Canadian Museum of Immigration at Pier 21 | Musée canadien de l'immigration du Quai 21

Canada

CANADIAN MUSEUM OF IMMIGRATION AT PIER 21

PROJECT NAME: **ESCALATOR REMOVAL AND NEW STAIR CONSTRUCTION**

SPECIFICATION

INVITATION TO TENDER

TENDER CLOSING DATE: December 22, 2015 at 2:00pm

QS online

SP DUMARESQ ARCHITECT LTD

BMR Structural Engineering

DUMAC

DUMAC ENERGY LTD.
CONSULTING ENGINEERS
752 BEDFORD HIGHWAY
HALIFAX, N.S.

Specifications Index

OWNER:	Canadian Museum of Immigration at Pier 21 Marie Chapman, Chief Executive Officer. Phone: 902 425 7770 #220 E-mail: mchapman@pier21.ca
ARCHITECT:	Syd Dumaresq, SP Dumaresq Architects Ltd. Phone: 902-421-1024 Fax: 902-492-1024 Email: syd@spda.ca
STRUCTURAL ENGINEER:	John Richardson, BMR Structural Engineering Phone: 902-429-3321 Fax: 902-422-8650 Email: johnr@bmreng.com
MECHANICAL ENGINEER:	Gerard Doyle, Dumac Energy Ltd. Phone: 902-457-1300 Fax: 902-457-1777 Email: gdoyle@dumac.ns.ca
ELECTRICAL ENGINNER	Marc Dumaresq, Dumac Energy Ltd. Phone: 902-457-1300 Fax: 902-457-1777 Email:marc@dumac.ns.ca

ARCHITECTURAL

A-000	COVER SHEET
A-301	EXISTING / DEMO LEVEL 1 AND 2 FLOOR PLANS
A-302	EXISTING / DEMO ESCALATOR SECTION
A-303	HOARDING AND TEMPORARY LAYOUT PLANS
A-304	LEVEL 1 AND 2 FLOOR PLANS
A-305	ENLARGED STAIR AND STORAGE ROOM PLAN
A-306	STAIR ELEVATIONS
A-307	STAIR ELEVATIONS
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A-309	STAIR SECTIONS
A-310	STAIR DETAILS
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STRUCTURAL

S-401	PARTIAL PLANS, DETAILS AND NOTES

ELECTRICAL

E-801	PARTIAL FLOOR PLANS ELECTRICAL

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SPEC-100	MECHANICAL SPECIFICATIONS
M-751	PARTIAL FLOOR PLANS MECHANICAL
FP901	PARTIAL HOARDING FLOOR PLANS - SPRINKLER
FP902	PARTIAL FLOOR PLAN - SPRINKLER

1.1 ELIGIBILITY

.1 To be considered for this project, Proponents must be General Contracting firms with at least ten (10) years experience in General Contracting.

1.2 INTENT AND SCOPE

.1 The intent of this bid call is to obtain a lump sum offer to remove and dispose of an escalator, install a new stair and perform related work at the Canadian Museum of Immigration at Pier 21 (CMIP/MCIQ)

.2 The Museum will remain in operation through this project. Provide public access as required by CMIP/MCIQ. Refer also to Item 25 Cooperation with CMIP/MCIQ.

.3 The Halifax Port Authority is the Landlord of the building. CMIP/MCIQ occupies portions of Shed 21. The successful contractor shall adhere to any and all Halifax Port Authority regulations.

1.3 OBTAINING TENDER DOCUMENTS

.1 Tender documents are available from:

Government Electronic Tendering Service
Buyandsell.gc.ca

.2 Bid documents are made available only for the purpose of obtaining offers for this project. Their use does not confer a license or grant for other purposes.

1.4 CONTRACT DOCUMENTS IDENTIFICATION

.1 The Contract Documents are as prepared by SP Dumaresq Architect Ltd, 6389 Coburg Rd, Suite 200, Halifax, NS B3H 2A5.

1.5 CONTRACT/BID DOCUMENTS:

.1 The Contract Documents consist of:

.1 Instructions to Bidders

.2 Bid Form and all required attachments.

.3 Supplementary General Conditions

.4 Plans, Drawings and Specifications

.5 The Award Letter

.6 The Contract Agreement between CMIP/MCIQ and the successful Bidder in the CCDC 2 (2008) “Stipulated Price Contract”.

.7 Post bid submissions or conditions set out in the Bid Documents or the Award Letter.

.2 Availability for Viewing

.1 Bid Documents are on available on the Government Electronic Tendering Service (GETS) at buyandsell.gc.ca.

.3 Product/System Options

.1 Where the Bid Documents stipulate a particular product, alternatives will be considered by the Consultant up to seven (7) working days before receipt of bids.

.2 When a request to substitute a product is made, the Consultant may approve the substitution and will issue an Addendum to under the tender on the Government Electronic Tendering Service, buyandsell.gc.ca.

.3 In submission of alternatives to products specified bidders shall include in their bid any changes required in the work to accommodate such alternatives. A later claim by the bidder for an addition to the contract price because of changes in work necessitated by use of alternatives shall not be considered.

.4 Unless alternatives are submitted in this manner and subsequently accepted, provide products as specified.

1.6 MANDATORY SITE VISIT

.1 A Mandatory Site Visit will be comprised of a Site Visit and an Information Session. Bidders must attend the Mandatory Site Visit to be held at the Canadian Museum of Immigration at Pier 21, located at 1055 Marginal Road, Halifax, Nova Scotia on December 1, 2015 at 1:00 pm, local time.

.1 Bidders are encouraged to register, via email, with Ashley MacPherson, Procurement and Administration Manager e-mail: amacpherson@pier21.ca prior to the Mandatory Site Visit.

.2 Registration will also be conducted at the start of the Mandatory Site Visit.

.3 Bidders must report to Ticket Counter located on the main level of the Canadian Museum of Immigration at Pier 21, by 1:00 p.m. local time for the Mandatory Site Visit. The Bidder (or representatives of the Bidder) must sign the Site Visit attendance sheet.

.4 CMIP/MCIQ will not accept tenders from Bidders whose company was not represented and did not sign the registration sheet at the Mandatory Site Visit.

.5 Each Bidder shall inspect the site and familiarize themselves with existing conditions, limitations and constraints that may arise during the period of this Contract.

.6 CMIP/MCIQ will provide an Information Session, immediately following the Mandatory Site Visit at which point Bidders will be permitted to ask questions.

.7 CMIP/MCIQ will respond, in a written Addendum, to all relevant queries from the Information Session following the Mandatory Site Visit. No information provided verbally during the site tour will be considered applicable to this tender unless it has been provided in writing.

1.7 PROJECT SCHEDULE

.1 Bidders shall indicate their proposed time to complete the Project in weeks on the Bid Form.

.2 CMIP/MCIQ desires to have the Project substantially complete prior to March 31, 2016.

1.8 BID SUBMISSION

.1 Submit the completed Bid Form and all required attachments in a sealed envelope marked as follows:

Tender No. CMIP 20151
CMIP/MCIQ New Stair

.2 The bid shall be delivered to:

Canadian Museum of Immigration at Pier 21
1099 Marginal Road, Second Floor
Halifax, NS, B3H 4P7
Attention: Ashley MacPherson, Procurement and Administration Manager
By December 22, 2015 at 2:00 p.m. (the "**Closing Time**")

.3 A complete bid is comprised of the following mandatory documents:

.1 ***Bid Form – Section 00 30 00*** with all pages and spaces for entry of information by bidders filled in.

.2 ***OH&S Certificate of Recognition or Letter of Good Standing*** (reference Instructions to Bidders 14.1.1)

.3 ***Workers' Compensation Board clearance certificate*** (reference Instructions to Bidders 14.1.2)

.4 ***Name of Bidder's proposed Superintendent*** (reference Instructions to Bidders 24)

.5 ***Bid Security*** (Refer to Instructions for Bidders 16.1.1 or 16.1.2 or 16.1.3)

.4 Bidders shall be solely responsible for the delivery of their bids in the manner and time prescribed.

.5 Bids must be submitted on forms provided by CMIP/MCIQ and attached to this document as Section 00 30 00. The Bid Form must be completely filled out in ink or by typewriter, with the signature in longhand. The Bid Form must not be

altered. Bid Forms that are incorrectly filled out or are not accompanied by all of the required attachments may be rejected by CMIP/MCIQ.

.6 E-mail or fax Bid Form submissions will not be accepted.

.7 Bids will be opened and reviewed by CMIP/MCIQ privately.

.8 CMIP/MCIQ reserves the right to reject any or all tenders.

1.9 BID INELIGIBILITY (REASON FOR REJECTION)

.1 CMIP/MCIQ may refuse to evaluate a bid which has been received prior to the closing time where:

.1 It is not submitted in the required form or bid is submitted by electronic transmission.

.2 There are omissions of significant information.

.3 A bid is not signed as required.

.4 The bid has conditions attached which are not authorized by the invitation to bid.

.5 The bid fails to meet one or more standards specified in the Instructions to Bidders.

.6 All addenda have not been acknowledged.

.7 Unbalanced bid or

.8 Any other defect which, in the opinion of CMIP/MCIQ brings the meaning of the bid into question.

1.10 BIDDERS' DUTY TO INVESTIGATE

.1 Bidders will be deemed to have familiarized themselves with the existing site and working conditions and all other conditions that may affect performance of the Contract. No plea of ignorance of such conditions or failure to make all necessary examinations will be accepted as a basis for any claims for extra compensation or an extension of time.

1.11 CLARIFICATION & ADDENDA

.1 Bidders finding any discrepancies or omissions in the Tender Documents, or having any doubt as to the meaning or intent of any part thereof, shall at once notify Ashley MacPherson, amacpherson@pier21.ca, not less than 7 days before the Closing Time. A discrepancy in the Contract Documents shall not limit the obligation of the Bidder to perform all of the work described by the Contract Documents.

.2 If CMIP/MCIQ considers that correction, explanation, or interpretation is necessary it will issue a written addendum. All addenda will form part of the Contract Documents.

.3 Bidders must confirm that all addenda have been received on the Bid Form. Failure to do so may result in disqualification.

.4 Verbal instructions will not bind CMIP/MCIQ.

1.12 EXAMINATION

.1 Before submitting a bid, each bidder shall carefully examine the drawings, read the specifications and all other contract Documents and visit the site of work. Each bidder shall fully inform himself prior to bidding as to all existing conditions and shall include in the bid a sum to cover the cost of all items necessary to perform the work as set forth in the Contract Documents. No allowance will be made to any bidder because of lack of such examinations or knowledge. The submission of a bid shall be construed as conclusive evidence that the bidder has made such examination. Request for clarification: refer to item 11 above

1.13 BID EVALUATION

.1 In the evaluation of bids CMIP/MCIQ may consider but will not be limited to the following criteria:

.1 The Stipulated Sum Bid submitted.

.2 Completion date.

.3 The Bidder's compliance with Bid Documents.

.4 Information received from persons who have previous experience with the Bidder on projects similar in size and scope as the work contemplated in this Tender. CMIP/MCIQ reserves the right to request from any Bidder the names of persons who may be able to provide information on the Bidder's capabilities and ability to perform the work. CMIP/MCIQ also reserves the right to contact and receive information from any other person, whether or not that person was referred by the Bidder, who may have information about the Bidder's capabilities and ability to perform the required work.

.5 The Bidder's plan for removing the escalator and installing the new stair in a timely manner with minimal disruption to the ongoing operation of CMIP/MCIQ. The two or three Bidders with the lowest acceptable tenders will have an opportunity to present their implementation plans in an interview with CMIP/MCIQ and the Architect. Interviews will be scheduled following tender submittal. Refer also to 1.25 for additional information.

.6 CMIP/MCIQ will take into account the information received and the Stipulated Sum Bid, and will award the contract to the Bidder who offers best value to CMIP/MCIQ and whose Bid, in CMIP/MCIQ's sole discretion, is in the best interests of CMIP/MCIQ to accept.

.2 Bidders will be evaluated on the following basis:

.1	Tendered price:	80 points
.2	Implementation plan (from post tender interviews)	10 points
.3	Evaluation of past performance	10 points

.3 CMIP/MCIQ reserves the right to accept or reject any Bids or all Bids.

1.14 BID & POST-BID SUBMISSIONS

.1 The following documents must be submitted with the Bid Form:

.1 Certificate of Recognition issued jointly by the Nova Scotia Department of Environment & Labour and an occupational health & safety organization approved by Nova Scotia Department of Environment & Labour, or a valid Letter of Good Standing from an occupational health and safety organization approved by CMIP/MCIQ, indicating the contractor is in the process of qualifying for the Certificate of Recognition.

.2 A Clearance Certificate indicating the Bidder is in good standing with the Workers' Compensation Board.

.3 Bid Bond (or Tender Security).

.4 Letter of Intent to Bond.

.2 The following documents must be provided within ten (10) days after CMIP/MCIQ issues an Award Letter. Failure to do so may result in withdrawal of the Award Letter.

.1 For the Bidder and all its Subcontractors:

.1 Evidence of Insurance.

.2 For all Subcontractors:

.1 Certificate of Recognition issued jointly by the Nova Scotia Department of Environment & Labour and an occupational health & safety organization approved by Nova Scotia Department of Environment & Labour, or a valid Letter of Good Standing from an occupational health and safety organization approved by CMIP/MCIQ, indicating the subcontractor is **in the process** of qualifying for the Certificate of Recognition. **"In the process"** has been defined as the completion of the four mandatory courses (Safety Basics, Safety Orientation, Safety Audit and Leadership) and completion of training required by the Occupational Health and Safety Act (such as, but not limited to, WHMIS, TDG, TCP, Confined Space, and First Aid)

.2 Evidence of an account with the Workers' Compensation Board, coverage under the Workers' Compensation Act, and a Clearance Certificate indicating the Subcontractor is in good standing.

1.15 STIPULATED SUM TENDER FORM

.1 Contractors must submit their bids only on the attached form. Additional copies, if required, can be obtained online through the Government Electronic Tendering Service, buyandsell.gc.ca under this tender. Complete each item on the form.

.2 Incomplete forms may be rejected.

.3 Tender form to be included within the Tender Submission and delivered in accordance with Section 00 10 00, Instructions to Bidders, Item 8 – Bid Submission.

1.16 SECURITY

.1 Any Bid for which the Stipulated Sum Bid before HST is $200,000 or more must be accompanied by security in the form or either a bid bond, certified cheque or an irrevocable standby letter of credit. All bid and security forms must bear the Bidder's original signature.

.1 Bid Bond:

.1 Submit with Bid a Bid Bond acceptable to CMIP/MCIQ in an amount not less than (10%) of the contract price. The Bid Bond is to be endorsed in the name of CMIP/MCIQ as oblige, signed and sealed by the Principal (Contractor) and surety. Submit with the Bid Form and Bid Bond a Consent of Surety stating that the Surety providing the Bid bond is willing to supply the Performance Bond and Labour and Materials Payment Bond required.

.2 Within ten (10) days after notification of award of the Contract, the Contractor shall provide CMIP/MCIQ with Performance Bond and a Labour and Materials Payment Bond, each of which shall be in a form prescribed by and acceptable to CMIP/MCIQ in an amount equal to **fifty percent (50%)** of the amount of the Contract.

.3 The Contractor shall maintain the Performance Bond in force for a period of not less than **twelve (12) months** after the issue of the Substantial Completion Certificate by CMIP/MCIQ.

.4 Each of the above mentioned Bid, Performance and labour and Materials Payment Bonds shall be provided at the expense of the Contractor and shall be with an established Surety Company satisfactory to and approved by CMIP/MCIQ.

.5 Include the cost of Bonds in the Contract Price.

.2 Certified Cheque:

.1 In lieu of the Bid, Performance and Labour and Materials Payment Bonds, each bidder may submit with a bid a Certified Cheque payable as specified for Bid Bond, for a sum not less than **ten percent (10%)** of the amount of the bid. The Cheque shall serve as Bid Deposit and as security for the faithful performance of the Contract including the payment of all obligations arising under the Contract.

.2 The amount remaining of the Certified Cheque of the successful bidder will be returned without interest on completion of the entire work and thirty (30) days after the date of the Certificate of Total Completion of the work by the Architect.

.3 Certified Cheques of unsuccessful Bidders will be returned after an award letter has been issued, or previous to such time, at the direction of CMIP/MCIQ.

.3 Irrevocable Standby Letter of Credit:

.1 In lieu of the specified Bid, Performance, and Labour and Materials Payment Bonds submitted as Bid Security and Performance.

.2 Assurance, Bidders may submit with their Bid Form an irrevocable Standby Letter of Credit for a sum not less than **ten percent (10%)** of the Contract price.

.3 The Irrevocable Standby Letter of Credit shall be issued by a certified financial institution subject to the Uniform Customs and Practices for Documentary Credit (1993 Revision).

.4 An Irrevocable Standby Letter of Credit is to remain in effect for the entire work and thirty (30) days after the date of the Certificate of Total Completion of the Work by the Architect.

.5 Upon expiry of the Irrevocable Standby letter of credit, a separate Irrevocable Standby Letter of Credit shall be provided for work requiring extended warranties.

.6 The certified financial institution is to endorse the Irrevocable Standby Letter of Credit as specified for Bid Bonds.

.7 Include the cost of providing the Irrevocable Standby Letter of Credit in the Contract Price.

1.17 CONDITIONAL AWARD

.1 Before issuing a letter of Award, CMIP/MCIQ may require any Bidder to satisfy conditions or provide additional information before a specified date. Failure to do so to the satisfaction of CMIP/MCIQ may result in elimination of the Bidder from further consideration.

.2 CMIP/MCIQ may issue a Letter of Award to a Bidder that contains conditions that are to be met before a specified date or on a continuing basis. These conditions will form a part of the conditions of the contract. Failure to meet the conditions so may result in withdrawal of the Letter of Award or termination of the Contract.

.3 A bidder who receives a conditional Letter of award may, if unwilling to accept the conditions, withdraw its Bid and not accept the Award.

1.18 ADDITIONS AND DELETIONS TO THE CONTRACT

.1 The following mark-ups will be allowed for additions and deletions to the Contract:

.1 For extras up to $5,000.00

.1 Sub-Contractors own work: Overhead and fee - 15% total

.2 General Contractors own work: Overhead and fee - 15% total

.3 General Contractor on Sub-Contractor's work: 10% total

.4 No percentage mark-up shall be applied to deductions

.2 For extras above $5,000.00

.1 Sub-Contractors own work: Overhead and fee - 10% total

.2 General Contractors own work: Overhead and fee - 10% total

.3 General Contractor on Sub-Contractor's work: 8% total

.4 No percentage mark-up shall be applied to deductions

1.19 FORM OF AGREEMENT

.1 The Form of Agreement will be CCDC 2, 2008 as amended by the Architect's Supplementary General Conditions.

1.20 BARRICADES, WARNINGS AND SAFETY

.1 The entire work is at the Contractor's risk and the Contractor will be held responsible for any accidents or injury which may happen to the work crews or public until the completion of the work.

.2 The Contractor shall be responsible for onsite safety and for compliance with all the applicable health and safety acts and regulations.

.3 The Contractor shall have in place a safety plan that is in conformance with the Occupational Health and Safety Act and its regulations.

.4 All safety signage in public spaces must be posted in both official languages (English and French).

1.21 MATERIALS

.1 Substitutions of products or materials will not be permitted without prior written approval by the Architect.

.2 All products and materials are to be new. Reconditioned or used materials are not acceptable.

1.22 MUNICIPAL PERMITS

.1 A Municipal Building Permit is not required, however, the General Contractor will be responsible for all inspections as required by any local authorities, utilities, etc., including the costs of same.

1.23 INSURANCE

.1 Contractor's Liability Insurance:

.1 The Contractor shall maintain such insurance and pay such assessments as will protect the Contractor and CMIP/MCIQ and Halifax Port Authority from claims under the Worker's Compensation Act and from any other claims for damages for bodily injury, sickness or disease, including death and from claims for property damage which may arise from operations under this contract. The minimum limits of such insurance shall not be less than $2,000,000 with respect to each occurrence or accident, on an occurrence (not claims made) basis.

.2 The liability insurance to be maintained by the Contractor shall include Commercial General Liability Insurance covering Premises and Operations Liability, elevators, broad form property damage, broad form automobile, CMIP/MCIQ's and Halifax Port Authority's and contractors', protective, blanket contractual, personal injury, contingent employers liability, cross liability clause, non-owned automobile liability and a 30 day notice of cancellation clause. Liability coverage of not less than $2,000,000 is required with regard to operations of owned automobiles.

.3 All liability insurance policies shall be written in such terms as will fully protect the Contractor and CMIP/MCIQ and Halifax Port Authority as additional named insureds.

.4 Prior to commencement of any Work hereunder, the contractor shall file with the Architect a certified copy of each insurance policy and certificate required. All such insurance shall be maintained until final completion and acceptance of the Work including the making good of faulty Work or materials, except that coverage of completed operations liability shall in any event be maintained for twelve (12) months date of final acceptance as certified by the Architect.

.2 Comprehensive Builders Risk Coverage

.1 Prior to the commencement of any Work hereunder, the contractor shall maintain and pay for Broad Form (All Risks) Builders Risk Coverage in the joint names of CMIP/MCIQ and Halifax Port Authority and the Contractor totaling not less than 100% of the total value of the Work done and materials delivered on the site (contract value) so that any loss under such policies of insurance will be payable to CMIP/MCIQ and Halifax Port Authority and the Contractor as their respective interests appear.

.2 Should a loss be sustained under the Builders Risk Coverage, the Contractor shall act on behalf of CMIP/MCIQ and Halifax Port Authority and Contractor for the purpose of adjusting the amount of such loss with the insurance companies. As soon as such adjustment has been satisfactorily complete, the Contractor shall proceed to repair the damage and complete the Work and shall be entitled to receive from CMIP/MCIQ in addition to any sum due under the Contract, the amount at which CMIP/MCIQ's and Halifax Port Authority's interest has been appraised in the adjustment made with the insurance companies as referred to above, said amount to be paid to the Contractor as the Work of restoration proceeds. Any loss or damage which may occur shall not affect the rights and obligations of either party under the Contract except as aforesaid and except that the Contractor shall be entitled to a reasonable extension of time for the performance of the Work, as CMIP/MCIQ may decide.

.3 All insurance policies shall be endorsed to provide a minimum advance written notice of not less than 30 days in the event of cancellation, termination, or reduction in coverage or limits, such notice to be made by the Insurer to CMIP/MCIQ and Halifax Port Authority.

.4 All insurance policies or certification documents shall specify coverage being applicable to this contract.

.5 Prior to commencement of Work, file with the Architect a certified copy each complete insurance policy or certification documents required. All such insurance shall be maintained until final completion of the contract.

.6 The Contractor shall not do or omit to do or suffer anything to be done or omitted to be done which will in any way impair or invalidate such policy or policies of insurance.

1.24 SUPERINTENDENT

.1 This project requires a highly qualified, full-time site superintendent to the approval of the Evaluation Committee. CMIP/MCIQ reserves the right to require the Contractor to replace the site Superintendent with a more qualified person should the performance of the site superintendent be in doubt

1.25 COOPERATION WITH CMIP/MCIQ

.1 The Museum will remain in operation through this project. Provide hoardings as per drawings and maintain public access as required by CMIP/MCIQ.

.2 The following is a tentative schedule of events at CMIP/MCIQ.

.1 No Construction is to occur on the following days: December 27, 28, 29, 30, 31, January 17,18,19,21, February 14, 21, Evening of February 22, March 2, 3, 4, 21, 22, 23, 28, 29, 30, 31, Evenings of March 5, 12, 26.

.2 There may be other days when construction cannot occur. The successful contractor must be willing to cooperate with the Museum to avoid disruption to the ongoing and revenue producing operations.

1.26 LANGUAGE OF THE PROJECT

.1 The working language of the project is English. Where there are discrepancies between the French and English forms of this tender, the English shall remain.

1.27 CONFLICT OF INTEREST

.1 Bidders must fully disclose, in writing to the Procurement and Administration Manager, on or before the closing date, any circumstances of any possible conflict of interest or what could be perceived as a possible conflict of interest if the Bidder were to become a contracting party pursuant to the tender call. CMIP/MCIQ shall review any submissions by bidders under this provision and may reject any tenders where, in the opinion of the Committee, the Bidder could be in conflict of interest or could be perceived to be in a possible conflict of interest position if the Bidder were to become a contracting party pursuant to this tender call

.2 It will be a condition of the final contract that no former public office holder who is not in compliance with the post-employment provision of the Conflict of Interest and Post Employment Code of the Public Office Holders shall derive a direct benefit from this Contract.

1.28 LEAD ABATEMENT

.1 CMIP has commissioned a Presence of Lead Assessment of the area of construction which will be distributed in Addendum#1. Lead abatement is anticipated to be a part of this contract. The full extent of lead paint and lead dust will not be known until the escalators are removed. Lead abatement will be a part of the General Contractor’s scope of work, and will be paid from the Lead Abatement Allowance shown on the Stipulated Sum Bid Form. Contractors are to allow time for lead abatement in their project scheduling.

END OF SECTION

1.1 GENERAL INFORMATION

.1 To:

Canadian Museum of Immigration at Pier 21
1099 Marginal Road, Second Floor
Halifax, NS, B3H 4P7
Att'n: Ashley MacPherson, Procurement and Administration Manager

Tender # CMIP 20151

.2 From:

Name: _____

Address: _____

_____

Telephone/Fax: _____

E-mail: _____

Contact: _____

1.2 CONFIRMATIONS

.1 The undersigned Bidder confirms that it has carefully read and examined the Bid Documents for the construction of the works and has carefully examined the locality and site of the Work and has full knowledge of the work required, viz:

.1 Instruction to Bidders

.2 Stipulated Sum Bid Form

.3 Plans, Drawings, and Specifications

.4 The Contract Agreement between CMIP/MCIQ and the successful Bidder in the CCDC 2 (2008) "Stipulated Price Contract" Between CMIP/MCIQ and Contractor.

.5 Supplementary Conditions

.6 CMIP/MCIQ Construction Contract Guidelines

.7 The following addenda

Addendum Number	Date	No. of Pages

(Insert above the numbers of Addenda received during the Bidding period and taken into account in preparing his Bid. It is the Bidder's responsibility to ensure that all addenda have been received. Failure to list all addenda may result in rejection of the bid.)

1.3 STIPULATED SUM BID

.1 The undersigned Bidder does hereby Bid and offer to enter into a Contract to perform and complete the whole of the Work and provide all necessary labour, plans, tools, materials, and equipment, including its overhead and profit as set forth and in strict accordance with the Specifications, Drawings, and other Contract Documents and to do all therein set forth including all taxes for the following total stipulated sum excluding HST:

$_____

_____(DOLLARS)

($_____) Applicable HST will be added by CMIP/MCIQ to all contract payments.

2. This Stipulated Sum is broken down as follows:
   1. Cost of construction $ _____
   2. Lead abatement allowance (refer to Inst. To Bidders1.28) $25,000.00
   3. Total stipulated sum $_____

Note: the Total Stipulated Sum above must agree with the amount quoted in 1.3 1

1.4 SCHEDULE (SEE ALSO ITEM 1.6 – INSTRUCTIONS TO BIDDERS)

.1 Project completion is extremely important to CMIP/MCIQ.

.2 Substantial Completion is desired by, March 31, 2016.

.3 If awarded this project we will complete the work in _____weeks.

1.5 SUPERINTENDENT

.1 We submit herewith the name of our full-time Construction Superintendent for the Work and state that he or she has the experience and qualifications required to effectively discharge the responsibilities of the position and shall be capable of managing the field operations of this contract to its completion. He or she shall be in attendance at the work site while work is being performed. We shall provide him/her with copies of all the contract documents, change orders, site directives and instructions, specified standards, approved samples, and installation directions.

Name: _____

.2 We understand that CMIP/MCIQ may require us to provide a resume and references for the proposed Construction Superintendent and may make an award that is conditional on provision of a different Construction Superintendent if CMIP/MCIQ judges that the proposed person does not have appropriate qualifications or experience. Substitution of the approved Construction Superintendent shall be subject to the approval of CMIP/MCIQ. CMIP/MCIQ requires the proposed Site Superintendent to a minimum of 7 years' experience in similar projects."

1.6 SUB-CONTRACTORS

.1 We submit herewith a list of suppliers and subcontractors:

	Trade	Name of Supplier or Subcontractor
.1	Demolition	_____
.2	Structural steel and stair supply	_____
.3	Millwork	_____
.4	Drywall and ceilings	_____
.5	Hard Tile	_____
.6	Painting	_____
.7	Electrical	_____
.8	Mechanical	_____

.9 Fire protection _____

1.7 DECLARATIONS AND UNDERTAKINGS

.1 The Undersigned Bidder:

.1 Declares that this Bid is valid for sixty (60) days from the date set for its delivery to CMIP/MCIQ.

.2 Undertakes in the event of acceptance of his Bid to execute the CCDC 2 (2008) "stipulated price contract between CMIP/MCIQ and Contractor" Contract Agreement within seven (7) days of CMIP/MCIQ's acceptance of the Bid.

.3 Undertakes in the event of acceptance of the Bid to complete and deliver the works comprised in the contract in accordance with item 5 "Contract/Bid Documents" of Instructions to Bidders and any subsequent amendments that CMIP/MCIQ and Contractor may make.

.4 Understands and agrees that CMIP/MCIQ is not bound to accept the lowest or any Bid which it may receive.

.5 Declares that it has examined the site of the Work and has satisfied itself as to working conditions, nature and kind of work to be done, any special risks associated therewith and all other matters which may be necessary in order to fully understand the conditions under which the work will be required to be performed.

.6 Declares that it has knowledge of the location of the proposed Work and has informed itself as to the actual conditions and requirements thereof, including labour conditions and labour rules and shall not claim at any time after execution of the Contract that there was any misunderstanding in regard to such conditions and requirements.

.7 Declares that it has carefully examined the Bid Documents referred to in the second paragraph of this Bid Form, and the Bidder hereby accepts and agrees to the same as forming a part of the Agreement.

.8 Agrees to perform any and all work extra to the Contract at overhead rates not to exceed those stipulated in the Instruction to Bidders, Item 18.

.9 Agrees that the warranty period shall be for a period of twelve months from the date of the Architect's Certificate of Substantial Performance of the Work or such longer period as may be specified in the Contract Documents.

.10 Agrees that time shall be construed as being of the essence of the Contract.

.11 Understands that in the evaluation of a bid, CMIP/MCIQ reserves the right to reject any and all bids or accept any bid within the sole opinion of CMIP/MCIQ is in its best interest.

.12 Understands that in the evaluation of a bid, CMIP/MCIQ will consider but not be limited to the following criteria:

.1 Bid price submitted

.2 Compliance with Bid Documents

.3 The experience of the Bidder with similar projects in size and scope

.4 Bidder's previous performance with CMIP/MCIQ, if any, and with other clients.

1.8 ATTACHMENTS

.1 The following mandatory documents are attached:

.1 ***Stipulated Sum Bid Form - Section 00 30 00*** with all pages and spaces for entry of information by bidders filled in.

.2 ***OH&S Certificate of Recognition or Letter of Good Standing*** (reference Instructions to Bidders 14.1.1)

.3 ***Workers' Compensation Board clearance certificate*** (reference Instructions to Bidders 14.1.2)

.4 ***Bid security*** (refer to Instructions to Bidders 16.1.1 or 16.1.2 or 16.1.3)

1.9 SIGNATURE*

Dated this _____ day of _____, 2015.

Name of Firm Bidding _____[Seal]

Address: _____

Telephone: _____

Signature: _____

Name and Title (Printed): _____

Witness _____

Name and Title (Printed)_____

Note: Bids submitted on behalf of any Corporation must be signed in the name of such Corporation by a duly authorized officer or agent, who shall also subscribe his own name and office. Affix seal.

1 PRECEDENCE

.1 Notwithstanding General Condition 1.1.9, these Supplementary Conditions form a part of the Contract between the Contractor and the Owner. In the event of any conflict they shall take precedence over the Definitions and General Conditions set out in the standard form CCDC 2- 2008 Stipulated Price Contract.

2 CONTRACT CHANGES

.1 Notwithstanding anything contained in GC 6.2.1 or 6.2.2 or 6.3.6 or 6.3.7 or 6.6, the value of any Change Order or Change Directive or other change in the Contract Price shall be determined in one or more of the following methods as determined by the Architect:

.1 An amount that is agreed between the Contractor and the Owner. If requested, the Contractor shall provide a detailed price breakdown showing labour and material quantities and prices.

.2 Cost of work and percentage or by cost and fixed fee.

.2 In cases of additional work to be paid for under method 2.1.2, the Contractor shall keep and present in such form as the Architect may direct, a correct account of the net cost of labour and materials, together with vouchers. In any case, The Architect shall certify to the amount due to the Contractor. Pending final determination of value, payments on account of changes shall be made on the Architect's certificate.

.3 In determining cost under method 2.1.2 above, the labour costs shall be calculated by the actual estimated hours at the Contractor's actual, usual labour costs including hourly wage, statutory contributions to EI, WCB and CPP and other applicable labour burdens paid directly by the employer such as vacation pay, holiday pay, pension plan etc. The Owner reserves the right to verify the labour costs by independent audit. The following markups may be added to the labour costs:

.1 5% of labour costs to cover the cost of small tools

.2 5% of labour costs to cover site supervision

.4 In determining cost under method 2.1.2 above, the material costs shall be calculated as the Contractors' net costs (including Contractor discounts from suppliers) FOB the project site plus applicable taxes.

.5 In determining costs under method 2.1.2 above, equipment rental costs for major pieces of equipment required will be at the lowest rates available in the area.

.6 In determining costs under method 2.1.2 above, overhead and fees chargeable by the Contractor shall be the cost of any authorized change plus the following mark-ups on the net total of labour and material and where applicable equipment rental:

.1 For Extras up to $5,000:

.1 Contractors Own Work: overhead & fee – 15% total

.2 Contractor on Sub Contractor's Work: overhead & fee – 10% total

.2 For Extras above $5,000:

.1 Contractors Own Work: overhead & fee - 10% total

.2 Contractors on Sub Contractors Work: overhead & fee - 8% total

.7 No percentage mark up shall be applied to deductions.

3 HOLDBACKS

.1 GC 5.5 and 5.6 shall be deleted and the following added.

.2 Ten (10%) percent of each progress claim will be withheld pursuant to the provisions of the Nova Scotia Builders Lien Act (the "Lien Holdback").

.3 The Lien Holdback shall be released to the Contractor by the Owner within two weeks of the date on which all of the following requirements have been met:

.1 Sixty (60) days have elapsed from the date of Substantial Performance of the Work of the Contractor as certified by the Architect, and

.2 The Contractor has provided the Architect with:

.1 an application for payment of the Lien Holdback amount

.2 a Statutory Declaration that all accounts for labour, subcontracts, products, construction machinery and equipment, and other indebtedness which may have been incurred by the Contractor in the Substantial Performance of the Work and for which The Owner might be in anyway held responsible have been paid in full except for amounts properly retained as holdback or an identified amount in dispute; and a Full and Final Release in favour of The Owner.

.4 In addition to the Lien holdback, the Owner may retain an additional sum for Work of the Contractor that is not complete or is deficient (the "Deficiency Holdback") in such amount as may be advised by the Consultant as being sufficient to cover the cost of performing remaining work or correcting deficiencies.

.5 The Deficiency Holdback or a portion thereof shall be released to the Contractor by the Owner within two weeks of the date on which all of the following requirements have been met:

.1 The Architect has advised the Owner and the Architect has certified that the Work of the Contractor against which the holdback or a portion thereof has been retained is complete and deficiencies have been corrected.

.2 The Owner may at its sole discretion release the Deficiency Holdback to the Contractor in more than one increment and continue to hold back the balance if a portion of the Work of the Contractor has been completed and

deficiencies corrected, but another portion remains incomplete or other deficiencies remain uncorrected.

.6 If a lien claim is made by a subcontractor or supplier to the Contractor, the Contractor shall at its cost take all steps required to effect the settlement and discharge of that lien claim and the Owner may retain all or that portion of monies held back pursuant to this General Condition that in the Owner's sole discretion it considers sufficient to discharge the claim of lien until the claim has been fully satisfied and discharged.

.7 In the event it is determined that any Contractor has not paid all expenses incurred by it in carrying out the Contract, the Owner shall be at liberty to pay such expenses at its sole discretion from the monies held back pursuant to this General Condition and such payment shall thereby, to the extent of such payment, release and discharge the Owner's payment obligations to the Contractor.

.8

4 OTHER

.1 Definition 20 Substantial Performance of the Work shall be replaced with: "Substantial performance of the Work in accordance with the Builders Lien Act shall be when the Work or improvement is ready for use or is being used for the purpose intended; and when the Work to be done under the contract is capable of completion or correction at a cost of not more than two and one-half percent of the contract price; and in addition is so certified by the Consultant in writing.

.2 Add the following Definitions:

.1 The terms "N.I.C., "by Owner", "by Others" when used in the Contract Documents shall mean the particular work or item so designated is not included in the Contractor's Work.

.2 "Product as Specified" shall mean the particular product is the exact manufacturer, model, series, type, shape, material, colour, texture and other characteristics specified in the Contract Documents.

.3 Add new GC 3.1.3 as follows:

.1 The Contract Documents are not intended to depict each and every condition or detail of the construction. As the knowledgeable party in the field, the Contractor is in the best position to verify and has the responsibility to ensure that all of the Work is completed in a manner which will provide a durable and watertight structure.

.4 Delete GC 5.1 in its entirety.

.5 GC 5.2.3 Delete "and Products delivered to the place of the work at that date". Add the words "and structural, mechanical or electrical components that have been fabricated specifically for the Project, have been delivered to the Place of the Work and are expected to be incorporated into the fabric of the building before

the end of the next payment period" to the end of the sentence. Add the following to the end of the paragraph: "Applications for payment shall be submitted in accordance with the instructions attached as Schedule A to these Supplementary Conditions".

.6 GC 5.3.1.2 change 10 days to 15 days; GC 5.3.1.3 change 20 days to 45 days.

.7 GC6.5.1 and 6.5.2 Delete "The Contractor shall be reimbursed by the Owner for reasonable costs incurred by the Contractor as the result of such delay".

.8 GC 7.1.2 and 7.1.3 Replace the phrase "5 Working Days" with "48 hours".

.9 Notwithstanding GC 9.4 the Contractor shall immediately comply with all policies and instructions regarding jobsite safety and occupational health and safety issued by the Owner. This shall not relieve the Contractor of its responsibility for construction safety under the General Conditions and all applicable legislation and regulations.

.10 Notwithstanding GC 11, general liability, automobile liability and property insurance limits shall be a minimum $2,000,000 each. No change shall be made to the terms of the insurance nor shall it be cancelled without the prior written consent of the Owner.

CCDC 2

CCDC 2

stipulated price contract

2008

[Name of the Project]

Apply a CCDC 2 copyright seal here. The application of the seal demonstrates the intention of the party proposing the use of this document that it be an accurate and unamended form of CCDC 2 – 2008 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.

