226069

Spriet Associates Architects and Consulting Engineers
Municipality of Southwest Middlesex
August 25, 2026

Glencoe

Operations Centre

Owner: Municipality of Southwest Middlesex
153 McKellar Street
Glencoe ON N0L1M0
P: 519-287-2015

Architect: Spriet Associates Limited
Architects
155 York Street
London, ON N6A 1A8
P:519-672-4100
E:mail@spriet.on.ca

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Part 1 General

1.1 ARCHITECTURAL DRAWING LIST

.1

DRAWING NO.	DESCRIPTION	REVISION NO 1
A100	New Addition Floor Plan & Wall Types	
A110	Ceiling Plan	
A200	Exterior Elevations	
A300	Building Sections	
A400	Wall Sections	
A500	Details	
A600	Washroom Plans & Elevations	
A601	Washroom Standards	
A700	Millwork	
A800	Schedules & Legends	

1.2 STRUCTURAL DRAWING LIST

.1

DRAWING NO.	DESCRIPTION	REVISION NO. 1
S100	Structural Plan	
S101	Framing Plan	
SP1	Site Plan	

1.3 CIVIL DRAWING LIST

.1

DRAWING NO.	DESCRIPTION	[REVISION NO].
SP1	Site Plan	

1.4 MECHANICAL DRAWING LIST

.1

DRAWING NO.	DESCRIPTION	[REVISION NO].
M1	Mechanical Plans	
M2	Mechanical Details / Schedules	

M3	Mechanical Specifications	

1.5 ELECTRICAL DRAWING LIST

.1

DRAWING NO.	DESCRIPTION	[REVISION NO].
E1	Electrical Plans	
E2	Electrical Schedules & Keyplan	
E3	Electrical Specifications	

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

Section 00 21 13
Instructions to Bidders

Part 1 General

1.1 BID CALL

.1 Bids signed under seal, executed, and dated will be received by the Owner:

.1 Location:
Municipality of Southwest Middlesex
153 McKellar Street
Glencoe, ON, N0L1M0
Canada
ATTN: Mauro Castrilli, C.E.T.
Manager of Public Works

.2 **DOCUMENTS AVAILABLE**:
https://biddingo.com

.1 **NO ELECTRONIC SUBMISSIONS. HARD COPIES WILL ONLY BE ACCEPTED**

.3 Date and Time: Before 14:00:00 local time on the 23 day of September, 2026.

.4 The time piece at the location for receiving Bids shall be the only measure for the exact time.

.1 Bidding system web clock

.5 It is the Bidders responsibility to ensure that all documents are received prior to closing time. Be aware of file sizes and "internet speed delays" that could occur. A bid is only considered to be submitted once it has been received by the bidding system.

.1 Bidders should contact the Municipality at least twenty-four (24) hours prior to the closing time and date, if they encounter any problems. The Bidding System will send a confirmation email to the Bidder advising that their bid was submitted successfully.

.2 Unofficial tender results will be posted on the Municipality’s Bidding System Website as soon as possible after the opening.

.6 Late bids shall not be accepted by the Municipality’s Bidding System.

.7 PHASED CLOSING - SUBMISSION REQUIREMENTS

.1 Notwithstanding the Bid Closing time set out in Article 1.3, the submission of the Stipulated Sum for Construction Breakdown identified in Section 00 41 00 - Bid Forms, Article 1.11 will be accepted up to two (2) hours after the Bid Closing time.

.1 This document can be email to mail@spriet.on.ca (max 20 MB)

.2 All other bid submission requirements, including the Form of Tender with Stipulated Sum, Bid Bond (or Agreement to Bond), and all other required documents, must be submitted by the Bid Closing time.

.3 The Stipulated Sum for Construction Breakdown is provided for information purposes only. It must total the same Stipulated Sum submitted at the Bid Closing time and shall not be used to alter the bid price.

.4 Failure to submit the Stipulated Sum for Construction Breakdown within the two (2) hour period may, at the Owner's discretion, render the bid invalid.

.2 Bids will be returned to the Bidder unopened if submitted after stated time.

.3 Bids will be opened publicly, but require a request for inclusion.

.1 Bids will be opened immediately after the time for receipt of Bids.

.2 Bidders who wish to participate virtually in the opening should email requests to the municipality no later than 3:00 PM, three (3) business days prior to closing.

.1 Mauro Castrilli, C.E.T.
Manager of Public Works
Mauro Castrilli: mcastrilli@southwestmiddlesex.ca

1.2 BID INTENT

.1 The intent of this bid call is to obtain an offer to perform Work to complete an addition to the existing Public Works Garage including office and staff support facilities project, located at 266 Appin Rd, Glencoe for a Stipulated Price contract, in accordance with the Contract Documents.

.2 Perform the Work within the time stated in the Bid Form.

1.3 CONTRACT DOCUMENT IDENTIFICATION

.1 the Contract Documents are identified as Project number 226069, as prepared by the prime Consultant Spriet Associates and their sub-consultants, and listed in The Table of Contents.

.2 The Documents consist of:

.1 Form of Tender and Instructions to Bidders

.2 CCDC2 2020 Edition

.3 Drawings and Specifications noted in the list of contract drawings

.4 All Addenda issued

1.4 BID MODIFICATION AND WITHDRAWAL

.1 Modifications to a submitted Bid or withdrawal of a Bid, will be permitted if received in writing in the form of a electronic submission through Bid Portal, prior to the date and time of Bid closing and if endorsed by the same party or parties who signed and sealed the initial offer.

.2 If a Bid is withdrawn, a new Bid may be submitted if received prior to the date and time of Bid closing.

.3 State all addendum numbers received, if different from what was indicated on originally submitted Bid Form.

.4 Any expenses incurred by the Bidder in the preparation of the Tender submission are entirely the responsibility of the Bidder and will not be charged to the Owner.

1.5 CONTRACT / BID DOCUMENT AVAILABILITY

.1 Agreement Form

.2 Definitions:

.1 Contract Document: defined in CCDC2020 Edition.

.2 Bid Document: Contract Documents supplemented with Instructions to Bidders, Soils Investigation Data, Bid Form, and Bid Supplementary Forms identified.

.3 Bid, Offer, or Bidding: act of submitting an offer under seal.

.4 Bid Price: monetary sum identified in Bid Form as an offer to perform Work.

.5 Bidder: Refers to any eligible entity submitting a Tender

.6 Successful Bidder/Bidder: Refers to the selected Bidder, if any

.3 Electronic versions of Bid Documents can be downloaded at www.biddingo.com.

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

1.6 BID DOCUMENT EXAMINATION

.1 Examine Bid documents and promptly notify the person designated to receive enquiries if documents are incomplete, or contain perceived errors, omissions, conflicts or discrepancies.

.2 There will be no consideration of any claim, after submission of Tenders, if there is a misunderstanding with respect to the conditions imposed by this Request for Tender. Should the Bidder require more information or clarification on any point, it must be obtained prior to the submission of the Tender

1.7 INQUIRIES

.1 Inquiries concerning the Project are to be directed to:

.1 Alex Altenliu, P.Eng
alex@spriet.ca
Partner Spriet Associates
cc. mail@spriet.on.ca

.2 Inquiries concerning the Tender process or Technical Specifications and are to be directed to (Project Manager):

.1 Mary Hirsch
maryh@spriet.ca

Project Manager
cc. mail@spriet.on.ca

.3 Inquires are to be emailed directly to the contact listed above.

.4 No Bidder shall contact any member of Council, Consultant, or Municipal staff other than the designated contact regarding this Tender.

.5 Clarifications (questions) requested by Bidders must be in writing not less than three (3) business days before 2:00pm of the Bid closing day.

.6 Direct questions in writing, via email to:

.1 NameSpriet Associates - Project Manager listed on Biddingo: mail@spriet.on.ca.

.2 Company nameSpriet Associates: 155 York St. London ON .

.3 Phone No.: 519-672-4100.

.4 Email address: mail@spriet.on.ca.

1.8 ADDENDA

.1 Addenda may be issued during the Bidding period. All addenda become part of the Contract Documents. Include costs in the Bid price.

.2 Responses to inquiries requiring interpretation, clarification or modification of the Bid Documents will be provided in the form of a written addendum only, issued not less than two (2) days before date and time of Bid closing, a copy of which will be forwarded to all known prime contract Bidders.

.3 Bidders should check online prior to submitting their Bid and up until Bid closing time and date in the event additional addendums are issued.

1.9 PUBLIC SECTOR PROCUREMENT

.1 The Owner is subject to the Buy Ontario Act (Public Sector Procurement), 2025 and the Municipal Buy Ontario Procurement Directive, as amended.

.2 This procurement is a capital infrastructure procurement and is subject to the applicable requirements of the Municipal Buy Ontario Procurement Directive.

.3 Bidders shall submit a **Domestic Supply Chain Plan** with their Bid, identifying the source and country/province of origin of each Major Good and Service identified in the Bid Form.

.4 For purposes of this procurement, Major Goods include, but are not necessarily limited to:

.1 Ready-mix concrete and reinforcing steel.

.2 Structural steel and miscellaneous metals.

.3 Lumber, wood framing, sheathing and engineered wood products.

.4 Thermal insulation.

.5 Roofing systems and sheet metal roofing.

.6 Exterior steel siding and related building-envelope components.

.7 Aluminum windows and glazing.

.8 Hollow metal doors and frames.

.9 Architectural millwork and casework.

.10 Plumbing fixtures and major plumbing equipment.

.11 HVAC equipment and major mechanical systems.

.12 Electrical distribution equipment, panels, transformers and major electrical equipment.

.13 Other durable materials, systems or components identified by the Bidder as material to the Work.

.5 Services to be identified in the Domestic Supply Chain Plan include major construction and trade services required to complete the Work, including:

.1 General contracting and construction management.

.2 Concrete.

.3 Structural steel erection.

.4 Carpentry.

.5 Roofing and sheet metal.

.6 Glazing.

.7 Mechanical.

.8 Electrical.

.6 For each Major Good, identify the manufacturer, proposed product or material, location of manufacture, province/state and country of origin, and whether the Good qualifies as an Ontario-Made Good or Canadian-Made Good under the applicable Directive.

.7 For each Service, identify the proposed supplier or subcontractor, location from which the Service will be provided, and whether the Service qualifies as an Ontario Service or Canadian Service under the applicable Directive.

.8 Information provided in the Domestic Supply Chain Plan forms part of the Bid and may be relied upon by the Owner in evaluating the Bid and administering the Contract.

.9 The successful Bidder shall comply with its accepted Domestic Supply Chain Plan throughout the Work. Proposed changes to identified sources following award shall be submitted to the Owner for review and shall not reduce the Bidder's committed Ontario and Canadian content without prior written acceptance by the Owner.

.10 Failure to submit the required Domestic Supply Chain Plan may result in the Bid being declared non-compliant.

.11 Domestic Supply Chain Plan Evaluation: The Owner will evaluate compliant Bids in accordance with the Municipal Buy Ontario Procurement Directive. A 10% evaluation advantage will be applied to the Bidder having the highest proportion of Ontario-Made

Goods and Ontario Services, followed by Canadian-Made Goods and Canadian Services, as demonstrated in the Bidder's Domestic Supply Chain Plan.

.12 The evaluation advantage is for the purpose of Bid evaluation only and does not alter the Bidder's submitted Contract Price.

1.10 DOMESTIC SUPPLY CHAIN PLAN

.1 The Bidder shall complete and submit the Domestic Supply Chain Plan with its Bid.

.2 The Bidder shall identify the source of each Major Good and Service identified in the Schedule.

.3 For each Major Good, identify the proposed manufacturer or supplier and the location of manufacture or production.

.4 For each Service, identify the proposed service provider and the location from which the Service will be provided.

.5 Classify each item as Ontario-Made/Ontario Service, Canadian-Made/Canadian Service, or Other in accordance with the definitions contained in the Contract Documents.

.6 The Owner reserves the right to require supporting documentation sufficient to verify information contained in the Domestic Supply Chain Plan.

.7 Failure to submit a completed Domestic Supply Chain Plan with the Bid may render the Bid non-compliant.

.8 The Domestic Supply Chain Plan will be evaluated in accordance with **10% evaluation advantage**, **10% scoring approach.**

1.11 SUBSTITUTIONS

.1 Product Substitution Procedures During the Bidding Stage:

.1 Where Bid Documents specify Products by proprietary name, requests for approval of substitutions during the Bid period will not be accepted. Base bids on the named Products only.

.2 Where Bid Documents specify Products by proprietary name, requests for approval of substitutions will be considered by Consultant during the Bid period.

.1 Submit substitution requests in writing, at least seven (7) days before Bid closing time. Refer to Section 01 25 00 for substitution procedures.

.2 When a request to substitute a Product is made, the Consultant may approve the substitution and will issue an addendum naming the substitute Product.

.2 Product Substitution Procedures During Construction Stage:

.1 The submission process for substituting Products after Bids have been submitted, is described in Section 01 25 00.

1.12 LIST OF SUBCONTRACTORS

.1 Complete and submit the List of Subcontractors on the Bid Form Section 00 41 00, indicating those Subcontractors or Suppliers whose bids have been received and accepted by the Bidder for performance of the Work.

.2 The List of Bidders will not be used in evaluating the Bids or to determine the lowest compliant bidder.

.3 The Owner (as further described in the General Conditions) reserves the right to reject a proposed Subcontractor for reasonable cause.

.4 Refer to CCDC 2 as to Owner rights to accept or dismiss Subcontractors.

1.13 PRE-BID MEETING

.1 A pre-bid meeting has been scheduled for 10:00 on the 9 day of September, 2026, at the location of 266 Appin Rd, Glencoe, ON.

.2 All prime contract Bidders, and major sub-trade Bidders are invited.

.3 Attendance by prime contract Bidders is mandatory.

.1 Bidders will be required to sign an attendance sheet during the meeting. Failure of a Bidder's representative to attend and sign the attendance sheet will cause the Bid to be rejected as non-compliant.

.2 Names of Bidders attending will be issued by Addendum.

.4 Issues arising from the pre-Bid meeting will be addressed as required in an Addendum to the Bid Documents. Bidders may not rely on information given verbally or otherwise.

.5 Representatives of the Owner and Consultants will be in attendance.

1.14 BID FORM SUPPLEMENTS

.1 Submit the following Bid Form Supplements together with the Bid Form:

.1 Bid security as specified.

.2 Agreement to Bond.

.2 Bidders must submit using the documents provided, completed and signed (where applicable), clearly marked with the name of the tender, uploaded through the Bidding System and must include items checked below:

.1 00 41 00 Bid Forms

.1 Bidder Information

.2 Project Information

.3 Base Bid

.4 Insurance

.5 Time of Completion

.6 Addenda

.7 Subconstractors

.8 Stipulated Sum for Construction Breakdown - **Phased emailed to consultant**

.9 Key Personal

.10 Domestic Supply Chain Plan - MANDATORY at closing

.11 Ability and Experience / Reference Form

.12 Seal of Bid

.2 Bid Deposit – Certified Cheque or Bid Bond / Digital Bid Bond

.3 Agreement to Bond / Digital Agreement to Bond

.3 After the Bid closing time and before contract award, the Owner will require the lowest two (2) Bidders to submit additional supplementary Bid information as identified in the Bid Form documents for further clarification. These documents need to be provided within 5 business days. Failure to submit results in an automatic bid rejection.

1.15 SUBCONTRACTORS

.1 The Owner reserves the right to reject a proposed subcontractor for reasonable cause, in accordance with the General Conditions.

1.16 BID IRREGULARITIES

.1 Bid Forms or Bid Form Supplements that are unsigned, improperly signed or sealed, conditional, contain arithmetical errors, erasures, contain alterations, added conditions, or other irregularities, may at the discretion of the Owner, be rejected as non-compliant.

.2 Bids which contain qualifying conditions or otherwise fail to conform to these Instructions to Bidders may be rejected.

.3 Bid Forms shall be complete, clear, and legible, and completed in a non-erasable medium. Alterations or additions not called for in the Bid Documents may result in rejection.
These requirements also apply to any hard copy documents required within five (5) business days of Bid Closing. Failure to comply may result in the Bid being deemed non-compliant.

.4 Where discrepancies exist between unit prices and extended totals, the unit price shall govern.

.5 The Owner may accept or waive a minor and inconsequential irregularity. The determination of what is a minor and inconsequential irregularity, and whether to accept or waive such an irregularity, will be at the Owner's sole discretion.

.6 Failure to provide security deposit, bonding or insurance requirements may be declared informal.

.7 The following irregularities relating to mandatory Bidding requirements will cause the Bid to be rejected as non-compliant:

.1 Bid form or Bid form supplement received after the specified Bid closing time.

.2 Missing Bid form or Bid form supplement.

.3 Bid form or Bid form supplement is not in the form provided or required.

.4 Bid bond is improperly completed or executed, if such improper completion or execution may render the Bid bond unenforceable.

.5 A Bid price is illegible, ambiguous or unclear.

.6 Conditions added to or submitted with the Bid which create a material modification of the Bid Documents.

.7 Failure to indicate in the Bid form the Addendum number(s) of all addenda received.

.8 Failure to comply with any other Bidding requirement expressly characterized as mandatory in elsewhere in the Bid Documents.

1.17 BID SUBMISSIONS

.1 Bidders shall be solely responsible for the delivery of their Bids to the instructions herein, in the manner and time prescribed.

.2 Original bid deposit (certified cheque or bid bond) is to be dropped off in a sealed envelope addressed to:
Municipality of Southwest Middlesex
153 McKellar Street
Glencoe, ON, N0L1M0
Canada
ATTN: Mauro Castrilli, C.E.T.
Manager of Public Works

.1 This is required within 5 business days of closing date and from the two (2) lowest bidders.

1.18 BID SECURITY

.1 Bids shall be accompanied by a Bid security deposit as follows:

.1 A Bid bond in an amount of not less than 10% of the Bid price, endorsed in the name of the Owner as obligee, signed and sealed by the principal (Contractor) and surety.

.2 Upon request, Bid bonds will be returned to unsuccessful Bidders after a contract with the Owner has been awarded and the successful Bidder has provided the specified contract security.

.2 Original hard copy documents are required within five (5) business days from Bid Closing from the two (2) lowest bidders. Failure to submit results is an automatic rejection.

.3 If no contract is awarded, all security deposits will be returned.

.4 Hard copy securities are to be delivered to:
Municipality of Southwest Middlesex
153 McKellar Street
Glencoe, ON, N0L1M0
Canada

ATTN: Mauro Castrilli, C.E.T.
Manager of Public Works

1.19 CONSENT TO BOND

.1 Submit with the Bid form, a Agreement to Bond, stating that the surety providing the Bid bond is willing to supply the Performance Bond and Labour and Materials Payment Bond required.

.2 Original hard copy documents are required within five (5) business days from Bid Closing from the two (2) lowest bidders. Failure to submit results is an automatic rejection.

.3 If no contract is awarded, all security deposits will be returned.

1.20 CONTRACT SECURITY

.1 The accepted Bidder shall provide a Performance Bond, and Labour and Materials Payment Bond as described in document 00 73 63 - Contract Security Requirements.

.2 Include the cost of the bonds in the Bid Price

1.21 INSURANCE

.1 Provide a signed "Undertaking of Insurance" on a standard form provided by the insurance company stating the Bidder's intention to provide insurance to the Owner in accordance with the insurance requirements of the Contract Documents.

1.22 CONTRACT TIME

.1 The Bidder, in submitting an offer, accepts the Contract Time stated in the Bid Form for performing the Work. The completion date in the Agreement shall be this Contract Time, added to the commencement date.

.2 The Bidder, agrees to the dates set in Summary of Work 01 11 00

1.23 TAXES

.1 HST is applicable to the item(s) listed in this Tender, however, is not to be included in the quoted unit cost. Please quote all prices “HST extra”

1.24 FEES FOR CHANGES IN THE WORK

.1 Include in the Bid form, the overhead and profit fees applicable for Changes in the Work, whether additions to or deductions from the Work on which the Bid Price was based.

.2 Include in the Bid form, the fees proposed for subcontract work for changes (both additions and deductions) in the Work.

.3 The Contractor shall apply fees as noted, to the Subcontractor's gross (net plus fee) costs on additional work.

1.25 BID FORM SIGNING

.1 The Bid Form shall be signed under seal by the Bidder.

.2 Incorporated Company: Provide company name and name and signature of the duly authorized signing representative(s) in their normal signatures. Insert under each

signature, the representative's capacity to act on behalf of the company. Affix the corporate seal.

.3 Joint Venture: Each party of the joint venture shall execute the Bid under their respective seals in a manner appropriate to such party as described above, similar to the requirements of a Partnership.

.4 Partnership: Provide name of partnership and name and signature of duly authorized representatives of the partnership. Affix a seal to each signature.

.5 Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.

1.26 BID ACCEPTANCE PERIOD

.1 Bids shall remain open to acceptance by the Owner and be irrevocable until another Bidder enters into a contract with the Owner for performance of the Work or until expiry of the bid acceptance period stated in the Bid Form, whichever occurs first.

.2 After bid closing and before expiry of the bid acceptance period stated in the Bid Form, the Owner may request all Bidders to agree to an extension of the originally specified bid acceptance period. In such case the bid acceptance period will be extended subject to the Bidder, whose bid the Owner wishes to accept, having agreed in writing to the extension.

1.27 BID ACCEPTANCE

.1 The Owner reserves the right in its absolute discretion to accept any Bid which it deems most advantageous to itself.

.2 The Owner reserves the right to accept the Bid that, in its opinion, is in the best interest of the Municipality, having regard to price, quality, service, delivery, past performance, and compliance with the Contract Documents.

.3 The Owner reserves the right to consider previous performance, references and vendor history when evaluating bids.

.4 The lowest or any Bid will not necessarily be accepted and the Owner may reject any and all Bids.

.5 Bids are open for acceptance for sixty (60) calendar days following the date of closing.

.6 If the lowest compliant Bid exceeds the Owner's budget, and the Owner is unwilling or unable to award a contract at the Bid price, the Owner may:

.1 Negotiate, with the lowest compliant Bidder only, identify and agree on acceptable changes and a reduced Bid price.

.7 Tie Bids:

.1 In the event of identical compliant bids, the Owner reserves the right to determine the successful Bid in accordance with its Procurement Policy.

.8 The Owner can reject award of tender and recall bidders at a later date if the following conditions occur:

.1 Only one (1) Bid has been received as result of the Tender call;

.2 Where the lowest responsive and responsible bidder substantially exceeds the estimated cost of the goods or service;

.3 When all tenders received fail to comply with the specifications or Tender terms and conditions;

.9 After acceptance by the Owner, the Owner will issue to the successful Bidder, a written notification of Bid acceptance.

.10 After a Bid has been accepted, all rejected Bids will be returned to the respective Bidders with submitted Bid securities and other requested enclosures.

END OF SECTION

Section 00 26 00
Procurement Substitution Procedures

Part 1 General

1.1 RELATED DOCUMENTS

.1 Section 00 43 25 - Substitution Request Form

.2 Section 01 21 00 - Allowances.

.3 Section 01 25 00 - Substitution Procedures

.4 Section 01 29 00 - Payment Procedures

.5 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.2 PRODUCT/SYSTEM OPTIONS

.1 Requests for approval of products other than those specified shall be submitted in writing to the Consultant. Requests shall clearly identify the proposed substitution and include sufficient manufacturer's literature, specifications, performance data, and supporting documentation to demonstrate that the proposed product meets or exceeds the specified requirements. Requests received less than ten (10) Working Days prior to Tender Closing will not be considered.

.2 Where the Consultant determines that the proposed substitution is acceptable, a written **Substitution Approval** will be issued by Addendum prior to Tender Closing. No proposed substitution shall be considered approved unless confirmed in writing by the Consultant.

.3 Bidders shall include in their Tender all modifications required to accommodate approved substitutions. No adjustment to the Contract Price or Contract Time will be considered for changes resulting from an approved substitution unless specifically identified in the Tender.

.4 Submissions shall include sufficient technical information to enable the Consultant to determine compliance with the Contract Documents.

.5 Submissions shall identify all revisions required to other portions of the Work, including any additions or deductions to the Tender Price and any impacts on coordination, performance, warranty, maintenance, or schedule.

.6 Unless a substitution has been approved in writing by the Consultant prior to Tender Closing, the products specified in the Contract Documents shall be provided.

1.3 PUBLIC SECTOR PROCUREMENT

.1 The Owner is subject to the Buy Ontario Act (Public Sector Procurement), 2025, and any applicable directives issued thereunder. Bidders shall ensure their submissions and proposed products, materials and services comply with all applicable procurement directives in effect at the time of bid closing.

1.4 PROCEDURE

.1 Refer to section 01 25 00 Substitution Procedures

.2 Section 00 43 25 Substitution Request Form to be completed by contractor.

.3 If section 00 43 25 is not included contractor is to request form during tender from consultant, and to be completed.

.4 Section 00 43 25 Substitution Request Form is to be submitted in a timely manor as indicated above to allow consultant to review and indicate if product will be accepted for the bidding process. If the forms are incomplete the consultant may reject the application.

END OF SECTION

Section 00 41 00
Bid Forms

Part 1 General

1.1 SUBMITTED BY:

.1 Company Name:
.....

.....

.2 Bidder's Contact Information:
.....

.....

.3 Mailing Address:
.....

.....

.4 E-mail Address:
.....

.....

.5 Office Phone #:
.....

.....

.6 Cell #:
.....

.....

.7 Website:
.....

.....

.8 WSIB Account #:
.....

.....

.9 HST Account:
.....

.....

.10 To: Municipality of Southwest Middlesex

.11 Attached you will find a Bid Bond made payable to the Owner for 10% of the Contract Price

1.2 PROJECT

.1 Project No.: .....

.2 Project Title: .....

1.3 BASE BID

.1 The Drawings, Specifications, and other Contract Documents for this Project have been examined, as well as the premises and job site conditions affecting the Work. The undersigned hereby offers to complete the work in accordance with the Contract Documents for the following Base Bid sum, including all taxes, but excluding **HST**:

Total Contract Amount (excluding HST)

.....

..... Dollars $.....

in Canadian funds. Only HST (13%) will be added to the Base Bid by the owner.

In the event that a discrepancy arises between the written bid sum and the associated numerical sum, the written bid sum will be deemed to be correct. HST will be based on the written bid sum irrespective of any discrepancy.

In submitting this Bid, the Bidder recognizes that changes to this Bid Form or unsolicited attachments or enclosures from the Bidder may be rejected by the Owner.

.2 The above base bid includes all allowances listed in 01 21 00 Allowances in the amount of:

_____

1.4 INSURANCE

.1 The undersigned carries Policy # ..... with ..... in the following amounts:

.1 Comprehensive General Insurance . . . . $ .....

1.5 TIME OF COMPLETION

.1 The undersigned hereby affirms and states that, if awarded the Contract for said work, the entire Contract will be completed within the time frame as stated in the Instructions to Bidders.

.2 Work related to the Project shall be scheduled to achieve Substantial Performance on or prior to March 5, 2027.

.3 Premise shall be turned over to the Owner (Ready-for-take-over) on or prior to April 19, 2027 (45 calendar days).

.4 Labour and materials required to achieve substantial performance and Ready-for-take-over are included in the Base Bid.

1.6 SUMMARY

.1 The undersigned agrees that the bid shall remain in effect for acceptance for a period of 60 (sixty) calendar days from the date of receipt of bids. The undersigned agrees to assume all increases in labour rates and material prices, taxes, cost indexes, or any other rates that may develop during the life of this Contract.

1.7 CONTRACT DOCUMENTS IDENTIFICATION

.1 The Contract Documents listed in "Instruction to Bidders", "1.3 Contract document identification" and CCDC 2, 2020 are identified as Project No. 226069 and were prepared by Spriet Associates Ltd. and their Consultants.

1.8 HARMONIZED SALES TAX (HST)

.1 The bidder shall not include the applicable HST in the bid price, nor in any Separate, Unit, or Itemized prices. The successful contractor shall indicate on each application for payment as a separate amount the appropriate HST the Owner is obliged to pay.

1.9 ADDENDA

.1 The undersigned acknowledges receipt of Addenda Numbers _____ through _____ inclusive, and that the price, or adjustment thereof, for all work required therein is included in this Bid.

1.10 SUBCONTRACTORS AND SUPPLIERS

.1 If the bid is accepted, it is our intention to employ the following subcontractors and suppliers.

.2 Refer to GC 3.6.

.3 Description of Work:

Excavating, Backfilling, and Grading .....

Cast-in-Place Concrete .....

Concrete Finishing .....

Metal Fabrication .....

Rough carpentry / Framing .....

Truss supplier & Installer .....

.....

Thermal insulation .....

Air / Moisture Barriers .....

Sheet Metal Roofing .....

Steel Siding .....

Sheet metal Flashing & Trims .....

Firestopping .....

Joint Sealant .....

Metal Doors and Frames .....

Aluminum Windows .....

Automatic Door Operators .....

Drywall and Acoustics .....

Flooring Epoxy .....

Painting .....

Mechanical .....

Electrical .....

Site Work .....

1.11 STIPULATED SUM FOR CONSTRUCTION BREAKDOWN (PHASE CLOSING)

.1 Complete and submit Stipulated Sum for Construction Breakdown in Tender Submission. The Total Price shall reflect the Base bid amount in section 1.3 above. If a section does not apply fill in with **N/A**

.2 The breakdown below is for tender evaluation purposes only and shall not be considered the Schedule of Values for progress payments. A detailed Schedule of Values will be required after Contract award.

.3 Breakdown:

Description of Work ..... Value

1. General Requirements .....
(Div. 1, except Cash Allowances)

2. Cash Allowances .....

3. General Scope .....
(includes all work not listed elsewhere on this list)

4. Demolition and Abatement (Div. 2) .....

5. Concrete (Div. 3) .....

6. Masonry (Div. 4) .....

7. Metals (Div. 5) .....

8. Carpentry and Plastics (Div. 6) .....

9. Thermal and Moisture Protection, Roofing (Div. 7) .....

10. Openings (Div. 8) .....

11. Finishes (Div. 9) .....

12. Specialties (Div. 10) .....

13. Furnishings (Div. 12) .....

14. Special Construction (Div. 13) .....

15. Mechanical – Common Requirements (Div. 20) .....

16. Fire Suppression (Div. 21) .....

17. Plumbing (Div. 22) .....

18. HVAC (Div. 23) .....

19. Integrated Automation (Div. 25) .....

20. Electrical (Div. 26) .....

21. Earthwork (Div. 31) .....

22. Exterior Improvements (Div. 32) .....

23. Utilities (Div. 33) .....

TOTAL PRICE .....
(This should be the same number as Base Bid price)

1.12 KEY PERSONNEL

.1 The following is a list of the Bidder's principals and key personnel who shall be provided for the Work. No personnel changes will be permitted without prior acceptance of the

Consultant. Attach a detailed summary of education, work experience, and qualifications for each individual named.

.2 Head Office Project Manager: .....

.3 Site Personnel Superintendent: .....

1.13 DOMESTIC SUPPLY CHAIN PLAN

.1 General

.1 The Bidder shall complete and submit this Domestic Supply Chain Plan with the Bid.

.2 This form is a mandatory Bid submission and forms part of the Bid.

.3 The Bidder shall identify the proposed source of each Major Good and Service listed herein.

.4 Information provided shall reflect the Bidder's intended supply chain at the time of Bid Closing.

.5 The Owner may rely on the information and attestations contained in this Domestic Supply Chain Plan for the purposes of the Buy Ontario Act (Public Sector Procurement), 2025 and the Municipal Buy Ontario Procurement Directive.

.6 The Owner reserves the right to request supporting information or documentation to verify the information contained in this form.

.7 Failure to submit a substantially complete Domestic Supply Chain Plan may render the Bid non-compliant.

.2 Classification

.1 For each Major Good or Service, indicate the applicable classification:

OM – Ontario-Made Good
OS – Ontario Service
CM – Canadian-Made Good
CS – Canadian Service
O – Other / Non-Canadian
TBD – Source not confirmed at time of Bid, where permitted by the Contract Documents.

No.	Major Good	Proposed Manufacturer / Supplier	Product / Material	City	Province / State	Country	Classification
1.	Ready-Mix Concrete						
2.	Reinforcing Steel						
3.	Structural / Miscellaneous Steel						

4.	Dimension Lumber / Wood Framing						
5.	Engineered Wood Products						
6.	Prefabricated Wood Roof Trusses						
7.	Plywood / Sheathing						
8.	Thermal Insulation						
9.	Air / Moisture Barrier Materials						
10.	Vapour Retarder Materials						
11.	Steel Siding / Soffit Panels						
12.	Sheet Metal Roofing System						
13.	Sheet Metal Flashing / Trim						
14.	Hollow Metal Doors and Frames						
15.	Aluminum Windows						
16.	Glass / Insulating Glass Units						
17.	Door Hardware / Automatic Operators						
18.	Architectural Millwork / Casework						
19.	Acoustical Ceiling System						
20.	20 Washroom Accessories						
21.	Plumbing Fixtures / Major Plumbing Equipment						
22.	HVAC Equipment / Major Mechanical Equipment						
23.	Electrical Distribution Equipment / Panels						

24.	Lighting Fixtures / Major Electrical Equipment						
25.	Other Major Good:						

.3 **Services**

No.	Service	Proposed Contractor / Subcontractor / Service Provider	City	Province / State	Country	Classification
1.	General Contracting / Construction Services					
2.	Excavation / Site Work					
3.	Concrete Work					
4.	Structural / Miscellaneous Steel Work					
5.	Carpentry / Wood Framing					
6.	Roofing / Sheet Metal Work					
7.	Steel Siding / Cladding Installation					
8.	Window / Glazing Installation					
9.	Millwork / Casework Installation					
10.	Painting / Finishing					
11.	Plumbing					
12.	HVAC / Mechanical					
13.	Electrical					
14.	Controls / Building Automation, if applicable					
15.	Other Major Service:					

.4 **Bidder's Summary**

.1 **Bidder's declared proportion of Major Goods and Services:**

Ontario-Made Goods / Ontario Services: _____ %

Canadian-Made Goods / Canadian Services excluding Ontario: _____ %

Other: _____ %

Total: 100%

.5 **Bidder Certification**

.1 The Bidder certifies that:

.1 The information contained in this Domestic Supply Chain Plan is true and accurate to the best of the Bidder's knowledge as of the Bid Closing Date.

.2 The sources and classifications identified represent the Bidder's intended supply chain for performance of the Work.

.3 The Bidder understands that the Owner may rely upon this Domestic Supply Chain Plan in evaluating the Bid in accordance with the Buy Ontario Act (Public Sector Procurement), 2025 and the Municipal Buy Ontario Procurement Directive.

.4 The Bidder will, upon request, provide information reasonably required by the Owner to substantiate a source or classification identified herein.

.5 Following Contract award, the Bidder will notify the Owner of proposed material changes to the sources identified in the accepted Domestic Supply Chain Plan and provide revised source information as requested.

.2 Bidder: _____
Authorized Representative: _____
Title: _____
Signature: _____
Date: _____

1.14 ABILITY AND EXPERIENCE FORM

.1 The Bidder shall be qualified and competent to perform the Work and shall demonstrate such qualification by providing a minimum of **three (3) references** with its Bid.

.2 References shall be for projects of similar scope, complexity and construction type to the Glencoe Operations Centre Addition and Renovation.

.3 Each referenced project shall have a construction value of not less than **$1,000,000**, before taxes.

.4 Required references:

.5 Two (2) projects successfully completed within the past three (3) years, 2023 to 2026.

.6 One (1) project successfully completed within the past five (5) years, 2021 to 2026.

.7 The Bidder must have acted as the **General Contractor** for each referenced project.

.8 References based solely upon the personal experience of the Bidder's employees, principals or personnel while employed by another company will not be accepted.

.9 References shall be projects completed by the legal entity submitting the Bid.

.10 Provide a reference contact representing the Owner, Consultant or other entity for whom the Work was performed. Reference contacts shall not be employees of the Bidder, affiliated companies, subcontractors or suppliers.

.11 Provide a unique reference contact for each project unless otherwise accepted by the Owner.

.12 The Owner reserves the right to contact references and make such inquiries as it considers necessary to verify the Bidder's satisfactory performance.

.13 Where, after reasonable inquiries, the Owner is unable to verify satisfactory performance of a referenced project, or determines that the reference does not demonstrate the required experience, the Bid may be declared non-compliant.

.14 The Owner may request additional information from the Bidder to verify qualifications, experience, scope, value or satisfactory completion of a referenced project.

.15

#1	**Information.....**
Reference Name	
Contact Name	
Reference Address	
Phone & Email	
General Contractor / Subcontractor(s)	
Value of Work	
Year Completed	
Description of Work	
Additional Comments (optional)	

.16

#2	**Information.....**
Reference Name	
Contact Name	
Reference Address	
Phone & Email	
General Contractor / Subcontractor(s)	
Value of Work	
Year Completed	
Description of Work	
Additional Comments (optional)	

.17

#3	Information.....
Reference Name	
Contact Name	
Reference Address	
Phone & Email	
General Contractor / Subcontractor(s)	
Value of Work	
Year Completed	
Description of Work	
Additional Comments (optional)	

1.15 ACCEPTANCE AND/OR REJECTION OF BIDS

.1 In submitting the Bid, the Bidder recognizes that changes to this Bid Form, or unsolicited attachments or enclosures from the Bidder, may be rejected by the Owner.

.2 In submitting this Bid, the Bidder recognizes and accepts the right of the Owner to accept any bid which is deemed to be the most advantageous to the Owner, or any part thereof, at the price submitted, or to reject any or all Bids. The Owner further reserves the right to waive informalities in the bids, and any awards shall be made on bids that will give the greatest value to the Owner, based on quality, service, and price. Separate Price(s), Unit Price(s), and Labour Rates are not considered in making final decisions. These conditions will be at the Owner's sole discretion.

.3

Signature: .....

Company Seal:

Name Printed: .....

Title: .....

Company: .....

Address: .....

.....

Telephone: .....

Date:.....

END OF SECTION

Section 00 43 25
Substitution Request Form

Part 1 General

1.1 SUBSTITUTION REQUEST

.1 Project:
_____
_____

_____
_____

.2 Project No.:
_____
_____

.3 Date:
_____
_____

.4 To:
_____Spriet Associates London
Limited_____

.5 From:
_____
_____

_____
_____

.6 Company:
_____
_____

_____
_____

.7 Address:
_____
_____

_____
_____

.8 Telephone:
_____
_____

_____
_____

.9 Email:

_____
_____

_____
_____

1.2 SUBSTITUTION REQUEST DETAILS

.1 Specification Section:: _____

.2 Section Title:

_____
_____

_____
_____

.3 Article / Paragraph:

_____
_____

_____
_____

.4 Page / Detail / Drawing Reference:

_____
_____

_____
_____

.5 Specified Product:

_____
_____

_____
_____

.6 Proposed Substitution:

_____
_____

_____
_____

.7 Manufacturer:

_____
_____

_____
_____

.8 Trade Name / Model No.:
_____
_____

_____
_____

.9 Manufacturer Address:
_____
_____

_____
_____

.10 Manufacture Telephone (contact):
_____
_____

.11 Installer:
_____
_____

.12 Installer Address:
_____
_____

.13 Installer Contact:
_____
_____

.14 History of Product (select one):
- □ New product
- □ 1-4 years old
- □ 5-10 years old
- □ More than 10 years old

.15 Differences between proposed substitution and specified product:
_____
_____

_____
_____

.16 Reason for not providing specified item:
_____
_____

_____
_____

.17 Similar Installation (example of a project where this is used previously)

.1 Project:
_____
_____

_____
_____

.2 Address:
_____
_____

_____
_____

.3 Owner:
_____
_____

_____
_____

.4 Date Installed:
_____
_____

1.3 CONTRACTOR / SUPPLIER STATEMENT

.1 The undersigned requests consideration of the product identified above as a substitute for the specified product and certifies that:

.1 The proposed substitute has been carefully reviewed and is, in the opinion of the undersigned, equivalent to or better than the specified product in respect of quality, function, appearance, durability, capacity, performance, code compliance, and suitability for the intended application.

.2 The proposed substitute complies with the requirements of the Contract Documents, including the specifications, drawings, and all applicable codes, regulations, and referenced standards.

.3 The proposed substitute is compatible with adjacent materials, systems, assemblies, and construction, and will not require revisions to the Work of other trades except as clearly identified in this submission.

.4 The proposed substitute will not adversely affect dimensions, clearances, accessibility, operation, maintenance access, serviceability, or performance of the Work.

.5 The proposed substitute will not result in any increase in Contract Price, professional fees, or cost to the Owner arising from redesign, coordination, review, rework, delays, or changes to related Work, unless specifically identified in this submission and accepted by the Owner.

.6 The proposed substitute will not cause delay to the Work, the construction schedule, procurement, delivery, installation, testing, commissioning, or project completion.

.7 The proposed substitute provides warranty coverage, service support, and availability of replacement parts equal to or better than those specified.

.8 Complete supporting information is attached, including product data, technical literature, test reports, certifications, installation requirements, and a detailed comparison to the specified product.

.9 All differences between the proposed substitute and the specified product have been clearly identified in this submission. Failure to identify differences shall mean that the proposed substitute is represented as fully complying with the Contract Documents.

.10 Acceptance of this request, if granted, shall not relieve the Contractor or supplier from responsibility for providing a complete and functioning installation in accordance with the Contract Documents.

1.4 REQUIRED SUPPORTING INFORMATION

.1 Attach the following, as applicable:

.1 product data and technical literature

.2 performance and test data

.3 code compliance / standards certifications

.4 shop drawings or dimensioned drawings

.5 samples, if requested

.6 installation instructions

.7 list of revisions required to related Work or Contract Documents

.8 side-by-side comparison to specified product

.9 confirmation of warranty, service, and parts availability

1.5 SUBMISSION

.1 Submitted By:

_____
_____

_____
_____

.2 Signature:

_____
_____

_____
_____

.3 Company:

_____

_____

.4 Address:

_____

_____

.5 Telephone:

_____

_____

.6 Email:

_____

_____

1.6 CONSULTANT REVIEW & ACTION

.1 □ Accepted

.2 □ Accepted as noted

.3 □ Rejected

.4 □ Rejected — incomplete submission

.5 □ Rejected — not in conformance with substitution procedures

.6 □ Rejected — request received after permitted substitution period

.7 Comments / Conditions:

_____

_____

_____

_____

.8 Reviewed By:

_____

_____

.9 Signature:

_____

_____

.10 Date:

_____

_____

1.7 INFORMATION

.1 Submission of this form does not constitute acceptance of the proposed substitute.

.2 Only substitutes accepted in writing by the Consultant during bidding shall be considered part of the Bid Documents. Submission approval form is to be submitted with Bid Forms if Consultant does not included in an Addendum.

.3 Proposed substitutes submitted during bidding shall be submitted within the time specified in the Instructions to Bidders or Division 01. Requests submitted after that time may be returned without review.

END OF SECTION

Section 00 52 00
Agreement Forms

Part 1 General

1.1 FORM OF CONTRACT DECLARATION

.1 CCDC 2-2020Stipulated Price Contract is the form of Contract between the Owner and Contractor for this Project, including the Agreement, Definitions and General Conditions; which are subject to modifications as indicated below

1.2 AMENDMENTS TO THE DEFINITIONS

.1 Refer to Document 00 71 00 - Contracting definitions.

1.3 AMENDMENTS TO THE GENERAL CONDITIONS

.1 Refer to Document 00 73 00 - Supplementary Conditions for amendments to the General Conditions.

1.4 CCDC CONTRACT AVAILABILITY

.1 The CCDC form of Contract is a copyrighted document published by the Canadian Construction Documents Committee (CCDC). It is incorporated into these Bid Documents by reference and is available for purchase from any CCDC document outlet.

1.5 CONTRACT PREPARATION FOR SIGNING

.1 The Consultant will prepare two (2) copies of the form of Contract for signing by the Contractor and the Owner after notice of award. Each copy will be comprised of the CCDC form of Contract with a CCDC copyright seal affixed, with a completed Agreement form, and with other Contract Documents referenced or appended.

END OF SECTION

AGREEMENT BETWEEN OWNER AND CONTRACTOR
For use when a stipulated price is the basis of payment.

This Agreement made on 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 below the description or title of the Work)*

located at *(insert below the Place of the Work)*

for which the Agreement has been signed by the parties, and for which *(insert below 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 *Ready-for-Takeover*, 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 bid 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*.

Note: This contract is protected by copyright. Use of a CCDC 2 document not containing a CCDC 2 copyright seal constitutes an infringement of copyright. Only sign this contract if the document cover page bears a CCDC 2 copyright seal to demonstrate that it is intended by the parties to be an accurate and unamended version of CCDC 2 – 2020 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.

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
- General Conditions
- *

* *(Insert here, attaching additional pages if required, a list identifying all other Contract Documents e.g. supplementary conditions; Division 01 of the Specifications – GENERAL REQUIREMENTS; Project information that the Contractor may rely upon; technical 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; time schedule)*

Note: This contract is protected by copyright. Use of a CCDC 2 document not containing a CCDC 2 copyright seal constitutes an infringement of copyright. Only sign this contract if the document cover page bears a CCDC 2 copyright seal to demonstrate that it is intended by the parties to be an accurate and unamended version of CCDC 2 – 2020 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.

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 *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 *Payment Legislation*, and in accordance with legislation and statutory regulations respecting holdback percentages, 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* unless otherwise prescribed by *Payment Legislation* together with such *Value Added Taxes* as may be applicable to such payments,

.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 Interest

.1 Should either party fail to make payments as they become due under the terms of the *Contract* or in an award by adjudication, 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 5.2.1 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.

6.2 The delivery of a *Notice in Writing* will be by hand, by courier, by prepaid first class mail, or by other form of electronic communication during the transmission of which no indication of failure of receipt is communicated to the sender.

6.3 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 will 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* will be deemed to have been received on the *Working Day* next following such day.

6.4 A *Notice in Writing* sent by any form of electronic communication will 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 will 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.

6.5 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.

Note: This contract is protected by copyright. Use of a CCDC 2 document not containing a CCDC 2 copyright seal constitutes an infringement of copyright. Only sign this contract if the document cover page bears a CCDC 2 copyright seal to demonstrate that it is intended by the parties to be an accurate and unamended version of CCDC 2 – 2020 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.

Owner

*name of Owner**

address

email address

Contractor

*name of Contractor**

address

email address

Consultant

*name of Consultant**

address

email address

*** If it is intended that a specific individual must receive the notice, 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.

Note: This contract is protected by copyright. Use of a CCDC 2 document not containing a CCDC 2 copyright seal constitutes an infringement of copyright. Only sign this contract if the document cover page bears a CCDC 2 copyright seal to demonstrate that it is intended by the parties to be an accurate and unamended version of CCDC 2 – 2020 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.

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

OWNER

_____
name of Owner

_____
signature

_____
signature

_____
name of person signing

_____
name and title of person signing

WITNESS

CONTRACTOR

_____
name of Contractor

_____
signature

_____
signature

_____
name of person signing

_____
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.

Note: This contract is protected by copyright. Use of a CCDC 2 document not containing a CCDC 2 copyright seal constitutes an infringement of copyright. Only sign this contract if the document cover page bears a CCDC 2 copyright seal to demonstrate that it is intended by the parties to be an accurate and unamended version of CCDC 2 – 2020 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.

Section 00 71 00
Contracting Definitions

Part 1 General

1.1 DEFINITIONS DECLARATION

.1 CCDC 2-2020 Edition, Stipulated Price Contract as may be amended, forms the basis of Definitions between the Owner and Contractor.

.2 These Definitions are bound to the CCDC 2 Definitions and CCDC 2 General Conditions.

1.2 AMENDMENTS TO WORD DEFINITIONS IN CCDC-2020

.1 The following are amendments to definitions listed in the CCDC 2:

.1 Consultant add as the third and fourth sentences:

.1 The Consultant has been appointed by the Owner to act for the Owner in a professional capacity in relation to the Work.

1.3 ADDITIONAL WORDS AND TERMS TO CCDC 2-2020

.1 The following words and terms are additional to the CCDC 2 Definitions:

.1 **Addendum:** A document that amends the Bid Documents during the Bidding Period and becomes part of the Contract Documents when a Contract is executed. (Plural: Addenda)

.2 **Agreement:** The signed and sealed legal instrument binding parties in a Contract, describing in strict terms their mutual arrangement, roles and responsibilities, commencement, and completion responsibilities.

.3 **Alternative Price:** The amount stipulated by a Bidder for an Alternative and stated as an addition, a deduction, or no change to the Bid Price.

.4 **Bid:** To offer as a Bid stating for what price a Contractor will assume a Contract.

.5 **Bid Documents:** A set of documents consisting of the Instructions to Bidders, Bid Form, Contract Documents, and other information issued for the benefit of Bidders to prepare and submit a Bid.

.6 **Bid Form:** The specific and detailed form used to collect information about a Bid.

.7 **Bidding:** The process of preparing and submitting a Bid.

.8 **Construction Documents:** The Drawings and Project Manual. When combined with a Contract and Contract conditions, these documents form the Contract Documents.

.9 **Contingency Allowance:** An additional monetary amount added to a Project cost estimate and designated to cover unpredictable or unforeseen items of Work. The amount is usually based on some percentage of the estimated cost

and expended and adjusted by Change Order. It is not intended to cover additions to the scope of Work.

.10 **Cost Plus Contract:** A Contract under which a Contractor is reimbursed for the direct and indirect costs for the performance of a Contract and, in addition, is paid a Fee for services. The Fee is usually stated as a stipulated price or as a percentage of cost.

.11 **General Conditions:** That part of the Contract Documents which sets forth many of the rights, responsibilities and relationships of the parties involved in a Contract.

.12 **Instructions To Bidders:** Instructions contained in the Bid Documents to convey an Owner's expectations and criteria associated with submitting a Bid.

.13 **Request for Information:** Requests for Information (RFI's) are documents issued by the Contractor to the Consultant requesting clarification or to obtain additional information where the intent of the Contract Documents is unclear or information is missing.

.14 **Section:** A portion of a Project Specification covering one or more segments of the total Work or requirements. Sections are included in a Project manual as required to meet Project requirements.

.15 **Standard:** A document describing a grade or a level of quality, which has been established by a recognized agency or organization, utilizing an internal voting process.

.16 **Separate Price:** A separate price for work to be added to the base price if selected by the Owner. This price type is not a part of the base bid price.