CANADIAN CONSTRUCTION DOCUMENTS COMMITTEE
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The Canadian Construction Documents Committee (CCDC) is a national joint committee responsible for the development, production and review of standard Canadian construction contracts, forms and guides. Formed in 1974 the CCDC is made up of volunteer representatives from:

Public Sector Owners
Private Sector Owners
Canadian Bar Association (Ex-Officio)
* The Association of Canadian Engineering Companies
* The Canadian Construction Association
* Construction Specifications Canada
* The Royal Architectural Institute of Canada

*Committee policy and procedures are directed and approved by the four constituent national organizations.

CCDC 2 is the product of a consensus-building process aimed at balancing the interests of all parties on the construction project. It reflects recommended industry practices. CCDC 2 can have important consequences. The CCDC and its constituent member organizations do not accept any responsibility or liability for loss or damage which may be suffered as a result of the use or interpretation of CCDC 2.

AGREEMENT BETWEEN OWNER AND CONTRACTOR

For use when a stipulated price is the basis of payment.

This Agreement made on the _____ day of _____ in the year _____ .

by and between the parties

_____

hereinafter called the "*Owner*"

and

_____

hereinafter called the *"Contractor"*

The *Owner* and the *Contractor* agree as follows:

ARTICLE A-1 THE WORK

The *Contractor* shall:

1.1 perform the *Work* required by the *Contract Documents* for

_____

insert above the name of the Work

located at

_____

insert above the Place of the Work

for which the Agreement has been signed by the parties, and for which

_____

insert above the name of the Consultant

is acting as and is hereinafter called the "*Consultant*" and

1.2 do and fulfill everything indicated by the *Contract Documents*, and

1.3 commence the *Work* by the _____ day of _____ in the year _____ and, subject to adjustment in *Contract Time* as provided for in the *Contract Documents*, attain *Substantial Performance of the Work*, by the _____ day of _____ in the year _____ .

ARTICLE A-2 AGREEMENTS AND AMENDMENTS

2.1 The *Contract* supersedes all prior negotiations, representations or agreements, either written or oral, relating in any manner to the *Work*, including the bidding documents that are not expressly listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS.

2.2 The *Contract* may be amended only as provided in the *Contract Documents*.

ARTICLE A-3 CONTRACT DOCUMENTS

3.1 The following are the *Contract Documents* referred to in Article A-1 of the Agreement - THE WORK:

- Agreement between *Owner* and *Contractor*
- Definitions
- The General Conditions of the Stipulated Price Contract
- *

* *(Insert here, attaching additional pages if required, a list identifying all other Contract Documents e.g. supplementary conditions; information documents; specifications, giving a list of contents with section numbers and titles, number of pages and date; material finishing schedules; drawings, giving drawing number, title, date, revision date or mark; addenda, giving title, number, date)*

ARTICLE A-4 CONTRACT PRICE

4.1 The *Contract Price*, which excludes *Value Added Taxes*, is:

_____ /100 dollars $ _____

4.2 *Value Added Taxes* (of _____ %) payable by the *Owner* to the *Contractor* are:

_____ /100 dollars $ _____

4.3 Total amount payable by the *Owner* to the *Contractor* for the construction of the *Work* is:

_____ /100 dollars $ _____

4.4 These amounts shall be subject to adjustments as provided in the *Contract Documents*.

4.5 All amounts are in Canadian funds.

ARTICLE A-5 PAYMENT

5.1 Subject to the provisions of the *Contract Documents*, and in accordance with legislation and statutory regulations respecting holdback percentages and, where such legislation or regulations do not exist or apply, subject to a holdback of _____ percent (_____ %), the *Owner* shall:

.1 make progress payments to the *Contractor* on account of the *Contract Price* when due in the amount certified by the *Consultant* together with such *Value Added Taxes* as may be applicable to such payments, and

.2 upon *Substantial Performance of the Work*, pay to the *Contractor* the unpaid balance of the holdback amount when due together with such *Value Added Taxes* as may be applicable to such payment, and

.3 upon the issuance of the final certificate for payment, pay to the *Contractor* the unpaid balance of the *Contract Price* when due together with such *Value Added Taxes* as may be applicable to such payment.

5.2 In the event of loss or damage occurring where payment becomes due under the property and boiler insurance policies, payments shall be made to the *Contractor* in accordance with the provisions of GC 11.1 – INSURANCE.

5.3 Interest

.1 Should either party fail to make payments as they become due under the terms of the *Contract* or in an award by arbitration or court, interest at the following rates on such unpaid amounts shall also become due and payable until payment:

(1) 2% per annum above the prime rate for the first 60 days.

(2) 4% per annum above the prime rate after the first 60 days.

Such interest shall be compounded on a monthly basis. The prime rate shall be the rate of interest quoted by

_____

(Insert name of chartered lending institution whose prime rate is to be used)

for prime business loans as it may change from time to time.

.2 Interest shall apply at the rate and in the manner prescribed by paragraph 5.3.1 of this Article on the settlement amount of any claim in dispute that is resolved either pursuant to Part 8 of the General Conditions – DISPUTE RESOLUTION or otherwise, from the date the amount would have been due and payable under the *Contract*, had it not been in dispute, until the date it is paid.

ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING

6.1 *Notices in Writing* will be addressed to the recipient at the address set out below. The delivery of a *Notice in Writing* will be by hand, by courier, by prepaid first class mail, or by facsimile or other form of electronic communication during the transmission of which no indication of failure of receipt is communicated to the sender. A *Notice in Writing* delivered by one party in accordance with this *Contract* will be deemed to have been received by the other party on the date of delivery if delivered by hand or courier, or if sent by mail it shall be deemed to have been received five calendar days after the date on which it was mailed, provided that if either such day is not a *Working Day*, then the *Notice in Writing* shall be deemed to have been received on the *Working Day* next following such day. A *Notice in Writing* sent by facsimile or other form of electronic communication shall be deemed to have been received on the date of its transmission provided that if such day is not a *Working Day* or if it is received after the end of normal business hours on the date of its transmission at the place of receipt, then it shall be deemed to have been received at the opening of business at the place of receipt on the first *Working Day* next following the transmission thereof. An address for a party may be changed by *Notice in Writing* to the other party setting out the new address in accordance with this Article.

Owner

_____
*name of Owner**

_____
address

_____ _____
facsimile number *email address*

Contractor

_____
*name of Contractor**

_____
address

_____ _____
facsimile number *email address*

Consultant

_____
*name of Consultant**

_____
address

_____ _____
facsimile number *email address*

** If it is intended that the notice must be received by a specific individual, that individual's name shall be indicated.*

ARTICLE A-7 LANGUAGE OF THE CONTRACT

7.1 When the *Contract Documents* are prepared in both the English and French languages, it is agreed that in the event of any apparent discrepancy between the English and French versions, the English / French # language shall prevail.
 # Complete this statement by striking out inapplicable term.

7.2 This Agreement is drawn in English at the request of the parties hereto. La présente convention est rédigée en anglais à la demande des parties.

ARTICLE A-8 SUCCESSION

8.1 The *Contract* shall enure 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 by the hands of their duly authorized representatives.

SIGNED AND DELIVERED
in the presence of:

WITNESS

signature

name of person signing

signature

name of person signing

OWNER

name of owner

signature

name and title of person signing

signature

name and title of person signing

WITNESS

signature

name of person signing

signature

name of person signing

CONTRACTOR

name of Contractor

signature

name and title of person signing

signature

name and title of person signing

N.B. Where legal jurisdiction, local practice or Owner or Contractor requirement calls for:
(a) proof of authority to execute this document, attach such proof of authority in the form of a certified copy of a resolution naming the representative(s) authorized to sign the Agreement for and on behalf of the corporation or partnership; or
(b) the affixing of a corporate seal, this Agreement should be properly sealed.

DEFINITIONS

The following Definitions shall apply to all *Contract Documents*.

1. **Change Directive**
A *Change Directive* is a written instruction prepared by the *Consultant* and signed by the *Owner* directing the *Contractor* to proceed with a change in the *Work* within the general scope of the *Contract Documents* prior to the *Owner* and the *Contractor* agreeing upon adjustments in the *Contract Price* and the *Contract Time*.

2. **Change Order**
A *Change Order* is a written amendment to the *Contract* prepared by the *Consultant* and signed by the *Owner* and the *Contractor* stating their agreement upon:
   - a change in the *Work*;
   - the method of adjustment or the amount of the adjustment in the *Contract Price*, if any; and
   - the extent of the adjustment in the *Contract Time*, if any.

3. **Construction Equipment**
Construction Equipment means all machinery and equipment, either operated or not operated, that is required for preparing, fabricating, conveying, erecting, or otherwise performing the *Work* but is not incorporated into the *Work*.

4. **Consultant**
The *Consultant* is the person or entity engaged by the *Owner* and identified as such in the Agreement. The *Consultant* is the Architect, the Engineer or entity licensed to practise in the province or territory of the *Place of the Work*. The term *Consultant* means the *Consultant* or the *Consultant*'s authorized representative.

5. **Contract**
The *Contract* is the undertaking by the parties to perform their respective duties, responsibilities and obligations as prescribed in the *Contract Documents* and represents the entire agreement between the parties.

6. **Contract Documents**
The *Contract Documents* consist of those documents listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS and amendments agreed upon between the parties.

7. **Contract Price**
The *Contract Price* is the amount stipulated in Article A-4 of the Agreement - CONTRACT PRICE.

8. **Contract Time**
The *Contract Time* is the time stipulated in paragraph 1.3 of Article A-1 of the Agreement - THE WORK from commencement of the *Work* to *Substantial Performance of the Work*.

9. **Contractor**
The *Contractor* is the person or entity identified as such in the Agreement. The term *Contractor* means the *Contractor* or the *Contractor*'s authorized representative as designated to the *Owner* in writing.

10. **Drawings**
The *Drawings* are the graphic and pictorial portions of the *Contract Documents*, wherever located and whenever issued, showing the design, location and dimensions of the *Work*, generally including plans, elevations, sections, details, and diagrams.

11. **Notice in Writing**
A *Notice in Writing*, where identified in the *Contract Documents*, is a written communication between the parties or between them and the *Consultant* that is transmitted in accordance with the provisions of Article A-6 of the Agreement – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING.

12. **Owner**
The *Owner* is the person or entity identified as such in the Agreement. The term *Owner* means the *Owner* or the *Owner*'s authorized agent or representative as designated to the *Contractor* in writing, but does not include the *Consultant*.

13. **Place of the Work**
The *Place of the Work* is the designated site or location of the *Work* identified in the *Contract Documents*.

14. **Product**
Product or Products means material, machinery, equipment, and fixtures forming the *Work*, but does not include *Construction Equipment*.

15. Project
The *Project* means the total construction contemplated of which the *Work* may be the whole or a part.

16. Provide
Provide means to supply and install.

17. Shop Drawings
Shop Drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures, *Product* data, and other data which the *Contractor* provides to illustrate details of portions of the *Work*.

18. Specifications
The *Specifications* are that portion of the *Contract Documents*, wherever located and whenever issued, consisting of the written requirements and standards for *Products*, systems, workmanship, quality, and the services necessary for the performance of the *Work*.

19. Subcontractor
A *Subcontractor* is a person or entity having a direct contract with the *Contractor* to perform a part or parts of the *Work* at the *Place of the Work*.

20. Substantial Performance of the Work
Substantial Performance of the Work is as defined in the lien legislation applicable to the *Place of the Work*. If such legislation is not in force or does not contain such definition, or if the *Work* is governed by the Civil Code of Quebec, *Substantial Performance of the Work* shall have been reached when the *Work* is ready for use or is being used for the purpose intended and is so certified by the *Consultant*.

21. Supplemental Instruction
A *Supplemental Instruction* is an instruction, not involving adjustment in the *Contract Price* or *Contract Time*, in the form of *Specifications*, *Drawings*, schedules, samples, models or written instructions, consistent with the intent of the *Contract Documents*. It is to be issued by the *Consultant* to supplement the *Contract Documents* as required for the performance of the *Work*.

22. Supplier
A *Supplier* is a person or entity having a direct contract with the *Contractor* to supply *Products*.

23. Temporary Work
Temporary Work means temporary supports, structures, facilities, services, and other temporary items, excluding *Construction Equipment*, required for the execution of the *Work* but not incorporated into the *Work*.

24. Value Added Taxes
Value Added Taxes means such sum as shall be levied upon the *Contract Price* by the Federal or any Provincial or Territorial Government and is computed as a percentage of the *Contract Price* and includes the Goods and Services Tax, the Quebec Sales Tax, the Harmonized Sales Tax, and any similar tax, the collection and payment of which have been imposed on the *Contractor* by the tax legislation.

25. Work
The *Work* means the total construction and related services required by the *Contract Documents*.

26. Working Day
Working Day means a day other than a Saturday, Sunday, statutory holiday, or statutory vacation day that is observed by the construction industry in the area of the *Place of the Work*.

GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

PART 1 GENERAL PROVISIONS

GC 1.1 CONTRACT DOCUMENTS

1.1.1 The intent of the *Contract Documents* is to include the labour, *Products* and services necessary for the performance of the *Work* by the *Contractor* in accordance with these documents. It is not intended, however, that the *Contractor* shall supply products or perform work not consistent with, not covered by, or not properly inferable from the *Contract Documents*.

1.1.2 Nothing contained in the *Contract Documents* shall create any contractual relationship between:
.1 the *Owner* and a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any portion of the *Work*.
.2 the *Consultant* and the *Contractor*, a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any portion of the *Work*.

1.1.3 The *Contract Documents* are complementary, and what is required by any one shall be as binding as if required by all.

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

1.1.5 References in the *Contract Documents* to the singular shall be considered to include the plural as the context requires.

1.1.6 Neither the organization of the *Specifications* nor the arrangement of *Drawings* shall control the *Contractor* in dividing the work among *Subcontractors* and *Suppliers*.

1.1.7 If there is a conflict within the *Contract Documents*:
.1 the order of priority of documents, from highest to lowest, shall be
- the Agreement between the *Owner* and the *Contractor*,
- the Definitions,
- Supplementary Conditions,
- the General Conditions,
- Division 1 of the *Specifications*,
- technical *Specifications*,
- material and finishing schedules,
- the *Drawings*.

.2 *Drawings* of larger scale shall govern over those of smaller scale of the same date.
.3 dimensions shown on *Drawings* shall govern over dimensions scaled from *Drawings*.
.4 later dated documents shall govern over earlier documents of the same type.

1.1.8 The *Owner* shall provide the *Contractor*, without charge, sufficient copies of the *Contract Documents* to perform the *Work*.

1.1.9 *Specifications*, *Drawings*, models, and copies thereof furnished by the *Consultant* are and shall remain the *Consultant*'s property, with the exception of the signed *Contract* sets, which shall belong to each party to the *Contract*. All *Specifications*, *Drawings* and models furnished by the *Consultant* are to be used only with respect to the *Work* and are not to be used on other work. These *Specifications*, *Drawings* and models are not to be copied or altered in any manner without the written authorization of the *Consultant*.

1.1.10 Models furnished by the *Contractor* at the *Owner*'s expense are the property of the *Owner*.

GC 1.2 LAW OF THE CONTRACT

1.2.1 The law of the *Place of the Work* shall govern the interpretation of the *Contract*.

GC 1.3 RIGHTS AND REMEDIES

1.3.1 Except as expressly provided in the *Contract Documents*, the duties and obligations imposed by the *Contract Documents* and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.

1.3.2 No action or failure to act by the *Owner*, *Consultant* or *Contractor* shall constitute a waiver of any right or duty afforded any of them under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

GC 1.4 ASSIGNMENT

1.4.1 Neither party to the *Contract* shall assign the *Contract* or a portion thereof without the written consent of the other, which consent shall not be unreasonably withheld.

PART 2 ADMINISTRATION OF THE CONTRACT

GC 2.1 AUTHORITY OF THE CONSULTANT

2.1.1 The *Consultant* will have authority to act on behalf of the *Owner* only to the extent provided in the *Contract Documents*, unless otherwise modified by written agreement as provided in paragraph 2.1.2.

2.1.2 The duties, responsibilities and limitations of authority of the *Consultant* as set forth in the *Contract Documents* shall be modified or extended only with the written consent of the *Owner*, the *Contractor* and the *Consultant*.

2.1.3 If the *Consultant*'s employment is terminated, the *Owner* shall immediately appoint or reappoint a *Consultant* against whom the *Contractor* makes no reasonable objection and whose status under the *Contract Documents* shall be that of the former *Consultant*.

GC 2.2 ROLE OF THE CONSULTANT

2.2.1 The *Consultant* will provide administration of the *Contract* as described in the *Contract Documents*.

2.2.2 The *Consultant* will visit the *Place of the Work* at intervals appropriate to the progress of construction to become familiar with the progress and quality of the work and to determine if the *Work* is proceeding in general conformity with the *Contract Documents*.

2.2.3 If the *Owner* and the *Consultant* agree, the *Consultant* will provide at the *Place of the Work*, one or more project representatives to assist in carrying out the *Consultant*'s responsibilities. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in writing to the *Contractor*.

2.2.4 The *Consultant* will promptly inform the *Owner* of the date of receipt of the *Contractor*'s applications for payment as provided in paragraph 5.3.1.1 of GC 5.3 – PROGRESS PAYMENT.

2.2.5 Based on the *Consultant*'s observations and evaluation of the *Contractor*'s applications for payment, the *Consultant* will determine the amounts owing to the *Contractor* under the *Contract* and will issue certificates for payment as provided in Article A-5 of the Agreement - PAYMENT, GC 5.3 - PROGRESS PAYMENT and GC 5.7 - FINAL PAYMENT.

2.2.6 The *Consultant* will not be responsible for and will not have control, charge or supervision of construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs required in connection with the *Work* in accordance with the applicable construction safety legislation, other regulations or general construction practice. The *Consultant* will not be responsible for the *Contractor*'s failure to carry out the *Work* in accordance with the *Contract Documents*. The *Consultant* will not have control over, charge of or be responsible for the acts or omissions of the *Contractor*, *Subcontractors*, *Suppliers*, or their agents, employees, or any other persons performing portions of the *Work*.

2.2.7 Except with respect to GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER, the *Consultant* will be, in the first instance, the interpreter of the requirements of the *Contract Documents*.

2.2.8 Matters in question relating to the performance of the *Work* or the interpretation of the *Contract Documents* shall be initially referred in writing to the *Consultant* by the party raising the question for interpretations and findings and copied to the other party.

2.2.9 Interpretations and findings of the *Consultant* shall be consistent with the intent of the *Contract Documents*. In making such interpretations and findings the *Consultant* will not show partiality to either the *Owner* or the *Contractor*.

2.2.10 The *Consultant*'s interpretations and findings will be given in writing to the parties within a reasonable time.

2.2.11 With respect to claims for a change in *Contract Price*, the *Consultant* will make findings as set out in GC 6.6 – CLAIMS FOR A CHANGE IN CONTRACT PRICE.

2.2.12 The *Consultant* will have authority to reject work which in the *Consultant*'s opinion does not conform to the requirements of the *Contract Documents*. Whenever the *Consultant* considers it necessary or advisable, the *Consultant* will have authority to require inspection or testing of work, whether or not such work is fabricated, installed or completed. However, neither the authority of the *Consultant* to act nor any decision either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the *Consultant* to the *Contractor*, *Subcontractors*, *Suppliers*, or their agents, employees, or other persons performing any of the *Work*.

2.2.13 During the progress of the *Work* the *Consultant* will furnish *Supplemental Instructions* to the *Contractor* with reasonable promptness or in accordance with a schedule for such instructions agreed to by the *Consultant* and the *Contractor*.

2.2.14 The *Consultant* will review and take appropriate action upon *Shop Drawings*, samples and other *Contractor*'s submittals, in accordance with the *Contract Documents*.

2.2.15 The *Consultant* will prepare *Change Orders* and *Change Directives* as provided in GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

2.2.16 The *Consultant* will conduct reviews of the *Work* to determine the date of *Substantial Performance of the Work* as provided in GC 5.4 - SUBSTANTIAL PERFORMANCE OF THE WORK.

2.2.17 All certificates issued by the *Consultant* will be to the best of the *Consultant*'s knowledge, information and belief. By issuing any certificate, the *Consultant* does not guarantee the *Work* is correct or complete.

2.2.18 The *Consultant* will receive and review written warranties and related documents required by the *Contract* and provided by the *Contractor* and will forward such warranties and documents to the *Owner* for the *Owner*'s acceptance.

GC 2.3 REVIEW AND INSPECTION OF THE WORK

2.3.1 The *Owner* and the *Consultant* shall have access to the *Work* at all times. The *Contractor* shall provide sufficient, safe and proper facilities at all times for the review of the *Work* by the *Consultant* and the inspection of the *Work* by authorized agencies. If parts of the *Work* are in preparation at locations other than the *Place of the Work*, the *Owner* and the *Consultant* shall be given access to such work whenever it is in progress.

2.3.2 If work is designated for tests, inspections or approvals in the *Contract Documents*, or by the *Consultant*'s instructions, or by the laws or ordinances of the *Place of the Work*, the *Contractor* shall give the *Consultant* reasonable notification of when the work will be ready for review and inspection. The *Contractor* shall arrange for and shall give the *Consultant* reasonable notification of the date and time of inspections by other authorities.

2.3.3 The *Contractor* shall furnish promptly to the *Consultant* two copies of certificates and inspection reports relating to the *Work*.

2.3.4 If the *Contractor* covers, or permits to be covered, work that has been designated for special tests, inspections or approvals before such special tests, inspections or approvals are made, given or completed, the *Contractor* shall, if so directed, uncover such work, have the inspections or tests satisfactorily completed, and make good covering work at the *Contractor*'s expense.

2.3.5 The *Consultant* may order any portion or portions of the *Work* to be examined to confirm that such work is in accordance with the requirements of the *Contract Documents*. If the work is not in accordance with the requirements of the *Contract Documents*, the *Contractor* shall correct the work and pay the cost of examination and correction. If the work is in accordance with the requirements of the *Contract Documents*, the *Owner* shall pay the cost of examination and restoration.

2.3.6 The *Contractor* shall pay the cost of making any test or inspection, including the cost of samples required for such test or inspection, if such test or inspection is designated in the *Contract Documents* to be performed by the *Contractor* or is designated by the laws or ordinances applicable to the *Place of the Work*.

2.3.7 The *Contractor* shall pay the cost of samples required for any test or inspection to be performed by the *Consultant* or the *Owner* if such test or inspection is designated in the *Contract Documents*.

GC 2.4 DEFECTIVE WORK

2.4.1 The *Contractor* shall promptly correct defective work that has been rejected by the *Consultant* as failing to conform to the *Contract Documents* whether or not the defective work has been incorporated in the *Work* and whether or not the defect is the result of poor workmanship, use of defective products or damage through carelessness or other act or omission of the *Contractor*.

2.4.2 The *Contractor* shall make good promptly other contractors' work destroyed or damaged by such corrections at the *Contractor*'s expense.

2.4.3 If in the opinion of the *Consultant* it is not expedient to correct defective work or work not performed as provided in the *Contract Documents*, the *Owner* may deduct from the amount otherwise due to the *Contractor* the difference in value between the work as performed and that called for by the *Contract Documents*. If the *Owner* and the *Contractor* do not agree on the difference in value, they shall refer the matter to the *Consultant* for a determination.

PART 3 EXECUTION OF THE WORK

GC 3.1 CONTROL OF THE WORK

3.1.1 The *Contractor* shall have total control of the *Work* and shall effectively direct and supervise the *Work* so as to ensure conformity with the *Contract Documents*.

3.1.2 The *Contractor* shall be solely responsible for construction means, methods, techniques, sequences, and procedures and for co-ordinating the various parts of the *Work* under the *Contract*.

GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

3.2.1 The *Owner* reserves the right to award separate contracts in connection with other parts of the *Project* to other contractors and to perform work with own forces.

3.2.2 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner*'s own forces, the *Owner* shall:

.1 provide for the co-ordination of the activities and work of other contractors and *Owner*'s own forces with the *Work* of the *Contract*;

.2 assume overall responsibility for compliance with the applicable health and construction safety legislation at the *Place of the Work*;

.3 enter into separate contracts with other contractors under conditions of contract which are compatible with the conditions of the *Contract*;

.4 ensure that insurance coverage is provided to the same requirements as are called for in GC 11.1 - INSURANCE and co-ordinate such insurance with the insurance coverage of the *Contractor* as it affects the *Work*; and

.5 take all reasonable precautions to avoid labour disputes or other disputes on the *Project* arising from the work of other contractors or the *Owner*'s own forces.

3.2.3 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner*'s own forces, the *Contractor* shall:

.1 afford the *Owner* and other contractors reasonable opportunity to store their products and execute their work;

.2 cooperate with other contractors and the *Owner* in reviewing their construction schedules; and

.3 promptly report to the *Consultant* in writing any apparent deficiencies in the work of other contractors or of the *Owner*'s own forces, where such work affects the proper execution of any portion of the *Work*, prior to proceeding with that portion of the *Work*.

3.2.4 Where the *Contract Documents* identify work to be performed by other contractors or the *Owner*'s own forces, the *Contractor* shall co-ordinate and schedule the *Work* with the work of other contractors and the *Owner*'s own forces as specified in the *Contract Documents*.

3.2.5 Where a change in the *Work* is required as a result of the co-ordination and integration of the work of other contractors or *Owner*'s own forces with the *Work*, the changes shall be authorized and valued as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

3.2.6 Disputes and other matters in question between the *Contractor* and other contractors shall be dealt with as provided in Part 8 of the General Conditions - DISPUTE RESOLUTION provided the other contractors have reciprocal obligations. The *Contractor* shall be deemed to have consented to arbitration of any dispute with any other contractor whose contract with the *Owner* contains a similar agreement to arbitrate.

GC 3.3 TEMPORARY WORK

3.3.1 The *Contractor* shall have the sole responsibility for the design, erection, operation, maintenance, and removal of *Temporary Work*.

3.3.2 The *Contractor* shall engage and pay for registered professional engineering personnel skilled in the appropriate disciplines to perform those functions referred to in paragraph 3.3.1 where required by law or by the *Contract Documents* and in all cases where such *Temporary Work* is of such a nature that professional engineering skill is required to produce safe and satisfactory results.

3.3.3 Notwithstanding the provisions of GC 3.1 - CONTROL OF THE WORK, paragraphs 3.3.1 and 3.3.2 or provisions to the contrary elsewhere in the *Contract Documents* where such *Contract Documents* include designs for *Temporary Work* or specify a method of construction in whole or in part, such designs or methods of construction shall be considered to be part of the 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 as for the execution of the *Work*.

GC 3.4 DOCUMENT REVIEW

3.4.1 The *Contractor* shall review the *Contract Documents* and shall report promptly to the *Consultant* any error, inconsistency or omission the *Contractor* may discover. Such review by the *Contractor* shall be to the best of the *Contractor*'s knowledge, information and belief and in making such review the *Contractor* does not assume any responsibility to the *Owner* or the *Consultant* for the accuracy of the review. The *Contractor* shall not be liable for damage or costs resulting from such errors, inconsistencies or omissions in the *Contract Documents*, which the *Contractor* did not discover. If the *Contractor* does discover any error, inconsistency or omission in the *Contract Documents*, the *Contractor* shall not proceed with the work affected until the *Contractor* has received corrected or missing information from the *Consultant*.

GC 3.5 CONSTRUCTION SCHEDULE

3.5.1 The *Contractor* shall:

.1 prepare and submit to the *Owner* and the *Consultant* prior to the first application for payment, a construction schedule that indicates the timing of the major activities of the *Work* and provides sufficient detail of the critical events and their inter-relationship to demonstrate the *Work* will be performed in conformity with the *Contract Time*;

.2 monitor the progress of the *Work* relative to the construction schedule and update the schedule on a monthly basis or as stipulated by the *Contract Documents*; and

.3 advise the *Consultant* of any revisions required to the schedule as the result of extensions of the *Contract Time* as provided in Part 6 of the General Conditions - CHANGES IN THE WORK.

GC 3.6 SUPERVISION

3.6.1 The *Contractor* shall provide all necessary supervision and appoint a competent representative who shall be in attendance at the *Place of the Work* while work is being performed. The appointed representative shall not be changed except for valid reason.

3.6.2 The appointed representative shall represent the *Contractor* at the *Place of the Work*. Information and instructions provided by the *Consultant* to the *Contractor*'s appointed representative shall be deemed to have been received by the *Contractor*, except with respect to Article A-6 of the Agreement – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING.

GC 3.7 SUBCONTRACTORS AND SUPPLIERS

3.7.1 The *Contractor* shall preserve and protect the rights of the parties under the *Contract* with respect to work to be performed under subcontract, and shall:

.1 enter into contracts or written agreements with *Subcontractors* and *Suppliers* to require them to perform their work as provided in the *Contract Documents*;

.2 incorporate the terms and conditions of the *Contract Documents* into all contracts or written agreements with *Subcontractors* and *Suppliers*; and

.3 be as fully responsible to the *Owner* for acts and omissions of *Subcontractors*, *Suppliers* and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the *Contractor*.

3.7.2 The *Contractor* shall indicate in writing, if requested by the *Owner*, those *Subcontractors* or *Suppliers* whose bids have been received by the *Contractor* which the *Contractor* would be prepared to accept for the performance of a portion of the *Work*. Should the *Owner* not object before signing the *Contract*, the *Contractor* shall employ those *Subcontractors* or *Suppliers* so identified by the *Contractor* in writing for the performance of that portion of the *Work* to which their bid applies.

3.7.3 The *Owner* may, for reasonable cause, at any time before the *Owner* has signed the *Contract*, object to the use of a proposed *Subcontractor* or *Supplier* and require the *Contractor* to employ one of the other subcontract bidders.

3.7.4 If the *Owner* requires the *Contractor* to change a proposed *Subcontractor* or *Supplier*, the *Contract Price* and *Contract Time* shall be adjusted by the differences occasioned by such required change.

3.7.5 The *Contractor* shall not be required to employ as a *Subcontractor* or *Supplier*, a person or firm to which the *Contractor* may reasonably object.

3.7.6 The *Owner*, through the *Consultant*, may provide to a *Subcontractor* or *Supplier* information as to the percentage of the *Subcontractor*'s or *Supplier*'s work which has been certified for payment.

GC 3.8 LABOUR AND PRODUCTS

3.8.1 The *Contractor* shall provide and pay for labour, *Products*, tools, *Construction Equipment*, water, heat, light, power, transportation, and other facilities and services necessary for the performance of the *Work* in accordance with the *Contract*.

3.8.2 Unless otherwise specified in the *Contract Documents*, *Products* provided shall be new. *Products* which are not specified shall be of a quality consistent with those specified and their use acceptable to the *Consultant*.

3.8.3 The *Contractor* shall maintain good order and discipline among the *Contractor*'s employees engaged on the *Work* and shall not employ on the *Work* anyone not skilled in the tasks assigned.

GC 3.9 DOCUMENTS AT THE SITE

3.9.1 The *Contractor* shall keep one copy of current *Contract Documents*, submittals, reports, and records of meetings at the *Place of the Work*, in good order and available to the *Owner* and the *Consultant*.

GC 3.10 SHOP DRAWINGS

3.10.1 The *Contractor* shall provide *Shop Drawings* as required in the *Contract Documents*.

3.10.2 The *Contractor* shall provide *Shop Drawings* to the *Consultant* to review in orderly sequence and sufficiently in advance so as to cause no delay in the *Work* or in the work of other contractors.

3.10.3 Upon request of the *Contractor* or the *Consultant*, they shall jointly prepare a schedule of the dates for provision, review and return of *Shop Drawings*.

3.10.4 The *Contractor* shall provide *Shop Drawings* in the form specified, or if not specified, as directed by the *Consultant*.

3.10.5 *Shop Drawings* provided by the *Contractor* to the *Consultant* shall indicate by stamp, date and signature of the person responsible for the review that the *Contractor* has reviewed each one of them.

3.10.6 The *Consultant*'s review is for conformity to the design concept and for general arrangement only.

3.10.7 *Shop Drawings* which require approval of any legally constituted authority having jurisdiction shall be provided to such authority by the *Contractor* for approval.

3.10.8 The *Contractor* shall review all *Shop Drawings* before providing them to the *Consultant*. The *Contractor* represents by this review that:

.1 the *Contractor* has determined and verified all applicable field measurements, field construction conditions, *Product* requirements, catalogue numbers and similar data, or will do so, and

.2 the *Contractor* has checked and co-ordinated each *Shop Drawing* with the requirements of the *Work* and of the *Contract Documents*.

3.10.9 At the time of providing *Shop Drawings*, the *Contractor* shall expressly advise the *Consultant* in writing of any deviations in a *Shop Drawing* from the requirements of the *Contract Documents*. The *Consultant* shall indicate the acceptance or rejection of such deviation expressly in writing.

3.10.10 The *Consultant*'s review shall not relieve the *Contractor* of responsibility for errors or omissions in the *Shop Drawings* or for meeting all requirements of the *Contract Documents*.

3.10.11 The *Contractor* shall provide revised *Shop Drawings* to correct those which the *Consultant* rejects as inconsistent with the *Contract Documents*, unless otherwise directed by the *Consultant*. The *Contractor* shall notify the *Consultant* in writing of any revisions to the *Shop Drawings* other than those requested by the *Consultant*.

3.10.12 The *Consultant* will review and return *Shop Drawings* in accordance with the schedule agreed upon, or, in the absence of such schedule, with reasonable promptness so as to cause no delay in the performance of the *Work*.

GC 3.11 USE OF THE WORK

3.11.1 The *Contractor* shall confine *Construction Equipment*, *Temporary Work*, storage of *Products*, waste products and debris, and operations of employees and *Subcontractors* to limits indicated by laws, ordinances, permits, or the *Contract Documents* and shall not unreasonably encumber the *Place of the Work*.

3.11.2 The *Contractor* shall not load or permit to be loaded any part of the *Work* with a weight or force that will endanger the safety of the *Work*.

GC 3.12 CUTTING AND REMEDIAL WORK

3.12.1 The *Contractor* shall perform the cutting and remedial work required to make the affected parts of the *Work* come together properly.

3.12.2 The *Contractor* shall co-ordinate the *Work* to ensure that the cutting and remedial work is kept to a minimum.

3.12.3 Should the *Owner*, the *Consultant*, other contractors or anyone employed by them be responsible for ill-timed work necessitating cutting or remedial work to be performed, the cost of such cutting or remedial work shall be valued as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

3.12.4 Cutting and remedial work shall be performed by specialists familiar with the *Products* affected and shall be performed in a manner to neither damage nor endanger the *Work*.

GC 3.13 CLEANUP

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

3.13.2 Before applying for *Substantial Performance of the Work* as provided in GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK, the *Contractor* shall remove waste products and debris, other than that resulting from the work of the *Owner*, other contractors or their employees, and shall leave the *Place of the Work* clean and suitable for use or occupancy by the *Owner*. The *Contractor* shall remove products, tools, *Construction Equipment*, and *Temporary Work* not required for the performance of the remaining work.

3.13.3 Prior to application for the final payment, the *Contractor* shall remove any remaining products, tools, *Construction Equipment*, *Temporary Work*, and waste products and debris, other than those resulting from the work of the *Owner*, other contractors or their employees.

PART 4 ALLOWANCES

GC 4.1 CASH ALLOWANCES

4.1.1 The *Contract Price* includes the cash allowances, if any, stated in the *Contract Documents*. The scope of work or costs included in such cash allowances shall be as described in the *Contract Documents*.

4.1.2 The *Contract Price*, and not the cash allowances, includes the *Contractor*'s overhead and profit in connection with such cash allowances.

4.1.3 Expenditures under cash allowances shall be authorized by the *Owner* through the *Consultant*.

4.1.4 Where the actual cost of the *Work* under any cash allowance exceeds the amount of the allowance, the *Contractor* shall be compensated for the excess incurred and substantiated plus an amount for overhead and profit on the excess as set out in the *Contract Documents*. Where the actual cost of the *Work* under any cash allowance is less than the amount of the allowance, the *Owner* shall be credited for the unexpended portion of the cash allowance, but not for the *Contractor*'s overhead and profit on such amount. Multiple cash allowances shall not be combined for the purpose of calculating the foregoing.

4.1.5 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the amount of each cash allowance and the actual cost of the work under that cash allowance.

4.1.6 The value of the work performed under a cash allowance is eligible to be included in progress payments.

4.1.7 The *Contractor* and the *Consultant* shall jointly prepare a schedule that shows when the *Consultant* and *Owner* must authorize ordering of items called for under cash allowances to avoid delaying the progress of the *Work*.

GC 4.2 CONTINGENCY ALLOWANCE

4.2.1 The *Contract Price* includes the contingency allowance, if any, stated in the *Contract Documents*.

4.2.2 The contingency allowance includes the *Contractor*'s overhead and profit in connection with such contingency allowance.

4.2.3 Expenditures under the contingency allowance shall be authorized and valued as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

4.2.4 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the expenditures authorized under paragraph 4.2.3 and the contingency allowance.

PART 5 PAYMENT

GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

5.1.1 The *Owner* shall, at the request of the *Contractor*, before signing the *Contract*, and promptly from time to time thereafter, furnish to the *Contractor* reasonable evidence that financial arrangements have been made to fulfill the *Owner*'s obligations under the *Contract*.

5.1.2 The *Owner* shall give the *Contractor Notice in Writing* of any material change in the *Owner*'s financial arrangements to fulfill the *Owner*'s obligations under the *Contract* during the performance of the *Contract*.

GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

5.2.1 Applications for payment on account as provided in Article A-5 of the Agreement - PAYMENT may be made monthly as the *Work* progresses.

5.2.2 Applications for payment shall be dated the last day of each payment period, which is the last day of the month or an alternative day of the month agreed in writing by the parties.

5.2.3 The amount claimed shall be for the value, proportionate to the amount of the *Contract*, of *Work* performed and *Products* delivered to the *Place of the Work* as of the last day of the payment period.

5.2.4 The *Contractor* shall submit to the *Consultant*, at least 15 calendar days before the first application for payment, a schedule of values for the parts of the *Work*, aggregating the total amount of the *Contract Price*, so as to facilitate evaluation of applications for payment.

5.2.5 The schedule of values shall be made out in such form and supported by such evidence as the *Consultant* may reasonably direct and when accepted by the *Consultant*, shall be used as the basis for applications for payment, unless it is found to be in error.

5.2.6 The *Contractor* shall include a statement based on the schedule of values with each application for payment.

5.2.7 Applications for payment for *Products* delivered to the *Place of the Work* but not yet incorporated into the *Work* shall be supported by such evidence as the *Consultant* may reasonably require to establish the value and delivery of the *Products*.

GC 5.3 PROGRESS PAYMENT

5.3.1 After receipt by the *Consultant* of an application for payment submitted by the *Contractor* in accordance with GC 5.2 - APPLICATIONS FOR PROGRESS PAYMENT:

.1 the *Consultant* will promptly inform the *Owner* of the date of receipt of the *Contractor*'s application for payment,

.2 the *Consultant* will issue to the *Owner* and copy to the *Contractor*, no later than 10 calendar days after the receipt of the application for payment, a certificate for payment in the amount applied for, or in such other amount as the *Consultant* determines to be properly due. If the *Consultant* amends the application, the *Consultant* will promptly advise the *Contractor* in writing giving reasons for the amendment,

.3 the *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement - PAYMENT on or before 20 calendar days after the later of:

- receipt by the *Consultant* of the application for payment, or
- the last day of the monthly payment period for which the application for payment is made.

GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK

5.4.1 When the *Contractor* considers that the *Work* is substantially performed, or if permitted by the lien legislation applicable to the *Place of the Work* a designated portion thereof which the *Owner* agrees to accept separately is substantially performed, the *Contractor* shall, within one *Working Day*, deliver to the *Consultant* and to the *Owner* a comprehensive list of items to be completed or corrected, together with a written application for a review by the *Consultant* to establish *Substantial Performance of the Work* or substantial performance of the designated portion of the *Work*. Failure to include an item on the list does not alter the responsibility of the *Contractor* to complete the *Contract*.

5.4.2 The *Consultant* will review the *Work* to verify the validity of the application and shall promptly, and in any event, no later than 20 calendar days after receipt of the *Contractor*'s list and application:

.1 advise the *Contractor* in writing that the *Work* or the designated portion of the *Work* is not substantially performed and give reasons why, or

.2 state the date of *Substantial Performance of the Work* or a designated portion of the *Work* in a certificate and issue a copy of that certificate to each of the *Owner* and the *Contractor*.

5.4.3 Immediately following the issuance of the certificate of *Substantial Performance of the Work*, the *Contractor*, in consultation with the *Consultant*, shall establish a reasonable date for finishing the *Work*.

GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

5.5.1 After the issuance of the certificate of *Substantial Performance of the Work*, the *Contractor* shall:

.1 submit an application for payment of the holdback amount,

.2 submit CCDC 9A 'Statutory Declaration' to state that all accounts for labour, subcontracts, *Products*, *Construction Equipment*, and other indebtedness which may have been incurred by the *Contractor* in the *Substantial Performance of the Work* and for which the *Owner* might in any way be held responsible have been paid in full, except for amounts properly retained as a holdback or as an identified amount in dispute.

5.5.2 After the receipt of an application for payment from the *Contractor* and the statement as provided in paragraph 5.5.1, the *Consultant* will issue a certificate for payment of the holdback amount.

5.5.3 Where the holdback amount required by the applicable lien legislation has not been placed in a separate holdback account, the *Owner* shall, 10 calendar days prior to the expiry of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*, place the holdback amount in a bank account in the joint names of the *Owner* and the *Contractor*.

5.5.4 In the common law jurisdictions, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable on the first calendar day following the expiration of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*. Where lien legislation does not exist or apply, the holdback amount shall be due and payable in accordance with other legislation, industry practice or provisions which may be agreed to between the parties. The *Owner* may retain out of the holdback amount any sums required by law to satisfy any liens against the *Work* or, if permitted by the lien legislation applicable to the *Place of the Work*, other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.

5.5.5 In the Province of Quebec, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable 30 calendar days after the issuance of the certificate. The *Owner* may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken, or could be taken, against the *Work* or other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.

GC 5.6 PROGRESSIVE RELEASE OF HOLDBACK

5.6.1 In the common law jurisdictions, where legislation permits and where, upon application by the *Contractor*, the *Consultant* has certified that the work of a *Subcontractor* or *Supplier* has been performed prior to *Substantial Performance of the Work*, the *Owner* shall pay the *Contractor* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, on the first calendar day following the expiration of the holdback period for such work stipulated in the lien legislation applicable to the *Place of the Work*. The *Owner* may retain out of the holdback amount any sums required by law to satisfy any liens against the *Work* or, if permitted by the lien legislation applicable to the *Place of the Work*, other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.

5.6.2 In the Province of Quebec, where, upon application by the *Contractor*, the *Consultant* has certified that the work of a *Subcontractor* or *Supplier* has been performed prior to *Substantial Performance of the Work*, the *Owner* shall pay the *Contractor* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, no later than 30 calendar days after such certification by the *Consultant*. The *Owner* may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken, or could be taken, against the *Work* or other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.

5.6.3 Notwithstanding the provisions of the preceding paragraphs, and notwithstanding the wording of such certificates, the *Contractor* shall ensure that such subcontract work or *Products* are protected pending the issuance of a final certificate for payment and be responsible for the correction of defects or work not performed regardless of whether or not such was apparent when such certificates were issued.

GC 5.7 FINAL PAYMENT

5.7.1 When the *Contractor* considers that the *Work* is completed, the *Contractor* shall submit an application for final payment.

5.7.2 The *Consultant* will, no later than 10 calendar days after the receipt of an application from the *Contractor* for final payment, review the *Work* to verify the validity of the application and advise the *Contractor* in writing that the application is valid or give reasons why it is not valid.

5.7.3 When the *Consultant* finds the *Contractor*'s application for final payment valid, the *Consultant* will promptly issue a final certificate for payment.

5.7.4 Subject to the provision of paragraph 10.4.1 of GC 10.4 - WORKERS' COMPENSATION, and any lien legislation applicable to the *Place of the Work*, the *Owner* shall, no later than 5 calendar days after the issuance of a final certificate for payment, pay the *Contractor* as provided in Article A-5 of the Agreement - PAYMENT.

GC 5.8 WITHHOLDING OF PAYMENT

5.8.1 If because of climatic or other conditions reasonably beyond the control of the *Contractor*, there are items of work that cannot be performed, payment in full for that portion of the *Work* which has been performed as certified by the *Consultant* shall not be withheld or delayed by the *Owner* on account thereof, but the *Owner* may withhold, until the remaining portion of the *Work* is finished, only such an amount that the *Consultant* determines is sufficient and reasonable to cover the cost of performing such remaining work.

GC 5.9 NON-CONFORMING WORK

5.9.1 No payment by the *Owner* under the *Contract* nor partial or entire use or occupancy of the *Work* by the *Owner* shall constitute an acceptance of any portion of the *Work* or *Products* which are not in accordance with the requirements of the *Contract Documents*.

PART 6 CHANGES IN THE WORK

GC 6.1 OWNER'S RIGHT TO MAKE CHANGES

6.1.1 The *Owner*, through the *Consultant*, without invalidating the *Contract*, may make:

.1 changes in the *Work* consisting of additions, deletions or other revisions to the *Work* by *Change Order* or *Change Directive*, and

.2 changes to the *Contract Time* for the *Work*, or any part thereof, by *Change Order*.

6.1.2 The *Contractor* shall not perform a change in the *Work* without a *Change Order* or a *Change Directive*.

GC 6.2 CHANGE ORDER

6.2.1 When a change in the *Work* is proposed or required, the *Consultant* will provide the *Contractor* with a written description of the proposed change in the *Work*. The *Contractor* shall promptly present, in a form acceptable to the *Consultant*, a method of adjustment or an amount of adjustment for the *Contract Price*, if any, and the adjustment in the *Contract Time*, if any, for the proposed change in the *Work*.

6.2.2 When the *Owner* and *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 the result of a *Change Order* shall be included in the application for progress payment.

GC 6.3 CHANGE DIRECTIVE

6.3.1 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*, the *Owner*, through the *Consultant*, shall issue a *Change Directive*.

6.3.2 A *Change Directive* shall only be used to direct a change in the *Work* which is within the general scope of the *Contract Documents*.

6.3.3 A *Change Directive* shall not be used to direct a change in the *Contract Time* only.

6.3.4 Upon receipt of a *Change Directive*, the *Contractor* shall proceed promptly with the change in the *Work*.

6.3.5 For the purpose of valuing *Change Directives*, changes in the *Work* that are not substitutions or otherwise related to each other shall not be grouped together in the same *Change Directive*.

6.3.6 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 expenditures and savings attributable to the *Change Directive*, valued in accordance with paragraph 6.3.7 and as follows:

.1 If the change results in a net increase in the *Contractor*'s cost, the *Contract Price* shall be increased by the amount of the net increase in the *Contractor*'s cost, plus the *Contractor*'s percentage fee on such net increase.

.2 If the change results in a net decrease in the *Contractor*'s cost, the *Contract Price* shall be decreased by the amount of the net decrease in the *Contractor*'s cost, without adjustment for the *Contractor*'s percentage fee.

.3 The *Contractor*'s fee shall be as specified in the *Contract Documents* or as otherwise agreed by the parties.

6.3.7 The cost of performing the work attributable to the *Change Directive* shall be limited to the actual cost of the following:

.1 salaries, wages and benefits paid to personnel in the direct employ of the *Contractor* under a salary or wage schedule agreed upon by the *Owner* and the *Contractor*, or in the absence of such a schedule, actual salaries, wages and benefits paid under applicable bargaining agreement, and in the absence of a salary or wage schedule and bargaining agreement, actual salaries, wages and benefits paid by the *Contractor*, for personnel

(1) stationed at the *Contractor*'s field office, in whatever capacity employed;

(2) engaged in expediting the production or transportation of material or equipment, at shops or on the road;

(3) engaged in the preparation or review of *Shop Drawings*, fabrication drawings, and coordination drawings; or

(4) engaged in the processing of changes in the *Work*.

.2 contributions, assessments or taxes incurred for such items as employment insurance, provincial or territorial health insurance, workers' compensation, and Canada or Quebec Pension Plan, insofar as such cost is based on wages, salaries or other remuneration paid to employees of the *Contractor* and included in the cost of the *Work* as provided in paragraph 6.3.7.1;

.3 travel and subsistence expenses of the *Contractor*'s personnel described in paragraph 6.3.7.1;

.4 all *Products* including cost of transportation thereof;

.5 materials, supplies, *Construction Equipment*, *Temporary Work*, and hand tools not owned by the workers, including transportation and maintenance thereof, which are consumed in the performance of the *Work*; and cost less salvage value on such items used but not consumed, which remain the property of the *Contractor*;

.6 all tools and *Construction Equipment*, exclusive of hand tools used in the performance of the *Work*, whether rented from or provided by the *Contractor* or others, including installation, minor repairs and replacements, dismantling, removal, transportation, and delivery cost thereof;

.7 all equipment and services required for the *Contractor*'s field office;

.8 deposits lost;

.9 the amounts of all subcontracts;

.10 quality assurance such as independent inspection and testing services;

.11 charges levied by authorities having jurisdiction at the *Place of the Work*;

.12 royalties, patent licence fees and damages for infringement of patents and cost of defending suits therefor subject always to the *Contractor*'s obligations to indemnify the *Owner* as provided in paragraph 10.3.1 of GC 10.3 - PATENT FEES;

.13 any adjustment in premiums for all bonds and insurance which the *Contractor* is required, by the *Contract Documents*, to purchase and maintain;

.14 any adjustment in taxes, other than *Value Added Taxes*, and duties for which the *Contractor* is liable;

.15 charges for long distance telephone and facsimile communications, courier services, expressage, and petty cash items incurred in relation to the performance of the *Work*;

.16 removal and disposal of waste products and debris; and

.17 safety measures and requirements.

6.3.8 Notwithstanding any other provisions contained in the General Conditions of the *Contract*, it is the intention of the parties that the cost of any item under any cost element referred to in paragraph 6.3.7 shall cover and include any and all costs or liabilities attributable to the *Change Directive* other than those which are the result of or occasioned by any failure on the part of the *Contractor* to exercise reasonable care and diligence in the *Contractor*'s attention to the *Work*. Any cost due to failure on the part of the *Contractor* to exercise reasonable care and diligence in the *Contractor*'s attention to the *Work* shall be borne by the *Contractor*.

6.3.9 The *Contractor* shall keep full and detailed accounts and records necessary for the documentation of the cost of performing the *Work* attributable to the *Change Directive* and shall provide the *Consultant* with copies thereof when requested.

6.3.10 For the purpose of valuing *Change Directives*, the *Owner* shall be afforded reasonable access to all of the *Contractor*'s pertinent documents related to the cost of performing the *Work* attributable to the *Change Directive*.

6.3.11 Pending determination of the final amount of a *Change Directive*, the undisputed value of the *Work* performed as the result of a *Change Directive* is eligible to be included in progress payments.

6.3.12 If the *Owner* and the *Contractor* do not agree on the proposed adjustment in the *Contract Time* attributable to the change in the *Work*, or the method of determining it, the adjustment shall be referred to the *Consultant* for determination.

6.3.13 When the *Owner* and the *Contractor* reach agreement on the adjustment to the *Contract Price* and to the *Contract Time*, this agreement shall be recorded in a *Change Order*.

GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

6.4.1 If the *Owner* or the *Contractor* discover conditions at the *Place of the Work* which are:

.1 subsurface or otherwise concealed physical conditions which existed before the commencement of the *Work* which differ materially from those indicated in the *Contract Documents*; or

.2 physical conditions, other than conditions due to weather, that are 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 give *Notice in Writing* to the other party of such conditions before they are disturbed and in no event later than 5 *Working Days* after first observance of the conditions.

6.4.2 The *Consultant* 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 cost or time to perform the *Work*, the *Consultant*, with the *Owner*'s approval, will issue appropriate instructions for a change in the *Work* as provided in GC 6.2 - CHANGE ORDER or GC 6.3 - CHANGE DIRECTIVE.

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

6.4.4 If such concealed or unknown conditions relate to toxic and hazardous substances and materials, artifacts and fossils, or mould, the parties will be governed by the provisions of GC 9.2 - TOXIC AND HAZARDOUS SUBSTANCES, GC 9.3 - ARTIFACTS AND FOSSILS and GC 9.5 – MOULD.

GC 6.5 DELAYS

6.5.1 If the *Contractor* is delayed in the performance of the *Work* by an action or omission of the *Owner*, *Consultant* or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the *Contract Documents*, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay.

6.5.2 If the *Contractor* is delayed in the performance of the *Work* by a stop work order issued by a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Contractor* or any person employed or engaged by the *Contractor* directly or indirectly, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay.

6.5.3 If the *Contractor* is delayed in the performance of the *Work* by:

.1 labour disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized contractors' association, of which the *Contractor* is a member or to which the *Contractor* is otherwise bound),

.2 fire, unusual delay by common carriers or unavoidable casualties,

.3 abnormally adverse weather conditions, or

.4 any cause beyond the *Contractor*'s control other than one resulting from a default or breach of *Contract* by the *Contractor*,

then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The extension of time shall not be less than the time lost as the result of the event causing the delay, unless the *Contractor* agrees to a shorter extension. The *Contractor* shall not be entitled to payment for costs incurred by such delays unless such delays result from actions by the *Owner*, *Consultant* or anyone employed or engaged by them directly or indirectly.

6.5.4 No extension shall be made for delay unless *Notice in Writing* of the cause of delay is given to the *Consultant* not later than 10 *Working Days* after the commencement of the delay. In the case of a continuing cause of delay only one *Notice in Writing* shall be necessary.

6.5.5 If no schedule is made under paragraph 2.2.13 of GC 2.2 - ROLE OF THE CONSULTANT, then no request for extension shall be made because of failure of the *Consultant* to furnish instructions until 10 *Working Days* after demand for such instructions has been made.

GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

6.6.1 If the *Contractor* intends to make a claim for an increase to the *Contract Price*, or if the *Owner* intends to make a claim against the *Contractor* for a credit to the *Contract Price*, the party that intends to make the claim shall give timely *Notice in Writing* of intent to claim to the other party and to the *Consultant*.

6.6.2 Upon commencement of the event or series of events giving rise to a claim, the party intending to make the claim shall:

.1 take all reasonable measures to mitigate any loss or expense which may be incurred as a result of such event or series of events, and

.2 keep such records as may be necessary to support the claim.

6.6.3 The party making the claim shall submit within a reasonable time to the *Consultant* a detailed account of the amount claimed and the grounds upon which the claim is based.

6.6.4 Where the event or series of events giving rise to the claim has a continuing effect, the detailed account submitted under paragraph 6.6.3 shall be considered to be an interim account and the party making the claim shall, at such intervals as the *Consultant* may reasonably require, submit further interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. The party making the claim shall submit a final account after the end of the effects resulting from the event or series of events.

6.6.5 The *Consultant's* findings, with respect to a claim made by either party, will be given by *Notice in Writing* to both parties within 30 *Working Days* after receipt of the claim by the *Consultant*, or within such other time period as may be agreed by the parties.

6.6.6 If such finding is not acceptable to either party, the claim shall be settled in accordance with Part 8 of the General Conditions - DISPUTE RESOLUTION.

PART 7 DEFAULT NOTICE

GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT

7.1.1 If the *Contractor* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Contractor*'s insolvency, or if a receiver is appointed because of the *Contractor*'s insolvency, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, terminate the *Contractor*'s right to continue with the *Work*, by giving the *Contractor* or receiver or trustee in bankruptcy *Notice in Writing* to that effect.

7.1.2 If the *Contractor* neglects to prosecute the *Work* properly or otherwise fails to comply with the requirements of the *Contract* to a substantial degree and if the *Consultant* has given a written statement to the *Owner* and *Contractor* that sufficient cause exists to justify such action, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, give the *Contractor Notice in Writing* that the *Contractor* is in default of the *Contractor*'s contractual obligations and instruct the *Contractor* to correct the default in the 5 *Working Days* immediately following the receipt of such *Notice in Writing*.

7.1.3 If the default cannot be corrected in the 5 *Working Days* specified or in such other time period as may be subsequently agreed in writing by the parties, the *Contractor* shall be in compliance with the *Owner*'s instructions if the *Contractor*:

.1 commences the correction of the default within the specified time, and

.2 provides the *Owner* with an acceptable schedule for such correction, and

.3 corrects the default in accordance with the *Contract* terms and with such schedule.

7.1.4 If the *Contractor* fails to correct the default in the time specified or in such other time period as may be subsequently agreed in writing by the parties, without prejudice to any other right or remedy the *Owner* may have, the *Owner* may:

.1 correct such default and deduct the cost thereof from any payment then or thereafter due the *Contractor* provided the *Consultant* has certified such cost to the *Owner* and the *Contractor*, or

.2 terminate the *Contractor*'s right to continue with the *Work* in whole or in part or terminate the *Contract*.

7.1.5 If the *Owner* terminates the *Contractor*'s right to continue with the *Work* as provided in paragraphs 7.1.1 and 7.1.4, the *Owner* shall be entitled to:

.1 take possession of the *Work* and *Products* at the *Place of the Work*; subject to the rights of third parties, utilize the *Construction Equipment* at the *Place of the Work*; finish the *Work* by whatever method the *Owner* may consider expedient, but without undue delay or expense, and

.2 withhold further payment to the *Contractor* until a final certificate for payment is issued, and

.3 charge the *Contractor* the amount by which the full cost of finishing the *Work* as certified by the *Consultant*, including compensation to the *Consultant* for the *Consultant*'s additional services and a reasonable allowance as determined by the *Consultant* to cover the cost of corrections to work performed by the *Contractor* that may be required under GC 12.3 - WARRANTY, exceeds the unpaid balance of the *Contract Price*; however, if such cost of finishing the *Work* is less than the unpaid balance of the *Contract Price*, the *Owner* shall pay the *Contractor* the difference, and

.4 on expiry of the warranty period, charge the *Contractor* the amount by which the cost of corrections to the *Contractor*'s work under GC 12.3 - 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.

7.1.6 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 after such termination of the *Contract*.

GC 7.2 CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT

7.2.1 If the *Owner* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Owner*'s insolvency, or if a receiver is appointed because of the *Owner*'s insolvency, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, terminate the *Contract* by giving the *Owner* or receiver or trustee in bankruptcy *Notice in Writing* to that effect.

7.2.2 If the *Work* is suspended or otherwise delayed for a period of 20 *Working Days* or more under an order of a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Contractor* or of anyone directly or indirectly employed or engaged by the *Contractor*, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, terminate the *Contract* by giving the *Owner Notice in Writing* to that effect.

7.2.3 The *Contractor* may give *Notice in Writing* to the *Owner*, with a copy to the *Consultant*, that the *Owner* is in default of the *Owner*'s contractual obligations if:

.1 the *Owner* fails to furnish, when so requested by the *Contractor*, reasonable evidence that financial arrangements have been made to fulfill the *Owner*'s obligations under the *Contract*, or

.2 the *Consultant* fails to issue a certificate as provided in GC 5.3 - PROGRESS PAYMENT, or

.3 the *Owner* fails to pay the *Contractor* when due the amounts certified by the *Consultant* or awarded by arbitration or court, or

.4 the *Owner* violates the requirements of the *Contract* to a substantial degree and the *Consultant*, except for GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER, confirms by written statement to the *Contractor* that sufficient cause exists.

7.2.4 The *Contractor*'s *Notice in Writing* to the *Owner* provided under paragraph 7.2.3 shall advise that if the default is not corrected within 5 *Working Days* following the receipt of the *Notice in Writing*, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, suspend the *Work* or terminate the *Contract*.

7.2.5 If the *Contractor* terminates the *Contract* under the conditions set out above, the *Contractor* shall be entitled to be paid for all work performed including reasonable profit, for loss sustained upon *Products* and *Construction Equipment*, and such other damages as the *Contractor* may have sustained as a result of the termination of the *Contract*.

PART 8 DISPUTE RESOLUTION

GC 8.1 AUTHORITY OF THE CONSULTANT

8.1.1 Differences between the parties to the *Contract* as to the interpretation, application or administration of the *Contract* or any failure to agree where agreement between the parties is called for, herein collectively called disputes, which are not resolved in the first instance by findings of the *Consultant* as provided in GC 2.2 - ROLE OF THE CONSULTANT, shall be settled in accordance with the requirements of Part 8 of the General Conditions - DISPUTE RESOLUTION.

8.1.2 If a dispute arises under the *Contract* in respect of a matter in which the *Consultant* has no authority under the *Contract* to make a finding, the procedures set out in paragraph 8.1.3 and paragraphs 8.2.3 to 8.2.8 of GC 8.2 - NEGOTIATION, MEDIATION AND ARBITRATION, and in GC 8.3 - RETENTION OF RIGHTS apply to that dispute with the necessary changes to detail as may be required.

8.1.3 If a dispute is not resolved promptly, the *Consultant* will give such instructions as in the *Consultant*'s opinion are necessary for the proper performance of the *Work* and to prevent delays pending settlement of the dispute. The parties shall act immediately according to such instructions, it being understood that by so doing neither party will jeopardize any claim the party may have. If it is subsequently determined that such instructions were in error or at variance with the *Contract Documents*, the *Owner* shall pay the *Contractor* costs incurred by the *Contractor* in carrying out such instructions which the *Contractor* was required to do beyond what the *Contract Documents* correctly understood and interpreted would have required, including costs resulting from interruption of the *Work*.

GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION

8.2.1 In accordance with the Rules for Mediation of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing, the parties shall appoint a Project Mediator

.1 within 20 *Working Days* after the *Contract* was awarded, or

.2 if the parties neglected to make an appointment within the 20 *Working Days*, within 10 *Working Days* after either party by *Notice in Writing* requests that the Project Mediator be appointed.

8.2.2 A party shall be conclusively deemed to have accepted a finding of the *Consultant* under GC 2.2 - ROLE OF THE CONSULTANT and to have expressly waived and released the other party from any claims in respect of the particular matter dealt with in that finding unless, within 15 *Working Days* after receipt of that finding, the party sends a *Notice in Writing* of dispute to the other party and to the *Consultant*, which contains the particulars of the matter in dispute and the relevant provisions of the *Contract Documents*. The responding party shall send a *Notice in Writing* of reply to the dispute within 10 *Working Days* after receipt of such *Notice in Writing* setting out particulars of this response and any relevant provisions of the *Contract Documents*.

8.2.3 The parties shall make all reasonable efforts to resolve their dispute by amicable negotiations and agree to provide, without prejudice, frank, candid and timely disclosure of relevant facts, information and documents to facilitate these negotiations.

8.2.4 After a period of 10 *Working Days* following receipt of a responding party's *Notice in Writing* of reply under paragraph 8.2.2, the parties shall request the Project Mediator to assist the parties to reach agreement on any unresolved dispute. The mediated negotiations shall be conducted in accordance with the Rules for Mediation of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing.

8.2.5 If the dispute has not been resolved within 10 *Working Days* after the Project Mediator was requested under paragraph 8.2.4 or within such further period agreed by the parties, the Project Mediator shall terminate the mediated negotiations by giving *Notice in Writing* to the *Owner*, the *Contractor* and the *Consultant*.

8.2.6 By giving a *Notice in Writing* to the other party and the *Consultant*, not later than 10 *Working Days* after the date of termination of the mediated negotiations under paragraph 8.2.5, either party may refer the dispute to be finally resolved by arbitration under the Rules for Arbitration of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing. The arbitration shall be conducted in the jurisdiction of the *Place of the Work*.

8.2.7 On expiration of the 10 *Working Days*, the arbitration agreement under paragraph 8.2.6 is not binding on the parties and, if a *Notice in Writing* is not given under paragraph 8.2.6 within the required time, the parties may refer the unresolved dispute to the courts or to any other form of dispute resolution, including arbitration, which they have agreed to use.

8.2.8 If neither party, by *Notice in Writing*, given within 10 *Working Days* of the date of *Notice in Writing* requesting arbitration in paragraph 8.2.6, requires that a dispute be arbitrated immediately, all disputes referred to arbitration as provided in paragraph 8.2.6 shall be

.1 held in abeyance until

(1) *Substantial Performance of the Work*,

(2) the *Contract* has been terminated, or

(3) the *Contractor* has abandoned the *Work*,

whichever is earlier; and

.2 consolidated into a single arbitration under the rules governing the arbitration under paragraph 8.2.6.

GC 8.3 RETENTION OF RIGHTS

8.3.1 It is agreed that no act by either party shall be construed as a renunciation or waiver of any rights or recourses, provided the party has given the *Notice in Writing* required under Part 8 of the General Conditions - DISPUTE RESOLUTION and has carried out the instructions as provided in paragraph 8.1.3 of GC 8.1 – AUTHORITY OF THE CONSULTANT.

8.3.2 Nothing in Part 8 of the General Conditions - DISPUTE RESOLUTION shall be construed in any way to limit a party from asserting any statutory right to a lien under applicable lien legislation of the jurisdiction of the *Place of the Work* and the assertion of such right by initiating judicial proceedings is not to be construed as a waiver of any right that party may have under paragraph 8.2.6 of GC 8.2 – NEGOTIATION, MEDIATION AND ARBITRATION to proceed by way of arbitration to adjudicate the merits of the claim upon which such a lien is based.

PART 9 PROTECTION OF PERSONS AND PROPERTY

GC 9.1 PROTECTION OF WORK AND PROPERTY

9.1.1 The *Contractor* shall protect the *Work* and the *Owner*'s property and property adjacent to the *Place of the Work* from damage which may arise as the result of the *Contractor*'s operations under the *Contract*, and shall be responsible for such damage, except damage which occurs as the result of:

.1 errors in the *Contract Documents*;

.2 acts or omissions by the *Owner*, the *Consultant*, other contractors, their agents and employees.

9.1.2 Before commencing any work, the *Contractor* shall determine the location of all underground utilities and structures indicated in the *Contract Documents* or that are reasonably apparent in an inspection of the *Place of the Work*.

9.1.3 Should the *Contractor* in the performance of the *Contract* damage the *Work*, the *Owner*'s property or property adjacent to the *Place of the Work*, the *Contractor* shall be responsible for making good such damage at the *Contractor*'s expense.

9.1.4 Should damage occur to the *Work* or *Owner*'s property for which the *Contractor* is not responsible, as provided in paragraph 9.1.1, the *Contractor* shall make good such damage to the *Work* and, if the *Owner* so directs, to the *Owner*'s property. The *Contract Price* and *Contract Time* shall be adjusted as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

9.2.1 For the purposes of applicable legislation related to toxic and hazardous substances, the *Owner* shall be deemed to have control and management of the *Place of the Work* with respect to existing conditions.

9.2.2 Prior to the *Contractor* commencing the *Work*, the *Owner* shall,

.1 take all reasonable steps to determine whether any toxic or hazardous substances are present at the *Place of the Work*, and

.2 provide the *Consultant* and the *Contractor* with a written list of any such substances that are known to exist and their locations.

9.2.3 The *Owner* shall take all reasonable steps to ensure that no person's exposure to any toxic or hazardous substances exceeds the time weighted levels prescribed by applicable legislation at the *Place of the Work* and that no property is damaged or destroyed as a result of exposure to, or the presence of, toxic or hazardous substances which were at the *Place of the Work* prior to the *Contractor* commencing the *Work*.

9.2.4 Unless the *Contract* expressly provides otherwise, the *Owner* shall be responsible for taking all necessary steps, in accordance with applicable legislation in force at the *Place of the Work*, to dispose of, store or otherwise render harmless toxic or hazardous substances which were present at the *Place of the Work* prior to the *Contractor* commencing the *Work*.

9.2.5 If the *Contractor*

.1 encounters toxic or hazardous substances at the *Place of the Work*, or

.2 has reasonable grounds to believe that toxic or hazardous substances are present at the *Place of the Work*,

which were not brought to the *Place of the Work* by the *Contractor* or anyone for whom the *Contractor* is responsible and which were not disclosed by the *Owner* or which were disclosed but have not been dealt with as required under paragraph 9.2.4, the *Contractor* shall

.3 take all reasonable steps, including stopping the *Work*, to ensure that no person's exposure to any toxic or hazardous substances exceeds any applicable time weighted levels prescribed by applicable legislation at the *Place of the Work*, and

.4 immediately report the circumstances to the *Consultant* and the *Owner* in writing.

9.2.6 If the *Owner* and *Contractor* do not agree on the existence, significance of, or whether the toxic or hazardous substances were brought onto the *Place of the Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, the *Owner* shall retain and pay for an independent qualified expert to investigate and determine such matters. The expert's report shall be delivered to the *Owner* and the *Contractor*.

9.2.7 If the *Owner* and *Contractor* agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous substances were not brought onto the place of the *Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, the *Owner* shall promptly at the *Owner's* own expense:

.1 take all steps as required under paragraph 9.2.4;

.2 reimburse the *Contractor* for the costs of all steps taken pursuant to paragraph 9.2.5;

.3 extend the *Contract* time for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor* and the expert referred to in 9.2.6 and reimburse the *Contractor* for reasonable costs incurred as a result of the delay; and

.4 indemnify the *Contractor* as required by GC 12.1 - INDEMNIFICATION.

9.2.8 If the *Owner* and *Contractor* agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous substances were brought onto the place of the *Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, the *Contractor* shall promptly at the *Contractor's* own expense:

.1 take all necessary steps, in accordance with applicable legislation in force at the *Place of the Work*, to safely remove and dispose the toxic or hazardous substances;

.2 make good any damage to the *Work*, the *Owner*'s property or property adjacent to the place of the *Work* as provided in paragraph 9.1.3 of GC 9.1 – PROTECTION OF WORK AND PROPERTY;

.3 reimburse the *Owner* for reasonable costs incurred under paragraph 9.2.6; and

.4 indemnify the Owner as required by GC 12.1 - INDEMNIFICATION.

9.2.9 If either party does not accept the expert's findings under paragraph 9.2.6, the disagreement shall be settled in accordance with Part 8 of the General Conditions - Dispute Resolution. If such disagreement is not resolved promptly, the parties shall act immediately in accordance with the expert's determination and take the steps required by paragraph 9.2.7 or 9.2.8 it being understood that by so doing, neither party will jeopardize any claim that party may have to be reimbursed as provided by GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES.

GC 9.3 ARTIFACTS AND FOSSILS

9.3.1 Fossils, coins, articles of value or antiquity, structures and other remains or things of scientific or historic interest discovered at the *Place or Work* shall, as between the *Owner* and the *Contractor*, be deemed to be the absolute property of the *Owner*.

9.3.2 The *Contractor* shall take all reasonable precautions to prevent removal or damage to discoveries as identified in paragraph 9.3.1, and shall advise the *Consultant* upon discovery of such items.

9.3.3 The *Consultant* will investigate the impact on the *Work* of the discoveries identified in paragraph 9.3.1. If conditions are found that would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Consultant*, with the *Owner's* approval, will issue appropriate instructions for a change in the *Work* as provided in GC 6.2 - CHANGE ORDER or GC 6.3 CHANGE DIRECTIVE.

GC 9.4 CONSTRUCTION SAFETY

9.4.1 Subject to paragraph 3.2.2.2 of GC 3.2 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, the *Contractor* shall be solely responsible for construction safety at the *Place of the Work* and for compliance with the rules, regulations and practices required by the applicable construction health and safety legislation and shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the *Work*.

GC 9.5 MOULD

9.5.1 If the *Contractor* or *Owner* observes or reasonably suspects the presence of mould at the *Place of the Work*, the remediation of which is not expressly part of the *Work*,

.1 the observing party shall promptly report the circumstances to the other party in writing, and

.2 the *Contractor* shall promptly take all reasonable steps, including stopping the *Work* if necessary, to ensure that no person suffers injury, sickness or death and that no property is damaged as a result of exposure to or the presence of the mould, and

.3 if the *Owner* and *Contractor* do not agree on the existence, significance or cause of the mould or as to what steps need be taken to deal with it, the *Owner* shall retain and pay for an independent qualified expert to investigate and determine such matters. The expert's report shall be delivered to the *Owner* and *Contractor*.

9.5.2 If the *Owner* and *Contractor* agree, or if the expert referred to in paragraph 9.5.1.3 determines that the presence of mould was caused by the *Contractor*'s operations under the *Contract*, the *Contractor* shall promptly, at the *Contractor*'s own expense:

.1 take all reasonable and necessary steps to safely remediate or dispose of the mould, and

.2 make good any damage to the *Work*, the *Owner*'s property or property adjacent to the *Place of the Work* as provided in paragraph 9.1.3 of GC 9.1 - PROTECTION OF WORK AND PROPERTY, and

.3 reimburse the *Owner* for reasonable costs incurred under paragraph 9.5.1.3, and

.4 indemnify the *Owner* as required by GC 12.1 - INDEMNIFICATION.

9.5.3 If the *Owner* and *Contractor* agree, or if the expert referred to in paragraph 9.5.1.3 determines that the presence of mould was not caused by the *Contractor*'s operations under the *Contract*, the *Owner* shall promptly, at the *Owner*'s own expense:

.1 take all reasonable and necessary steps to safely remediate or dispose of the mould, and

.2 reimburse the *Contractor* for the cost of taking the steps under paragraph 9.5.1.2 and making good any damage to the *Work* as provided in paragraph 9.1.4 of GC 9.1 - PROTECTION OF WORK AND PROPERTY, and

.3 extend the *Contract Time* for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor* and the expert referred to in paragraph 9.5.1.3 and reimburse the *Contractor* for reasonable costs incurred as a result of the delay, and

.4 indemnify the *Contractor* as required by GC 12.1 - INDEMNIFICATION.

9.5.4 If either party does not accept the expert's finding under paragraph 9.5.1.3, the disagreement shall be settled in accordance with Part 8 of the General Conditions - DISPUTE RESOLUTION. If such desagreement is not resolved promptly, the parties shall act immediately in accordance with the expert's determination and take the steps required by paragraphs 9.5.2 or 9.5.3, it being understood that by so doing neither party will jeopardize any claim the party may have to be reimbursed as provided by GC 9.5 - MOULD.

PART 10 GOVERNING REGULATIONS

GC 10.1 TAXES AND DUTIES

10.1.1 The *Contract Price* shall include all taxes and customs duties in effect at the time of the bid closing except for *Value Added Taxes* payable by the *Owner* to the *Contractor* as stipulated in Article A-4 of the Agreement - CONTRACT PRICE.

10.1.2 Any increase or decrease in costs to the *Contractor* due to changes in such included taxes and duties after the time of the bid closing shall increase or decrease the *Contract Price* accordingly.

GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

10.2.1 The laws of the *Place of the Work* shall govern the *Work*.

10.2.2 The *Owner* shall obtain and pay for development approvals, building permit, permanent easements, rights of servitude, and all other necessary approvals and permits, except for the permits and fees referred to in paragraph 10.2.3 or for which the *Contract Documents* specify as the responsibility of the *Contractor*.

10.2.3 The *Contractor* shall be responsible for the procurement of permits, licences, inspections, and certificates, which are necessary for the performance of the *Work* and customarily obtained by contractors in the jurisdiction of the *Place of the Work* after the issuance of the building permit. The *Contract Price* includes the cost of these permits, licences, inspections, and certificates, and their procurement.

10.2.4 The *Contractor* shall give the required notices and comply with the laws, ordinances, rules, regulations, or codes which are or become in force during the performance of the *Work* and which relate to the *Work*, to the preservation of the public health, and to construction safety.

10.2.5 The *Contractor* shall not be responsible for verifying that the *Contract Documents* are in compliance with the applicable laws, ordinances, rules, regulations, or codes relating to the *Work*. If the *Contract Documents* are at variance therewith, or if, subsequent to the time of bid closing, changes are made to the applicable laws, ordinances, rules, regulations, or codes which require modification to the *Contract Documents*, the *Contractor* shall advise the *Consultant* in writing requesting direction immediately upon such variance or change becoming known. The *Consultant* will make the changes required to the *Contract Documents* as provided in GC 6.1 - OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

10.2.6 If the *Contractor* fails to advise the *Consultant* in writing; and fails to obtain direction as required in paragraph 10.2.5; and performs work knowing it to be contrary to any laws, ordinances, rules, regulations, or codes; the *Contractor* shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations, or codes.

10.2.7 If, subsequent to the time of bid closing, changes are made to applicable laws, ordinances, rules, regulations, or codes of authorities having jurisdiction which affect the cost of the *Work*, either party may submit a claim in accordance with the requirements of GC 6.6 – CLAIMS FOR A CHANGE IN CONTRACT PRICE.

GC 10.3 PATENT FEES

10.3.1 The *Contractor* shall pay the royalties and patent licence fees required for the performance of the *Contract*. The *Contractor* shall hold the *Owner* harmless from and against 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 a patent of invention by the *Contractor* or anyone for whose acts the *Contractor* may be liable.

10.3.2 The *Owner* shall hold the *Contractor* harmless against 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 a patent of invention in executing anything for the purpose of the *Contract*, the model, plan or design of which was supplied to the *Contractor* as part of the *Contract Documents*.

GC 10.4 WORKERS' COMPENSATION

10.4.1 Prior to commencing the *Work*, again with the *Contractor*'s application for payment of the holdback amount following *Substantial Performance of the Work* and again with the *Contractor*'s application for final payment, the *Contractor* shall provide evidence of compliance with workers' compensation legislation at the *Place of the Work*, including payments due thereunder.

10.4.2 At any time during the term of the *Contract*, when requested by the *Owner*, the *Contractor* shall provide such evidence of compliance by the *Contractor* and *Subcontractors*.