.17 **Stipulated Price:** An amount set forth in a Stipulated Price Contract as the total payment for the performance of the Work. Sometimes referred to as a stipulated sum or a lump sum stipulated price.

.18 **Submittals:** Submittals are documents or items required by the Contract Documents to be provided by the Construction Manager, such as:

.1 Shop Drawings, samples, models, mock-ups to indicate details or characteristics, before the portion of the Work that they represent can be incorporated into the Work; and

.2 As-built drawings and manuals to provide instructions to the operation and maintenance of the Work.

.19 **Tender:** A term that was formally abandoned by CCDC and the Canadian Construction industry in the early 1980's in favour of the preferred term **Bid**.

.20 **Unit Price:** The amount payable for a single unit of Work as stated in a Schedule of Prices.

.21 **Install:** To remove from site storage, move or transport to intended location, install in position, connect to utilities, repair site caused damage, and make ready for use.

.22 **Supply:** To acquire or purchase, ship or transport to the site, unload, remove packaging to permit inspection for damage, re-package, replace damaged items, and safely store on-site.

END OF SECTION

Section 00 72 13
General Conditions - Stipulated Price

Part 1 General

1.1 GENERAL CONDITIONS DECLARATION

.1 CCDC 2-2020 - The General Conditions of the Stipulated Price Contract; is the General Conditions between the Owner and Contractor.

1.2 SUPPLEMENTARY CONDITIONS

.1 Refer to Document 00 73 00 - Supplementary Conditions for amendments to these General Conditions.

1.3 LEGAL REQUIREMENTS, RULES, AND RESTRICTIONS

.1 Definitions

.1 The **.....(client).....** and the Contractor will be respectively referred to herein as the Owner and the Contractor. The term subcontractor, as employed herein, includes only those having a direct contract with the Contractor. It includes one who furnishes material worked to a special design according to drawings or specifications, but does not include one who merely furnishes material not so worked.

.2 These General Conditions are part of the Contract.

.2 Laws, Ordinances and Regulations

.1 The Contractor shall, in the performance of the Contract, comply with stipulations and representations required by all applicable Federal, Provincial, and Local Laws, Ordinances, and Regulations.

.2 Should the Contractor fail with respect to any of these provisions, they shall defend, indemnify, and hold harmless the Owner from any liability, damage costs, or expenses resulting from such failure.

.3 Permits, Space Fees, and Taxes

.1 The Owner shall apply for and pay for the building permit. All other permits shall be paid for and obtained, and all inspection fees shall be paid for by the Contractor. The Contractor shall submit applications for permits to the Owner for inspection before filing. The Contractor shall pay all Federal, Provincial, and Local taxes and duties, of whatever character and description, incident to performance of the Contract.

.4 City Inspections (Municipal)

.1 The Contractor will be required to complete the building inspections required for this project by using the applicable Municipality standard forms to facilitate all inspections required by the Municipality, as appropriate. It should be extended to include any other inspections from any statutory authorities. The permit and list

shall be displayed together on the site and copies provided to the Consultant and Owner. As each inspection is arranged and completed the process is to be recorded appropriately and copies forwarded to both the Consultant and Owner for record.

1.4 MATERIALS AND JOB REQUIREMENTS

.1 Cutting and Patching Building Openings

.1 When it is necessary to cut or drill openings in walls, floors, roofs, etc., precautions shall be taken to prevent dust and falling debris from affecting adjacent areas. All openings shall be patched by the Contractor to match the original construction using workmen skilled in the required crafts.

.2 Inserts and Attachments to Building Structures or Equipment

.1 Any attachments or inserts in walls, ceilings, or building structural members for the support of equipment, ductwork, or piping are to be provided by the Contractor. The Contractor must get permission from the Owner to make attachments to an existing structure. Such attachments must conform to all local laws and requirements.

.2 Any temporary attachments to building or equipment for installation purposes shall be removed by Contractor upon completion of work and any damage or defacement caused by such removal shall be repaired or replaced by and at Contractor's expense.

.3 Interference with Owner's Work

.1 The Contractor will be required to cooperate with Owner's workers or Contractor's workers who may also be working within the designated construction site area.

.2 In the event any work is to be done on the project by the Owner or in the event the Owner's own forces are at the Place of the Work to do any work associated with the project:

.1 the Owner shall consult with the Contractor with respect to the scheduling and coordination of such work, and

.2 the Contractor shall at all times remain responsible for construction safety and shall remain the Constructor under applicable health and safety legislation.

.4 Patching and Replacing of Damaged Work or Property

.1 All damage to the Owner's property, including that to roadways, sidewalks, floors, fences, doorways, glass damage, etc., that is caused by Contractor's or Subcontractor's work or workers shall be repaired by and at the expense of Contractor and the actual patching, repairing, and replacement or work under the Contact shall be done by the firm which installed the work.

.5 Storage of Materials

.1 Contractor shall not occupy any space on Owner's premises for storage of materials or handling and storage of materials must be done in such manner that

minimum interference occurs in connection with Owner's requirements. Hazardous or dangerous materials may be stored on the premises only if prior approval is obtained from the Owner as to the method of storage and location.

.6 Moving Materials

.1 If it becomes necessary at any time during the performance of the work to move Contractor's facilities, materials, or equipment which have been placed by the Contractor without the Owner's prior approval, the Contractor shall move them or cause them to be moved when so directed by Owner without additional charge.

.2 No materials and equipment necessary under the Contract and delivered upon the premises shall be removed from the premises without the written consent of the Owner. Refer to General Conditions, Section 3, responsibility for equipment materials and Owner's property.

.7 Cleaning of Premises

.1 Each Contractor, Subcontractor, and/or Supplier shall remove rubbish and debris from the site on a daily basis or as directed by the Owner. On completion of the work, all debris shall be removed; the floor shall be thoroughly cleaned and swept; the site shall be left in a tidy condition.

.2 The Contractor is responsible for compliance with all applicable laws for the removal of waste.

.3 Do not use Owner's equipment or facilities for cleaning or for any other reason.

.8 Backflow Prevention – Testing

.1 The Contractor (or Sub-Contractor) responsible for the plumbing system is to be a certified Cross Connection and Backflow Prevention Tester who is registered with the local Municipality. Any testing and/or inspection of the backflow prevention devices (reduced pressure backflow preventers, double check valves, and pressure vacuum breakers) must adhere to the regulations specified by the Municipality, including all testing procedures and submittals of appropriate testing and inspection reports. The Contractor is to clearly indicate on the submitted forms the location of the backflow assembly, i.e. building name, room number, and what system on which the device is installed.

1.5 CONTRACTOR'S RESPONSIBILITY, INSURANCE, PROTECTION

.1 Contractor's Responsibility

.1 Contractor assumes all risks of injury to persons, including death and/or damage to property, resulting from any action or operation under the Contract and/or in connection with the work, except for such injury to persons, including death and/or damage to property, caused due to the negligence of the Owner, and undertakes to defend, indemnify, and hold the Owner harmless against all such alleged injury or damage.

.2 The Contractor shall notify Owner in writing of all such injuries to persons or damage to property within 24 hours of the occurrence. This is to be mailed in triplicate to the Owner.

.3 The Contractor and/or Subcontractors and/or Suppliers will be responsible for loss of equipment or materials supplied by Contractor or Subcontractor or turned over to Contractor by Owner.

.2 Owner's Insurance Responsibility

.1 The Owner will maintain insurance for Fire and the Extended Coverage perils of windstorm, hail, smoke, explosion, aircraft, vehicle, riot and riot attending a strike, civil commotion including vandalism, malicious mischief and, where applicable, sprinkler leakage damage, upon the entire structure on which work of this Contract is done or to be done or upon the equipment and materials installed to one hundred percent of the insurable value thereof and the full value of only that equipment and materials delivered to the site of the project and which are to be included in and remain a part of the permanent construction, whether or not installed.

.2 Coverage shall protect the Owner, Contractor, and Subcontractors as their interests may appear. Loss, if any, under such insurance shall be adjusted with and payable to the Owner.

.3 Contractor's Insurance Responsibility

.1 It shall be the Contractor's responsibility to effect and maintain adequate Fire and Extended Coverage for perils of windstorm, hail, smoke, explosion, aircraft, vehicle, riot and riot attending a strike, civil commotion and vandalism to cover loss or damage to items of Contractor's equipment including tools, scaffolding, forms and the like, sheds and other temporary structures and their contents, owned or rented by the Contractor or for which the Contractor is liable and which are not to remain as part of the permanent construction.

.4 Construction Safety Measures

.1 The Contractor will be responsible to take all necessary steps to protect personnel (workers, visitors, general public, etc.) and property from any harm during the course of the Contract.

.2 All work procedures and equipment will be in accordance with the Owner and legislated standards.

.3 Only competent personnel will be permitted on site. The Owner will determine during the site introduction who is competent and will cause to remove from the site any persons not observing or complying with safety requirements.

.4 The Contractor shall supply competent personnel to implement their safety program and ensure compliance with the Owner's standards and the standards of the Occupational Health and Safety Act (OHSA).

.5 The Owner may visit the job site on occasion. The Contractor is to ensure that safety requirements and records are properly kept and maintained. Initial disregard for safety standards will cause the Contract to be reviewed and a written record of the review will become part of the Contract Documents. Further infraction(s) can lead to loss of Contract.

.6 The Contractor will report to the Owner and jurisdictional authorities any accident or incident involving Contractor, public, personnel, and/or property arising from the Contractor's execution of the work.

.7 The Contractor will include all provisions of this contract and any agreement with subcontractors and hold all subcontractors equally responsible for safe work performance.

.8 If the Contractor is responsible for a delay in the progress of the work due to a violation of legislated or Owner-mandated health and safety requirements, the Contractor shall, at no additional cost to the Owner, work such overtime and procure and utilize the necessary resources, as deemed necessary by the Owner, to avoid any delay in the final completion of the work or any of its operations.

.5 Internal Combustion Engines and Toxic Fumes

.1 Before use of internal combustion engines on site or where any toxic fumes may be produced, the precautions required by law are to be in place for review and the Owner must be advised.
The Owner will then arrange to visit the site for the Contractor to demonstrate that the proper procedures and requirements are in place before work commences.

.2 The Owner will request that continuous or intermittent air sample monitoring be provided by either or both the Owner and the Contractor. The need for either or both to provide continuous or intermittent air monitoring will be mutually determined, dependent on the complexity of the work and site conditions.

.3 The duration of the work will be predetermined by the Contractor for everyone's information.

.4 The above procedure and policy shall be adopted each and every time a new operation is to be undertaken.

.5 It is the Contractor's responsibility to ensure that their own forces, subtrades and their subtrades, and all other appropriate personnel are advised of this policy.

.6 Insurance (Contractor Coverage)

.1 The Contractor agrees to provide and maintain with responsible insurance carriers satisfactory to Owner, the following insurance:

.1 Comprehensive Liability Insurance

.1 The Contractor shall protect himself and indemnify and save the Owner harmless from any and all claims which may arise from the Contractor's operations under the Contract where bodily injury, death, or property damage is cause and for this purpose shall, without restricting the generality of the foregoing, maintain insurance acceptance to the Owner, to the limits of not less than noted in Section 00 73 03 Supplementary Conditions – Stipulated Price.

.2 Issue liability insurance in the joint names of the Owner and the Contractor.

.7 Protection of Premises and Persons

.1 The Contractor shall properly protect Owner's and adjoining property from injury. Any damage to same shall be repaired or replaced by the Contractor without delay.

.2 The Contractor shall provide and properly maintain warning signs, dust proof barriers, welding tarpaulins, barricades, and other safeguards for the protection of workmen and others around holes and openings, on, about, or adjacent to the work as required by the conditions and progress of the work or as directed by the Owner.

.3 At the end of each working day all construction materials should be accumulated and piled in designated areas.

.8 Non-Compliance with Safety Rules and Regulations

.1 Non-compliance of any of the safety requirements contained in this section may result in the Contractor or Subcontractor being requested to remove the offending person or persons from the Owner's premises.

.9 Substitution of Subcontractors or Suppliers

.1 The Contractor must submit in writing at the time of Bid and/or when requested by the Owner the identified list of Subcontractors and/or Suppliers who will be employed on the Contract. The Contractor must also submit in writing all other sub-contractors and suppliers listed which will be employed on the Contract at the Post Bid Meeting. Substitution of named Subcontractors and Suppliers after submission of Bids will not be accepted unless a valid reason in writing is given to, and approved by, the Owner.
The reason for substitution must be provided to the original listed Subcontractor or Supplier and the Subcontractor or Supplier given an opportunity to reply to the Contractor and Owner. Contractors are expected to be fully aware of the capability and competence (eg. technical, financial, safety, etc.) of their listed Subcontractors and Suppliers and be prepared to work together prior to submission of the Bid.
Similarly, the use of the term "own forces' and the subsequent use of unlisted Subcontractors or Suppliers is not acceptable and could result in rejection of the Bid.
All Subcontractor and Supplier listings must be firm prior to the issue of a letter of intent or Contract. Failure to meet these requirements will permit the Owner to cancel the Contract at any stage.

.10 Project Site Supervisor (Site Superintendent)

.1 The designated Site Superintendent (i.e. not a replacement) is to remain full time on the project until all deficiencies are completed, deemed completion has been achieved, and approval of the Owner and Consultant has been obtained.

.2 For the purpose of this Contract, the "Superintendent" shall mean, and shall be interchangeable with, the term "Supervisor."

1.6 SUPERVISION

.1 Owner's Supervision

.1 The Owner's supervision is for the purpose of assuring the Owner that the plans and specifications are being properly executed. The Owner will not supervise or give instructions to the Contractor's employees other than the Contractor's Superintendent. While the Owner will give the Contractor all desired assistance in interpreting the Owner's drawings, specifications, and intent, such assistance shall not relieve the Contractor from any responsibility for the work.

.2 The fact that the Owner has permitted or overlooked faulty work or work done which is not in accordance with drawings and specifications shall not prevent the Owner from insisting that the Contractor make all work right. Any work which proves faulty shall be rectified by the Contractor without delay.

.2 Contractor to Assist Owner

.1 The Contractor shall provide sufficient, safe, and proper access to facilities at all times for the inspection of the work by the Owner.

.3 Cooperation Between Contractor, Subcontractors, and Trades

.1 Anything necessary on the part of any one trade to make possible or expedite the work of other trades shall be done as part of the Contract by the Contractor without additional expenses to the Owner.

.4 Confined Space Entry Meetings

.1 When work is required in confined spaces a separate meeting will be convened by the Owner to discuss work strategies prior to work starting.

.2 No work may commence without first attending this meeting to ensure a clear understanding of procedures, policies, training, etc. that the Contractor will employ.

1.7 OWNER POLICIES AND PROCEDURES

.1 The Owner strongly supports safety practices and wellbeing for personnel working on their property.

.2 In addition to OHSA requirements the Owner has work procedures which must be fully complied with by all Contractors and their personnel.

.3 The Contractor is responsible for training etc., for their employees to ensure the requirements of OHSA and the Owner's work procedures are followed.

.4 Any person who violates the requirements of OHSA and the Owner's work procedures is subject to dismissal from the site.

END OF SECTION

CCDC 2 STIPULATED PRICE CONTRACT

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DEFINITIONS

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

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*.

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.

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*.

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*.

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.

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.

Contract Price

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

Contract Time

The *Contract Time* is the time from commencement of the *Work* to the date of *Ready-for-Takeover* as stipulated in paragraph 1.3 of Article A-1 of the Agreement – THE WORK .

Contractor

The *Contractor* is the person or entity identified as such in the Agreement.

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.

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.

Owner

The *Owner* is the person or entity identified as such in the Agreement.

Other Contractor

Other Contractor means a contractor, other than the *Contractor* or a *Subcontractor*, engaged by the *Owner* for the *Project*.

Payment Legislation

Payment Legislation means such legislation in effect at the *Place of the Work* which governs payment under construction contracts.

Place of the Work

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

Product

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

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Project

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

Ready-for-Takeover

Ready-for-Takeover shall have been attained when the conditions set out in paragraph 12.1.1 of GC 12.1 – READY-FOR-TAKEOVER have been met, as verified by the *Consultant* pursuant to paragraph 12.1.4.2 of GC 12.1 – READY-FOR-TAKEOVER.

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*.

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*.

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*.

Substantial Performance of the Work

Substantial Performance of the Work is as defined in the lien legislation applicable to the *Place of the Work*.

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*.

Supplier

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

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*.

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 tax legislation.

Work

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

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*.

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GENERAL CONDITIONS

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 The *Contract Documents* are complementary, and what is required by one shall be as binding as if required by all. Performance by the *Contractor* shall be required only to the extent consistent with the *Contract Documents*.

1.1.3 The *Contractor* shall review the *Contract Documents* for the purpose of facilitating co-ordination and execution of the *Work* by the *Contractor*.

1.1.4 The *Contractor* is not responsible for errors, omissions or inconsistencies in the *Contract Documents.* If there are perceived errors, omissions or inconsistencies discovered by or made known to the *Contractor*, the *Contractor* shall promptly report to the *Consultant* and shall not proceed with the work affected until the *Contractor* has received corrected or additional information from the *Consultant*.

1.1.5 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 *Owner* and *Contractor*,
- the Definitions,
- Supplementary Conditions,
- the General Conditions,
- Division 01 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 amended or later dated documents shall govern over earlier documents of the same type.

.5 noted materials and annotations shall govern over graphic indications.

1.1.6 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*.

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

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

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

1.1.10 *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*.

1.1.11 Physical 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.

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1.3.2 No action or failure to act by the *Owner*, the *Consultant* or the *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 *Consultant* and the *Contractor*.

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 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 – PAYMENT and GC 5.5 – FINAL PAYMENT.

2.2.5 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 perform the *Work* in accordance with the *Contract Documents*.

2.2.6 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*.

2.2.7 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.

2.2.8 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*.

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

2.2.10 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.

2.2.11 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*.

2.2.12 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.*

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

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

2.2.15 The *Consultant* will conduct reviews of the *Work* to determine the date of *Substantial Performance of the Work* and verify that *Ready-for-Takeover* has been attained.

2.2.16 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.

2.2.17 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.

2..2.18 If the *Consultant*'s engagement is terminated, the *Owner* shall immediately engage a *Consultant* against whom the *Contractor* makes no reasonable objection and whose duties and responsibilities under the *Contract Documents* will be that of the former *Consultant*.

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*, 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 required 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 others 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 was incorporated in the *Work* or 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 finding.

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*.

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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 THE 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 the *Owner*'s own forces with the *Work* of the *Contract*;

.2 enter into separate contracts with *Other Contractors* under conditions of contract which are compatible with the conditions of the *Contract*;

.3 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

.4 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 co-ordinate and schedule the *Work* with the work of *Other Contractors* or the *Owner*'s own forces that are identified in the *Contract Documents*;

.3 participate with *Other Contractors* and the *Owner* in reviewing their construction schedules when directed to do so; and

.4 report promptly 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 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.

3.2.5 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. In the absence of *Other Contractors* having reciprocal obligations, disputes and other matters in question initiated by the *Contractor* against *Other Contractors* will be considered disputes and other matters in question between the *Contractor* and the *Owner*.

3.2.6 Should the *Owner*, the *Consultant*, *Other Contractors*, or anyone employed by them directly or indirectly 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.

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* unless otherwise specified in the *Contract Documents*.

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*.

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GC 3.4 CONSTRUCTION SCHEDULE

3.4.1 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 3.5 SUPERVISION

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

3.5.2 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 3.6 SUBCONTRACTORS AND SUPPLIERS

3.6.1 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 applicable 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 any persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the *Contractor*.

3.6.2 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.

3.6.3 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.

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

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

3.6.6 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 3.7 LABOUR AND PRODUCTS

3.7.1 The *Contractor* shall maintain good order and discipline among the *Contractor*'s employees engaged on the *Work* and employ only workers that are skilled in the tasks assigned.

3.7.2 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*.

3.7.3 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*.

GC 3.8 SHOP DRAWINGS

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

3.8.2 The *Contractor* shall provide *Shop Drawings* to the *Consultant* to review in accordance with an agreed schedule, or in the absence of an agreed schedule, in orderly sequence and sufficiently in advance so as to cause no delay in the *Work* or in the work of *Other Contractors* or the *Owner*'s own forces.

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3.8.3 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*.

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

3.8.5 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.

3.8.6 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*.

3.8.7 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*.

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 the *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, any unexpended amounts from other cash allowances shall be reallocated, at the *Consultant's* direction, to cover the shortfall, and, in that case, there shall be no additional amount added to the *Contract Price* for overhead and profit. Only where the actual cost of the *Work* under all cash allowances exceeds the total amount of all cash allowances shall the *Contractor* be compensated for the excess incurred and substantiated, plus an amount for overhead and profit on the excess only, as set out in the *Contract Documents*.

4.1.5 The net amount of any unexpended cash allowances, after providing for any reallocations as contemplated in paragraph 4.1.4, shall be deducted from the *Contract Price* by *Change Order* without any adjustment for the *Contractor's* overhead and profit on such amount.

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 items called for under cash allowances must be ordered 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 fulfil the *Owner*'s obligations under the *Contract* during the performance of the *Contract*.

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GC 5.2 APPLICATIONS FOR PAYMENT

5.2.1 Applications for payment on account as provided in Article A-5 of the Agreement – PAYMENT shall be submitted monthly to the *Owner* and the *Consultant* simultaneously 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 as specified in the *Contract* and supported by such evidence as the *Consultant* may reasonably require.

5.2.6 Applications for payment shall be based on the schedule of values accepted by the *Consultant* and shall comply with the provisions of *Payment Legislation*.

5.2.7 Each application for payment shall include evidence of compliance with workers' compensation legislation at the *Place of the Work* and after the first payment, a declaration by the *Contractor* as to the distribution made of the amounts previously received using document CCDC 9A 'Statutory Declaration'.

5.2.8 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 PAYMENT

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

.1 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* certifies a different amount, or rejects the application or part thereof, the *Owner* shall promptly issue a written notice to the *Contractor* giving reasons for the revision or rejection, such written notice to be in compliance with *Payment Legislation*.

.2 The *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement – PAYMENT on or before 28 calendar days after the receipt by the *Owner* and the *Consultant* of the application for payment, and in any event, in compliance with *Payment Legislation*.

GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK

5.4.1 The *Consultant* will review the *Work* to certify or verify the validity of the application for *Substantial Performance of the Work* and will promptly, and in any event, no later than 20 calendar days after receipt of the *Contractor*s 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*.

5.4.2 Where the holdback amount required by the applicable lien legislation has not been placed in a separate lien holdback account, the *Owner* shall, no later than 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*.

5.4.3 Subject to the requirements of any *Payment Legislation*, all holdback amount prescribed by the applicable lien legislation for the *Work* shall become due and payable to the *Contractor* no later than 10 *Working Days* following the expiration of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*.

5.4.4 The *Contractor* shall submit an application for payment of the lien holdback amount in accordance with GC 5.3 – PAYMENT.

5.4.5 Where legislation permits progressive release of the holdback for a portion of the *Work* and the *Consultant* has certified or verified that the part of the *Work* has been performed prior to *Substantial Performance of the Work*, the *Owner* hereby agrees to release, and shall release, such portion to the *Contractor* in accordance with such legislation.

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5.4.6 Notwithstanding any progressive release of the holdback, the *Contractor* shall ensure that such parts of the *Work* 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 the holdback was released.

GC 5.5 FINAL PAYMENT

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

5.5.2 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 when the *Consultant* finds the *Contractor*'s application for final payment valid, the *Consultant* will promptly issue a final certificate for payment to the *Owner,* with a copy to the *Contractor*.

5.5.3 If the *Consultant* rejects the application or part thereof, the *Owner* will promptly issue a written notice to the *Contractor* giving reasons for the revision or rejection, such written notice to be in compliance with *Payment Legislation*.

5.5.4 Subject to the provision of paragraph 10.4.1 of GC 10.4 – WORKERS' COMPENSATION, and any 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 and in any event, in compliance with *Payment Legislation*.

GC 5.6 DEFERRED WORK

5.6.1 If because of climatic or other conditions reasonably beyond the control of the *Contractor*, or if the *Owner* and the *Contractor* agree that, there are items of work that must be deferred, 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 deferred *Work*.

GC 5.7 NON-CONFORMING WORK

5.7.1 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 to the *Consultant*, in a form that can be reasonably evaluated, 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 the *Contractor* agree to the adjustments in the *Contract Price* and *Contract Time* or to the method to be used to determine the adjustments, such agreement shall be effective immediately and shall be recorded in a *Change Order*. The value of the work performed as the result of a *Change Order* shall be included in the applications 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.

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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 in as much as it contributes directly to the implementation of the *Change Directive*:

Labour

.1 rates that are listed in the schedule or as agreed by the *Owner* and the *Contractor* including wages, benefits, compensation, contributions, assessments, or taxes incurred for such items as employment insurance, provincial or territorial health insurance, workers' compensation, and Canada or Quebec Pension Plan for:

(1) trade labour in the direct employ of the *Contractor*;

(2) the *Contractor*'s personnel when stationed at the field office;

(3) the *Contractor*'s personnel engaged at shops or on the road, in expediting the production or transportation of materials or equipment; and

(4) the *Contractor*'s office personnel engaged in a technical capacity, or other personnel identified in Article A-3 of the Agreement – CONTRACT DOCUMENTS for the time spent in the performance of the *Work*;

Products, Construction Equipment and Temporary Work

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

.3 in the absence of agreed rates, cost less salvage value of *Construction Equipment*, *Temporary Work* and tools, exclusive of hand tools under $1,000 owned by the *Contractor*;

.4 rental cost of *Construction Equipment*, *Temporary Work* and tools, exclusive of hand tools under $1,000;

.5 cost of all equipment and services required for the *Contractor*'s field office;

Subcontract

.6 subcontract amounts of Subcontractor with pricing mechanism approved by the *Owner*;

Others

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

.8 deposits lost provided that they are not caused by negligent acts or omissions of the *Contractor*;

.9 cost of quality assurance such as independent inspection and testing services;

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

.11 royalties, patent license 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;

.12 premium for all contract securities and insurance for which the *Contractor* is required, by the *Contract Documents*, to provide, maintain and pay in relation to the performance of the *Work*;

.13 losses and expenses sustained by the *Contractor* for matters which are the subject of insurance under the policies prescribed in GC 11.1 – INSURANCE when such losses and expenses are not recoverable because the amounts are in excess of collectible amounts or within the deductible amounts;

.14 taxes and duties, other than *Value Added Taxes*, income, capital, or property taxes, relating to the *Work* for which the *Contractor* is liable;

.15 charges for voice and data communications, courier services, expressage, transmittal and reproduction of documents, and petty cash items;

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

.17 legal costs, incurred by the *Contractor*, in relation to the performance of the *Work* provided that they are not:

(1) relating to a dispute between the *Owner* and the *Contractor* unless such costs are part of a settlement or awarded by arbitration or court,

(2) the result of the negligent acts or omissions of the *Contractor*, or

(3) the result of a breach of this *Contract* by the *Contractor*;

.18 cost of auditing when requested by the *Owner*; and

.19 cost of *Project* specific information technology in accordance with the method determined by the parties.

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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 performance of the *Work* attributable to the *Change Directive* 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.

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 a finding.

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* and 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 *Owner*, through the *Consultant*, shall 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 promptly inform 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 the *Owner*, the *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, resulting in the failure of the *Contractor* to attain *Ready-for-Takeover* by the date stipulated in Article A-1 of the Agreement – THE WORK, 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

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.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*, the *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 2.2.12 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 and the *Consultant* will make a finding upon such claim.

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 perform 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* which provides the detail of such neglect to perform the *Work* properly or such failure to comply with the requirements of the *Contract* to a substantial degree, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, give the *Contractor Notice in Writing*, containing particulars of the default including references to applicable provisions of the *Contract*, 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,
.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.

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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 by giving *Notice in Writing*:

.1 correct such default and deduct the cost thereof from any payment then or thereafter due the *Contractor* for the *Work* 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,

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

.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 in force 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*,

.2 the *Consultant* fails to issue a certificate as provided in Part 5 of the General Conditions – PAYMENT,

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

.4 the *Owner* fails to comply with the requirements of the *Contract* to a substantial degree and the *Consultant*, except for GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER, gives a written statement to the *Owner* and the *Contractor* that provides detail of such failure to comply with the requirements of the *Contract* to a substantial degree.

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* by giving a *Notice in Writing* to the *Owner* 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

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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 8.3.3 to 8.3.8 of GC 8.3 – NEGOTIATION, MEDIATION AND ARBITRATION, and in GC 8.4 – 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 ADJUDICATION

8.2.1 Nothing in this *Contract* shall be deemed to affect the rights of the parties to resolve any dispute by adjudication as may be prescribed by applicable legislation.

GC 8.3 NEGOTIATION, MEDIATION AND ARBITRATION

8.3.1 In accordance with the rules for mediation as provided in CCDC 40 'Rules for Mediation and Arbitration of Construction Industry Disputes' 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.

8.3.2 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*.

8.3.3 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.

8.3.4 After a period of 10 *Working Days* following receipt of a responding party's *Notice in Writing* of reply under paragraph 8.3.2, 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 as provided in CCDC 40 in effect at the time of bid closing.

8.3.5 If the dispute has not been resolved at the mediation or within such further period as is agreed by the parties, the Project Mediator will terminate the mediated negotiations by giving *Notice in Writing* to the *Owner*, the *Contractor* and the *Consultant*.

8.3.6 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 8.3.5, either party may refer the dispute to be finally resolved by arbitration under the rules of arbitration 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*.

8.3.7 On expiration of the 10 *Working Days*, the arbitration agreement under paragraph 8.3.6 is not binding on the parties and, if a *Notice in Writing* is not given under paragraph 8.3.6 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.

8.3.8 If neither party, by *Notice in Writing*, given within 10 *Working Days* of the date of *Notice in Writing* requesting arbitration in paragraph 8.3.6, requires that a dispute be arbitrated immediately, all disputes referred to arbitration as provided in paragraph 8.3.6 shall be:
.1 held in abeyance until:
(1) *Ready-for-Takeover*,
(2) the *Contract* has been terminated, or
(3) the *Contractor* has abandoned the *Work*,
whichever is earlier; and

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.2 consolidated into a single arbitration under the rules governing the arbitration under paragraph 8.3.6.

GC 8.4 RETENTION OF RIGHTS

8.4.1 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.

8.4.2 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 8.3.6 of GC 8.3 – 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*, 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 or omissions in the *Contract Documents*; or
.2 acts or omissions by the *Owner*, the *Consultant*, *Other Contractors*, or 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 the *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 substance 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 any toxic or hazardous substance which was 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 substance 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.

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9.2.6 If the *Owner* and the *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 the *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 13.1 – INDEMNIFICATION.

9.2.8 If the *Owner* and the *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 13.1 – 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 *Owner*, through the *Consultant*, shall 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 The *Contractor* shall be responsible for establishing, initiating, maintaining, and supervising all health and safety precautions and programs in connection with the performance of the *Work* in accordance with the applicable health and safety legislation.

9.4.2 The *Owner* and the *Contractor* shall comply with all health and safety precautions and programs established at the *Place of the Work*.

9.4.3 The *Owner* and the *Contractor* shall comply with the rules, regulations and practices required by the applicable health and safety legislation.

9.4.4 The *Owner* shall cause the *Consultant*, *Other Contractors* and the *Owner*'s own forces to comply with all health and safety precautions and programs established by the *Contractor* at the *Place of the Work*.

9.4.5 Nothing in this *Contract* shall affect the determination of liability under the applicable health and safety legislation.

GC 9.5 MOULD

9.5.1 If the *Contractor* or the *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,

.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

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.3 if the *Owner* and the *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 the *Contractor*.

9.5.2 If the *Owner* and the *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,
.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 9.5.1.3, and
.4 indemnify the *Owner* as required by GC 13.1 – INDEMNIFICATION.

9.5.3 If the *Owner* and the *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,
.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,
.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 13.1 – 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 disagreement 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 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 issue 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.

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10.2.6 If the *Contractor* fails to advise the *Consultant* in writing; 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 physical model, plan or design of which was supplied to the *Contractor* as part of the *Contract*.

GC 10.4 WORKERS' COMPENSATION

10.4.1 Prior to commencing the *Work*, and again with the *Contractor*'s applications for payment, the *Contractor* shall provide evidence of compliance with workers' compensation legislation at the *Place of the Work*.

PART 11 INSURANCE

GC 11.1 INSURANCE

11.1.1 Without restricting the generality of GC 13.1 – INDEMNIFICATION, the *Contractor* shall provide, maintain and pay for the following insurance coverages, the 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 *Ready-for-Takeover*. Liability coverage shall be provided for completed operations hazards from the date of *Ready-for-Takeover* on an ongoing basis for a period of 6 years following *Ready-for-Takeover*.

.2 Automobile Liability Insurance from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.

.3 Unmanned aerial vehicle aircraft, manned aircraft or watercraft Liability Insurance when owned or non-owned manned or unmanned 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 *Ready-for-Takeover*;

(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*; and

(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 *Ready-for-Takeover*.

.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

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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 *Other Contractors*, the *Owner* shall, in accordance with the *Owner*'s obligations under the provisions relating to construction by the *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 *Ready-for-Takeover*.

.8 Contractors' Pollution Liability Insurance from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.

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 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 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.

PART 12 OWNER TAKEOVER

GC 12.1 READY-FOR-TAKEOVER

12.1.1 The prerequisites to attaining *Ready-for-Takeover* of the *Work* are limited to the following:

.1 The *Consultant* has certified or verified the *Substantial Performance of the Work*.

.2 Evidence of compliance with the requirements for occupancy or occupancy permit as prescribed by the authorities having jurisdiction.

.3 Final cleaning and waste removal at the time of applying for *Ready-for-Takeover*, as required by the *Contract Documents*.

.4 The delivery to the *Owner* of such operations and maintenance documents reasonably necessary for immediate operation and maintenance, as required by the *Contract Documents*.

.5 Make available a copy of the as-built drawings completed to date on site.

.6 Startup, testing required for immediate occupancy, as required by the *Contract Documents*.

.7 Ability to secure access to the *Work* has been provided to the *Owner*, if required by the *Contract Documents*.

.8 Demonstration and training, as required by the *Contract Documents*, is scheduled by the *Contractor* acting reasonably.

12.1.2 If any prerequisites set forth in paragraphs 12.1.1.3 to 12.1.1.6 must be deferred because of conditions reasonably beyond the control of the *Contractor*, or by agreement between the *Owner* and the *Contractor* to do so, *Ready-for-Takeover* shall not be delayed.

12.1.3 When the *Contractor* considers that the *Work* is *Ready-for-Takeover*, the *Contractor* shall deliver to the *Consultant* and to the *Owner* a comprehensive list of items to be completed or corrected, together with a written application for *Ready-for-Takeover* for review. Failure to include an item on the list does not alter the responsibility of the *Contractor* to complete the *Contract*.

12.1.4 The *Consultant* will review the *Work* to verify the validity of the application and will promptly, and in any event, no later than 10 calendar days after receipt of the *Contractor*'s list and application:

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.1 advise the *Contractor* in writing that the *Work* is not *Ready-for-Takeover* and give reasons why, or
.2 confirm the date of *Ready-for-Takeover* in writing to each of the *Owner* and the *Contractor*.

12.1.5 Immediately following the confirmation of the date of *Ready-for-Takeover*, the *Contractor*, in consultation with the *Consultant*, shall establish a reasonable date for finishing the *Work*.

12.1.6 The provision of GC 12.1 – READY-FOR-TAKEOVER shall be subject to GC 12.2 – EARLY OCCUPANCY BY THE OWNER.

GC 12.2 EARLY OCCUPANCY BY THE OWNER

12.2.1 The *Owner* may take occupancy of a part or the entirety of the *Work* before *Ready-for-Takeover* has been attained only as agreed by the *Contractor* which agreement shall not be unreasonably withheld.

12.2.2 The *Owner* shall not occupy a part or the entirety of the *Work* without prior approval by authorities having jurisdiction.

12.2.3 If the *Owner* takes occupancy of a part of the *Work* before *Ready-for-Takeover* has been attained:
.1 The part of the *Work* which is occupied shall be deemed to have been taken over by the *Owner* as from the date on which it is occupied.
.2 The *Contractor* shall cease to be liable for the care of such part as from this date, when responsibility shall pass to the *Owner*.
.3 The warranty period specified in paragraph 12.3.1 of GC 12.3 – WARRANTY for that part of the *Work* shall start from the date on which it is occupied.

12.2.4 If the *Owner* takes occupancy of the entirety of the *Work* before all the prerequisites are met as described in paragraph 12.1.1 of GC 12.1 – READY-FOR-TAKEOVER, the *Work* shall, subject to the requirements of the applicable lien legislation, be deemed to achieve *Ready-for-Takeover*. This shall not relieve the *Contractor*'s responsibility to complete the *Work* in a timely manner.

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 when *Ready-for-Takeover* has been attained.

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.

PART 13 INDEMNIFICATION AND WAIVER

GC 13.1 INDEMNIFICATION

13.1.1 Without restricting the parties' obligation to indemnify respecting toxic and hazardous substances, patent fees and defect in title claims all as described in paragraphs 13.1.4 and 13.1.5, 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 negligent 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 *Ready-for-Takeover* date 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*.

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13.1.2 The obligation of either party to indemnify as set forth in paragraph 13.1.1 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 minimum liability insurance limit for one occurrence, of the applicable insurance policy, 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 indemnification by a party against the other with respect to losses suffered by them, such obligation shall be restricted to direct loss and damage, and neither party shall have any liability to the other for indirect, consequential, punitive or exemplary damages.

.4 In respect to indemnification respecting claims by third parties, the obligation to indemnify is without limit.

13.1.3 The obligation of either party to indemnify the other as set forth in paragraphs 13.1.1 and 13.1.2 shall be inclusive of interest and all legal costs.

13.1.4 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.

13.1.5 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*.

13.1.6 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 become known; and

.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 13.2 WAIVER OF CLAIMS

13.2.1 Subject to any lien legislation applicable to 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* under the *Contract*, 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 *Ready-for-Takeover* date, except as follows:

.1 claims arising prior to or on the *Ready-for-Takeover* date for which *Notice in Writing* of claim has been received by the *Owner* from the *Contractor* no later than 5 calendar days before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work* or 20 calendar days following the *Ready-for-Takeover* date, whichever is later;

.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 respecting toxic and hazardous substances, patent fees and defect in title matters for which a right of indemnity could be asserted by the *Contractor* pursuant to the provisions of paragraphs 13.1.4 or 13.1.5 of GC 13.1 – INDEMNIFICATION; and

.4 claims resulting from acts or omissions which occur after the *Ready-for-Takeover* date.

13.2.2 The *Contractor* waives and releases the *Owner* from all claims resulting from acts or omissions which occurred after the *Ready-for-Takeover* date except for:

.1 indemnification respecting third party claims, and claims respecting toxic and hazardous substances, patent fees and defect in title matters, all as referred in paragraphs 13.2.1.2 and 13.2.1.3; and

.2 claims for which *Notice in Writing* of claim has been received by the *Owner* from the *Contractor* within 395 calendar days following the *Ready-for-Takeover* date.

13.2.3 Subject to any lien legislation applicable to 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* under the *Contract*, 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 *Ready-for-Takeover* date, except as follows:

.1 claims arising prior to or on the *Ready-for-Takeover* date for which *Notice in Writing* of claim has been received by the *Contractor* from the *Owner* no later than 20 calendar days following the *Ready-for-Takeover* date;

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.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 respecting toxic and hazardous substances for which a right of indemnity could be asserted by the *Owner* against the *Contractor* pursuant to the provisions of paragraph 13.1.4 of GC 13.1 – 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 *Ready-for-Takeover* date.

13.2.4 Respecting claims arising upon substantial defects and deficiencies in the *Work*, as referenced in paragraph 13.2.3.4, and notwithstanding paragraph 13.2.3.5, the *Owner* waives and releases the *Contractor* from all claims 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 *Ready-for-Takeover* date, provided that 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, the time within which any such claim may be brought shall be such shorter period as may be prescribed by any limitation statute of the Province or Territory of the *Place of the Work*.

13.2.5 The *Owner* waives and releases the *Contractor* from all claims arising from acts or omissions which occur after the *Ready-for-Takeover* date, except for:
.1 indemnification for claims advanced against the *Owner* by third parties, as referenced in paragraph 13.2.3.2;
.2 claims respecting toxic and hazardous substances for which a right of indemnity could be asserted by the *Owner* against the *Contractor*, as referenced in paragraph 13.2.3.3;
.3 claims arising under GC 12.3 – WARRANTY; and
.4 claims for which *Notice is Writing* has been received by the *Contractor* from the *Owner* within 395 calendar days following the *Ready-for-Takeover* date.

13.2.6 "*Notice in Writing* of claim" as provided for in GC 13.2 – WAIVER OF CLAIMS to preserve a claim or right of action which would otherwise, by the provisions of GC 13.2 – WAIVER OF CLAIMS, be deemed to be waived, must include the following:
.1 a clear and unequivocal statement of an 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.

13.2.7 A claim for lien asserted under the lien legislation prevailing at the *Place of the Work* shall qualify as notice of claim for the purposes of this *Contract*.

13.2.8 The party giving the *Notice in Writing* of claim as provided for in GC 13.2 – WAIVER OF CLAIMS shall submit within a reasonable time a detailed account of the amount claimed.

13.2.9 Where the event or series of events giving rise to a claim made under paragraphs 13.2.1 or 13.2.3 has a continuing effect, the detailed account submitted under paragraph 13.2.8 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 such claim 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.

13.2.10 Nothing in GC 13.2 – WAIVER OF CLAIMS shall be deemed to affect the rights of the parties under any lien legislation or limitations legislation prevailing at the *Place of the Work*.

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Section 00 73 00
Supplementary Conditions

Part 1 General

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1.2 CCDC 2 - 2020

.1 The Standard Construction Document for Stipulated Price Contract, 2020 English version, consisting of the Agreement Between Owner and Contractor, Definitions, and General Conditions of the Stipulated Price Contract, Parts 1 to 13 inclusive, governing same is hereby made part of these Contract Documents, with the following amendments, additions, and modifications specifically reference a change to the Agreement Definitions, or General Conditions, these amendments, additions, and modifications shall govern.

.2 Where a General Condition or paragraph of the General Conditions of the Stipulated Price Contract is deleted by these Supplementary Conditions, the numbering of the remaining General Conditions or paragraphs shall remain unchanged, and the numbering of the deleted item will be retained, unused.

1.3 DEFINITIONS

.1 Add the following definitions:

.1 Refer to 00 71 00 for additional definitions to be added to the contract

.2 **Proper Invoice:**
means a written bill or other request for payment for services or materials in respect of an improvement under a contract, if it contains the following

information and, subject to subsection (restricted on conditions), meets any other requirements that the contract specifies:

.1 The contractor's name and address.

.2 The date of the invoice and the period, milestone or other contractual payment entitlement to which the invoice relates.

.3 Information identifying the contract or other authorization under which the services or materials were supplied, such as a contract number, contract line item number or purchase order number.

.4 A description, including quantity where appropriate, of the services or materials that were supplied.

.5 The amount payable for the services or materials that were supplied, and the payment terms.

.6 The name, title, mailing address and telephone number of the person to whom payment is to be sent or, if payment is to be sent to an office or department, its name, mailing address and telephone number.

.7 Any other information that is necessary for the proper functioning of the owner's accounts payable system that the owner reasonably requests.

.8 Any other information that may be prescribed. 2017, c. 24, s. 7; 2024, c. 20, Sched. 4, s. 5 (1).

.3 **Request for Information (RFI):**
Means written documentation by the Contractor to the Owner or the Owner's representative or the Consultant requesting written clarification(s) and/or interpretation(s) of the Drawings and/or Specifications, Contract requirements and/ or other pertinent information required to complete the Work of the Contract without applying for a change or changes to the Work.

.4 **Submittals:**
Submittals are documents or items required by the Contract Documents to be provided by the Contractor, such as:
Shop Drawings, samples models, mock-ups to indicate details or characteristics, before the portion of the Work that they represent can be incorporated into the Work and;
As-built drawings and manuals to provide instructions to the operation and maintenance of the Work.

.5 **By Others:**
By Others, when used in the Contract Documents, shall not mean by someone other than the Contractor. The only means by which something shown or specified shall be indicated as not being in the Contract is by the use of the initials "N.I.C." or the words "not in (the) Contract" or "by Owner".

.6 **Exposed:**
Exposed means visible by the occupants at completion of the Work, unless indicated otherwise. This includes roof area, mechanical and service spaces, inside cupboards and the like.

.7 **OHSA:**
OHSA means the Occupational Health and Safety Act, R.S.O. 1990, c.0.1, as amended, and its regulations.

.8 **EPA:**
EPA means the Environmental Protection Act R.S.O. 1990, c.E.19, as amended, and it's regluations.

.9 **Bid Documents:**
Bid Documents means the Documents listed in the Instructions to Bidders 00 21 13, Section 1.3.

1.4 A-1 THE WORK

.1 Add the following word to the beginning of paragraph 1.1: “Diligently”,

.2 Add new paragraph 1.4 in its entirety as follows:

.1 Provide all the labour, materials, equipment, machinery, products, and work including, without limitation, all commissioning services required by the Contract Documents in order to fully complete and construct the Work and in accordance with, and satisfaction of, all applicable federal, provincial, municipal, and local laws, regulations, rules, by-laws, guidelines, standards, permits, statutes, ordinances, and codes including, without limitation, those relating to occupational health and safety and any and all obligations, responsibilities, and duties required by or set out in any site plan agreement or approval, attributable to the Place of the Work and/or the proposed development therein, and furnish efficient business and construction administration and superintendence consistent with the interests of the Owner.

1.5 A-5 PAYMENT

.1 5.1 "Subject to the provisions of the *Contract Documents and Payment Legislation"*

.1 Add: Construction Act, R.S.O. 1990, c. C.30

.2 Delete paragraph 5.1.2 in entirety and replace with the following:

.1 Upon Substantial Performance of the Work, as certified by the Consultant, and one day after all lien rights have expired, pay to the Contractor any unpaid balance of holdback monies together with such Value Added Taxes as may be applicable to such payment.

.3 In paragraph 5.1.3 revise the word “issuance” to “receipt by the Owner.”

.4 In paragraph 5.2.1(2) delete “(Insert name of chartered lending institution whose prime rate is to be used)” to “the Canadian Imperial Bank of Commerce.”

1.6 A-7 LANGUAGE OF THE CONTRACT

.1 Delete paragraph 7.1 in its entirety

1.7 GC 1.1 CONTRACT DOCUMENTS

.1 Delete the first sentence in paragraph 1.1.1 and replace it with the following:

.1 The intent of the Contract Documents is to include the construction, labour, products, construction machinery and equipment, and other services necessary, complementary, or ancillary, whether described or not, for the performance and completion of the Work by the Contractor in accordance with the Contract Documents or properly inferable from them.

.2 Add the following to the end of paragraph 1.1.1:

.1 The Contractor shall not avail himself of any obvious error or any error of which he becomes aware in the Contract Documents.

.3 Delete paragraph 1.1.5.1 in entirety and replace with the following:

.1 .1 the order of priority of documents, from highest to lowest shall be:

.1 the Supplementary Conditions,

.2 the Agreement between the Owner and the Contractor,

.3 the Definitions,

.4 the General Conditions,

.5 the Addenda to the Bid Documents,

.6 the Request for Bid Documents,

.7 the Contractor’s Bid,

.8 the Division 1 of the Specifications,

.9 Technical Specifications,

.10 Material and Finishing Schedules,

.11 the Drawings.

.4 Add new paragraphs 1.1.5.6, 1.1.5.7, and 1.1.5.8 as follows:

.1 .6 finishes in the room finish schedules shall govern over those shown on the drawings.

.2 .7 architectural drawings shall have precedence over structural, plumbing, mechanical and electrical drawings in so far as outlining the design intent.

.3 .8 noted materials shall govern over graphic indications.

.5 Add to the end of subparagraph 1.1.6.2:

.1 Except where the Consultant shall be indemnified as a third-party beneficiary as provided in subparagraphs 9.2.7.4 and 9.5.3.4 and in 13.1.3.

.6 Add to the end of paragraph 1.1.9:

.1 The Specifications are divided into division and sections for convenience but shall be read as a whole and neither such division nor anything else contained in the Contract Documents will be construed to place responsibility on the Owner or the Consultant to settle disputes among the Subcontractors and Suppliers with respect to such divisions. The Drawings are, in part, diagrammatic and are intended to convey scope of the Work and indicate general and appropriate

locations, arrangements and sizes of fixtures, equipment and outlets. The Contractor shall obtain more accurate information about locations, arrangements and sizes from study and coordination of the Drawings, including Shop Drawings and shall become familiar with conditions and spaces affecting those matters before proceeding with the Work. Where site conditions require reasonable minor changes in indicated locations and arrangements, the Contractor shall make such changes at no additional cost to the Owner. Similarly, where known conditions or existing conditions interfere with new installation and require relocation, the Contractor shall include such relocation in the Work. The Contactor shall arrange and install fixtures and equipment in such a way as to conserve as much headroom and space as possible. The schedules are those portions of the Contract Documents, wherever located and whenever issued, which compile information of similar content and may consist of drawings, tables and/or lists.

.7 Add paragraph 1.1.12 in its entirety as follows:

.1 1.1.12 The Consultant shall furnish to the Contractor without charge, one complete digital/electronic set of the Contract Documents, exclusive of those required by jurisdictional authorities and the executed Contract Documents. The use of these documents will be for the sole purpose to assist the Contractor to construct the project.

.8 Add paragraph 1.1.13 in its entirety as follows:

.1 1.1.13 Whenever the words "approved", "as directed", "submit", "make good", "inspected" or similar wording or phrases appear throughout the Contract Documents, they shall be understood, unless otherwise provided, to mean: materials or items referred to shall be "approved by the Consultant", "submit to the Consultant", "make good to the Consultant's satisfaction", or, "inspected by the Consultant".

.9 Add paragraph 1.1.14 in its entirety as follows:

.1 1.1.14 All legislation, regulations, by-laws, codes or standards quoted shall be the latest edition, including all revisions or amendments.

.10 Add paragraph 1.1.15 in its entirety as follows:

.1 1.1.15 The Contractor represents and warrants that, prior to entering into the Contract, it has carefully reviewed all available documentation provided by the Owner, including, without limitation, geotechnical reports, and has either conducted, or has had the opportunity to conduct, a reasonable visual inspection of the Place of the Work and surrounding conditions.