PART 11 INSURANCE AND CONTRACT SECURITY

GC 11.1 INSURANCE

11.1.1 Without restricting the generality of GC 12.1 - INDEMNIFICATION, the *Contractor* shall provide, maintain and pay for the following insurance coverages, the minimum requirements of which are specified in CCDC 41 – CCDC Insurance Requirements in effect at the time of bid closing except as hereinafter provided:

.1 General liability insurance in the name of the *Contractor* and include, or in the case of a single, blanket policy, be endorsed to name, the *Owner* and the *Consultant* as insureds but only with respect to liability, other than legal liability arising out of their sole negligence, arising out of the operations of the *Contractor* with regard to the *Work*. General liability insurance shall be maintained from the date of commencement of the *Work* until one year from the date of *Substantial Performance of the Work*. Liability coverage shall be provided for completed operations hazards from the date of *Substantial Performance of the Work*, as set out in the certificate of *Substantial Performance of the Work*, on an ongoing basis for a period of 6 years following *Substantial Performance of the Work*.

.2 Automobile Liability Insurance from the date of commencement of the *Work* until one year after the date of *Substantial Performance of the Work*.

.3 Aircraft or Watercraft Liability Insurance when owned or non-owned aircraft or watercraft are used directly or indirectly in the performance of the *Work*

.4 "Broad form" property insurance in the joint names of the *Contractor*, the *Owner* and the *Consultant*. The policy shall include as insureds all *Subcontractors*. The "Broad form" property insurance shall be provided from the date of commencement of the *Work* until the earliest of:

(1) 10 calendar days after the date of *Substantial Performance of the Work*;

(2) on the commencement of use or occupancy of any part or section of the *Work* unless such use or occupancy is for construction purposes, habitational, office, banking, convenience store under 465 square metres in area, or parking purposes, or for the installation, testing and commissioning of equipment forming part of the *Work*;

(3) when left unattended for more than 30 consecutive calendar days or when construction activity has ceased for more than 30 consecutive calendar days.

.5 Boiler and machinery insurance in the joint names of the *Contractor*, the *Owner* and the *Consultant*. The policy shall include as insureds all *Subcontractors*. The coverage shall be maintained continuously from commencement of use or operation of the boiler and machinery objects insured by the policy and until 10 calendar days after the date of *Substantial Performance of the Work*.

.6 The "Broad form" property and boiler and machinery policies shall provide that, in the case of a loss or damage, payment shall be made to the *Owner* and the *Contractor* as their respective interests may appear. In the event of loss or damage:

(1) the *Contractor* shall act on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Contractor* shall proceed to restore the *Work*. Loss or 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 *Contract Time* relative to the extent of the loss or damage as the *Consultant* may recommend in consultation with the *Contractor*;

(2) the *Contractor* shall be entitled to receive from the *Owner*, in addition to the amount due under the *Contract*, the amount which the *Owner*'s interest in restoration of the *Work* has been appraised, such amount to be paid as the restoration of the *Work* proceeds in accordance with the progress payment provisions. In addition the *Contractor* shall be entitled to receive from the payments made by the insurer the amount of the *Contractor*'s interest in the restoration of the *Work*; and

(3) to the *Work* arising from the work of the *Owner*, the *Owner*'s own forces or another contractor, the *Owner* shall, in accordance with the *Owner*'s obligations under the provisions relating to construction by *Owner* or other contractors, pay the *Contractor* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as in accordance with the progress payment provisions.

.7 Contractors' Equipment Insurance from the date of commencement of the *Work* until one year after the date of *Substantial Performance of the Work*.

11.1.2 Prior to commencement of the *Work* and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the *Contractor* shall promptly provide the *Owner* with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements applicable to the *Work*.

11.1.3 The parties shall pay their share of the deductible amounts in direct proportion to their responsibility in regards to any loss for which the above policies are required to pay, except where such amounts may be excluded by the terms of the *Contract*.

11.1.4 If the *Contractor* fails to provide or maintain insurance as required by the *Contract Documents*, then the *Owner* shall have the right to provide and maintain such insurance and give evidence to the *Contractor* and the *Consultant*. The *Contractor* shall pay the cost thereof to the *Owner* on demand or the *Owner* may deduct the cost from the amount which is due or may become due to the *Contractor*.

11.1.5 All required insurance policies shall be with insurers licensed to underwrite insurance in the jurisdiction of the *Place of the Work*.

11.1.6 If a revised version of CCDC 41 – INSURANCE REQUIREMENTS is published, which specifies reduced insurance requirements, the parties shall address such reduction, prior to the *Contractor*'s insurance policy becoming due for renewal, and record any agreement in a *Change Order*.

11.1.7 If a revised version of CCDC 41 – INSURANCE REQUIREMENTS is published, which specifies increased insurance requirements, the *Owner* may request the increased coverage from the Contractor by way of a *Change Order*.

11.1.8 A *Change Directive* shall not be used to direct a change in the insurance requirements in response to the revision of CCDC 41 – INSURANCE REQUIREMENTS.

GC 11.2 CONTRACT SECURITY

11.2.1 The *Contractor* shall, prior to commencement of the *Work* or within the specified time, provide to the *Owner* any *Contract* security specified in the *Contract Documents*.

11.2.2 If the *Contract Documents* require surety bonds to be provided, such bonds shall be issued by a duly licensed surety company authorized to transact the business of suretyship in the province or territory of the *Place of the Work* and shall be maintained in good standing until the fulfillment of the *Contract*. The form of such bonds shall be in accordance with the latest edition of the CCDC approved bond forms.

PART 12 INDEMNIFICATION, WAIVER OF CLAIMS AND WARRANTY

GC 12.1 INDEMNIFICATION

12.1.1 Without restricting the parties' obligation to indemnify as described in paragraphs 12.1.4 and 12.1.5, the *Owner* and the *Contractor* shall each indemnify and hold harmless the other from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings whether in respect to losses suffered by them or in respect to claims by third parties that arise out of, or are attributable in any respect to their involvement as parties to this *Contract*, provided such claims are:

.1 caused by:

(1) the negligent acts or omissions of the party from whom indemnification is sought or anyone for whose acts or omissions that party is liable, or

(2) a failure of the party to the *Contract* from whom indemnification is sought to fulfill its terms or conditions; and

.2 made by *Notice in Writing* within a period of 6 years from the date of *Substantial Performance of the Work* as set out in the certificate of *Substantial Performance of the Work* issued pursuant to paragraph 5.4.2.2 of GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK or within such shorter period as may be prescribed by any limitation statute of the province or territory of the *Place of the Work*.

The parties expressly waive the right to indemnity for claims other than those provided for in this *Contract*.

12.1.2 The obligation of either party to indemnify as set forth in paragraph 12.1.1 shall be limited as follows:

.1 In respect to losses suffered by the *Owner* and the *Contractor* for which insurance is to be provided by either party pursuant to GC 11.1 – INSURANCE, the general liability insurance limit for one occurrence as referred to in CCDC 41 in effect at the time of bid closing.

.2 In respect to losses suffered by the *Owner* and the *Contractor* for which insurance is not required to be provided by either party in accordance with GC 11.1 – INSURANCE, the greater of the *Contract Price* as recorded in Article A-4 – CONTRACT PRICE or $2,000,000, but in no event shall the sum be greater than $20,000,000.

.3 In respect to claims by third parties for direct loss resulting from bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, the obligation to indemnify is without limit. In respect to all other claims for indemnity as a result of claims advanced by third parties, the limits of indemnity set forth in paragraphs 12.1.2.1 and 12.1.2.2 shall apply.

12.1.3 The obligation of either party to indemnify the other as set forth in paragraphs 12.1.1 and 12.1.2 shall be inclusive of interest and all legal costs.

12.1.4 The *Owner* and the *Contractor* shall indemnify and hold harmless the other from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of their obligations described in GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES.

12.1.5 The *Owner* shall indemnify and hold harmless the *Contractor* from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings:

.1 as described in paragraph 10.3.2 of GC 10.3 – PATENT FEES, and

.2 arising out of the *Contractor*'s performance of the *Contract* which are attributable to a lack of or defect in title or an alleged lack of or defect in title to the *Place of the Work*.

12.1.6 In respect to any claim for indemnity or to be held harmless by the *Owner* or the *Contractor*:

.1 *Notice in Writing* of such claim shall be given within a reasonable time after the facts upon which such claim is based became known;

.2 should any party be required as a result of its obligation to indemnify another to pay or satisfy a final order, judgment or award made against the party entitled by this contract to be indemnified, then the indemnifying party upon assuming all liability for any costs that might result shall have the right to appeal in the name of the party against whom such final order or judgment has been made until such rights of appeal have been exhausted.

GC 12.2 WAIVER OF CLAIMS

12.2.1 Subject to any lien legislation applicable to the *Place of the Work*, as of the fifth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*, the *Contractor* waives and releases the *Owner* from all claims which the *Contractor* has or reasonably ought to have knowledge of that could be advanced by the *Contractor* against the *Owner* arising from the *Contractor*'s involvement in the *Work*, including, without limitation, those arising from negligence or breach of contract in respect to which the cause of action is based upon acts or omissions which occurred prior to or on the date of *Substantial Performance of the Work*, except as follows:

.1 claims arising prior to or on the date of *Substantial Performance of the Work* for which *Notice in Writing* of claim has been received by the *Owner* from the *Contractor* no later than the sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*;

.2 indemnification for claims advanced against the *Contractor* by third parties for which a right of indemnification may be asserted by the *Contractor* against the *Owner* pursuant to the provisions of this *Contract*;

.3 claims for which a right of indemnity could be asserted by the *Contractor* pursuant to the provisions of paragraphs 12.1.4 or 12.1.5 of GC 12.1 – INDEMNIFICATION; and

.4 claims resulting from acts or omissions which occur after the date of *Substantial Performance of the Work*.

12.2.2 The *Contractor* waives and releases the *Owner* from all claims referenced in paragraph 12.2.1.4 except for those referred in paragraphs 12.2.1.2 and 12.2.1.3 and claims for which *Notice in Writing* of claim has been received by the *Owner* from the *Contractor* within 395 calendar days following the date of *Substantial Performance of the Work*.

12.2.3 Subject to any lien legislation applicable to the *Place of the Work*, as of the fifth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*, the *Owner* waives and releases the *Contractor* from all claims which the *Owner* has or reasonably ought to have knowledge of that could be advanced by the *Owner* against the *Contractor* arising from the *Owner*'s involvement in the *Work*, including, without limitation, those arising from negligence or breach of contract in respect to which the cause of action is based upon acts or omissions which occurred prior to or on the date of *Substantial Performance of the Work*, except as follows:

.1 claims arising prior to or on the date of *Substantial Performance of the Work* for which *Notice in Writing* of claim has been received by the *Contractor* from the *Owner* no later than the sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*;

.2 indemnification for claims advanced against the *Owner* by third parties for which a right of indemnification may be asserted by the *Owner* against the *Contractor* pursuant to the provisions of this *Contract*;

.3 claims for which a right of indemnity could be asserted by the *Owner* against the *Contractor* pursuant to the provisions of paragraph 12.1.4 of GC 12.1 - INDEMNIFICATION;

.4 damages arising from the *Contractor*'s actions which result in substantial defects or deficiencies in the *Work*. "Substantial defects or deficiencies" mean those defects or deficiencies in the *Work* which affect the *Work* to such an extent or in such a manner that a significant part or the whole of the *Work* is unfit for the purpose intended by the *Contract Documents*;

.5 claims arising pursuant to GC 12.3 - WARRANTY; and

.6 claims arising from acts or omissions which occur after the date of *Substantial Performance of the Work*.

12.2.4 The *Owner* waives and releases the *Contractor* from all claims referred to in paragraph 12.2.3.4 except claims for which *Notice in Writing* of claim has been received by the *Contractor* from the *Owner* within a period of six years from the date of *Substantial Performance of the Work* should any limitation statute of the Province or Territory of the *Place of the Work* permit such agreement. If the applicable limitation statute does not permit such agreement, within such shorter period as may be prescribed by:

.1 any limitation statute of the Province or Territory of the *Place of the Work*; or

.2 if the *Place of the Work* is the Province of Quebec, then Article 2118 of the Civil Code of Quebec.

12.2.5 The *Owner* waives and releases the *Contractor* from all claims referenced in paragraph 12.2.3.6 except for those referred in paragraph 12.2.3.2, 12.2.3.3 and those arising under GC 12.3 – WARRANTY and claims for which *Notice in Writing* has been received by the *Contractor* from the *Owner* within 395 calendar days following the date of *Substantial Performance of the Work*.

12.2.6 "*Notice in Writing* of claim" as provided for in GC 12.2 – WAIVER OF CLAIMS to preserve a claim or right of action which would otherwise, by the provisions of GC 12.2 – WAIVER OF CLAIMS, be deemed to be waived, must include the following:

.1 a clear and unequivocal statement of the intention to claim;

.2 a statement as to the nature of the claim and the grounds upon which the claim is based; and

.3 a statement of the estimated quantum of the claim.

12.2.7 The party giving "*Notice in Writing* of claim" as provided for in GC 12.2 – WAIVER OF CLAIMS shall submit within a reasonable time a detailed account of the amount claimed.

12.2.8 Where the event or series of events giving rise to a claim made under paragraphs 12.2.1 or 12.2.3 has a continuing effect, the detailed account submitted under paragraph 12.2.7 shall be considered to be an interim account and the party making the claim shall submit further interim accounts, at reasonable intervals, giving the accumulated amount of the claim and any further grounds upon which it is based. The party making the claim shall submit a final account after the end of the effects resulting from the event or series of events.

12.2.9 If a *Notice in Writing* of claim pursuant to paragraph 12.2.1.1 is received on the seventh or sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*, the period within which *Notice in Writing* of claim shall be received pursuant to paragraph 12.2.3.1 shall be extended to two calendar days before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*.

12.2.10 If a *Notice in Writing* of claim pursuant to paragraph 12.2.3.1 is received on the seventh or sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*, the period within which *Notice in Writing* of claim shall be received pursuant to paragraph12.2.1.1 shall be extended to two calendar days before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*.

GC 12.3 WARRANTY

12.3.1 Except for extended warranties as described in paragraph 12.3.6, the warranty period under the *Contract* is one year from the date of *Substantial Performance of the Work*.

12.3.2 The *Contractor* shall be responsible for the proper performance of the *Work* to the extent that the design and *Contract Documents* permit such performance.

12.3.3 The *Owner*, through the *Consultant*, shall promptly give the *Contractor Notice in Writing* of observed defects and deficiencies which occur during the one year warranty period.

12.3.4 Subject to paragraph 12.3.2, the *Contractor* shall correct promptly, at the *Contractor*'s expense, defects or deficiencies in the *Work* which appear prior to and during the one year warranty period.

12.3.5 The *Contractor* shall correct or pay for damage resulting from corrections made under the requirements of paragraph 12.3.4.

12.3.6 Any extended warranties required beyond the one year warranty period as described in paragraph 12.3.1, shall be as specified in the *Contract Documents*. Extended warranties shall be issued by the warrantor to the benefit of the *Owner*. The *Contractor*'s responsibility with respect to extended warranties shall be limited to obtaining any such extended warranties from the warrantor. The obligations under such extended warranties are solely the responsibilities of the warrantor.

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CCDC 41
CCDC INSURANCE REQUIREMENTS

PUBLICATION DATE: JANUARY 21, 2008

1. General liability insurance shall be with limits of not less than $5,000,000 per occurrence, an aggregate limit of not less than $5,000,000 within any policy year with respect to completed operations, and a deductible not exceeding $5,000. The insurance coverage shall not be less than the insurance provided by IBC Form 2100 (including an extension for a standard provincial and territorial form of non-owned automobile liability policy) and IBC Form 2320. To achieve the desired limit, umbrella or excess liability insurance may be used. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts.

2. Automobile liability insurance in respect of vehicles that are required by law to be insured under a contract by a Motor Vehicle Liability Policy, shall have limits of not less than $5,000,000 inclusive per occurrence for bodily injury, death and damage to property, covering all vehicles owned or leased by the *Contractor*. Where the policy has been issued pursuant to a government-operated automobile insurance system, the *Contractor* shall provide the *Owner* with confirmation of automobile insurance coverage for all automobiles registered in the name of the *Contractor*.

3. Aircraft and watercraft liability insurance with respect to owned or non-owned aircraft and watercraft (if used directly or indirectly in the performance of the *Work*), including use of additional premises, shall have limits of not less than $5,000,000 inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof and limits of not less than $5,000,000 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the *Owner*.

4. "Broad form" property insurance shall have limits of not less than the sum of 1.1 times *Contract Price* and the full value, as stated in the *Contract*, of *Products* and design services that are specified to be provided by the *Owner* for incorporation into the *Work*, with a deductible not exceeding $5,000. The insurance coverage shall not be less than the insurance provided by IBC Forms 4042 and 4047 (excluding flood and earthquake) or their equivalent replacement. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts.

5. Boiler and machinery insurance shall have limits of not less than the replacement value of the permanent or temporary boilers and pressure vessels, and other insurable objects forming part of the *Work*. The insurance coverage shall not be less than the insurance provided by a comprehensive boiler and machinery policy.

6. "Broad form" contractors' equipment insurance coverage covering *Construction Equipment* used by the *Contractor* for the performance of the *Work*, shall be in a form acceptable to the *Owner* and shall not allow subrogation claims by the insurer against the *Owner*. Subject to satisfactory proof of financial capability by the *Contractor* for self-insurance, the *Owner* may agree to waive the equipment insurance requirement.

7. Standard Exclusions

   7.1 In addition to the broad form property exclusions identified in IBC forms 4042(1995), and 4047(2000), the *Contractor* is not required to provide the following insurance coverage:
   - Asbestos
   - Cyber Risk
   - Mould
   - Terrorism

Association of Canadian Engineering Companies

Canadian Construction Association

Construction Specifications Canada

The Royal Architectural Institute of Canada

1.1 REFERENCES

.1 The Contractor shall conform with all the applicable requirements of the following:

.1 National Building Code of Canada (NBC) 2010 including all amendments up to bid closing date.

.2 National Fire Code of Canada, latest edition.

.3 Provincial Government Act and Regulations; including, but not limited to:

.4 Provincial Building Code Act

.5 Worker's Compensation Act

.6 Fire Protection Act

.7 Dangerous Goods Transportation Act

.8 Builder's Lien Act

The provisions of all Sections of Division 1 shall apply to each Section of this Project Manual.

1.2 REFERENCE STANDARDS

.1 Where edition date is not specified, consider that references to manufacturer's and, published codes, standards and specifications approved by the issuing organization, current at the date of this Specification.

.2 Reference standards and specifications are quoted in this Project Manual (Specification) to establish minimum standards. Work which in quality exceeds these minimum standards shall be considered to conform.

.3 Should the Contract Documents conflict with specified reference standards or specifications the General Conditions of the Contract shall govern.

.4 Where reference is made to manufacturer's directions, instructions or specifications they shall include full information on storing, handling, preparing, mixing, installing, erecting, applying, or other matters concerning the materials pertinent to their use and their relationship to materials with which they are incorporated and written to suit this specific project.

.5 Have a copy of each code, standard and specification, and manufacturer's directions, instructions and specifications, to which reference is made in this Project Manual, always available at construction site, when requested by Consultant.

.6 Standards, specifications, associations, and regulatory bodies are generally referred to throughout the project manual by their abbreviated designations. These are:

AA - The Aluminum Association
AABC - Associated Air Balance Council
ACI - American Concrete Institute
AISI - American Iron and Steel Institute
AMCA - Air Moving & Air Conditioning Assoc.
ANSI - American National Standards Institute
ARI - Air Conditioning & Refrigeration Institute
ASTM- - American Society for Testing and Materials
ASHRAE - American Society of Heating, Refrigeration & Conditioning Engineers, Inc.
AWI - Architectural Woodwork Institute
AWMAC - Architectural Woodwork Manufacturers Association of Canada
CBIP - Commercial Building Incentive Program
CGSB - Canadian General Standards Board
CISC - Canadian Institute of Steel Construction
CPMA - Canadian Paint Manufacturers Association
CSA - Canadian Standards Association
CSSBI - Canadian Sheet Building Institute
DTIR - Department of Transportation and Infrastructure Renewal Province of Nova Scotia
IAO - Insurers Advisory Organization
MFMA - Maple Flooring Manufacturers Assoc.
NAAMM - The National Association of Architectural Metal Manufacturers
NBC - National Building Code
NFPA - National Fire Protection Association
NRC - National Research Council, Canada
CANS - Construction Association of Nova Scotia
SAE - Society of Automotive Engineers
SMACNA - Sheet Metal & Air-Conditioning Contractors National Association Inc.
ULC - Underwriters Laboratories of Canada
ULI - Underwriters Laboratories Incorporated
USAS - United States of America Standards, of American National Standards Institute

1.3 AFFIDAVITS

.1 Submit affidavits which are required in other Sections of the Project Manual.

.1 Submit affidavits in duplicate and signed and notarized by a responsible officer of the certifying company.

.2 For Work incorporating structural, mechanical and electrical design validation, affix seal of design engineer registered to practice in Nova Scotia and who is a specialist in the applicable Work.

1.4 PROJECT MANUAL (SPECIFICATION)

.1 Sections of the Project Manual are numbered in conformance with the Master List of Section Titles and Numbers, CSC Document 004E, published jointly by Construction Specifications Canada and the Construction Specifications Institute (USA). Sections are arranged in their standard 16 - Division format.

.2 Sections are written as units of the Work which have been assigned numbers in conformance with the CSC/CSI system. They are arranged in sequence for this Manual. Gaps in the order of numerical sequence to not indicate that a section has been inadvertently omitted from this Manual, but rather, that a section is not required for completion of the Work.

.3 Sections are not intended to identify absolute contractual limits between Subcontractors, nor between the Contractor and his Subcontractors. The Contractor shall organize division of labour and supply of the materials essential to complete the Work in all its parts and provide a total enclosure and protection from weather of interior spaces.

.4 Wherever in the Contract Documents the word “provide” is used in any form, it shall mean that the Work concerned shall include both supply and installation of the products required for completion of that part of the Work.

1.5 DESCRIPTION OF WORK INCLUDED

.1 Work under this Contract covers renovations to the Harbourside Gallery Lobby at the Canadian Museum of Immigration at Pier 21, 1055 Marginal Road, Halifax NS, complete with all site works.

.2 Work not included in Contract comprises furnishings and other items supplied by the Owner.

1.6 CODES AND STANDARDS

.1 Meet or exceed requirements of:

.1 contract documents,

.2 specified standards, codes and referenced documents.

1.7 TOLERANCES

.1 Unless acceptable tolerances are otherwise specified in a Section:

.1 "Plumb and level" shall mean plumb or level within 1/8" in 10' - 0".

.2 "Square" shall mean not in excess of 10 . seconds less or greater than 90

.3 "Straight" shall mean within 1/8" under a 10' - 0" long straightedge.

1.8 DOCUMENTS REQUIRED

.1 Maintain at job site, one copy each of following:

.1 Contract drawings.

.2 Specifications.

.3 Addenda.

.4 Reviewed shop drawings.

.5 Change orders.

.6 Other modifications to Contract.

.7 Field test reports.

.8 Copy of approved work schedule.

.9 Manufacturers' installation and application instructions.

.10 National Building Code of Canada.

1.9 TEMPORARY FACILITIES

.1 Refer to Section 01 50 00 – Construction and Temporary Facilities.

1.10 WORK SCHEDULE

.1 Refer to GC 3.5 – Construction Schedule and Supplementary Conditions

.2 Provide the first Construction Schedule at start-up meeting or within 10 Working Days after award of contract, whichever occurs first.

.3 Indicate in Construction Schedule dates for:

.1 Submission of shop drawings, material lists and samples.

.2 Delivery of items of equipment and materials key to delivering the Project on schedule.

.3 Final completion date within time period required by Contract documents.

1.11 MATERIAL AND EQUIPMENT

.1 Refer to Section 01 60 00 - Materials and Equipment.

1.12 SUBSTITUTION OF PRODUCTS

.1 Products substituted for those specified or approved, or both, shall be permitted only if the listed product cannot be delivered to maintain construction schedule and if the delay is caused by conditions beyond the Contractor's control.

.2 Obtain approval for substitutions. Application for approval of substitutions shall be made only by Contractor. Process proposals for substituted Work in accordance with procedures established for changes in the Work.

.3 Submit, with request for substitution, documentary evidence that substituted products are equal to, or superior to, approved products, and a comparison of price and delivery factors for both specified or approved products, and proposed substitute.

1.13 PROGRESSIVE CLEANING

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by the Owner or Other Contractors working for the Owner.

.2 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.3 Remove waste material and debris from the site at the end of each working day.

.4 Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.

1.14 WASTE MANAGEMENT AND DISPOSAL

.1 Refer to Section 01 35 50 - Waste Management and Disposal.

1.15 COST BREAKDOWN

.1 Refer to Section 01 37 00 - Schedule of Values

1.16 WARRANTY MEETINGS

.1 The contractor and sub-contractors that he feels are required, shall meet with the consultant and the Owner on a quarterly basis (4 times) during the warranty period to review any and all deficient, maintenance and/or warranty work.

.2 Date of warranty meetings to be established by the consultant at substantial performance.

.3 These meetings shall be separate and in addition to any other meetings with the contractor to respond to specific problems or concern with the project during the warranty period.

.4 Minutes of all such meetings are to be prepared by the contractor and issued to all related parties.

1.17 SETTING OUT OF WORK

.1 Not Used.

1.18 CONCEALMENT

.1 Conceal pipes, ducts and wiring affected by Work in floor, wall and ceiling construction of finished areas except where indicated otherwise.

1.19 CUTTING AND PATCHING

.1 Refer to Section 01 04 10 – Project Coordination.

1.20 EXISTING SERVICES

.1 Where Work involves breaking into or connecting to existing services, carry out work at times directed by Consultant, with minimum of disturbance to pedestrian and vehicular traffic.

.2 Before commencing work, establish location and extent of service lines in area of Work and notify Consultant of findings.

.3 Submit schedule to and obtain approval from Consultant for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.

.4 Where unknown services are encountered, immediately advise Consultant and confirm findings in writing.

.5 Remove abandoned service lines within 6 ft. of structures. Cap or otherwise seal lines at cut-off points.

.6 Record locations of maintained, re-routed and abandoned service lines.

1.21 PROJECT SITE SECURITY

.1 Where security has been reduced by work of Contract, provide temporary means to maintain security.

.2 Maintain security of construction site by control of access through enclosing fences, barricades, and hoardings during time Work is in progress, and by locking hardware otherwise.

.3 After building is enclosed, maintain its security by adequate barriers to entry, and by temporary doors equipped with locking hardware.

.4 Maintain security at all times construction is shut down because of a strike or a lockout.

.5 Employ sufficient competent watchmen to guard all portions of the Work Site during all time outside of regular working hours. This shall include nights, Sundays, holidays, and during strikes and lockouts, until the building is turned over to Owner.

.6 Provide sufficient illumination of site so that security can be maintained.

1.22 ADDITIONAL DRAWINGS

.1 Consultant 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.

1.23 RELICS AND ANTIQUITIES

.1 Comply with regulations of the Special Places Protection Act as applicable to project.

.2 Protect relics, antiquities, items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets, and similar object found during course of work.

.3 Give immediate notice to Consultant and await Consultant's written instructions before proceeding with work in this area.

.4 Relics, antiquities and items of historical or scientific interest remain property of Owner.

1.24 RECORD DOCUMENTS

.1 Record information on a set of opaque drawings, and in a copy of a Project Manual (Specifications), provided by Owner.

.2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.

.3 Record information concurrently with construction progress. Do not conceal work until required information is recorded.

.4 Specifications: legibly mark each item to record actual construction, including manufacturer, trade name, and catalog number of each project actually installed.

.5 Other Documents: Maintain manufacturer's field test records, and information required by individual specifications sections.

1.25 MAINTENANCE MANUALS

.1 Submit two copies of completed volumes in final form at time indicated in Section 01 70 00 - Contract Closeout.

.2 Organize data in the form of an instructional manual in D-ring binders of commercial quality, 8½" x 11" maximum ring size of 3", with contents not to exceed 75% of the size of each volume.

.3 Cover: Identify each binder with typed or printed title "Project Record Documents"; list title of Project, identify subject matter of contents.

.4 Arrange content by systems under Section numbers and sequence of Table of Contents.

.5 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

.6 Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

.7 For Each Product or System: List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

.8 Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.

1.26 EXTENDED WARRANTIES

.1 Submit the extended warranties listed in this paragraph and as specified in each applicable Section of the Project Manual.

.2 Extended Warranties shall commence on termination of the standard one year warranty granted in this Contract as specified in GC16, Correction after final payment, of the General Conditions of the Contract, and shall be an extension of these same provisions.

.3 Submit each extended warranty on a standard Form of Warranty, as sample of which is included in this Section.

.4 Submit extended warrantees for:

.1 Section 08 71 00 Door Hardware

.1 As per 1.12, 1

Sample Form of Warranty

Date:_____, 20

Client: _____

Project: _____

_____

_____

_____

Warranty: _____

(Title of Work)

We hereby undertake to warrant all materials supplied and installed under our Contracts and include the providing of necessary materials and labour to cover the result of faulty materials or workmanship. Upon written notification from Client or the Consultant that the above work is defective any repair or replacement work required shall be to the Consultant's satisfaction at no cost to the Client. This warranty shall not apply to defects caused by the work of others, maltreatment of materials, negligence or Acts of God. This Warranty shall remain in effect for the following period [_____] years from the date of Substantial Performance of the Work as certified by the Consultant.

Signature: _____

Authorized Signing

Officer: _____

Firm: _____

Address: _____

_____

_____

END OF SECTION

1.1 GENERAL

.1 Prices included in the Contract shall be complete for the applicable work, and shall include for each price:

.1 Expenditures for wages and for salaries of workmen, engineers, superintendents, draftsmen, foremen, time-keepers, accountants, expeditors, clerks, watchmen and such other personnel as may be approved, employed directly under the Contractor and while engaged on the applicable Work at the site and expenditures for travelling and board allowances of such employees when required by location of the applicable Work or when covered by trade agreements and when approved; provided, however, that nothing shall be included for wages or salary of the Contractor if an individual, or of any member of the Contractor's firm if the Contractor is a firm or the salary of any officer of the Corporation if the Contractor is a corporation, unless otherwise agreed to in writing.

.2 Expenditures for material used in or required in connection with the construction of the applicable Work including material tests and mix designs required by the laws or ordinances of any authority having jurisdiction and not included under Subparagraph .9.

.3 Expenditures of preparation, inspection, delivery, installation and removal of materials, plant, tools and supplies.

.4 Temporary facilities as required for the applicable Work.

.5 Travelling expenses properly incurred by the Contractor in connection with the inspection and supervision of the applicable Work or in connection with the inspection of materials prepared or in course of preparation for the applicable Work and in expediting their delivery.

.6 Rentals of all equipment whether rented from the Contractor or others, in accordance with approved rental agreements including any approved applicable insurance premiums thereon and expenditures for transportation to and from the site of such equipment, costs of loading and unloading, cost of installation, dismantling and removal thereof and repairs or replacements during its use on the applicable Work, exclusive of any repairs which may be necessary because of defects in the equipment when brought to the Work or appearing within thirty (30) days thereafter.

.7 The cost of all expendable materials, supplies, light, power, heat, water and tools (other than tools customarily provided by the tradesmen) less the salvage value thereof at the completion of the applicable Work.

.8 Assessments under the Workmen's Compensation Act, the employment Act, Canada Pension Act, statutes providing for government hospitalization, vacations with pay or any similar statutes; or payments on account of usual vacations made by the Contractor to his employees

engaged on the applicable Work at the site, to the extent to which such assessments or payments for vacations with pay relate to the Work covered by the specified price; and all sales taxes or other taxes where applicable.

.9 The amounts of all Subcontracts related to the specified price.

.10 Premiums on all insurance policies and bonds called for under this Contract as related to the specified price.

.11 Royalties for the use of any patented invention on the applicable Work.

.12 Fees for licences and permits in connection with the applicable Work.

.13 Duties and taxes imposed on the applicable Work.

.14 Such other expenditures in connection with the applicable Work as may be approved.

.15 Provided always that except with the consent of the Owner, the above items of cost shall be at rates comparable with those prevailing in the locality of the Work.

END OF SECTION

1.1 OCCUPANT'S USE OF EXISTING BUILDING

.1 The existing building will remain in full use and occupancy throughout the duration of construction except as noted below.

.2 All work shall be organized around Pier 21's operational schedule.

.3 Ensure that proper and safe means of egress from all existing exits to open spaces are provided at all times to the approval of jurisdictional authorities.

.4 Provide dust proof partitions to seal all areas under construction from the remainder of the building.

1.2 SERVICES IN EXISTING BUILDING

.1 Ensure that existing services are not damaged during demolition and construction. Arrange with mechanical and electrical Subcontractors to immediately cut off and cap concealed services uncovered during Work.

.2 Do not interrupt mechanical or electrical services of the existing building except for temporary close-downs to make connections to new Work, and as approved in writing by prior arrangements. Give both the Architect and Pier 21 two working days notice in writing of intention to interrupt mechanical or electrical services in existing building in any area.

.3 In no case shall service interruptions affect the total area of the Pier 21 building.

.4 Should existing services be accidentally uncovered and disrupted, make complete restoration immediately and ensure adequate protection to avoid further disruption until alternative means of providing permanent continuation of the services are made.

.1 Make payment for Work specified in the foregoing at no additional cost to the Owner, if in the opinion of the Architect, such Work could have been foreseen at time of tendering and which has been caused by lack of proper care and protection.

.2 Payment for Work specified in the foregoing will be paid for as changes in the Work at standard rates established in the industry if, in the opinion of the Architect, such Work could not have been foreseen at time of tendering.

.3 Unless otherwise specified, restore services on which Work is performed to original condition.

1.3 MAKE GOOD ALL SURFACES DAMAGED BY NEW WORK INCLUDING BUT NOT LIMITED TO:

.1 Repair and Refinishing of all interior and exterior surfaces

.2 Replacement of ceiling, walls etc as required to install new services.

.3 Filling of redundant holes in ceilings, floors, walls, roof etc.

1.4 CRUISE SHIP TRAFFIC

.1 During days when Cruise Ships are in port the following activities will not be permitted except with prior permission from the Halifax Port Authority.

.1 Deliveries to the site.

.2 Work to the exterior of the building.

.2 The contractor shall organize the work accordingly at no additional cost to the owner.

.3 Tentative cruise ship schedules are available from the Halifax Port Authority,

1.5 MUSEUM/GALLERY EVENTS (REFER ALSO TO INSTRUCTIONS TO BIDDERS, ITEM 25)

.1 The contractor shall organize the work around Museum and Harbourside Gallery events accordingly at no additional cost to the owner.

.2 Pier 21 will confirm with the contractor dates and times of arranged events, to be incorporated into the Construction Schedule.

1.6 FIRE WATCH

.1 Provide a fire watch during all welding activities and for 4 hours post welding.

END OF SECTION

1.1 DESCRIPTION

.1 Co-ordination of the Work of all Sections of the Specification is the responsibility of the Contractor, including Work of Divisions 15 and 16.

.2 The Contractor's responsibilities include, but are not restricted to, co-ordination specified in this Section, unless specified otherwise.

1.2 QUALITY ASSURANCE

.1 Requirements of Regulatory Agencies: Coordinate requirements of jurisdictional authorities.

.2 Source Quality Control:

.1 Ensure that Work meets specified requirements.

.3 Job Records: Maintain job records and ensure that such records are maintained by Subcontractors.

1.3 SUBMITTALS

.1 Prepare schedule and expedite submission of specified submittals.

.2 Review submittals and make comments as specified in Section 01 30 00.

.3 Maintain a log of submittals to ensure their original submission on schedule, and their subsequent revisions and resubmissions.

1.4 PRODUCT DELIVERY, STORAGE & HANDLING

.1 Schedule delivery of products and provide delivery access and unloading areas.

.2 Make available areas for storage of products and construction equipment to meet specified requirements, and to ensure a minimum of interference with progress of the Work and relocations.

.3 Make available access for transference of stored products and construction

1.5 JOB CONDITIONS

.1 Ensure that Work proceeds under conditions meeting specified environmental requirements.

.2 Ensure that conditions within the building are maintained to meet specified environmental requirement.

.3 Ensure that protection of adjacent property and the Work is adequately provided and maintained to meet specified requirements.

1.6 WARRANTIES

.1 Ensure that warranties are provided as specified.

.2 Coordinate warranty conditions of interconnected Work to ensure that full coverage is obtained.

1.7 COORDINATION

.1 Coordinate all Work in each area and Work on which subsequent Work depends to facilitate mutual progress, and to prevent conflict between parts of the Work.

.2 Ensure that each Section makes known for the information of the Contractor and other Sections, the environmental and surface conditions required for the execution of its Work, and the sequence of others' Work required for installation of its Work.

.3 Ensure that each Section, before commencing Work, knows requirements for subsequent Work, and that each Section is assisted in the execution of its preparatory Work by Sections depending upon its preparation.

.4 Ensure that setting drawings, templates, and all other information necessary for the location and installation of materials, holes, sleeves, inserts anchors, accessories, fastenings, connections, and access panels are provided by each Section the Work of which requires cooperative location and installation by other Sections, and that such information is communicated to the applicable installer.

.5 Deliver materials supplied by one Section to be installed by another well before the installation begins.

.6 Sections giving installation information in error, or too late to incorporate in the Work, shall be responsible for having Work done which was thereby additionally made necessary.

.7 Remove Work installed in error which is unsatisfactory for subsequent Work.

1.8 METRIC/IMPERIAL DIMENSIONED COMPONENTS

.1 Install metric dimension components incorporated with imperial dimension construction only with the Architect's approval unless specified in SI.

.2 Such substitution will be approved only if components of the same dimension system are not available, and if they can be incorporated with minor dimensional adjustments with no effect on the total Work, sound construction and design intent.

.3 Submit proposal for substitution to Architect for his approval before components are fabricated for the Work.

1.9 CUTTING & PATCHING

.1 Cut and patch to provide for connection of new Work to existing work and where existing work is altered. Cutting shall be interpreted as providing new openings in construction. Cutting shall not provide for drilling of holes for fasteners of Work which shall be performed by Sections requiring the fasteners.

.2 Before cutting, drilling, or sleeving structural load bearing elements, obtain approval of location and methods.

.3 Do not endanger Work or property by cutting, digging, or similar activities. No Section shall cut or alter the Work of another section unless approved by the Section which has installed it.

.4 Cut and drill with true smooth edges and to minimum suitable tolerances.

.5 Fit construction tightly to ducts, pipes and conduits to stop air movement completely. The Section performing Work that penetrates a fire, air, vapour, moisture, thermal or acoustic separation element of the building shall pack voids tightly with rock wool; seal air, vapour and moisture barriers; and caulk joints as may be required to ensure that no air movement through the penetration is possible.

.6 Cutting, drilling and sleeving of Work shall be done only by the Section which has installed it. The Section requiring drilling and sleeving shall inform the Section performing the Work of the location and other requirements for drilling and sleeving. The Contractor shall directly supervise performance of cutting and patching.

.7 Replace, and otherwise make good, damaged Work.

.8 Cutting and Patching for Holes Required by Mechanical and Electrical Work:

.1 Include under Work of Divisions 15 and 16 cutting or provision of holes up to 8" in diameter and related patching.