The Contractor acknowledges that it has satisfied itself as to the general conditions affecting the Work, including the location and nature of visible and reasonably inferable utilities, structures, and site conditions. The Contractor shall bear the risk of conditions that would have been reasonably apparent upon such review and inspection, or that could reasonably be inferred from the Contract Documents.

Notwithstanding the foregoing, the Contractor shall not be responsible for

concealed or latent conditions that could not have been reasonably identified through normal industry-standard investigation, or for conditions that materially differ from those indicated in the Contract Documents.

Any use of, reliance upon, any part of parts of the documentation and/or geotechnical report(s) by any party, including a tenderer, proponent, or any party or parties carrying on any Work associated with the project, is at the sole risk and responsibility of such party or parties. The Owner makes no representation or warranty as to the accuracy, completeness or appropriateness of the contents of the documentation and/or geotechnical report and assumes no liability for same.

The Contractor further declares and represents that in tendering for the Work and in entering into the Contract, that it has satisfied itself and will assume the risk for the nature and location of the Work, the character of the equipment and facilities needed preliminary to and during prosecution of the Work, the general and local conditions and all other matters which can in any way affect the work under the Contract, and in so carrying out this examination the Contractor has assessed and will assume the risk for and has made its own estimate of the facilities and difficulties to be encountered; and has allowed for all conditions that could have a bearing on the cost of the work or the time allowed for its completion.

.11 Add paragraph 1.1.16 in its entirety as follows:

.1 1.1.16 Except as otherwise provided for in the Contract Documents, all loss or damage occasioned to the Work or arising out of the nature of the Work to be done, or from the normal action of the elements or from any reasonably foreseeable circumstance in the prosecution of the same, or from any normal difficulties which may be encountered in the prosecution of the Work, having regard to the nature thereof, shall be sustained and borne by the Contractor including all material required to replace any defective or rejected Work, or to restore any failure shall be all at the expense of the Contractor.
Without limiting the foregoing, where the completion date for the construction of the Works makes necessary the performance of all or Front End Master Spec Project No: 1000-4 Section 00 73 00 Supplementary Conditions 2024-11-12 Page 6 of 36 Spriet Associates Architects and Consulting Engineers Client: part of the Works under winter conditions, then except as specifically stated otherwise in the Contract Documents, the Contractor shall do all things necessary for the performance and protection of such winter work without additional compensation or claim thereof.

1.8 GC 1.4 ASSIGNMENT

.1 Delete paragraph 1.4.1 in entirety and replace with the following:

.1 The Contractor shall not assign the Contract, or any portion thereof, without the prior written consent of the Owner. The Owner shall be entitled to assign the Contract to any person, corporation or other entity (the “Assignee”). Upon the assumption by the Assignee of the Owner’s obligations under the Contract, the Owner shall be released from its obligations arising under the Contract.

1.9 2.2 ROLE OF THE CONSULTANT

.1 Add to the end of paragraph 2.2.2 the following:

.1 The Consultant's reviews shall be a general review only, not a detailed inspection of all the Work. Such review does not relieve the Contractor of responsibility for errors, omissions or deviations in the Work or of responsibility for meeting all requirements of the Contract Documents, unless a deviation has been accepted in writing by the Consultant.

.2 Add the word ", schedules" after the word "techniques" in paragraph 2.2.5.

.3 Add to the end of the second sentence of paragraph 2.2.5: , or to adhere to the construction schedule. Contractor will remain fully responsible for errors, omissions of deviations in the Work and for meeting all the requirements of the Contract Documents whether or not the Work has been reviewed by the Consultant.

.4 Amend paragraph 2.2.6 by deleting the following:

.1 "except with respect to GC 5.1 - Financing Information Required of the Owner".

.5 Add at the end of paragraph 2.2.8 the following:

.1 The Owner and the Contractor shall waive any claims against the Consultant arising out of the making of such interpretations and findings in accordance with paragraphs 2.2.6., 2.2.7. and 2.2.8.

.6 Add to the end of paragraph 2.2.12 the following:

.1 If, in the option of the Contractor, the Supplemental Instruction involves an adjustment in the Contract Price or in the Contract Time, it shall, within ten (10) Working Days of the receipt of a Supplemental Instruction, provide the Consultant with a written notice to that effect, Failure to provide written notification within the stipulated time shall preclude the Contractor from making a claim for an adjustment in the Contract Price or Contact Time as a result of the Supplemental Instruction.

.7 Amend new paragraph 2.2.13 as follows:

.1 Delete the comma after the word "Contractor" and add the words "which are provided" before the words "in accordance" in paragraph 2.2.14.

.8 Add new paragraph 2.2.19 in its entirety as follows:

.1 2.2.19 The Consultant, at the Owner's request, will participate at any negotiation, mediation or arbitration as provided in GC-8 DISPUTE RESOLUTION".

.9 Add new paragraph 2.2.20 in it entirety as follows:

.1 2.2.20 The Consultant, on behalf of the Owner, acting reasonably, may require the Contractor to remove from the Project any personnel, including project managers, superintendents or Subcontractors. Such persons shall be replaced by the Contractor in a timely fashion to the satisfaction of the Consultant or the Owner, at no cost to the Owner.

1.10 GC 2.3 REVIEW AND INSPECTION OF THE WORK

.1 Amend paragraph 2.3.1 as follows:

.1 Add the words “and the Owner” immediately following the words “the Consultant” appearing in the second sentence.

.2 Amend paragraph 2.3.3 as follows:

.1 Add the words “and the Owner” immediately following the words “the Consultant”.

.3 Amend paragraph 2.3.4 as follows:

.1 After the word “inspections” insert “review” in all three occurrences.

1.11 GC 2.4 DEFECTIVE WORK

.1 Add new subparagraphs 2.4.1.1, 2.4.1.2 and 2.4.1.3 as follows:

.1 The Contractor shall rectify, in a manner acceptable to the Owner and the Consultant, all defective work and deficiencies throughout the Work, whether or not they are specifically identified by the Consultant.

.2 The Contractor shall prioritize the correction of any defective work which, in the sole discretion of the Owner, adversely affects the day-to-day operation of the Owner.

.3 The Contractor agrees to correct, or reimburse the Owner for, all damage, to the Work and/or the property, goods and/or equipment of the Owner and/or the Owner’s tenants, where the damage is the result of any defective work of the Contractor.

.2 Delete paragraph 2.4.3 in entirety and replace with the following::

.1 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 greater of (i) the difference in value between the Work as preformed and that called for by the Contract Documents and (ii) the cost to rectify the defective or substandard work. If the Owner and the Contractor do not agree on the difference in value or the cost to rectify the work, they shall refer the matter to the Consultant for determination.

.3 Add new paragraph 2.4.4 in its entirety as follows:

.1 2.4.4 Neither acceptance of the Work by the Consultant or the Owner, nor any failure by the Consultant of the Owner to identify, observe or warn of defective work or any deficiency in the Work shall relieve the Contractor from the sole responsibility for rectifying such defect or deficiency at the Contractor’s sole cost.

.4 Add new paragraph 2.4.5 in its entirety as follows:

.1 The Contractor shall correct all defective work identified at the time of Ready for Takeover within ninety (90) calendar days of the Ready for Takeover date, unless otherwise approved in writing by the Owner. Should the Contractor fail to complete such defective work within this period, the Owner may, without further notice, engage others to complete the outstanding work. All costs incurred by the

Owner in completing the defective work, including but not limited to the cost of work by others and any additional fees for review or inspection by the Owner's consultants, shall be borne by the Contractor and may be deducted from the Contract Price or recovered as a debt due to the Owner.

1.12 GC 3.1 CONTROL OF THE WORK

.1 Add new paragraph 3.1.3 in its entirety as follows:

.1 3.1.3 Prior to commencing individual procurement, fabrication and construction activities, the Contractor shall verify, at the Place of Work, all relevant measurements and levels necessary for proper and complete fabrication, assembly and installation of the Work and shall further carefully compare such field measurements and conditions with the requirements of the Contract Documents. Where dimensions are not included or contradictions exist, or exact locations are not apparent, the Contractor shall immediately notify the Consultant in writing and obtain written instructions from the Consultant before proceeding with any part of the affected work.

.2 Add new paragraph 3.1.4 in its entirety as follows:

.1 3.1.4 The Contractor's workmanship shall be, in every respect, best practice and the Work shall be performed in accordance with the best modern industry practice. The Contractor acknowledges, confirms, represents and warrants to the Owner that:

.1 In performing the Work, it shall at all times exercise the degree of care and skill that ought to be exercised by contractors in performing work of the nature contemplated herein; and

.2 It has the necessary experience, skill and expertise required to enable it to fulfil its obligations, duties, liabilities and responsibilities herein.

1.13 GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

.1 Delete section 3.2.1 in entirety and replace with the following::

.1 3.2.1 In the event any work is to be done on the project by the Owner, or in the event the Owner's own forces are at the Place of the Work to do any work associated with the project:

.1 the Owner shall consult with the Contractor with respect to the scheduling and coordination of such work, and

.2 the Contractor shall at all times remain responsible for construction safety in accordance with GC 3.5.1 and shall remain the Constructor under applicable health and safety legislation.

1.14 GC 3.3 TEMPORARY WORK

.1 Amend paragraph 3.3.2 as follows following:

.1 After the word "personnel" add: , registered in the Province of Ontario,

.2 Add new paragraph 3.3.4 in its entirety as follows:

.1 3.3.4 The Contactor shall adequately protect all adjacent existing surfaces to remain and all new finished surfaces from damage or residue of dust until the space is turned over to the Owner for its intended use, or, if necessary, until total completion of the Work.

1.15 GC 3.4 CONSTRUCTION SCHEDULE

.1 Delete paragraph 3.4.1.1 in entirety and replace with the following:

.1 within ten (10) working days of receiving written confirmation of the award of the Contract, prepare and submit to the Owner and the Consultant for their review and acceptance, a construction schedule that indicates the timing of the 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 and in schedule for Products whose delivery is critical to the schedule for the Work or are required by the Contract to be included in a Products delivery schedule.
The Contractor shall employ construction scheduling software that permits the progress of the Work to be monitored in relation to the critical path established in the schedule. Once accepted by the Owner and the Consultant, the construction schedule submitted by the Contactor shall become the baseline construction schedule.

.2 Delete paragraph 3.4.1.2 in entirety and replace with the following:

.1 monitor the progress of the Work on a weekly basis relative to the baseline construction schedule, or any successor or revied schedule accepted by the Owner; update the schedule on a monthly basis, at a minimum, or as required by the Consultant and advise the Consultant and the Owner weekly in writing of any variation from the baseline or slippage in the schedule; and submit a two (2) week look-ahead related to the higher-level tasks listed in the construction schedule. The Contractor shall attend bi-weekly job site meetings and any meetings of the Owner when reasonably called upon to do so to discuss the said schedule and subsequent progress of construction relating to said schedules.

.3 Add new paragraph 3.4.1.4 in its entirety as follows:

.1 .4 Carry out the Work to completion as rapidly as possible consistent with good practice, safe working conditions and reasonable economy;

.4 Add new paragraph 3.4.1.5 in its entirety as follows:

.1 .5 Commence the Work immediately upon award of Contract and shall provide Sufficient labour for the steady progress of the Work including overtime work, if required to meet the scheduled rate of completion, at all times working in compliance with the OHSA.

.5 Add new paragraph 3.4.1.6 in its entirety as follows:

.1 .6 Provide overtime work where required to maintain the construction schedule due to delays attributable to the Contractor

.6 Add new paragraph 3.4.2 in its entirety as follows:

.1 3.4.2 if, at any time, it should appear the to the Owner or the Consultant that the actual progress of the Work is behind schedule or is likely to become behind schedule, or if the Contractor has given notice of such to the Owner or the Consultant pursuant to subparagraph 3.4.1.2, the Contractor shall, either at the request of the Owner or the Consultant, or following giving notice pursuant to subparagraph 3.4.1.2, take appropriate steps to cause the actual progress of the Work to conform to the schedule or minimize the resulting delay. Within five (5) calendar days of the request by the Owner or the Consultant of the notice being given pursuant to subparagraph 3.4.1.3, the Contractor shall produce and present to the Owner and the Consultant a recovery plan demonstrating how the Contractor will achieve the recovery of the schedule.

.7 Add new paragraph 3.4.3 in its entirety as follows:

.1 3.4.3 The construction schedule shall demonstrate compliance with the required dates for Substantial Performance and Ready-for-Takeover as specified in Section 00 41 00

.8 Add new paragraph 3.4.4 in its entirety as follows:

.1 3.4.4 The Contract Price shall include all costs required to phase the work of the Project in order that the various stages of the Work as called for in the Contract Documents and the functional needs of the Owner are maintained.

1.16 GC 3.5 SUPERVISION

.1 Amend paragraph 3.5.1 as follows:

.1 In paragraph 3.5.1 on the first line after the words “who shall be in” insert “full time”

.2 In paragraph 3.5.1, after “valid reason”, add: which shall be provided in writing and in consultation with the Consultant and the Owner.

.2 Delete paragraph 3.5.2 in entirety and replace with the following:

.1 3.5.2 The supervisor, and any project manager appointed by the Contactor, shall represent the Contractor at the Place of the Work and shall have full authority to act on written instructions given by the Consultant and/or the Owner. Instructions given to the supervisor or project manager shall be deemed to have been given to the Contractor and both the supervisor and any project manager shall have full authority to act on behalf of the Contractor and bind the Contractor in the matters related to the Contract.

.3 Add new paragraph 3.5.3 in its entirety as follows:

.1 “.5.3 The appointed representative assigned to the Project shall be fully competent to implement efficiently all requirements for scheduling, coordination, field engineering, reviews, inspections and submittals defined in the specifications and have minimum 5 years documented Superintendent/Project Management experience.

.4 Add new paragraph 3.5.4 in its entirety as follows:

.1 3.5.4 The Consultant shall reserve the right to review the record of experience and credentials of the appointed representative assigned to this Project prior to

commencement of Work, during Work or any change of the representative by the Contractor pursuant to paragraph 3.5.1.

.5 Add new paragraph 3.5.5 in its entirety as follows:

.1 3.5.5 The Owner may, at any time during the course of the Work, request the replacement of the appointed representative(s). Immediately upon receipt of the request, the Contractor shall make arrangements to appoint an acceptable replacement, which is approved by the Owner.

1.17 GC 3.6 SUBCONTRACTORS AND SUPPLIERS

.1 Amend paragraph 3.6.1.1 as follows:

.1 add to the end of the second line: including any warranties and service agreements which extend beyond the terms of this Contract.

.2 Add new paragraph 3.6.1.4 in its entirety as follows:

.1 .4 The Contractor shall ensure that, and make it a condition of any engagement of a Subcontractor that, if any individual who performs any work or who will be present at the Place of the Work on behalf of the Contractor or a Subcontractor would not ordinarily be considered to be a “worker” under the Workplace Safety and Insurance, such individual shall have obtained voluntary coverage under the Workplace Safety and Insurance Act so that such statute shall apply to such individual as a “worker” and shall have a valid personal coverage identification card at all times during which such individual is performing any work or is present at the Place of the Work. The Contractor shall require all Subcontractors to have similar requirements for the Sub-subcontractors.

.3 Amend paragraph 3.6.2 as follows:

.1 In the first line, delete the words “if requested by the Owner” and add to the end of the paragraph the following: The Contractor agrees not to change Subcontractors without the prior written approval of the Owner, which approval will not be unreasonably withheld.

.4 Add new paragraph 3.6.7 in its entirety as follows:

.1 3.6.7 The Contractor shall employ those Subcontractors, Suppliers or Contractors Own Forces proposed in the bid for the specific item of work. If the Contractor wishes to substitute a Subcontractor, Suppliers or Contractors Own Forces other than the one named in the bid, the Contractor shall provide the Consultant and Owner with the following:

.1 Reason(s) for the substitution

.2 Documentation from the originally named Subcontractor, Suppliers or Contractors Own Forces indicating their desire to withdraw from the project including the reason(s) for the withdrawal; and

.3 The proposed substitute Subcontractor’s, Supplier’s or Contractors Own Forces experience and competence to carry out the work

.4 Employment of the proposed substitute Subcontractor, Suppliers or Contractors Own Forces on the project is subject to the written consent of the Owner.

.5 Add new paragraph 3.6.8 in its entirety as follows:

.1 3.6.8 The approval of Subcontractors, Suppliers or Contractors Own Forces by the Owner in no way signifies a relationship between the Owner and any Employment of the proposed substitute Subcontractor, Suppliers or Contractors Own Forces on the project is subject to the written consent of the Owner.

.6 Add new paragraph 3.6.9 in its entirety as follows:

.1 3.6.9 Work performed by Subcontractors, Suppliers or Contractors Own Forces other than those named in the bid, or substitutions consented to by the Owner as described in 3.6.7, may not be paid for by the Owner.

1.18 GC 3.7 LABOUR AND PRODUCTS

.1 Delete paragraph 3.7.2 in entirety and replace with the following:

.1 3.7.2 Products provided shall be new and shall conform to all current applicable specifications of the Canadian Standards Association, Canadian Standards Board or General Standards Board, ASTM, National Building Code, provincial and municipal building codes, fire safety standards, and all governmental authorities and regulatory agencies having jurisdiction at the Place of the Work, unless otherwise specified. Products which are not specified shall be of a quality consistent with those specified and their use acceptable to the Consultant.

Products brought on to the Place of Work by the Contractor shall be deemed to be the property of the Owner, but the Owner shall be under no liability for loss thereof or damage thereto arising from any cause whatsoever. The said Products shall be at the sole risk of the Contractor.

.2 Delete paragraph 3.7.3 in entirety and replace with the following:

.1 3.7.3 Unless otherwise specified in the Contract Documents, Products provided shall be new and as specified. The Contractor shall not provide substitutions for specified Products without the express written consent of the Consultant and the Owner.

.3 Add new paragraph 3.7.4 in its entirety as follows:

.1 3.7.4 The Contractor is responsible for the safe on-site storage of Products and their protection (including Products supplied by the Owner and other contractors to be installed under the Contract) in such ways as to avoid dangerous conditions or contamination to the Products or other persons or property and in locations at the Place of the Work to the satisfaction of the Owner and the Consultant. The Owner shall provide all relevant information on the Products to be supplied by the Owner.

.4 Add new paragraph 3.7.5 in its entirety as follows:

.1 3.7.5 The Contactor shall not employ any persons on the Work whose labour affiliation (or lack thereof) is incompatible with other labour employed in connection with this Project.

.5 Add new paragraph 3.7.6 in its entirety as follows:

.1 3.7.6 Ensure that rates of wages, hours and conditions of work are in accordance with codes generally recognized and accepted in the locality.

.6 Add new paragraph 3.7.7 in its entirety as follows:

.1 3.7.7 Products which are specified by their proprietary names or by part or catalogue number shall form the basis for the specifications and tenders. No substitutes for these may be used without the Consultant's approval in writing. Substitutes will be considered only when submitted with the bids and on the appropriate form. In applying for permission to use substitutes, the Contractor shall prove to the Consultant's satisfaction that the substitute is equal to the specified product and is compatible in every respect with the configuration and design of the Project, not requiring any change thereto to accommodate the substitution. Each application shall be accompanied by a list of properties of the specified product and the proposed substitute. No application to use substitutes will be considered unless made in this way.

.7 Add new paragraph 3.7.8 in its entirety as follows:

.1 3.7.8 When requesting approval for the use of substitutes, the Contractor shall include in their submission any effect that the substitute may have on the Contract Price and be prepared to reimburse the Owner for all costs that may become evident later as a result of the substitution.

.8 Add new paragraph 3.7.9 in its entirety as follows:

.1 3.7.9 The Contractor shall use all Products in strict accordance with the manufacturers' directions except where specified otherwise. Whenever specific reference to manufacturers' direction or instructions is made in specifications, the Contractor shall submit copies of said instructions or directions or both for approval before commencing to use such Products. Whenever more than one Product is specified for one use, the Contractor may select for their use any of the Products so specified unless the specifications or the drawings indicate otherwise.

.9 Add new paragraph 3.7.10 in its entirety as follows:

.1 3.7.10 Materials, appliances, equipment and other Products are sometimes specified by reference to brand names, proprietary names, trademarks or symbols. In such cases, the name of a manufacturer, distributor, Supplier or dealer is sometimes given to assist the Contractor to find a source Supplier. This shall not relieve the Contractor from their responsibility to find their own source of supply even if the source named no longer supplies the Product specified. If the Contractor is unable to obtain the specified Product, they shall supply a substitute Product equal to or better than the specified Product, as approved by the Consultant with no extra compensation. Should the Contractor be unable to obtain a substitute Product equal to or superior to the specified Product and the

Owner accepts an inferior Product, the Contract Price shall be adjusted accordingly, as approved by the Consultant.

.10 Add new paragraph 3.7.11 in its entirety as follows:

.1 3.7.11 The Contractor shall use Canadian made Products where the price and quality thereof are comparable to corresponding foreign made Products.

.11 Add new paragraph 3.7.12 in its entirety as follows:

.1 3.7.12 All work shall be of the highest quality performed by persons trained and skilled in accordance with the best practices for each particular Section of the Work and trade. Provide special work and performance standards specified.

.12 Add new paragraph 3.7.13 in its entirety as follows:

.1 3.7.13 Where materials or workmanship are specified to comply to a standard such as a Building Code, Canadian Standards Association, Canadian General Standards Board or American Society for Testing and Materials, it shall mean the latest revised edition of the standard at the time of receipt of bids.

1.19 GC 3.8 SHOP DRAWINGS

.1 Add the words “AND OTHER SUBMITTALS” to the Title after “SHOP DRAWINGS”.

.2 Add "and Submittals" after the words "Shop Drawings" in paragraphs 3.8.1, 3.8.3, 3.8.5, 3.8.6, 3.8.7.

.3 Delete paragraph 3.8.2 in entirety and replace with the following:

.1 3.8.2 The Contractor shall prepare a Shop Drawing schedule of the dates for provision, review and return of Shop Drawings and Submittals and submit to the Consultant for review.

.1 The Contractor shall provide Shop Drawings to the Consultant to review in accordance with approved Shop Drawing Schedule, in orderly sequence and sufficiently in advice so as to cause no delay in the Work or in the work of Other Contractors of the Owner’s own forces.

.4 In paragraph 3.8.3.1, change “determined and verified all applicable field measurements” to read: determined, verified and correlated all applicable field measurements

.5 Delete the last sentence in paragraph 3.8.5.

.6 Add the following to the end of paragraph 3.8.7:

.1 The Contractor shall allow the Consultant 10 Working Days to review shop drawings from the date of receipt to the date of postage with a courier. The Contractor shall periodically re-submit the Shop Drawings Schedule to correspond to changes in the construction schedule. If re- submission of shop drawings is required a further 10 Working Day period is required for Consultant’s review.

.7 Add new paragraph 3.8.8 in its entirety as follows:

.1 3.8.8 The Consultant’s review of shop drawings does not relieve the Contractor of their responsibility to review all information pertaining to:

.1 detail design

.2 dimensions

.3 information pertaining to fabrication processes

.4 techniques of construction and installation

.5 coordination of the work of Subcontractors

.8 Add new paragraph 3.8.9 in its entirety as follows:

.1 3.8.9 The Contractor shall submit shop drawings in accordance with the shop drawing procedures specified in Section 01 33 00 – Submittal Procedures.

.9 Add new paragraph 3.8.10 in its entirety as follows:

.1 3.8.10 Only shop drawings indicated as “Reviewed”, “Reviewed for General Design, “Reviewed as Modified, or Reviewed as Noted” and bearing the Consultant’s review data and initials, shall be used at the Place of the Work.

.10 Add new paragraph 3.8.11 in its entirety as follows:

.1 3.8.11 Reviewed shop drawings shall not authorize changes in cost to the Owner nor shall they authorize changes to the construction schedule.

1.20 GC 4.1 CASH ALLOWANCES

.1 In paragraph 4.1.1 add the following: The Consultant may direct the Contractor to bid work for which payment is made from a cash allowance.

.2 Delete paragraph 4.1.4 in entirety and replace with the following:

.1 4.1.4 Where costs exceed the amount under an allowance, unexpended amounts from other cash allowances will be relocated at the Consultant’s direction to cover the shortfall without additional overhead and profit charges attributed. Overhead and profit charges may only be charged to overruns on the sum total of cash allowances. The maximum mark-up on authorized overrun on cash allowances shall be 5%.

.3 Delete paragraph 4.1.7 in entirety and replace with the following:

.1 4.1.7 At the commencement of the work, the contractor shall prepare for the review and acceptance of the Owner and the Consultant a schedule indicating the times, within the construction schedule referred to in GC 3.4, that items called for under cash allowances and items that are specified to be Owner purchased and Contractor installed or hooked up as required at the site to avoid delaying the progress of the Work.

.4 Add new paragraph 4.1.8 in its entirety as follows:

.1 4.1.8 The Owner reserves the right to call, or to have the Contractor call, for competitive bids for portions of the Work, to be paid for from cash allowances.

.5 Add new paragraph 4.1.9 in its entirety as follows:

.1 4.1.9 Administration of Cash Allowances:

.1 Expenditure of Cash Allowance items will be authorized in writing.

.2 Contractor shall administer, upon direction from the Consultant. Competitive quotations are where applicable. When competitive quotations are not applicable, a complete breakdown into net costs of labour and materials (all trades) is required.

.3 The invited bidders for quotes on Work under cash allowances shall be acceptable to the Consultant. The successful bidder shall then enter into a sub-contract arrangement with the Contractor.

.6 Add new paragraph 4.1.10 in it entirety as follows:

.1 4.1.10 Testing Allowances:

.1 When included in the Contract it is to cover the cost of inspection and testing work done by the independent inspection and testing company appointed by the Consultant, and does not cover labour costs, overhead, or profit of the Contractor for work such as sampling, transportation of samples, etc., done by the Contractor. Cash allowances for inspection and testing do not cover the cost of re-testing of materials required due to the failure to meet the requirements of the applicable specification.

.7 Add new paragraph 4.1.11 in its entirety as follows:

.1 4.1.11 Hardware Allowance:

.1 When included in the Contract, it is to cover the cost of materials only and does not cover installation costs of the Contractor.

1.21 GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

.1 Delete GC 5.1 in its entirety.

1.22 GC 5.2 APPLICATIONS FOR PAYMENT

.1 Add new paragraph 5.2.1.1

.1 Draft payment shall be submitted 10 calendar days prior to the proper invoice submission

.2 Proper invoices shall be submitted to the Owner and the Consultant on a monthly basis and shall be dated the first (1st) day of each month. Where the first (1st) falls on a weekend or statutory holiday, the invoice date shall be the next business day. Proper invoices shall be submitted a minimum ten (10) days following issuance of the draft invoice in order to comply with invoicing date requirements.

.2 In paragraph 5.2.3, delete the words “as of the last day of the payment period.” and add: less than two weeks prior to their incorporation into the Work, unless otherwise approved by the Consultant.

.3 In paragraph 5.2.4, on the first line, revise “15 calendar days” to “20 calendar days”.

.4 Add to the end of paragraph 5.2.7 as follows:

.1 Any Products delivered to the Place of the Work but not yet incorporated into the Work shall remain at the risk of the Contractor not withstanding that title has passed to the Owner pursuant to GC 13.1 – OWNERSHIP OF MATERIALS.

.5 Add new paragraph 5.2.9 in its entirety as follows:

.1 5.2.9 The Contractor shall submit as required, a valid and unexpired certificate from the authority responsible for worker' compensation at the Place of the Work, attesting that it is registered with such authority and that its account is in good standing.

.6 Add new paragraph 5.2.10 in its entirety as follows:

.1 5.2.11 With each application for progress payment after the first, and as a condition of receiving such progress payment, the Contractor shall provide an updated Construction Schedule in accordance with GC 3.5 – CONSTRUCTION SCHEDULE.

.7 Add new paragraph 5.2.11 in its entirety as follows:

.1 5.2.12 Prior to each application for payment, the Contractor and Consultant shall jointly check the progress of the Work at the site.

1.23 GC 5.3 PAYMENT

.1 Add new paragraph 5.3.2 in its entirety as follows:

.1 5.3.2 No further progress payments shall be certified following Substantial Performance, except for payments associated with completion of deficiencies and closeout.

1.24 GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK

.1 Delete paragraph 5.4.2 in its entirety.

.2 Amend section 5.4.3: delete "no later than 10 working days". Replace with: no later than 15 working days.

.3 Add new sub paragraph 5.4.4 in its entirety as follows:

.1 5.4.4. (1) The Contractor shall submit a draft application for the release of holdback not less than thirty (30) days prior to the expiry of the sixty (60)-day lien period, for review by the Consultant and to allow the Owner to commence processing.
Applications for payment of holdback shall include an itemized breakdown identifying the amount of holdback retained under each prior certificate for payment.

.2 5.4.4. (2) At the commencement of the lien period sixty (60) - day the contactor is to provide :

.1 5.4.4.(2.1.) Statutory declaration

.2 5.4.4. (2.2.) Confirmation no notices of lien have been received

.3 5.4.4. (2.3.) WSIB clearance / other closeout docs if required

.1 The Contractor must be registered as an employer or independent operator (as the case may be) with the Workplace Safety and Insurance Board (WSIB). The Contractor shall be required to enroll in the WSIB e-Clearance service and provide

the Owner with a Clearance Certificate Number through the e-Clearance service. The Contractor must maintain their account with the WSIB in good standing throughout the duration of the Work under this order and shall ensure that its e- Clearance is automatically renewed prior to its expiry. At no time may Work proceed or continue under the Contract in the absence of a current Clearance Certificate Number from WSIB.

.3 Add new sub paragraph 5.4.5 in its entirety as follows:

.1 5.4.5 (1) Where the duration of the Work exceeds one (1) year, the Contractor shall submit an application for annual release of holdback no later than thirty (30) days prior to the anniversary of the date the Contract was entered into. The application shall identify the amount of holdback proposed to be released and shall include an itemized breakdown of holdback amounts retained from each prior payment certificate, together with the percentage of holdback to be released to each trade.

.2 5.4.5 (2) The Contractor shall, on behalf of the Owner, publish the notice of annual release of holdback in accordance with the Construction Act (Ontario) no later than fourteen (14) days after the anniversary of the date the Contract was entered into.

.4 Add new paragraph 5.4.7 in its entirety as follows:

.1 5.4.7 Together with the submission of its written application for Substantial Performance of the Work, the Contractor shall submit to the Consultant and to the Owner a statutory declaration setting forth in reasonable detail any then outstanding and unresolved disputes or claims between the Contractor and any Subcontractor or Supplier, including any claims allegedly arising from delay, which are, directly or indirectly, related to any then outstanding or anticipated disputes or claims between the Contractor and the Owner, and this disclosure shall, at a minimum:

.1 identify the parties involved;

.2 identify the amount in dispute;

.3 provide a brief statement summarizing the position of each party;

.4 include copies of any correspondence or documents in support of either party's position;

.5 include copies of any documents of any court or arbitration process related to the matter;

.6 identify the dispute or claim between the Contractor and the Owner to which the matter relates; and

.7 include a copy of any written agreement or a summary of any oral agreement between the parties related to resolution of the matter.

.2 The disclosure requirements detailed herein are of a continuing nature and survive completion of the Work. Accordingly, the Contractor shall supplement the information provided with the original statutory declaration with additional

materials pertaining to new or existing disputes or claims, as they become available.

1.25 GC 5.5 FINAL PAYMENT

.1 Amend paragraph 5.5.2 as follows:

.1 Delete from the first line of the paragraph the words, “calendar days” and substitute the words “Working Days”.

.2 Amend paragraph 5.5.4 as follows:

.1 Delete from the second line of paragraph the words, “5 Working Days after issuance” and substitute the word “15 days after receipt of”.

.3 Add new paragraph 5.5.5 in its entirety as follows:

.1 5.5.5 Notwithstanding paragraph 5.5.4, the Owner shall retain a lien holdback on the finishing work in accordance with the lien legislation applicable to the Place of the Work, which shall become due in accordance with paragraph 5.4.3 and the Contractor shall submit an application for payment of the lien holdback amount for the finishing work in accordance with paragraph 5.4.4.

.4 Add new paragraph 5.5.6 in its entirety as follows:

.1 5.5.6. The Contractor may apply for release of the warranty holdback upon expiry of the warranty period (typically 12 months from Substantial Performance), provided all Work has been completed, and all deficiencies corrected and accepted. The warranty holdback is separate from the statutory lien holdback and is not governed by the Construction Act, it is Contractual.

.5 Add new paragraph 5.5.7 in its entirety as follows:

.1 5.5.7. The Contractor may apply for release of the Close-Out Document holdback upon submission and acceptance of all required close-out documentation to the satisfaction of the Consultant. The Close-Out Document holdback is separate from the statutory lien holdback and is not governed by the Construction Act, it is Contractual.

1.26 GC 5.6 DEFERRED WORK

.1 Delete 5.6.1 in entirety and replace with the following:

.1 5.6.1 If because of climatic or other conditions reasonably beyond the control of the Contractor, there are items of work that cannot be performed, or should there be items of work which have been rejected by the Consultant pursuant to GC 2.4.1 which have not been corrected, the Owner may withhold, until the remaining portion of the Work is finished and all defective Work has been corrected, such an amount that the Consultant determines is sufficient and reasonable to cover the cost of performing or correcting such work.

.2 Add new paragraph 5.6.2 in its entirety as follows:

.1 5.6.2 The Contractor shall be responsible for any legal costs borne by the Owner related to lien action. The Owner may withhold any such amount sufficient to cover such legal costs.

.3 Add new paragraph 5.6.3 in its entirety as follows:

.1 5.6.3 Notwithstanding other provisions, where the Contractor owes monies to the Owner then the Owner may set-off such monies from payments due and owing to the Contractor pursuant to this Contract.

1.27 GC 6.1 OWNER'S RIGHT TO MAKE CHANGES

.1 Add new paragraph 6.1.3 in its entirety as follows:

.1 6.1.3 No extension to Contract Time shall be granted for changes in the Work unless the Contractor can clearly demonstrate that such changes significantly alter the overall construction schedule submitted at the commencement of the work. All costs associated with extensions of contract time, if approved, are to be included in the relevant change order.

.2 Add new paragraph 6.1.4 in its entirety as follows:

.1 6.1.4 If changes to the Contract become in excess of 10% of the contract price, the Contractor shall inform Insurance or Surety Company or Companies who have issued Performance Bonds, Liability Insurance and Property Insurance for this Contract, of these changes and shall, subject to approval by the Consultant and the Owner, initiate and pay such adjustments on behalf of the Owner and a Change Order will be issued by the Consultant, to reimburse the Contractor.

1.28 GC 6.2 CHANGE ORDER

.1 Delete paragraph 6.2.1 in entirety and replace with the following:

.1 6.2.1 Quotations submitted by the Contractor for any Changes to the Work must be accompanied by a complete itemized breakdown of all costs so that the total price can be properly assessed. Include any costs associated with extensions in time. Overhead and profit shall be calculated as per paragraph 6.2.8 of this section.

.2 Delete paragraph 6.2.2 in entirety and replace with the following:

.1 6.2.2 When a change in the Work is proposed or required the Contractor shall within 10 calendar days present to the Consultant for review and recommendation his/her claim for a change in the Contract Price and change in Contract Time with appropriate documentation in a form acceptable to the Consultant. Should the specified date for receipt of the itemized quotation be insufficient, the Contractor, within 5 calendar days of the above date, advise the Consultant in writing of the proposed date of delivery of the quotation. No additional claims will be permitted should the Contractor fail to advise the Consultant. The Consultant will satisfy her/himself as to the correctness of such claim and, when approved by the Owner, a change order shall be issued to the Contractor amending the Contract Price and Contract Time as appropriate.

The value of work performed in the change shall be included for payment with the regular certificates for payment.

.3 Add new paragraph 6.2.3 in its entirety as follows:

.1 6.2.3 In the case of changes in the Work to be paid for under methods (b) and (c) of paragraph 6.2.1, the form of presentation of costs and methods of measurement shall be agreed to by the Consultant and Contractor before proceeding with the change. The Contractor shall keep accurate records, as agreed upon, of quantities or costs and present an account of the cost of the change in the Work, together with vouchers where applicable.

.4 Add new paragraph 6.2.4 in its entirety as follows:

.1 6.2.4 If the method of valuation, measurement, change in Contract Price and change in Contract Time cannot be promptly agreed upon and the change is required to be proceeded with then the Consultant in the first instance will establish the method of valuation, measurement, the change in Contract Price and Contract Time subject to his finding in the manner set out in PART 8, DISPUTE RESOLUTION. In this case the Consultant will, with the consent of the Owner, issue a written authorization for the change setting out the method of valuation and if by lump sum his valuation of the change in Contract Price and Contract Time.

.5 Add new paragraph 6.2.5 in its entirety as follows:

.1 6.2.5 In the case of a dispute in the valuation of a change authorized in the Work and pending final determination of such value, the Consultant will certify the value of work performed in accordance with his own evaluation of the change and include the amount with the regular certificates for payment. The Contractor shall keep accurate records of quantities and cost of such work.

.6 Add new paragraph 6.2.6 in its entirety as follows:

.1 6.2.6 It is intended in all matters referred to above that both the Consultant and Contractor shall act promptly.

.7 Add new paragraph 6.2.7 in its entirety as follows:

.1 6.2.7 When and if the Contractor is notified by the Consultant of proposed changes in the Work he shall prepare and submit to the Consultant at his earliest convenience a full statement of the additional or less costs of such work in an itemized breakdown form and such costs shall be based on the materials and methods specified and/or shown in/on the Contract Documents unless the Contractor is specifically notified to the contrary in each case.

.8 Add new paragraph 6.2.8 in its entirety as follows:

.1 6.2.8 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 overhead and profit shall be calculated on the following basis:

.1 combined overhead and profit mark-up on the Contractor’s work shall not exceed ten percent (10%)

.2 the Contractor’s combined overhead and profit mark-up on Subcontractors’ work shall not exceed five percent (5%);

.3 combined overhead and profit mark-up charged by Subcontractors on their own work shall not exceed ten percent (10%)."

.4 Hourly rates are defined as being the charge out base labour rate cost including EI, CPP, Vacation Pay, and benefits. These rates may be requested at Bid time or at the Post Bid Review Meeting or at any time thereafter for review and agreement.

.5 Materials are defined as being actual cost.

.6 Overhead is defined as being inclusive of, and not limited to, the following:

.1 Head Office and site operations and facilities

.2 Head Office and site administration and supervision and scheduling

.3 All duties and taxes for permits and other licenses required by jurisdictional authorities

.4 All requirements of Submittals Section and as-built/maintenance manuals requirements

.5 All requirements of Quality Control Section

.6 Expenses related to site safety.

.7 Changes resulting in a credit to the contract shall be no less than 75% of the above calculations.

.9 Add new paragraph 6.2.9 in its entirety as follows:

.1 "6.2.9 No allowance will be made for travel and related living expenses incurred by the Contractor or any sub-contractor while traveling to and from the construction site."

.10 Add new paragraph 6.2.10 in its entirety as follows:

.1 6.2.10 Statements submitted by the Contractor in respect to payment for changes to the Contract Price shall be accompanied by complete documentation indicating the following:

.1 A Gantt Chart showing the full impact of the change to the construction schedule. Include the critical path.

.2 Complete additional or less costs resulting from the change including delay claims or future expenses, if applicable.

.3 Quotations, unless previously arranged in writing, shall be valid for a period of 30 days.

Any statement or quotation not including present and future cost and time impacts shall be deemed to have no effect on the contract time or price. Changes in contract (or claims for delays) will not be considered after the formal submission of a statement or quotation by the Contractor.

.4 All quotations or statements must be itemized and summarized in the following format:

ITEM	LABOUR	MATERIAL	OVERHEAD PROFIT
1.General Costs		Sub-Total	
2.Structural Costs		Sub-Total	
3.Architectural Costs		Sub-Total	
4.Mechanical Costs		Sub-Total	
5.Electrical Costs		Sub-Total	
6.Site Services Costs			
7.Landscaping Costs		Sub-Total	
		Net-Total	
Note: HST excluded.		Gross	

.5 All quotations or statements shall include, in all the summarized items described in this Section, a comprehensive, detailed breakdown of all materials and labour affecting the proposed changes in the work. Quotations or statements not complying with this requirement shall be returned to the Contractor for resubmission.

.11 Add new paragraph 6.2.11 in its entirety as follows:

.1 6.2.11 If, in the option of the Contractor, a Supplemental Instruction involves an adjustment in the Contract Price of in the Contract Time, it shall within five (5) Working Days of receipt of a Supplemental Instruction, provide the Consultant with a notice in writing to that effect. In the event that the Contractor needs additional information to determine whether a Supplemental Instruction involves an adjustment of the Contract Price or in the Contract Time, it may issue a written request to the Consultant seeking such additional information, within five (5) Working days of receipt of Supplemental Instruction. The Contractor shall, within five (5) Working days of receipt of such additional information, provide the Consultant with the written notice described in the first sentence of this paragraph. Failure to provide written notification within the time stipulated shall be deemed an acceptance of the Supplemental Instruction by the Contractor, without any adjustment in the Contract Price or Contract Time.

1.29 GC 6.3 CHANGE DIRECTIVE

.1 In paragraph 6.3.6.1, on the second line delete “percentage fee on such net increase.” and insert the following:

.1 overhead and profit, which shall be calculated on the following basis:

.1 combined overhead and profit mark-up on the Contractor’s work shall not exceed ten percent (10%);

.2 the Contractor’s combined overhead and profit mark-up on the Subcontractors’ work shall not exceed five percent (5%);

.3 combined overhead and profit mark-up charged by Subcontractors on their own work shall not exceed ten percent (10%).

1.30 GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

.1 In subparagraph 6.4.1.1 add to the end of the sentence: or any geotechnical reports that were made available to the Contractor prior to the Contract.

.2 Add new subparagraph 6.4.5 in its entirety as follows:

.1 6.4.5 The Contractor confirms that, prior to bidding the Project, it carefully investigated the Place of the Work and applied to that investigation the degree of care and skill described in paragraph 3.10.1, given the amount of time provided between the issue of the bid documents and the actual closing of bids, the degree of access provided to the Contractor prior to submission of bid, and the sufficiency and completeness of the information provided by the Owner. The Contractor is not entitled to compensation or to an extension of the Contract Time for conditions which could reasonably have been ascertained by the Contractor by such careful investigation undertaken prior to the submission of the bid.

1.31 GC 6.5 DELAYS

.1 In paragraph 6.5.1. in the second sentence add “and direct” between the words “reasonable” and “costs”.

.2 Delete the period at the end of paragraph 6.5.1, and add the following words:

.1 , provided that the Owner shall not be liable for any other costs or damages whatsoever including, without limitation, any indirect, consequential, or special damages, such as loss of profits, loss of opportunity or loss of productivity resulting from such delay.

.3 In paragraph 6.5.2. in the second sentence add “and direct” between the words “reasonable” and “costs”.

.4 Delete the period at the end of paragraph 6.5.2, and add the following words:

.1 , provided that the Owner shall not be liable for any other costs or damages whatsoever including, without limitation, any indirect, consequential, or special damages, such as loss of profits, loss of opportunity or loss of productivity resulting from such delay.

.5 Add the following to the end of subparagraph 6.5.3.4:

.1 provided that the Owner shall, in such instance, only be liable for reasonable and direct costs incurred by the Contractor and shall not be liable for any other costs or damages whatsoever including, without limitation, any indirect, consequential, or special damages, such as loss of profits, loss of opportunity or loss of productivity resulting from such delay. Notwithstanding the foregoing, the Contractor shall use its best efforts to minimize the impact of such event upon the performance of the Work and Contract Time.

.6 At the end of the paragraph 6.5.4 add as follows:

.1 No claim for delay shall be considered valid unless a copy of the notice requested to be given to the Consultant, has been sent simultaneously to the Owner. No valid claim for additional payment arising from a delay will be payable to the Contractor unless the Contractor has prepared, or caused to be prepared,

records of all Work and the costs of the Work, on a weekly basis as the Work proceeds, and submits such records in support of the claim. Contractor cannot claim delay just because their schedule was longer. Contractor is bound to your fixed date.

.7 In paragraph 6.5.5, add the following:

.1 In case the additional instructions require pricing by the Contractor, the above 10 day period shall commence after a fully substantiated price has been submitted by the Contractor to the Consultant.

.8 Add new paragraph 6.5.6 in its entirety as follows:

.1 6.5.6 If the Contractor is delayed in the performance of the Work by an act or omission of the Contractor or anyone employed or engaged by the Contractor directly or indirectly, or by any cause within the Contractor's control, then the Contract Time shall be extended for such reasonable time as the Consultant may decide in consultation with the Contractor. The Owner shall be reimbursed by the Contractor for all reasonable costs incurred by the Owner as the result of such delay, including all services required by the Owner from the Consultant as a result of such delay by the Contractor and, in particular, the cost of the Consultant's services during the period between the date of Substantial Performance of the Work stated in Article A-1 herein as the same may be extended through the provisions of these General Conditions and any later, actual date of Substantial Performance of the Work achieved by the Contractor.

.9 Add new paragraph 6.5.7 in its entirety as follows:

.1 6.5.7 If the Work should be behind schedule for a reason other than as described in GC 6.5.1 to 6.5.6 or if any of the Subcontractors delay the progress of any portion of the Work necessary to complete the Work on schedule, the Contractor shall use all possible measures and, if necessary, extraordinary measures to bring the Work back on schedule. The Contractor shall exercise all reasonable means within its discretion, such as directing any Subcontractor creating delays to increase their labour forces and overtime as may be needed. The Contractor shall provide any additional supervision, coordination and expediting including overtime by its own personnel as may be required to achieve this end. The costs and expenses incurred by the use of such measures and overtime shall be borne by the Contractor and/or its Subcontractors.

.10 Add new paragraph 6.5.8 in its entirety as follows:

.1 6.5.8 Without limiting the obligations of the Contractor described in GC 3.2 – CONSTRUCTION BY OWNER OR OTHER CONTRACTORS or GC 9.4 – CONSTRUCTION SAFETY, the Owner may, by notice in writing, direct the Contractor to stop the Work where the Owner determines that there is an imminent risk to the safety of persons or property at the Place of the Work. In the event that the Contractor receives such notice, it shall immediately stop the Work and secure the site. The Contractor shall not be entitled to an extension of the Contract Time or to an increase in the Contract Price unless the resulting delay, if any, would entitle the Contractor to an extension of the Contact Time or the reimbursement of the Contractor’s costs as provided in paragraphs 6.5.1, 6.5.2 or 6.5.3.

.11 Add new paragraph 6.5.9 in its entirety as follows:

.1 6.5.9 In the event of a delay which results in a stoppage of the Work, the Contractor will take all reasonable steps to protect the Work for the entire period of the delay. The cost of such protection will be paid by the Owner unless and to the extent the delay was caused directly or indirectly by the Contractor.

.12 Add new paragraph 6.5.10 in its entirety as follows:

.1 6.5.10 No extension of Contract Time shall be granted where delay results from the Contractor's failure to provide adequate resources or properly plan the Work to meet the required Contract Time.

1.32 GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

.1 Add the words "as noted in paragraph 6.6.3" after the words "of the claim" in paragraph 6.6.5 and add the words "and the consultant", at the end of paragraph 6.6.5.

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

.1 Add new paragraph 7.1.3.4 in its entirety as follows:

.1 .4 An "acceptable schedule" as referred to in paragraph 7.1.3.2 means a schedule approved by the Consultant and the Owner wherein the default can be corrected within the balance of the Contract Time and shall not cause delay to any other aspect of the Work or the work of other contractors, and in no event shall it be deemed to give a right to extend the Contract Time.

.2 In subparagraph 7.1.5.3 add "Owner and" between "including compensation to the" and "Consultant for the". Also add "Owner's and" between "for the" and "Consultant's additional services".

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

.1 In paragraph 7.2.1, add "and the Consultant" between the words "bankruptcy" and "Notice in Writing".

.2 Add new paragraph 7.2.3.5 in its entirety as follows:

.1 .5 The foregoing defaults in contractual obligations shall not apply to the withholding of certificates or payments, or both, in accordance with the General Conditions, because of the Contractor's failure to pay all claims promptly, nor because of the registration of liens against the Owner's property, until such claims and liens are discharged.

.3 Add new paragraph 7.2.3.6 in its entirety as follows:

.1 .6 If the Contractor stops the Work or terminates the Contract as provided for in paragraph 7.2.1 to 7.2.5 above, the Contractor shall ensure the Place of Work and the Work is left in a safe, secure condition as required by authorities having jurisdiction as well as the Contract Documents.

1.35 GC 8.1 AUTHORITY OF THE CONSULTANT

.1 Add new paragraph 8.1.4 in its entirety as follows:

.1 8.1.4 Notwithstanding any other paragraph, the Consultant shall not have authority to make a finding and the procedures set out in paragraph 8.1.3 and paragraphs 8.3.3 to 8.3.8 of GC 8.3 - NEGOTIATION, MEDIATION AND ARBITRATION, and in GC 8.4 - RETENTION OF RIGHTS shall not apply to:

.1 any claim by a third party against the Owner and/or the Contractor for any personal injury, including death, or damage to property;

.2 any claim for indemnity as between the Owner and Contractor; or

.3 any claim or dispute that is insured or subject to a subrogated right of an insurer.

1.36 GC 8.3 NEGOTIATION, MEDIATION, AND ARBITRATION

.1 Delete paragraph 8.3.4 in entirety and replace with the following:

.1 8.3.4 After a period of 10 Working Days following receipt of a responding party's Notice in Writing of reply under paragraph 8.3.2, the parties may request the Project Mediator to assist the parties to reach agreement on any unresolved dispute, who shall do so only with the consent of all parties involved in the dispute. The mediated negotiations shall be conducted in accordance with the rules for mediation as provided in CCDC 40 in effect at the time of bid closing.

.2 Delete paragraph 8.3.6 in entirety and replace with the following:

.1 8.3.6 When a dispute has not been resolved through negotiation or mediation, within 10 Working Days after the date of termination of the mediated negotiations under paragraph 8.3.5, either party may give a Notice in Writing to the other party and to the Consultant inviting the other party to agree to submit the dispute to be finally resolved by arbitration, pursuant to provisions of the Arbitration Act, 1991. If the other party wishes to accept the invitation to submit the dispute to arbitration, it shall so indicate by the delivery of a responding Notice in Writing within 10 Working Days of receipt of the invitation. If, within the required times, no invitation is made or, if made, is not accepted, either party may refer the dispute to the courts or to any other form of dispute resolution, including arbitration, which the parties may agree to use.

.3 Delete paragraph 8.3.7 in its entirety.

.4 Delete paragraph 8.3.8 in its entirety.

.5 Add new paragraph 8.3.9 in its entirety as follows:

.1 8.3.9 Within five days of receipt of the notice of arbitration by the responding party under paragraph 8.3.6, the Owner and the Contractor shall give the Consultant a written notice containing:

.1 a copy of the notice of arbitration;

.2 a copy of supplementary conditions 8.3.9 to 8.3.14 of this Contract, and;

.3 any claims or issues which the Contractor or the Owner, as the case may be, wishes to raise in relation to the Consultant arising out of the issues in dispute in the arbitration.

.6 Add new paragraph 8.3.10 in its entirety as follows:

.1 8.3.10 The Owner and the Contractor agree that the Consultant may elect, within ten days of receipt of the notice under paragraph 8.3.9, to become a full party to the arbitration under paragraph 8.3.6 if the Consultant:

.1 has a vested or contingent financial interest in the outcome of the arbitration;

.2 gives the notice of election to the Owner and the Contractor before the arbitrator is appointed;

.3 agrees to be a party to the arbitration within the meaning of the rules referred to in paragraph 8.3.6; and

.4 agrees to be bound by the arbitral award made in the arbitration.

.7 Add new paragraph 8.3.11 in its entirety as follows:

.1 8.3.11 If an election is made under paragraph 8.3.10, the Consultant may participate in the appointment of the arbitrator and, notwithstanding the rules referred to in paragraph 8.3.6, the time period for reaching agreement on the appointment of the arbitrator shall begin to run from the date the respondent receives a copy of the notice of arbitration.

.8 Add new paragraph 8.3.12 in its entirety as follows:

.1 8.3.12 The arbitrator in the arbitration in which the Consultant has elected under paragraph 8.3.10 to become a full party may:

.1 on application of the Owner or the Contractor, determine whether the Consultant has satisfied the requirements of paragraph 8.3.10, and;

.2 make any procedural order considered necessary to facilitate the addition of the Consultant as a party to the arbitration.

.9 Add new paragraph 8.3.13 in its entirety as follows:

.1 8.3.13 The provisions of paragraph 8.3.9 shall apply mutatis mutandis to written notice to be given by the Consultant to any sub-consultant.

.10 Add new paragraph 8.3.14 in its entirety as follows:

.1 8.3.14 In the event of notice of arbitration given by the Consultant to a sub-consultant, the sub-consultant is not entitled to any election with respect to the proceeding as outlined in 8.3.10 and is deemed to be bound by the arbitration proceeding.

.11 Add new paragraph 8.3.15 in its entirety as follows:

.1 8.3.15 Unless the arbitrator orders otherwise, each party shall bear their own costs of the arbitration and the cost of arbitrator(s) and any arbitration facilities shall be apportioned equally between the parties hereto.

1.37 GC 9.1 PROTECTION OF WORK AND PROPERTY

.1 Delete subparagraph 9.1.1.1 in its entirety and substitute with the following

.1 .1 errors or omissions in the Contract Documents which the Contractor could not have discovered applying the standard of care described in paragraph 3.10.1;

.2 Delete paragraph 9.1.2 in its entirety and substitute with the following

.1 9.1.2 Before commencing any Work, the Contractor shall determine the locations of all underground utilities and structures indicated in or reasonably determinable from the Contract Documents, or that are discoverable from an inspection of the Place of Work, exercising the degree of care and skill described in paragraph 3.10.1.

.3 Add new paragraph 9.1.5 in its entirety as follows:

.1 9.1.5 The Contractor shall provide and maintain hoarding and dust screens in accordance with local bylaws and Construction Safety Council, and to the Consultant’s approval. The Contractor shall locate hoarding either in accordance with instructions received from the Consultant at the first site meeting or as specified in the Contact Documents.

.4 Add new paragraph 9.1.6 in its entirety as follows:

.1 9.1.6 The Contractor shall be responsible for securing the Place of Work at all times and shall take all reasonable precautions necessary to protect the Place of Work, its contents, materials (including Owner supplied materials) and the public from loss or damage during and after working hours. Where the Consultant or the Owner deems the provision of security guard services to be necessary, the Contractor shall provide those services at the Owner's expense.

1.38 GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

.1 In paragraph 9.2.1, after the word “legislation” insert “and the Occupational Health and Safety Act of Ontario (OHSA) and amendments to the Act and all regulations under the Act”

.2 Amend paragraph 9.2.6 as follows:

.1 After the word "responsible", add the following: or whether any toxic or hazardous substances or materials already at the Place of the Work (and which were then harmless or stored, contained or otherwise dealt with in accordance with legal and regulatory requirements) were dealt with by the Contractor or anyone for whom the Contractor is responsible in a manner which does not comply with legal and regulatory requirements, or which threatens human health and safety or the environment, or material damage to the property of the Owner or others.

.3 Add "and the Consultant" after the word "Contractor" in subparagraph 9.2.7.4.

.4 Amend paragraph 9.2.8 as follows:

.1 After the word "responsible", add the following: or that any toxic or hazardous substances or materials already at the Place of the Work (and which were then harmless or stored, contained or otherwise dealt with in accordance with legal

and regulatory requirements) were dealt with by the Contractor or anyone for whom the Contractor is responsible in a manner which does not comply with legal and regulatory requirements, or which threatens human health and safety or the environment, or material damage to the property of the Owner or others.

.5 Add new paragraph 9.2.10 in its entirety as follows:

.1 9.2.10 It shall be the responsibility of the Contractor to ensure that the following Workplace Hazardous Material Information System regulations are adhered to on the job site:

.1 All personnel shall have received WHMIS training;

.2 All materials being used, falling under WHMIS guidelines, shall be labelled in accordance with up-to-date and valid WHMIS requirements;

.3 Appropriate Material Safety Data Sheets shall be available at all times.

1.39 GC 9.4 CONSTRUCTION SAFETY

.1 Add new paragraph 9.4.6 in its entirety as follows:

.1 9.4.6 Prior to the commencement of the Work, the Contractor shall submit to the Owner:

.1 a current WSIB clearance certificate;

.2 copies of the Contractor's insurance policies having application to the Project or certificates of insurance, at the option of the Owner;

.3 documentation of the Contractor's in-house safety-related programs, including, but not limited to, Contractor's Health and Safety Policy and Contractor's Health and Safety Program Manual.

.2 Add new paragraph 9.4.7 in its entirety as follows:

.1 9.4.7 The Contractor shall indemnify and save harmless the Owner, its agents, officers, directors, employees, consultants, successors and assigns from and against the consequences of any and all safety infractions committed by the Contractor under OHSA, including the payment of legal fees and disbursements on a solicitor and Owner basis. Such indemnity shall apply to the extent to which the Owner is not covered by insurance, provided that the indemnity contained in this paragraph shall be limited to costs and damages resulting directly from such infractions and shall not extend to any consequential, indirect or special damages.

.3 Add new paragraph 9.4.8 in its entirety as follows:

.1 9.4.8 Each Contractor and Subcontractor having an accident or incident on the project site, as prescribed in Sections 8 through 11 of the Construction Regulations under the OHSA, shall notify the Director of Facilities and the Project Manager for the City; and the General Contractor, as constructor, shall advise the Workplace Safety and Insurance Board and the Ministry of Labour, if so required by the OHSA.

.4 Add new paragraph 9.4.9 in its entirety as follows:

.1 9.4.9 Failure to comply with these provisions and all applicable legislation, including the OHSA and the Environmental Protection Act and regulations made thereunder, may result in the cancellation of this Contract and no further monies will be owed by the Owner from the date of cancellation. As well, the Owner may withhold any monies owing to the Contractor in order to cover any losses the Owner may incur in order to have the Work completed by whatever means the Owner deems appropriate.

1.40 GC 9.5 MOULD

.1 Add "and the Consultant" after "Contractor" in subparagraph 9.5.3.4.

1.41 GC 10.1 TAXES AND DUTIES

.1 Add to the end of paragraph 10.1.2: The Contractor shall keep a record of all taxes and duties carried in the Contract Price and records and invoices of accounts subject to such taxes and duties paid for substantiating any adjustments in the event of changes in legislation during the course of the Contract and for the purpose of claiming exemption or recovering taxes and duties paid.

.2 Add new paragraph 10.1.3 in its entirety as follows:

.1 10.1.3 Where the Owner is entitled to an exemption or a recovery of sales taxes, customs duties, excise taxes or Value Added Taxes applicable to the Contract, the Contractor shall, at the request of the Owner, assist with application for any exemption, recovery or refund of all such taxes and duties and all amounts recovered or exemptions obtained shall be for the sole benefit of the Owner. The Contractor agrees to endorse over to the Owner any cheques received from the federal or provincial governments, or any other taxing authority, as may be required to give effect to this paragraph.

.3 Add new paragraph 10.1.4 in its entirety as follows:

.1 10.1.4 Upon registration of this agreement, the Contractor shall provide the Owner with its GST registration number.

.4 Add new paragraph 10.1.5 in its entirety as follows:

.1 10.1.5 For out of Ontario Contractors who have a GST registration number, the Contractor shall invoice the Owner for the Ontario HST for applicable goods and services delivered in Ontario. For out of Ontario Contractors who do not have a GST registration number, the Owner will self-assess the HST on applicable goods and services delivered in Ontario. If the Contractor does not have a business office in Canada and does not provide a waiver of income tax withholding from the Canada Revenue Agency, the Owner will withhold and remit income tax as necessary.

1.42 GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

.1 In paragraph 10.2.1, add “...including, but not limited to OHSA, EPA and all regulations made under these Acts.”

.2 Add to the end of paragraph 10.2.2 “Application and administration work required to obtain the building permit will be performed by the Consultant.”

.3 Add to the end of paragraph 10.2.3 as follows:

.1 ", as well as the filing of any "Notice of Project". The Contractor, when necessary, shall also be responsible for the filing of the "Notice of Project" with the Ministry of Labour under the OHSA."

.4 Delete paragraph 10.2.4 in entirety and replace with the following:

.1 "10.2.4 The Contractor shall give the required notices and shall comply, and shall require its employees, agents and Subcontractors and Suppliers to comply, with all laws, ordinances, guidelines, standards, permits, statutes, by-laws, rules, regulations, or codes and all of the Owner's policies and procedures which are or become in force and are applicable to the performance of the Work including, without limitation, all those relating to the preservation of the public health, occupational health and safety and to construction safety."

.5 Delete from the first line of paragraph 10.2.5 the word, "The" and substitute the words: "Subject to paragraph 3.8.1, the".

1.43 GC 10.4 WORKERS' COMPENSATION

.1 Delete 10.4.1 in entirety and replace with the following:

.1 "10.4.1 The Contractor must be registered as an employer or independent operator with the Workplace Safety and Insurance Board (WSIB). The Contractor shall be required to enroll in the WSIB eClearance service and provide the Owner with a Clearance Certificate Number through the e-Clearance service. The Contractor must maintain his or her account with the WSIB in good standing throughout the duration of the work under this order, and shall ensure that its eClearance is automatically renewed prior to its expiry. At no time may work proceed or continue under the contract in the absence of a current Clearance Certificate Number from the WSIB."

.2 Add new paragraph 10.4.2 in its entirety as follows:

.1 "10.4.2 The Contractor is also required to obtain and provide from any and all Subcontractors, including any and all independent operators who perform Work as a Sub-contractor, copies of current clearance certificates and is expected to continue to maintain and provide updated clearance certificates throughout the period of Work under this contract. No Work under this Contract may be performed in the absence of a current clearance certificate which applies to any Contractor, Subcontractor, worker or independent operator who is to perform the Work."

1.44 GC 11.1 INSURANCE

.1 Delete paragraph 11.1.1 in entirety and replace with the following:

.1 "11.1.1 Without restricting the generality of GC 13.1 Indemnification the following insurance coverages are specified as minimum requirements of this Contract. The Contractor's attention is directed to the insurance requirements below. It is highly recommended that the Contractor confer with their respective insurance carriers or brokers to determine in advance of bid submission the availability of insurance certificates and endorsements as prescribed and provided herein. It is

the responsibility of the Contractor and/or their Insurance Broker to review all potential operations and exposures to determine if the coverage and limits noted below are sufficient to address all insurance related exposures presented by the specifications of this Contract. The Contractor shall insure its undertaking, business and equipment under the following coverage so as to protect and indemnify and save harmless the Owner:

.1 Commercial General Liability Insurance:
The Contractor shall maintain liability insurance acceptable to the Owner throughout the term of this Agreement. Coverage shall consist of a comprehensive policy of public liability and property damage insurance, with all applicable coverage endorsements available, in an amount of not less than $5,000,000 per occurrence. Such insurance shall name The Owner, and any other person or party identified in the Contract Documents, as an additional insured with a cross liability endorsement and severability of interests provision. The policy Self- Insured Retention (SIR)/deductible shall not exceed $100,000 per claim and if the policy has an aggregate limit, the amount of the aggregate shall be double the required per-occurrence limit. A combination of primary coverage plus umbrella or excess liability insurance coverage may be used.
In the event that the Contract includes shoring, blasting, excavation, underpinning, demolition, pile driving, caisson work and work below ground surface including tunneling and grading: such insurance coverage shall be endorsed to cover shoring, blasting, excavation, underpinning, demolition, pile driving, caisson work and work below ground surface including tunneling and grading.
The Owner reserves the right to request an alternative to the Commercial General Liability Insurance policy in the form of a Wrap-Up Liability Insurance policy. If this option is exercised, it will be specified elsewhere in the Contract Documents.

.2 Owned and Non-Owned Automobile Liability Insurance:

.1 The Contractor shall maintain automobile liability insurance on all Owned, Non-Owned, and Leased Automobiles used in the performance of the work to a limit of $5,000,000 throughout the term of this Agreement.

.3 Unless otherwise specified in the Contract Documents, the Contractor shall provide and maintain during the term of the Agreement, Broad Form Contractors' Equipment Insurance coverage for construction machinery and equipment used by the Contractor for the performance of the work. Such insurance 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 to self-insure their equipment, the Owner agrees to waive the equipment insurance requirement.

.4 In the event that the Contract includes the installation of any machinery and equipment not covered under a Builders Risk Insurance policy, the Contractor shall provide and maintain during the term of the Agreement an All Risk Installation Floater Insurance policy covering the installation

of any machinery and equipment associated with the Contract. Coverage shall be in an amount equal to the value of the machinery and/or equipment and shall include coverage while it is in transit to and awaiting installation at the work site.

.5 Unless otherwise specified in the Contract Documents, the Contractor shall provide and maintain during the term of the Contract, Broad Form Builders' Risk Insurance coverage to the amount of 1.1 times the full replacement cost of the Contract.

The Builders Risk shall be underwritten on the following basis:

.1 Policy deductible shall not exceed $5,000 without prior approval by the Owner. If a loss occurs, the deductible shall be the sole responsibility of the Contractor.

.2 The Contractor and the Owner must be named as co-insured on the policy.

.3 The policy shall contain a clause which will allow occupancy prior to the completion or acceptance of the entire work.

.4 A copy of the Builder's Risk Certificate shall be furnished to all parties prior to the commencement of the Contract.

.6 In the event that the Contract includes the replacement of boilers, machinery or equipment, the Contractor shall provide and maintain Boiler & Machinery Insurance coverage on a Comprehensive Plus Form to the full replacement cost of the boiler, machinery and equipment.

.7 In the event that the Contract requires the Contractor to retain professional consultants, architects, landscape architects, planners and/or engineers, the Contractor shall ensure its professional consultants, architects, landscape architects, planners and engineers, providing a professional service in connection with the Contract, maintain until three (3) years after the Agreement, Professional Liability Insurance to a limit not less than $1,000,000 providing coverage for acts or errors and omissions arising from their professional services performed under this Agreement. The policy SIR/deductible shall not exceed $100,000 per claim and if the policy has an aggregate limit, the amount of the aggregate shall be double the required per claim limit. Certificates evidencing such coverage shall be supplied to the Owner prior to the completion of the Contract and in accordance with the provisions stated above.

.8 When specified elsewhere in the Contract Documents, the Contractor shall take out and keep in force Contractor's Pollution Liability (CPL) coverage to ensure that their work does not exacerbate any pre-existing environmental condition during construction. Coverage shall be in an amount of not less than $2,000,000 per claim or per occurrence, or such greater amount as the Owner may from time to time require, naming the Owner as an additional insured, which coverage shall be maintained in force for 12 months following the termination of the Contract. The policy

SIR/deductible shall not exceed $100,000 per claim and if the policy has an aggregate limit, the amount of the aggregate shall be double the required per occurrence limit.

.9 In the event any aircraft and/or watercraft are used directly or indirectly in the performance of the work, Aircraft and/or Watercraft Liability Insurance shall be maintained by the Contractor throughout the term of this Agreement. Coverage shall be in an amount of not less than $5,000,000 per occurrence.

.10 Provisions:

.1 All Insurers must be licensed in Ontario. The Contractor shall forward a Certificate of Insurance [on the Owner's Form (CERTIFICATE OF INSURANCE – CONTRACTOR)] evidencing this insurance with the executed Agreement. The Certificate shall state that coverage will not be cancelled, terminated, amended or otherwise changed or modified except after thirty (30) days (fifteen (15) days if cancellation is due to non payment of premium) prior written notice by certified mail to the Owner.

It is also understood and agreed that in the event of a claim any deductible or self-insured retention under these policies of insurance shall be the sole responsibility of the Contractor and that this coverage shall preclude subrogation claims against the Owner and any other person insured under the policy and be primary insurance in response to claims. Any insurance or self-insurance maintained by the Owner and any other person insured under the policy shall be considered excess of the Contractor's insurance and shall not contribute with it. The minimum amount of insurance required herein shall not modify, waive or otherwise alter the Contractor’s obligation to fully indemnify the Owner under this Agreement. Any failure to comply with any provision of the insurance policy by the Contractor shall not affect coverage provided to the Owner.

The Owner reserves the right to modify the insurance requirements as deemed suitable.

.11 Third Party Claims Process:

.1 The Owner's claims process for third party Contractor claims is to refer the claimant directly to the Contractor and to leave the resolution of the claim with the Contractor. This applies regardless of whether or not it is an insured loss.
As the Owner has a responsibility to the taxpayers, the Owner must ensure that claimants are dealt with in a fair and efficient manner. Claims reported to the Contractor, either directly by a third party or through the Owner shall be promptly investigated by the Contractor. The Contractor shall make contact with the third party claimant within 48 hours of receipt of notice of a claim.

The Contractor shall initiate an investigation of the claim immediately upon notice and advise the third party claimant in writing, with a copy to the Owner, of the status of their claim within 20 business days of the notice. Upon resolution of the claim, the Contractor shall issue a letter to the Claimant, with a copy to the Owner, which will include the reasons for their position.
Should this position not resolve the claim and be accepted by the third party claimant, the Contractor shall immediately report the claim to its Insurer for a further review. (Insurer for this purpose is defined as either the Claims Department of the Contractor's Insurance Company or the Claim's Administrator at the Contractor's Insurance Broker.) The Contractor's Insurer upon receipt of this claim shall advise the third party claimant by letter, with a copy to the Owner, that they are now investigating the claim. When a final position on the claim has been determined, the Contractor's Insurer shall advise the third party claimant by letter, with a copy to the Owner. Failure to follow this procedure shall permit the Owner to investigate and resolve any such claims. Nothing herein shall limit the right of the Owner to investigate and resolve any such claims notwithstanding the response the Contractor and/or its Insurer and to seek indemnification from the Contractor or to exercise of any other rights under the Contract. The Owner may, without breaching this Contract, retain from the funds owing to the Contractor an amount that, as between the Owner and the Contractor, is equal to the balance in the Owner's favour of all outstanding debts, claims or damages, whether or not related to this Contract.

1.45 GC 12.1 READY-FOR-TAKEOVER

.1 Add note 12.1.1. (.9) :

.1 Provide the *Owner* with CAD as-builts drawings completed to date. Base drawings will be provided by consultant team.

.2 Add note 12.1.4. (.1)

.1 If project exceeds initial proposed schedule, contractor will be responsible for cost of consultant to complete inspection and any follow-up inspections required. (travel and expenses included)

.3 Add new paragraph 12.1.7 in its entirety:

.1 "12.1.7 **0.5%** of the Contractor's bid price shall be allocated as a separate holdback for the submission of record drawings, as-built drawings, operation and maintenance manuals, warranties, and other close-out documentation required by the Contract Documents. The Contractor shall have the right to invoice the Owner for the balance of the Close-Out Documents when the consultants have received and approved the entire package of documents."

.2 Close-Out Document holdback is a contractual agreement with the purpose to ensure a timely delivery of close-out documents at ready-for-takeover. The

release will be applied when the task is deemed 100% complete, and complies with 01 78 00 Closeout submittals

1.46 GC 12.3 WARRANTY

.1 Delete paragraph 12.3.2 in its entirety.

.2 Amend paragraph 12.3.4 as follows:

.1 Add the word "all" after the word "expense" in the first line.

.3 Delete paragraph 12.3.5 in entirety and replace with the following:

.1 “12.3.5 The Contractor agrees to correct, or reimburse the Owner for, all damage, to the Work and/or the property, goods and/or equipment of the Owner and/or the Owner’s tenants, where the damage is the result of any defect or deficiency that is covered pursuant to the warranty herein.”

.4 Add new paragraph 12.3.7 in its entirety as follows:

.1 “12.3.7 The Contractor shall commence or correct any deficiency within two working days after receiving a notice from the Owner or the Consultant, and complete the work as expeditiously as possible, except that in case the deficiency would prevent maintaining security or keep basic systems essential to the ongoing business of the Owner and/or their tenants, operational as designed, all necessary corrections and/or installations of temporary replacements shall be carried out immediately as an emergency service. Should the Contractor fail to provide this emergency service within 8 hours of a request made during normal business hours of the Contractor the Owner is authorized, regardless of GC 3.1 – Control of the Work, to carry out all necessary repairs or replacements at the Contractor’s expense.”

.5 Add new paragraph 12.3.8 in its entirety as follows:

.1 “12.3.8 The Contractor shall submit written warranty or guarantee certificates and extended warranty or guarantees for all work as required in the specifications. The guarantee shall be addressed to the Owner and state the following:

.1 Date of Ready-For-Takeover as applicable to the Warranty or Guarantee Period.

.2 Name of Project to be same as indicated in the Contract.

.3 Terms and Conditions.

.4 Warranty or Guarantee Period.”

.6 Add new paragraph 12.3.9 in its entirety as follows:

.1 “12.3.9 Use of the building systems during construction for temporary heat will require written approval from the Owner and shall not have any effect on the warranty period of those systems and equipment in use. The warranty period will not begin until Ready-For- Takeover has been attained.”

.7 Add new paragraph 12.3.10 in its entirety as follows:

.1 "12.3.10 **2.5%** of the Contractor's bid price shall be allocated as a holdback for security for the Contractor's performance of its warranty obligations. In the event the Contractor fails to correct a defect or deficiency during the warranty period within the required time and/or fails to pay for the redesign, reconstruction and other costs related to damages arising from a defect or deficiency, the Owner shall have the right to use the warranty holdback, or such part of it still being held by the Owner to pay for the costs of remedying the defect or deficiency and any redesign, reconstruction or other costs relating to the defect or deficiency. If the costs are greater than the amount of the warranty holdback, the Contractor shall pay the additional costs upon receipt of an invoice from the Owner. The Contractor shall have the right to invoice the Owner for the balance of the warranty holdback at the end of the warranty period or extended warranty period as described in paragraphs 12.3.1 and 12.3.6."

.1 Warranty holdback is a contractual agreement with the purpose to secure warranty and deficiency obligations. The release can be applied for at the expiry of the warranty period.

1.47 GC 13.1 INDEMNIFICATION

.1 Delete paragraph 13.1.1 in entirety and replace with the following:

.1 ".1 The Contractor, both during and after the term of this Agreement, shall at all times, and at its own cost, expense and risk, defend, indemnify and hold harmless the Owner and the upper-tier municipality in which the works are carried out, their elected officials, officers, employees, volunteers, agents, contractors, the Contract Administrator, all respective heirs and executors, successors and assigns, from any and all losses, damages (including, but not limited to, incidental, indirect, special and consequential damages, or any loss of use, revenue or profit by any person, organization or entity), fines, penalties and surcharges, liabilities (including, but not limited to, any and all liability for damages to property and injury to persons, including death), judgments, claims, demands, causes of action, contracts, suits, actions or other proceedings of any kind (including, but not limited to, proceedings of a criminal or quasi-criminal nature) and expenses (including, but not limited to, legal fees on a substantial indemnity basis), which the indemnified persons or person may suffer or incur, howsoever caused, arising out of or in consequence of or directly or indirectly attributable to the Work required to be performed by the Contractor, its agents, employees and Subcontractors on behalf of the Owner, provided such losses, damages, fines, penalties and surcharges, liabilities, judgments, claims, demands, causes of action, contracts, suits, actions or other proceedings of any kind and expenses as defined above are due or claimed to be due to the negligence, breach of contract, and/or breach of law of the Contractor, its agents, employees or Subcontractors."

.2 Delete GC 13.1.2 in its entirety.

.3 Delete GC 13.1.3 in its entirety.

1.48 GC 13.2 WAVIER OF CLAIMS

.1 Delete GC 13.2 in its entirety.

END OF SECTION

Section 00 73 63
Contract Security Requirements

Part 1 General

1.1 PERFORMANCE BOND

.1 Provide security for performance of the Contract in the form of a Performance Bond issued by a duly licensed surety company authorized to transact surety business in the province of the Place of the Work.

.2 Issue bond in the amount of 100% of the Contract Price, to assure the faithful performance of the Contract, including corrections to the Work required under GC 12.3 - Warranty.

.3 Sign bond in the name Owner as the obligee, and signed, sealed, and dated by both Contractor and surety company.

.4 Submit signed bond to Owner within 10 working days after contract award.

1.2 LABOUR AND MATERIAL PAYMENT BOND

.1 Provide security for labour and material payment in the form of a Labour and Material Bond issued by a duly licensed surety company authorized to transact surety business in the province of the Place of the Work.

.2 Sign bond in the name Owner as the obligee, and signed, sealed, and dated by both Contractor and surety company.

.3 Issue bond in the amount of 50% of the Contract Price, to assure faithful payment of monies to parties in contract with the Contract.

.4 Submit signed bond to Owner within 10 working days after contract award.

END OF SECTION

Section 01 00 00
General Requirements

Part 1 General

1.1 DESCRIPTION

.1 Work under this Contract as detailed in the contract documents includes but is not restricted to, the supply of all labour, materials, services and incidentals in order to perform the work.

.2 Except where specified otherwise, all requirements of Section 01 00 00 General Requirements shall apply to the Work of all other sections of the specifications.

.3 Study all Contract Documents to determine additional work required by your Section on which the work of other Sections depends.

1.2 DOCUMENTS REQUIRED ON SITE

.1 One copy of the following is to be on site and accessible:

.1 Drawings and Specifications

.2 Addenda

.3 Change Orders

.4 Other Modifications to the Contract

.5 Field Reports

.6 Test Reports

.7 Copy of Approvals, up to date, work schedule

.8 Manufacturer’s installation and application instructions

.9 Copy of the “Material Safety Data Sheet” (MSDS) for all materials and products on
site as required by the “Workplace Hazardous Materials Information System” (WHMIS).

.10 A day-to-day record of all work performed,

.11 Shop Drawings

1.3 DOCUMENTS

.1 The Contractor shall be responsible to see that all of his sub-contractors are fully informed in regard to the General Conditions, regulations, revisions, and addenda which may be issued.

.2 No deviation from the Drawings and Specification shall be made in the execution of the work, without the written approval of the Consultant.

1.4 SPECIFICATION FORMAT

.1 These Specifications are not intended as a detailed description of installation methods but serve to indicate particular requirements in the completed work.

.2 Conform to the Current Ontario Building Code together with all its related supplements, hereinafter referred to as the "Code". Where Drawings and/or Specifications exceed Code requirements, provide such additional requirements

.3 The Specifications are divided into Divisions and Sections for the convenience of the Contractor and the Consultant, and shall be interpreted as a whole.

.4 Where the aforementioned Code or this Specification does not provide all information necessary for complete installation of an item, then the manufacturer's instruction for first quality workmanship shall be strictly complied with.

.5 Where words in the Contract Documents occur in the singular number, they shall be taken as plural where applicable in accordance with the quantities required to satisfy the requirements of the Contract.

1.5 SUBCONTRACTING

.1 The Contractor cannot subcontract the Project.

1.6 WORK SCHEDULE

.1 Schedules required

.1 Construction progress schedule

.2 Schedule of values of the work

.3 Schedule for processing shop drawings, product data and samples

.4 Schedule for mock-up reviews of the key building components.

.2 Provide a schedule in accordance with GC 3.5.1 showing anticipated progress stages and final completion of Work within time period quoted in the Bid Form. Schedule to include dates for the following:

.1 Submission of shop drawings, material lists and samples

.2 Start and completion of all major elements of Work including removals, structural repairs, interior fit-up, by area of Work

.3 Substantial completion and total completion

.3 Submit an updated and revised schedule with each claim for payment

1.7 DIGITAL PROJECT MANAGEMENT PLATFORM

.1 At 65% construction completion, the Contractor shall obtain and maintain an active subscription to Fieldwire Business Plus (or current equivalent tier approved by the Consultant).

.2 The Contractor shall use the platform for the tracking and management of deficiencies, site instructions, field reports, and project documentation issued by the Consultant. All deficiency items shall be logged, updated, and closed within the platform.

.3 The Contractor shall ensure that all relevant Subcontractors have appropriate access and participate in the platform as required to complete the Work.

.4 Costs associated with the subscription and implementation of the platform shall be included in the Contract Price. Failure to maintain and utilize the platform may be considered a deficiency in the Contractor's contract administration obligations.

1.8 COORDINATION

.1 Allocate mobilization areas of site; for field offices and sheds, for stockpiling, access, traffic, and parking facilities. Provide a plan for approval by owner and consultant.

.2 During construction co-ordinate use of site and facilities through procedures for submittals, reports and records, schedules, co-ordination of drawings, recommendations, and resolution of ambiguities and conflicts.

.3 Provide information required for preparation of co-ordination drawings. Review and approved revised drawings for submission to Consultant.

.4 The responsibility as to which sub-trade provides required articles, labour, or materials to be built in or provided, rests solely with the Contractor. Extras will not be considered, based on grounds of difference in interpretation of Specifications and Drawings.

1.9 EXAMINATION

.1 Examine the work upon which your work depends. Report to the Consultant in writing any defects in such work. The application of your work or any part of it shall be deemed acceptance of the work upon which your work or that part of it which has been applied depends

.2 Drawings are, in part, diagrammatic and are intended to convey scope of work and indicate general and approximate location, arrangement and sizes of fixtures and indicate general and approximate location, arrangement and sizes of fixtures and equipment. Obtain more accurate information about locations, arrangements and sizes from study and co-operation of shop drawings, including Architectural, Structural, Mechanical, and Electrical Drawings and become familiar with conditions and spaces affecting these matters before proceeding with the work. Where job conditions require reasonable changes in indicated locations and arrangements, make changes at no additional cost to the Contract. Install and arrange fixtures and equipment in such a way as to conserve as much headroom and space as possible.

1.10 LINES, LEVELS AND DIMENSIONS

.1 The Contractor shall, immediately upon entering the project site for purpose of beginning work, locate all general reference points and take such action as is necessary to prevent their destruction; lay out his own work and be responsible for all lines, elevations and measurements of buildings, grading, paving, utilities and other work executed by him under the Contract. Establish lines and levels, locate and layout, by instrumentation. The Contractor must exercise proper precaution to verify figures shown on the Drawings before laying out work and will be held responsible for any error resulting from his failure to exercise such precaution.

.2 Line and levels are generally as shown on drawings.

.3 Verify lines, levels and dimensions and report errors or inconsistencies in the drawings to the Consultant before commencing.

.4 On completion of foundation work, provide and pay for a certified survey (performed by a Registered Land Surveyor) showing dimensions, locations, angles and elevations of work.

.5 Drawings are, in part, diagrammatic and are provided to convey the design intent and scope of Work, as well as indicate the general and approximate location, arrangement and size of fixtures and equipment. Obtain more accurate information about locations, arrangements and sizes at the site and become familiar with conditions and spaces affecting these matters before proceeding with Work. Where job conditions require reasonable changes in indicated locations and arrangements, make changes at no additional cost to owner. Similarly, where existing conditions interfere with new installations and require relocation, include such relocation in the Work of this Contract.

1.11 STANDARDS AND DEFINITIONS

.1 Where a reference is made in the specifications to Standards produced by various organizations, conform to the latest edition of the standard, as amended and revised at date of Contract.

1.12 SUBMITTALS

.1 Administrative

.1 Submit to the Consultant submittals listed for review with reasonable promptness and in an orderly sequence as to not cause delay in the Work.

.2 Work affected by submittal shall not proceed until review is complete.

.3 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of the Work and Contract Documents.

.4 Verify field measurements and affected adjacent Work are coordinated.

.5 Organize and track each submittal per instructions in Section 01 33 00 Submittal Procedures.

.2 Shop Drawings and Product Data

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

.2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connection, explanatory notes and other information necessary for completion of Work.

.3 Mark-ups done by Consultant are not intended to change Contract Price.

.4 Make changes in shop drawings as consultant may require.

.5 Submittals intended to illustrate colours and finishes shall be submitted in physical form. Digital submission for colours and finishes will not be reviewed.

.6 Electronic submissions of shop drawings are to be emailed to the Consultant Project Manager. Only provide hard copies if requested (3 copies)

.7 Electronic submissions of product data sheets or brochures for requirements requested in specification Sections, and as the Consultant may reasonably request where shop drawings will not be prepared due to standardized manufacture of product

.3 Samples

.1 Samples are to be provided in accordance with the specification section. The Consultant has the right to request samples even if not specified within specific sections to further clarify if required.

.2 Deliver samples prepaid to Consultant's business address.

.4 Operating Maintenance Manuals

.1 Two weeks prior to Substantial Performance of the Work, submit to Consultant, 2 copies of operating and maintenance manual/documentation upon project completion.

.2 Manuals to contain operational information on equipment, cleaning and lubrication schedules, filters, overhaul and adjustment schedules and similar maintenance information.

.3 Bind contents in a three-ring, hard covered, plastic jacketed binder. Organize contents into applicable categories of work, parallel to specifications Sections.

.4 Each binder shall also contain a complete list of contents and a complete list of subcontractors used for this project and shall include phone numbers, addresses and contact personnel. Each section shall be properly partitioned.

.5 Maintenance Manuals shall be submitted to the Consultant in electronic and hard copy format; one hard copy in matching 3-ring binders and 2 USB's and they shall contain the following documents:

.1 Printed or type-written copies of maintenance procedures where indicated in the specifications.

.2 All require warranty and guarantee certificates

.3 As-Recorded drawings as required elsewhere in this Section

.4 Inspection and Verification Certificates

.5 Recorded Drawings

.1 After award of Contract, Consultant will provide a set of drawings for purpose of maintaining record drawings. Accurately and neatly record deviations from Contract Documents caused by site conditions and changes ordered by Consultant.

.2 Record locations of concealed components of mechanical and electrical services.

.3 Identify drawings as "Project Record Copy". Maintain in new condition and make available for review on site by Consultant.

.4 On completion of Work and prior to final review, submit record documents to Consultant.

.5 Record drawings not submitted on completion of Work will be cause for the Consultant to withhold a retainage amount.

.6 Progress Reports

.1 Supply for distribution a minimum of every 2 weeks a written description of the project status and specific information about the work that will affect the building occupants. Increase the frequency of the submission as necessary to keep the Owners informed. Liaise with Owner's Representative and Consultant with respect to all issues impacting the building occupants' use of the site and building.

1.13 PROGRESS CLAIMS

.1 Progress claims submitted for payment during the course of the project shall be based on the cost breakdown in accordance with the Schedule of Value, or modified as requested by the Consultant at the beginning of the project

.2 Progress claims shall be submitted in duplicate the first week of each month for the Work completed the previous month. Only one claim per month shall be submitted.

.3 A revised and updated work schedule is to be submitted by the Contractor with each progress claim.

1.14 MEASUREMENTS FOR PAYMENT

.1 Notify Consultant sufficiently in advance of operations to permit required measurements for payment.

1.15 ACCESSABILITY

.1 As of January 1, 2012, Proponents must meet the requirements of the Customer Service Standard of the Accessibility for Ontarians with Disabilities Act, 2005

1.16 CONTRACTOR'S USE OF SITE

.1 Due to occupancy of the existing buildings and grounds, areas of work, storage, and disposal bin location on site will be designated by the Consultant before commencement of Work. The boundaries established thereby shall be strictly observed. Do not unreasonably encumber site with materials or equipment which interfere with the Owner.

.2 Obtain and pay for use of additional storage or work areas as needed for operations at no additional expense to the Owner.

.3 When required for Contractor to conduct the Work, close off access to site by placing barricades or posting guards to prevent access to unauthorized personnel. Unauthorized personnel shall mean the public and anyone not directly concerned with the execution, supervision or inspection of the Work.

.4 Existing or new roofs areas must be protected with plywood or suitable sheet material if they are to be used for the transportation of materials or equipment or excessive traffic. Coordinate use with the Owner.

.5 Parking of private vehicles for the Contractor's work force are available on site, within area designated by Owner.

.6 No signs or advertisements of any description, other than notices regarding safety, cautions, and instructions, shall be put around the building or site without the approval of the Consultant.

.7 The Contractor shall be responsible for care and cleaning of areas within the building that are affected by the Work.

.8 Washroom Facilities

.1 Contractor to provide and maintain washroom facilities for all workers and subtrades. Washrooms inside the building are not to be used by the contractor.

.2 Provide adequate portable toilet facilities with weatherproof enclosures, all to the approval of the Department of Health, Municipal Regulations, and the Consultant. These facilities shall be removed and the site left in a neat, clean and sanitary condition upon completion of the work.

.9 Emergency Contact

.1 Provide a 24 hour emergency contact telephone number in the event that an emergency arises as a result of the work being undertaken.

.2 Ensure that emergency service has a maximum response time of 3 hours and can accommodate all conditions that may arise from the work including water damage, hoarding, security, mechanical failure, electrical failure, gas service interruption, utility interruption, broken glass and any other related failure.

1.17 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

.1 Provide construction facilities and temporary controls to execute work efficiently. Remove from site all such work after use.

.2 Erect hoarding to protect public, workers, public and private property from injury or damage.

.3 Provide sufficient sanitary facilities for workers in accordance with local health authorities. Maintain in clean condition. Existing facilities, if designated for the Contractor’s use, are to be maintained throughout the construction period.

.4 Provide temporary heating required during construction period, including attendance, maintenance and fuel, at no additional cost to the Owner. Ventilate heated areas and keep building free of exhaust or combustion gases. Provide protection on floors and adjacent surfaces to prevent damage, particularly when refueling

.1 Heat, heating equipment, and shelter: Contractor shall provide and maintain, unless otherwise specified, heat and shelter to keep that work which requires protection from cold adequately warm and sheltered from elements, and allow it to be done safely and well.

.2 Permanent heating systems of the building may be used during construction, provided all warranties are still provided as of the date of Substantial Completion, proper servicing is maintained, extra precautions are taken to protect the system, the entire system is brought up to an "as new" condition at the time of

completion, and all costs are borne by the Contractor. The maintenance program and agreement must be submitted to the Consultant and approval received before using the permanent heating system.

.5 Provide a continuous supply of potable water for construction use. Arrange for connection with appropriate utility company and pay costs for installation, utility charges, maintenance and removal.

.6 Arrange for connection with appropriate utility company and pay costs for installation, maintenance and removal of power required during construction.

.7 Provide and maintain as long as required, an approved temporary building for the Contractor's Office. This Office shall be provided with heat, power, light, and a table for the examination of drawings. Contractor to have a cellular phone on site to allow for communications with Consultant

.8 Prevent overloading of any part of the building. Do not store or stockpile material or equipment on floors or roofs. Do not cut, drill or sleeve any load-bearing structural member.

.1 Do not apply undue loads onto slab of underground garage without obtaining written approval from a registered structural engineer.

.9 Protect existing Work or Work of other trades from damage. Damaged Work shall be made good by appropriate trades at the expense of the Contractor.

.10 Provide a fully qualified hoist operator to operate hoist equipment. All trades to make their own financial arrangements with Contractor for use thereof.

.11 Provide weather tight enclosures to unfinished areas or openings, and all openings in roofs. Take precautions to protect openings made in the building from entry of elements and of persons during the Work and to protect existing structure and finishes from damage as a result of the Work. Work damaged or defaced, due to a failure in providing such protection, is to be removed and replaced, or repaired, as directed by the Consultant at no additional cost to the Owner.

.12 The Contractor shall provide tarpaulins and/or other coverings for the protection of interior finishes and exterior surfaces adjacent to work areas.

.13 Drips or smears of bitumen, adhesives, caulking or sealing compounds on adjacent Work, interior finishes, carpet or furniture, shall be removed completely without damage to the building.

.14 Suitable platforms, wheeling stages and/or plywood shall be provided to protect the roof system from possible damage caused by material and equipment being moved, mounted or stored on the roof system.

.15 Where security has been reduced by Work of Contract, provide temporary means to maintain security.

.16 Provide temporary dust screens, barriers and warning signs in locations where renovation and alteration work is adjacent to occupied or “Not in Contract” areas.

.17 Execution of Work within occupied premises shall cause a minimum interference with the use of the building. Maintain maximum safety to occupants during Work. Take reasonable measures for control of noise and dust. Dust protection measures will be

judged by their effectiveness. Any clean-up required is to be completed by the Contractor at no cost to the Owner.

.18 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.

.19 Do not operate any equipment or machinery, or undertake any dust generating operations, near or adjacent to air intakes. Provide protection to air intakes as required to prevent the entry of dust or other contaminants into the building or building mechanical systems or those of the surrounding buildings.

.20 Dispose of rainwater off roofs and away from the buildings until the roof drains, scuppers, eaves troughs and downspouts are installed and connected properly

.21 Open fires and burning of rubbish are not permitted on the site.

.22 Protect existing building, curbs, roads and lanes. If, during work, any portion of the building, curbs, roads or lanes are damaged, the damage shall be repaired at no extra expense to the Owner.

.23 Maintain temporary entrances to Building, including enclosed hoardings if deemed necessary by the Consultant. Bridge temporary excavation with materials and construction to safely support any load that could be imposed. Co-ordinate access to existing building with Owner.

.24 At commencement of work protect all fences, trees, shrubs, and landscape elements from incidental damage as required.

.25 Interior Protection (if required):

.1 Undertake a pre-construction survey of interior prior to undertaking any work. Record all observations in writing or by photographic or video record and notify the Consultant in writing of any pre-existing conditions prior to commencing work.

.2 While working inside, all workmen must, at all times, wear either clean footwear used only for interior work or clean footwear guards

.3 All traffic paths shall be protected by canvas drop cloths and protection of the floors must be maintained at all times. Remove the traffic paths and clean areas at the end of each working day.

.4 Repair any interior damage caused by the work.

.26 Dewatering trenches and building from damage by rainwater, ground water, backing up of drains or sewers, and other water, frost and other weather conditions. Provide sheeting, piling, shoring, pumps, equipment, temporary drainage and enclosures required for this protection. Provide necessary pumps including spare pump for keeping project free of water throughout construction period. Pump water to existing sewers by adequate means

1.18 SCAFFOLDING

.1 Erect scaffolding independent of walls. Use it in such a manner as to interfere as little as possible with other trades. When not in use, it shall be movable to permit installation of

other work. Construct and maintain scaffolding in a rigid, secure, and safe manner. Remove it promptly when no longer required

1.19 CONCEALMENT OF PIPES, DUCTS, TUBING AND WIRING

.1 Pipes, ducts, tubing and wiring shall be concealed in the floor, wall and ceiling construction of finished areas except where indicated otherwise.

1.20 PROJECT MEETINGS

.1 A start-up meeting will be held prior to commencement of Work and at a suitable time and location, as approved by Consultant.

.2 The Contractor will schedule and administer project progress meetings at least every two weeks. Meetings shall be held on site unless otherwise directed by the Owner or Consultant.

.1 The Contractor shall ensure that both the Site Supervisor and Project Manager are present on site for each meeting.

.2 The Contractor shall assume responsibility for recording and distributing minutes within 3 working days following the meeting. The minutes shall indicate actions to be taken, and by which party.

.3 The owner has confirmed there is WIFI service on site that can be used to facilitate virtual attendance for trades or representatives unable to attend in person.

.3 The Contractor shall notify all parties concerned of the time and place of the meetings.

1.21 CODES AND STANDARDS

.1 The Specifications are not intended as a detailed description of installation methods, but do indicate particular requirements in the completed Work.

.2 Conform to the local Building By-Law, together with all its related supplements, hereinafter referred to as the “Code” or “code”. Where Drawings and Specifications exceed the requirements of the code requirements, provide such additional requirements

.3 Where a material is designated on Drawings or in the Specifications for a certain application, unless otherwise specified, that material shall conform to standards designated in the applicable Code. Similarly, unless otherwise specified, installation methods and standards of workmanship shall also conform to standards invoked by the aforementioned code.

.4 Where reference is made to a specification/code/standard, conform to the latest edition of the specification/code/standard, as amended, as of the date of the Contract

1.22 QUALITY CONTROL

.1 Work will be reviewed by the Consultant to evaluate general conformance with the contract documents. The Contractor is responsible to maintain quality control over all aspects of the Work.

.2 Review and testing are specified as precautions against oversight or errors in the performance of the Contract. These precautions do not in any way relieve the Contractor of his responsibility to perform the Work in conformance with the Contract Documents.

.3 The Owner and the Consultant shall have unlimited access to all Work at any time requested. If parts of the Work are in preparation at locations other than the Place of the Work, access shall be given to such Work whenever it is in progress.

.4 Give forty-eight (48) hours notice requesting review if Work is designated for review or approvals by the Consultant.

.5 If the Contractor covers or permits to be covered Work that has been designated for special tests, review, or approvals before such is made, the Contractor must, at its own expense, uncover the Work, have the Work reviewed or tests satisfactorily completed and make good all Work.

.6 The Consultant may order any part of the Work to be reviewed if such Work is suspected to be not in accordance with the Contract Documents. The Contractor shall be responsible for the cost of examination, replacement or repair.

.7 Remove defective Work, whether the result of poor workmanship, use of defective products or damage and whether incorporated in the Work or not, which has been rejected by the Consultant as failing to conform to the Contract Documents. Replace or re-execute in accordance with the Contract Documents.

.8 Make good other Contractor's Work damaged by such removals or replacements promptly.

1.23 OWNERS PERFORMANCE REVIEW

.1 The Owner may evaluate the performance of the Contractor during and/or when the Contract is completed or terminated. If evaluated, the Contractor's performance shall be rated on a scale of 0-4 (0- Not rated, 1-poor, 2-below standard, 3-standard, 4-excellent) under the following categories:

.1 Administration

.2 Adherence to Specifications and Special Provisions

.3 Public Relations

.4 Condition and Sufficiency of Equipment

.5 Safety Procedures

.6 Organization, Co-ordination and Efficiency

.7 Environmental Compliance

.2 The performance rating shall be determined based on the everyday performance of the Work, quality assurance test(s), letters, and Written Instructions to the Contractor.

.3 If evaluated, a copy of the completed Contractor's Performance Report shall be sent to the Contractor. If the Contractor disagrees with any portion of the Contractor's Performance Report, they shall advise the Owner of their specific objections, in writing, within twenty (20) days of the date of the report

.4 If the Contractor is evaluated as poor or below standard in three categories or very poor in two areas, the Owner may disqualify the Contractor from Bidding on the Owners Contracts for a period of up to two years from the date the Contract was completed or terminated. The length of the termination will depend on the nature of the unsatisfactory performance.

.5 If the Contractor is evaluated as poor or below standard in two or more evaluation categories on two Contractor's Performance Reports of different contracts, within twelve months, the Owner may disqualify the Contractor from bidding on the Owners Contracts for a period from three months to two years from the date of the completion or termination of the last contract. The length of the termination will depend on the nature of the unsatisfactory performance.

.6 The decision of the Owner in respect of the Contractor's Performance Report shall be final and binding for all purposes.

1.24 MOCK-UPS

.1 Prepare mock-ups as requested by the Consultant and where mock-ups are required by the specifications herein.

.2 Construct in locations as directed by the Consultant

.3 Prepare mock-ups for Consultant review with reasonable promptness and in an orderly sequence, so as not to cause any delay in the Work.

.4 Failure to prepare mock-ups in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.

.5 Remove mock-ups at conclusion of Work or when acceptable to Consultant.

.6 The approved mock-up may form part of the completed contract Work at the discretion of the Consultant

1.25 LOCATION OF EQUIPMENT AND FIXTURES

.1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate. Coordination between complete drawing set.

.2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.

.3 Inform Consultant of impending installation and obtain his approval for actual location.

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

.5 All electrical work to be completed by a licensed contractor certified to work the voltage ratings. Acquisition of the necessary permits is the responsibility of the electrical contractor.

.6 All vents and vent terminations for natural gas or propane fire appliances removed during repairs must be replaced by a licensed gas fitter employed by a registered gas contractor. The installation of gas appliance is to be in accordance with Document

MA00188SA “Reinstallation of Gas Appliance Vents - Update” by the Ministry of Municipal Affairs and as amended by any later regulations.

1.26 ADDITIONAL DRAWINGS

.1 Consultant may furnish additional drawings to assist proper execution of Work. These drawings will be issued for clarification only. Such drawings shall have same meaning and intent as if they were included in Contract documents

1.27 CUTTING AND PATCHING

.1 Submit written request in advance of cutting or alteration which affects the integrity of structural elements, weather-exposed or moisture resistant elements, visual qualities of sight-exposed elements, or Work of the Owner or separate Contractors

.2 Inspect existing conditions, including elements subject to damage or movement during cutting and patching. After uncovering, inspect conditions affecting performance of the Work. Beginning of cutting or patching means acceptance of existing conditions.