.2 Include under Work of this Section holes and other openings larger than 8" in diameter or least dimension, and chases, bulkheads, furring and required patching. This Section shall be responsible for determination of Work required for holes in excess of 8" diameter or least dimension.

.3 Include under Work of this Section all other cutting and patching required by the Work except for holes up to 8" provided by Divisions 15 and 16.

.4 Patching or replacement of damaged Work shall be done by the Subcontractor under whose Work it was originally executed, and at the expense of the Subcontractor who caused the damage.

.5 Make patches invisible in final assembly.

END OF SECTION

1.1 JURISDICTIONAL AUTHORITIES

.1 Where reference is made to jurisdictional authorities, it shall mean all authorities who have within their constituted powers the right to enforce the laws of the place of building.

1.2 DEFINITIONS

.1 The "Constructor" named in the Construction Safety Act, Chapter 52, Revised Statues of Nova Scotia, as amended by 1972, Chapter 25; and Construction Safety Regulations, pursuant to Chapter 52 R.S.N.S., including any amendments, shall mean the "Contractor" for the Work performed under this Specification.

1.3 REQUIREMENTS OF REGULATORY AGENCIES

.1 Ensure that pollution and environmental control of construction activities are exercised as required during the Work.

.2 Except where special permission is obtained, maintain clear access on public sidewalks and roads.

.3 Maintain sidewalks and roads clear of construction materials and debris, including excavated material. Clean sidewalks and roads as frequently as required to ensure that they are cleared of materials, debris and excavated material.

1.4 REFERENCE STANDARDS

.1 Where edition date is not specified, consider that references to manufacturer's and, published codes, standards and specifications are made to the latest edition, or revision approved by the issuing organization, current at the date of this Specification.

.2 Reference standards and specifications are quoted in this Specification to establish minimum standards. Work which in quality exceeds these minimum standards shall be considered to conform.

.3 Should the Contract Documents conflict with specified reference standards or specifications the General Conditions of the Contract shall govern.

.4 Where reference is made to manufacturer's directions, instructions or specifications they shall include full information on storing, handling, preparing, mixing, installing, erecting, applying, or other matters concerning the materials pertinent to their use and their relationship to materials with which they are incorporated.

.5 Have a copy of each code, standard and specification, and manufacturer's directions, instructions and specifications, to which reference is made in this Specification, always available at construction site.

END OF SECTION

1.1 PRECONSTRUCTION MEETING

.1 Within 7 days after award of Contract, arrange a meeting between the Architect, Consultants, Subcontractors, Project Superintendents, Inspection and Testing Company Representatives, and Representatives of others whose coordination is required during construction.

.2 Discuss at the meeting the means by which full cooperation and coordination of the participants during construction can be achieved.

.3 Document the responsibilities and necessary activities of the participants during construction as discussed, and distribute to each participant.

.4 Establish procedures for maintenance and completion of Project record drawings specified in Section 01 70 00.

1.2 PROGRESS MEETINGS

.1 Invite representatives of the Project Consultants to attend site meetings once every two weeks called by the Contractor during the progress of the Work or at the request of the Architect to discuss with his Subcontractor's project scheduling, document interpretation and completion.

.2 Inform the Owner, Construction Manager, Project Manager, Architect and Project Consultants of each meeting and of the proposed agenda a minimum of 5 days before meeting.

.3 Submit proposed schedule of site meetings to Architect and Project Manager.

.4 Record, prepare, and distribute minutes of each meeting to the Owner and to each other participant.

.5 Ensure that all representatives who attend meetings have the authority to conduct business on behalf of firms they represent.

END OF SECTION

1.1 GENERAL

.1 Make submittals specified in this Section to Architect unless otherwise specified, with additional submissions made, in manner he directs, to other parties involved with construction of the Project as their interests are concerned. These parties are, but shall not be restricted to, consultants, jurisdictional authorities, and subcontractors whose Work must be coordinated with Work related to submittals.

.2 Ensure that; submissions are made to allow sufficient time for review without the construction schedule being delayed.

1.2 DOCUMENT SUBMISSIONS REQUIRED

.1 At commencement of Contract:

.1 Performance and Payment Bonds (where applicable).

.2 Public Liability and Property Damage Insurance Certificate.

.3 All Risk Insurance.

.4 List of Subcontractors by firm name.

.5 Construction Schedule and other required schedules and estimates.

.6 Permits as required by the Work.

.2 During Construction:

.1 Weekly progress reports.

.2 Job-meeting reports and minutes.

.3 Updated construction schedules.

.4 Shop drawings as indicated.

.5 Inspection and test reports.

.6 Job mockups as required.

.3 Submissions at completion of Work are specified in Section 01 70 00, Contract Closeout.

1.3 CONSTRUCTION SCHEDULES

.1 Submit proposed construction schedule at beginning of Project, as specified in Section 01 01 00.

.2 As construction progresses, submit up-dated construction schedules each month to Owner, Construction Manager, Architect, Project Manager, and to each Subcontractor who is included on Schedule.

1.4 SHOP DRAWINGS

.1 Refer to Article GC 3.11 of the General Conditions of Contract and the following.

.2 Do not order delivery of items requiring shop drawings until the shop drawings for those items have been reviewed by the Consultants.

.3 Submit shop drawings for which submission requirement is specified in other Sections of this Project Manual. Include in final shop drawing submissions to Contractor detailed information, templates and installation instructions required for incorporation and connection of the Work concerned.

.4 With each submission, the Contractor shall indicate changes from the Contract Drawings and Specifications that have been incorporated in the shop drawings. Review of such shop drawings incorporating changes shall not relieve the Contractor from responsibility for errors in the shop drawings, or for changes made from the Contract Drawings and Specifications which are not indicated or otherwise communicated in writing with the submission.

.5 Shop drawing review by Architect or Consultants is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Architect or Consultants 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 his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains to solely to fabrication processes or to techniques of construction and installation and for coordination of the Work of all sub-trades.

.6 Show on shop drawings:

.1 Clear and obvious notes of any proposed changes from Drawings and Specifications.

.2 Fabrication and erection dimensions.

.3 Details to indicate construction arrangements of the parts and their connections, and interconnections with other Work.

.4 Location and type of anchors, and exposed fastenings.

.5 Materials and finishes.

.6 Descriptive names of equipment.

.7 Mechanical and electrical characteristics when applicable.

.7 Submit shop drawings folded into 8 1/2" x 11" size with title block showing "Project Number" appearing on outside. Five copies of engineering data sheets, catalogue cuts and standard diagrams may be substituted for shop drawings where applicable. Eight white prints of all shop drawings are required otherwise.

.8 The Contractor shall check, sign, and make notations he considers necessary on shop drawings before each submission.

.9 Shop drawings which require extensive correction will be sent back for revisions and resubmission. Three white prints will be returned.

.10 Otherwise shop drawings will be sent back with review comments only. Two white prints will be retained and the other copies returned.

.11 Only drawings noted for revision and resubmission need to be resubmitted.

.12 Do not add new details or information to shop drawings after they have been finally reviewed, except when approval is given.

.13 Do not proceed with Work dependent on shop drawings information until approval is given and verification received from Contractor. Approval shall not relieve the Contractor of his responsibility for execution of Work in accordance with Contract Documents.

1.5 RECORD DRAWINGS

.1 Record, as the Work progresses, changes and deviations in the location of Work concealed by the finished Work, and such other approved changes that occur during progress of the Work, and such other approved changes that occur during progress of Work, to ensure that an accurate record is provided for future maintenance and alterations.

.2 Submit record drawings at completion of Work, prepared and signed by a Surveyor licensed to practice in Nova Scotia showing the actual location of buildings and all underground services. Final acceptance of the Work will be predicated on receipt and approval of record drawings.

END OF SECTION

1 GENERAL

1.1 SECTION INCLUDES

.1 This Project shall generate the least amount of waste possible. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

.2 For generated waste, consider salvage, reuse and recycling opportunities, where economically feasible. Divert a minimum of 75% (by weight) of construction waste materials from disposal in landfills.

.3 Referring to these goals, the General Contractor will oversee a Waste Reduction Work Plan (WRW) for this project. All Trade Contractors will be expected to take part in this plan by assisting with developing the plan, Providing tracking forms and performing on-site waste separation and Disposal to the appropriate bins provided and paid for by the General Contractor.

1.2 DEFINITIONS

.1 Waste Audit (WA): Involves measuring and estimating quantity and composition of waste, reasons for waste generation, and operational factors that contribute to waste.

.2 Waste Reduction Work plan (WRW): Written report, which addresses opportunities for reduction, reuse, or recycling of materials.

.3 Trip Log Form (TLF): Tracking form for each transported load of reusable, recyclable or waste material. To be prepared by Trade Contractor on a weekly basis and be available for review by the general contractor.

.4 Materials Source Separation Program (MSSP): Consists of a series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.

.5 Waste Management Coordinator (WMC): Designated individual who is in attendance on site, full-time. Designate, or have designated, individuals from each Trade Contractor to be responsible for waste management related to their trade and for coordinating waste management activities with WMC.

1.3 DOCUMENTS

.1 All Trade Contractors are to maintain at job site, one copy of following documents:

.1 Waste Audit Sheet (see Schedule A),

.2 Waste Management Work plan (see Schedule B), and

.3 Trip Log Forms (see Schedule C).

1.4 USE OF SITE AND FACILITIES

.1 Execute waste management work with least possible interference or disturbance to the construction process.

1.5 SUBMITTAL

.1 The General Contractor to prepare and submit a Waste Management Work plan (Schedule B) and the Summary Tracking Form (Schedule D), Attached to this section.

1.6 WASTE REDUCTION RESPONSIBILITIES

.1 General Contractor and Trade Contractors are to assess construction procedures and material orders to minimize temporary use items.

.2 Each Trade Contractor is to ensure that packaging material shall protect all products from damage or deterioration, while at the same time reduce the amount of waste generated from packaging.

.3 The General Contractor is responsible to monitor the separation, storage, and transportation of all streams of reusable, recyclable and disposable material. The General Contractor and Trade Contractors shall use the Trip Log Form (Schedule C) to ensure the transportation of these materials to an appropriate re-use, recycling, or disposal site/facility and shall comply with proper waste handling procedures.

.4 Workers are to work in a productive and non-wasteful manner ensuring that temporary and permanent installations are protected from misuse and remain undamaged from construction activities.

1.7 MATERIALS SOURCE SEPARATION PROGRAM

.1 The General Contractor will designate an area for recycling/waste material separation and storage, without hindering daily operations.

.2 The General Contractor is to use designated area for own collection, handling, and storage of anticipated quantities of reusable, recyclable, and/or waste materials.

.3 General Contractor is to transport reusable and recyclable materials in separated condition. Transport salvageable material to approved and authorized recycling or re-use facility.

.4 Trade Contractors are responsible to provide own recycling/waste containers and place them in area designated by General Contractor. Each Trade Contractor shall attempt to minimize material damage.

1.8 DISPOSAL OF WASTES

.1 Burying of rubbish and waste materials on site is strictly prohibited.

.2 Disposal of waste into waterways, storm, or sanitary sewers is strictly prohibited.

1.9 STORAGE, HANDLING AND PROTECTION

.1 The General Contractor shall store materials to be reused, recycled or salvaged in designated locations.

.2 Unless specified otherwise, all generated recyclable and waster material generated by the Trade Contractors are the property and responsibility of the Trade Contractors.

.3 Separate non-salvageable materials (waste) from salvageable materials. Schedule, transport and deliver waste to licensed disposal facility.

.4 Remove from site all materials and waste not to be incorporated into the work.

1.10 SCHEDULING

.1 Coordinate work with other activities at site to ensure timely and orderly progress of the work.

2 PRODUCTS

2.1 NOT USED

.1 Not Used.

3 EXECUTION

3.1 APPLICATION

.1 Each Trade Contractor is to handle own generated waste materials in accordance with appropriate regulations and codes.

.2 Each Trade Contractor is to complete a Waste Audit Sheet (see Schedule A), Waste Management Work plan (see Schedule B), and Trip Log Form (see Schedule C).

3.2 CLEANING

.1 Each Trade Contractor is to remove tools and waste materials on completion of work, and leave work area in clean and orderly condition.

.2 Each Trade Contractor is to maintain clean work area as work progresses.

3.3 TRADE CONTRACTOR PROCEDURES

.1 REDUCE:

.1 Reduce potentially wasteful items (i.e. one-use items, disposable items), and substitute with reusable items.

.2 Minimize packaging requirements, provided they do not limit the protection of the supplied items (as damaged goods re-enter the waste stream at some point, and must be replaced by new goods.)

.2 REUSE:

.1 Reuse temporary materials on site whenever possible.

.2 Salvage value of all debris to be assessed for potential resale to other parties for viable re-use.

.3 RECYCLE:

.1 Separate waste streams per local Waste Reduction Work plan.

.2 Schedule and transport all recyclable materials to the appropriate facilities. Use Trip Log Form (see Schedule C) to track each transported load.

.4 DISPOSE:

.1 Dispose of construction debris (unable to be reused or recycle) in separated waste streams as outlined in the Waste Reduction Work Plan.

Schedule A

WASTE AUDIT SHEET

Company Name:	
Contact Name:	
Address:	
Telephone: Mobile Phone: Fax:	Signature: Date:

Material	Quantity of new material	Unit	Estimated Waste %	Estimated weight of waste (kg)	Estimated volume of waste (m^3)

Schedule B
WASTE MANAGEMENT WORKPLAN

Material Type	Source	Person/Trade Responsible	Diverted Amount Projected (Kg or m^3)	Actual	Destination (see list below)
Hazardous materials					.7
Wood (clean)					.1, .3, .6
Gypsum Board (clean)					.1, .3, .6
Treated wood					.3
Metals, separated					.3, .4
Concrete, masonry, asphalt and other aggregates.					.1, .2
Plastic packaging, Separated					.3
Cardboard, separated.					.3, .5
Paper, separated					.5
Other waste					.3, .6

Processing sites: The following list contains local markets for recyclable materials. This list is provided for information only and is not necessarily comprehensive; other haulers and markets are acceptable.

.1 Reused on-site where possible.

.2 Aggregate (brick, block, concrete, asphalt, etc.) will be classed as sorted C&D waste. To reduce disposal costs, a local "clean fill" site should be sought.

.3 Local Waste Facilities:

Schedule C
TRIP LOG FORM

This form is to be used by the General Contractor and Trade Contractors to record all reusable, recyclable and waste materials leaving the construction site.

DATE: _____ PROJECT: _____ PROJECT NO. _____

TIME: _____ LOCATION: _____

MATERIAL: ❑ WOOD ❑ AGGREGATE ❑ METAL ❑ HAZ. WASTE

❑ PLASTIC ❑ ROOFING ❑ INSULATION ❑ CARDBOARD ❑ DRYWALL

❑ CARPET ❑ GLASS ❑ MIXED ❑ OTHER _____

TRANSPORT TYPE: ❑ ½ T ❑ 1 T ❑ 5T ❑ TANDEM ❑ TRAIL. DUMP

ROLLOFF BIN: ❑ 20 yd. ❑ 30 yd. ❑ 40 yd. ❑ 50 yd. ❑ Other

COMPANY: _____

HOW FULL: ❑ > ½ ❑ ½ ❑ ¾ ❑ FULL

EST. VOLUME: cu. yd. / m

EST. WEIGHT (if applicable): tonnes

DESTINATION: _____

SIGNATURE FOR RECEIPT: _____

OUTCOME: ❑ Reuse ❑ Recycle ❑ Fill on Site
❑ Compost ❑ Landfill ❑ Other

COMMENTS:

RECORDED BY:

END OF SECTION

1 RELATED DOCUMENTS

.1 General Conditions

2 DOCUMENTS

.1 Submit to the Consultant and Project Manager, Schedule of Values prior to commencement of Work.

.2 Use Schedule of Values as basis for Contractors Progress Claim.

3 FORM OF SUBMITTAL

.1 Form included at end of this Section.

4 PREPARING SCHEDULE OF VALUES

.1 Itemize separate line item cost for work required.

.2 Round off figures to nearest end dollars.

.3 Submit separate Schedule of Values for: Project having clearly defined stages or phases.

.4 The sum of all values listed in the schedule shall equal the total contract sum.

5 REVIEW AND RESUBMITTAL

.1 After review by Consultant and Project Manager, revise and resubmit Schedule as directed.

.2 The form shall be completed and supported by such evidence as to its correctness as the Consultant and Project Manager may reasonably direct.

SCHEDULE OF VALUES

Project Name: _____

Consultant: _____

Contractor: _____

Date: _____

ITEM	DESCRIPTION	ITEM AMOUNT
1.	**GENERAL REQUIREMENTS**	_____
.1	Mobilization & Initial Expenses	_____
.2	Site Overhead & Fee	_____
.3	Bonds	_____
.4	Certificates	_____
.5	Testing	_____
.6	Construction Facilities and Temporary Controls	_____
.7	Other (Specify) _____	_____
	Total (Items 1.1 to 1.7)	
2.	**SITEWORK**	
.1	Demolition	_____

ITEM	DESCRIPTION	ITEM AMOUNT
.2	Excavating, Backfilling & Compacting (Structures)	_____
.3	Fill Below Grade Slabs	_____
.4	Site Drainage and Utilities	_____
.5	Other (Specify) _____	_____
	Total (Items 2.1 to 2.15)	_____
4.	**MASONRY**	_____
.1	Unit Masonry (Existing Wall).	_____
.2	Masonry Reinforcement & Tying	_____
.3	Other (Specify) _____	_____
	Total (Items 4.1 to 4.3)	
5.	**METALS**	_____
.1	Structural Framing	_____
.2	Miscellaneous	_____
.3	Other (Specify)_____	_____
	Total (Items 5.1 to 5.3)	
6.	**WOOD & PLASTICS**	_____
.1	Rough Carpentry	_____
.2	Architectural Woodwork	_____
.3	Other (Specify) _____	_____
	Total (Items 6.1 to 6.3)	

ITEM	DESCRIPTION	ITEM AMOUNT
7.	**THERMAL & MOISTURE PROTECTION**	_____
.1	Thermal Insulation (Internal Walls)	_____
.2	Firestopping	_____
.3	Sealants & Caulking	_____
.4	Other (Specify) _____	_____
	Total (Item 7.1 to 7.4)	
8.	**DOORS & WINDOWS**	_____
.1	Metal Doors & Frames	_____
.2	Wood Doors	_____
.3	Curtain Wall	_____
.4	Hardware	_____
.5	Interior Glass and Glazing	_____
.6	Other (Specify) _____	_____
	Total (Items 8.1 to 8.6)	
9.	**FINISHES**	_____
.1	Gypsum Board and Support Systems	_____
.2	Special Coatings	_____
.3	Interior Painting	_____
.4	Wall Coverings	_____
.5	Other (Specify) _____	_____
	Total (Items 9.1 to 9.14)	

ITEM	DESCRIPTION	ITEM AMOUNT
10.	**SPECIALTIES**	_____
.1	Visual Display Boards/Cases	_____
.2	Louvres/Vents/Grilles	_____
.3	Fire Protection Specialties	_____
.4	Operable Partitions	_____
.5	Other (Specify) _____	
	Total (Items 10.1 to 10.5)	
15.	**MECHANICAL** Refer to 13930 and 15011	_____
16.	**ELECTRICAL** Refer to 16011	_____

Signature _____

END OF SECTION

1.1 GENERAL

.1 Related Requirements Specified Elsewhere

.1 Inspections and testing required by laws, ordinances, rules and regulations of jurisdictional authorities are found in: General Conditions of the Contract.

.2 Verification by affidavits and certification that specified products meet requirements of reference standards: In applicable Sections of the Specification.

.3 Testing, balancing and adjusting of equipment: In applicable mechanical and electrical Sections of the Specification.

.4 Cutting and Patching: Section 01 04 10.

1.2 TOLERANCES FOR INSTALLATION OF WORK

.1 Unless acceptable tolerances are otherwise specified in a Section:

.1 "plumb and level" shall mean plumb or level within 1/8" in 10'-0".

.2 "square" shall mean not in excess of 10 seconds less or greater than 90°.

.3 "straight" shall mean within 1/8" under a 10'-0" long straightedge.

1.3 INSPECTION & TESTING

.1 This Section establishes requirements for performance of inspection and testing specified under Source Quality Control and Field Quality Control in other Sections of the Specification.

.2 Do not limit responsibility for ensuring that products and execution of the Work meet Contract requirements, and inspection and testing required to this end, to inspection and testing specified in this Section.

.3 The General Contractor shall be responsible for testing of all systems as a dynamic whole, and the failure of any one element of the construction will mean the failure of the whole. All remedial work will be the responsibility of the General Contractor, before acceptance of the building.

END OF SECTION

1 General

1.1 DESCRIPTION

.1 This Section specifies requirements for handling of a hazardous materials, working in potentially hazardous situations, and for potential exposure to harmful materials.

.2 Adhere to the Nova Scotia Occupational Health and Safety Act and Regulations, Codes of Practice and Guidelines.

.3 Supply all labour and equipment, conduct tests, take precautions, produce and maintain a Health and Safety Plan suitable for the nature of the work, keep records, maintain trained personnel on site, and maintain a safe work place during all work as specified herein.

1.2 REQUIREMENTS INCLUDED

.1 The provisions of this Section shall apply to all Sections.

1.3 POTENTIAL HAZARDS

.1 Inform the Architect immediately of any suspected contaminant in the work area not identified herein.

.2 The Contractor shall become familiar with all potential hazards associated; with the work, and shall take necessary measures to avoid injury or damage of any kind.

1.4 HEALTH AND SAFETY PLAN

.1 Prior to commencement of the Work, prepare a detailed Health and Safety Plan. The Health and Safety Plan shall comply with the provisions of this Section, and shall illustrate the Contractor's knowledge and understanding of health and safety aspects of the Work, the Contractor's intention to maintain a high level of safety on site.

1.5 TESTING AND MONITORING

.1 Test and monitor for hazardous conditions, as required to demonstrate compliance with provincial regulations.

.2 If multiple locations are being worked simultaneously, provide monitoring at all locations where work is being carried out, including providing additional monitoring instruments.

1.6 SITE SAFETY OFFICER

.1 Appoint a responsible member of the work force as Site Safety Officer (SSO). The selection of the SSO will be subject to the approval of the Architect, and changes shall be made as requested by the Architect. The SSO shall be

responsible for ensuring that all provisions of the health and Safety Plan and relevant legislation are implemented. The SSO shall ensure that all monitoring and testing, as specified and at the direction of the Architect, are conducted. The SSO shall maintain records of all readings that are taken by the Contractor. The SSO shall report any abnormal or dangerous situations to the Architect, after having implemented emergency measures, as required, and work shall not continue or proceed until the situation has been rectified.

.2 The SSO shall be authorized to act on behalf of the Contractor on all matters related to Health and Safety.

1.7 PERSONAL PROTECTIVE EQUIPMENT

.1 Use personal protection equipment as specified.

.2 Training of workers in the proper use, fitting inspection and storage of personal protective equipment shall be done prior to use of the equipment.

1.8 SANITATION/DECONTAMINATION PRACTICES

.1 After each use, all disposable protective equipment shall be collected in a dedicated container for disposal.

.2 All respiratory equipment shall be decontaminated daily after use.

.3 All tools, pumps and equipment used during cleanup should be dedicated to the handling of contaminants and labelled as such and thoroughly decontaminated at the completion of the project.

.4 Contaminated work clothing will not be worn outside of regulated areas.

.5 Workers shall wash their hands and exposed skin before eating, drinking, smoking or using toilet facilities during the work shift, and at the completion of a work shift.

.6 Food, drink and tobacco products shall not be permitted in regulated areas.

1.9 RECORD KEEPING

.1 All activities associated with Health and Safety shall be recorded daily in a bound notebook. Include as a minimum: activity date, time, location of occurrence, mitigation action taken and results. Records shall be assessed by the Architect.

1.10 OPEN FLAMES, SPARKS, EXPLOSION PROTECTION

.1 Keep open flames and sparks to a minimum. When flame or sparks are required, follow proper procedures to prevent fire or explosion.

1.11 SITE SAFETY MEETINGS

.1 An orientation meeting shall be held with all workers at the start-up of the work, to review the Health and Safety aspects of the work.

.2 An orientation meeting shall be held for each new worker on the site following the initial orientation meeting.

1.12 SUSPENSION OF ACTIVITIES

.1 Exposure to contaminants shall be controlled so that no worker is exposed to contaminants at a concentration greater than the Time Weighted Average (TWA) concentration for the contaminant, for up to a 10 hour workday, 40 hour work week.

.2 The Contractor will halt activities where due to unsafe conditions. All costs relating to suspension of work for Contractor's failure to maintain Health and Safety procedures shall be borne by the Contractor.

1.13 BASIS FOR PAYMENT

.1 No separate payment will be made for preparation implementation and enforcement of the Health and Safety Plan.

END OF SECTION

1.1 GENERAL

.1 Include in the work construction and temporary facilities required as construction aids or by jurisdictional authorities, or as otherwise specified. Install to meet needs of construction as work progresses.

.2 Include in the work construction and temporary facilities to provide for construction safety such as: fences, barricades, bracing, supports, storage, sanitation and first aid facilities, fire protection, stand pipes, electrical supply, temporary heat, temporary water etc., ventilation, construction equipment with its supports and guards, stairs, ramps, platforms, runways, ladders, scaffolds, guardrails, temporary flooring, rubbish chutes, and walkway, morality and guard lights, and as otherwise required of the Constructor by the Construction Safety Act, of the Province of Nova Scotia, as well as all other applicable regulations or jurisdictional authorities.

.3 Ensure that structural, mechanical and electrical characteristics of temporary facilities are suitable and adequate for use intended. Be responsible that no harm is caused to persons and property by failure of temporary facilities because of placing, location stability, protection, structural sufficiency, removal, or any other cause.

.4 Relocate construction and temporary facilities as required by the progress of the work, and remove at completion of work.

.5 Provide an on-site job office, including space for use by the Architect's Representative, during construction and remove upon completion.

1.2 SERVICES

.1 Temporary Electric Power:

.1 Provide electric power for all construction purposes. Make connections available to any part of the work within distance of 100'-0" extension. Provide power at temporary storage sheds and field office.

.2 Install electric service distribution conductors and necessary components. Determine anticipated demand which will be place on service during normal peak periods and obtain approval on this basis before making installation. Supply power of characteristics required by the Work. Install a power center for miscellaneous tools and equipment for each major building floor area with weatherproof distribution box, a minimum of four 20 amps grounded outlets, and circuit breaker protection for each outlet.

.2 Temporary Lighting:

.1 Install lighting for:

.1 Emergency evacuation, safety and security throughout the project at intensity levels required by jurisdictional authorities.

.2 Performance of work throughout work areas as required, evenly distributed, and at intensities to ensure that proper installations and applications are achieved.

.3 Performance of finishing work in areas as required, evenly distributed and of an intensity of at least 15 foot candles.

.2 Permanent lighting may be used during construction, provided lamps, fluorescent tubes and ballasts that are so used are replaced with new at time work is turned over to Owner, provided that fixtures, lamps and lenses are completely cleaned.

.3 Temporary Heat:

.1 Heat the building during construction and completion of finish Work to ensure a minimum temperature of 15 deg. C. and to maintain temperature for working, surface, and curing conditions required by all specified materials. Use only oil or propane fired heaters with enclosed combustion chamber vented to exterior in accordance with good practice and safety regulations, and as approved. Do not use salamanders.

.2 Take care that heating units are placed so that formwork and its supports are not endangered, that no material is damaged by excessive heat.

.4 Telephone & Fax:

.1 Provide and pay for a telephone and Facsimile machine in the job office with a put-outside bell. This telephone or an extension will be available for use by the Architect's representative.

.5 Temporary Water Supply:

.1 Provide water of potable quality for all construction purposes, at one location at least, on each floor area.

.6 Sanitary Facilities:

.1 Provide and maintain adequate sanitary facilities for use by the workmen throughout the work to the Architect's approval. On completion, remove the facility entirely from the site.

.7 Maintain fire protection as required by jurisdictional authorities.

.8 Connections to Utilities:

.1 Make arrangements for connections to water, sewers, electric, and telephone utilities as required for temporary use during construction.

.2 Pay connection and disconnection charges, and for use of services required by construction.

1.3 CONSTRUCTION AIDS

.1 Hoists & Cranes: Select, operate and maintain hoisting equipment and cranes as may be required. Operate such equipment only by qualified hoist or crane operators. Make hoist available for Work of each Section.

.2 Scaffolding: Each user of scaffolding shall be responsible for its examination and testing for sufficiency before using it. He shall make it secure if necessary, or shall notify the Contractor in writing that he will not commence work until it is made secure; otherwise he will be held responsible for accidents due to its insufficiency.

.3 Barriers: Install barricades for traffic control, and to prevent damaging traffic over exterior and interior finished areas, as well as safety barricades and otherwise, as may be required.

1.4 PROTECTION

.1 Protect roofs by substantial temporary construction to ensure that no damage occurs. Provide protection by materials of sufficient thickness to prevent all damage to structure and finish, and to waterproofing qualities of membranes, whenever each of these individual components are exposed. Damage shall include harm resulting from all construction work, such as falling objects, wheel and foot traffic, failure to remove debris, operation of machinery and equipment, and scaffolding and hoisting operations. Positively secure protection to prevent displacement from any cause.

.2 Box with wood or otherwise protect from damage by continuing construction: finished sills, jambs, corners, and the like.

1.5 SECURITY

.1 It will be the sole responsibility of the General Contractor to ensure that the site and the work are secured against fire and damage from the elements and from damage to the work or theft of materials.

END OF SECTION

1.1 DESCRIPTION

.1 This Section specifies the minimum requirements for prevention of releases resulting from Contract work to the environment, and for prevention of cross-contamination of environmental media.

1.2 REQUIREMENTS INCLUDED

.1 The provisions of this Section shall apply to all sections.

1.3 REGULATORY REQUIREMENTS

.1 Comply with all applicable legislation, including, but not limited to:

.1 Nova Scotia Environment Act and regulations.

3 Execution

3.1 PRECAUTIONARY MEASURES

.1 Take every and all precautions to prevent discharge of materials to the environment. This requirement shall be regarded as paramount. All necessary precautions, material, equipment and labour for the prevention of discharges shall be included in the Contract.

.2 Do not conduct work involving contaminated materials during precipitation.

.3 The Contractor shall report to the Architect all spills on site of substances introduced to the site by the Contractor, e.g. fuel, lubricant. Adhere to spill reporting requirements as outlined in provincial and federal legislation.

.4 The Contractor shall take all necessary measures to remedy the effects of any spills, whether of hazardous or non-hazardous substances, and shall assume full financial liability for all such remediation measures.

.5 All rubbish and waste generated by the contractor shall be taken off site by the contractor. Regulated wastes shall be disposed of in accordance with applicable municipal, provincial and federal requirements.

3.2 DUST CONTROL

.1 The Contractor shall take such steps as may be required to prevent dust nuisance resulting from his operations.

.2 Where the work requires the sawing of asphalt or the sawing or grinding of concrete, blades and grinders of wet type shall be used together with sufficient water to prevent the incidence of dust. The cost of all such preventive measures shall be borne by Contractor.

3.3 STOCKPILING

.1 Contaminated excavated and demolished materials shall be stockpiled so as to prevent spread of contamination.

3.4 DISPOSAL OF WASTES

.1 Waste volatile materials, such as mineral spirits, oil or paint thinners will not be disposed in landfills, waterways, storm or sanitary sewers. Disposal of these materials will be in accordance with appropriate guidelines and regulations.

3.5 DRAINAGE

.1 Do not pump water containing suspended materials into waterways, sewers or off site drainage systems.

.2 Control disposal or run-off of water containing suspended materials or other harmful substances in accordance with local authority requirements.

3.6 POLLUTION CONTROL

.1 Control emissions from equipment and plant to local authority's emission requirements.

.2 Cover or wet down dry materials and rubbish as required to prevent blowing dust and debris. Provide dust control for temporary roads and open excavations. Contractor shall be responsible for spraying buildings to control dust.

.3 Spills:

.1 Submit procedures for interception, rapid clean-up and disposal of spillages that may occur, for the Engineer's review, prior to commencing work.

.2 Be prepared at all times to intercept, clean-up and dispose of any spillage that may occur.

.3 Keep all materials required for clean-up of spillages readily accessible on site.

.4 Report immediately any spills causing damage or potential damage to the environment to Environment Canada (Environmental Emergencies) 426-6030.

3.7 PAYMENT

.1 No separate pay item shall apply to the requirements of this Section. Costs shall be included in the bulk sum portion of the contract which this Section applied to.

END OF SECTION

1.1 GENERAL

.1 Products refer to materials, manufactured components and assemblies, fixtures and equipment incorporated in the Work.

.2 Use only products of Canadian manufacture unless such products are not manufactured in Canada, are specified otherwise, or are not competitive.

.3 Production for use in the Project and on which the Tender was based shall be in product at that time, with a precise model and shop drawings available for viewing.

.4 Where alternatives are proposed under "substitution of products", these products claimed by the Contractor as equivalent shall be comparable in construction, type, function, quality, performance, and, where applicable, in appearance, as approved.

.5 Incorporate products in the Work in strict accordance with manufacturer's directions unless specified otherwise.

.6 Products delivered to the Project site for incorporation in the Work shall be considered the property of the Owner. Maintain protection and security of products stored on the site after payment has been made for them.

.7 Do not install permanently incorporated labels, trademarks and nameplates, in visible locations unless required for operating instructions or by jurisdictional authorities.

1.2 SPECIFIED PRODUCTS

.1 Products specified by manufacturer's name, brand name or catalogue reference shall be the basis of the bid and shall be supplied for the Work without exception in any detail, subject to allowable substitutions as specified.

.2 Where several proprietary products are specified, any one of the several will be acceptable.

.3 For products specified by reference standards, the onus shall be on the supplier to establish that such products meet reference standard requirements. The Architect may require affidavits from the supplier or inspection and testing at the expense of the supplier, or both, to prove compliance. Products exceeding minimum requirements established by reference standards will be accepted for the Work if such products are compatible with the and harmless to Work with which they are incorporated.

1.3 SUBSTITUTION OF PRODUCTS DURING PROGRESS OF WORK

.1 Products substituted for those specified or approved, or both, shall be permitted only if the listed product cannot be delivered to maintain construction schedule and if the delay is caused by conditions beyond the Contractor's control.

.2 Obtain approval for substitutions. Application for approval of substitutions shall be made only by Contractor. Process proposals for substituted Work in accordance with procedures established for changes in the Work.

.3 Submit with request for substitution documentary evidence that substituted products are equal to, or superior to, approved products, and a comparison of price and delivery factors for both specified or approved products, and proposed substitute.

.4 Ensure that substituted products can be both physically and dimensionally incorporated in the Work with no loss of intended function, performance, space or construction time, and that spare parts and service are readily available. The Contractor shall be responsible for additional installation costs, including architectural and engineering fees, required by incorporation of substituted products, and for adaptations made otherwise necessary to ensure that above requirements are satisfied.

1.4 PRODUCT HANDLING

.1 Manufacture, pack, ship, deliver, and store products so that no damage occurs to structural qualities and finish appearance, nor in any other way detrimental to their function or appearance, or both.

.2 Ensure that products, while transported, stored or installed, are not exposed to an environment which would increase their moisture content beyond the maximum specified.

.3 Schedule early delivery of products to enable Work to be executed without delay. Before delivery, arrange for receiving at site.

.4 Deliver packaged products, and store until use, in original unopened wrapping or containers, with manufacturer's seals and labels intact.

.5 Label packaged products to describe contents, quantity and other information as specified.

.6 Product handling requirements may be repeated, and additional requirements specified, in other Sections.

1.5 DEFECTIVE PRODUCTS AND WORK

.1 Products and Work found defective; not in accordance with the Specifications; or defaced or injured through negligence of the Contractor, his employees or subcontractors, or by fire, weather or any other cause will be rejected for incorporation in the Work.

.2 Remove rejected products and Work from the premises immediately.

.3 Replace rejected products and Work with no delay after rejection. Provide replacement products and execute replacement Work precisely as required by the Specification for the defective Work replaced. Previous inspection and payment

shall not relieve the Contractor from the obligation of providing sound and satisfactory Work in compliance with this Project Manual.

1.6 WORKERS, SUPPLIERS, AND SUBCONTRACTORS

.1 Assign Work only to workers, suppliers, and Subcontractors who have complete knowledge, not only of the conditions of this Project Manual, but of jurisdictional requirements, and reference standards and specifications.

.2 Give preference to use of local workers, suppliers, and Subcontractors wherever possible.

1.7 WORKMANSHIP

.1 Unless otherwise specified in a more detailed manner, workmanship shall be of the highest quality recognized by trade executing the Work in accordance with standard practices, by the best methods recommended by the manufacturer of the product, and as approved by the Architect.

END OF SECTION

1 General

1.1 SECTION INCLUDES

1. Final Cleaning.
2. Take over procedures.
3. Inspection Procedures and Closeout Submittals.

1.2 RELATED SECTIONS

1. Individual Specifications Sections: Specific requirements for operation and maintenance data.

1.3 FINAL CLEANING

.1 In addition to requirements for cleaning-up specified in General Conditions of the Contract, and in Section 01 01 00, include in Work the final cleaning by skilled cleaning specialists on completion of construction.

.2 Remove temporary protections and make good defects before commencement of final cleaning.

.3 Remove dust, stains, paint spots, soil, grease, fingerprints, and accumulations of construction materials, interior and exterior to the building. Perform cleaning in accordance with installer's instructions for each material. Final cleaning shall include:

.1 Washing of exterior paved surfaces, and of interior concrete floors.

.2 Cleaning and polishing of glass, mirrors, porcelain, enamel, and finish metals.

.3 Vacuum cleaning of ceilings, walls, and floors.

.4 Cleaning and polishing of concrete floors.

.5 Cleaning of hardware, mechanical fixtures, lighting fixtures, cover plates, and equipment, including polishing of their finish metal, porcelain, vitreous, and glass components.

.6 Removing of visible labels left on materials, components, and equipment.

.4 Maintain cleaning until Owner has taken possession of building or portions thereof.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Collect, separate and recycle all site generated waste materials in accordance with Section 01 35 50 Waste Management Disposal.

.2 Coordinate all work related to Section 01 35 50 Waste Management Disposal with

1.5 DEMONSTRATION OF SYSTEMS & EQUIPMENT

.1 Give a complete demonstration of all systems and equipment in the presence of the Owner, Architect and Project Manager at the following times:

.1 When each 100% completed at the request of the Contractor.

.2 At time of inspection to validate final completion.

.3 At final completion for the benefit of the maintenance staff for the Project.

.2 Responsible personnel representing the Subcontractor responsible for the Work being demonstrated shall be present at each demonstration.

.3 Refer to Division 15 and Division 16 for specific demonstration and training requirements.

1.6 SUBMITTALS

.1 Submit with application for Substantial Performance:

.1 Certificate of final inspection report from electrical utility or inspection.

.2 Other reports required or specified.