.3 Perform cutting, fitting, and patching as necessary to complete the Work. Provide openings in non-structural elements for penetrations of mechanical and electrical Work. Prepare proper surfaces to receive patching and finishing. Restore Work with new products in accordance with the Contract Documents or to match existing.

.4 At penetration of fire-rated wall, ceiling, or floor construction, completely seal voids with fire rated material for full thickness of construction element

.5 Cut rigid materials using power saw or core drill. Pneumatic or impact tools not allowed.

.6 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.7 Refinish surfaces to match adjacent finishes; for continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

1.28 MATERIALS AND EQUIPMENT

.1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of the best quality for the purpose intended. If requested, supply evidence as to type, source and quality of products provided. Should any dispute arise as to quality or fitness of items incorporated in the Work, decision rests strictly with the Consultant based upon requirements of the Contract Documents

.2 Defective products will be rejected, regardless of previous inspections and/or reviews. Inspections and reviews do not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

.3 Provide and maintain, in a clean and orderly condition, lockable weatherproof trailers for storage of tools, equipment and materials.

.4 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause the least interference with work activities.

.5 Should any dispute arise as to quality or fitness of products, decision rests strictly with Consultant based upon requirements of Contract Documents.

.6 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price.

.7 Where a material is specified and work is to be done in accordance with the manufacturer's specifications, said specifications shall be as issued by the manufacturer(s) at the date of signing the Contract. The Contractor is to be responsible for making themself acquainted with these specifications, and they shall become a part of the Specifications for this work, with the same force as though printed in full in the Contract Specifications.

.8 All materials must be shipped prepaid and consigned to the Contractor or sub-contractor. All materials shall be delivered to the building site at the Contractor's expense. The Contractor must be responsible for the transporting of all materials to and from the work.

.9 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.

.10 Notify the Consultant in writing of any conflict between these specifications and the manufacturer's instructions. The Consultant will designate which document is to be followed.

.11 Deliver, store and maintain packaged material and equipment with manufacturer's seals and labels intact. Store material and equipment in accordance with supplier’s instructions.

.12 Prevent damage, adulteration and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected material and equipment from site.

.13 Touch-up damaged factory finished surfaces to the Consultant's satisfaction. Use primer or enamel to match original. Do not paint over name plates.

1.29 PROTECTION

.1 Take reasonable and required measures, including those required by authorities having jurisdiction, to protect public and private property from damage. Make full restitution for such harm and damage resulting from failure to take adequate protective measures. Make good damage resulting from failure to take adequate protective measures. Make good damage from whatever cause. Comply with requirements of Construction Safety Act, latest issue.

.2 Provide safety helmets for Consultant, Owner and any other authorized visitors to the site if required

.3 Provide guard rails, barriers, and pavement protection as required for protection of public and private property, and as required by law and by authorities having jurisdiction. Erect sturdy railings around shafts, stairwells, and the like to protect workmen and public from injury. Alter, remove and relocate or replace as required, hoardings, barriers, and entrances therein as required by authorities having jurisdiction, and by the Work.

.4 Provide and maintain guard lights at barricades, railings, obstructions, in streets, roads or sidewalks and at trenches or pits adjacent to public walks or roads.

.5 Take all necessary precautions to guard site, premises, materials and the public at times other than when supervised work is in progress.

.6 Provide and maintain in working order, suitable, Underwriter's labelled fire extinguishers and locate in prominent positions, to the approval of authorities having jurisdiction.

.7 Completely protect all trees existing on adjacent properties except where specified otherwise, indicated otherwise on the Drawings, or instructed otherwise by the Consultant. Protect roots during excavation and grading so that they receive the minimum possible disturbance and damage.

.8 During the progress of the Work, the Contractor shall be held responsible for full and complete protection of all portions of the building and their contents. Any damage caused by failure of the performance of these requirements must be made good by the Contractor at his own expense to the entire satisfaction of the Owner and the Consultant.

1.30 REMOVED MATERIALS

.1 Except as expressly stated otherwise, material indicated for removal becomes the property of the Contractor and shall be taken from the site. Material removed from the site shall be disposed of in accordance with all Federal, Provincial and Municipal regulations.

1.31 WORKMANSHIP

.1 Workmanship shall be the best quality, executed by workers experienced and skilled in the respective duties for which they are employed. Immediately notify the Consultant if required Work is such as to make it impractical to produce required results.

.2 Do not employ any unfit person or anyone unskilled in their required duties. the Owner and the Consultant, reserve the right to require the dismissal from the site any worker(s) deemed incompetent, careless or insubordinate

.3 Decisions as to the quality or fitness of workmanship in cases of dispute rest solely with the Consultant, whose decision is final.

.4 Furnish all labour, materials and equipment to complete the Work as described. “Work as described” includes all incidental items that by implication, good trade practice, or customary usage, are required to complete the Work, even though they may not be specifically mentioned or shown.

1.32 PUBLIC UTILITIES

.1 Notify Public Utilities and obtain locations of utilities prior to excavation.

1.33 CLEANING

.1 When the Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for the performance of the remaining Work.

.2 At least once per day, remove accumulations of waste material and debris. Provide a waste container and remove waste materials and debris from the site at regularly scheduled times or dispose of as directed by the Consultant. Cost for removal and disposal of waste material shall be included in the Contract Price.

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

.4 Remove dirt and dust, clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, mechanical, electrical fixtures and interior and exterior surfaces. Vacuum carpets. Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer. As directed by the Consultant, replace or repair broken, scratched, stained or disfigured building elements.

.5 Clean roofs, gutters, downspouts, and drainage systems upon completion of the Work.

.6 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

.7 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

.8 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly repaired surfaces nor contaminate building systems.

.9 Broom clean paved surfaces, rake clean other surfaces of grounds as directed by the Owner or the Consultant.

.10 Make good any damage to the landscaping, sodding and flower beds outside the area of Work damaged by the Contractor's equipment, materials or his work force.

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

.12 Clean the inside of all windows affected by or adjacent to work at the completion of interior repairs.

.13 Clean the outside of all windows immediately after the completion of the exterior work.

.14 Wax, seal or prepare floor finishes, as recommended by the manufacturer. Co-ordinate final application of wax and sealers with Owner's maintenance staff. Supply listing of products and instructions.

.15 Final cleaning requirements beyond the "broom clean" requirement noted in this sub-section is to be performed by the General Contractor's cleaning contractor. All co-ordination and charges shall be the responsibility of the General Contractor. The complete building shall be cleaned to highest standard, to allow the Owner to occupy the building without further cleaning by Owner's staff.

1.34 DOCUMENTS UPON SUBSTANTIAL COMPLETION

.1 Prior to applying for Substantial Completion, carefully inspect the Work and ensure it is substantially complete.

.2 Following the date of Substantial Completion, the Contractor is to provide warranties fully executed and notarized.

.3 Submit a final statement of accounting, giving total adjusted Contract Price, previous payments, and monies remaining due.

.4 Provide a statutory declaration that all sub trades and suppliers have been compensated for materials and labour.

.5 Submit certificate of good standing from the Workers’ Compensation Board.

.6 Comply with the requirements of the Construction Act. The 60 day lien period shall commence upon the date of Substantial Completion as certified by the Consultant.

1.35 TAKEOVER PROCEDURES

.1 Notify the Consultant, in writing, of satisfactory completion of the Work and request for the final review.

.2 The Contractor and all sub-contractors shall conduct an inspection of the work, identify deficiencies and defects; repair as required. Notify the Consultant in writing of satisfactory completion of the Contractor's Inspection and that corrections have been made. Request a Consultant's Review. Provide a written copy of the Contractor's deficiency report with the request for the Consultant's Review.

.3 The Consultants together with the Owner and the Contractor will perform a review of the work to identify obvious defects or deficiencies. The Contractor shall correct work accordingly.

END OF SECTION

Section 01 11 00
Summary of Work

Part 1 General

1.1 SECTION INCLUDES

.1 Documents and terminology.

.2 Associated requirements.

.3 Work expectations.

.4 Work by other parties.

.5 Occupancy and premises usage.

1.2 RELATED REQUIREMENTS

.1 Section 01 21 00 - Allowances.

.2 Section 01 77 00 - Closeout Procedures

.3 Section 01 78 00 - Closeout Submittals.

.4 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 RELATED DOCUMENTS

.1 Section 00 52 00 - Agreement Forms.

.2 Section 00 71 00 - Contracting Definitions.

.3 Section 00 73 00 - Supplementary Conditions.

.4 All other Division 01 specification sections.

.5 Division 01 sections describe requirements applicable to all Sections within Divisions 02 to 49 inclusive.

1.4 WORDS AND TERMS

.1 Refer to and acknowledge other words, terms, and definitions in CCDC 2 Definitions. Additional words and terms are cited in Section 00 71 00.

1.5 COMPLEMENTARY DOCUMENTS

.1 Drawings, specifications, and schedules are complementary each to the other and what is called for by one to be binding as if called for by all. Should any discrepancy appear between documents that leave doubt as to the intent or meaning, abide by priority of documents established in the General Conditions or obtain direction from the Consultant.

.2 Drawings indicate general location and route of building services. Install building services not shown or indicated diagrammatically in schematic or riser diagrams to provide an operational assembly or system.

.3 Examine all discipline drawings, specifications, and schedules and related Work to ensure that Work can be satisfactorily executed. Conflicts or additional work beyond work described to be brought to attention of Consultant.

1.6 DESCRIPTION OF THE WORK

.1 Work of this Contract comprises general construction of an addition to the existing Public Works Garage, including architectural, structural, mechanical, electrical and site work, complete with all labour, materials, equipment and services necessary for a complete and operational facility, located at 266 Appin Rd, Glencoe, Ontario ; and identified as Glencoe Public Works Garage Addition .

.2 Division of the Work among Subcontractors, suppliers/vendors, and other contractors is solely the Contractor's responsibility. Neither the Owner nor Consultant assumes any responsibility to act as an arbiter to establish subcontract terms between sectors or disciplines of work.

1.7 CONSTRUCTION SCHEDULE

.1 Separate from the requirements of the Bid Submission, submit a detailed construction schedule within ten (10) working days of notification of bid acceptance, for approval.

.2 Correct, revise, update, and otherwise maintain schedule during progress of construction. Supply each corrected, revised and updated schedule to Owner, Consultant, and Subcontractors. Include the Critical Path.

.3 Prepare schedule as indicated in Section 01 33 00, Submittal Procedures.

.4 Work on site is to commence immediately such that Substantial Performance of the Work is achieved for Owner occupancy before the date noted in Section 1.8

.5 Total completion to be achieved before or on the date noted in Section 1.9

1.8 PERFORMANCE OF THE WORK

.1 Substantial Performance of the Work is required before March 5, 2027.

.2 Refer to Sections 01 77 00 and 01 78 00, CCDC, and 00 73 00.
A separate 2.5% holdback is required for warranties and deficiencies. This is in addition to the statutory holdback and will only be released once all deficiencies are completed and all warranty/closeout requirements tied to Substantial Performance are satisfied.

.3 The required dates for Substantial Performance and Ready-for-Takeover as identified in Section 00 41 00 shall form part of the Contract Documents.

1.9 READY-FOR-TAKEOVER

.1 Ready-for-Takeover is required for Owner occupancy before April 19,2027.

.2 The Contractor shall achieve Ready-for-Takeover (Owner occupancy) within 45 calendar days of Substantial Performance, in accordance with the Contract Documents.

.3 Ready-for-Takeover shall not be achieved until all requirements of Substantial Performance, deficiencies, commissioning, and closeout documentation have been completed to the satisfaction of the Owner and Consultant.

.4 Perform all prerequisite activities identified in the General Conditions, including a list of incomplete items, before applying for Ready-for-Takeover.

.5 Refer to additional specification sections 01 77 00 and 01 78 00, CCDC and 00 73 00

.6 Supplemental conditions requires a holdback of 0.5% of the bid price as a separate holdback for the submission of record drawings, operation and maintenance manuals, warranties, and any other outstanding documents required for close-out.

1.10 CONTRACT METHOD

.1 Construct Work under single, stipulated price contract.

.2 Relations and responsibilities are between the Contractor and the Owner.

.3 Provide the required bonds and liability insurance to ensure such specified assurances to the Owner.

.4 Assigned Subcontractors are required to provide requested bonds covering faithful performance of subcontracted work, to the Owner plus payment of related obligations.

.5 Refer to Section 01 21 00 for cash allowance amounts applicable to assignable contracts.

.6 Assume responsibility for assigned contracts as Subcontracts forming part of the Work.

.7 Contract Documents were prepared by the Consultant for the Owner. Any use which a third party makes of the Contract Documents, or any reliance on or decisions to be made based on them, are the responsibility of such third parties. The Consultant accepts no responsibility for damages, suffered by any third party as a result of decisions made or actions based on the Contract Documents.

.8 For purposes of reference in these Contract Documents, the term "Contractor" shall mean the party in contract with the Owner.

1.11 DOCUMENTS AT THE SITE

.1 The contractor shall keep one copy of current Contract Documents, submittals, reports, and records of meetings at the place of work, in good order and available to the Owner and the Consultant.

1.12 SPECIFICATIONS

.1 Division 01, General Requirements, of the Specifications generally specifies work and coordination that is the direct responsibility of the Contractor, but should not be interpreted to define absolutely the limits of responsibility that must be established between the Contractor and his Subcontractors.

.2 Ensure that Subcontractors understand that the General Conditions of the Contract, Supplementary Conditions, and Division 01, General Requirements, apply to all sections of the Specifications governing their work.

.3 Work in these Specifications is divided into descriptive sections which 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 materials essential to complete the Project in all its parts and provide a total enclosure

and protection from weather of interior spaces, as established in the General Conditions of the Contract.

.4 Wherever in the Contract Documents the words "approval", "approved", "direction", "directed", "selection", "selected", "request", "requested", "report", and similar words are used, such approvals, directions, selections, requests and reports shall be given by the Consultant.

.5 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 specified work to which reference is made.

.6 Wherever in the Contract Documents the word "include" is used in any form, the items of Work listed following shall not be interpreted to be restricted to only those items that are listed.

.7 Wherever in the Contract Documents the words "indicated" or "shown" are used they shall apply as meaning "indicated on Drawings and/or Schedules" or "shown on Drawings and/or Schedules" unless the context expresses another meaning.

.8 Wherever in these specifications it is specified that work to which reference is made shall proceed or shall meet approval, direction, selection or request of jurisdictional authorities or others, such approval, direction, selection or request shall be in writing.

.9 Wherever in these specifications it is specified that work shall be repaired, made good or replaced, it shall be performed without any additional cost to the Owner

.10 Wherever in the Contract Documents the term "exposed to view" is used it shall refer to surfaces that are within the line of vision of persons from any accessible viewpoint, both within and without the building. Where any part of a surface is exposed to view, all other portions of that surface shall also be considered as exposed to view.

1.13 DIVISION 00 AND 01, GENERAL REQUIRMENTS

.1 The provisions of all Division 00 and Division 01 and all sections contained therein shall apply to each Section of Divisions 02 to 50, inclusive, which form a part of the specifications for this Project.

.2 Procurement of products and services shall comply with all applicable Owner procurement policies, including Buy Ontario requirements where applicable.

1.14 DRAWINGS

.1 Drawings indicate scope of the Work and the general and approximate location, arrangement and size of fixtures, equipment, ducts, piping, conduit and outlets. The Contractor will determine accurate locations, arrangements and sizes by study and coordination of architectural, structural, mechanical, electric and equipment drawings and shop drawings. Before proceeding with the Work, ensure that spaces and arrangements which affect installations are adequate and coordinated

1.15 DOCUMENTS PROVIDED

.1 Owner will supply the Contractor with:

.1 Electronic documents, in electronically deliveredAdobe PDF formats.

.2 Electronic documents: Access to storage in a designated project Common Data Environment (CDE) platform.

.3 Paper documents: three 3 sets of Contract Documents for construction purposes, which includes two (2)sets for record "as-built" purposes. The Contractor may obtain additional sets of Contract Documents at the cost of printing, handling and shipping.

.2 An electronic set of documents will be provided near the end of the Project for purposes of transferring changed information recorded on as-built documents to the electronic Record Documents.

1.16 WORK PERFORMED UNDER SEPARATE CONTRACTS

.1 Work which is not to be included in this Contract and/or noted as "N.I.C." on the Drawings shall be governed by Amendments to CCDC 2-2020 GC 3.2 herein.

.2 Work which may be performed under separate contracts or by Owner and which will affect the work of the Contract include:

.1 The supply and installation of loose furniture.

.2 I.T. Equipment (including patch cables).

.3 Installation of Dishwasher and Stove

1.17 OWNER-SUPPLIED PRODUCTS

.1 Obtain the necessary Shop Drawings from the Owner and proceed to coordinate details for installation, expedite, receive, unload, install, connect and test the specified equipment, and be responsible for warranty.

.2 Equipment specifications for pre-purchased items are included at the end of the project specification, printed on blue paper for confirmation only.

.3 Receive Owner-supplied Products and equipment F.O.B. and store and process Products and equipment until installation.

.4 Owner Responsibilities:

.1 Arrange for delivery of shop drawings, product data, samples, manufacturer's instructions, and certificates to Project Manager.

.2 Deliver supplier's bill of materials to Project Manager.

.3 Arrange and pay for delivery to the Place of the Work in accordance with Progress Schedule.

.4 Inspect deliveries jointly with Contractor.

.5 Submit claims for transportation damage.

.6 Arrange for replacement of damaged, defective or missing items.

.7 Arrange for manufacturer's field services; arrange for and deliver manufacturer's warranties and bonds to Contractor.

.5 Contractor Responsibilities:

.1 Designate submittals and delivery date for each Product in progress schedule.

.2 Review shop drawings, product data, samples, and other submittals. Submit to Consultant, notification of any observed discrepancies or problems anticipated due to non-conformance with Contract Documents.

.3 Receive and unload Products at site.

.4 Inspect deliveries jointly with Owner; record shortages, and damaged or defective items.

.5 Handle Products at site, including uncrating and storage.

.6 Protect Products from damage, and from exposure to elements.

.7 Assemble, install, connect, adjust, and finish Products.

.8 Arrange for installation inspections required by public authorities.

.9 Repair or replace items damaged by Contractor or Subcontractor on site (under their control).

.6 Schedule of Owner-supplied Products.

.1 Washroom Accessories.

.1 Toilet Paper holders, Paper towel holder / dispensers, Sanitary napkin disposal.

1.18 CONTRACTOR USE OF PREMISES

.1 Contractor has unrestricted use of site until Substantial Performance of the Work.

.2 Limit use of site and premises to allow:

.1 Owner and public occupancy.

.2 Work by Others.

.3 Use of site and premises by the public.

.3 Emergency Building Exits During Construction: Limited to occupied areas.

.4 Construction Operations: Limited to areas noted on Drawings.

.5 Time Restrictions for Performing Exterior & Interior Work: 7-5.

.6 Utility Outages and Shutdown: to Coordinate with Consultant.

1.19 OWNER OCCUPANCY

.1 Owner will occupy premises during entire construction period for execution of normal operations.

.1 The Owner reserves the right to occupy and use portions of the premises, whether partially or entirely completed, or whether completed on schedule or not, provided such occupancy does not interfere with the Contractor's continuing work.

.2 Partial occupancy or installation by the Owner of his equipment shall not imply acceptance of the Work in whole, or in part, nor shall it imply acknowledgment that terms of the Agreement are fulfilled.

.3 The Contractor shall not be entitled to indemnity for interference with performance of the Work due to Owner's occupancy of areas of Project prior to Total Performance but after date of Substantial Performance.

.2 Cooperate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.

.3 Maintain fire and life safety systems and public access to exits during all stages of the Work.

1.20 LIST OF MATERIALS AND MANUFACTURERS

.1 Upon award of the Contract, the Contractor shall within fifteen (15) days submit to the Consultant a complete list of materials together with quality descriptions, manufacturers and the names of Sub-Contractors responsible for installation and delivery dates.

.2 Such list must verify compliance with Specifications.

.3 Materials not complying with Specifications will not be accepted

1.21 EXAMINATION

.1 Site: Examine the site and ensure that each Section performing work related to site conditions has examined it, so that all are fully informed on all particulars which affect Project Work.

.2 Ensure by examination that all physical features at the Work, and working restrictions and limitations which exist are known, so that the Owner is not restricted in his use of the premises for their needs.

.3 Previously Completed Work:

.1 Where dimensions are required for proper fabrication, verify dimensions of completed work in place before fabrication and installation of work to be incorporated with it.

.2 Verify that previously executed work and surfaces are satisfactory for installation or application, or both and that performance of subsequent work will not be adversely affected.

.3 Ensure that work installed in an unsatisfactory manner is corrected by those responsible for its installation before further work proceeds.

.4 Rejected work resulting from application to, or installation on, or incorporation with, unsatisfactory previous work will be considered the responsibility of those performing the later work.

.4 Construction Measurements:

.1 Before commencing installation of work, verify that the layout is accurate in accordance with intent of Drawings, and that positions, levels, and clearances to adjacent work are maintained.

.2 Before commencing any work, verify that all clearances required by jurisdictional authorities can be maintained.

.3 If work is installed in wrong location, correct it before construction continues.

.5 Existing Photographs:

.1 Prior to the commencement of the work, prepare a photographic record of both the interior and exterior spaces that clearly demonstrate the existing conditions.

1.22 PROTECTION OF WORK, PROPERTY AND PERSONS

.1 Provide necessary methods, materials, and construction to ensure that no damage or harm to work, materials, property and persons results from the Work of this Contract. Temporary facilities relating to protection are specified in Section 01 53 00, Temporary Construction.

.2 Protect excavated areas from damage by frost, and water from natural sources and from backed up drain lines and sewers.

.3 Keep excavations, basements, and pits free of water. Pump dry as required.

.4 Protect building from damage by water and exposure to weather. Remove snow and ice immediately from interior of building.

.5 Protect adjacent private and public property from damage and, if damaged, make good to match in all details. Re-sod and replant damaged lawns and planting to its original condition, except in areas designated to receive landscaping under this Contract or other contract.

.6 Keep surfaces, on which finish materials will be applied, free from grease, oil, and other contamination which would be detrimental in any way to the application of finish materials

.7 Protect glass and other finishes against heat, slag and weld spatter by provision of adequate shielding.

.8 Do not permit strippable tape or coatings to become baked on surfaces which they protect.

.9 Do not apply visible markings to surfaces exposed to view in finished state or that receive transparent finishes.

.10 Protect existing surfaces and surfaces of completed work exposed to view from staining, disfigurement and all other damage by restriction of access or by use of physical means suitable to the material and surface location. Establish with each Subcontractor the suitability of such protection in each case.

.11 Schedule finish work at end of construction when interference from tradesmen is at a minimum.

.12 Brace and shore masonry walls until their designed lateral support is incorporated at both top and bottom. Do not permit backfilling at masonry walls below grade until floor systems are installed and lateral bracing is thus achieved.

.13 Enforce fire prevention methods at site. Do not permit bonfires, open flame heating devices or accumulation of debris. Use flammable materials only if proper safety precautions are taken, both in use and storage.

.14 Provide and maintain in working order, suitable U.L.C. labelled fire extinguishers and locate them in prominent locations and to approval of jurisdictional authorities.

.15 Do not store flammable materials in the building. Take necessary measures to prevent spontaneous combustion. Place cloths and other disposable materials that are a fire hazard in closed metal containers and remove them from the building every night.

.16 Where flammable materials are being applied, ensure that adequate ventilation is provided, spark-proof equipment is used, and smoking and open flames are prohibited.

.17 Ensure that volatile fluid wastes are not disposed of in storm or sanitary sewers or in open drain courses

.18 Public Utilities and Services:

.1 Verify location of and limitations imposed by, existing mechanical, electrical, telephone and similar services, and protect them from damage. If necessary, relocate active services to ensure that they function continuously in safety and without risk of damage.

.2 Cap off and remove unused utility services encountered during work after approval is given by the utilities concerned or jurisdictional authorities, whichever may apply. Relocation, removal, protection and capping of existing utility services shall be performed only by the applicable utility, and of other services by licensed mechanics.

.3 Coordinate the capping off, removal and re-connection of a utility with the utility concerned, and make payment for costs involved

.19 Ensure that precautions are taken to prevent leakage and spillage from plumbing and mechanical work that may damage surfaces and materials.

.20 Give constant close supervision to roofing and/or waterproofing membranes following their installation, during the time they are temporarily protected or exposed, to ensure that no damage occurs to them before completion of building. Protect especially against damage from traffic or work performed on top of completed roofing when temperature is over 27°C (85°F).

.21 Ensure that physical protection and barriers to prevent traffic are installed for waterproofing membranes. Provide barricades or guards to prevent traffic over horizontal membranes until permanent protection is provided. Inspect membranes with waterproofing Subcontractor before they are finally covered.

.22 Floors:

.1 Keep trowelled concrete floors free from oils, grease or other materials likely to damage them, discolour them or affect bond of applied finishes. Keep floors as dry as possible.

.2 To prevent soiling or damage to finish flooring where pedestrian traffic occurs after the flooring has been installed, install and maintain 0.152 mm (6 mil) polyethylene membrane or reinforced kraft paper temporary protection, secured in place and with joints sealed by reinforced pressure sensitive tape

.3 Install plywood panels of minimum 6 mm (¼") thickness over completed finish flooring materials on which further construction work is performed or delivery of

products is made, or both. Seal joints between panels with reinforced pressure sensitive tape.

.23 Protect metal deck on which construction personnel work, and on which materials are stored, with substantial planking.

.24 Prevent spread of dust, dirt and other such materials beyond the construction site by wetting, or by other approved means, as it accumulates

.25 Provide safety helmets to loan to visitors to the site.

1.23 FASTENINGS

.1 Include in the work of each Section necessary fastenings, anchors, inserts, attachment accessories, and adhesives. Where installation of devices is in work of other Sections, deliver devices in ample time for installation, locate devices for other Sections and cooperate with other Sections as they require.

.2 Do not install fiber, plastic or wood plugs or blocking for fastenings in masonry, concrete, or metal construction, unless specified or indicated on Drawings.

.3 Do not use fastenings which cause spalling or cracking of materials in which installed.

.4 Do not use powder actuated fastening devices which are stressed in withdrawal on any part of this work without written approval of the Consultant. Take particularly stringent safety precautions when using powder actuated fastenings. Devices and use must comply with CSA A166-1961 "Safety Code for Explosive Actuated Tools" and latest amendment. Only low velocity plunger-type devices are permitted.

.5 Use only approved driven fasteners

.6 Expansion Bolts:

.1 Whenever expansion type fastening devices of any kind which rely upon friction forces created by expansion of the device in concrete or masonry are to be used, submit following data to Consultant for review:

.1 load carrying capacity of device

.2 nature and magnitude of force to be applied to device with supporting data

.3 materials to which device is fastened

.4 whether device is self-drilling or, if not, the size of bit to be used to drill holes to receive the device

.5 installation procedure to ensure that fastener is secure and reliable and that metal reinforcing is not damaged.

The Consultant may request that all such data bear the seal of a professional structural engineer licensed to practice at the location of the Work.

.2 If requested by the Consultant, conduct on-site tests of installed fasteners using an approved independent testing company with properly designed and calibrated force measuring apparatus. Costs for such testing shall be borne by the Owner.

.7 Install metal-to-metal fastenings fabricated of the same metal, or of a metal which will not set up electrolytic action causing damage to fastenings or components, or both. Use noncorrosive or hot dip galvanized steel fastenings for exterior work, and where attached to, or contained within, exterior walls and slabs, unless stainless steel or other material is specifically requested in the affected specification Section. Leave steel anchors bare where cast in concrete.

.8 Install work with fastenings or adhesives in sufficient quantity to ensure permanent secure anchorage of materials, construction, components, and equipment. Space anchors within limits of load-bearing or shear capacity.

.9 Space exposed fastenings evenly and in an organized pattern. Keep number to a minimum. Provide exposed fastenings and accessories in same material, texture, colour and finish as adjacent materials on which they occur, unless indicated otherwise.

1.24 LIGHTING FIXTURES AT SUSPENDED CEILINGS

.1 Ensure that secure support for lighting fixtures is provided by suspended ceilings, or by separate hangers, or by both.

.2 Coordinate the ceiling system and lighting fixture installations to provide adequate support.

.3 Submit affidavits with acceptable design information confirming that the installation of the suspended ceiling system and/or separate fixture hangers provided by the lighting fixture installer will provide adequate support for the lighting fixtures without exceeding specified deflection tolerances for the ceiling system.

.4 Conform to current requirements of the Electrical Inspection Department of Ontario Hydro.

1.25 EMBEDDED CONDUIT, PIPE AND SLEEVES

.1 Slabs on Grade:

.1 Conduits or pipes embedded in concrete slabs on grade shall not be larger in outside diameter than 1/3 the thickness of the slab, and shall have minimum 50 mm (2") concrete cover to finished surface.

.2 Where crossovers occur, one conduit or pipe shall be depressed to pass under the other and sub-grade depressed to increase the slab thickness locally.

.3 Parallel conduits or pipes shall not be closer than three diameters center to center.

.4 For conduits greater than 1/3 slab thickness, depress sub-grade to maintain minimum 50 mm (2") concrete above and below conduit, extend coverage 150 mm (6") minimum each side of conduit.

.2 Suspended Slabs, Beams or Walls:

.1 Sleeves, conduits and pipes which pass through suspended slabs, beams or walls, shall be in approved locations which do not impair strength of construction. Space them at not less than 3 diameter o.c.

.2 Conduits or other pipes which are continuously embedded in concrete slabs or walls, shall be installed in center of slab or wall, shall have a maximum outside diameter of 50 mm (2"), and shall, in parallel installation, be not less than 150 mm (6") on centers. A maximum of 6 such conduits shall be run in any bay of slab or wall. Crossovers shall not be permitted within slab or wall thickness unless the crossing conduits can remain within the mid third of slab or wall thickness. No conduit other than light (19 mm (¾") OD maximum) shall be embedded in suspended slabs or walls thinner than 150 mm (6").

1.26 THERMAL EXPANSION AND CONTRACTION

.1 Conform to manufacturer's recommended installation temperatures. If finishes such as tile, resilient flooring, stone, etc. are installed at temperatures different from operation of service temperatures, make provision for expansion and contraction in service as approved by Consultant. Repair all resulting damage should expansion provisions prove inadequate.

1.27 FINISHES, APPEARANCE

.1 Exposed surfaces shall be finished to approval of Consultant. Colour, tone, texture, grain, pattern, smoothness, flatness, evenness, transparency and translucency matching and appearance of elements in finished surface and of surface shall be to Consultant's approval.

1.28 CLEANING DURING CONSTRUCTION

.1 The General Contractor will be responsible to keep the site clean during construction to meet the requirements listed below.

.2 Ensure that spatters, droppings, soil, labels, and debris are removed from surfaces to receive finishes, before they set up. Leave work and adjacent finished work in new condition.

.3 Use only cleaning materials which are recommended for the purpose by both the manufacturer of the surface to be cleaned and of the cleaning material.

.4 Maintain premises "broom clean" at all times. Vacuum clean interior areas immediately before finish painting commences.

.5 Do not burn or bury waste material at site. Remove as often as required to avoid accumulation.

.6 Do not allow waste material and debris to accumulate in an unsightly or hazardous manner. Sprinkle dusty accumulations with water. Provide containers in which to collect waste material and debris

.7 Control lowering of materials. Use as few handlings as possible. Do not drop or throw materials from storeys above grade.

.8 Ensure that cleaning operations are scheduled to avoid deposit of dust or other foreign matter on surfaces during finishing work and until wet or tacky surfaces are cured.

.9 Each Section shall supply the Contractor with instructions for final cleaning of his work, and for inclusion in Project Data Book as specified in each trade Section and in Section 01 33 00, Submittals.

.10 Powerwash all new concrete and stone horizontal surfaces to remove construction vehicle tire markings. This will also apply to concrete curbs. Leave no trace of construction vehicle traffic on the site.

1.29 ADJUSTING

.1 Ensure that all components of assemblies fit snugly, accurately and in true planes, and that moving parts operate positively and freely, without binding and scraping.

.2 Verify that work functions properly, and adjust it accordingly to ensure satisfactory operation.

.3 Lubricate products as recommended by the supplier.

1.30 SALVAGE

.1 Unless otherwise specified, materials on the site at the time of signing of Contract shall remain property of Owner. The Contractor shall deliver those items indicated on the drawings to the Owner as directed by the Consultant

.2 Unless otherwise specified, salvaged material resulting from construction, and surplus materials and construction debris shall become property of Contractor, who shall dispose of it away from site.

.3 Treasure, such as coins, bills, papers of value, and articles of antiquity, discovered during digging, demolition and cutting at the site shall remain property of Owner, and shall be delivered immediately into his custody.

.4 When salvage items and materials are delivered to the Owner by the Contractor, the Contractor shall submit to the Owner a Certificate of Receipt which is to be endorsed by the Owner's representative. The Contractor shall incorporate copies of the Certificate of Receipt in the Project Data Books in accordance with Section 01 33 00, Submittals.

END OF SECTION

Section 01 19 00
Specifications and Documents

Part 1 General

1.1 SECTION INCLUDES

.1 Words and terms.

.2 Complementary documents.

.3 Precedence of Documents.

.4 Specification grammar.

1.2 RELATED DOCUMENTS

.1 Document 00 72 13 - General Conditions - Stipulated Price.

.2 Section 01 11 00 – Summary of Work.

.3 This section describes requirements applicable to all sections within Divisions 02 to 49.

1.3 WORDS AND TERMS

.1 Conform to definitions and their defined meanings in the Agreement and Definitions portion of CCDC 2 for supplementary words and terms.

.2 The following words and terms are applicable to the Contract Documents for this project:

.3 Addendum: A document that amends the Bid Documents during the Bidding Period and becomes part of the Contract Documents when a Contract is executed. (Plural: Addenda).

.4 Agreement: The signed and sealed legal instrument binding parties in a Contract, describing in strict terms their mutual arrangement, roles and responsibilities, commencement, and completion responsibilities.

.5 Alternative Price: The amount stipulated by a Bidder for an Alternative and stated as an addition, a deduction, or no change to the Bid Price.

.6 Bid: To offer as a Bid stating for what price a Contractor will assume a Contract.

.7 Bid Documents: A set of documents consisting of the Instructions to Bidders, Bid Form, Contract Documents, and other information issued for the benefit of Bidders to prepare and submit a Bid.

.8 Bid Form: The specific and detailed form used to collect information about a Bid.

.9 Bidding: The process of preparing and submitting a Bid.

.10 Construction Documents: The Drawings and Project Manual. When combined with a Contract and Contract conditions, these documents form the Contract Documents.

.11 Contingency Allowance: An additional monetary amount added to a Project cost estimate and designated to cover unpredictable or unforeseen items of Work. The amount is

usually based on some percentage of the estimated cost and expended and adjusted by Change Order. It is not intended to cover additions to the scope of Work.

.12 Cost Plus Contract: A Contract under which a Contractor is reimbursed for the direct and indirect costs for the performance of a Contract and, in addition, is paid a Fee for services. The Fee is usually stated as a stipulated price or as a percentage of cost.

.13 General Conditions: That part of the Contract Documents that sets forth many of the rights, responsibilities and relationships of the parties involved in a Contract.

.14 Instructions To Bidders: Instructions contained in the Bid Documents to convey an Owner's expectations and criteria associated with submitting a Bid.

.15 Section: A portion of a Project Specification covering one or more segments of the total Work or requirements. Sections are included in a Project manual as required to meet Project requirements.

.16 Standard: A document describing a grade or a level of quality, which has been established by a recognized agency or organization, utilizing an internal voting process.

.17 Separate Price: A separate price for work to be added to the base price if selected by the Owner. This price type is not a part of the base bid price.

.18 Stipulated Price: An amount set forth in a Stipulated Price Contract as the total payment for the performance of the Work. Sometimes referred to as a stipulated sum or a lump sum stipulated price.

.19 Tender: A term that was formally abandoned by CCDC and the Canadian Construction industry in the early 1980's in favour of the preferred term Bid.

.20 Unit Price: The amount payable for a single unit of Work as stated in a Schedule of Prices.

.21 Install: To remove from site storage, move or transport to intended location, install in position, connect to utilities, repair site caused damage, and make ready for use.

.22 Supply: To acquire or purchase, ship or transport to the site, unload, remove packaging to permit inspection for damage, re-package, replace damaged items, and safely store on-site.

1.4 COMPLEMENTARY DOCUMENTS

.1 Generally, drawings indicate graphically, the dimensions and location of components and equipment. Specifications indicate specific components, assemblies, and identify quality.

.2 Drawings, specifications, diagrams and schedules are complementary, each to the other, and what is required by one, to be binding as if required by all.

.3 Should any conflict or discrepancy appear between documents, which leaves doubt as to the intent or meaning, apply the Precedence of Documents article below or obtain guidance or direction from Consultant.

.4 Examine all discipline drawings, specifications, schedules, diagrams and related Work to ensure that Work can be satisfactorily executed.

.5 All specification sections of the Project Manual and Drawings are affected by requirements of Division 01 sections.

1.5 PRECEDENCE OF DOCUMENTS

.1 In the event of conflict within and between the Contract Documents, the order of priority within specifications and drawings for this project are - from highest to lowest:

- .1 the Agreement and Definitions between the Owner and the Contractor;
- .2 the Defined Terms;
- .3 Supplementary Conditions;
- .4 the General Conditions;
- .5 Sections of Division 01 of the specifications;
- .6 Sections of Divisions 02 through 49 of the specifications.
- .7 Schedules and Keynotes:
  - .1 Material and finishing schedules within the specifications, then;
  - .2 Material and finishing schedules on drawings, then;
  - .3 Keynotes and definitions thereto, then;
- .8 Diagrams.
- .9 Drawings:
  - .1 Drawings of larger scale shall govern over those of smaller scale of the same date, then;
  - .2 Dimensions shown on drawings shall govern over dimensions scaled from drawings, then;
  - .3 Location of utility outlets indicated on architectural detail drawings takes precedence over positions or mounting heights located on mechanical or electrical Drawings.
- .10 Later dated documents shall govern over earlier documents of the same type.

.2 In the event of conflict between documents, the decision of the Consultant shall be final.

1.6 SPECIFICATION GRAMMAR

.1 Specifications are written in the imperative (command) mode, in an abbreviated form.

.2 Imperative language of the technical sections is always directed to the Contractor identified as a primary constructor, as sole executor of the Contract, unless specifically noted otherwise.

- .1 This form of imperative (command) mode statement requires the primary constructor to perform such action or Work.
- .2 Perform all requirements of the Contract Documents whether stated imperatively or otherwise.

.3 Division of the Work among subcontractors, suppliers, or others is solely the prime constructor's responsibility. The Consultant(s) and specification authors assume no

responsibility to function or act as an arbiter to establish subcontract scope or limits between sections or divisions of Work.

END OF SECTION

Section 01 21 00
Allowances

Part 1 General

1.1 SECTION INCLUDES

.1 Cash allowances.

.2 Inspection and testing allowances.

.3 Contingency allowance.

1.2 RELATED REQUIREMENTS

.1 Section 01 29 00 - Payment Procedures.

.2 Section 01 25 00 - Substitution Procedures.

.3 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 CASH ALLOWANCES

.1 Costs Included in Cash Allowances: Cost of Product to Contractor less applicable trade discounts; delivery to site, and applicable taxes.

.2 If a Cash Allowance item described in the Allowances Schedule below indicates the inclusion of installation, include in the Cash Allowance amount, provision for Product handling at the site, including unloading, uncrating, storage, protection of Products from elements and from damage, labour for installation and finishing, insurance, labour costs, taxes, bonding if applicable, equipment rental, overhead and profit.

.3 If a Cash Allowance item described in the Allowances Schedule below indicates supply only, include in the Contract Price costs not included in Cash Allowances but included in the Contract Price: Product handling at the site including unloading, uncrating, storage, protection of Products from elements and from damage, labour for installation and finishing, insurance, labour costs, taxes, bonding if applicable, equipment rental, overhead and profit.

.4 The Contract Price, and not the cash allowance, includes the Contractor's overhead and profit in connection with such cash allowance.

.5 Where the total costs expended under all cash allowances exceed the aggregate amount of all cash allowances, the Contractor will be compensated for any excess incurred and substantiated plus an allowance for overhead and profit as set out in the Contract Documents.

.6 The Contract Price will be adjusted by written Change Order to address for any excess or deficit to cash allowance.

.7 Consultant Responsibilities:

.1 Consult with Contractor for consideration and selection of Products, suppliers, and installers.

.2 Owner and Consultant to select Products.

.3 Prepare Change Order.

.8 Contractor Responsibilities:

.1 Assist Consultant in selection of Products, suppliers and installers.

.2 Obtain proposals from suppliers and installers and offer recommendations.

.3 On notification of selection by Consultant or Owner, execute purchase agreement with designated supplier and installer.

.4 Arrange for and process shop drawings, product data, and samples. Arrange for delivery.

.5 Promptly inspect Products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.

.9 Differences in costs will be adjusted by Change Order.

.10 Allowances Schedule:

.1 Section 1: Include the stipulated sum of $13,000 for purchase, delivery, and installation of Finish Hardware.

.1 Allowance includes all mechanical hardware, keying, electric strike(s) and keypads.

.2 Hardware is to be supplied and installed by one supplier to ensure that all hardware is installed as per the schedule.

.3 Any hardware not installed due to coordination will be credited back to the Owner at the Contractors expense.

.2 Section #2: Include the stipulated sum of $2,500 for purchase, delivery, and installation of Signs.

.3 Section #3: Include the stipulated sum of $15,000 for material, labour, and design of foundations (based on field testing) .

1.4 INSPECTING AND TESTING ALLOWANCES

.1 Costs Included in Inspecting and Testing Allowances: Cost of engaging an inspecting or testing agency; execution of inspecting and tests; and reporting results.

.2 Costs Not Included in the Inspecting and Testing Allowance But Included in the Contract Price:

.1 Costs of incidental labour and facilities required to assist inspecting or testing agency.

.2 Costs of testing services used by Contractor separate from Contract Document requirements.

.3 Costs of retesting upon failure of previous tests as determined by Consultant.

.3 Payment Procedures:

.1 Submit one (1) copy of the inspecting or testing firm's invoice with next application for payment.

.2 Pay invoice on approval by Consultant.

.4 Inspecting and Testing Allowances Schedule:

.1 Include the sum of $10,000 for the purpose of independent testing and inspection services of the following:

.1 Earth Work:

.1 Foundation Excavation

.2 Sub-grade Compaction

.3 Granular Base & Compaction

.4 Back-fill & Compaction

.2 Cast-in-place Concrete

.3 Building Envelope:

.1 Air/Vapour Barrier

.2 Sealents

.4 Firestopping

.5 Differences in cost will be adjusted by Change Order.

1.5 CONTINGENCY ALLOWANCE

.1 Include in the Contract, a stipulated price of $25,000 for use upon Owner's written instruction via Change Order.

.2 Contractor's costs for Products, delivery, installation, labour, insurance, payroll, taxes, bonding, equipment rental, additional time, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.

.3 Funds will be drawn from the Contingency Allowance only by Change Order.

.4 At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

END OF SECTION

Section 01 22 00
Prices

Part 1 General

1.1 SECTION INCLUDES

.1 Quantity measurement with unit value of products determined by and expanded in the Bid Documents.

.2 Schedule of products and their quantities.

.3 Schedule of applicable values.

.4 Itemized Prices.

.5 Separate Prices.

1.2 RELATED REQUIREMENTS

.1 Refer to CCDC 2-2020 for specific contractual requirements.

.2 Section 01 25 00 - Substitution Procedures: Substitutions and Modification Requirements.

.3 Section 01 29 00 – Payment Procedures: Application for Payment.

1.3 PRICES - GENERAL

.1 Prices included in the Contract shall be complete for the applicable work, and shall constitute the full consideration, payment, compensation and remuneration to the Contractor for all such work. For greater certainty, but without limitation to the foregoing, such prices shall constitute full and complete consideration, payment, compensation and remuneration to the Contractor for the following (subject to adjustments only as specified in the Contract Documents):

.1 Expenditures for wages and for salaries of workmen, engineers, superintendents, draftsmen, foremen, timekeepers, accountants, expediters, 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 traveling 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 for preparation, inspection, delivery, installation and removal of materials, plant, tools and supplies;

.4 Temporary facilities as required for the applicable work;

.5 Traveling 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 of 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 tradesmen) less the salvage value thereof at the completion of the applicable work;

.8 Assessments under the Worker's Compensation Act, the Unemployment Insurance 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 licenses and all required permits (other than building permit) in connection with the applicable work;

.13 Duties and all applicable taxes, except H.S.T., imposed on the applicable work; and

.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.

1.4 UNIT PRICES

.1 Unit Prices are NOT subjected to the Bid evaluation process.

.2 Unit Prices shall be applied at the sole discretion of the Owner. The Owner reserves the right to re-negotiate these Unit Prices during construction if the Unit Prices are found to be significantly higher than acceptable current market range.

.3 Unit Prices included in the Contract, and which were submitted as a part of the Bid, shall be based on units of measurement described in the bidding documents to include for labour, materials, preparation of shop drawings, design fees, delivery, handling, disposal of surplus material, overhead and profit, all applicable taxes except HST, and any other direct or indirect expenditures, of such work measured complete in place, and as further described in other Sections of the Specifications.

.4 Unit Prices for specified units of measurements shall apply to any and all work which can be measured in the said units regardless of the variations in productivity and job conditions, or the time when instructions to carry out that work will be issued.

.5 Unit Prices shall apply only to the net change in quantities for each unit of work in each change to the work, provided that the instructions to change have been given before the start of applicable work and/or ordering of equipment.

.6 After the applicable work has started, the Unit Prices shall cover the new work without any credit for the work already completed. Work completed and to be removed to accommodate new work shall be paid for as described for Changes in the Work in the General Conditions on a lump sum or by cost and fixed or percentage fee basis.

.7 Unit Prices for "CREDIT" shall be not less than 75% of Unit Prices for "EXTRA".

.8 Provide Unit Prices are listed on Specification Section 00 41 00 Bid Form, UNIT PRICES (when requested).

1.5 TAXES

.1 Refer to Section 00 73 03 Supplementary Conditions - Stipulated Price, for requirements relating to the Harmonized Sales Tax (H.S.T.).

1.6 SCHEDULE OF VALUES

.1 Submit Schedule of Values within fifteen (15) days after date of award of contract.

.2 Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the primary associated specification section. Also identify Separate line items for Site Mobilization, Bonds, Insurance, **General Conditions**, and Cash Allowances. .

.3 Include in each line item, the amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the specified unit price to arrive at the total amount.

.4 Include within each line item a direct proportional allocation of Contractor's overhead and profit. No separate line item for overhead and profit shall be permitted unless specifically approved by the Consultant.

.5 Revise the Schedule of Values to reflect approved Change Orders with each Application for Payment.

.6 The sum of all line items shall equal the Contract Price, including all Allowances, overhead, profit, bonds, insurance, and applicable taxes.

.7 Breakdown shall be of sufficient detail to permit evaluation of Applications for Payment. The Consultant may require additional breakdown of any line item where the submitted detail is considered insufficient.

.8 Consultant may require additional breakdown

1.7 SCHEDULE OF UNIT PRICE ITEMS (WHEN APPLICABLE)

.1 Submit a separate Schedule of Unit Prices for all Unit Price Items identified in the Contract Documents. Format shall correspond to the Schedule of Values.

.2 Unit Prices shall include all costs required to complete the Work, including:

.1 Labour

.2 Materials

.3 Equipment

.4 Delivery, unloading, handling, and storage

.5 Supervision

.6 Overhead and profit

.7 Applicable taxes

.8 Incidentals necessary to complete the Work

.3 The quantity and unit price submitted shall be consistent with the quantities identified in the Contract Documents and shall form the basis of valuation for additions or deletions to the Work

.4 Unit Prices shall remain fixed for the duration of the Contract unless otherwise specified in the Contract Documents.

.5 Unit Prices shall be used as the basis for valuation of additions or deletions of quantities where applicable.

.6 Where requested by the Consultant, provide a detailed breakdown of any Unit Price identifying labour, material, equipment, overhead, and profit components.

1.8 DEFECT ASSESSMENT

.1 Replace the Work, or portions of the Work, not conforming to specified requirements.

.2 If, in the opinion of the Consultant, it is not practical to remove and replace the Work, the Consultant will direct one of the following two (2) remedies:

.1 The defective Work may remain, but the unit sum/price will be adjusted to a new sum/price at the discretion of the Consultant.

.2 The defective Work will be partially repaired to the instructions of the Consultant, the unit sum/price will be adjusted to a new sum/price at the discretion of the Consultant.

.3 The individual specification sections may modify these options or may identify a specific formula or percentage sum/price reduction.

.4 The authority of the Owner / Consultant to assess the defect and identify payment adjustment, is final.

1.9 NON-PAYMENT FOR REJECTED PRODUCTS

.1 Payment will not be made for any of the following:

.1 Products wasted, damaged, or disposed of in a manner not in accordance with the Contract Documents.

.2 Products rejected by the Consultant as not conforming to the Contract Documents, whether before or after installation.

.3 Products delivered to the Site but not incorporated into the Work, unless specifically approved for payment as materials stored on Site.

.4 Products not completely unloaded from the transporting vehicle.

.5 Products installed outside the lines, grades, elevations, locations, dimensions, or tolerances specified in the Contract Documents.

.6 Surplus Products remaining on hand after completion of the Work.

.7 Costs associated with removal, loading, hauling, storage, replacement, and disposal of rejected Products.

.8 Costs associated with correction of defective Work resulting from rejected Products.

END OF SECTION

Section 01 25 00
Substitution Procedures

Part 1 General

1.1 SECTION INCLUDES

.1 Substitutions.

1.2 RELATED REQUIREMENTS

.1 Section 00 26 00 - Procurement Substitution

.2 Section 00 43 25 - Substitution Request Form

.3 Section 01 21 00 - Allowances.

.4 Section 01 29 00 - Payment Procedures.

.5 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 SUBSTITUTIONS

.1 Instructions to Bidders specify time restrictions for submitting requests for Substitutions during the bidding period to requirements specified in this section.

.1 Request a form if Section 00 43 25 Substitution Request Form is not provided from the consultants and submit all required items listed in sentence (7)

.2 Consultant will consider requests for Substitutions only within thirty (30) calendar days after date of Owner-Contractor Agreement. Requests submitted after this period will not be considered unless the specified product becomes unavailable through no fault of the Contractor or the Consultant agrees otherwise in writing. .

.1 If the Contractor proposes substitutions not specified in the Contract Documents, the Contractor is responsible for all consultant review costs, including any coordination or redesign. These costs will be back-charged or deducted from the Contract Price.

.3 Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.

.4 Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

.1 Provide a side-by-side comparison identifying all differences between the specified product and the proposed substitution, including performance, materials, dimensions, finishes, warranties, maintenance requirements, life expectancy, code compliance, and any resulting cost savings to the Owner. To demonstrate that the proposed product complies with or exceeds the specified performance, quality, and functional requirements.

.5 A request constitutes a representation that the Contractor:

.1 Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.

.2 Will provide the same warranty for the Substitution as for the specified Product.

.3 Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.

.4 Waives claims for additional costs or time extension that may subsequently become apparent.

.5 Will reimburse Owner and Consultant for review or redesign services associated with re-approval by authorities.

.6 Accepts full responsibility for the substituted product, including compatibility with adjacent work and the performance of the completed system.

.6 Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

.1 Substitutions indicated only on Shop Drawings, Product Data, Samples, RFIs, or other submittals will be rejected and returned without review unless accompanied by a separate written Substitution Request in accordance with this Section.

.7 Substitution Submittal Procedure:

.1 Complete 00 43 25 Substitution Request Form if provided or Request a form from the consultants and submit all required items below.

.2 Submit electronic copies of request for Substitution for consideration. Limit each request to one (1) proposed Substitution.

.3 Each request shall include complete technical documentation demonstrating that the proposed substitution complies with or exceeds the specified performance, quality, durability, code compliance, warranty, maintainability, and functional requirements of the Contract Documents.

.1 The burden of proof rests entirely with the Contractor to demonstrate that the proposed substitution fully complies with the Contract Documents and meets or exceeds the specified performance requirements.

.4 The Consultant's review of a proposed substitution is solely for determining general compliance with the Contract Documents. Acceptance of a substitution does not relieve the Contractor of responsibility for the substituted product, its performance, coordination with other Work, or compliance with the Contract Documents.

.5 The Consultant will notify Contractor in writing of decision to accept or reject request.

.6 If the forms are not completed the application maybe rejected. If is not the consultants responsibility to complete the forms.

END OF SECTION

Section 01 29 00
Payment Procedures

Part 1 General

1.1 REFERENCE STANDARDS

.1 Owner/Contractor Agreement.

.2 Canadian Construction Documents Committee (CCDC)

.1 CCDC 2-2020, Stipulated Price Contract.

1.2 APPLICATIONS FOR PROGRESS PAYMENT

.1 Refer to CCDC 2.

.2 Submit a CCDC 24 electronic form using an authorized electronic signature, or a printed copy with an authorized signature.

.3 Make applications for payment on account as monthly as Work progresses.

.4 Accompany applications with the following:

.1 CCDC 9A-2001 Statutory Declaration form

.2 Current copy of Workplace Safety & Insurance Board Clearance Certificate

.3 Supporting documents for requested payment.

.5 Date applications for payment last day of agreed monthly payment period and ensure amount claimed is for value, proportionate to amount of Contract, of Work performed and Products delivered to Place of Work at that date.

.6 Submit to Consultant, at least 14 days before first application for payment. Schedule of values for parts of Work, aggregating total amount of Contract Price, to facilitate evaluation of applications for payment.

1.3 SCHEDULE OF VALUES

.1 Refer to CCDC 2.

.2 Provide schedule of values supported by evidence as Consultant may reasonably direct and when accepted by Consultant, be used as basis for applications for payment.

.3 Include statement based on schedule of values with each application for payment.

.4 Support claims for products delivered to Place of Work but not yet incorporated into Work by such evidence as Consultant may reasonably require to establish value and delivery of products.

1.4 PREPARING SCHEDULE OF UNIT PRICE TABLE ITEMS

.1 Submit separate schedule of unit price items of Work requested in Bid form.

.2 Make form of submittal parallel to Schedule of Values, with each line item identified same as line item in Schedule of Values. Include in unit prices only:

.1 Cost of material.

.2 Delivery and unloading at site.

.3 Sales taxes.

.4 Installation, overhead and profit.

.3 Ensure unit prices multiplied by quantities given equal material cost of that item in Schedule of Values.

1.5 PROGRESS PAYMENT

.1 Refer to CCDC 2.

.2 Refer to 00 73 00 Supplemental Conditions

.3 Submit a progress payment schedule on CCDC 24 electronic form using an authorized electronic signature, or a printed copy with an authorized signature.

.4 Accompany applications with a CCDC 9A-2001 - Statutory Declaration form and current copy of Workplace Safety & Insurance Board Clearance Certificate.

.5 Consultant will issue to Owner, no later than 10 days after receipt of an application for payment, certificate for payment in amount applied for or in such other amount as Consultant determines to be due. If Consultant amends application, Consultant will give notification in writing giving reasons for amendment.

.6 As per the Construction Act; without subject to the giving of a notice of non-payment, an owner shall pay the amount payable under a proper invoice no later than 28 days after receiving the proper invoice from the contractor. (or when the consultant receives the proper invoice).

1.6 SUBSTANTIAL PERFORMANCE OF WORK

.1 Refer to CCDC 2.

.2 Submit a schedule of payments on CCDC 24 electronic form using an authorized electronic signature

.3 Accompany applications with a CCDC 9A-2001 Statutory Declaration form and current Workplace Safety & Insurance Board Clearance Certificate.

.4 Prepare and submit to Consultant comprehensive list of items to be completed or corrected and apply for a review by Consultant to establish Substantial Performance of Work or substantial performance of designated portion of Work when Work is substantially performed if permitted by lien legislation applicable to Place of Work designated portion which Owner agrees to accept separately is substantially performed. Failure to include items on list does not alter responsibility to complete Contract.

.5 Request Consultant review to establish Substantial Performance of the Work.

.6 Where permitted by local lien legislation, Contractor may apply for substantial performance of a designated portion of the Work, subject to Owner acceptance of that portion of the Work being substantially performed.

.7 No later than 10 days after receipt of list and application, Consultant will review Work to verify validity of application, and no later than 7 days after completing review, will notify Contractor if Work or designated portion of Work is substantially performed.

.8 Consultant: state date of Substantial Performance of Work or designated portion of Work in certificate.

.9 Immediately following issuance of certificate of Substantial Performance of Work, in consultation with Consultant, establish reasonable date for finishing Work.

1.7 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF WORK

.1 Refer to CCDC 2.

.2 Refer to Supplemental conditions 00 73 00

.3 After issuance of certificate of Substantial Performance of Work:

.1 Submit application for payment of holdback amount.

.2 Submit sworn statement that accounts for labour, subcontracts, products, construction machinery and equipment, and other indebtedness which may have been incurred in Substantial Performance of Work and for which Owner might in be held responsible have been paid in full, except for amounts properly retained as holdback or as identified amount in dispute.

.4 After receipt of application for payment and sworn statement, Consultant will issue certificate for payment of holdback amount.

.5 Amount authorized by certificate for payment of hold-back amount is due and payable on day following expiration of hold-back period stipulated in lien legislation applicable to Place of the Work. (refer to CCDC 2 and Construction act for payment due dates)

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

1.8 PROGRESSIVE RELEASE OF HOLDBACK

.1 Refer to CCDC 2.

.2 Refer to Supplemental Conditions 00 73 00

.3 Where legislation permits, if Consultant has certified that Work of subcontractor or supplier has been performed prior to Substantial Performance of Work, Owner will pay holdback amount retained for such subcontract Work, or products supplied by such supplier, on day following expiration of holdback period for such Work stipulated in lien legislation applicable to Place of Work.

.4 In addition to provisions of preceding paragraph, and certificate wording, ensure that such subcontract Work or products is protected pending issuance of final certificate for

payment and be responsible for correction of defects or Work not performed regardless of whether or not such was apparent when such certificates were issued.

1.9 FINAL PAYMENT

.1 Refer to CCDC 2.

.2 Refer to Supplemental Conditions 00 73 00

.3 Submit application for final payment when Work is completed.

.4 Consultant will, no later than 10 days after receipt of application for final payment, review Work to verify validity of application. Consultantwill give notification that application is valid or give reasons why it is not valid, no later than 7 days after reviewing Work.

.5 Consultant will issue final certificate for payment when application for final payment is found valid.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

Section 01 31 00
Project Management and Coordination

Part 1 General

1.1 SECTION INCLUDES

.1 Coordination Work with other contractors and work by Owner under administration of Consultant or Project Manager.

.2 Scheduled progress and Pre-installation meetings.

1.2 RELATED REQUIREMENTS

.1 Section 01 32 00 - Construction Progress Documentation.

.2 Section 01 33 00 - Submittal Procedures.

.1 This section describes requirements applicable to all Sections within Divisions 02 to 49

1.3 COORDINATION

.1 Perform coordination of progress schedules, submittals, use of site, temporary utilities, construction facilities and construction Work, with progress of Work of others, under instructions of Consultant and Project Manager.

1.4 PROJECT MEETINGS

.1 Schedule and administer bi-weekly project meetings throughout progress of Work as determined by Consultant.

.2 Schedule and administer pre-installation meetings when specified in sections and when required to coordinate related or affected Work.

.3 Prepare agenda for meetings.

.4 Distribute written notice of each meeting four (4) days in advance of meeting date to Consultant and Owner.

.5 Provide physical space and make arrangements for meetings.

.6 Preside at meetings.

.7 Record minutes. Include significant proceedings and decisions. Identify action by parties.

.8 Reproduce and distribute copies of minutes within three (3) days after each meeting and transmit to meeting participants, Owner, Consultant, and affected parties not in attendance.

1.5 CONSTRUCTION ORGANIZATION AND START-UP

.1 Within fifteen (15) days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.

.2 Consultant, Owner, Contractor, major Subcontractors, field inspectors and supervisors are to be in attendance.

.3 Establish time and location of meeting and notify parties concerned minimum five (5) days before meeting.

.4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.

.5 Agenda to include following:

- .1 Bid Review
  - .1 Contract Amount/HST
  - .2 Separate Prices/Alternate Prices/Unit Prices/Labour Rates
  - .3 Itemized Prices
  - .4 Allowances
  - .5 List of Subcontractors & Suppliers
  - .6 Post Bid Addenda/Negotiations
- .2 Approvals
  - .1 Building Permit Status
  - .2 Site Plan Approval
  - .3 Owner Internal Approvals
- .3 Appointment of official representative of participants in Work.
  - .1 Site Contacts
    - .1 Contractor (24 hr)
    - .2 Consultant
    - .3 Owner
- .4 Schedule of Work, progress scheduling as specified in Section 01 32 00.
  - .1 Mobilization
  - .2 Locates and Service Interrupts
    - .1 Owner
    - .2 Ontario One Call
  - .3 Long Delivery Items
  - .4 Phasing
  - .5 Completion
- .5 Schedule of submission of shop drawings, samples, colour chips as specified in Section 01 33 00.

.6 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences as specified in Section 01 51 00.

.7 Delivery schedule of specified equipment as specified in Section 01 32 00.

.8 Site security & safety as specified in Section 01 35 29.

.9 Site Set-Up

.1 Access & Staging Area

.2 Hoarding & Signage

.3 Security & Lighting

.4 Use of Temporary Services

.1 power

.2 elevators

.3 water

.4 washrooms

.5 care taking equipment/ladders, etc.

.6 waste holding & removal

.10 Parking

.11 Keys & I.D.

.12 Hours of Work

.13 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.

.14 Owner-furnished Products.

.15 Record drawings as specified in Section 01 78 20.

.16 Maintenance material and data as specified in Section 01 78 20.

.17 Take-over procedures, acceptance, and warranties as specified Section 01 78 20.

.18 Monthly progress claims, administrative procedures, photographs, and holdbacks.

.19 Appointment of inspection and testing agencies or firms as specified in Section 01 45 00.

.20 Insurances and transcript of policies.

.6 Comply with Consultant's allocation of mobilization areas of site; for field offices and sheds, for construction, access, traffic, and parking facilities.

.7 During construction, coordinate use of site and facilities through Consultant's procedures for intra-project communications: Submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.

.8 Comply with instructions of Consultant for use of temporary utilities and construction facilities.

.9 Coordinate field engineering and layout work with Consultant.

1.6 ON-SITE DOCUMENTS

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

.1 Contract drawings.

.2 Specifications.

.3 Addenda.

.4 Reviewed shop drawings.

.5 Change orders.

.6 Other modifications to Contract.

.7 Field test reports.

.8 Copy of approved Work schedule.

.9 Manufacturers' installation and application instructions.

.10 Labour conditions and wage schedules.

.11 Applicable current editions of municipal regulations and by-laws. Current building codes, complete with addenda bulletins applicable to the Place of the Work.

1.7 SCHEDULES

.1 Submit preliminary construction progress schedule as specified in Section 01 32 00 to Consultant coordinated with Consultant's project schedule.

.2 After review, revise and resubmit schedule to comply with revised project schedule.

.3 During progress of Work revise and resubmit as directed by Consultant.

1.8 CONSTRUCTION PROGRESS MEETINGS

.1 During course of Work and 4 weeks prior to project completion, schedule progress meetings bi-weekly.

.2 Contractor, major subcontractors involved in Work Owner and Consultant are to be in attendance.

.3 Notify parties minimum of 5 days prior to meetings.

.4 Record minutes of meetings, and circulate to attending parties and affected parties not in attendance within 3 days after meeting.

.5 Agenda to include following:

.1 Review, approval of minutes of previous meeting.

.2 Review of Work progress since previous meeting.

.3 Field observations, problems, conflicts.

.4 Problems that impede construction schedule.

.5 Review of off-site fabrication delivery schedules.

.6 Corrective measures and procedures to regain projected schedule.

.7 Revision to construction schedule.

.8 Progress schedule, during succeeding work period.

.9 Review submittal schedules: expedite as required.

.10 Maintenance of quality standards.

.11 Review proposed changes for effect on construction schedule and on completion date.

.12 Review site safety and security issues.

.13 Other business.

1.9 SUBMITTALS

.1 Prepare and issue submittals to Consultant for review.

.2 Submit preliminary Shop Drawings, product data and samples as specified in Section 01 33 00 for review for compliance with Contract Documents; for field dimensions and clearances, for relation to available space, and for relation to Work of other contracts. After review, revise and resubmit for transmittal to Consultant.

.3 Submit requests for payment for review, and for transmittal to Consultant.

.4 Submit requests for interpretation of Contract Documents, and obtain instructions through Consultant.

.5 Process substitutions through Consultant.

.6 Process change orders through Consultant.

.7 Deliver closeout submittals for review and preliminary inspections, for transmittal to Consultant.

1.10 COORDINATION DRAWINGS

.1 Provide information required by Consultant for preparation of coordination Drawings.

.2 Review and approve revised Drawings for submittal to Consultant.

1.11 CLOSEOUT PROCEDURES

.1 Notify Consultant when Work is considered ready for Substantial Performance.

.2 Accompany Consultant on preliminary inspection to determine items listed for completion or correction.

.3 Comply with Consultant's instructions for correction of items of Work listed as to be completed or corrected with the Ready-For-Takeover application.

.4 Notify Consultant of instructions for completion of items of Work determined in Consultant's final inspection.

END OF SECTION

Section 01 32 00
Construction Progress Documentation

Part 1 General

1.1 SECTION INCLUDES

.1 Schedules, form, content, submission.

.2 Critical path scheduling.

.3 Recording As-Built documents.

.4 Progress photographs.

.5 Submittals schedule.

1.2 RELATED REQUIREMENTS

.1 Section 01 33 00 - Submittal Procedures.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 SCHEDULES

.1 Submit schedules as follows:

.1 Submittal Schedule for Shop Drawings and Product Data.

.2 Submittal Schedule for Samples.

.3 Submittal Schedule for timeliness of Owner-furnished Products.

.4 Product Delivery Schedule.

.5 Cash Allowance Schedule for acquiring Products only or Products and Installation, or Installation only.

.6 Shutdown or closure activity.

.2 Schedule Format.

.1 Prepare schedule in form of a horizontal GANTT bar chart.

.2 Provide a separate bar for each major item of work.

.3 Split horizontally for projected and actual performance.

.4 Provide horizontal time scale identifying first Working Day of each week.

.5 Format for listings: Chronological order of start of each item of work.

.6 Identification of listings: By specification Section numbers.

.3 Schedule Submission.

.1 Submit initial format of schedules within fifteen (15) days after award of Contract.

.2 Submit schedules in electronic format, forward through e-mail as *.pdf files.

.3 Submit one (1) electronic copy to be retained by Owner.

.4 Consultant will review schedule and return review copy within ten (10) days after receipt.

.5 Resubmit finalized schedule within seven (7) days after return of review copy.

.6 Submit revised progress schedule with each application for payment.

.7 Distribute copies of revised schedule to:

.1 Job site office.

.2 Subcontractors.

.3 Other concerned parties.

.8 Instruct recipients to report to Contractor within ten (10) days, any problems anticipated by timetable shown in schedule.

1.4 CONSTRUCTION PROGRESS SCHEDULING

.1 Submit initial schedule in duplicate within fifteen (15) days after date of Owner-Contractor Agreement.

.2 Revise and resubmit as required.

.3 Submit revised schedules with each Application for Payment, identifying changes since previous version.

.4 Submit a computer generated chart with separate line for each section of Work, identifying first workday of each week.

.5 Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.

.6 Indicate estimated percentage of completion for each item of Work at each submission.

.7 Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those furnished by Owner and required by Allowances.

.8 Include dates for commencement and completion of each major element of construction as follows.

.1 Site clearing.

.2 Site utilities.

.3 Foundation Work.

.4 Structural framing.

.5 Special Subcontractor Work.

.6 Equipment Installations.

.7 Finishes.

.9 Indicate projected percentage of completion of each item as of first day of month.

.10 Indicate progress of each activity to date of submission schedule.

.11 Indicate changes occurring since previous submission of schedule:

.1 Major changes in scope.

.2 Activities modified since previous submission.

.3 Revised projections of progress and completion.

.4 Other identifiable changes.

.12 Provide a narrative report to define:

.1 Problem areas, anticipated delays, and impact on schedule.

.2 Corrective action recommended and its effect.

.3 Effect of changes on schedules of other prime contractors.

1.5 CRITICAL PATH SCHEDULING

.1 Include complete sequence of construction activities.

.2 Include dates for commencement and completion of each major element of construction as follows.

.1 Site clearing.

.2 Site utilities.

.3 Foundation work.

.4 Structural framing.

.5 Special subcontractor work.

.6 Equipment installations.

.7 Finishes.

.3 Show projected percentage of completion of each item as of first day of month.

.4 Indicate progress of each activity to date of submission schedule.

.5 Show changes occurring since previous submission of schedule:

.1 Major changes in scope.

.2 Activities modified since previous submission.

.3 Revised projections of progress and completion.

.4 Other identifiable changes.

.6 Provide a narrative report to define:

.1 Problem areas, anticipated delays, and impact on schedule.

.2 Corrective action recommended and its effect.

.3 Effect of changes on schedules of other prime contractors.

1.6 RECORDING ACTUAL CONDITIONS ON AS BUILT DOCUMENTS

.1 Record updated information on drawings and Project Manual provided by Consultant.

.2 Record changed information by annotating with separate colours for each major system.

.3 Record information concurrently with construction progress. Do not conceal Work of the Project until required information is accurately recorded.

.4 Contract drawings and Shop Drawings: record actual construction of each item, including :

.1 Measured depths of elements of foundation in relation to finish first floor datum.

.2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

.3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.

.4 Field changes of dimension and detail.

.5 Changes made by change orders.

.6 Details not indicated on original Contract Drawings.

.7 References to related shop drawings and modifications.

.5 Specifications: legibly mark each item to record actual construction, including:

.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.

.2 Changes made by Addenda and change orders.

.6 Other Documents: Maintain manufacturer's certifications, inspection certifications, and field test records required by individual specifications sections.

.7 Electronic as built document format

.1 Make as-built documents available electronically, accessible by all project personnel who require access, including Consultant.

.2 Enable navigation of electronic documents accessed from mobile devices such as computer tablets.

.3 Label as-built documents in accordance with section number listings in List of Contents of the Project Manual. Label each document AS-BUILT DOCUMENTS on every page.

.8 Physical as built document format

.1 Store as-built documents in field office apart from documents used for construction. Provide files, racks, and secure storage. Length of time Months

.2 Label as-built documents and file in accordance with section number listings in List of Contents of the Project Manual. Label each document AS-BUILT DOCUMENTS in neat, large, printed letters.

.3 Maintain as-built documents in clean, dry and legible condition. Do not use as-built documents for construction purposes.

.4 Keep as-built documents and samples available for inspection by Consultant.

.9 Samples: Maintain physical samples of products installed in the project at field office in clean, dry condition. Keep samples available for inspection by Consultant. Do not use samples for construction purposes.

1.7 PROGRESS PHOTOGRAPHS

.1 Digital Photography.

.1 Submit electronic progress of the jobsite on a cloud base sharing service for the Consultant and Owner to view progress.

.2 Frequency: Progress photo uploads shall be provided on a daily or weekly basis, depending on the level of construction activity. Given the active nature of the site, daily uploads are expected during periods of ongoing work. During slower periods of activity, weekly uploads will be acceptable, provided this has been identified and discussed at the site meetings.

.2 Number of photos required:

.1 Prior to construction: Provide necessary number of photographs, as required to document existing conditions to verify damage to adjacent property which may or may not have occurred during construction: contractor to evaluate the quantity required.

.2 Each progress draw: Provide additional pictures to accompany each application for progress draw to document the stage of the work from points selected by the Consultant showing as much as possible of the work installed during the previous month. (ex. items stored on site in containers)

.3 Completion: when the work is completed, contractor shall arrange to take final photographs of the project to verify that all deficiencies are completed.

1.8 SUBMITTALS SCHEDULE

.1 Include schedule for submitting Shop Drawings, product data, samples.

.2 Indicate dates for submitting, review time, resubmission time, and last date for meeting fabrication schedule.

.3 Include dates when delivery will be required for Owner-furnished products.

.4 Include dates when reviewed submittals will be required from Consultant.

END OF SECTION

Section 01 33 00
Submittal Procedures

Part 1 General

1.1 SECTION INCLUDES

.1 Shop drawings and product data.

.2 Samples.

.3 Certificates and transcripts.

1.2 RELATED REQUIREMENTS

.1 Section 01 32 00 Construction Progress Documents

.2 Section 01 78 00 Closeout Submittals

.3 Other sections requesting submittals.

.4 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Submit to Consultant submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Do not proceed with Work affected by submittal until review is complete.

.3 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.4 Where items or information is not produced in SI Metric units converted values are acceptable.

.5 Review submittals before submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.

.6 Notify Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.7 Verify site measurements and affected adjacent Work are coordinated.

.8 Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals.

.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.

.10 Keep one reviewed copy of each submission on site.

1.4 SHOP DRAWINGS AND PRODUCT DATA

.1 Refer to Section 01 00 00 General Requirements.

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

.3 Submit drawings stamped and signed by professional engineer registered or licensed in Ontario, Canada.

.4 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to Contract drawings and specifications.

.5 Allow minimum 7 days for Consultant's review of each submission.

.6 Adjustments made on shop drawings by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultantbefore to proceeding with Work.

.7 Make changes in shop drawings as Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of revisions other than those requested.

.8 Accompany submissions with transmittal letter,in duplicate, containing:

- .1 Date.
- .2 Project title and number.
- .3 Contractor's name and address.
- .4 Identification and quantity of each shop drawing, product data, and sample.
- .5 Other pertinent data.

.9 Submissions to include:

- .1 Date and revision dates.
- .2 Project title and number.
- .3 Name and address of:
  - .1 Subcontractor.
  - .2 Supplier.
  - .3 Manufacturer.
- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of site measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of Work as applicable:

.1 Fabrication.

.2 Layout, showing dimensions, including identified site dimensions and clearances.

.3 Setting or erection details.

.4 Capacities.

.5 Performance characteristics.

.6 Standards.

.7 Operating weight.

.8 Wiring diagrams.

.9 Single line and schematic diagrams.

.10 Relationship to adjacent work.

.10 After Consultant's review, distribute copies.

.11 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as Consultant may reasonably request.

.12 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Consultant where shop drawings will not be prepared due to standardized manufacture of product.

.13 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Consultant.

.1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.

.2 Testing must have been within 3 years of date of Contract award for project.

.14 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Consultant.

.1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.

.2 Certificates must be dated after award of Contract complete with project name.

.15 Submit electronic copies of manufacturers instructions for requirements requested in specification Sections and as requested by Consultant.

.1 Pre-printed material describing installation of product, system or material, including special notices and Safety Data Sheets concerning impedances, hazards and safety precautions.

.16 Submit electronic copies of Manufacturer's Site Reports for requirements requested in specification Sections and as requested by Consultant.

.17 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

.18 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Consultant.

.19 Delete information not applicable to project.

.20 Supplement standard information to provide details applicable to project.

.21 If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

.22 Submit documentation demonstrating compliance with any **Buy Ontario or Canadian content requirements identified in the Contract Documents** or required by applicable legislation.

1.5 SAMPLES

.1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.

.2 Deliver samples prepaid to Consultant's.

.3 Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.

.4 Where colour, pattern or texture is criterion, submit full range of samples.

.5 Adjustments made on samples by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant before proceeding with Work.

.6 Make changes in samples which Consultant may require, consistent with Contract Documents.

.7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.6 MOCK-UPS

.1 Erect mock-ups in accordance with section01 45 00 - Quality Control.

1.7 PHOTOGRAPHIC DOCUMENTATION

.1 Submit electronic copy of digital photography in jpg format, standard resolution as directed by [Consultant].

.2 Project identification: name and number of project and date of exposure indicated.

.3 Frequency of photographic documentation: weekly.

.1 Upon completion of: as directed by [Consultant].

1.8 CERTIFICATES AND TRANSCRIPTS

.1 Submit to the Consultant within two (2) weeks after award of contract the following:

.1 Workers Compensation Bond status.

.2 Insurance Forms.

.3 Performance Bond.

.4 Materials and Labour Bond.

.5 Monthly billing format indicating detailed line items and values.

.6 Sample of quotation format.

.7 Construction Schedule.

.8 Shop Drawing Schedule.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

Section 01 35 23
Health and Safety

Part 1 General

1.1 SECTION INCLUDES

.1 Safety requirements and adherence.

1.2 RELATED SECTIONS

.1 Section 01 31 00 - Project Managing and Coordination

.2 Section 01 33 00 - Submittal Procedures

.3 Section 01 35 29 - Health, Safety, and Emergency Response Procedures

.4 This section describes requirements applicable to all Sections within Divisions 02 to 49

1.3 REFERENCES

.1 Province of Ontario: Occupational Health and Safety Act, Regulation and Code R.S.A - Amended 1995, including requirements for a "Prime Contractor" as defined by the Act.

1.4 SAFETY PLAN

.1 The Successful Bidder will review and agree to follow the Corporation of the of Southwest Middlesex Health and Safety Policy provided to the successful bidder.

.2 Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

.3 Consultant may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.5 SUBMITTALS

.1 Make submittals in accordance with Section 01 33 00.

.2 Submit site-specific Health and Safety Plan: Within ten (10) days after award of contract and prior to commencement of Work. Health and Safety Plan must include:

.1 Results of safety and health risk or hazard analysis for site tasks and operation.

.2 Results of site specific safety hazard assessment.

.3 Submit copies of Contractor's authorized representative's work site health and safety inspection reports to Authority Having Jurisdiction.

.4 Submit copies of reports or directions issued by Federal, Provincial health and safety inspectors.

.5 Submit copies of incident and accident reports.

.6 Submit Material Safety Data Sheets (MSDS) to Consultant.

.7 Consultant's review of Contractor's Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.

.8 Medical Surveillance: Where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work and submit additional certifications for any new site personnel to Consultant.

.9 On-site Contingency and Emergency Response Plan: Address standard operating procedures to be implemented during emergency situations.

.10 File Notice of Project with Provincial authorities prior to commencement of Work.

1.6 SAFETY ACTIVITIES

.1 Schedule and administer Health and Safety meeting with Consultant prior to commencement of Work.

.2 Perform Work in accordance with Section 01 41 00 - Regulatory Requirements and this section.

.3 Work shall include protection measures consisting of materials, constructions and methods required by the Occupational Health and Safety Act, 2006 as amended, of the Province of Ontario, and as otherwise imposed by jurisdictional authorities to save persons and property from harm.

.4 Ensure that pollution and environmental control of construction activities are exercised as required during the Work.

.5 Except where special permission is obtained, maintain clear access for roads and sidewalks on public property.

.6 Maintain roads and sidewalks clear of construction materials and debris, including excavated material, according to the local Municipality standards and requirements. Clean roads and sidewalks as frequently as required to ensure that they are cleared of materials, debris and excavated materials.

.7 Remove snow and ice from sidewalks as required by the Municipality.

1.7 HEALTH AND SAFETY COORDINATOR

.1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:

.1 Have minimum two (2) years' site-related working experience.

.2 Have working knowledge of occupational safety and health regulations.

.3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.

.4 Be responsible for implementing, enforcing and monitoring site-specific Contractor's Health and Safety Plan.

.5 Be on site during execution of Work and report directly to and be under direction of site supervisor.

1.8 POSTING OF DOCUMENTS

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

1.9 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Consultant.

.2 Provide Consultant with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Consultant may stop Work if non-compliance of health and safety regulations is not corrected.

1.10 HAZARDOUS WORK

.1 Blasting or other use of explosives is not permitted.

1.11 WORK STOPPAGE

.1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

1.12 FIRE PROTECTION

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

.2 Burning rubbish and construction waste materials is not permitted on site.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

Section 01 35 29
Health, Safety, and Emergency Response Procedures

Part 1 General

1.1 SECTION INCLUDES

.1 Safety requirements and adherence.

1.2 RELATED REQUIREMENTS

.1 Section 01 31 00 - Project Management and Coordination.

.2 Section 01 33 00 - Submittal Procedures.

.3 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 REFERENCE STANDARDS

.1 Province of Ontario: Occupational Health and Safety Act, including requirements for a "Prime Contractor" as defined by the Act.

1.4 SAFETY PLAN

.1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

.2 Consultant may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.5 RESPONSIBILITY

.1 The "Prime Contractor" according applicable local jurisdiction, is responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.

.2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

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

1.6 SUBMITTALS

.1 Make submittals in accordance with Section 01 33 00.

.2 Submit site-specific Health and Safety Plan: Within seven (7) days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:

.1 Results of site specific safety hazard assessment.

.2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.

.3 Submit 3 copies of Contractor's authorized representative's work site health and safety inspection reports to Consultant, weekly.

.4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.

.5 Submit copies of incident and accident reports.

.6 Submit Material Safety Data Sheets (MSDS) to Consultant.

.7 Consultant will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 7 days after receipt of plan. Revise plan as appropriate and resubmit plan to Consultant within 7 days after receipt of comments from Consultant.

.8 Consultant's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.

.9 Medical Surveillance: Where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Consultant.

.10 On-site Contingency and Emergency Response Plan: Address standard operating procedures to be implemented during emergencies.

.11 File Notice of Project with Provincial authorities prior to commencement of Work.

1.7 SAFETY ACTIVITIES

.1 Perform site specific safety hazard assessment related to project.

.2 Schedule and administer Health and Safety meeting with Consultant prior to commencement of Work.

.3 Perform Work in accordance with Section 01 41 00 - Regulatory Requirements and this section.

1.8 HEALTH AND SAFETY COORDINATOR

.1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:

.1 Have minimum two (2) years' site-related working experience specific to activities associated with construction site health and safety.

.2 Have working knowledge of occupational safety and health regulations.

.3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.

.4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

.5 Be on site during execution of Work, and report directly to and be under direction of site supervisor.

1.9 POSTING OF DOCUMENTS

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

1.10 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Consultant.

.2 Provide Consultant with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Consultant may stop Work if non-compliance of health and safety regulations is not corrected.

1.11 HAZARDOUS WORK

.1 Blasting or other use of explosives is not permitted without prior receipt of written instruction by Consultant.

.2 Use powder actuated devices only after receipt of written permission from Consultant and Owner.

1.12 WORK STOPPAGE

.1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

1.13 FIRE PROTECTION

.1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction governing codes, regulations and bylaws.

.2 Burning rubbish and construction waste materials is not permitted on site.

.3 Maintain placed or installed fire resistive construction, fireproofing, and firestopping to protect the portions of the Work during construction.

1.14 MISCELLANEOUS OPERATIONS

.1 Falsework: Design and construction falsework in accordance with CSA S269.1-1975

.2 Scaffolding: Design and construct scaffolding in accordance with CAN/CSA-S269.2.

.3 Environmental Protection: Comply with Municipal and Provincial regulations governing handling and disposal of demolished material.

.4 Confined Space Entry Procedure: Any person entering a Confined Space as defined by the Occupational Health and Safety Act must have current and up to date training. Also be aware of other policies such as (but not limited to) high voltage vault training, and asbestos policies.

END OF SECTION

Section 01 41 00
Regulatory Requirements

Part 1 General

1.1 SUMMARY

.1 This Section references laws, bylaws, ordinances, rules, regulations, codes, orders of Authority Having Jurisdiction (AHJ), and other legally enforceable requirements applicable to the Work and that are or become enforced during performance of the Work.

1.2 RELATED REQUIREMENTS

.1 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 DEFINITIONS

.1 Reference Standards: Means consensus standards, trade association standards, guides, and other publications expressly referenced in the Contract Documents.

1.4 REFERENCE STANDARDS AND REFERENCE DOCUMENTS

.1 Standards, specifications, associations, and regulatory bodies are generally referred to throughout the specifications by their abbreviated designations. These are, but not necessarily limited to:

- .1 AA The Aluminum Association
- .2 AAMA Architectural Aluminum Manufacturers Association
- .3 ACI American Concrete Institute
- .4 AISI American Iron and Steel Institute
- .5 ANSI American National Standards Institute
- .6 ASTM American Society for Testing and Materials
- .7 AWI Architectural Woodwork Institute
- .8 AWMAC Architectural Woodwork Manufacturers' Association of Canada
- .9 CGSB Canadian General Standards Board (designated CAN/CGSB)
- .10 CISC Canadian Institute of Steel Construction
- .11 CPMA Canadian Paint Manufacturers Association
- .12 CSA Canadian Standards Association (designated CAN/CSA)
- .13 CSSBI Canadian Sheet Steel Building Institute
- .14 MFMA Maple Flooring Manufacturers Association
- .15 MTC Ministry of Transportation and Communications, Ontario
- .16 NBC National Building Code

.17 OAA Ontario Association of Architects

.18 OBC Ontario Building Code

.19 OGCA Ontario General Contractors Association

.20 SAE Society of Automotive Engineers

.21 ULC Underwriters Laboratories of Canada

.22 ULI Underwriters Laboratories Incorporated

.23 USAS United States of America Standards, of American National Standards Institute

.2 If specified referenced standards do not indicate an edition or version, the latest edition or revision issued by the publisher at the time of bid closing shall apply, except as follows:

.1 If a particular edition or revision date of a specified standard is referenced in an applicable code or other regulatory requirement, the edition or version in the regulatory reference shall apply.

.3 The specified reference standards establish minimum requirements. If Contract Documents indicate requirements that conflict with a reference standard, the more stringent requirements shall apply.

.4 If multiple reference standards are specified and the standards establish different requirements, the most stringent requirement shall apply.

.5 In case of discrepancy or uncertainties, refer to Consultant for interpretation or clarification.

1.5 CODES

.1 Building Code: Perform Work in accordance with the OBC 2024 O REG 163/24 including amendments up to the time of bid closing and other codes of provincial or local application.

.2 Fire Code: Perform Work in accordance with the [National Fire Code of Canada (NFC)] including amendments up to the time of bid closing and other codes of provincial or local application.

.3 Energy Code: Perform Work in accordance with the OBC 2024 O REG 163/24 including amendments up to the time of bid closing and other codes of provincial or local application.

.4 Plumbing Code: Perform Work in accordance with OBC 2024 O REG 163/24 including amendments up to the time of bid closing and other codes of provincial or local application.

.5 Highway Bridge Code: Perform Work in accordance with CSA S6-14, Canadian Highway Bridge Design Code including supplements up to the time of bid closing and other codes of provincial or local application.

.6 If there is a conflict or discrepancy between codes, the most stringent requirements shall apply.

.7 Specific design and performance requirements listed in Specifications and indicated on Drawings may exceed minimum requirements established by referenced Codes; these requirements will govern over the minimum requirements listed in the referenced Codes.

1.6 LAWS, NOTICES, AND PERMITS

.1 The laws of the Place of the Work shall govern the Work.

.2 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.

.3 If the Contractor knowingly performs or allows work to be performed that is 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.

.4 Determine detailed requirements of authorities having jurisdiction.

1.7 FEES

.1 The Owner shall obtain and pay for the building permit, permanent easements, and rights of servitude.

.2 Regulatory Requirements: Except as otherwise specified, Contractor shall apply for, obtain, and pay fees associated with permits, licenses, certificates, and approvals required by regulatory requirements and Contract Documents, based on General Conditions of Contract and the following:

.1 Regulatory requirements and fees in force at the time of bid closing, and

.2 A change in regulatory requirements or fees scheduled to become effective after the time of bid closing and of which public notice has been given before the time of bid closing.

1.8 HAZARDOUS MATERIAL DISCOVERY

.1 Asbestos: If material resembling asbestos is encountered in course of demolition work, immediately stop work and notify Consultant.

1.9 PERSONNEL SMOKING

.1 Comply with regulatory and Owner imposed smoking restrictions during execution of the Work within or outside the premises.

Part 2 Products

2.1 EASEMENTS AND NOTICES

.1 Owner will obtain permanent easements and rights of servitude that may be required for performance of the Work.

.2 Contractor shall give notices required by regulatory requirements.

2.2 PERMIT REQUIREMENTS

.1 Development Permit: Owner has applied for, obtained, and paid for development permit.

.2 Building Permit:

.1 Owner has applied for and will be paying for building permit. Contractor is responsible for obtaining or coordinating other permits required for Work and its various parts.

.2 Contractor will require that specific Subcontractors obtain and pay for some permits required by authorities having jurisdiction (AHJ), where their work is affected by work requiring permits including all permits.

.3 Contractor shall display building permit and other permits in a conspicuous location at the Place of the Work.

.3 Occupancy Permits:

.1 Contractor shall apply for, obtain, and pay for occupancy permits, including partial occupancy permits where required by AHJ.

.2 Contractor shall correct deficiencies in accordance with Consultant's instructions. If a deficiency is not corrected, the Owner reserves the right to make correction and charge Contractor for costs incurred.

.3 Contractor shall turn occupancy permits over to Owner.

Part 3 Execution - Not Used

END OF SECTION

Section 01 45 00
Quality Control

Part 1 General

1.1 SUMMARY

.1 This Section describes administrative and procedural requirements for reactive activities to verify that completed Work conforms to Contract Documents requirements.

.2 Having inspection and testing agencies by Contractor or Owner does not relieve the Contractor of their responsibility to perform Work in accordance with Contract Documents.

1.2 RELATED SECTIONS

.1 Section 01 21 00 - Allowances.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 REFERENCES

.1 ISO/IEC 17025-20065 - General Requirements for the Competence of Testing and Calibration Laboratories.

.2 SCC (Standards Council of Canada).

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Cash Allowances for independent inspection and testing services to be retained and paid for by the Contractor as described in Section 01 21 00 - Allowances. This Cash Allowance(s) excludes any inspection and testing that is for the Contractor's own quality control, and excludes inspection and testing required by authority having jurisdiction.

.2 Allow Authorities Having Jurisdiction (AHJ) access to Work on site, manufacturing off site, and fabrication off site with inspection and testing agencies. If part of Work is in preparation at locations other than Place of Work, cooperate to provide reasonable access to such Work whenever it is in progress.

.3 Retain and pay for inspection and testing that are designated for Contractor's own quality control plan, and when testing and inspection are required by AHJ..

.4 Give timely notice requesting inspection whenever portions of the Work are designated for special tests, inspections or approvals, either when described in the Contract Documents or when required by law in the Place of the Work.

.5 Give advanced notice to Consultant and to each inspection/testing agency for inspection and testing required by Contract Documents or by AHJ.

.6 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections, or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit schedule of testing and inspection activities to Consultant, Owner, applicable Subcontractors, testing agencies, and other affected parties. Include the following:

.1 List each testing and inspection agency

.2 Identify types of tests and inspections for each agency, and cross reference to applicable specification Section number-title in Contract Documents

.3 Description of test and inspection

.4 Identify applicable reference standard

.5 Identify test and inspection method

.6 Indicate number of each test and inspection required

.3 Submit one digital copy of each quality assurance inspection and test report to Consultant, except where a technical specification Section indicates otherwise.

.4 Submit reports for inspection and testing required by Contract Documents or by AHJ and performed by Contractor-retained inspection and testing agencies within ten days after inspection or test is completed, except where a technical specification Section indicates a different time period.

.5 Submit one digital copy of each quality control inspection and test report to Consultant, except where a technical specification Section indicates otherwise.

.6 Deliver copies of quality control reports to Subcontractor of work being inspected or tested.

1.6 SITE QUALITY CONTROL PROCEDURES

.1 Provide labour, Construction Equipment, and temporary facilities to obtain and handle test samples and materials on site. Arrange for sufficient space to store and cure test samples.

.2 Deliver samples and materials required for testing, as requested in technical specification Sections. Submit with reasonable promptness and in an orderly sequence to avoid delays in Work.

1.7 TESTING AND INSPECTION SERVICES

.1 Consultant may order any part of the Work to be reviewed or inspected if Work is suspected to be not in accordance with Contract Documents.

.2 If, upon review such work is found not in accordance with Contract Documents, correct such Work and pay cost of additional review and correction.

.3 If such Work is found in accordance with Contract Documents, Owner will pay cost of review and replacement.

.4 Independent Inspection and Testing Agencies will be engaged by Owner for purpose of inspecting and testing portions of Work. Cost of such services will be allocated to Section 01 21 00: Allowances.

.5 Provide equipment required for executing inspection and testing by appointed agencies.

.6 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and testing to ascertain full degree of defect. Correct defect and irregularities as advised by Consultant at no cost to Owner. Pay costs for retesting and reinspection.

.7 Quality control testing and inspection reports to include the following:

.1 Project name and number

.2 Testing/Inspection agency's name, address, telephone number, and website

.3 Date of issuing report

.4 Dates and locations of tests, inspections, or samples

.5 Description of the Work and test and inspection method

.6 Numbers and titles of associated specification Sections

.7 Test and inspection data and interpretation of test results (e.g., pass or fail)

.8 Ambient conditions at time of test, inspection, or sampling

.9 Recommendations on re-testing and re-inspecting, if applicable

1.8 REJECTED WORK

.1 Remove defective Work, whether result of poor workmanship, use of defective products or damage, and whether incorporated in Work or not, which has been rejected by Consultant as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

.2 Make good other Contractor's work damaged by such removals or replacements promptly.

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

1.9 REPORTS

.1 Submit electric * .pdf copy of signed inspection and test reports to Consultant and Project Manager.

.2 Provide signed paper copies to manufacturer or fabricator of material being inspected or tested and Subcontractor of work being inspected or tested.

1.10 TESTS AND MIX DESIGNS

.1 Furnish test results and mix designs as may be requested.

.2 The cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work shall be appraised by Consultant and may be authorized as recoverable.

1.11 MOCK-UP

.1 Prepare mock-up for Work specifically requested in specifications. Include for Work of all Sections required to provide mock-ups.

.2 Construct in all locations acceptable to Consultant.

.3 Prepare mock-ups for Consultant's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.

.4 Failure to prepare mock-ups in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.

.5 If requested, Consultant will assist in preparing a schedule fixing dates for preparation.

.6 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed.

1.12 MILL TESTS

.1 Submit mill test certificates as required of specification Sections.

1.13 EQUIPMENT AND SYSTEMS

.1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

Section 01 51 00
Temporary Utilities

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 52 00 - Construction Facilities.

.2 Section 01 53 00 - Temporary Construction.

.3 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.2 INSTALLATION AND REMOVAL

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

.2 Salvage and assist in recycling products for potential reuse.

.3 Remove from site all such work after use.

1.3 DEWATERING

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

1.4 TEMPORARY ELECTRICITY

.1 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance, and removal.

.2 Temporary electricity for electric cranes and other equipment requiring a supply in excess of above is responsibility of Contractor and based on General Conditions of Contract.

.3 Electrical power systems installed under this Contract may be used for construction requirements only with prior approval from Consultant if warranties are not affected.

.1 Repair damage to electrical system caused by use under this Contract.

.2 Replace lamps which have been used for more than two (2) months.

1.5 TEMPORARY FIRE PROTECTION

.1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.

1.6 TEMPORARY HEATING, COOLING, AND VENTILATING

.1 Provide temporary heating as required during construction period, including attendance, maintenance and fuel.

.2 Construction heaters used inside building must be vented to outside or be of the flameless (vent free) type. Solid fuel salamanders are not permitted.

.3 Provide temporary heat and ventilation in enclosed areas as required to:

.1 Facilitate progress of Work.

.2 Protect Work and Products against dampness and cold.

.3 Prevent moisture and condensation on surfaces.

.4 Provide ambient temperatures and humidity levels for storage, installation, and curing of materials.

.5 Provide adequate ventilation to meet health regulations for safe working environment.

.4 Maintain minimum temperatures of 15 °C in areas where construction is in progress.

.5 Ventilating:

.1 Prevent accumulations of dust, fumes, mists, vapours, or gases in occupied areas during construction.

.2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.

.3 Dispose of exhaust materials in a manner that will not result in harmful exposure to persons.

.4 Ventilate storage spaces containing hazardous or volatile materials.

.5 Ventilate temporary sanitary facilities.

.6 Continue operating ventilation and exhaust system after cessation of work process until complete removal of harmful contaminants is ensured.

.6 Permanent heating, ventilating, and air conditioning system of building, may be used when available. Be responsible for damage to systems if use is permitted.

.7 On completion of Work for which permanent heating system is used, replace filters.

.8 Ensure Date of Substantial Performance and Warranties for heating system does not start until entire system is in as near original condition as possible and is certified by Consultant.

.9 Contractor pay costs for maintaining temporary heat when using permanent heating system.

.10 Maintain strict supervision of operation of temporary heating and ventilating equipment to:

.1 Conform with applicable codes and standards.

.2 Enforce safe practices.

.3 Prevent abuse of services.

.4 Prevent damage to finishes.

.5 Vent direct-fired combustion units to outside.

.11 Be responsible for damage to Work due to failure to provide adequate heat and protection during construction.

1.7 TEMPORARY LIGHTING

.1 Provide and maintain temporary lighting throughout Project. Ensure level of illumination on all floors and stairs is not less than 162 lx.

.2 Electrical lighting systems installed under this Contract may be used for construction requirements only with prior approval of Consultant if warranties are not affected.

.1 Repair damage to lighting systems caused by use under this Contract.

.2 Replace lamps that have been used for more than 2 months.

1.8 TEMPORARY TELECOMMUNICATIONS

.1 Provide and pay for temporary high-speed internet and telephone hook-up, line/lines up to construction trailer. Provide all lines and equipment necessary for own use and use of Consultant.

1.9 TEMPORARY WATER

.1 Provide continuous supply of potable water for construction use.

.2 Arrange for connection with appropriate utility company and pay costs for installation, maintenance, and removal.

.3 Pay for utility charges at prevailing rates, based on General Conditions of Contract.

Part 2 Products - Not Used

Part 3 Execution

3.1 INSTALLATION AND REMOVAL

.1 Provide temporary utilities to execute Work expeditiously.

.2 Remove all such temporary utilities from site after use.

END OF SECTION

Section 01 52 00
Construction Facilities

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 51 00 - Temporary Utilities.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.2 REFERENCE STANDARDS

.1 Canadian Construction Documents Committee (CCDC)

.1 CCDC 2-2020, Stipulated Price Contract.

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.

.2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.

.3 CSA Group (CSA)

.1 CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.

.2 CSA-0121-M1978(R2003), Douglas Fir Plywood.

.3 CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.

.4 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.

.4 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as of: May 14, 2004.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.4 INSTALLATION AND REMOVAL

.1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.

.2 Identify areas which have to be gravelled to prevent tracking of mud.

.3 Indicate use of supplemental or other staging area.

.4 Provide construction facilities in order to execute work expeditiously.

.5 Remove from site all such work after use.

1.5 SCAFFOLDING

.1 Scaffolding in accordance with CAN/CSA-S269.2.

.2 Provide and maintain ladders, ramps, platforms, scaffolding, temporary stairs, swing staging and as required.

1.6 HOISTING

.1 Provide, operate and maintain hoists cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.

.2 Hoists and cranes to be operated by qualified operator.

1.7 SITE STORAGE/LOADING

.1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.

.2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

1.8 CONSTRUCTION PARKING

.1 Parking will be permitted on site in Owner designated areas provided it does not disrupt the continuing operation of the facility and performance of Work, as well as public access to entrance. Maintain safe and adequate access to project site and entrance, clear of construction materials and debris.

.2 Build and maintain temporary roads for construction where required and provide snow removal during period of Work.

.3 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.

.4 Clean runways and taxi areas where used by Contractor's equipment.

1.9 SECURITY

.1 Provide temporary fire rated and completely secure dust free construction partition/barrier to separate the existing facility from the construction site. Any doors in this portion/barrier shall be fire rated with locking hardware coordinated with the Owner. When the above cannot be achieved, the Contractor shall provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays. Contractor to notify the Owner in advance of such conditions.

1.10 OFFICES

.1 Provide office heated to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.

.2 Provide marked and fully stocked first-aid case in a readily available location.

.3 Subcontractors to provide their own offices as necessary. Direct location of these offices.

1.11 EQUIPMENT, TOOL, AND MATERIALS STORAGE

.1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.12 SANITARY FACILITIES

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Post notices and take precautions as required by local health authorities. Keep sanitary facilities clean and fully stocked with the necessary supplies at all times.

.3 When permanent water and drain connections are completed, provide temporary water closets and urinals complete with temporary enclosures, inside building. Permanent facilities may be used on approval of Consultant.