.2 Submit with application for release of holdback:

.1 Final project record drawings.

.2 Five Maintenance manuals and operating instructions.

.3 Extra stock.

.4 Statements from each Subcontractor listed on Tender Form, stating that each has been paid in full for its Work performed under this Contract.

.5 Performance Bonds which shall remain in effect for one year after take-over date.

.6 Completed Liability Insurance Policy extended for one year from take over date.

.7 Written guarantee covering all workmanship and materials used in the Work.

.8 Maintenance bonds as specified.

.9 Certificate from Worker's Compensation Board.

1.7 INSPECTIONS AND SUBSTANTIAL PERFORMANCE

.1 Inspection by Contractor to Determine Substantial performance:

.1 Determination that Project meets requirements for final inspection is the responsibility of the Contractor.

.2 The Contractor together with Subcontractors involved shall inspect the Work.

.3 The Contractor shall prepare a list of uncompleted and unsatisfactory Work from these inspections.

.4 Issue these lists to Subcontractors concerned and Architect.

.5 Upon completion of the items on the Contractor's list, the Contractor shall provide all submittals as per 1.3.1 and make an application for Substantial Performance as per GC 5.4 and Supplementary Conditions.

1.8 PAYMENT OF HOLDBACK

.1 The Contractor shall provide all submittals as per 1.3.2.

.2 Payment of holdback shall be as per GC 5.5, 5.7 and 5.8 and Supplementary Conditions.

1.9 WARRANTY PERIOD

.1 The Owner will advise the Architect of defects observed during warranty periods.

.2 The Architect will notify the Contractor of these defects and request him to remedy the defects in accordance with the Contract Documents.

.3 Thirty days before expiration of warranties the Owner's representatives, the Architect and the Contractor will inspect the Work as arranged by the Contractor noting defects of products and workmanship.

.4 The Contractor shall immediately remedy such noted defects.

END OF SECTION

1 General

1.1 RELATED WORK

.1 Section 01 56 10: Environmental Protection

1.2 REFERENCE STANDARDS

.1 Perform work in accordance with the following standards:
- .1 Canadian Construction Safety Code, latest edition.
- .2 NBC 2010 Code, Part 8 - Safety Measures at Construction and Demolition sites.
- .3 CSA S350 - Code of Practice for Safety in Demolition of Structures.
- .4 NFC 2010 Code - Part 6 governing installation and maintenance of portable fire extinguishers.
- .5 CSA C22.1, "Canadian Electrical Code", governing temporary electrical installations.
- .6 Transportation of Dangerous Goods Acts.

1.3 WORK INCLUDED

.1 Demolition, removal and disposal of the all work itemized on the drawings.

.2 Coordinate removals in order to maintain services as required for operation.

.3 Obtain all necessary permits required to perform the above noted work.

1.4 EXISTING CONDITIONS

.1 Take over structures to be demolished based on their condition on date that the contract is awarded.

.2 Inspect adjacent existing property to extent possible and ensure that its condition and stability is recorded.

1.6 PROTECTION

.1 For demolition within the existing Museum provide dust proof partitions and all other measures required to maintain a clean environment for the building occupants.

.2 Ensure safe passage of the public past area of demolition.

.3 Prevailing weather conditions and weather forecast shall be considered. Demolition work shall not proceed when extreme weather conditions constitute a hazard to the works and site.

.4 Protect existing items designated to remain. In event of damage, immediately replace such items or make repairs to approval of the Architect at no additional cost to the Owner.

.5 Protect the supply of electricity to areas of property to remain in service.

.6 Protect telephone service to areas of property to remain in service.

.7 Protect water and sewer service to areas of the property to remain in service.

.8 Take precautions to support structures and, if safety of building being demolished or adjacent structures or services, etc. appears to be endangered, cease operations and notify the Architect.

.9 Prevent debris from blocking surface drainage system, mechanical and electrical systems which must remain in operation.

.10 Ensure that adjacent properties, and other equipment are protected from damage resulting from Work of this Section. Install protection consisting of fences, barricades, signs, and substantial construction to provide physical protection.

.11 Post danger signs in conspicuous locations to warn persons that demolition is in progress.

.12 Erect protection to provide safe access which must be maintained to existing buildings and support area of the building being demolished.

.13 Protect existing services from damages. Where required, arrange to relocate existing active services to ensure that they function continuously in safety and without risk of damage. Cap off and remove unused services encountered during demolition after approval is given by the Architect and utilities or jurisdictional authorities, whichever may apply.

.14 Maintain security of areas in which demolition is proceeding by control of access through enclosing fences, barricades, and hoardings during times Work is in progress, and by locking hardware otherwise.

.15 Maintain security of areas in which demolition is proceeding while Work is shut down because of a strike or a lockout.

.16 Prevent spread of dust beyond the demolition area by wetting, or by other approved means, as it accumulates.

.17 Keep sidewalks, streets, and roads free of dust and debris from demolition Work. Clean up accumulations as they occur.

.18 Provide up-to-date proof of certification of all equipment to be used on site.

.19 Temporary shoring and protection shall be designed by a professional engineer registered or licensed to practice in Nova Scotia.

1.7 SALVAGEABLE MATERIALS

.1 Salvage, recycling or reuse of materials or equipment from the buildings to be demolished is encouraged.

.2 Re-grade and label salvageable lumber as required by law.

.3 The Contractor shall protect the owner from any claims, however, rising, from the salvage, recycling or reuse of materials or equipment from the demolished buildings.

1.8 HAZARDOUS MATERIAL

.1 The Museum has completed a Hazardous materials assessment, attached following this section.

.2 The Museum will remediate any Hazardous materials noted in this Hazardous materials Assessment prior to the commencement of construction.

3. Should material resembling hazardous materials, including but not limited to spray or trowel applied asbestos, be encountered in course of work; stop work immediately. Do not proceed until written instructions have been received from Consultant.

4. Where work entails use, storage, or disposal of toxic or hazardous materials, chemicals and or explosives, or otherwise creates a hazard to life, safety, health, or the environment; work shall be in accordance with the Jurisdictional Authority.

3 Execution

3.1 ENVIRONMENTAL PROTECTION

.1 Perform work in an environmentally acceptable manner. Comply with requirements of Sections 01 56 10.

3.2 PREPARATION

.1 Obtain all necessary permits and approvals.

.2 Inspect site and verify with the Architect items designated for removal and items to be preserved.

.3 Locate and protect utility lines to remain. Notify utility companies before starting demolition.

.4 Employ rodent and vermin exterminators to comply with Health and Environmental regulations.

3.3 EXAMINATION

.1 Before commencing Work, ensure in examination of the site and Work to be demolished that all possible factors concerning demolition are investigated, and that the following are know in particular:
- .1 Methods and means available for material handling, disposal, storage, and transportation.
- .2 Construction details of structures to be demolished.
- .3 Construction details of other existing and adjacent properties.
- .4 Location of utility and other services.

.2 Review demolition Work to be performed in all its details. Do not proceed without review of the demolition methods that will be used.

3.4 DEMOLITION - GENERAL

.1 Remove any equipment or materials intended for reuse, recycling or salvage.

.2 Sub-Contractor shall provide a detailed description of the proposed methods and procedures for demolition prior to commencing work on the site.

.3 Do not disrupt active or energized utilities designated to remain undisturbed.

.4 At end of each day's work leave site in safe condition so that no part is in danger of toppling or falling.

.5 Carefully remove and lower structural framing and other heavy or large objects.

.6 Demolish to minimize dusting and noise. Spray water on structures during demolition as required and when ever requested by the Architect to control dust.

.7 Remove and dispose of all demolition items and materials from site in accordance with authorities having jurisdiction and as per "3.5 Disposal of Material" of this section.

.8 In removal of pavements, curbs and gutters:
- .1 Square up adjacent surfaces to remain in place by saw cutting or other approved method.
- .2 Protect adjacent joints and load transfer devices.
- .3 Protect underlying granular materials.

.9 Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as work progresses.

.10 Demolish concrete walls in small sections. Carefully remove and lower structural framing and other heavy or large objects.

.11 Dispose of materials not designated for salvage or re-use in work, off site.

.12 Do not sell or burn materials on site.

3.5 DISPOSAL OF MATERIAL

.1 Reuse, recycling and salvage of materials and equipment is permitted and encouraged with regulatory requirements. Do not reuse salvaged material in this project unless approved by the Architect.

.2 Sale of materials shall not take place on or from the site.

.3 All debris must be disposed off site at an approved disposal facility.

.4 The contractor will provide a waste disposal plan to the Architect and obtain approval for the disposal plan in writing from the NSDOE, and the Architect prior to commencement of work at the site.

3.6 RESTORATION

.1 Upon completion of work, remove debris, trim surfaces and leave work sites clean to a condition satisfactory to the Architect.

.2 Reinstated areas must be considered safe by the Architect.

.3 Reinstate areas in existing works outside area of demolition to conditions that existed prior to commencement of work.

END OF SECTION

1 General

1.1 RELATED WORK

.1 Section 03 30 00: Cast-In-Place Concrete

1.2 REFERENCES

.1 Manual of Standard Practice - Reinforcing Steel Institute of Ontario.

.2 CAN/CSA 23.1-M94, Concrete Materials and Methods of Concrete Construction.

.3 CAN3 A23.3-M84, Design of Concrete Structures for Buildings.

.4 CSA G30.5-M198(R1991), Welded Steel Wire Fabric for Concrete Reinforcement.

.5 CAN/CSA G30.18 –M92, Billet-Steel Bars for Concrete Reinforcement.

1.3 SOURCE QUALITY CONTROL

.1 Upon request, provide Architect with certified copy of mill test report of reinforcing steel, showing physical and chemical analysis.

.2 Upon request, inform Architect of proposed source of material to be supplied.

1.4 SUBSTITUTES

.1 Substitute different size bars only if permitted in writing by Architect.

2 Products

2.1 MATERIALS

.1 Reinforcing steel: billet steel, grade 400, deformed bars to CAN/CSA G30.18, unless indicated otherwise.

.2 Cold-drawn, annealed, steel wire ties: to CSA G30.3.

.3 Welded steel wire fabric: to CSA G30.5.

.4 Chairs, bolsters, bar supports, spacers: to CAN/CSA A23.1.

2.2 FABRICATION

.1 Fabricate reinforcing steel in accordance with CAN/CSA-A23.1 and Reinforcing Steel Manual of Standard Practice by the Reinforcing Steel Institute of Ontario unless indicated otherwise.

.2 Obtain Architect's approval for locations of reinforcement splices other than those shown on placing drawings.

.3 Ship bundles of bar reinforcement clearly identified in accordance with bar bending details and lists.

3 Execution

3.1 FIELD BENDING

.1 Do not field bend or field weld reinforcement except where indicated or authorized by Architect.

3.2 PLACING REINFORCEMENT

.1 Remove all coatings on reinforcement which might reduce bond before placing.

.2 Cold bend bars and place accurately in position in strict accordance with the approved shop drawings.

.3 Place reinforcing steel as indicated on drawings and in accordance with CAN/CSA-A23.1.

.4 Secure reinforcing bars in position on chairs and spaces to provide minimum concrete coverage: as per structural drawings.

.1 Keep splices to a minimum. Lap necessary splices at least 40 bar diameters in length. Lap adjacent sheets of fabricated mats or wire mesh at least 6" (150mm) and securely wire to prevent elastic curl.

.5 Prior to placing concrete, obtain Architect's approval of reinforcing material and placement.

.6 Ensure cover to reinforcement is maintained during concrete pour.

END OF SECTION

1 General

1.1 SECTION INCLUDES

.1 This section specified requirements for constructing cast-in-place concrete. Work includes supply and installation of formwork, reinforcement, concrete and accessories.

1.2 RELATED SECTIONS

.1 Section 03 20 00 Concrete Reinforcement

.2 Section 05 51 29 Metal Stairs

1.3 REFERENCES

.1 ASTM C171-07, Standard Specification for Sheet Materials for Curing Concrete

.2 ASTM C260-09, Air-Entraining Admixtures for Concrete

.3 ASTM C309-07, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete

.4 ASTM C494/C494M-08a, Standard Specification for Chemical Admixutres for Concrete

.5 AASHTO M182 Burlap Cloth Made from Jute or Kenaf

.6 CAN/CSA A3000 Series –03, Cementitious Materials Compendium.

.7 CSA A23.1-04/A23.2-04 - Concrete Materials and Methods of Concrete Construction / Methods of Test and Standard Practices for Concrete.

.8 CSA S269.3-M92 (R2008) - Concrete Formwork.

.9 CSA G30.18-M92 (R2007), Billet-Steel Bars for Concrete Reinforcement.

2 Products

2.1 MATERIALS

.1 Portland Cement: to CSA Standard A3000, Type 1O, Normal and CSA A23.1, Table 6, type GU.

.2 Blended Hydraulic Cement: CSA Standard A3000 and CSA A23.1, Table 7. Ternary blended cements may be used with the concurrence of the Engineer.

.3 Aggregates: to CSA-A23.1. For exposure Classes C-XL, C-1, C-2, C-3, C-4 and F- 1, supply certification that the concrete mixtures have been evaluated for

alkali-aggregate reaction and that measures have been taken to improve the reaction.

.4 Water: to CSA-A23.1, Table 9.

.5 Admixtures

.1 Air Entraining: to ASTM C260.

.2 Chemical: to ASTM C494/C494M or C1017 for flowing Concrete.

.6 Supplementary Cementing Materials:

.1 Low Calcium Fly Ash (Class F): to CSA A3000 and CSA 23.1, Table 8. Certification shall be provided for the fly ash used in the concrete.

.7 Reinforcement:

.1 Bars: to CSA G30.18, billet steel, grade 400, deformed.

.2 Welded Steel Wire Fabric: to CSA G30.5.

.3 Bar Supports and Spacers: to CSAA23.1.

.8 Formwork:

.1 Forms: to CSA-A23.1, plywood and lumber, clean and free of loose knots, splits or metal.

.2 Form Ties: to CSA-A23.1, removable or snap-off metal ties, fixed or adjustable length. Form ties, tie wire, spacers or other embedded fixtures shall not be positioned closer than 20 mm of the surface. For severe environments, the dimension shall be as shown on the project drawings.

.3 Release Agent: non-staining natural organic chemicals of sprayable consistency which prevent adhesion of concrete to forms.

.4 Design: to CSA S269.3.

.9 Curing Compound: to CSA A23.1, white. Refer to AASHTO M182; ASTM C171; ASTM 309.

.10 Waterstops: ribbed, extruded PVC of type and size indicated.

.11 Non-shrink Grout: pre-mixed, dry pack or pourable, containing non-metallic aggregate, plasticizing agents and cement, minimum compressive strength of 45 MPa at 28 days.

.12 Damp proofing:

.1 Emulsified asphalt, mineral colloid type, unfilled: to CAN/CGB-37.2.

2.2 CONCRETE MIX

.1 Provide in accordance with CSA A23.1, Table 5, Alternate (1) or (2).

.2 Mix proportions to provide workable concrete having required durability and strength.

.3 Air entraining admixtures: to obtain Air Content Category as defined in CSA A23.1, Tables 1, 2 and 4.

.4 Slump: to CAN/CSA A23.1, Section 4.3.2.3.

.5 Compressive strength at 28 days: unless for mixtures containing supplementary cementing materials other ages may be appropriate as determined by the Engineer. The strength shall be evaluated in accordance with CSA A23.1.

.6 Water/cement ratio: to CSA A23.1, Tables 1, 2 and 4 as required for exposure conditions.

.7 Ready mix plant shall conform to CSA and possess a current active membership in the Atlantic Provinces Ready Mix Concrete Association.

3 Execution

3.1 GENERAL

.1 Do concrete work to CSA-A23.1 and as herein specified.

.2 Use ready-mixed concrete unless on-site mixing approved.

.3 Do not change concrete mix without prior approval of Engineer. Changes in material supply will require submission of a new mix design for review.

.4 If on-site mixing is approved, equipment to be capable of accurately proportioning ingredients to produce required concrete.

3.2 FORMWORK AND FALSEWORK

.1 Construct formwork and falsework to CSA-A23.1

.2 Construct formwork to produce finished concrete to required shape, dimensions, and levels indicated within tolerances required by CSA-A23.1. Provide close fitting joints to prevent leakage of mortar, and form ties and bracing sufficient to withstand pressure of plastic concrete without deflection.

.3 Falsework to be of sufficient strength to support total load of formwork, concrete, reinforcing steel, workers and equipment.

.4 Use approved form release agent.

.5 Formwork removal shall be in accordance with CSA A23.1.

.6 Fill form tie holes with non-shrink mortar and finish to texture of adjacent concrete.

3.3 REINFORCEMENT AND EMBEDDED ITEMS

.1 Clean reinforcing of rust build-up, mill scale or other coatings that prevent or reduce bond

.2 Bend all bars cold to measurements required

.3 Ensure reinforcement and inserts are not disturbed during concrete placement

.4 Place and support reinforcing using bar supports and side form spacers to ensure cover, spacing and location indicated.

3.4 WATERSTOPS

.1 N/A

3.5 PLACING CONCRETE

.1 Place concrete in accordance with CSA A23.1, Section 7.

.2 Convey concrete from mixer to forms by methods that will maintain specified slump and prevent segregation.

.3 Do not drop concrete more than 1.5 metres vertically unless it can be shown that the concrete will not segregate. Deposit concrete in final position in forms to avoid lateral movement.

.4 Place concrete in continuous operation, starting from lowest point in form, in lifts not greater than 500 mm.

.5 Vibrate or tamp each later to obtain sense homogeneous structure free of cold joints, fill planes, voids and honeycombing. For vertical installation vibrate at least 150 mm into previously placed later. Concrete to be well bonded to all reinforcing steel, anchors, waterstops and other embedded parts.

3.6 JOINTS

.1 Make joints in accordance with CSA A23.1, Section 7.3

3.7 FINISHING

.1 Finish concrete in accordance with CSA A23.1, Section 7.5.

.2 Exposed concrete to have a smooth, steel trowel finish

3.8 CURING AND PROTECTION

.1 Provide curing and protection to CSA A23.1, Section 7.4. The temperature of the concrete as placed to be within the limits of Table 14.

.2 Do not place concrete of frozen base. Remove all snow, ice and frost from area prior to placing concrete. Do not place concrete on. Or against, any surface that will lower the temperature of the concrete in place below the minimum value shown in Table 14.

.3

.4 When air temperature may drop below 5°C or when there is a probability that it will drop below 5°C within 24 hours of placing, raise temperature of base, reinforcing steel, embedded parts and forms above 5°C prior to placing concrete. In addition, before placement have available all materials and equipment needed for adequate protection and curing.

.5 When air temperature is at or above 27°C, or when there is a probability of its rising to 27°C during the placing period, provide facilities for protection of concrete in place from effects of hot and/or drying weather conditions. Under severe drying conditions, protect formwork reinforcement and concreting equipment from direct rays of sun, or cool by fogging.

.6 After placing is completed, maintain minimum curing conditions for the concrete in accordance with CSA-A23.1, Section 7.4.

3.9 BITUMINOUS DAMPPROOFING

.1 N/A

3.10 CONCRETE QUALITY

.1 Engineer may require inspection or testing of concrete in accordance with CSA-A23.1, using CSA certified concrete laboratory.

3.11 DEFECTIVE WORK

.1 Remediate defective concrete or remove and replace concrete not in accordance with these specifications, blemishes and embedded debris, and repair as directed.

3.12 FIELD QUALITY CONTROL

.1 Inspection and testing of concrete and concrete materials will be carried out by a Testing Laboratory in accordance with CAN/CSA A23.1. Cost of testing will be paid by the Owner. Contractor shall arrange for and coordinate testing.

.2 Such testing will not augment or replace Contractor quality control nor relieve him of his contractual responsibility.

3.13 ADMIXTURES

.1 Non air entrained concrete, use a water reducing agent in compliance with ASTM C494 Type 1, such as Eucon WR75 by Euclid Canada.

.2 Concrete floors with hardener as designated on the finish schedule shall be surfaced hardened using "Surflex coloured by Euclid Canada" coloured non-metallic hardener used at the rate of 100 lbs. per 100 sq.ft. and mechanically trowelled in strict accordance with the manufacturer's instructions. Cure

trowelled surface immediately with a clear Non-Yellowing Cure & Seal such as Super Diamond Clear by Euclid Canada.

3.14 FINISHING

.1 Finish concrete in accordance with CAN/CSA-A23.1.

.2 Use procedures acceptable to Architect or those noted in CAN/CSA A23.1 to remove excess bleed water. Ensure surface is not damaged

.3 Use curing compounds compatible with applied finish on concrete surfaces. Provide written declaration that compounds used are compatible.

.4 Finish concrete floor to meet requirements of CGSB 81 GP 1M.

.5 Provide swirl trowelled finish where floor tile is to be applied. Provide depressions to accommodate floor file.

.6 Provide swirl trowelled finish unless otherwise indicated.

.7 Rub exposed sharp edges of concrete with carborundum to produce 3 mm radius edges unless otherwise indicated.

END OF SECTION

1.1 GENERAL

1.2 REFERENCES

.1 ASTM A36/A36M, Specification for Structural Steel.

.2 CAN/CGSB 85.100, Painting, Section 09 91 10.

.3 CAN/CSA-G40.20, General Requirements for Rolled or Welded Structural Quality Steel.

.4 CAN/CSA G40.21, Structural Quality Steels.

.5 CAN/CSA G164, Hot Dip Galvanizing of Irregularly Shaped Articles.

.6 CAN/CSA S16.1, Limit States Design of Steel Structures.

.7 CAN/CSA S136, Cold Formed Steel Structural Members.

.8 CSA W47.1, Certification of Companies for Fusion Welding of Steel Structures.

.9 CSA W48 Series, Electrodes.

.10 CSA W55.3, Resistance Welding Qualification Code for Fabricators of Structural Members Used in Buildings.

.11 CSA W59, Welded Steel Construction Metal Arc Welding.

.12 CISC/CPMA 1-73b, Quick Drying, One Coat Paint for Use on Structural Steel.

1.3 SOURCE QUALITY CONTROL

.1 If required, submit 2 copies of mill test reports showing chemical and physical properties and other details of steel to be incorporated into work prior to fabrication of structural steel. Such mill test reports shall be certified by qualified metallurgists confirming that tests conform to requirements of CAN/CSA G40.20 and CAN/CSA G40.21.

.3 Fabricator of structural steel shall, in addition, provide an affidavit stating that materials and products used in fabrication conform to applicable material and products standards called for by design drawings and specifications.

1.4 DESIGN OF DETAILS AND CONNECTIONS

.1 Design details and connections in accordance with requirements of CAN/CSA S16.1 to resist forces, moments, shears and allow for movements indicated.

.2 If connection for shear only (standard connection) is required:

.1 Select framed beam shear connections from an industry accepted publication such as "Handbook" by the Canadian Institute of Steel Construction.

.2 If shears are not indicated, select or design connections to support reaction from maximum uniformly distributed load that can be safely supported by beam in bending, provided no point loads act on beam.

.3 For non standard connections, submit sketches and design calculations stamped and signed by qualified professional engineer registered or licensed in Province of N.S. in Canada.

1.5 FABRICATION AND ERECTION DOCUMENTS

.1 Submit fabrication and erection documents and materials list in accordance with Section 01 30 00 Submittals.

.3 On erection drawings, indicate all details and information necessary for assembly and erection purposes such as, description of methods, sequence of erection, type of equipment used in erection and temporary bracings.

.4 Each drawing submission shall bear signature and stamp of qualified professional engineer registered or licensed in the province of N.S. in Canada for all fabricator designed assemblies, components and connections.

1.6 WASTE MANAGEMENT AND DISPOSAL

.1 Collect, separate and recycle all site generated waste materials in accordance with Section 01 35 50 Waste Management Disposal.

.2 Coordinate all work related to Section 01 35 50 Waste Management Disposal with Contractor.

1.7 LEED DOCUMENTATION

Not Used.

2 Products

2.1 MATERIALS

.1 Structural steel: to CAN/CSA G40.21 Grade 350W and Class H for HSS Sections.

.2 Anchor bolts: to CAN/CSA G40.21, Grade 300W.

.3 Bolts, nuts and washers: to ASTM A325M.

.4 Welding materials: to CSA W48 Series and certified by Canadian Welding Bureau.

.5 Shop paint primer: to CISC/CPMA 1.

.6 Hot dip galvanizing: galvanize steel, where exposed to outside to CAN/CSA G164, minimum zinc coating of 600 g/m^2.

2.2 FABRICATION

.1 Fabricate structural steel, as indicated, in accordance with CAN/CSA S16.1 and in accordance with reviewed shop drawings.

2.3 SHOP PAINTING

.1 For steel not to receive finish painting on site: clean, prepare surfaces and shop prime structural steel in accordance with CAN/CSA S16.1 except where members to be encased in concrete.

.2 For steel to receive further finish painting on site: clean, prepare surfaces and shop prime in accordance with CISC-2-75 (brush blasted).

2.4 BOLT HOLES FOR OTHERS

.1 Pre-drill bolt holes for other trades as required.

3 Execution

3.1 GENERAL

.1 Do structural steel work in accordance with CAN/CSA S16.1 and CAN/CSA S136.

.2 Do welding in accordance with CSA W59.

.3 Companies to be certified under Division 1 or 2.1 of CSA W47.1 for fusion welding of steel structures and/or CSA W55.3 for resistance welding of structural components.

3.2 MARKING

.1 Mark materials in accordance with CAN/CSA G40.20. Do not use die stamping. If steel is to be left in unpainted condition, place marking at locations not visible from exterior after erection.

.2 Match marking: shop mark bearing assemblies and splices for fit and match.

3.3 ERECTION

.1 Erect structural steel, as indicated and in accordance with CAN/CSA S16.1 and in accordance with reviewed erection drawings.

.2 Obtain written approval of Architect prior to field cutting or altering of structural members.

.3 Clean with mechanical brush and touch up shop primer to bolts, rivets, welds and burned or scratched surfaces at completion of erection.

.4 Continuously seal members by continuous welds where indicated. Grind smooth.

END OF SECTION

1 General

1.1 RELATED WORK

.1 Section 05120: Structural Steel

1.2 REFERENCES

.1 CAN/CSA_S16.1_M94, Limit States Design of Steel Structures.
.2 CAN/CSA_S136_M94, Cold Formed Steel Structural Members.
.3 CSA W59_M1989, Welded Steel Construction, (Metal Arc Welding).
.4 CSA W59S1_M1989, Supplement No. 1 to W59_M1989, Welded Steel Construction Metal Arc Welding.
.5 CAN/CGSB_1.181_92, Ready_Mixed Organic Zinc_Rich Coating.
.6 CSSBI 10M_86(Rev. 88), Steel Roof Deck.
.7 CSSBI 101M_84, Zinc Coated Structural Quality Steel Sheet for Steel Deck.
.8 CSA W47.1_92, Certification of Companies for Fusion Welding of Steel Structures.
.9 CSA W55.3_1965, Resistance Welding Qualification Code for Fabricators of Structural Members Used in Buildings.

1.3 DESIGN CRITERIA

.1 Design steel deck using limit states design in accordance with Canadian Sheet Steel Building Institute CSSBI 10M.
.2 Steel deck and connections to carry dead live diaphragm action lateral loads, composite deck action, uplift and other loads.
.3 Deflection under specified live load not to exceed 1/240th of span, for roof deck and 1/360th of span for floor deck.
.4 Where vibration effects are to be controlled as indicated, dynamic characteristics of decking system to be designed to be in accordance with CAN/CSA_S16.1, Appendix 'G'.

1.4 **SHOP DRAWINGS**

.1 Submit shop drawings, erection and shoring drawings in accordance with Section 01 30 00.
.2 Each drawing submission shall bear signature and stamp of qualified professional engineer registered or licensed in Province of N.S.
.3 Submit design calculations if requested by Architect.
.4 Indicate deck plan, profile, dimensions, base steel thickness, metallic coating designation, connections to supports and spacings, projections, openings, reinforcement details and accessories.

2 Products

2.1 **MATERIALS**

.1 Zinc-iron Alloy ZF coated steel sheet: to ASTM A446/A446M or CSSBI 101M structural quality Grade A with ZF75 coating, for interior surfaces not exposed to weather, where no finish painting is to occur .76 mm base steel thickness.
  .1 Where deck is to be painted, supply wiped or satin coated decking.
  .2 Acoustic insulation: fibrous glass 17.5 kg/m3 density profiled to suit deck flutes.
.2 Closures: as recommended by manufacturer and on drawings.
.3 Cover plates, cell closures and flashings: steel sheet with minimum base steel thickness of 0.76 mm. Metallic coating same as deck material.
.4 Touch Up Primer: zinc rich, ready mix to CAN/CGSB_1.181.

3 Execution

3.1 **GENERAL**

.1 Design, detail, fabricate and erect in accordance with CAN/CSA_S136 and CSSBI 10M.
.2 Do welding in accordance with CSA W59 and with CSA W59S1, except where specified otherwise.
.3 Welding companies to be certified under Division 1 or 2.1 of CSA W47.1 for fusion welding of steel decks and/or CSA W55.3 for resistance welding.

3.2 ERECTION

.1 Erect steel deck in accordance with CAN/CSA S136 and CSSBI 10M except as specified otherwise.

.2 Butt ends: to 1.5 to 3 mm gap. Install steel cover plates over gaps wider than 3 mm.

.3 Lap ends: to 50 mm minimum.

.4 Immediately after deck is permanently secured in place, touch up metallic coated top surface with compatible primer where burned by welding.

.5 Prior to concrete placement, steel deck to be free of soil, debris, standing water, loose mil scale and other foreign matter.

.6 Place and support steel reinforcement to maintain covers to reinforcement as indicated.

3.3 CLOSURES

.1 Install closures in accordance with details and as indicated. In all cases to ensure effective closures against weather, thermal and acoustic effects.

.2 For details not indicated, follow manufacturer's recommendations.

3.4 OPENINGS AND AREAS OF CONCENTRATED LOADS

.1 No reinforcement required for openings cut in deck which are smaller than 150 mm square.

.2 Frame deck openings with any one dimension between 150 to 300 mm as recommended by manufacturer, except as otherwise indicated.

.3 For deck openings with any one dimension greater than 300 mm and for areas of concentrated load, reinforce in accordance with structural framing details, except as otherwise indicated.

3.5 CONNECTIONS

.1 Install connections in accordance with CSSBI recommendations as indicated.

END OF SECTION

1 General

1.1 WORK INCLUDED

.1 To complete all metal stairs, balustrades and landings in strict accordance with the manufacturer's instructions, the drawings and specifications and summarized but not restricted to:

.1 Provision of new stairs, guardrails, handrails, etc. as per drawings

.2 Modifications to existing guardrails, handrails, etc.

1.2 RELATED WORK

.1 Section 03 30 00: Cast-in-place Concrete

1.3 REFERENCES

.1 Aluminum Association Designation System for Aluminum Finishes_1980.

.2 ASTM A36M_90 Specification for Structural Steel.

.3 ASTM A53_90a Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.

.4 ASTM A307_90, Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile.

.5 ASTM A325M-90, Specification for High-Strength Bolts for Structural Steel Joints.

.6 ANSI/NAAMM MBG 531-88 Metal Bar Grating Manual.

.7 CAN/CGSB_1.40_M89 Primer, Structural Steel, Oil Alkyd Type.

.8 CAN/CSA_G40.21_M92 General Requirements for Rolled or Welded Structural Quality Steel.

.9 CSA W59_M1989 Welded Steel Construction (Metal Arc Welding).

1.4 DESIGN CRITERIA

.1 Design metal stair, balustrade and landing construction and connections to NBC vertical and horizontal live load requirements.

.2 Detail and fabricate stairs to NAAMM Metal Stairs Manual fourth edition 1982.

1.5 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 30 00 - Shop Drawings, Product Data, Samples and Mock-ups.

.2 Indicate construction details, sizes of steel sections and thickness of steel sheet.

.3 Each shop drawing submitted shall bear the stamp of a qualified professional engineer registered in the Province of N.S.

2 Products

2.1 MATERIALS

.1 Steel sections: to CAN3_G40.21, Grade 350W.

.2 Steel plate: to CAN3_G40.21, Grade 300W.

.3 Steel pipe: to ASTM A53, standard weight, schedule 40, seamless black.

.4 HSS: to CAN3_G40.21, Grade 350, Class C, sizes and dimensions as indicated.

.5 Aluminum bar, rod, wire and extruded shapes: to CSA HA.5 .6351_T6.

.6 Welding materials: to CSA W59.

.7 Bolts: to ASTM A307.

.8 High strength bolts: to ASTM A325M.

.9 Shop coat primer: to CGSB 1_GP_40M.

2.2 FABRICATION

.1 Weld connections where possible, otherwise bolt connections. Countersink exposed fastenings, cut off bolts flush with nuts. Make exposed connections of same material, colour and finish as base material on which they occur.

.2 Accurately form connections with exposed faces flush; mitres and joints tight. Make risers of equal height.

.3 Grind or file exposed welds and steel sections smooth.

.4 Shop fabricate stairs in sections as large and complete as practicable.

2.3 STEEL PAN STAIRS

.1 Fabricate stairs with closed riser steel pan construction.

.2 Form treads and risers from 3 mm thick steel plate. Secure treads and risers to L35 x 35 x 5 horizontal and vertical welded to stringers.

.3 Provide two steel “Z” bars in each tread to secure concrete infill.

.4 Form wall stringers to sizes as indicated on structural drawings.

.5 Form outer stringers to sizes as indicated on structural drawings.

.6 Form landings from 3 mm thick steel plate, reinforced by L55 x 55 x 6 mm spaced at 400 mm oc.

.7 Provide clip angles for fastening of furring channels, where applied finish is indicated for underside of stairs and landings.

.8 Extend stringers around mid landings to form steel base.

.9 Close ends of stringers where exposed.

2.4 BALUSTRADES

.1 Construct balusters and handrails from steel bars and pipes, sized and formed to shape as indicated on the drawings. Join by flush type fittings and welding, or by fully notching intersecting members to pipe contour and welding.

.2 Provide perforated steel guards, etc. at balustrades as indicated in drawings.

.3 Weld balustrades to stringers as indicated.

2.5 SHOP PAINTING

.1 Clean surfaces in accordance with Steel Structures Painting Council SSPC_SP2.

.2 Apply one coat of shop primer except interior surfaces of pans.

.3 Apply two coats of primer in different colours to parts inaccessible after final assembly.

.4 Use primer as prepared by manufacturer without thinning or adding admixtures. Paint on dry surfaces, free from rust, scale, grease; do not paint when temperature is below 7°C.

.5 Do not paint surfaces to be field welded.

3 Execution

3.1 INSTALLATION OF STAIRS

.1 Install plumb and true in exact locations, using welded connections wherever possible to provide rigid structure. Provide anchor bolts, bolts and plates for connecting stairs to structure.

.2 Hand items over for casting into concrete or building into masonry to appropriate trades together with setting templates.

.3 Do welding work in accordance with CSA W59 unless specified otherwise.

.4 Touch up shop primer to bolts, welds, and burned or scratched surfaces at completion of erection.

.5 Secure channel supports, etc. to concrete block and concrete slabs with Hilti HIT epoxy anchors, min. 5/8" dia. (or Architect approved equivalent). Attach handrail brackets to walls using Hilti bolts and anchors, minimum 1/4" diameter bolt.

END OF SECTION

1 General

1.1 GENERAL CONDITIONS

.1 The General Conditions of the contract as well as provisions of Division 1 at the beginning of these specifications shall be deemed to apply and be a part of this section of the specification.

1.2 WORK INCLUDED

.1 To complete finish carpentry as shown or specified and summarized but not restricted to the following:

.1 Installation of doors

.2 Installation of finish door hardware as specified in Section 08 71 00.

1.3 WORK INSTALLED BUT FURNISHED BY OTHER SECTIONS

.1 Section 08 71 00: Door Hardware

.2 Section 08 11 00: Steel Hollow Metal Doors

1.4 RELATED WORK SPECIFIED ELSEWHERE

.1 Section 09 21 16: Gypsum Board Assemblies

.2 Section 09 91 10: Painting

1.5 PROTECTION

.1 Protect the work of this section and be responsible for all damage incurred. Replace damaged work with perfect materials at no additional cost.

.2 Protect work of all other sections from damage resulting from the work of this section. Arrange and pay for the restoration of any such damage incurred.

1.6 EXAMINATION

.1 Examine all work performed by other trades upon which the work of this section depends and be responsible for checking all dimensions at the site affecting this work.

.2 Do not install the work of this section until all previous work which is to receive it and site conditions are satisfactory. Commencement of the work will indicate acceptance of the previous work and site conditions.

2 Products

2.1 GENERAL

.1 Include Work of Section rough hardware required for its execution.

3 Execution

3.1 INSTALLATION

.1 Install Work plumb, level and straight, and fasten it securely to backing to support it and anticipated imposed loads.

.2 Build work into construction as indicated on drawings or specified in other sections of this specification, or both.

.3 Co-operate with other trades and proceed promptly with the work of this section as rapidly as job conditions permit.

.4 Carefully read all other sections of the specifications describing work which is affected by the work of this section. Notify the Architect in writing of any condition which may adversely affect the proper execution of the work of this section.

3.2 INSTALLATION OF DOORS

.1 Install hollow metals doors supplied under Section 08 11 00.

3.3 INSTALLATION OF FINISH HARDWARE

.1 Install finish hardware where specified under Section 08 71 00.

.2 Accurately locate and adjust hardware to meet manufacturer's instructions. Use special tools, jigs and templates as required.

3.4 ADJUSTMENT AND CLEANING

.1 Adjust hinged doors to swing freely and easily, to remain stationary at any point of swing, to close evenly and tightly against stops without binding, and to latch positively when doors are closed with moderate force.

.2 Adjust hardware so that latches and locks operate smoothly and without binding, and closers act positively with the least possible resistance in use. Lubricate hardware if required by supplier's instructions.

.3 Clean hardware after installation in accordance with supplier's instructions.

.4 Sand clean woodwork to leave free from finish defects in any exposed part.

3.5 CLEAN-UP

1. Promptly as the work proceeds and upon completion, clean up and remove from the premises all rubbish and surplus materials resulting from the work of this Section.

END OF SECTION

1 General

1.1 GENERAL CONDITIONS

.1 The General Conditions of the contract as well as provisions of Division 1 at the beginning of these specifications shall be deemed to apply and be a part of this section of the specification.

1.2 WORK INCLUDED

.1 To supply and install millwork as shown or specified and summarized but not restricted to the following:

.1 Wood handrails

.2 Misc. repair and infill to existing casework as indicated on drawings.

1.3 WARRANTY & INSPECTIONS

Not Used.

1.4 REFERENCE STANDARDS

.1 Do millwork to Quality Standards of Architectural Woodwork Manufacturers Association of Canada (AWMAC), current edition.

.2 Thermofused Melamine to NEMA LD3-95 grade VGL-HGL.

.3 Particle board: ANSI A 208.1, 1993, grade M3, density 640-800 kg/m³.

.4 Medium density fibreboard: ANSI A 208.2, 1994, grade MD, density 640-800 kg/m³.

1.5 SUBMITTALS (REFER ALSO TO 1.10)

.1 Provide shop drawings for cabinets in accordance with Section 01 30 00.

.1 Clearly indicate details of construction, profiles, jointing, fastening.

1.6 SAMPLES

.1 If requested, submit to the Architect for approval prior to fabrication, full size samples of any or all of the following, as selected by the Architect:

.1 Wood Handrails

.2 Samples of colours proposed for finishes.

.2 Arrange and pay for the shipment of all samples requested to the job site.

.3 Samples will be subject to testing at the discretion of the Architect within the limits of this specification. Samples undamaged by testing may be used to form part of the work.

1.7 PROTECTION

.1 All materials shall be delivered to the project site properly protected.

.2 Materials shall be stored flat and level in a fully enclosed space, preferably in the room in which they will be installed. Units shall be stored off the floor.

.3 Care in handling shall be exercised to avoid damage. Do not allow material to become wet.

.4 Protect the work of this section and be responsible for all damage incurred. Replace damaged work with perfect materials at no additional cost.

.5 Protect work of all other sections from damage resulting from the work of this section. Arrange and pay for the restoration of any such damage incurred.

1.8 ENVIRONMENTAL REQUIREMENTS

.1 Installation shall be done only when the temperature and humidity closely approximates the interior conditions that will exist when the building is occupied.

.2 The heating system shall be operating before, during, and after installation.

.3 Prior to the start of installation, all wet trades' work must be completed, and thoroughly dry.

.4 Do not install work in any area unless satisfied that work in place has dried out, and that no further installation of damp materials is contemplated.

1.9 EXAMINATION

.1 Examine all work performed by other trades upon which the work of this section depends and be responsible for checking all dimensions at the site affecting this work.

.2 Do not install the work of this section until all previous work which is to receive it and site conditions are satisfactory. Commencement of the work will indicate acceptance of the previous work and site conditions.

1.10 LEED DOCUMENTATION

Not Used.

1.11 WASTE MANAGEMENT AND DISPOSAL

.1 Collect, separate and recycle all site generated waste materials in accordance with Section 01 35 50 Waste Management Disposal.

.2 Coordinate all work related to Section 01 35 50 Waste Management Disposal with Contractor.

2 Products

2.1 GENERAL

.1 All wood products and bi-products in this section shall be FSC certified.

.2 Include in Work of Section all hardware required for its execution.

.3 Moisture content of wood at time of installation shall be kiln dried.

.4 Use only adhesives and fastenings that develop sufficient strength for intended use, are non-staining, and are unaffected by the environment to which exposed.

2.2 MATERIALS

.1 Thermofused Melamine

.1 To NEMA LD-3-95 grade VGL-HGL.

.2 Decorative paper impregnated and saturated with melamine resin thermally fused under heat and pressure to 5/8" and 3/4" medium density fibreboard.

.3 Medium density fibreboard to have both sides faced with melamine.

.4 Medium density fibreboard to ANSI A 208.2, 1994; to ASTM E 1333-1990, grade MD, density 740 kg/m³.

.5 Edging: 3 mm PVC edging, coloured to match finish of melamine.

.6 All exposed edges are to be clad with 3mm PVC edging where exposed and melamine where not exposed, in order to eliminate off-gassing of MDG.

.7 Thickness: 3/4" except where 5/8" is specifically called for.

.8 Colours: To be selected by architect from full range of colours.

.9 Acceptable manufacturers: Panval, Panolam, Tafisa, Flakeboard.

.2 General Materials

.1 Nails and Staples:

.1 CSA B111-1974 galvanized.

.2 Fastenings:

.1 Melamine screws.

.3 Grommets:

.1 Countersunk head BNP fasteners manufactured by MW Fasteners, plastic, coloured to match laminate.

.4 Metal Fabricated Support for Vanity Counter:

.1 1" H.S.S. galvanized and steel channels galvanized as per details.

.2 Hiliti Anchor fasteners.

.5 Sealant:

.1 Silicone sealant, Tremco “Proglaze”.

.6 Draw Bolts & Splines: As recommended by fabricator.

2.3 FABRICATION

.1 Thermofused Melamine Casework Fabrication

.1 General

.1 Fabricate casework to AWMAC custom grade.

.2 Cabinets to be AWMAC reveal overlay casework.

.3 Fabricate casework from thermofused melamine.

.4 Provide cutouts for plumbing fixtures, insert appliances, outlet boxes and other fixtures.

.5 Shelving to cabinetwork adjustable unless noted otherwise.

.6 Shelves are not to exceed 32" in length. Provide intermediate bulkhead as required to maintain this maximum dimension.

.7 Shop install cabinet hardware for doors, shelves and drawers.

.8 Recess shelf standards unless noted otherwise.

.9 Shop assemble work for delivery to site in size easily handled and to ensure passage through building openings.

.10 Provide filler pieces approximately 1" wide (colour and material to match cabinet work) between cabinet work and wall and at inside corners of cabinetry.

.11 All edges of thermofused melamine board are to be finished, whether exposed or not.

.2 Miscellaneous Millwork

.1 Workmanship

Conform to AWMAC Premium requirements.

.2 Fastening

.1 Fasten work with nails generally, but use screws or special fasteners at critical joints, and where required by specified quality grade standards.

.2 Glue built-up work as well as nailing and screwing.

.3 Blind nail unless impossible.

.4 Set finishing nails below finished surfaces to receive putty.

.3 Finishing:

.1 Fine sand wood surfaces after installation to leave surfaces in true planes and free of machine or tool marks.

.2 All wood shall receive a catalyst type low voc synthetic varnish finish applied as follows:

.1 1 coat of stain to Architect's approval (to match colour of melamine laminate).

.2 1 coat of sealer.

.3 6 coats of clear catalytic type low voc synthetic varnish.

3 EXECUTION

3.1 INSTALLATION

.1 Set and secure materials and components in place, rigid plumb and square.

.2 Install work plumb, true and square, neatly scribed to adjoining

.3 Make allowances around perimeter where fixed objects pass through or project into laminated plastic work to permit normal movement without restriction.

.4 Build work into construction as indicated on drawings or specified in other sections of this specification, or both.

.5 Co-operate with other trades and proceed promptly with the work of this section as rapidly as job conditions permit.

.6 Touch up external and semi-exposed surfaces to provide complete finish. Remove all stickers and wipe down all surfaces. Trim and sand smooth all edges.

.7 Wipe out interior surfaces, trim and sand smooth all edges.

.8 Remove excess adhesive with recommended solvent.

3.2 ADJUSTMENT AND CLEANING

.1 Sand clean woodwork to leave free from finish defects in any exposed part.

.2 All work that cannot be successfully cleaned or repaired shall be removed and replaced.

3.3 CLEAN-UP

.1 Promptly as the work proceeds and upon completion, clean up and remove from the premises all rubbish and surplus materials resulting from the work of this Section.

3.4 GIS – (GUARANTEE & INSPECTION SERVICE)

Not used.

END OF SECTION

1 General

1.1 WORK INCLUDED

.1 To complete thermal insulation for resistance of heat transfer as shown or specified and summarized but not restricted to:

.1 Under slab insulation.

1.2 RELATED WORK SPECIFIED IN OTHER SECTIONS

Not Used.

1.3 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Package insulation materials and label them to designate manufacturer, type, density and insulation value, and reference standard specification number if applicable.

.2 Store insulation materials in dry areas, protected from wetting and traffic.

.3 Store insulation board flat, on a flat surface, and to prevent edge damage and placing of materials on top of stored boards.

.4 Protect polystyrene insulation from sunlight at all times until permanent cover is installed.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Collect, separate and recycle all site generated waste materials in accordance with Section 01 35 50 Waste Management Disposal.

.2 Ensure the following forms, included at the end of Section 01 35 50 Waste Management Disposal, are completed and submitted to the Contractor.

.1 Waste Audit (WA) Sheet – Schedule A

.2 Waste Tracking Form – Section 01 35 50 - Schedule B

.3 Coordinate all work related to Section 01 35 50 Waste Management Disposal with Contractor.

2 Products

2.1 GENERAL

.1 Ensure that all materials of an insulation system, and the construction with which it is in contact, are compatible.

2.2 EXTERIOR WALL INSULATION

Not Used.

2.3 PERIMETER FOUNDATION INSULATION AND PERIMITER UNDER SLAB INSULATION

Not Used.

2.4 UNDERSLAB INSULATION

.1 Acceptable Materials:

.1 FOAMULAR 1000 Extruded Polystyrene (XPS), High Compressive Strength Rigid Foam Insulation. Manufacturer: Owens Corning.

.2 STYROFOAM™ HIGHLOAD 100 Type V extruded polystyrene foam insulation. Manufacturer: Dow.

3 Execution

3.1 EXAMINATION

.1 Ensure that all surfaces to which insulation is applied are clean, reasonably smooth with no abrupt changes in plane, free of grease and with protruding fins of mortar or concrete removed, and that the surfaces are otherwise acceptable for insulation application as specified.

.2 Ensure that furring is installed to suit insulation sizes and thicknesses, and to ensure proper support.

3.2 INSTALLATION

Not Used.

3.3 ADJUSTMENT AND CLEANING

Not Used.

END OF SECTION

1 General

1.1 RELATED DOCUMENTS

.1 Drawings and general provisions of Contract, including General and Supplementary conditions and Division 1 Specification Section, apply to work specified in this section.

1.2 DEFINITIONS

.1 Firestopping: Material or combination of materials used to retain integrity of fire-rated construction by maintaining an effective barrier against the spread of flame, smoke, and hot gases through penetrations in fire rated wall and floor assemblies.

1.3 GENERAL DESCRIPTION OF THE WORK OF THIS SECTION

.1 Only tested firestop systems shall be used in specific locations as follows:

.1 Penetrations for the passage of duct, cable, cable tray, conduit, piping, electrical busways and raceways through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions.

.2 Gaps between edge of floor slabs and curtain walls.

.3 Openings between structurally separate sections of wall or floors.

.4 Gaps between the top of walls and ceilings or roof assemblies.

.5 Expansion joints in walls and floors.

.6 Openings and penetrations in fire-rated partitions or walls containing fire doors.

.7 Openings around structural members which penetrate floors or walls.

1.4 QUALITY ASSURANCE

.1 A manufacturer’s direct representatives (not distributor or agent) to be on-site during initial installation of firestop systems to train appropriate contractor personnel in proper selection and installation procedures. This will be done per manufacturer’s written recommendations published in their literature and drawing details.

.2 Firestop System installation must meet requirements of CAN4-S115-M, ULC S-115-M OR UL 2079 tested assemblies that provide a fire rating as required.

.3 Proposed firestop materials and methods shall conform to applicable governing codes having local jurisdiction.

.4 Firestop Systems do not re-establish the structural integrity of load bearing partitions/assemblies, or support live loads and traffic. Installer shall consult the structural engineer prior to penetrating any load bearing assembly.

.5 For those firestop applications that exist for which no ULC or cUL tested system is available through a manufacturer, a manufacturer's engineering judgment derived from similar ULC or cUL system designs or other tests will be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineer judgement drawings must follow requirements set forth by the International Firestop Council.

1.5 SUBMITTALS

.1 Submit Product Data: Manufacturer's specifications and technical data for each material including the composition and limitations, documentation of ULC or cUL firestop systems to be used and manufacturer's installation instructions to comply with Section 01 30 00.

.2 Shop Drawings: illustrate each type of firestopping required for the project and the materials, thicknesses, etc. to be provided for each type.

.3 Manufacturer's engineering judgment identification number and drawing details when no ULC or cUL system is available for an application. Engineered judgment must include both project name and contractor's name who will install firestop system as described in drawing.

.4 Submit material safety data sheets provided with product delivered to job site.

1.6 INSTALLER QUALIFICATIONS

.1 Engage an experienced installer who is certified, licensed, or otherwise qualified by the firestopping manufacturer as having the necessary experience, staff, and training to install manufacturer's products or specified requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Deliver materials undamaged in manufacturer's clearly labelled, unopened containers, identified with brand, type, and ULC or cUL label where applicable.

.2 Coordinate delivery of materials with scheduled installation date to allow minimum storage time on job site.

.3 Store materials under cover and protect from weather and damage in compliance with manufacturer's requirements, including temperature restrictions.

.4 Comply with recommended procedures, precautions or remedies described in material safety data sheets as applicable.

.5 Do not use damaged or expired materials.

1.8 PROJECT CONDITIONS

.1 Do not use materials that contain flammable solvents.

.2 Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.

.3 Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding.

.4 Weather conditions: Do not proceed with the installation of firestop materials when temperatures exceed the manufacturer's recommended limitations for installation printed on product label and product data sheet.

.5 During installation, provide masking and drop cloths to prevent firestopping materials from contaminating any adjacent surfaces.

1.9 WASTE MANAGEMENT AND DISPOSAL

.1 Collect, separate and recycle all site generated waste materials in accordance with Section 01 35 50 Waste Management Disposal.

.2 Coordinate all work related to Section 01 35 50 Waste Management Disposal with Contractor.

1.10 LEED DOCUMENTATION

Not Used.

2 Products

2.1 FIRESTOPPING, GENERAL

.1 Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by the firestopping manufacturer based on testing and field experience.

.2 Provide components for each firestopping system that are needed to install fill material. Use only components specified by the firestopping manufacturer and approved by the qualified testing agency for the designated fire-resistance-rated systems.

.3 Firestopping Materials are either "cast-in-place" (integral with concrete placement) or "post installed". Provide cast-in-place firestop devices prior to concrete placement.

2.2 ACCEPTABLE MANUFACTURERS

.1 Subject to compliance with through penetration firestop systems and joint systems listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products

Certified for Canada (cUL) Directory, provide products of the following manufacturers as identified below:

.1 Hilti (Canada) Limited, Mississauga, Ontario 1-800-363-4458

.2 Other manufacturers listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory.

2.3 UNRATED FIRE SEPARATIONS

.1 Provide 45 minute fire rated fire stopping assemblies for all un-rated fire separations.

2.4 MATERIALS

.1 Use only firestop products that have been ULC or cUL tested or specified fire-rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements, and fire-rating involved for each separate instance.

.2 Cast-in place firestop devices for use with non-combustible and combustible plastic pipe (closed and open piping systems) penetrating concrete floors, the following products are acceptable:

.1 Hilti CP 680 Cast-in Place Firestop Device

.2 Equivalent products listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory

.3 Sealants or caulking materials for use with non-combustible items including steel pipe, copper pipe, rigid steel conduit and electrical metallic tubing (EMT), the following products are acceptable:

.1 Hilti FS-ONE Intumescent Firestop Sealant

.2 Hilti CP 604 Self Levelling Firestop Sealant

.3 Hilti CP 620 Fire Foam

.4 Equivalent products listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory

.4 Sealants or caulking materials for use with sheet metal ducts, the following products are acceptable:

.1 Hilti CP 601s Elastomeric Firestop Sealant

.2 Hilti CP 606 Flexible Firestop Sealant

.3 Hilti FS-ONE Intumescent Firestop Sealant

.4 Hilti CP 604 Self Levelling Firestop Sealant

.5 Equivalent products listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory

.5 Sealants, caulking or spray materials for use with fire-rated construction joints and other gaps, the following products are acceptable:

.1 Hilti CP 672 Speed Spray

.2 Hilti CP 601s Elastomeric Firestop Sealant

.3 Hilti CP 606 Flexible Firestop Sealant

.4 Hilti CP 604 Self Levelling Firestop Sealant

.5 Equivalent products listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory

.6 Intumescent sealants or caulking materials for use with combustible items (penetrants consumed by high heat and flame) including metal pipe, PVC jacketed, flexible cable or cable bundles and plastic pipe, the following products are acceptable:

.1 Hilti FS-ONE Intumescent Firestop Sealant

.2 Hilti CP 620 Fire Foam

.3 Equivalent products listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory

.7 Intumescent sealants, caulking or putty materials for use with flexible cable or cable bundles, the following products are acceptable:

.1 Hilti FS-ONE Intumescent Firestop Sealant

.2 Hilti CP 618 Firestop Putty Stick

.3 Hilti CP 620 Fire Foam

.4 Equivalent products listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory

.8 Non curing, re-penetrable intumescent sealants, caulking or putty materials for use with flexible cable or cable bundles, the following products are acceptable:

.1 Hilti CP 618 Fire Stop Putty Stick

.2 Equivalent products listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory

.9 Wall opening protective materials for use with U.L.C. listed metallic and specified nonmetallic outlet boxes, the following products are acceptable:

.1 Hilti CP 617 Fire Stop Putty Pad

.2 Equivalent products listed in the UL Products Certified for Canada (cUL) Directory

.10 Firestop collar or wrap devices attached to assembly around combustible plastic pipe (closed and open piping systems), the following products are acceptable:

.1 Hilti CP 642 Firestop Collar

.2 Hilti CP 643 Firestop Collar

.3 Hilti CP 645 Wrap Strips

.4 Equivalent products listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory

.11 Materials used for large size/complex penetrations made to accommodate cable trays, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:

.1 Hilti CP 637 Trowelable Firestop Compound

.2 Hilti FS 657 FIRE BLOCK

.3 Hilti CP 620 Fire Foam

.4 Equivalent products listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory

.12 Non curing, re-penetrable materials used for large size/complex penetrations made to accommodate cable trays, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:

.1 Hilti CP 657 FIRE BLOCK

.2 Equivalent products listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory

.13 Sealants or caulking materials used for openings between structurally separate sections of wall and floors, the following products are acceptable:

.1 Hilti CP 672 Speed Spray

.2 Hilti CP 601s Elastomeric Firestop Sealant

.3 Hilti CP 606 Flexible Firestop Sealant

.4 Hilti CP 604 Self Levelling Firestop Sealant

.5 Equivalent products listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory

.14 For penetrations through a Fire Suppression provide a firestop system with an “F” Rating as determined by ULC or cUL as indicated below.

Fire Resistance Rating Required ULC or cUL “F” Rating of

Of Separation	Firestopping Assembly
Unrated separation	45 minutes
30 minutes	20 minutes
45 minutes	45 minutes
1 hour	45 minutes
1.5 hours	1 hour
2 hours	1.5 hours
3 hours	2 hours
4 hours	3 hours

For combustible pipe penetrations through a Fire Separation provide a firestop system with a "F" Rating as determined by ULC or cUL which is equal to the fire resistance rating of the construction being penetrated.

.15 For penetrations through a Fire Wall or horizontal Fire Separation provide a firestop system with a "FT" Rating as determined by ULC or cUL which is equal to the fire resistance rating of the construction being penetrated.

.16 For joints provide a firestop system with an Assembly Rating as determined by CAN4-S115-M, ULC-S115-M or UL 2079 which is equal to the fire resistance rating of the construction being penetrated.

3 Execution

3.1 PREPARATION

.1 Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

.2 Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, rust, laitance, release agents, water repellents, and any other substances that may affect proper adhesion.

.3 Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.

.4 Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.

.5 Do not proceed until unsatisfactory conditions have been corrected.

3.2 COORDINATION

.1 Coordinate location and proper selection of cast-in-place firestop devices with trade responsible for the work. Ensure device is installed before placement of concrete.

.2 Responsible trade to provide adequate spacing of field run pipes to allow for installation of cast-in-place firestop devices without interference.

3.3 INSTALLATION

.1 Regulatory Requirements: Install firestop materials in accordance with ULC Fire Resistance Directory or UL Products Certified for Canada (cUL) Directory.

.2 Manufacturer's Instructions: Comply with manufacturer's instructions for installation of through-penetration and construction joint materials.

.1 Seal all holes or voids made by penetrations to ensure an air and water resistant seal.

.3 Provide temporary forming as required. Remove forming only after materials have gained sufficient strength and after initial curing.

.4 Tool and trowel exposed surfaces to a neat finish.

.5 Remove excess compound promptly as work progresses and upon completion.

.6 Consult with mechanical engineer, project manager, and damper manufacturer prior to installation of ULC or cUL firestop systems that might hamper the performance of fire dampers as it pertains to duct work.

.7 Protect materials from damage on surfaces subjected to traffic.

3.4 FIELD QUALITY CONTROL

.1 Examine sealed penetration areas to ensure proper installation before concealing or enclosing areas.

.2 Keep areas of work accessible until inspection by applicable code authorities.

.3 Perform under this section patching and repairing of firestopping caused by cutting or penetrating of existing firestop systems already installed by other trades.

.4 Install a warning card that is clearly visible adjacent to all large and medium openings that may be re-penetrated. This card should contain the following information:

.1 Warning that the opening has been fire stop protected.

.2 Indicate the fire stop system used (ULC or cUL)

.3 F rating or FT rating

.4 Firestop products(s)

.5 Person to contact and phone number in case of modification or new penetration of firestop system.

3.5 ADJUSTING AND CLEANING

.1 Remove equipment, materials and debris, leaving area in undamaged, clean condition.

.2 Clean all surfaces adjacent to holes and joints to be free of excess firestop materials and soiling as work progresses.

END OF SECTION

1 General

1.1 SECTION INCLUDES

.1 Sealants and caulking.

.2 Backer rods.

.3 Flexible epoxy joint fillers.

1.2 WORK INCLUDED

.1 To complete joint sealants as shown or specified and summarized but not restricted to the following:

.1 Caulking between door frames and adjacent material, interior and exterior.

.2 Caulking of control joints.

.3 Exposed joints, between dissimilar materials and not concealed from view.

.4 Miscellaneous construction joints.

1.3 RELATED WORK

.1 Section 03 30 00 - Cast-In-Place Concrete

.2 Section 07 27 00 - Fire-stopping

1.4 REFERENCES

.1 ASTM C 321-00 - Standard Test Method for Bond Strength of Chemical-Resistant Mortars.

.2 ASTM C 834-05 - Standard Specification for Latex Sealants.

.3 ASTM C 919-98 - Standard Practice for Use of Sealants in Acoustical Applications.

.4 ASTM C 920-05 - Standard Specification for Elastomeric Joint Sealants.

.5 ASTM C 1330-02 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.

.6 ASTM C 882-05 - Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear.

1.5 SUBMITTALS

.1 Manufacturer's Technical Data Guides and application procedures.

.2 Submit samples illustrating colors selected.

.3 Submit laboratory tests or data validating product compliance with performance criteria specified. Include SWRI validation certificate where required.

.4 Upon completion of the project the sealant applicator must submit copies of the Manufacturer's Weather-seal and the Warranty Applicator's Workmanship Warranty.

1.6 QUALITY ASSURANCE

.1 Manufacturer Qualifications: Company regularly engaged in manufacturing and marketing of products specified in this section.

.2 Installer Qualifications: Qualified to perform work specified by reason of experience or training provided by the product manufacturer.

.3 Installer must submit a reference list including a minimum of three projects of similar size and scope.

.4 Mock-Ups: Include a minimum of 5 linear feet of sealant to show compatibility with substrate, proper adhesion to substrate and chosen color.

.1 Apply mock-up with specified joint filler types and with other components noted. Installer must provide both primed and un-primed mock up to asses whether a primer is required for the project.

.2 Locate where directed by architect.

.3 Mock-up may remain as part of work if acceptable to architect.

.5 Adhesion pull tests: the number of adhesion pull tests is to be determined by the manufacturer's weather seal warranty. Adhesion pull tests are to be conducted by or in the presence of the manufacturer's representative. The manufacturer is to supply the architect / owner with the results of the adhesion pull tests. The sealant installer is responsible for repairing areas where adhesion pull tests are conducted.

.6 Access: Installer must coordinate with manufacturer's representative to provide access to completed work areas until such time as adhesion pull tests can be completed.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Deliver products in original factory packaging bearing identification of product, manufacturer, and batch number. Provide Material Safety Data Sheets for each product.

.2 Store products in a location protected from freezing, damage, construction activity, precipitation, and direct sunlight in strict accordance with manufacturer's recommendations.

.3 Condition products to approximately 60 to 70 degrees F (16 to 21 degrees C) for use in accordance with manufacturer's recommendations.

.4 Handle all products with appropriate precautions and care as stated on Material Safety Data Sheet.

1.8 PROJECT CONDITIONS

.1 Do not use products under conditions of precipitation or freezing weather. Use appropriate measures for protection and supplementary heating to ensure proper curing conditions in accordance with manufacturer's recommendations if application during inclement weather occurs.

.2 Ensure substrate is dry.

.3 Protect adjacent work from contamination due to mixing, handling, and application.

1.9 WASTE MANAGEMENT AND DISPOSAL

.1 Coordinate all work related to Section 01 35 50 Waste Management Disposal with Contractor.

1.10 LEED DOCUMENTATION

Not Used.

2 Products

2.1 MANUFACTURERS

.1 Acceptable Manufacturers:

.1 BASF Building Systems

.2 Tremco Sealant and Waterproofing.

.3 Sika Canada Inc.

.4 Dow Corning

.2 Provide all joint materials of the same type from a single manufacturer.

2.2 0.1 MATERIALS

.1 Single Component, Non-Sag Polyurethane Sealant with plus or minus 25 percent movement capability for vertical joints; ASTM C 920, Type S, Grade NS, Class 25, uses NT, M, A, O & I; SWRI validated.

.1 Acceptable material:

.1 Sonolastic NP1 by BASF Building Systems

.2 Tremco Dymonic by Tremco Sealant & Waterproofing

.3 Sikaflex 1a by Sika Canada Inc.

.2 Single component texturized polyurethane sealant with plus or minus 25 percent joint movement capability for horizontal or vertical joints; ASTM C 920, Type S, Grade NS, Class 25, uses NT, M, A, O.

.1 Acceptable material:

.1 Sonolastic TX1 by BASF Building Systems

.2 Vulkem 116 by Tremco Sealant & Waterproofing

.3 Single component security sealant with plus or minus 25 percent joint movement capability; ASTM C 920, Type S, Grade NS, Class 25, uses NT, T, M, A, G, I; SWRI validated.

.1 Acceptable materials:

.1 Sonolastic Ultra by BASF Building Systems

.4 Single component low modulus high movement fast-curing silyl terminated polyether sealant with plus 100 and minus 50 percent joint movement capability; ASTM C 920, Type S, Grade NS, Class 100/50, uses NT, M, A, G, O; ASTM C 1382

.1 Acceptable materials:

.1 Sonolastic 150 with VLM technology by BASF Building Systems

.5 Multi-component tintable low modulus high movement fast-curing silyl terminated polyether sealant with plus 100 and minus 50 percent joint movement capability; ASTM C 920, Type M, Grade NS, Class 100/50, uses NT, M, A, G, O.

.1 Acceptable materials:

.1 Sonolastic 150 Tint Base by BASF Building Systems

.6 Multi-Component, Polyurethane Sealant with Plus or minus 50 percent joint movement capability; ASTM C 920, Type M, Grade NS, Class 25, uses NT,T, M, A, O, G and I; UL classified (fire resistance).

.1 Acceptable materials:

.1 Sonolastic NP2 by BASF Building Systems

.2 Dymeric 240 by Tremco Sealant & Waterproofing

.3 Sikaflex 2C NS by Sika Canada Inc.

.7 Single component self-leveling polyurethane sealant with plus or minus 25 percent movement capability for horizontal joints; ASTM C 920, Type S, Grade P, Class 25 uses T & M.

.1 Acceptable materials:

.1 Sonolastic SL1 by BASF Building Systems

.2 Vulkem 45 by Tremco Sealant & Waterproofing

.3 Sikaflex 1C SL by Sika Canada Inc.

.8 Multi-Component, Self-Leveling Polyurethane Sealant with plus or minus 25 percent movement capability for horizontal joints; ASTM C 920, Type M, Grade P, Class 25 uses NT, T, A, I & M.

.1 Acceptable materials:

.1 Sonolastic SL2 by BASF Building Systems

.2 Vulkem THC 900 by Tremco Sealant & Waterproofing

.3 Sikaflex 2C SL by Sika Canada Inc.

.9 Two component polysulfide sealant with plus or minus 25 percent joint movement capability; ASTM C 920, Type M, Grade NS Grade NS, Class 25 uses T, G, M, A, O.

.1 Acceptable material:

.1 Sonolastic Polysulfide Sealant by BASF Building Systems

.2 Duoflex NS by Sika Canada Inc.

.10 Single component general purpose siliconized acrylic latex sealant; ASTM C 834.

.1 Acceptable material:

.1 Sonolac by BASF Building Systems

.2 Tremflex 834 by Tremco Sealant & Waterproofing

.11 Single component neutral cure silicone sealant for non-structural glazing applications with plus minus 50% joint movement capability; ASTM C 920, Type S, Grade NS, Class 50, Use NT, M, G and A

.1 Acceptable material:

.1 Dow Corning 795 by Dow Corning

.2 Spectrum 2 by Tremco Sealant & Waterproofing

.3 Omniseal 50 by BASF Building Systems

.12 Single component neutral cure silicone sealant for non-structural glazing applications with plus 100% minus 50% joint movement capability; ASTM C 920, Type S, Grade NS, Class 25, Use T, NT, M, G A and O. SWRI validated.

.1 Acceptable material:

.1 Spectrum 1 by Tremco Sealant & Waterproofing

.2 Dow Corning 790 by Dow Corning

.13 Single component mildew resistant silicone sealant +/- 25% movement capability; ASTM C 920, Type S, Grade NS, Class 25, Use NT, G and A.

.1 Acceptable material:

.1 Tremsil 200 by Tremco Sealant & Waterproofing

.2 Dow Corning 786

.3 OmniPlus by BASF Building Systems

.14 Single component silicone structural adhesive with +/- 50% joint movement capability; ASTM C 920, Type S, Grade NS, Class 25, Use NT, G and A.

.1 Acceptable material:

.1 Dow Corning 995 by Dow Corning

.15 Single component synthetic rubber sealant purpose made for use in acoustical applications.

.1 Acceptable material:

.1 Tremco Acoustical Sealant

.16 Poured flexible 100% solids epoxy joint filler: properties.

.1 Shore A Hardness: greater than 75.

.2 Shore D Hardness: greater than 30.

.3 Elongation: 75 percent.

.4 Tensile Strength: 4.5 MPa

.5 Acceptable material:

.1 Epolith-P by BASF Building Systems

.2 Loadflex 2 by Sika Canada Inc.

.17 Gunned flexible 100% solids epoxy joint filler. Two component gun-grade epoxy joint filler with flexible, pick-proof properties for sloped or vertical areas.

.1 Shore A Hardness: 90.

.2 Shore D Hardness: 50.

.3 Elongation: 50 percent.

.4 Tensile Strength: 6.2 MPa plus or minus 0.07 MPa

.5 Slant Shear Strength: 6.0 MPa per square inch per ASTM C 882.

.6 Slant Shear Strength: 0.8 MPa per square inch per ASTM C 321.

.7 Acceptable material:

.1 Epolith-G by BASF Building Systems

2.3 ACCESSORIES

.1 Primer: Type recommended by the sealant manufacturer and compatible with joint forming materials.

.2 Joint Cleaner: Non-corrosive and non-staining type recommended by sealant manufacturer and compatible with joint forming materials.

.3 Soft Backer Rod: non-gassing, reticulated closed-cell polyethylene rod designed for use with cold-applied joint sealants.

.1 Comply with ASTM C 1330.

.2 Size required for joint design.

.4 Closed-Cell Backer Rod: closed-cell polyethylene rod designed for use with cold-applied joint sealants for on-grade or below-grade applications.

.1 Comply with ASTM C 1330.

.2 Size required for joint design.

.5 Joint Filler: closed-cell polyethylene joint filler designed for use in cold joints, construction joints, or isolation joints wider than 1/4 inch (6 mm).

.1 Size required for joint design.

.6 Bond Breaker: Pressure-sensitive tape recommended by sealant manufacturer to suit application.

2.4 COLOR

.1 Sealant Colors: Selected by architect/owner/engineer:

.1 Manufacturer's "Rainbow of Colors" range.

.2 Custom color matching submittal of job site substrate samples.

3 Execution

3.1 EXAMINATION

.1 Inspect all areas involved in work to establish extent of work, access, and need for protection of surrounding construction.

.2 Conduct pre application inspection of site verification with an authorized manufacturer's representative.

.3 Occupied areas: where high VOC materials are utilized investigate occupants to determine the measures to be taken to accommodate them.

3.2 PREPARATION

.1 Remove loose materials and foreign matter which could impair adhesion of the sealant.

.2 Clean joints and saw cuts by grinding, sandblasting, or wire brushing to expose a sound surface free of contamination and laitance.

.3 Ensure structurally sound surfaces are, dry, clean, free of dirt, moisture, loose particles, oil, grease, asphalt, tar, paint, wax, rust, waterproofing, curing and parting compounds, membrane materials, and other foreign matter.

.4 Where the possibility of sealants staining adjacent areas or materials exists, mask joints prior to application.

.1 Do not remove masking tape before joints have been tooled and initial cure of joint filler has taken place.

.2 Work stained due to failure of proper masking precautions will not be accepted.

3.3 INSTALLATION

.1 Priming:

.1 Prime all surfaces to receive sealant with recommended primer unless the mock-up proves otherwise.

.2 Back-Up Material:

.1 Install appropriate size backer rod, larger than joint where necessary according to manufacturer's recommendations.

.2 Install polyethylene joint filler in joints wider than 1/4 inch (6 mm) to back-up material per manufacturer's recommendations.

.3 Bond Breaker:

.1 Install bond-breaker strip in joint to be sealed on top of back-up material to prevent adhesion of sealant to back-up material; install per manufacturer's recommendations.

.4 Sealant:

.1 Prepare sealants that require mixing; follow manufacturer's recommended procedures, mixing thoroughly.

.2 Mix only as much material as can be applied within manufacturer's recommended application time period.

.3 Apply materials in accordance with manufacturer's recommendations; take care to produce beads of proper width and depth, tool as recommended by manufacturer, and immediately remove surplus sealant.

.4 Apply materials only within manufacturer's specified application life period. Discard sealant after application life is expired or if prescribed application period has elapsed.

3.4 CLEANING

.1 Remove uncured sealant with Reducer 990, xylene, toluene, or MEK. Remove cured sealant by razor, scraping, or mechanically.

.2 Remove all debris related to application of sealants from job site in accordance with all applicable regulations for hazardous waste disposal.

END OF SECTION

1 General

1.1 RELATED WORK

.1	Steel door frames	Section 08 11 00
.2	Finish hardware and mounting heights	Section 08 71 00
.3	Painting:	Section 09 91 10

1.2 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 30 00.

.2 Indicate door types and cutouts for glazing and louvres.

1.3 WASTE MANAGEMENT AND DISPOSAL

.1 Coordinate all work related to Section 01 35 50 Waste Management Disposal with Contractor.

1.4 LEED DOCUMENTATION

Not Used.

2 Products

2.1 MATERIALS

.1 Sheet steel: 18 ga. base thickness, commercial grade steel to ASTM A366-72, Class 1 finished to ASTM A526(1975) W25 wiped zinc finish.

.2 Glazing stops: minimum 20 ga. base thickness sheet steel with W25 wiped zinc finish to ASTM A525-80a screw fixed.

.3 Door Core:

.1 Interior Doors: Honeycomb, structural core consisting of kraft paper having 3/4" cell size to thickness indicated.

.4 Fire Doors: Fire doors shall carry a Fire Underwriter's Laboratory label of classes as required by the drawings.

.5 Primer: for touch up to CGSB 1-GP-181M+Amdt-Mar-78.

2.2 FABRICATION

.1 The following fabricators are approved to perform work of this section:

Apex Machine Works Ltd., S.W. Flemming Ltd., Macotta Co. of Canada Ltd., Daybar Industries Ltd., Artek.

.2 Fabricate steel doors as detailed, in accordance, with Canadian Steel Door and Frame Manufacturer's Association, "Canadian Manufacturing Specifications for Steel Doors and Frames", 1978 for hollow steel construction, except where specified otherwise.

.3 Mortise, reinforce, drill and tap doors and reinforcements to receive hardware using templates provided by finish hardware supplier. Reinforcement gauges to meet or exceed CSDFMA specification.

.4 Make provision for louvres and glazing as indicated and provide necessary glazing stops.

.5 Construct rail and stile doors in same manner as flush doors.

.6 Conceal weld where possible; if exposed, grind and buff smooth to match adjacent surfaces.

.7 Touch up doors with primer where galvanized finish damaged during fabrication.

.8 All exterior door joints to be sealed to prevent moisture penetration.

.9 Top of all exterior doors to be fitted with vinyl cap.

.10 Weep holes to be provided in bottom closure channel of all exterior doors.

3 Execution

3.1 INSTALLATION

.1 Installation of hollow metal doors supplied by this Section and finishing hardware supplied under Work of Section 08 71 00 is specified under Work of Section 06 20 00.

3.2 ADJUSTMENT AND CLEANING

.1 Refinish damaged and defective work before completion of project.

.2 Adjust operable parts for correct function.

END OF SECTION

1 General

1.1 RELATED WORK SPECIFIED ELSEWHERE

.1	Sealants	Section 07 90 00
.2	Steel hollow metal doors	Section 08 11 00
.3	Door Hardware	Section 08 71 00
.4	Gypsum Board Assemblies	Section 09 21 16
.5	Painting	Section 09 91 10

1.2 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 30 00.

1.3 WASTE MANAGEMENT AND DISPOSAL

.1 Coordinate all work related to Section 01 35 50 Waste Management Disposal with

1.4 LEED DOCUMENTATION

Not Used.

2 Products

2.1 MATERIALS

.1 Sheet steel: commercial grade steel to ASTM A366-72, Class 1 finished to ASTM A526(1975) W25 wiped zinc finish.

- .1 Frames: generally 16 ga. base thickness steel.
- .2 Floor anchors, channel spreaders and wall anchors: minimum 16 ga. base thickness steel.
- .3 Guard boxes: minimum 22 ga. base thickness steel.
- .4 Glazing stops: minimum 20 ga. base thickness steel, tamperproof.

.2 Reinforcing channel: to CSA G40.21-M1978, type 300W.

.3 Door bumpers: black neoprene single stud.

.4 Primer: to CGSB 1-GP-181M+Amdt-Mar-78.

2.2 FABRICATION

.1 The following fabricators are approved to perform work of this section:

Apex Machine Works Ltd., S.W. Fleming, Macotta Co. of Canada Ltd., Daybar Industries Ltd., Artek

.2 Fabricate frames as detailed, to Canadian Steel Door and Frame Manufacturer's Association, "Canadian Manufacturing Specifications for Steel Doors and Frames", 1978; except where specified otherwise.

.3 Exterior door frames to be thermally broken.

.4 Cut mitres and joints accurately and weld continuously on inside of frame profile.

.5 Grind welded corners and joints to flat plane, fill with metallic paste filler and sand to uniform smooth finish.

.6 Touch up frames with primer where galvanized finish damaged during fabrication.

.7 Provide adjustable jamb anchors for fixing at floor.

.8 Prepare frames for specified hardware with mortises and reinforcement. Drill and tap to template information.

.9 Construct thermally broken frames using steel core, separating exterior portion of frame from interior portion with polyvinyl chloride thermal breaks.

.10 Install 3 bumpers on strike jamb for each single door.