.4 Except where connected to municipal sewer system, periodically remove wastes from Site.

.5 New permanent facilities may not be used.

1.13 CONSTRUCTION SIGNAGE

.1 Provide and erect project sign, within three weeks of signing Contract, in a location designated by Consultant.

.2 Construction sign 1.2m (4 feet) x 2.4m (8 feet) m, of wood frame and plywood construction painted with exhibit lettering produced by a professional sign painter.

.3 Indicate on sign, name of Owner, and Contractor and Consultant, of design style as detailed.

.4 No other signs or advertisements, other than warning signs, are permitted on site.

.5 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN/CSA-Z321.

.6 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Consultant.

1.14 PROTECTION AND MAINTENANCE OF TRAFFIC

.1 Provide access and temporary relocated roads as necessary to maintain traffic.

.2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Consultant.

.3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs

.4 Protect travelling public from damage to person and property.

.5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.

.6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.

.7 Construct access and haul roads necessary.

.8 Haul roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided.

.9 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.

.10 Dust control: adequate to ensure safe operation at all times.

.11 Location, grade, width, and alignment of construction and hauling roads: subject to approval by Consultant.

.12 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.

.13 Provide snow removal during period of Work.

.14 Remove, upon completion of work, haul roads designated by Consultant.

1.15 CLEAN-UP

.1 Remove construction debris, waste materials, packaging material from work site daily.

.2 Clean dirt or mud tracked onto paved or surfaced roadways.

.3 Store materials resulting from demolition activities that are salvageable.

.4 Stack stored new or salvaged material not in construction facilities.

Part 2 Products - Not Used

Part 3 Execution

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to sediment and erosion control drawings.

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

END OF SECTION

Section 01 53 00
Temporary Construction

Part 1 General

1.1 SECTION INCLUDES

.1 Site enclosure.

.2 Guardrails and barriers.

.3 Weather enclosures.

.4 Dust tight barriers.

.5 Protection for off-site and public property.

.6 Protection of applied finishes.

.7 Protection of surrounding Work.

1.2 RELATED REQUIREMENTS

.1 Section 01 51 00 - Temporary Utilities.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 INSTALLATION AND REMOVAL

.1 Provide temporary controls in order to execute Work expeditiously.

.2 Remove from site all such work after use.

1.4 SITE ENCLOSURE

.1 Erect temporary site enclosure using new 1.83 m (6'-0") high modular metal, selfsupporting, construction fence.

.2 Apply panels vertically as indicated.

.3 Provide one (1) lockable truck entrance gate/gates and at least one (1) pedestrian door as directed and conforming to applicable traffic restrictions on adjacent streets. Equip gates with locks and keys with restricted availability, in the project office.

.4 Erect and maintain pedestrian walkways including roof and side covers, complete with signs and electrical lighting as required by law.

.5 Paint public side of site enclosure in selected colours with one coat of exterior alkyd primer and one coat of exterior alkyd paint. Maintain public side of enclosure in clean condition. Paint particleboard panels, on project side with one coat of exterior alkyd primer.

.6 Erect temporary site enclosure using new 1.2 m (4 ft) high snow fence wired to rolled steel "T" bar fence, posts spaced at 2.4 m (8 ft) on centre.

.1 Provide one (1) lockable truck gate.

.2 Maintain enclosure in good repair.

.7 Provide barriers around trees and plants designated to remain.

.8 Protect from damage by equipment and construction procedures.

1.5 GUARDRAILS AND BARRIERS

.1 Provide secure, rigid guardrails and barricades around deep excavations, open shafts, open stairwells, open edges of floors and roofs.

.2 Provide as required by governing authorities.

1.6 WEATHER ENCLOSURES

.1 Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.

.2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.

.3 Design enclosures to withstand wind pressure and snow loading.

1.7 DUST TIGHT BARRIERS

.1 Provide dust tight barriers and screens or insulated partitions to localize dust generating activities, and for protection of workers, finished areas of Work and to separate the construction from the existing building and public.

.2 Screens shall consist of 12 mm drywall on steel stud framing and 4 mil polyethylene. All joints shall be taped. Insulated wall at exterior locations and at separation to existing building. These screens are to be maintained at all times until completion of the work when they are to be removed.

.3 Maintain and relocate protection until such work is complete.

.4 Locate in such a manner as to maintain means of egress to all exits as required by jurisdictions having authority.

1.8 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred.

1.9 PROTECTION OF APPLIED FINISHES

.1 Provide protection for finished and partially finished surfaces and equipment during performance of Work.

.2 Provide necessary screens, covers, and hoardings.

.3 Confirm with Consultant locations and installation schedule one (1) days prior to installation.

.4 Be responsible for damage incurred due to lack of or improper protection.

1.10 PROTECTION OF SURROUNDING WORK

.1 Provide protection for finished and partially finished Work from damage.

.2 Provide necessary cover and protection.

.3 Be responsible for damage incurred due to lack of or improper or inappropriate protection.

END OF SECTION

Section 01 54 23
Temporary Scaffolding, Platforms and Fencing

Part 1 General

1.1 DESCRIPTION

.1 The work in this section includes providing roof access and site containment and includes:

.1 Designing, supplying, erecting and maintaining scaffolding, and/or suspended scaffolding to facilitate restoration work including all bracing, tie backs, outriggers, guardrails, toe boards, platforms, access stairs and ladders.

.2 Performing daily safety inspections of the scaffolding and/or suspended scaffolding throughout the progress of the work, and maintaining the safety of the workmen and pedestrians.

.3 Designing, supplying, erecting and maintaining hoarding to protect public, workers and private property from injury or damage.

.4 Access to the roof areas to be provided by scaffolding towers complete with stairs. The base of all scaffolding towers must be protected with plywood hoarding (8 feet high min.), have a lockable door and must not be climbable.

.5 Provide temporary fencing to secure work areas separate from public areas.

1.2 REFERENCES

.1 CAN/CSA-S269.2 “Access Scaffolding for Construction Purposes”.

.2 CAN/CSA-Z271 “Safety Code for Suspended Elevating Platforms”.

.3 Occupational Health and Safety Act of Ontario.

.4 Workers’ Compensation Board of Ontario.

Part 2 Products

2.1 SCAFFOLDING COMPONENTS

.1 All metal scaffolding components to be provided by a single source supplier of metal scaffolding components.

.2 The supplier of metal scaffolding components shall provide test data and test information upon request.

.3 All commercially manufactured suspended scaffolds must be erected, operated in accordance with written operating procedures developed by the manufacturer, and in accordance with a professional engineer’s design including instructions on erection, use and design.

2.2 FENCE COMPONENTS

.1 Provide temporary fence panels 6’ in height designed and constructed from coated steel tube and heavy gauge welded wire mesh.

.2 Provide all related based and interlocking steel caps. All metal components to be provided by a single source supplier of metal scaffolding components.

2.3 DESIGN

.1 The scaffolding and/or suspended scaffolding shall be designed and constructed in accordance to the requirements of the referenced standards and codes.

.2 When required, the scaffolding and/or suspended scaffolding is to be equipped with an enclosure capable of providing protection to pedestrians and adjacent property from dust, dirt, debris, water spray, falling tools and/or materials, and any other workplace hazards.

.3 Support Conditions:

.1 The bearing condition of the soil and/or supporting structure shall be verified by the Scaffolding Contractor.

.2 Where the existing structure is to be used for the support of the scaffolding and/or suspended scaffolding, the Contractor must verify that the existing structure can safely support the imposed loads from the scaffolding. Should the existing structure require strengthening for support of the scaffolding, the Contractor must provide details from a professional engineer for the shoring or strengthening requirements.

.3 When the Contractor relies on the structural integrity of the existing exterior walls of the building for lateral support of the scaffolding, the Contractor must establish whether the existing wall components can adequately support the additional lateral loads. The Contractor takes responsibility for providing adequate anchorage of the lateral supports for the scaffolding, and any damage to the existing wall due to the anchorage of the scaffolding must be restored to its original condition.

.4 Enclosure:

.1 The Contractor is responsible for taking into account wind loads that are imposed on the scaffolding as a result of the scaffolding being enclosed.

.5 Access to Scaffolding:

.1 Access to all working levels of the scaffolding shall be provided by means of either stairs or fixed vertical ladders.

.2 All stairs are to have handrails and all landings to have railings such that if a workman trips and falls while descending the stairs, it will not be possible for the workman to fall through the railing system.

.3 All stair openings on planked working areas of the scaffolding shall be surrounded by railings to prevent workmen from walking into the back or the sides of the open stair.

.6 Working Platforms:

.1 Levels of the scaffolding designated for work must be fully planked. On a designated working platform, the Contractor is not to remove isolated areas of planking such that the fully planked platform has areas of missing planks. All damaged planks are to be replaced by the Contractor immediately.

.2 If the Contractor deems that fully planked working platforms are not required, or a partially planked platform is required to facilitate lowering or raising material, guardrails must be installed to prevent a workman from falling off the partially planked platform.

.3 With the exception of the front of stair openings, all openings in working platforms are to have railings to prevent workmen from accidentally walking into the openings.

Part 3 Execution

3.1 SCAFFOLDING DRAWINGS FOR REVIEW BY THE CONSULTANT

.1 Prior to erection of the scaffolding and/or suspended scaffolding, the Contractor shall prepare and submit erection drawings and connection details for review by the Consultant. The drawings are to be stamped by a professional engineer (with experience in the structural design of scaffolding) registered in the Province of Ontario. The Consultant's review does not relieve the Contractor from any contractual requirement and/or responsibility.

.2 The erection drawings shall show the following:

.1 Reference specifications, materials and sizes for structural members.

.2 Main dimensions of scaffolding. Prepare surfaces in strict accordance with manufacturer's directions.

.3 Locations of tie backs and bracing.

.4 Guardrails.

.5 Planking.

.6 Stairs.

.7 Ladders.

.8 Where necessary, shoring or strengthening of existing strictures.

.9 Connection details.

.10 Support details for suspended scaffolding.

.11 Tie back arrangement for suspended scaffolding.

.12 Counterweight arrangement and outrigger design for suspended scaffolding.

3.2 PROFESSIONAL ENGINEER'S CERTIFICATION

.1 All scaffolding and/or suspended scaffolding are to be erected in accordance with the erection drawings.

.2 After the scaffolding and/or suspended scaffolding is erected, the Contractor must provide written certification from a professional engineer that the scaffolding is erected in accordance with the reviewed erection drawings.

.3 Any revisions to the lateral and gravity support arrangements for suspended scaffolding made by the Contractor must be reported to the professional engineer who certified the erection drawings. In addition, the Professional Engineer must certify that the revisions have been reviewed and are acceptable.

.4 Any inspection reports, orders to comply, etc., issued to the Contractor by the representative of the Workers' Compensation Board of Ontario, are to be provided to the Consultant and the Professional Engineer responsible for certifying the scaffolding erection drawings and confirming that the scaffolding is erected in accordance with the reviewed erection drawings. Any life safety instructions / work orders by the Workers' Compensation Board of Ontario are to be immediately followed by the Contractor prior to continuing with the Work.

3.3 EXISTING STRUCTURE

.1 The Contractor must verify that the existing structure can safely support all loads imposed by the scaffolding.

.2 The Contractor will be responsible for all damage to the existing building caused by the erection and dismantling of the scaffolding, and by loads imposed by the scaffolding.

3.4 FABRICATION AND INSTALLATION OF HOARDING

.1 All hoarding is to be installed in accordance with the rules and regulations set forth in the referenced standards.

.2 Install hoarding protection at the areas identified as being in the scope of work and in accordance with approved shop drawings.

.3 Provide posts, rafters, planking and plywood sheathing.

.4 The roof structure of the hoarding is to be constructed of wood framing capable of withstanding impact load from falling debris, materials or tools in order to provide overhead protection to public accessing the building during construction. The roof of all hoarding must also be waterproof.

.5 If necessary, provide sufficient lighting for evening entrance and exit of the building throughout covered walkways to ensure safety and security to public. No dark corners are allowed.

.6 Maintain hoarding in good condition at all times.

.7 Repair any damaged hoarding to satisfaction of the Consultant and other applicable authorities.

.8 Keep hoarding clean at all times.

.9 Remove hoarding from site only when authorized by the Consultant.

3.5 INSTALLATION OF FENCING

.1 Install fencing to fully secure and separate construction work zones from public areas.

.2 Maintain fencing and move to accommodate the work schedule and ensure contained areas are closed off after hours.

END OF SECTION

Section 01 57 13
Temporary Erosion and Sediment Control

Part 1 General

1.1 SECTION INCLUDES

.1 Create an erosion and sediment control plan.

.2 Prevent loss of soil during construction by stormwater runoff and wind erosion.

.3 Protect stockpiled topsoil.

.4 Prevent sedimentation of stormwater and receiving streams.

.5 Prevent pollution of the air with dust and particulate matter.

1.2 RELATED REQUIREMENTS

.1 Section 31 10 00 - Site Clearing.

.2 Section 31 23 16 - Excavation.

1.3 REFERENCE STANDARDS

.1 EPA 832/R-92-005 - Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices, September 1992.

.2 Local erosion and sediment control guidelines.

1.4 DEFINITIONS

.1 Erosion: Deterioration, displacement, or transportation of land surface by wind or water, intensified by land-clearing practices related to construction activates.

.2 Rain or Rain Storm: An event defined causing the pooling of water on road or other impervious surfaces.

.3 Sediment: Particulate matter transported and deposited as a layer of solid particles within a body of water.

.4 Snow Melt: An event in snow conditions when the temperature is above 0 degrees C or when environmental conditions causing snow on the ground to melt.

1.5 SUBMITTALS

.1 Provide requested information specified in Section 01 33 00.

.2 Provide shop drawings prior to commencement of Work.

.3 Application for Payment: Concurrent with each application, provide the following Inspection Log information:

.1 Weekly inspection record.

.2 Report damages or deficiencies and maintenance of erosion and sediment control measures.

.3 Identify and address standing rainwater or snowmelt conditions.

Part 2 Products

2.1 SILT FENCING

.1 Posts: Steel "T" cross section, of lengths as required.

.2 Geotextile: Woven polypropylene filter fabric, resistant to ultra-violet degradation.

2.2 STOCKPILING

.1 Prevent cleared topsoil and excavated earth stockpiled on site from being eroded by rain storm, snow melt or wind.

.2 Install silt fencing.

.3 Maintain silt fencings as per details on drawings.

.4 Extend geotextile filter fabric 150 mm (6 inches) below grade, and return 150 mm (6 inches) towards the opposite direction of flow.

.5 Space posts not further than 1800 mm (72 inches) apart.

.6 Limit operation of vehicles on site to paved surfaces or temporary gravel surfaces in order to avoid the disturbing soil.

2.3 MUNICIPAL STORMWATER

.1 Protect catch basins, drains, culverts and other points of entry into municipal storm water collection systems.

.2 Each Week: Inspect for erosion and sediment control measures, to ensure proper functions are not damaged.

Part 3 Execution

3.1 STOCKPILING

.1 Prevent cleared topsoil and excavated earth stockpiled on site from being eroded by rain storm, snow melt or wind.

.2 Install silt fencing.

.3 Maintain silt fencing at a height of no less than 400 mm (16 inches) above grade, and no greater than 800 mm.

.4 Extend geotextile filter fabric 150 mm (6 inches) below grade, and return 150 mm (6 inches) towards the opposite direction of flow.

.5 Space posts not further than 1800 mm (72 inches) apart.

.6 Limit operation of vehicles on site to paved surfaces or temporary gravel surfaces in order to avoid the disturbing soil.

3.2 MUNICIPAL STORM WATER

.1 Protect catch basins, drains, culverts and other points of entry into municipal storm water collection systems.

3.3 INSPECTION

.1 Each Week: Inspect for erosion and sediment control measures, to ensure proper functions are not damaged,

END OF SECTION

Section 01 61 00
Common Product Requirements

Part 1 General

1.1 RELATED REQUIREMENTS

.1 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.2 REFERENCE STANDARDS

.1 Canadian Construction Documents Committee (CCDC)

.1 CCDC 2-2020, Stipulated Price Contract.

1.3 TERMINOLOGY

.1 New: Produced from new materials.

.2 Re-newed: Produced or rejuvenated from an existing material to like-new condition to serve a new or existing service.

.3 Defective: A condition determined exclusively by the Owner and Consultant.

1.4 QUALITY

.1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.

.2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.

.3 Buy Ontario Requirements: Refer to Division 00 procurement requirements for applicable product-origin, domestic supply chain, certification, and reporting requirements.

.4 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

.5 Should disputes arise as to quality or fitness of products, decision rests strictly with Consultant based upon requirements of Contract Documents.

.6 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

.7 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.5 AVAILABILITY

.1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.

.2 In event of failure to notify Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Consultant reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.6 STORAGE, HANDLING AND PROTECTION

.1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.

.2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.

.3 Store sensitive products in weather tight, climate controlled, enclosures in an environment favourable to product.

.4 For exterior storage of fabricated products, place on sloped supports above ground.

.5 Store cementitious products clear of earth or concrete floors, and away from walls.

.6 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

.7 Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

.8 Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

.9 Store sheet materials, lumber and plywood on flat, solid supports and keep clear of ground. Slope to shed moisture.

.10 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

.11 Remove and replace damaged products at own expense and to satisfaction of Consultant.

.12 Touch-up damaged factory finished surfaces to Consultant's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

.13 Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

.14 Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.7 TRANSPORTATION

.1 Pay costs of transportation of products required in performance of Work.

.2 Transportation cost of products supplied by Owner will be paid for by Owner. Unload, handle and store such products.

.3 Transport and handle products in accordance with manufacturer's written instructions.

.4 Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

.5 Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.8 PRODUCT CHANGES

.1 Change in product/products: Submit request for substitution or alternative in accordance with Section 01 25 00 - Substitution Procedures.

1.9 MANUFACTURER'S INSTRUCTIONS

.1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

.2 Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant will establish course of action.

.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.

1.10 QUALITY OF WORK

.1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.

.2 Do not employ anyone unskilled in their required duties. Consultant reserves right to require dismissal from site, workers deemed incompetent or careless.

.3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Consultant, whose decision is final.

1.11 CO-ORDINATION

.1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.

.2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.12 CONCEALMENT

.1 In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

.2 Before installation inform Consultant if there is interference. Install as directed by Consultant.

1.13 REMEDIAL WORK

.1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.

.2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.14 LOCATION OF FIXTURES

.1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.

.2 Inform Consultant of conflicting installation. Install as directed.

1.15 FASTENINGS

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.

.2 Prevent electrolytic action between dissimilar metals and materials.

.3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.

.4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.

.5 Keep exposed fastenings to a minimum, space evenly and install neatly.

.6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.16 FASTENINGS - EQUIPMENT

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.

.3 Bolts may not project more than one diameter beyond nuts.

.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.17 PROTECTION OF WORK IN PROGRESS

.1 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Consultant.

1.18 EXISTING UTILITIES

.1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and pedestrian and vehicular traffic and/or building occupants and the construction schedule.

.2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

Section 01 71 00
Examination and Preparation

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 62 00 - Product Exchange Procedures.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit name, address, and registration information of land surveyor to Consultant.

.2 Submit documentation that verifies accuracy of site engineering work when requested by Consultant.

.3 Submit certificate signed by surveyor indicating elevations and locations of completed Work that conform to Contract Documents and those that do not conform.

1.3 QUALIFICATIONS

.1 Surveyor: Qualified, registered land surveyor, licensed to practise at the Place of the Work, and acceptable to Consultant.

1.4 RECORDS

.1 Maintain a complete, accurate log of control and survey work as Work progresses.

.2 On completion of foundations and major site improvements, prepare and submit a certified survey showing dimensions, locations, angles, and elevations of Work.

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

1.5 SUBSURFACE CONDITIONS

.1 Promptly notify Consultant in writing if discovered surface or subsurface conditions at place of work differ materially from those indicated in Contract Documents.

.2 Advise the Consultant of a reasonable assumption of probable conditions when determined.

.3 After prompt investigation, should Consultant determine that conditions do differ materially, instructions will be issued for changes in work as provided in Changes or Change Orders set out in Section 01 29 00.

Part 2 Products - Not Used

Part 3 Execution

3.1 EXAMINATION REQUIREMENTS

.1 Verification of Conditions:

.1 Verify that substrate conditions are acceptable for installation of materials, assemblies, and systems in accordance with manufacturer's instructions and recommendations.

.2 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.3 After uncovering, inspect conditions affecting performance of Work.

.4 Proceed with installation only after unacceptable conditions are remedied.

.5 Proceeding with cutting, patching, or installation means acceptance of existing conditions.

.6 Existing Services:

.1 Confirm locations and extent of service lines in area of Work before beginning work on site. Notify Consultant of findings.

.2 Remove abandoned service lines within 2 m of structures. Cap or seal lines at cut-off points as directed by Consultant.

.2 Pre-Installation Testing:

.1 Perform manufacturer-recommended pre-installation site test of substrate and submit report of test results indicating whether test results meet the manufacturer's minimum requirements and recommendations.

.3 Location of Equipment and Fixtures

.1 Location of equipment, fixtures, and outlets indicated or specified are to be considered as approximate.

.2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.

.3 Inform Consultant of impending installation and obtain approval for actual location.

.4 Submit field drawings to indicate relative position of various services and equipment when required by Consultant.

.4 Evaluation and Assessment:

.1 Verify that pre-existing substrate conditions are acceptable for installation of materials, assemblies, and systems in accordance with manufacturer's instructions and recommendations.

.2 Proceed with installation only after unacceptable conditions are remedied.

3.2 PREPARATION

.1 Common Requirements for Protection of In-Place Conditions:

.1 Provide supports to ensure structural integrity of surroundings. Provide devices and methods to protect other portions of Project from damage.

.2 Provide protection from weather and other potentially damaging conditions at areas which will be exposed when uncovering work. Maintain excavations free of water.

.2 Survey Reference Points:

.1 Existing base horizontal and vertical reference points are indicated on Drawings.

.2 Locate and confirm reference points before starting site work. Protect permanent reference points during construction.

.3 Changes or relocations should not be made without prior written notice to Consultant.

.4 Notify Consultant if a reference point is lost or destroyed.

.1 Surveyor to replace reference points in accordance with original land survey.

.5 Notify Consultant if a reference point requires relocation because of necessary changes in grades or locations.

.1 Surveyor to register new reference points with land titles department.

.6 Require surveyor to replace control points in accordance with original survey control.

.3 Survey Requirements:

.1 Establish two permanent benchmarks on site, referenced to established benchmarks by survey reference points. Record locations with horizontal and vertical data in Project record documents.

.2 Establish lines and levels, location and layout, by instrumentation.

.3 Stake for grading, fill and topsoil placement and landscaping features.

.4 Stake slopes and berms.

.5 Establish pipe invert elevations.

.6 Stake batter boards for foundations.

.7 Establish foundation column locationsand floor elevations.

.8 Establish lines and levels for mechanical and electrical work.

END OF SECTION

Section 01 73 29
Cutting and Patching

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 11 00 - Summary of Work.

.2 Section 01 25 00 - Substitution Procedures: Product options and substitutions.

.3 Section 01 32 00 - Construction Progress Documentation: Submittals and scheduling.

.4 Section 01 61 00 - Common Product Requirements.

.5 Section 07 84 00 - Firestopping.

.6 Individual Product Specification Sections:

.1 Cutting and patching incidental to work of the section.

.2 Advance notification to other sections of openings required in Work of those sections.

.3 Limitations on cutting structural members.

.7 This section describes requirements applicable to all Sections within Divisions 02 to 49.

.1 Cutting and patching incidental to work of the section.

.2 Advance notification to other sections of openings required in work of those sections.

.3 Limitations on cutting structural members.

1.2 SUBMITTALS

.1 Submit written request in advance of cutting or alteration that affects:

.1 Structural integrity of any element of Project.

.2 Integrity of weather exposed or moisture resistant element.

.3 Efficiency, maintenance, or safety of any operational element.

.4 Visual qualities of sight exposed elements.

.5 Work of Owner or separate contractor.

.2 Include in request:

.1 Identification of Project.

.2 Location and description of affected Work.

.3 Necessity for cutting or alteration.

.4 Description of proposed Work and Products to be used.

.5 Alternatives to cutting and patching.

.6 Effect on work of Owner or separate contractor.

.7 Written permission of affected separate contractor.

.8 Date and time work will be executed.

Part 2 Products

2.1 MATERIALS

.1 Primary Products: Those required for original installation.

.2 Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 25 00.

Part 3 Execution

3.1 EXAMINATION

.1 Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.

.2 After uncovering existing Work, assess conditions affecting performance of work.

.3 Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

.1 Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.

.2 Provide protection from elements for areas that may be exposed by uncovering work.

.3 Maintain excavations free of water.

3.3 CUTTING

.1 Execute cutting and fitting including excavation and fill to complete the Work.

.2 Uncover work to install improperly sequenced work.

.3 Remove and replace defective or non-conforming work.

.4 Remove samples of installed work for testing when requested.

.5 Provide openings in the Work for penetration of mechanical and electrical work.

.6 Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

.7 Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

3.4 PATCHING

.1 Execute patching to complement adjacent Work.

.2 Fit Products together to integrate with other Work.

.3 Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.

.4 Employ original installer to perform patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.

.5 Restore work with new Products in accordance with requirements of Contract Documents.

.6 Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.7 At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material to Section 07 84 00, to full thickness of the penetrated element.

.8 Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION

Section 01 74 00
Cleaning

Part 1 General

1.1 SECTION INCLUDES

.1 Progressive cleaning.

.2 Cleaning prior to acceptance.

1.2 RELATED REQUIREMENTS

.1 Section 01 74 19 - Construction Waste Managing and Disposal.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 REFERENCE STANDARDS

.1 Canadian Construction Documents Committee (CCDC)

.1 CCDC 2-2020, Stipulated Price Contract.

.2 CSA Group/International Organization for Standardization (CSA ISO):

.1 CSA ISO 14024:20, Environmental labels and declarations – Type 1 – environmental labelling – Principles and procedures

.3 Green Seal, Inc. (GS):

.1 GS-34-2017, Green Seal Standard for Cleaning and Degreasing Agents

.2 GS-37-2022, Green Seal Standard for Cleaning Products for Industrial and Institutional Use

.3 GS-40-2020, Green Seal Standard for Floor-Care Products for Industrial and Institutional Use

.4 GS-52-2022, Green Seal Standard for Specialty Cleaning Products for Household Use

.5 GS-53-2022, Green Seal Standard for Specialty Cleaning Products for Industrial and Institutional Use

.4 Underwriters' Laboratories Inc. (UL):

.1 UL 2759-2011, Standard for Sustainability for Hard Surface Cleaners

.2 UL 2767-2011, Standard for Paint and Varnish Remover

.3 UL 2777-2011, Standard for Sustainability for Hard Floor Care Products

.4 UL 2791-2012, Standard for Sustainability for Drain and/or Grease Trap Additives

.5 UL 2792-2012, Standard for Sustainability for Cleaning and Degreasing Compounds: Biologically-based

.6 UL 2795-2012, Standard for Sustainability for Carpet and Upholstery Care Products

.7 UL 2796-2012, Standard for Sustainability for Odor Control Products

.8 UL 2798-2012, Standard for Sustainability for Biological Digestion Additives for Cleaning and Odour Control

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Coordination:

.1 Coordinate with Section 23 01 05 - Operation and Maintenance of HVAC Systems During Construction for related cleaning requirements.

.2 Notify the Consultant if cleaning is required due to actions of the Owner or other contractors.

.2 Scheduling: Schedule cleaning operations so resulting dust and other contaminants will not fall on recently painted surfaces or contaminate building ventilation systems.

1.5 WASTE MANAGEMENT AND DISPOSAL

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

Part 2 Products

2.1 CLEANING MATERIALS

.1 Cleaning Agents and Materials: Low VOC content.

Part 3 Execution

3.1 PREPARATION

.1 Provide adequate temporary ventilation during use of volatile or noxious cleaning substances.

.2 If no indoor air quality plan is in place comply with this section:

.1 Protect indoor air quality during construction and prior to occupancy

.2 Minimize exposure to dust, fumes, VOCs, and other airborne contaminants

.3 Prevent contamination of HVAC systems and finished materials

.4 Comply with applicable standards (e.g., CSA, ASHRAE, LEED, OBC best practices)

.1 ASHRAE 62.1 – Ventilation for Acceptable Indoor Air Quality

3.2 GENERAL REQUIREMENTS

.1 Use cleaning products recommended by, or acceptable to, the manufacturer of surfaces to be cleaned. Use cleaning products that will not void installed products' warranties.

.1 Sustainability characteristics:

.1 Use cleaning products certified to one or more of the following standards:

.1 A type 1 environmental labelling program in accordance with CSA ISO 14024;

.2 EPA's Safety Choice Standard;

.3 GS-34, GS-37, CS-40, GS-52, GS-53; or

.4 UL 2759, UL 2767, UL 2777, UL 2791, UL 2792, UL 2795, UL 2796, or UL 2798.

.2 Use cleaning products in accordance with manufacturer's instructions.

.3 Test each cleaning product and procedure in a small inconspicuous area to verify no adverse reaction occurs with surface before proceeding with cleaning remainder of surface.

.4 Clean stained surfaces as soon as possible.

3.3 PROGRESS CLEANING

.1 Maintain the Work in a tidy and safe condition, free from accumulation of waste materials and debris, including when caused by the Owner or other contractors.

.2 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.

.1 Dispose of waste materials and debris off site.

.2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

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

.4 Containers:

.1 Provide on-site steel framed, hinged lid containers for collection of waste materials and debris.

.2 Provide and use clearly marked, separate bins for recycling.

.3 Refer to Section 01 74 19.

.5 Remove waste material and debris from site and deposit in waste container at end of each working day.

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

.7 Remove dust, debris, and other contaminants from wall and other cavities before enclosing.

.8 Clean interior areas before start of finish work. Maintain areas free of dust and other contaminants during finishing operations.

.9 Provide adequate ventilation during use of volatile or noxious substances. Use of enclosure ventilation systems is not permitted for this purpose.

.10 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

.11 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

.12 Clean dirt or mud tracked onto paved or surfaced roadways.

.13 Clear snow and ice from access to buildings, sidewalks and paving, in accordance with local regulations. Remove cleared snow from site or if approved Pile cleared snow in designated areas.

3.4 CLEANING PRIOR TO ACCEPTANCE - SUBSTAINTIAL PERFORMANCE

.1 Additional notes in final cleaning to be followed to complete project

.2 Prior to applying for Substantial Performance of the Work, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

.3 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

.4 Prior to final review, remove surplus products, tools, construction machinery and equipment.

.5 Remove waste products and debris including that caused by Owner or other Contractors.

.6 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.

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

.8 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.

.9 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, floors.

.10 Clean lighting reflectors, lenses, and other lighting surfaces.

.11 Vacuum clean and dust building interiors, behind grilles, louvres and screens.

.12 Clean and polish surface finishes, as recommended by manufacturer.

.13 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

.14 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.

.15 Remove dirt and other disfiguration from exterior surfaces.

.16 Clean and sweep roofs, gutters, areaways, and sunken wells.

.17 Sweep and wash clean paved areas.

.18 Clean equipment and fixtures to a sanitary condition; replace filters of mechanical equipment.

.19 Clean roof surfaces, down-spouts, and drainage components.

.20 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

.21 Remove snow and ice from access to facilities.

3.5 FINAL CLEANING

.1 Execute final cleaning prior to final project assessment. Refer to Section 01 74 00.

.2 Remove surplus products, tools, construction machinery, and equipment not required for performance of remaining Work before Consultant's final review.

.3 Remove waste and surplus materials, rubbish, and construction facilities from the site.

.4 Replace broken, scratched, or otherwise disfigured glass and mirrors.

.5 Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

.6 Clean and polish exposed glass-, mirror-, stainless steel-, and chrome-surfaces.

.7 Clean hardware, wall tile, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures.

.8 Remove stains, spots, marks, and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors.

.9 Remove dust and vacuum interior building surfaces, behind grilles, louvres, and screens.

.10 Wax, seal, or otherwise apply treatments to floor finishes as recommended by each flooring manufacturer.

.11 Remove paint from:

.1 mechanical nameplates;

.2 electrical nameplates; and

.3 permanent labels required by authorities having jurisdiction or regulatory agencies, such as CSA, cUL, NFPA, ULC, WHI, etc.

.12 Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

.13 Clean plumbing fixtures to a sanitary condition.

.14 Clean permanent filters and replace disposable filters for plumbing and HVAC equipment used during construction.

.15 Replace all disposable filters in equipment during construction. Ensure owner have new clean filters for Ready-For -Takeover

.16 Remove dust and other contaminants from lighting reflectors, lenses, lamps, bulbs, and other lighting surfaces.

.17 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

.18 Clean and sweep roofs, gutters, areaways, downspouts, sunken window wells, and related drainage systems.

.19 Remove dirt and other disfiguration from exterior building surfaces.

.20 Re-clean areas soiled by workers before Owner occupancy.

.21 Broom clean and power wash exterior sidewalks and stairs.

.22 Sweep and power wash clean paved areas , including parking areas and roads.

.23 Clean landscaped areas of construction-related waste and leaves.

.24 Remove snow and ice from primary pedestrian and vehicular access routes to building.

END OF SECTION

Section 01 74 19
Waste Management and Disposal

Part 1 General

1.1 SUMMARY

.1 This Section includes requirements for management of construction waste and disposal, which forms the Contractor 's commitment to reduce and divert waste materials from landfill and includes the following:

.1 Preparation of a Draft Construction Waste Management Plan that will be used to track the success of the Construction Waste Management Plan against actual waste diversion from landfill.

.2 Preparation of a Construction Waste Management Plan that provides guidance on a logical progression of tasks and procedures to be followed in a pollution prevention program to reduce or eliminate the generation of waste, the loss of natural resources, and process emissions through source reduction, reuse, recycling, and reclamation.

.3 Preparation of monthly progress reports indicating cumulative totals representing progress towards achieving diversion and reduction goals of waste materials away from landfill and identifying any special programs, landfill options or alternatives to landfill used during construction.

.4 Preparation of a Construction Waste Management Report containing detailed information indicating total waste produced by the Project, types of waste material and quantity of each material, and total waste diverted and diversion rates indicated as a percentage of the total waste produced.

.2 Owner has established that this Project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors be employed by the Contractor.

1.2 RELATED REQUIREMENTS

.1 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 DEFINITIONS

.1 Clean Waste: Untreated and unpainted; not contaminated with oils, solvents, sealants or similar materials.

.2 Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, re-modeling, repair and demolition operations.

.3 Hazardous: Exhibiting the characteristics of hazardous substances including properties such as ignitability, corrosiveness, toxicity, or reactivity.

.4 Non-hazardous: Exhibiting none of the characteristics of hazardous substances, including properties such as ignitability, corrosiveness, toxicity, or reactivity.

.5 Non-toxic: Not poisonous to humans either immediately or after a long period of exposure.

.6 Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

.7 Recycle: To remove a waste material from the Project site to another site for remanufacture into a new product for reuse by others.

.8 Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form; recycling does not include burning, incinerating, or thermally destroying waste.

.9 Return: To give back reusable items or unused products to vendors for credit.

.10 Reuse: To reuse a construction waste material in some manner on the Project site.

.11 Salvage: To remove a waste material from the Project site to another site for resale or reuse by others.

.12 Sediment: Soil and other debris that has been eroded and transported by storm or well production run off water.

.13 Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

.14 Toxic: Poisonous to humans either immediately or after a long period of exposure.

.15 Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

.16 Volatile Organic Compounds (VOC's): Chemical compounds common in and emitted by many building products over time through outgassing:

.1 Solvents in paints and other coatings;

.2 Wood preservatives; strippers and household cleaners;

.3 Adhesives in particleboard, fiberboard, and some plywood; and foam insulation.

.4 When released, VOC's can contribute to the formation of smog and can cause respiratory tract problems, headaches, eye irritations, nausea, damage to the liver, kidneys, and central nervous system, and possibly cancer.

.17 Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

.18 Construction Waste Management Plan: A project related plan for the collection, transportation, and disposal of the waste generated at the construction site; the purpose of the plan is to ultimately reduce the amount of material being landfilled.

1.4 REFERENCE STANDARDS

.1 ASTM International (ASTM)

.1 ASTM E1609 01, Standard Guide for Development and Implementation of a Pollution Prevention Program

.2 Recycling Certification Institute (RCI)

.1 RCI Certification Construction and Demolition Materials Recycling

1.5 ADMINISTRATIVE REQUIREMENTS

.1 Coordination: Coordinate waste management requirements with all Divisions of the Work for the Project, and ensure that requirements of the Construction Waste Management Plan are followed.

.2 Preconstruction Meeting: Arrange a pre-construction meeting in accordance with Section 01 31 00 - Project Management and Coordination before starting any Work of the Contract attended by the Owner, Contractor, affected Subcontractor 's and Consultant to discuss the Contractor 's Construction Waste Management Plan and to develop mutual understanding of the requirements for a consistent policy towards waste reduction and recycling.

1.6 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit required information in accordance with Section 01 33 00 - Submittal Procedures.

.2 Action Submittals: Provide the following submittals before starting any work of this Section:

.1 Draft Construction Waste Management Plan (Draft CWM Plan): Submit to Consultant a preliminary analysis of anticipated site generated waste by listing a minimum of five (5) construction or demolition waste streams that have potential to generate the most volume of material indicating methods that will be used to divert construction waste from landfill and source reduction strategies; Consultant will provide commentary before development of Contractor 's Construction Waste Management Plan.

.2 Construction Waste Management Plan (CWM Plan): Submit a CWM Plan for this Project before any waste removal from site and that includes the following information:

.1 Material Streams: Analysis of the proposed jobsite waste being generated, including material types and quantities forming a part of identified material streams in the Draft CWM Plan; materials removed from site destined for alternative daily cover at landfill sites and land clearing debris cannot be considered as contributing to waste diversion and will be included as a component of the total waste generated for the site.

.2 Recycling Haulers and Markets: Investigate local haulers and markets for recyclable materials, and incorporate into CWM Plan.

.3 Alternative Waste Disposal: Prepare a listing of each material proposed to be salvaged, reused, recycled or composted during the course of the Project, and the proposed local market for each material.

.4 Landfill Options: The name of the landfill where trash will be disposed of; landfill materials will form a part of the total waste generated by the Project.

.5 Materials Handling Procedures: A description of the means by which any recycled waste materials will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities.

.6 Transportation: A description of the means of transportation of the recyclable materials, whether materials will be site separated and self hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site, and destination of materials.

1.7 PROJECT CLOSEOUT SUBMITTALS

.1 Record Documentation and Diversion Documentation: Submit as constructed information in accordance with Section 01 78 00 - Closeout Submittals as follows:

1.8 QUALITY ASSURANCE

.1 Resources for Development of Construction Waste Management Report (CWM Report): The following sources may be useful in developing the Draft Construction Waste Management Plan:

.1 Recycling Haulers and Markets: Investigate local haulers and markets for recyclable materials, and incorporate into CWM Plan.

.2 Waste-to-Energy Systems: Investigate local waste-to-energy incentives where systems for diverting materials from landfill for reuse or recycling are not available.

.2 Certifications: Provide proof of the following during the course of the Work:

.1 Compliance Certification: Provide proof that recycling center is third party verified and is listed as a Certified Facility through the registration and certification requirements of the Recycling Certification Institute.

1.9 DELIVERY, STORAGE, AND HANDLING

.1 Storage Requirements: Implement a recycling/reuse program that includes separate collection of waste materials as appropriate to the Project waste and the available recycling and reuse programs in the Project area.

.2 Handling Requirements: Clean materials that are contaminated before placing in collection containers and ensure that waste destined for landfill does not get mixed in with recycled materials:

.1 Deliver materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to recycling process.

.2 Arrange for collection by or delivery to the appropriate recycling or reuse facility.

.3 Hazardous Waste and Hazardous Materials: Handle in accordance with applicable regulations.

Part 2 Products - Not Used

Part 3 Execution

3.1 (CWM PLAN) IMPLEMENTATION

.1 Manager: Contractor is responsible for designating an on site party or parties responsible for instructing workers and overseeing and documenting results of the CWM Plan for the Project.

.2 Distribution: Distribute copies of the CWM Plan to the job site foreman, each Subcontractor, the Owner, the Consultant and other site personnel as required to maintain CWM Plan.

.3 Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, composting and return methods being used for the Project to Subcontractor 's at appropriate stages of the Project.

.4 Separation Facilities: Lay out and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, composting and return:

.1 Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.

.2 Hazardous wastes shall be separated, stored, and disposed of in accordance with local regulations.

.5 Progressive Documentation: Submit a monthly summary of waste generated by the Project to ensure that waste diversion goals are on track with Project requirements:

.1 Submittal of waste summary can coincide with application for progress payment, or similar milestone event as agreed upon between the Owner, Contractor and Consultant.

.2 Monthly waste summary shall contain the following information:

.1 The amount in tonnes or m^3 and location of material landfilled,

.2 The amount in tonnes or m^3 and location of materials diverted from landfill, and

.3 Indication of progress based on total waste generated by the Project with materials diverted from landfill as a percentage.

3.2 SUBCONTRACTOR'S RESPONSIBILITY

.1 Subcontractor 's shall cooperate fully with the Contractor to implement the CWM Plan.

.2 Failure to cooperate may result in the Owner not achieving their environmental goals, and may result in penalties being assessed by the Contractor to the responsible Subcontractor 's.

END OF SECTION

Section 01 75 16
Startup Procedures

Part 1 General

1.1 SECTION INCLUDES

.1 Starting equipment and systems.

.2 Verification of installation and system operation.

.3 Testing, adjusting and balancing coordination.

.4 Preparation of systems for demonstration and training.

.5 To bring the facility to a fully operational state, free of deficiencies.

.6 Testing, adjusting and balancing of mechanical and electrical systems

1.2 RELATED REQUIREMENTS

.1 Section 01 79 00 - Demonstration and Training.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 SUBMISSIONS

.1 Submit manufacturer start-up procedures for all major equipment.

.2 Submit completed start-up and verification reports for all systems.

.3 Submit confirmation that systems are complete, operational, and ready for demonstration and training.

1.4 TESTING, ADJUSTING AND BALANCING

.1 Perform testing, adjusting and balancing (TAB) of all mechanical and electrical systems to ensure systems operate in accordance with the Contract Documents.

.2 TAB shall include, but is not limited to:

- .1 Air systems: balancing of supply, return, and exhaust air systems.
- .2 Hydronic systems: balancing of heating and cooling water systems.
- .3 Verification of control sequences and system operation.
- .4 Adjustment of equipment to achieve specified performance.

.3 Engage qualified personnel experienced in TAB to perform the work.

.4 Submit TAB reports indicating:

- .1 Measured vs design values.
- .2 System deficiencies.
- .3 Corrective actions taken.

.5 Complete TAB prior to:

.1 Performance testing.

.2 Demonstration and training.

.6 Rebalance systems after corrections or deficiencies are addressed.

Part 3 Execution

3.1 STARTING SYSTEMS

.1 Coordinate schedule for start-up of various equipment and systems.

.2 Notify Consultant and Owner, seven (7) days prior to start-up of each item.

.3 Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.

.4 Verify tests, metre readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

.5 Verify that wiring and support components for equipment are complete and tested.

.6 Execute start-up under supervision of qualified personnel in accordance with manufacturers' written instructions

.7 When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

.8 Submit a written report in accordance with Section 01 33 00 that equipment or system has been properly installed and is functioning correctly.

3.2 START-UP REPORT

.1 Contractor shall develop, complete and submit start-up report forms for all equipment and systems.

.2 Include the following:

.1 Technical data (shop drawings and installed conditions).

.2 Installation verification checks.

.3 Operational checks.

.3 Include manufacturer start-up sheets and certifications.

.4 Submit completed reports to Consultant for review prior to Substantial Completion.

.5 Maintain records on site and keep current throughout construction.

3.3 CONTRACTOR START UP

.1 Contractor to perform the following during start-up:

.1 Start equipment and systems.

.2 Perform testing, adjusting and balancing of all systems.

.3 Coordinate all trades and suppliers to achieve fully operational systems

.4 Prepare systems for demonstration and training in accordance with Section 01 79 00.

.2 Complete and submit start-up reports including:

.1 Contractor's system and equipment start up reports.

.2 Manufacturers' equipment start up reports.

.3 Testing and balancing reports.

.3 Verify that systems:

.1 Are complete and operational.

.2 Perform in accordance with Contract Documents.

.3 Are ready for demonstration and instruction.

.4 Review Contract Documents and inspect the Work to ensure completeness of the Work and compliance with requirements of Contract Documents.

.5 Correct Contract deficiencies and defects identified as a result of the foregoing and as may be identified by the owner.

.6 Execute and complete approved Change Orders.

.7 Perform other work and activities required for fulfillment of prerequisites to Interim Acceptance of the Work.

.8 The following will be performed to an on-going cycle of:

.1 Owner's inspections.

.2 Documentation of results.

.3 Diagnosis of problems.

.4 Correction of Contract Deficiencies and execution of Change Orders as required.

.5 Verification of results.

3.4 PERFORMANCE TESTING

.1 Performance testing shall be carried out after completion of testing, adjusting and balancing.

.2 Testing shall confirm systems operate in accordance with the Contract Documents.

.3 Contractor shall correct deficiencies identified during testing prior to demonstration and training.

.4 Consultant reserves the right to witness start-up, testing, and demonstration activities and require re-testing where systems do not perform in accordance with the Contract Documents

3.5 SEASONAL CONSTRAINTS

.1 Notwithstanding requirements in this section, additional separate cycles of Contractor start-up, performance testing and fine tuning may be necessitated at a later time on equipment and systems whose full operation is dependent on seasonal conditions.

.2 Contractor's responsibilities with respect to later facility start-up activities are specified in this section.

3.6 PARTIAL UTILIZATION OF WORK

.1 When partial utilization of the Work is required, the applicable requirements specified in this section apply to the part(s) of the Work to be utilized.

END OF SECTION

Section 01 77 00
Closeout Procedures

Part 1 General

1.1 RELATED REQUIREMENTS

.1 This section describes requirements applicable to all sections within Divisions 02 to 49.

.2 Section 01 78 00: Closeout Submittals.

.3 Section 01 45 00 - Quality Control.

1.2 REFERENCE STANDARDS

.1 Canadian Construction Documents Committee (CCDC)

.1 CCDC 2- 2020, Stipulated Price Contract.

.2 DOC 14- 2000, Design-Build Stipulated Price Contract.

.3 DOC 15- 2000, Design-Builder/ Consultant Contract.

.2 Canadian Environmental Protection Act (CEPA)

.1 SOR/2008-197, Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Acceptance of Work Procedures:

.1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.

.1 Notify Consultant in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.

.2 Request Consultant's inspection.

.2 Consultant's Inspection:

.1 Consultant and Contractor to inspect Work and identify defects and deficiencies.

.2 Contractor to correct Work as directed.

.3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:

.1 Work: completed and inspected for compliance with Contract Documents.

.2 Defects: corrected and deficiencies completed.

.3 Equipment and systems: tested, adjusted and fully operational.

.4 Certificates required by Fire Commissioner and Utility companies: submitted.

.5 Operation of systems: demonstrated to Owner's personnel.

.6 Commissioning of mechanical systems: completed in accordance with 01 91 13 - General Commissioning Requirements and 3 and copies of final Commissioning Report submitted to Consultant.

.7 Underground storage tank inspection documentation, registration, forms, decommissioning and removal in accordance with CEPA SOR/2008-197.

.8 Work: complete and ready for final inspection.

.4 Final Inspection:

.1 When completion tasks are done, request final inspection of Work by Consultant, and Contractor.

.2 When Work incomplete according to Consultant and Owner, complete outstanding items and request re-inspection.

.5 Declaration of Substantial Performance: when Consultant considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.

.6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.

.7 Final Payment:

.1 When Consultant considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.

.2 Refer to CCDC 2: when Work deemed incomplete by Consultant, complete outstanding items and request re-inspection.

.8 Provide all closeout Documentation as per Section 01 78 00 Closeout Submittals.

.1 Where a specification section does not specifically identify a warranty requirement, submit the standard published manufacturer's warranty for products incorporated into the Work. Such warranties shall be in addition to, and shall not limit or replace, the Contractor's warranty obligations under the Contract Documents.

.9 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

1.4 FINAL CLEANING

.1 Clean in accordance with Section 01 74 00 - Cleaning.

.1 At completion of work, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all surfaces exposed to view; leave project clean and ready for occupancy.

.2 Be responsible for final cleaning of both new work areas and existing areas affected by new work; including but not limited to the following:

.1 Employ experiences workers, or professional cleaners, for final cleaning.

.2 Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from all sight-exposed interior and exterior finished surfaces; polish resilient and ceramic surfaces so designated to shine finish. Vacuum carpet.

.3 Clean and polish new and existing glass and mirrors.

.4 Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.

.5 Broom-clean paved surfaces; rake clean other surfaces of grounds.

.6 Clean filters, exposed ductwork and structure.

.7 Clean bulbs, lamps and lenses and replace those burned out or damaged.

.8 Clean new doors and existing doors to remain. Refinish existing wood doors with an oil stain to match existing.

.9 Clean inside and out of new and existing millwork.

.10 Clean and treat resilient flooring per manufacturer’s recommendation.

.11 Cleaning of Vinyl Base

.1 Scrub and wash streak free.

.12 Final cleaning will be done to the Owner’s satisfaction before substantial performance can be claimed.

.3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

Section 01 78 00
Closeout Submittals

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 45 00 - Quality Control.

.3 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.2 REFERENCE STANDARDS

.1 Canadian Environmental Protection Act (CEPA):

.1 SOR/2008-197, Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations

1.3 INSPECTIONS AND DECLARATIONS

.1 Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of work, identify deficiencies and defects, and repair as required to conform to contract documents.

.1 Notify Consultant in writing of satisfactory completion of Contractor's and Sub Contractor’s Inspection and that corrections have been made.

.2 Request Consultant's Inspection.

.2 Consultant's Inspection: Consultant and Contractor will perform inspection of work to identify defects or deficiencies. Correct defective and deficient work accordingly.

.3 Completion: Submit written certificate that following have been performed:

.1 Work has been completed and inspected for compliance with contract documents.

.2 Defects have been corrected and deficiencies have been completed.

.3 Equipment and systems have been tested, adjusted, balanced, and are fully operational.

.4 Certificates required by authorities having jurisdiction have been submitted.

.5 Operation of systems have been demonstrated to Owner's personnel.