.11 Reinforce head of frames wider than 4'-0" in unsupported width.

.12 Provide labelled fire rated frames where required.

3 Execution

3.1 INSTALLATION

.1 Set frames plumb, square, level and at correct elevation.

.2 Secure anchorages and connections to adjacent construction.

.3 Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over 4'-0" wide. Remove temporary spreaders after frames are built-in.

.4 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.

3.2 CLEANING AND ADJUSTMENT

.1 Refinish damaged and deflective Work before completion of Project. Refinish exposed surfaces to ensure that no variation in appearance is discernible.

.2 Clean Work for specified finishing at completion of installation.

END OF SECTION

1 GENERAL

1.1 RELATED SECTIONS

.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

.2 Section 01 30 00 Submittal Procedures.

.3 Section 01 35 50 Construction/Demolition Waste Management and Disposal.

.4 Section 01 70 00 Contract Closeout

.5 Section 08 11 10 Hollow Metal Doors

.6 Section 08 11 10 Pressed Steel Frames

1.2 REFERENCES

.1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)

.1 ANSI/BHMA A156.1, American National Standard for Butts and Hinges.

.2 ANSI/BHMA A156.2, Bored and Preassembled Locks and Latches.

.3 ANSI/BHMA A156.3, Exit Devices.

.4 ANSI/BHMA A156.4, Door Controls - Closers.

.5 ANSI/BHMA A156.5, Auxiliary Locks and Associated Products.

.6 ANSI/BHMA A156.6, Architectural Door Trim.

.7 ANSI/BHMA A156.8, Door Controls - Overhead Stops and Holders...

.8 ANSI/BHMA A156.13, Mortise Locks and Latches Series 1000.

.9 ANSI/BHMA A156.14, Sliding and Folding Door Hardware.

.10 ANSI/BHMA A156.15, Release Devices - Closer Holder, Electromagnetic and Electromechanical.

.11 ANSI/BHMA A156.16, Auxiliary Hardware.

.12 ANSI/BHMA A156.18, Materials and Finishes.

.13 ANSI/BHMA A156.19, Power Assist and Low Energy Power - Operated Doors.

.2 Canadian Steel Door and Frame Manufacturers' Association (CSDFMA)

.1 CSDFMA Recommended Dimensional Standards for Commercial Steel Doors and Frames.

.3 UL - Underwriters Laboratories

.1 UL 10B - Fire Test of Door Assemblies

.2 UL 305 - Panic Hardware

.4 DHI - Door and Hardware Institute

.1 Sequence and Format for the Hardware Schedule

.2 Recommended Locations for Builders Hardware

.3 Key Systems and Nomenclature

1.3 SUBMITTALS

.1 Product Data:

.1 Submit in accordance with Conditions of Contract and Division 01 requirements.

.2 Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

.2 Samples:

.1 If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.

.2 After approval samples will be returned for incorporation in the Work.

.3 Hardware List:

.1 Door Hardware Schedule: Submit schedule with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening, include:

.1 Door Index; include door number, heading number, and Architects hardware set number.

.2 Type, style, function, size, and finish of each hardware item.

.3 Name and manufacturer of each item.

.4 Fastenings and other pertinent information.

.5 Location of each hardware set cross-referenced to indications on Drawings.

.6 Explanation of all abbreviations, symbols, and codes contained in schedule.

.7 Mounting locations for hardware.

.8 Door and frame sizes and materials.

.9 Operational Description of openings with any electrified hardware Operational description should include how door will operate on egress, ingress, and fire and smoke alarm connection.

.1 Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with

scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.

.4 Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:

.1 Wiring Diagrams: For power, signal, and control wiring and including:

.1 Details of interface of electrified door hardware and building safety and security systems.

.2 Schematic diagram of systems that interface with electrified door hardware.

.3 Point-to-point wiring.

.4 Risers.

.2 Key Schedule:

.1 After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used and door numbers controlled.

.2 Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.

.3 Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.

.4 Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.

.5 Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

.6 Keys to match existing system including Modico exterior cylanders

.3 Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory prepared for door hardware installation.

.5 Informational Submittals:

.1 Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.

.2 Product Certificates for electrified door hardware, signed by manufacturer:

.1 Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.

.3 Certificates of Compliance:

.1 Certificates of compliance for fire-rated hardware and installation instructions if requested by Architect or Authority Having Jurisdiction.

.6 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

.7 Closeout Submittals:

.1 Provide operation and maintenance data for door closers, locksets, door holders' electrified hardware and fire exit hardware for incorporation into manual specified in Section 01 70 00 - Closeout Submittals.

.1 Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.

.2 Catalog pages for each product.

.3 Name, address, and phone number of local representative for each manufacturer.

.4 Parts list for each product.

.5 Final approved hardware schedule, edited to reflect conditions as-installed.

.6 Final keying schedule

.7 Copies of floor plans with keying nomenclature, if provided for keying.

.8 As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.

.9 Copy of warranties including appropriate reference numbers for manufacturers to identify project.

1.4 MAINTENANCE MATERIALS

.1 Provide maintenance materials in accordance with Section 01 70 00 - Closeout Submittals.

.2 Supply two sets of wrenches for door closers, locksets and fire exit hardware.

.3 See Miscellaneous Hardware Set for items not listed for a specific door but required.

1.5 WARRANTY

.1 Provide a written manufacturer's warranty for work of this Section for failure due to defective materials for one (1) year, dated from substantial completion certificate.

.2 Provide a written Contractor's warranty for work of this Section for failure due to defective installation workmanship for one (1) year, dated from submittal completion certificate.

1.6 QUALITY ASSURANCE

.1 Regulatory Requirements:

.1 Hardware for doors in fire separations and exit doors certified by a Canadian Certification Organization accredited by Standards Council of Canada.

.2 Only products meeting ANSI/BHMA standards are acceptable. Items that are equal in design, function and quality may be accepted upon approval of the Owner's Representative. Submit detailed cross reference list and samples for review prior to tender.

.3 Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.

.1 Warehousing Facilities: In Project's vicinity.

.2 Scheduling Responsibility: Preparation of door hardware and keying schedules.

.3 Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

.4 Coordination Responsibility: Coordinate installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.

.1 Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.

.5 Suppliers Architectural Hardware Consultant (AHC) to review submittal for Life Safety Code and Fire Code Compliance. Alert Architect of any conflicts or issues that need discussion.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, store, handle and protect materials in accordance with Section 01 60 00 - Material & Equipment.

.2 Store finishing hardware in locked, clean and dry area.

.3 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.

1.8 MAINTENANCE SERVICE

.1 Provide maintenance service for one year during warranty period to maintain all barrier free entrance automatic operators as follows:

.1 Qualified service personal approved by manufacturer of operators.

.2 Make detailed reports of each visit and copy to Owner and Architect.

.3 Cost of this service will be included as part of this Section and is not covered by any allowance amount.

2 PRODUCTS

2.1 HARDWARE ITEMS

.1 Approval of manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.

.2 Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.

.3 Non-conforming products shall be replaced with specified products at no cost to Owner

.4 Use one manufacturer's products only for similar items.

2.2 DOOR HARDWARE

.1 Butts and hinges: to ANSI/BHMA A156.1, designated by letter A and numeral identifiers, followed by size and finish, listed in Hardware Schedule.

.1 Scheduled Manufacturer and Product: Ives 3BB series1-3/4 inch thick doors, up to and including 36 inches wide:

.2 Exterior: Heavy weight stainless steel, 4-1/2 inches high

.3 Interior: Standard weight, steel, 4-1/2 inches high and high traffic areas to have heavy weight hinges

.4 Provide three hinges per door leaf for doors 90 inches or less in height, and one additional hinge for each 30 inches of additional door height.

.5 Out-Swinging Exterior Doors: Non-removable pins

.6 Out-Swinging Interior Lockable Doors: Non-removable pins

.7 Provide mortar guard for each electrified hinge specified, unless specified in hollow metal frame specification.

.2 Locks and latches:

.1 Bored and preassembled locks and latches: to ANSI/BHMA A156.2, 4000 bored lock, grade 1, designed for function and keyed as stated in Hardware Sets for heavy duty areas

.2 Bored and preassembled locks and latches: to ANSI/BHMA A156.2, 4000 bored lock, grade 2, designed for function and keyed as stated in Hardware Sets for medium duty areas

.3 Stand-alone Electronic Locks: to ANSI/BHMA A156.25, grade 1, designed for function and keyed as stated in Hardware Sets for heavy duty areas

.4 Mortise locks and latches: to ANSI/BHMA A156.13, series 1000 mortise lock, designed for function and keyed as stated in Hardware Sets.

.5 Lever handles: Matching styles

.1 Bored Locks grade 1 to have Schlage Sparta (SPA)

.2 Electronic lock grade 1 to have Schlage Sparta (SPA)

.3 Bored Locks grade 2 to have Schlage Neptune (NEP)

.4 Mortise Locks grade 1 to have Schlage 17B

.5 Exit devices grade 1 to have .Von Duprin 17

.6 Normal strikes: box type, lip projection not beyond jamb.

.7 Cylinders: key into a new factory registered Grand Master keying system as directed. Submit a proposal for review and editing

.1 Full size interchangeable cores at:

.1 Exterior doors

.8 All corresponding cylinders to be removable.

.9 Finished to BHMA 626.

.1 Door Closers and Accessories:

2.3 MANUFACTURERS AND PRODUCTS:

.1 Scheduled Manufacturer and Product: LCN 4040XP series.

.2 Exterior Requirements:

.1 Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.

.2 Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.

.3 Cylinder Body: 1-1/2 inch diameter with 3/4 inch diameter double heat-treated pinion journal.

.4 Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.

.5 Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.

.6 Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.

.7 Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.

.8 Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).

.9 Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

.3 Interior Requirements:

.1 Manufacturers and Products:

.1 Scheduled Manufacturer and Product: LCN 1460 series

.2 Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory.

.3 Provide door closers with fully hydraulic, full rack and pinion action cylinder.

.4 Closer Body: 1-1/4 inch (32 mm) diameter, with 5/8 inch diameter heat-treated pinion journal.

.5 Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.

.6 Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.

.7 Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.

.8 Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

.4 Architectural door trim: to ANSI/BHMA A156.6, designated by letter J and numeral identifiers listed in Hardware Schedule.

.1 Door protection plates: 1.27 mm thick stainless steel, finished to BMHA 630.

.2 Push plates: 1.27 mm thick stainless steel finished to BMHA 630.

.3 Push/Pull units: type stainless steel finished to BMHA 630.

.5 Auxiliary hardware: to ANSI/BHMA A156.16, designated by letter L and numeral identifiers listed in Hardware Schedule.

.1 Combination stop and holder, floor mounted: finished to BMHA 626.

.2 Surface bolt lever extension flush bolt: finish to BMHA 626.

.6 Door bottom seal: heavy duty, door seal of extruded aluminum frame and hollow closed cell neoprene weather seal, surface mounted with drip cap closed ends, clear anodized finish.

.7 Thresholds: to ANSI/BHMA A156.21 extruded aluminum mill finish, serrated surface, with lip and vinyl door seal insert.

.8 Weatherstripping:

.1 Head and jamb seal:

.1 Extruded aluminum frame and solid closed cell neoprene insert, clear anodized finish.

.2 Astragal: overlapping, extruded aluminum frame with vinyl insert, finished to match doors.

2.4 FASTENINGS

.1 Use only fasteners provided by manufacturer. Failure to comply may void warranties and applicable licensed labels.

.2 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.

.3 Exposed fastening devices to match finish of hardware.

.4 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.

.5 Use fasteners compatible with material through which they pass.

2.5 KEYING

.1 Doors locks to be grand master keyed as directed and integrated with existing system. Prepare detailed keying schedule in conjunction with Owner's Representative and owner.

.2 Provide keys in duplicate for every lock in this Contract.

.3 Provide Construction Control keys, Construction Keys, Permanent Control Keys, Permanent Grand Master and Master Keys as noted in Misc. Allow for three (3) levels of keying, Grand master, master as well as individual change keys or keyed alike groups.

.4 Stamp keying code numbers on keys and cylinders.

.5 Provide construction cores at Exterior, Interior Control, Reception and Staff Doors

.6 Provide all permanent cores and keys to Owner's Representative.

.7 Supply fifty (50) blanks to suit project keyway

2.6 FINISHES

.1 Following finishes are indicated in hardware groups.

BHMA	CAN MATERIAL	FINISH
626	26D Brass/Bronze	Satin Chrome
628	28 Aluminum	Satin Alum, Anodized
630	32D Stainless Steel	Satin Stainless Steel
652	26D Steel	Plated Satin Chrome

689	Al Aluminum	Painted Aluminum
	Alum Aluminum	Mill Finish

2.7 ABBREVIATIONS

ALD	Aluminum Door and Frame
ATMS STMS	Arm/strike To Template with Machine Screws
ASB	Arm Complete with Sex Bolts
BC	Back Check
C to C, C/L	Centerline to Centerline
CD	Cylinder Dogging
CON	Molex Connector
CS	Concealed ON/OFF Switch
Cyl	Cylinder (of a lock)
CMK	Construction Master Key
Deg.	Degree (of opening)
DEL	Delayed Action
EB	Entry Buzzer
FBB or BB	Ball bearing hinge
FSE	Fail Secure for Electric Strikes
ICX	Construction Interchangeable Core
INS-2	½" applied panel or Insulclad
NRP	Non Removal Pin
QEL	Quiet Latch Retraction
RD	Schlage Full Size Interchangeable Core
RX	Request to Exit Switch
SRT	Self Drilling / Tapping Screws

3 EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

.2 Furnish metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.

.3 Furnish manufacturers' instructions for proper installation of each hardware component.

3.2 INSTALLATION

.1 Install hardware to standard hardware location dimensions in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturers' Association.

.2 Where door stop contacts door pulls, mount stop to strike bottom of pull.

.3 Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.

.4 Remove construction when directed by Owner’s Representative; install permanent cores and check operation of locks.

.5 Wiring Diagrams:

.1 Provide any special information, voltage requirements and wiring diagrams to other trades requiring such information.

3.3 EXAMINATION

.1 Visit will include examination of openings, site conditions and materials for conditions that prevent proper application of finish hardware.

.2 Installation will imply conditions for installation acceptable hardware contractor to accept responsibility.

3.4 FIELD QUALITY CONTROL

.1 Hardware contractor to have a qualified AHC representative from the manufacturer/supplier on site at Substantial Completion Inspection and at commissioning of the finished hardware. Cost of the visits to be included in contract.

3.5 ADJUSTING

.1 Adjust door hardware, operators, closures and controls for optimum, smooth operating condition, safety and for weather tight closure.

.2 Lubricate hardware, operating equipment and other moving parts.

.3 Adjust door hardware to provide tight fit at contact points with frames.

.4 Where hardware is found defective, repair or replace or correct as desired by inspection reports.

3.6 CLEANING

.1 Perform cleaning after installation to remove construction and accumulated environmental dirt.

.2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacturer's instructions.

.3 Remove protective material from hardware items where present.

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

3.7 PROTECTION

.1 All hardware shall be protected against damage from paint, plaster or other defacing materials. Whenever possible manufacturers protective covering when applied, shall not be removed until final project cleaning takes place. Material not protected by manufacture shall be covered or removed from door during painting or any other adjustments that can cause damage to hardware.

3.8 HARDWARE SETS

.1 Provide hardware to function properly as indicated by the products specified in the previous articles in sets according to the following groups. Supplier to provide all products to suit opening.

.2 Cylinders and cam models to suit locking device. Review cylinder model, cam, size, type and supply as required. Size Weatherstrip, sweeps, thresholds, and hook strips to suit inside frame sizing. Interlock gasketting at frame head, sized outside of frame to outside of frame.

.3 Provide the following hardware:

- 1 ½ pr butts
- Weatherstripping
- Latch set
- Deadbolt with cylinder to suit owners requirements
- Smoke Seal

END OF SECTION

1 General

1.1 GENERAL CONDITIONS

.1 The General Conditions of the contract as well as provisions of Division 1 at the beginning of these specifications shall be deemed to apply and be a part of this section of the specification.

1.2 WORK INCLUDED

.1 To complete all interior gypsum board & steel stud on walls and ceilings as shown or specified and summarized but not restricted to:

.1 Metal stud partitions.

.2 Suspended gypsum board ceilings and bulkheads.

.3 Furring systems and enclosures as described herein and indicated on drawings.

.4 Miscellaneous drywall as required to complete the project.

.5 Installation of pressed steel frames in steel stud partitions.

1.3 RELATED WORK

.1 Section 08 11 10: Pressed Steel Frames

1.4 REFERENCE STANDARDS

.1 Do work in accordance with CSA A82.31-M1980 except where specified otherwise.

1.5 SHOP DRAWINGS

.1 Submit Shop Drawings in accordance with Section 01 30 00

.2 Indicate steel studs, bridging, etc.

.3 All steel studs and bridging shop drawings to be stamped by a professional engineer licensed in Nova Scotia.

2 Products

2.1 GYPSUM BOARD

.1 Plain: to CSA A82.27-M1977 standard and Type X, thickness as noted on drawings, 4'-0" wide x maximum practical length, ends square cut, edges tapered.

.2 Abuse resistant drywall to be Fiberock VHI, 5/8" thick.

.3 Drywall for curved walls: 2 layers of 1/4" Flexroc by 9-P Gypsum Corporation or approved equal.

2.2 METAL FURRING AND SUSPENSION SYSTEMS

.1 Metal furring runners, hangers, tie wires, inserts, anchors: to CSA A82.30-M1980, galvanized.

.2 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.

.3 Resilient drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board, except 16 ga. for drywall secured to existing steel structure.

2.3 FASTENINGS AND TIES

.1 Screws: to CSA A82.31-M1980. Self-drilling, self-tapping, case hardened, Philips head, drywall screws, with corrosion resistant finish.

.2 Hangers: 9 ga. galvanized soft annealed steel wire.

2.4 ACCESSORIES

.1 Casing beads, corner beads fill type: 0.5 mm base thickness commercial grade sheet steel with Z275 zinc finish to ASTM A525M-80, perforated flanges; one piece length per location.

.2 Acoustic Sealant: to CGSB 19-GP-21M as manufactured by Tremco Manufacturing Co. or Inmont Presstite Ltd.

.3 Polyethylene: to Can 2-51.33-M80, 6 mil.

.4 Joint Compound: to CSA A82.31-M1980, asbestos free.

.5 Joint Tape: 2" x 0.012" thick, perforated paper with chamfered edges.

.6 Control Joists: Crimped rolled-formed zinc, with flanges for tape reinforcement, or two casing beads, set with gap for movement and backed with flexible air seal membrane.

.7 Special purpose made angles and channels as required and as detailed to support radiant heating panels.

2.5 PARTITION SYSTEM

.1 Interior Steel Studs: 25 ga. steel, galvanized, having knurled flanges 1 1/4" wide edges double back at least 3/16", with girts as required, and with service access holes. Sizes as indicated on drawings.

.2 Partition Runners: as specified for studs, with flanges a minimum of 7/8" high, and to suit width of studs.

.3 Bracing Channels: 18 ga. 1 1/2" x 3/4" cold rolled steel, wipe coated.

.4 Hanger Devices: Zinc coated annealed steel wire; 9 ga. to support a maximum weight of 310 lbs. per hanger.

2.6 ACOUSTIC INSULATION

.1 Type: Unfaced glass fiber acoustical insulation complying with ASTM C665, Type I.

.2 Size 2 ½" thick, 16" wide, 96" long.

.3 Surface Buring Characteristics:

.1 Maximum flame spread: 10

.2 Maximum smoke developed: 10

.4 Combustion Characteristics:

.1 Passes ASTM E 119 test.

.5 Sound Transmission Class: STC 45.

3 Execution

3.1 METAL STUD SYSTEM

.1 Align partition tracks at floor and ceiling and secure at 2'-0" o.c. maximum.

.2 Install damproof course under stud shoe tracks of partitions on slabs on grade.

.3 Place studs vertically at 16" o.c. and not more than 2" from abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace studs as required to provide rigid installation to manufacturer's instructions.

.4 Erect metal studding to tolerance of 1:1000.

.5 Attach studs to bottom and ceiling track using screws.

.6 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.

.7 Co-ordinate erection of studs with installation of door/window frames and special supports or anchorage for work specified in other Sections.

.8 Provide two studs extending from floor to ceiling at each side of openings wider than stud centres specified. Secure studs together, 2" apart using column clips or other approved means of fastening place alongside frame anchor clips.

.9 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.

.10 Frame openings and around built-in equipment, cabinets, access panels, on four sides. Extend framing into reveals. Check clearances with equipment suppliers.

.11 Provide 1 1/2" stud or furring channel secured between studs for attachment of fixtures behind laboratory basins, toilet and bathroom accessories, and other fixtures including grab bars and towel rails, attached to steel stud partitions.

.12 Install steel studs or furring channel between studs for attaching electrical and other boxes.

.13 Extend partitions from floor to underside of structure except where noted otherwise on drawings.

.14 Install two continuous beads of acoustical sealant under studs and tracks around perimeter of sound control partition.

.15 Install mineral wood insulation to fill steel stud cavity in exterior wall assembly.

3.2 SUSPENDED AND FURRED CEILINGS

.1 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with CSA A82.31-M1980 except where specified otherwise.

.2 Support light fixtures by providing additional ceiling suspension hangers within 6" of each corner and at maximum 2'- 0" around perimeter of fixture.

.3 Support heating panels as per mechanical details.

.4 Install work level to tolerance of 1:1200.

.5 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles.

.6 Install furring channels parallel to, and at exact locations of steel stud partition header tracks.

.7 Furr for gypsum board faced vertical bulkheads within or at termination of ceilings.

.8 Furr above suspended ceilings for gypsum board fire and sound stops as indicated.

3.3 WALL FURRING

.1 Install wall furring for gypsum board wall finishes in accordance with CSA A82.31-M1980, except where specified otherwise.

.2 Furr openings and around built-in equipment, cabinets, access panels, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.

.3 Furr beams, duct shafts, columns, pipes and exposed services where indicated.

3.4 GYPSUM BOARD APPLICATION

.1 Do not apply gypsum board until bucks, anchors, blocking, electrical and mechanical work are approved.

.2 Apply gypsum board to metal furring or framing using screw fasteners. Maximum spacing of screws 12" o.c.

.3 Extend all drywall to u/s of structure except where noted otherwise on the drawings.

.4 Where partitions call for acoustic insulation, apply 1/2" diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, ducts, etc., in partitions where perimeter sealed with acoustical sealant.

3.5 ACCESSORIES

.1 Erect accessories straight, plum or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 6"o.c.

.2 Install casing beads around perimeter of suspended ceilings.

.3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.

.4 Install insulating strips continuously at edges of gypsum board or casing beads abutting metal window or exterior door frames, to provide thermal break.

.5 Install acoustic insulation where indicated on drawings.

3.6 CONTROL JOINTS

.1 Locate control joints in all gypsum board walls over 30' in length or height. Space joints at 30' on centre horizontally and vertically.

.2 Construct control joints of preformed units set in gypsum board facing and supported independently on both sides of joint.

.3 Provide continuous polyethylene dust barrier behind and across control joints.

.4 Install control joints straight and true.

3.7 TRIM

.1 Install trim as indicated.

.2 Minimize joints; use corner pieces and splicers.

3.8 ACCESS DOORS

.1 Install access doors to electrical and mechanical fixtures specified in respective Sections.

.2 Rigidly secure frames to furring or framing systems.

3.9 ACOUSTIC INSULATION AND APPLICATION

.1 Obtain installer’s written report listing conditions detrimental to performance of work in this section. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

.2 Comply with manufacturer’s instructions for particular conditions of installation in each case.

.3 Sound Attenuation Batts may be friction-fit in place until the interior finish is applied. Install batts to fill entire stud cavity. If stud cavity is less than 96" in height, cut lengths to friction-fit against floor and ceiling tracks. Walls with penetrations require that insulation be carefully cut to fit around outlets, junction boxes and other irregularities.

.4 Where walls are not finished on both sides of insulation does not fill the cavity depth, supplementary support must be provided to hold product in place.

.5 Where insulation must extend higher than 8 feet, temporary support shall be provided to hold product in place until the finish material is applied.

3.10 INSTALLATION OF PRESSED STEEL FRAMES IN STEEL STUD PARTITIONS

.1 Install hollow metal door frames supplied under Section 08 11 10.

.2 Brace frames in place to prevent displacement until anchored into masonry and remove spreaders at floor after frames are anchored.

3.11 TAPING AND FILLING

.1 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.

.2 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.

.3 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after painting is completed.

.4 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.

.5 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for painting.

3.12 ADJUSTMENT AND CLEANING

.1 Remove droppings and excess of joint compound from Work of others, and from Work of this Section, before it sets.

.2 Make good to cut-outs for services and other Work, fill in defective joints, holes and other depressions with joint compound.

.3 Make good defective work, and ensure that surfaces are smooth, evenly textured and within specified tolerances to receive finish treatments.

END OF SECTION

1 General

1.1 GENERAL CONDITIONS

.1 The General Conditions of the contract as well as provisions of Division 1 at the beginning of these specifications shall be deemed to apply and be a part of this section of the specification.

1.2 RELATED WORK

.1	Sealants:	Section 07 90 00
.2	Gypsum Board:	Section 09 21 16

1.3 REFERENCE STANDARDS

.1 Do tile work in accordance with "2000 Specification Guide 09300 Tile Installation Manual" produced by Terrazzo Tile and Marble Association of Canada (TTMAC), except where specified otherwise.

1.4 SUBMITTALS

.1 Submit cleaning and maintenance instructions in accordance with Section 01 30 00.

.2 Submit tile and grout samples to Architect for approval before commencing work.

1.5 ENVIRONMENTAL CONDITIONS

.1 Maintain air temperature and structural base temperature at ceramic tile installation area above 12°C for 48 h before, during, and 48 h after, installation.

1.6 PROTECTION

.1 Prevent traffic and work on newly laid floors by barricading areas for at least 48 hours following installation.

1.7 EXTRA STOCK

.1 Deliver to Owner on completion of the Work, and as directed, 2% of the quantity of hard tile installed of each material and colour (including base), in labelled packages.

2 Products

2.1 CERAMIC FLOOR TILE

Not Used.

2.2 TILE BASE

.1 Manufacturer: Cemento or Approved Equal

Available thru Elegant Flooring, Ernie Lamont

.2 Pattern/Color: Rasato Antracite by Cemento or approved equal.

.3 Size: 4" Height

.4 Location: Walls below stairs, storage room, etc. as per drawings.

2.3 ADHESIVE FOR PORCELAIN AND QUARRY TILE

.1 Thin set mortar: Keralastic and Kerabond as manufactured by Mapei or Fixal G-6 and Parilat L Modenfix, Chembond 8820 multi-purpose mortar.

2.4 PRIMER

.1 To meet specified requirements of suppliers of adhesive.

2.5 GROUT

.1 Polymer modified floor/wall grout by Flextile or Latex Additive Keracolor plus Plastijoint Additive by Mapei, or Chembond 9924 floor grout.

.2 Colour to match tile as closely as possible.

2.6 BOND COAT

.1 Mix and apply where recommended to manufacturer's instructions.

2.7 ACCESSORIES

.1 Stair Nosing Profile: Schluter Systems, TREP-GK-S color: GSEBKGS

.2 Tile Base Edge Profile; Schluter Systems, JOLLY color: Satin Nickle, depth to match tile.

2.8 CAULKING COMPOUND

.1 Type 1 to meet specified requirement of Section 07 90 00.

2.9 CLEANER

.1 To meet specified requirements of 1000 Series of Terrazzo, Tile and Marble Association of Canada.

2.10 SEALANT

.1 Type 1 to meet specified requirements of Section 07 90 00.

2.11 TILE AND GROUT SEALER

.1 To meet specified requirements of 1000 Series of Terrazzo, Tile and Marble Association of Canada.

.2 Penetrating, water based sealer

3 Execution

3.1 WORKMANSHIP

.1 Install tile in accordance with details and specifications of the Terrazzo, Tile and Marble Association of Canada Installation Manual.

.2 Ensure that environmental conditions and backing surfaces have been provided according to specified requirements.

.3 Defective work resulting from application to unsatisfactory surfaces will be considered the responsibility of those performing the work of this section.

.4 Install coved base as per drawings.

.5 Fit tile around corners, fitments, fixtures, drains and other built-in objects. Maintain uniform joint appearance. Cut edges smooth and even.

.6 Maximum surface tolerance 1:800.

.7 Make joints between tile uniform and approximately 1/16" wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation. Align joints in floor and base.

.8 Lay out tiles so perimeter tiles are minimum 1/2 size.

.9 Sound tiles after setting and replace hollow-sounding units to obtain full bond.

.10 Back butter all 18" x 18" porcelain tiles.

.11 Make internal angles square, external angles bull-nosed.

.12 Slope tile work to floor drains.

3.2 SETTING

.1 Prime entire backing surface. Prime with materials and by methods specified by manufacturer of adhesive. Set tile firmly on bed. Bring all surfaces to a true plane at the proper position or elevation.

3.3 ACCESSORIES

.1 Not Used.

3.4 GROUTING

.1 Grout tile joints in accordance with grout manufacturer's directions and to fill joints solidly.

.2 Fill all joints of square edge tile flush with surface of tile.

.3 Fill all gaps and skips, and cover setting bed completely. Ensure that finish grout is uniform in colour, smooth and without voids, pinholes or low spots.

3.5 CAULKING

.1 Caulk joints between tile and water closet bowls with silicone sealant to meet specified requirements of Section 07 90 00 of this project manual.

3.6 TILE AND GROUT SEALER

.1 Seal all floor tile grout. Do not apply sealer to floor tiles

3.7 ADJUSTMENT AND CLEANING

.1 Before project completion, remove and replace defective, damaged, loose, and unbonded tile; and point defective joints.

.2 Clean installed tile surfaces after installation and grouting cured in accordance with Section 01 70 00.

END OF SECTION

1 General

1.1 WORK INCLUDED:

.1 Painting of all exposed new and existing steel guardrails, channels, etc. as indicated in the drawings.

.2 All Painting as per finish schedule.

1.2 RELATED WORK

.1 Doors and frames: Section 08 11 00

.2 Gypsum board: Section 09 21 16

1.3 REFERENCE STANDARDS

.1 The best practices specified or recommended in CAN2-85.100-M81 shall govern for materials, methods and procedures.

1.4 ENVIRONMENTAL REQUIREMENTS

.1 Do not apply paint finish in areas where dust is being generated.

.2 Ensure that all areas in which paint is applied are well-ventilated and broom clean.

.3 Do not apply paint unless a uniform minimum 50°F air temperature has been achieved in the installation area for 24 hours prior to and after application.

1.5 PROTECTION

.1 Cover or mask surface adjacent to those receiving finish to protect work of others from damage and soil.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Deliver to site each container sealed and labelled with manufacturer's name, catalogue number or brand name, colour, formulation type, reducing instructions, and reference standard specification number if applicable.

.2 Store only acceptable project materials at site, and in an area specifically set aside for purpose that is locked, ventilated, maintained at a temperature of over 4°C, and protected from direct rays of sun. Ensure that health and fire regulations are complied with in storage area.

1.7 EXTRA STOCK

.1 Deliver to Owner on completion of Work, and as he directs, sealed containers of each finish painting material applied, and in each colour. Label each container as for original, including mixing formula. Provide one litre of extra stock when less than 40 litres are used for project, 4 litres of extra stock when 40 to 50 litres are used, and 8 litres of extra stock when over 150 litres are used.

1.8 ECO-LOGO

.1 All paint products are to be "Eco-Logo" approved products. Supply appropriate certificate from manufacturer.

.2 All paints to be premium low order, zero VOC.

1.9 TECHNICAL REPRESENTATION

.1 Manufacturer's Obligations

.1 The manufacturer shall play an active role in the application of his product during the period of this contract. The manufacturer shall be represented at all these meetings by a qualified technical representative, trained as a paint inspector with a minimum of 5 years experience. The technical representative shall be approved by the Architect.

.2 The project shall be subdivided into "Sectors of Work":

.1 A minimum of three inspections per sector from the Manufacturer's representative must be made prior to and during application of this work to ensure proper application.

.2 After each visit provide a written report to the Architect within 5 working days.

.3 30 days prior to any painting, a prejob conference shall be held to confirm methods, materials, etc. for this contract. Items to be present: specifications, finish schedule, colour schedule, product data sheets - MSDS.

1.10 PREJOB CONFERENCE

.1 After the award of this contract and prior to the preparation of a mock sample area, a pre-job conference shall be held with the following people present:

.1 The Architect

.2 The applicator and his designated inspectors and crew supervisors who will be working on site on this project

.3 The paint manufacturer's trained paint inspector.

2 Products

2.1 MATERIALS

.1 Acceptable Manufacturers: Pittsburg, Glidden, Benjamin Moore, Sherwin Williams, provided the manufacturer can provide technical representation as per 1.9, and match product quality specified.

.2 Stain and varnish finish on wood doors and millwork only flame retardant.

.3 Paint materials: to Ecologo and CGSB Standards listed in Finishing Formulae.

.4 Paint materials for each coating formulae to be products of a single manufacturer.

3 Execution

3.1 EXAMINATION

.1 Ensure that surfaces to receive finishing materials are satisfactory for specified materials; have been provided as specified in the Work of other Sections; will not adversely affect execution, permanence, or quality of Work; and can be put into an acceptable condition by means of preparation specified in this section.

.2 Defective painting and finishing Work resulting from application to unsatisfactory surfaces will be considered the responsibility of those performing the Work of this Section.

3.2 EXTENT OF WORK

.1 All new work in finished areas is to be painted.

.2 Where a room or surface is called to be painted, all work in the room or surface other than pre-finished work is to be painted.

.3 In renovated areas, all patches, etc. are to be painted. If painting of patched work cannot be made to match adjacent work, the entire wall is to be re-painted.

3.3 PREPARATION OF SURFACES

.1 General:

.1 Vacuum clean interior areas immediately before finishing work commences.

.2 Remove from surfaces: grease, oil, dirt, dust, ridges, and other soil and materials that would adversely affect the adhesion or appearance of finish coatings.

.3 Rust on surfaces primed under work of other Sections shall be removed and the areas reprimed under the Work of these Sections.

.4 Finish, patch and smooth surfaces to remove cracks, holes, ridges, and similar blemishes.

.5 Touch-up damaged prime coats on shop primed metals with same priming material. Feather out edges of shop coat and smooth repair coat into shop coat surfaces.

.6 Scrub mildewed surfaces with a solution of tri-sodium phosphate, bleach with a solution of one part sodium hypochlorite (Javex) to three parts water, and rinse with clear water.

.2 Masonry:

.1 Fill minor holes and cracks in concrete, and concrete masonry with Portland cement grout.

.2 Remove dirt, scale, loose mortar, and similar foreign matter by brushing.

.3 Touch up shop paint primer on steel with CGSB 1-GP-40M to CGSB 85-GP-14M.

.4 Prepare galvanized steel and zinc coated surfaces to CGSB 85-GP-16M.

.5 Existing Metal:

.1 Sand all rust or base spots. Feather edges & prime as per 3.4.

.6 Gypsum Board:

.1 Fill minor holes and depressions, caused by accidental damage, with drywall joint compound, and sand smooth when it is set, taking care not to raise nap of paper cover.

.7 Wood:

.1 Sand finish surfaces smooth with No. 00 sandpaper.

.2 Clean soiled surfaces with an alcohol wash.

.3 Wipe off dust and other loose dirt, or vacuum clean before application of coatings.

.4 Seal knots, pitch, and sapwood with two coats of uncut orange shellac, or an application of special sealer. Use only sealer that is compatible with transparent finish.

.5 After prime coat is dry and sanded, fill nail and screw holes, and cracks with wood filler, or with putty for interior work and caulking compound for exterior work. Colour fillers to match wood or stain if surfaces are given clear final coatings. Smooth, sand and prime fillers when set.

3.4 APPLICATION

.1 Consult with Architect before proceeding with application of finishes to surfaces for which a formula is given in specification.

.2 Apply paint to concrete block by spray and back roll method.

.3 Sand and dust between each coat to remove defects.

.4 Finish bottoms, edges, tops and cutouts of doors after fitting as specified for door surfaces.

.5 Finish closets and alcoves as specified for adjoining rooms.

.6 Apply each coat only after preceding coat is dry and hard, or as otherwise directed by material manufacturer.

.7 Priming and Back Priming:

.1 Verify, by review of other sections of this specification, the extent of surfaces primed under work of other sections. Priming of unprimed surfaces shall be included in Work of this Section.

.2 Backprime exterior and interior woodwork, frames, fitments and similar work as soon as it is delivered and before installed. Use exterior primer compatible to finish coat for exterior work, and enamel undercoater for interior work to receive paint or enamel finishes. Prevent primer from running over faces.

.3 Backprime exterior and interior woodwork receiving clear finishes with floss varnish reduced 25% by mineral spirits. Prime all exterior doors and frames.

.4 Prime tops and bottoms of painted wood doors with enamel undercoater, and tops and bottoms of clear finished doors with gloss varnish. When doors are stained apply varnish after staining. Remove doors to prime and finish.

.5 Brush out and force primers into grain of wood, and into crevices, cracks and joints in all materials.

3.5 MECHANICAL AND ELECTRICAL EQUIPMENT

.1 Paint exposed conduits, pipes, hangers and other mechanical and electrical equipment occurring in finished areas. Colour and texture to match adjacent surfaces, except as noted otherwise.

.2 Paint all rooftop mechanical and electrical units and equipment, and exterior louvres, etc.

.3 Keep sprinkler heads free from paint.

.4 Paint both sides of plywood backboards for equipment before installation.

3.6 COLOURS

.1 Colours of paints, including shades of stains, shall be applied to match approved samples.

.2 Colours will be selected by the Architect.

3.7 INTERIOR FINISHES

.1 Formula 7: for gypsum board walls other than epoxy finish, apply:

one coat latex primer-sealer CGSB, 1-GP-119M-Amdt-Sep-80,

two coats latex eggshell enamel. 9-411 Series min. 3 mils dry

.2 Formula 9: for gypsum board ceilings generally, apply:

one coat primer sealer CGSB 1-GP-119M-Amdt-Sep-80

one coat flat paint CGSB-1-GP-100

.3 Formula 16: for primed ferrous metal surfaces apply:

.1 one coat enamel undercoat

.2 two coats gloss enamel PPG Pitt Tech

.4 Formula 17: for galvanized and zinc coated metal apply (after etching)

one coat galvanized metal primer

two coats enamel semi-gloss enamel PPG Pitt Tech

one coat varnish satin finish CGSB 1-GP-36M, Type 2

.5 Formula 20: for Metal handrails, metal doors and misc. metal trim:

one coat enamel undercoat primer

two finish coats Pitt tech styrinated acrylic satin finish, spray applied

.6 Formula 22: Interior metal door frames:

spray two coats PPG Pitt Tech 90-474 in desired colour-satin finish

.7 For Existing Metal trim, handrails, guardrails, etc.

One coat enamel undercoat, primer at bare spots.

Two finish coats Pitt Tech styrinated satin finish, spray applied.

END OF SECTION