.6 Work is complete and ready for final inspection.

.4 Final Inspection: When items noted above are completed, request final inspection of work by Consultant. If work is deemed incomplete by Consultant, complete outstanding items and request re-inspection.

.5 Declaration of Substantial Performance: When Consultant consider deficiencies and defects have been corrected and it appears requirements of contract have been substantially performed, make application for Substantial Performance of the Work.

.6 Commencement of Warranty Periods: The date of Substantial Performance of the Work shall be the date for commencement of the warranty period.

.7 Commencement of Lien Periods: The date of publication of the certificate of Substantial Performance of the Work shall be the date for commencement of the lien period, unless required otherwise by the lien legislation applicable at the Place of the Work.

.8 Final Payment: When Consultant and Owner consider final deficiencies and defects have been corrected and it appears requirements of Contract have been completed, make application for final payment.

.9 Payment of Hold-back: After issuance of certificate of Substantial Performance of the Work, submit an application for payment of hold-back amount.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Pre-warranty Meeting:

.1 Convene meeting one week before Contract completion with Consultant, in accordance with Section 01 31 00 Project Management and Coordination to:

.1 Verify Project requirements.

.2 Review installation instructions and warranty requirements.

.2 Consultant to establish communication procedures for:

.1 Notifying construction warranty defects.

.2 Determine priorities for type of defects.

.3 Determine reasonable response time.

.3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.

.4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Four weeks before Substantial Performance of the Work, submit to the Consultant, one final copies of operating and maintenance manuals in English.

.1 Prepare instructions and data using personnel experienced in maintenance and operation of described products.

.2 Known information that is missing or not available at the time of this submission shall be identified with a contrasting colour placeholder page clearly indicating the information and the expected date to be received. The progress copy will be returned with Consultant's comments no more than 2 weeks later for

Contractor/Subcontractor completion. Re-submit one (1) week prior to Substantial Performance the completed document for final Consultant approval. Contractor to provide one (1) pdf copy and three (3) hard copies of the final document to the Consultant prior to Substantial Performance. One (1) hard copy of the above may be delivered to the site if directed by the Owner.

.3 Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work.

.4 Provide evidence, if requested, for type, source and quality of products supplied.

.5 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

.6 Pay costs of transportation.

1.6 FORMAT

.1 Organize data as instructional manual.

.2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 8.5 x 11 inch with spine and face pockets.

.3 When multiple binders are used correlate data into related consistent groupings.

.1 Identify contents of each binder on spine.

.4 Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.

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

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

.7 Text: manufacturer's printed data, or typewritten data.

.8 Drawings: Provide with reinforced punched binder tab.

.1 Bind in with text; fold larger drawings to size of text pages.

.9 Provide 1:1 scaled CAD files in *.PDF format on USB drive.

.10 Provide and maintain a cloud-based document repository containing all project records, including but not limited to drawings, specifications, shop drawings, reports, and close-out documentation. Documents shall be organized in a structured and clearly labeled folder system for efficient navigation. The repository shall remain accessible to the Owner for a minimum period of three (3) years following Ready-for-Take-Over.

1.7 CONTENTS - PROJECT RECORD DOCUMENTS

.1 Table of Contents: Provide:

.1 Title of Project

.2 Date of submission

.3 Names, addresses, and telephone numbers of Consultant and Contractor with name of responsible parties.

.4 Schedule of products and systems, indexed to content of volume.

.2 For each product or system:

.1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

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

.1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00.

.4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

.5 Typewritten Text: As required to supplement product data.

.1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

.6 Certificate of Acceptance: Relevant certificates issued by authorities having jurisdiction, including code compliance certificate.

1.8 AS-BUILT DOCUMENTS AND SAMPLES

.1 Maintain, in addition to requirements in General Conditions, one record copy of:

.1 Contract Drawings.

.2 Specifications.

.3 Addenda.

.4 Change Orders and other modifications to Contract.

.5 Reviewed shop drawings, product data, and samples.

.6 Site test records.

.7 Inspection certificates.

.8 Manufacturer's certificates.

.2 Store record documents and samples in site office apart from documents used for construction.

.1 Provide files, racks, and secure storage.

.3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.

.1 Label each document "PROJECT RECORD" in neat, large, printed letters.

.4 Maintain record documents in clean, dry and legible condition.

.1 Do not use record documents for construction purposes.

.5 Keep record documents and samples available for inspection by Consultant.

1.9 RECORD DOCUMENTS

.1 Four (4) weeks prior to Substantial Performance of the Work, provide on DVD the marked up information from the as-built documents to a master set of drawing and specification files provided by the Consultant, as follows:

.1 Drawings: Adobe Acrobat and AutoCAD current release.

.2 Specifications: Adobe Acrobat and Microsoft Word.

.2 Mark revised documents as "RECORD DOCUMENTS". Include all revisions, with special emphasis on structural steel, electrical, reinforced concrete, and mechanical.

.3 Employ a competent computer draftsperson to indicate changes on the electronic set of record drawings. Provide updated record drawings in AutoCAD current release.

.4 Employ a competent specification writer to indicate changes to the electronic set of record specifications. Provide updated record specifications in Adobe Acrobat and Microsoft Word on USB drive.

.5 Submit completed record documents to Consultant on a USB drive, accompanied by one (1) hard copy set.

1.10 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS

.1 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Consultant.

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

.3 Record information concurrently with construction progress.

.1 Do not conceal Work until required information is recorded.

.2 Failure to document this information may result in adjustments to the billing.

.4 Contract Drawings and shop drawings: mark each item to record actual construction, including:

.1 Measured depths of elements of foundation in relation to finish first floor datum.

.2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

.3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.

.4 Site changes of dimension and detail.

.5 Changes made by change orders.

.6 Details not on original Contract Drawings.

.7 Referenced Standards to related shop drawings and modifications.

.5 Specifications: mark each item to record actual construction, including:

.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.

.2 Changes made by Addenda and change orders.

.6 Other Documents: Maintain manufacturer's certifications, inspection certifications, and site test records, required by individual specifications Sections.

.7 Provide digital photos, if requested, for site records.

1.11 FINAL SURVEY

.1 Submit final site survey certificate in accordance with Section 01 71 00 - Examination and Preparation, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

.2 Inaccurate or neglectful information shall become a liability of the Contractor.

1.12 EQUIPMENT AND SYSTEMS

.1 For each item of equipment and each system include description of unit or system, and component parts.

.1 Give function, normal operation characteristics and limiting conditions.

.2 Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.

.3 Include installed colour coded wiring diagrams.

.4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences.

.1 Include regulation, control, stopping, shut-down, and emergency instructions.

.2 Include summer, winter, and any special operating instructions.

.5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.6 Provide servicing and lubrication schedule, and list of lubricants required.

.7 Include manufacturer's printed operation and maintenance instructions.

.8 Include sequence of operation by controls manufacturer.

.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

.10 Provide installed control diagrams by controls manufacturer.

.11 Provide Contractor's coordination drawings, with installed colour coded piping diagrams.

.12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

.13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

.14 Include test and balancing reports as specified in Section 01 45 00 - Quality Control and Section 01 91 00- Commissioning.

.15 Underground and Above ground storage tank inspection documentation, registration, forms, decommissioning and removal in accordance with CEPA SOR/2008-197.

.16 Additional requirements: As specified in individual specification Sections.

1.13 MATERIALS AND FINISHES

.1 Building products, applied materials, and finishes: Include product data, with catalogue number, size, composition, and colour and texture designations.

.1 Provide information for re-ordering custom manufactured products.

.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Moisture-protection and weather-exposed products: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.4 Additional requirements: As specified in individual specifications Sections.

1.14 MAINTENANCE MATERIALS

.1 Spare Parts:

.1 Provide spare parts, in quantities specified in individual specification Sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to location as directed; place and store.

.4 Receive and catalogue items.

.1 Submit inventory listing to Consultant.

.2 Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit before final payment.

.2 Extra Stock Materials:

.1 Provide maintenance and extra materials, in quantities specified in individual specification Sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to location as directed; place and store.

.4 Receive and catalogue items.

.1 Submit inventory listing to Consultant.

.2 Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit before to final payment.

.3 Special Tools:

.1 Provide special tools, in quantities specified in individual specification Section.

.2 Provide items with tags identifying their associated function and equipment.

.3 Deliver to location as directed; place and store.

.4 Receive and catalogue items.

.1 Submit inventory listing to Consultant.

.2 Include approved listings in Maintenance Manual.

1.15 DELIVERY, STORAGE, AND HANDLING

.1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.

.2 Store in original and undamaged condition with manufacturer's seal and labels intact.

.3 Store components subject to damage from weather in weatherproof enclosures.

.4 Store paints and freezable materials in a heated and ventilated room.

.5 Remove and replace damaged products at own expense and for review by Consultant.

1.16 WARRANTIES AND BONDS

.1 Develop warranty management plan to contain information relevant to Warranties.

.2 Submit warranty management plan, 30 days before planned pre-warranty conference, to Consultant approval.

.3 Warranty management plan to include required actions and documents to assure that Consultant receives warranties to which it is entitled.

.4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.

.5 Submit, warranty information made available during construction phase, to Consultant for approval before each monthly pay estimate.

.6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:

.1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.

.2 List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

.3 Obtain warranties and bonds, executed in duplicate by Subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.

.4 Verify that documents are in proper form, contain full information, and are notarized.

.5 Co-execute submittals when required.

.6 Retain warranties and bonds until time specified for submittal.

.7 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.

.8 Conduct joint 4 month and 9 month warranty inspection, measured from time of acceptance, by Consultant.

.9 Include information contained in warranty management plan as follows:

.1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, Subcontractors, manufacturers, or suppliers involved.

.2 Listing and status of delivery of Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, and transformers, etc....

.3 Provide list for each warranted equipment, item, feature of construction or system indicating:

.1 Name of item.

.2 Model and serial numbers.

.3 Location where installed.

.4 Name and phone numbers of manufacturers or suppliers.

.5 Names, addresses and telephone numbers of sources of spare parts.

.6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.

.7 Cross-reference to warranty certificates as applicable.

.8 Starting point and duration of warranty period.

.9 Summary of maintenance procedures required to continue warranty in force.

.10 Cross-Reference to specific pertinent Operation and Maintenance manuals.

.11 Organization, names and phone numbers of persons to call for warranty service.

.12 Typical response time and repair time expected for various warranted equipment.

.4 Contractor's plans for attendance at 4 and 9 month post-construction warranty inspections.

.5 Procedure and status of tagging of equipment covered by extended warranties.

.6 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

.10 Respond in timely manner to oral or written notification of required construction warranty repair work.

.11 Written verification to follow oral instructions.

.1 Failure to respond will be cause for the Consultant to proceed with action against Contractor.

.12 Where a specification section does not specifically identify a warranty requirement, submit the standard published manufacturer's warranty for products incorporated into the Work. Such warranties shall be in addition to, and shall not limit or replace, the Contractor's warranty obligations under the Contract Documents.

1.17 WARRANTY TAGS

.1 Tag, at time of installation, each warranted item. Provide durable, oil- and water-resistant tag approved by Consultant.

.2 Attach tags with copper wire and spray with waterproof silicone coating.

.3 Leave date of acceptance until project is accepted for occupancy.

.4 Indicate the following information on tag:

.1 Type of product/material.

.2 Model number.

.3 Serial number.

.4 Contract number.

.5 Warranty period.

.6 Inspector's signature.

.7 Construction Contractor.

Part 2 Products - Not Used

Part 3 Execution - Not Used

END OF SECTION

Section 01 79 00
Demonstration and Training

Part 1 General

1.1 SECTION INCLUDES

.1 Procedures for demonstration and instruction of Products, equipment and systems to Owner's personnel.

.2 Seminars and demonstrations.

.3 Coordination of all demonstration and training activities by the Contractor.

1.2 RELATED REQUIREMENTS

.1 Section 01 33 00 - Submittal Procedures

.2 Section 01 75 16 - Startup Procedures

.3 Section 01 78 00 - Closeout Submittals.

.4 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 DESCRIPTION

.1 Demonstrate operation and maintenance of equipment, building envelope, and systems to Owner's personnel after completion of system start-up, testing, and balancing, and minimum two (2) weeks prior to Substantial Performance.

.2 Owner will provide list of personnel to receive instructions, and will coordinate their attendance at agreed-upon times.

.3 Contractor shall coordinate all training activities and ensure participation of all required trades and suppliers.

1.4 COMPONENT DEMONSTRATION

.1 Mechanical and Electrical trades together with manufacturer's representative, shall demonstrate operation of equipment and systems.

.2 Equipment shall be:

.1 Fully installed and operational.

.2 Started up in accordance with Section 01 75 16

.3 Tested and balanced in accordance with Section 01 75 19

.3 Demonstrations shall not proceed until:

.1 Start-up reports have been submitted and reviewed

.2 Systems are operating in accordance with Contract Documents

.4 Request written confirmation that demonstration and instruction have been completed and are satisfactory.

1.5 SUBMITTALS

.1 Submit schedule of time and date for demonstration of each item of equipment and each system two (2) weeks prior to designated dates, for Consultant's approval.

.2 Submit reports within one (1) week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.

.3 Give time and date of each demonstration, with list of persons present.

1.6 CONDITIONS FOR DEMONSTRATIONS

.1 Equipment shall be:

.1 Fully installed and operational

.2 Started up in accordance with manufacturer requirements

.3 Tested and balanced

.2 Demonstrations shall not proceed until systems are fully functional.

.3 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

Part 2 Products - Not Used

Part 3 Execution

3.1 PREPARATION

.1 Verify that suitable conditions for demonstration and instructions are available.

.2 Verify that designated personnel are present.

.3 Prepare agendas and outlines.

3.2 PREPARATION OF AGENDAS AND OUTLINES

.1 Prepare agendas and outlines including the following:

.1 Equipment and systems to be demonstrated

.2 Names of presenters / companies

.3 Training content outline

.4 Time and date allocated to each system and item of equipment.

.5 Provide separate agenda for each system.

3.3 SEMINAR ORGANIZATION

.1 Coordinate content and presentations for seminars.

.2 Coordinate individual presentations and ensure representatives scheduled to present at seminars are in attendance.

.3 Arrange for presentation leaders familiar with the design, operation, maintenance and troubleshooting of the equipment and systems. Where a single person is not familiar with all aspects of the equipment or system, arrange for specialists familiar with each aspect.

.4 Coordinate proposed dates for seminars with Owner and select mutually agreeable dates.

3.4 EXPLANATION OF DESIGN STRATEGY

.1 Explain design philosophy of each system. Include following information:

.1 An overview of how system is intended to operate.

.2 Description of design parameters, constraints and operational requirements.

.3 Description of system operation strategies.

.4 Information to help in identifying and troubleshooting system problems.

3.5 DEMONSTRATION AND INSTRUCTIONS

.1 Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, and maintenance of each item of equipment at agreed upon times, at the equipment location.

.2 Instruct personnel in all phases of operation and maintenance using operation and maintenance manuals as the basis of instruction.

.3 Instruct personnel on control and maintenance of sensory equipment and operational equipment associated with maintaining energy efficiency and longevity of service.

.4 Review contents of manual in detail to explain all aspects of operation and maintenance.

.5 Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instructions.

.6 Contractor shall ensure that demonstrations reflect actual operating conditions and completed system performance.

3.6 TIME ALLOCATED FOR INSTRUCTION

.1 Provide sufficient time to fully train Owner personnel on all systems, including (but not limited to):

.1 Plumbing Systems

.2 Heating / Cooling Systems

.3 Ventilation Systems

.4 Filtering Equipment

.5 Control Systems

.6 Electrical Systems

END OF SECTION

Section 03 30 00
Cast-in-Place Concrete

Part 1 General

1.1 SECTION INCLUDES

.1 Cast-in-place concrete building frame members, shear walls, elevator shaft walls, foundation walls, equipment pads, supported slabs, underpinning, caissons, headwalls, pile caps, pilasters, columns, beams, girders, arches, suspended floor, roof slabs, pits, trenches, stairs, filling of beams and columns pockets and encasement of steel beams and columns and concrete topping over precast structural concrete. .

.2 Site work retaining walls, sidewalks, curbs, light pole base, flagpole base thrust blocks,and manholes..

.3 Control, expansion and contraction joint devices associated with concrete work including embedments and joint sealants.

.4 Also included in this section when applicable are: Grouting under steel column bases, pre-moulded joint fillers, water stops, and pre-formed or saw-cut control joints in walls.

1.2 RELATED REQUIREMENTS

.1 Conform to Division 1 General Requirements.

.2 Section 03 30 10 Concrete Floor Slab on Grade

.3 Section 03 35 00 Concrete Finishing

.4 Section 06 10 00 Rough Carpentry

.5 Section 07 21 00 Thermal Insulation

.6 Section 07 92 00 - Joint Sealants.

.7 Section 31 23 33.01 Excavating, Trenching and Backfilling

.8 Division 23 - Heating, Ventilating, and Air-Conditioning (HVAC): Mechanical items for casting into concrete.

.9 Division 26 – Electrical: Electrical items for casting into concrete.

1.3 REFERENCE STANDARDS

.1 ACI-PRC 305-20 Guide to hot weather concreting

.2 ACI-PRC 306R-16 Guide to cold weather concreting

.3 ASTM A820/A820M-22 Standard specification for steel fibers for fibre-reinforced concrete

.4 ASTM B221-21 Standard specification for aluminum and aluminum-alloy extruded bars, rods, wire, profiles, and tubes

.5 ASTM B221M-21 Standard specification for aluminum and aluminum-alloy extruded bars, rods, wire, profiles, and tubes (metric)

.6 ASTM C260/C260M-10a(2016) Standard specification for air-entraining admixtures for concrete

.7 ASTM C330/C330M-23 Standard specification for lightweight aggregates for structural concrete

.8 ASTM C494/C494M-24 Standard specification for chemical admixtures for concrete

.9 ASTM C1017/C1017M-13e1 Standard specification for chemical admixtures for use in producing flowing concrete. (Withdrawn)

.10 ASTM D412-16(2021) Standard test methods for vulcanized rubber and thermoplastic elastomers - tension

.11 ASTM D624-00(2020) Standard test method for tear strength of conventional vulcanized rubber and thermoplastic elastomers

.12 ASTM D994/D994M-11(2016) Standard specification for preformed expansion joint filler for concrete (bituminous type)

.13 ASTM D1751-23 Standard specification for preformed expansion joint filler for concrete paving and structural construction (nonextruding and resilient bituminous types)

.14 ASTM D1752-18 Standard specification for preformed sponge rubber, cork and recycled PVC expansion joint fillers for concrete paving and structural construction

.15 CSA A23.1:24/A23.2:24 Concrete materials and methods of concrete construction/test methods and standard practices for concrete

.16 CSA A3000-18 Cementitious materials compendium. (Withdrawn)

1.4 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.1 Submit shop drawings for reinforcing steel shop consisting of bar bending details, lists and placing drawings

.2 On placing drawings, indicate sizes, spacing, location and quantities of reinforcement and mechanical splices, with identifying code marks to permit correct placement without reference to structural drawings. Indicate sizes, spacing and location of chairs, spacers and hangers. Do drawings in accordance with Reinforcing Steel Manual of Standard Practice, by Reinforcing Steel Institute of Ontario.

.3 Design and detail lap lengths and bar development lengths to CSA A23.3:19, unless otherwise indicated. Provide type C tension lap splices unless otherwise indicated

.2 The Consultant will require the formwork contractor to have falsework drawings prepared and submitted for review for all slab, beam, girder, and arch forming, or other forming requiring shoring and falsework.

.3 Submitted form and falsework drawings shall bear the seal of a qualified Professional Engineer registered in the Province of Ontario

.4 Product Data: Provide data on joint devices, attachment accessories, admixtures.

.5 Samples: Submit two (2) samples, 600 mm long, of control joint, expansion joint, and water stops.

1.5 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Test Data: Minimum five (5) weeks prior to starting concrete work, submit manufacturer's test data and certification by qualified independent inspection and testing laboratory that following materials will meet specified requirements:

.1 Portland cement.

.2 Blended hydraulic cement.

.3 Portland-limestone cement.

.4 Supplementary cementing materials.

.5 Grout.

.6 Admixtures.

.7 Aggregates.

.8 Water.

.3 Certification: Provide certification that mix proportions selected will produce concrete of quality, yield and strength as specified in concrete mixes, and will comply with CSA-A23.1/A23.2.

.4 Certification: Provide certification that plant, equipment, and materials to be used in concrete comply with requirements of CSA-A23.1/A23.2.

.5 Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent Work.

.6 The slump test shall be used as a guide to workability, and to control the consistency of the concrete, especially from batch to batch. The value of slump for reinforced concrete within vertical formwork such as walls or beams shall be 3" (75mm) plus or minus 1" (25mm), and for all other concrete shall be 2 1/2" (64mm) plus or minus 1" (25mm) unless otherwise approved by the Consultant.

.7 All exposed exterior concrete shall be air entrained unless approved otherwise by the Consultant. A sufficient air entraining agent shall be added to the concrete mix to provide the total air content as shown in the following table.
Determination of total air content shall be made by means of an air meter of approved design at the point of placing.

Nominal Maximum Size of Course Aggregate	Total Air Content
1 1/2" (37.5mm)	5.5% +/- 1.0%
1" (26.5mm)	5.5% +/- 1.0%
3/4" (19mm)	6.0% +/- 1.0%
1/2" (13.2mm)	7.0% +/- 1.0%
3/8" (9.5mm)	8.0% +/- 1.0%

.8 No other admixtures unless otherwise specified in this Section will be permitted without the approval of the Consultant

1.6 FORMWORK DESIGN

.1 The design and engineering of the formwork, as well as its construction, shall be the responsibility of the Contractor. Forms shall be of sufficient strength and rigidity to support all concrete and construction loads and wind, taking into account proposed rate and method of pouring concrete so that the resultant finished concrete shall conform to the shapes, lines and dimensions of the members shown on the drawings.

.2 The formwork shall be designed for the loads and lateral pressures outlined in the ACI publication "Formwork for Concrete SP4" and wind pressures and allowable stresses as set down in the current Ontario Building Code.

1.7 QUALITY ASSURANCE

.1 Perform Work in accordance with CSA-A23.1/A23.2.

.2 Maintain one (1) copy of document on site.

.3 Acquire cement and aggregate from same source for all work.

.4 Conform to CSA-A23.1/A23.2 when concreting during hot weather.

.5 Conform to CSA-A23.1/A23.2 when concreting during cold weather.

.6 Before ordering any concrete, the Contractor shall obtain from the ready-mix manufacturer and submit to the Consultant for approval, recent test reports from an approved testing laboratory on samples of materials and concrete taken from the ready-mix supplier, and a statement giving the proportions by dry weight of cement, and fine and course aggregates that will be used in the manufacture of each class of concrete to be ordered by the Contractor.

.7 In case of doubt as to the quality of the concrete provided by the proposed supplier, the Consultant may, at his option, order the Contractor not to use the concrete on the Work from such proposed supplier and the Contractor shall arrange for another acceptable source of supply.

.8 Equipment used for mixing or agitating concrete shall be clean and in good mechanical condition. Trucks may be subject to examination and individual approval by the Consultant to check for accumulation of hardened material, blade wear, water gauging, general condition and efficiency, etc.

.9 The proportions of materials shall be such as to produce a mixture which will work readily into the corners and angles of the forms and around the reinforcement. The mix proportions shall be such that the concrete will not easily segregate or cause excess free water to collect on the surface.

1.8 FIELD QUALITY CONTROL

.1 All operations relating to mixing, placing, and curing shall be controlled by the Consultant. The Contractor shall provide unhindered access to the work for purposes of inspection and selection of samples. The Contractor shall provide the necessary protection for the specimens against injury or loss.

.2 All concrete sampling and testing shall be carried out by an independent inspection and testing company appointed by the Consultant, and paid for out of the Testing Allowance (see Section 00 73 03 Supplementary Conditions - Stipulated Price). Note that re-testing of materials required due to failure to meet the requirements of this specification shall be paid for directly by the Contractor and not out of the Testing Allowance. Send copies of the concrete test reports to the concrete supplier, the Contractor, and the Consultant.

.3 The Contractor shall notify the inspection and testing company twenty-four hours before each concrete placing operation.

.4 During the progress of the Work, make concrete compression test specimens from concrete being used in the construction. Store, cure, and test specimens to CSA A23.2:19.

.5 For each strength test, make three compressive strength test cylinders. Test one cylinder at 7 days; test the remaining two cylinders at 28 days.

.6 For building structures, make not less than one strength test (three cylinders) for each 75 cubic meters of concrete, but in no case shall there be less than one strength test made for each class of concrete placed on any day.

.7 For sidewalks, curbs, pole bases, catchbasins, manholes, distribution structures, headwalls, and other appurtenances, the number of strength tests shall be at the discretion of the Consultant.

.8 For all types of construction where the time of removal of formwork is being controlled by strength tests, additional tests may be required.

.9 Regularly control the consistency of concrete by means of slump tests. In no case shall there be less than one slump test taken for each strength test made.

.10 Make one air test at the same time as, and from the same pour of concrete as, each slump test is made.

.11 If the 7-day strength of any test specimen falls below 50% of the specified 28-day strength, the Consultant will inform the Contractor and may require that additional curing operations be implemented immediately on those portions of the structure represented by that specimen. The cost of any additional such curing shall be borne entirely by the Contractor.

.12 To conform to the strength requirements of this specification, the average of all 28-day tests for each class of concrete shall exceed the specified strength, and no individual 28-day test shall fall below 80% of the specified strength. If this criterion is not met, the Consultant shall have the right to require one or more of the following be done, at the sole expense of the Contractor:

.1 Changes in the mix proportions for the remainder of the Work.

.2 Additional curing on those portions of the structure represented by the test specimens which failed.

.3 That cores be drilled (from the portions of the structure in question) and tested in accordance with CSA A23.2:19.

.4 Non-destructive testing of the structure or structural elements shall be in accordance with CSA A23.2:19.

.13 If, after the above requirements have been carried out, the Consultant is not satisfied that the concrete in the structure is of the specified quality, he may demand a strengthening or replacement of those portions in which the concrete failed to develop the required strength. The costs of such strengthening or replacement shall be borne entirely by the Contractor.

1.9 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

.2 Record Documentation: Accurately record actual locations of embedded utilities and components.

Part 2 Products

2.1 MATERIALS

.1 Design and produce all concrete to develop a compressive strength of 25 MPa (3625 psi) at 28 days except as noted: exterior sidewalks, slabs, curbs and concrete topping over precast structural concrete shall be 32 MPa at 28 days, minimum cement content 350 kg/meter cubed. Air content shall be 4% except for troweled interior slabs and footings.

.2 Formwork lumber: plywood and wood formwork materials to **CSA-086.19**.

.3 Falsework materials: to CSA S269.1-16 (R2021).

.4 Form ties: removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 1" (25 mm) dia. in concrete surface.

.5 Form liner:

.1 Plywood: Douglas Fir to **CSA 0121-08R2013**, No. 2 grade, square edge, 11/16" (17mm) thick.

.6 Form parting agent: non-staining mineral oil or chemically active release agent containing compounds that react with free lime present in concrete to provide water insoluble soaps, preventing concrete from sticking to all form types:

.1 Acceptable chemical release agent materials: Sealtight "Duoguard" by W.R. Meadows or approved.

.7 Column forms: Symons Round Column as manufactured by Dayton Superior, Ontario. See drawings for diameter and height.

.8 Reinforcing steel: carbon steel, grade 400, deformed bars to CSA G30.18:21 unless indicated otherwise. Reinforcing steel in walls of salt structure to be epoxy coated.

.9 Cold-drawn annealed steel wire ties: to ASTM A 1064/A 1064M.

.10 Welded steel wire fabric: to ASTM A 1064/A 1064M. Provide in flat sheets only. Refer to drawings for sizes.

.11 Welded deformed steel wire fabric: to ASTM A 1064/A 1064M. Provide in flat sheets only.

.12 Chairs (for welded steel wire fabric support): shall be Class A, HC (High Chair), Type B, standard finish. Height of chair to be as such to allow 2" (50mm) concrete cover over wire fabric.

.13 Bolsters, bar supports, spacers: to CSA A23.1:19.

.14 Mechanical splices: subject to approval of Consultant.

.15 Cement: normal Portland cement to CAN/CSA-A3000.

.16 Fine Aggregates: Normal density aggregates, graded to CSA-A23.1/A23.2; maximum aggregate size 10 mm.

.17 Coarse Aggregates: Normal density aggregates, graded to CSA-A23.1/A23.2, Group I; maximum aggregate size 19 mm.

.18 Lightweight Aggregate: ASTM C330/C330M, for structural concrete.

.19 Water for making concrete and grout: clean, potable, and free from oil, acid, alkali, organic matter or other deleterious substances to CSA-A23.1/A23.2

.20 Air entraining admixtures: to ASTM C 260.

.21 Grout for column base plates: approved pre-mixed, non-metallic, non-shrinking type having a 28 day compressive strength of 8000 psi (55 MPa.) minimum.

.22 Membrane-curing compounds (when approved for use): oil and wax free 100% resin base compounds to ASTM-C3 09-11.

.23 Waterstops: Extruded PVC to ASTM D 412-92, ASTMD624-91, and HEPC Spec. M264, of types and sizes shown on the drawings. Straight splices, mitered corners, tees, and crosses shall be accurately cut and fused together with heating irons in strict compliance with manufacturer's instructions.

.24 Joint sealant: approved non-sag polysulphide type suitable for interior or exterior use in moving or static joints.

.25 Pre-moulded filler (backing for joint sealant): non-extruding and resilient unicellular foamed plastic compatible with polysulphide sealant.

.26 Dovetail anchor slots: minimum 24-gauge galvanized steel with insulation filled slots.

.27 Non-slip strips: non-slip abrasive cement strip filler shall be two parts fine aluminum oxide to one part cement, in colour selected by the consultant. Non-slip channel inserts shall be zinc, 10mmx10mmx20 gauge, dovetail shaped channels with anchors.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify all dimensions and locations required on drawings.

.3 Verify requirements for concrete cover over reinforcement.

.4 Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not impede concrete placement.

.5 Verify locations of all openings and embedments required for other architectural, mechanical, electrical and structural work.

.6 Verify the locations and elevations of excavations and other existing work. Immediately notify the Consultant of any failure of the building components to fit together properly. Corrective measures shall be undertaken only as approved by the Consultant.

.7 The Contractor shall examine both the contract drawings and the shop drawings pertaining to other trades, and shall make provisions for the installation of all necessary anchors and anchorage devises, inserts, sleeves, bolts, bearing plates and assemblies, and all other items specifically shown as being embedded in concrete members.

.8 The Contractor shall notify the Consultant of his intentions to place concrete for any part of the Work at least 48 hours before placement to allow the Consultant to inspect the applicable formwork, falsework, reinforcing steel, and site preparation and conditions.

3.2 PREPARATION

.1 Prepare previously placed concrete and apply bonding agent to manufacturer's written instructions.

.1 Prepare by:

.1 Mechanical roughening.

.2 Cleaning with steel brush.

.3 Sanding with abrasive wheel.

.4 Sand blasting to +/- 6 mm roughness.

.2 In locations where new concrete is dowelled to existing work, drill holes in existing concrete, with size as shown on Drawings.

.3 Coordinate the placement of joint devices with erection of concrete formwork and placement of form accessories.

3.3 FORMWORK ERECTION

.1 Handle and store forming materials on the job site in such a manner that no damage will be caused to the material, to existing structures on the site, and to the work of other trades in progress.

.2 Forms shall conform to the shape, line and dimensions of the members called for on the plans. They shall be substantial and sufficiently tight to prevent the leakage of mortar, and shall be properly supported, braced, and tied, so as to maintain position and shape to a tolerance of plus or minus 1/8" (3 mm) for columns and beams and a non-accumulative tolerance of 1/8" (3 mm) in 10'-0" (3 m) for walls and floor slabs.

.3 All forms shall be constructed with stiff framing members in two directions. Horizontal walers shall be at least double 2" x 4" (38 x 89) at the top of forms and in all form tie positions.

.4 Supports for forms shall be constructed so that they will not deflect under the weight of the wet concrete or other loads incidental to construction. Shores supporting forms for slabs, beams, girders or arches shall be set on wedges or other approved supports in order that they may be removed without producing undue strains or shock in the superstructure.

.5 Exposed corners of all beams and columns shall be chamfered 1" (25 mm) nominal each face unless otherwise directed.

.6 Surfaces of formwork which will be in contact with concrete shall be coated with parting agent before reinforcing steel is placed. Take care to ensure that no parting agent comes in contact with reinforcing steel or embedded inserts.

.7 Parting agents shall not be used on forms for concrete which will receive a plaster finish.

.8 Provide temporary openings at the base of columns, wall forms, and other places where necessary to facilitate cleaning and inspection. Place openings so that water and remaining debris shall have a clear run to the outside of the form.

.9 Immediately prior to pouring, all forms shall be inspected by the Consultant to ensure that they are properly placed, sufficiently rigid and tight, thoroughly clean, properly treated, and free from snow, ice or other foreign material.

.10 Install continuous, vertical dovetail anchor channels on the face of all concrete columns abutting masonry work, and at 32"(800 mm) o.c. on the faces of all concrete walls backing masonry work.

.11 As an alternative, the Contractor may, at his option, employ approved metal forms for forming of unexposed work only.

3.4 BENDING OF REINFORCING

.1 Bend reinforcing steel accurately to suit the concrete dimensions indicated on the drawings and the protective cover requirements of this specification. Make all bends cold.

.2 Minimum inside radius of bends for stirrups, and beam and column ties shall equal one bar diameter.

.3 Minimum inside radius of bends for all other bars shall be as shown in the following table, except that for standard hooks for bar sizes 10M to 30M inclusive, the minimum radius may be equal to 5 bar diameters, and for standard hooks for bar sizes 35M to 55M inclusive, the minimum radius may be equal to 10 bar diameters for grade 400 MPa steel:

	Bar Size	Min. Bending Inside Radius
1.	10M & 15M	2 1/2 bar diameters
2.	20M & 25M	3 bar diameters
3.	30M & 35M	4 bar diameters

3.5 PLACING REINFORCING

.1 Handle and store reinforcing steel on the job site so that no damage will be caused to the material, to the existing structures on the site, and to the work of other trades in progress. Store reinforcing steel on wood blocking above ground and keep free of mud, oil, and other foreign matter.

.2 Free reinforcing steel of dirt, scale, or other coatings that will destroy or reduce the bond at the time of concrete placement. Where there is a delay in placing concrete, reinforcing steel shall be re-inspected by the Consultant and cleaned when necessary.

.3 Place reinforcing steel accurately and secure in position adequately using concrete or steel chairs or spacers and annealed iron tie wires. Brick, wood, tile, etc. shall not be used. At outside surfaces, bend tie wire ends inward to give at least the same cover as required for reinforcing steel.

.4 Splices shall provide sufficient lap to transfer the stress between bars by bond and shear. The clear distance between bars shall also apply to the clear distance between a contact splice and adjacent contact splices or bars. In slabs, beams, and girders, avoid splices of reinforcement at points of maximum stress.

.5 The minimum clear distance between parallel bars, except in columns, shall equal the nominal diameter of the bars. In no case shall the clear distance between be less than 1" (25 mm) nor less than one and one-third times the maximum size of the course aggregate. Where reinforcing steel between beams and girders is placed in two or more layers, the clear distance between the layers shall not be less than one inch, and the bars in the upper layers shall be placed directly above those in the bottom layer.

.6 The reinforcing steel for footings and other principal structural members in which the concrete is deposited against the ground shall have not less than 3" (75 mm) of concrete between it and the ground contact surface. If concrete surfaces after removal of the forms are to be exposed to the weather, or to be in contact with the ground, the reinforcing steel shall be protected with not less than 2" (50 mm) of concrete for bars more than 5/8"(16 mm) diameter, and 1 1/2" (40 mm) for 5/8"(16 mm) diameter bars or smaller.

.7 The concrete cover for reinforcing steel at surfaces not exposed directly to the ground or weather shall be not less than 3/4" (20 mm) for slabs and walls and not less than 1 1/2" (40 mm) for beams, girders, and columns. In concrete joist floors in which the clear distance between joists is not more than 2'-4" (700 mm), the protective covering for reinforcing steel shall be at least 3/4" (20 mm).

.8 Concrete cover for reinforcing steel shall in all cases be at least equal to the diameter of the round bars.

3.6 PLACING FABRIC REINFORCING

.1 Place fabric reinforcing accurately and secure in position using steel chairs specified and annealed tie wires. Fabric to sit on chairs spaced in a 24" (600mm) grid each way. The fabric reinforcing shall be lapped 6" (150mm) minimum and tied securely to the chair.

3.7 PLACING CONCRETE

.1 Place concrete in accordance with CSA-A23.1/A23.2.

.2 Notify Consultant minimum twenty-four (24) hours prior to commencement of operations.

.3 Ensure reinforcement, inserts, embedded parts, and formed expansion/contraction joints are not disturbed during concrete placement.

.4 Install vapour retarder under interior slabs on grade. Lap joints minimum 300 mm and seal watertight by sealant applied between overlapping edges and ends.

.5 Repair vapour retarder damaged during placement of concrete reinforcing. Repair with vapour retarder material; lap over damaged areas minimum 150 mm and seal watertight.

.6 Water Stops.

.1 Install water stops to provide continuous watertight seal.

.2 Do not distort or pierce water stop in such a way as to hamper performance.

.3 Do not displace reinforcement when installing water stops.

.4 Use equipment to manufacturer's requirements to field splice water stops.

.5 Tie water stops rigidly in place.

.6 Use only straight heat sealed butt joints in field.

.7 Use factory welded corners and intersections.

.7 Separate slabs on grade from vertical surfaces with as noted thick joint filler.

.8 Place joint filler in floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.

.9 Extend joint filler from bottom of slab to within 6 mm of finished slab surface. Conform to Section 07 92 00 for finish joint sealer requirements.

.10 Install joint devices to manufacturer's written instructions.

.11 Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.

.12 Install joint device anchors. Maintain correct position to allow joint cover to be flush with floor or wall finish.

.13 Install joint covers in one (1) piece length, when adjacent construction activity is complete.

.14 Apply sealants in joint devices in accordance with Section 07 92 00.

.15 Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

.16 Place concrete continuously between predetermined expansion, control, and construction joints.

.17 Do not interrupt successive placement; do not permit cold joints to occur.

.18 Place floor slabs in strips; install saw cut pattern indicated.

.19 Saw cut joints within twenty-four (24) hours after placing. Use 5 mm thick blade, cut minimum 1/4 depth of slab thickness.

.20 Screed floors level, maintaining surface flatness to either:

.1 CSA-A23.1/A23.2.

.2 Maximum 6 mm in 3 m.

3.8 READY MIXED CONCRETE

.1 Deliver the concrete to the site of the work and complete the discharge within one and one-half (1 1/2) hours after the introduction of the mixing water to the cement and aggregates. In hot weather, or under conditions contributing to quick stiffening of the

concrete, or where high early cement is used, or where the temperature of the concrete is 27 degrees C or above, this time shall not exceed 45 minutes.

.2 When the concrete is mixed in a truck mixer, the mixing operation shall begin within 30 minutes after the cement has been intermingled with aggregates.

.3 Do not haul ready mixed concrete more than 50 km in order to reach the Work, regardless of the time involved.

.4 The approved Ready-Mixed Concrete Operation shall be equipped with suitable and adequate heating equipment capable of heating the stockpiles of aggregates, the batch bins and mix water, as required. If not, the operation will be approved for summer use only. This equipment shall be available in working order at all times when needed between October 1 and May 1.

.5 Convey concrete from the mixer to the place of final deposit at a uniform rate, by methods which will prevent the separation or loss of materials. Size and design equipment for chuting, pumping, and pneumatically conveying concrete to ensure a practically continuous flow of concrete at the delivery end without separation of materials. Conveying equipment shall be thoroughly flushed with water before and after each run and the water used for this purpose shall be discharged outside the forms.

.6 When concrete pumps are used to place concrete, the required slumps as specified in this section may be increased 1" (25 mm) for each 100' (30 m) of piping through which the concrete is pumped, but the maximum slump measured at the pump shall not exceed 6" (150 mm). The Contractor shall arrange with the ready mix supplier, and pay any additional costs required, for mix designs which will maintain the required strength of concrete pumped at high slump.

.7 Wet down all forms thoroughly before depositing concrete, except in freezing weather. Use no chemicals to free ice from the hardened concrete in the forms.

.8 Deposit concrete in the forms as nearly as practicable in its final position to avoid re-handling, and in approximately horizontal layers. The vertical height of free fall shall not exceed 5'-0" (1500 mm).

.9 Carry on the concreting at such a rate that the concrete is at all times plastic and flows readily into the spaces between reinforcing steel. No concrete that is partially hardened or has been contaminated by foreign material shall be deposited in the work, nor shall re-tempered concrete be used. Do not deposit concrete during rain unless adequately protected, and in any case shall be protected from rain until it has cured sufficiently so that it will not be damaged.

.10 Carry on the concreting as a continuous operation until the placing of the panel or sections is completed in such a manner that fresh concrete will not be deposited on concrete which has hardened sufficiently to cause formation of seams and planes or weakness within the section. Maintain the top surface generally level. Make construction joints as required, in accordance to this section.

.11 Compact all concrete thoroughly by suitable means during placing, and compact around the reinforcing steel and embedded fixtures and into the corners of the forms.

.12 Compact all concrete (unless otherwise permitted by the Consultant) by mechanical vibrators for internal use in the forms. Where walls are thin, or heavy reinforcement

obstructs the use of an internal vibrator, or for surfaces relatively inaccessible from within, use external vibrators. Maintain at least one extra vibrator on the site as a standby unit. If vibrators are electrically powered, a standby generator will be required.

.13 Operate internal vibrators at a speed of not less than 3600 impulses per minute. Apply vibrators at the points of deposit and in the area of the freshly placed concrete. Allow vibrator to sink of its own weight in the concrete until it penetrates to the previous layer of concrete; withdraw immediately at the same speed at which it sank, and then move about 12" (300mm) to a new location, and repeat the process. Take care that the reinforcing steel and attached fittings are not disturbed.

.14 External vibrators may be chipping hammers applied to the walls of the forms, and moved progressively as the forms are filled with concrete. Fit the chipping hammers with a 2" x 2" (50mm x 50mm) steel plate to bear against the forms.

.15 Take care that vibration of concrete is not continued after capillary continuity has been achieved as indicated by the glistening of a film of water at the top surface of the concrete.

.16 Do not use the vibrators to move the fresh concrete within the forms.

3.9 CONSTRUCTION JOINTS

.1 Locate joints not indicated on the drawings so as to least impair the strength and appearance of the structure. The location of construction joints subject to the approval of the Consultant.

.2 Where a joint is to be made, the surface of hardened concrete shall be roughened and thoroughly cleaned of foreign matter and laitance, and shall be thoroughly wetted with water but not saturated, and the forms re-tightened against the face of the hardened concrete before depositing additional concrete. An excess of mortar on hardened surfaces shall be secured by first placing a 2" (50mm) layer of cement-sand mortar. Into this mortar layer, the regular mix concrete shall be deposited immediately. The cement-sand mortar shall shall be of the same proportions as the regular concrete mix, except that the course aggregate is omitted.

.3 Construction joints in walls shall be vertical and located so as to least impair the strength of the structure. Bulkheads forming construction joints shall be tight and truly vertical. Vertical construction joints in walls shall be made at control joints, if control joints are indicated on the drawings.

.4 Make horizontal construction joints in walls only where indicated on the drawings or in the specifications. To ensure a level, straight joint on the exposed surface of the walls, use the following: set level a strip of 1" (25mm) square edged lumber and tack to the forms at the outside surface of the wall. Carry the concrete about 1/2" (12mm) above the underside of the strip. About one hour after the concrete has been placed, remove the strip. Level off any irregularities in the joint line with a screed.

3.10 FINISHING UNFORMED AND FORMED SURFACES

.1 Finish concrete floor surfaces in accordance with CSA-A23.1/A23.2.

.2 Refer to section 03 35 00 Concrete Finishing

.3 The tops or other exposed unformed surfaces of concrete placed in all types of structures shall conform accurately to the grades and elevations shown on the drawings.

.4 These surfaces are to be free from open texturing, plucked aggregates, local projections, and shall be such that when tested with a 10'-0" (3m) long straight edge (provided by the Contractor at his own expense) placed any where in any direction on the surface, there shall be no gaps greater than 1/8" (3mm) between the bottom of the straight edge and the surface of the concrete. No variation will be permitted across any joint.

.5 The appearance of the finished concrete shall be uniform as to colour, pattern and texture when viewed from a distance of 50'-0" (15m). If this appearance is not achieved by the methods specified above, additional treatment will be required at the Contractor's expense and as directed by the Consultant.

3.11 CURING AND PROTECTION

.1 Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical damage.

.2 Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

.1 Cure all unformed concrete surfaces using burlap and water unless otherwise approved.

.2 Water for curing: clean and free from any materials which will cause staining or discolouration of the concrete.

.3 The Consultant may permit curing by use of a moisture vapour barrier or a membrane compound where, in his/her opinion, either procedure will adequately cure the concrete.

.3 Cure floor surfaces in accordance with CSA-A23.1/A23.2.

.4 Ponding: Maintain 100% coverage of water over floor slab areas continuously for four (4) days.

.5 Spraying: Spray water over floor slab areas and maintain wet cure for seven (7) days.

.1 Keep the exposed surfaces continuously moist for at least 7 consecutive days after placing when normal Portland or sulphate-resisting cements are used, and for at least 3 consecutive days when High Early Strength Portland cement is used.

.6 Curing Formed Surfaces: If the formwork is left in place for 7 days, no additional curing will be required. If the formwork is removed in less than 7 days, cure the concrete in the manner specified for unformed surfaces.

3.12 COLD WEATHER REQUIREMENTS

.1 When the surrounding air temperature is lower than 4 degrees C, pre-heat all aggregates and water to arrive at the Work having a temperature not less than 15 degrees C, nor greater than 32 degrees C, unless otherwise permitted in writing by the Consultant.

.2 Where the anticipated minimum air temperature is 4 degrees C or falls only a little below for a short period of time, and the concrete is protected from high winds by virtue of its

location relative to the atmosphere such as in an excavation, or by other means, such as tarpaulins or sheeting securely covering the Work, provide normal curing only as required by this Section.

.3 Where the anticipated minimum air temperature is between -1 degree C and 4 degrees C or falls only a little below -1 degree C for a short period of time, make the following provisions:

.1 Cover formed surfaces with securely tied or fastened, and overlapping tarpaulins, or sheeting, to provide a dead air space adjacent to the formwork.

.2 Cover unformed surfaces with tarpaulins, waterproof kraft paper, or polyethylene sheeting (4 mil minimum) as soon after placing concrete as possible. Cover this covering with 6" (150mm) of tightly packed dry straw or equivalent thickness of dry insulation. This insulating material shall be kept dry at all times by covering with water-proof sheeting or by other means.

.4 Where the anticipated minimum air temperature is below -1 degree C and will remain below -1 degree C for long periods of time, make the following provisions:

.1 Protect ground surfaces (on which concrete will be placed) from freezing immediately after excavation with tightly packed dry straw or other dry insulating material of thicknesses as approved by the Consultant for the ambient conditions.

.2 Construct weather tight protective housings around the Work and keep the housings clear of the concrete a minimum of 12" (300mm) all around to permit free circulation of air over all parts of the Work.

.3 Defrost all reinforcing, forms, and ground surfaces (which will be in contact with the concrete) before placing any concrete in the Work.

.4 Keep the concrete within the housing at a temperature of 10 degrees C for not less than 7 days after placing. Keep the relative humidity in the housing above 95%. The housing, covering, and/or other methods used for protection shall remain in place and intact for at least 24 hours after artificial heating is discontinued.

.5 As an alternative to maintaining the atmosphere within the housing at a relative humidity of not less than 95%, provide normal curing within the housing as specified in this Section, and in addition, keep wooden formwork wetted at all times.

.6 Adequately vent hot air blowers (used for providing heat within the housing) to prevent the accumulation of carbon dioxide within the housing.

.7 The use of salamanders, coke stoves, oil or gas burners and similar spot heaters which have an open flame and intense local heat, shall not be permitted.

.5 If approved in writing by the Consultant, calcium chloride in quantity not exceeding 2% by weight of the cement may be used in concrete mixes to prevent freezing in cold weather. The use of and quantity of calcium chloride to be added will be determined by the Consultant. Calcium chloride shall not be used with alkali-sulphate resisting cement, or where other additives are used.

3.13 REMOVAL OF FORMWORK

.1 Forms and shoring shall not be removed until the concrete has gained the strength to carry its own weight together with any superimposed load that may come upon it.

.2 Vertical forming such as wall, column, and beam and girder side forming shall be left in place for at least 48 hours (with the exception of slip forms).

.3 Horizontal forming and shoring supporting curing concrete shall not be removed until written permission is received from the Consultant.

.4 Removal of forming shall proceed with care so that concrete edges and surfaces are not damaged.

3.14 PATCHING

.1 Allow Consultant to inspect concrete surfaces immediately upon removal of forms.

.2 Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Consultant upon discovery.

.3 Patch imperfections in accordance with CSA-23.1.

3.15 NON-SLIP INSERTS

.1 Install non-slip channel strip where indicated on the drawings.

.2 Install abrasive strip filler into channels to CSC/TTMAC recommendations.

3.16 FIELD QUALITY CONTROL

.1 Inspection and Testing:

.1 Section 01 45 00: Field testing and inspection.

.2 Provide free access to Work and cooperate with appointed firm.

.3 Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of Work.

.4 Tests of cement and aggregates may be performed to ensure conformance with specified requirements.

.5 Three (3) concrete test cylinders will be taken and tested for every 50 cu m or less, of each class of concrete placed.

.1 Minimum one (1) test per day.

.2 One (1) test per type of component, slabs, pile caps, walls, and columns.

.6 One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.

.7 One slump or flow test and one air test will be taken for each set of test cylinders.

3.17 DEFECTIVE CONCRETE

.1 Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

.2 Repair or replacement of defective concrete will be determined by the Consultant.

.3 Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Consultant for each individual area.

3.18 CLEAN UP

.1 On completion of the work of this section, all protection erected under this section shall be removed, all damage to this work and to the work of other trades resulting from the execution of the work of this section shall be made good, and all surplus materials, debris, tools, plant, and equipment shall be removed from the premises, and the building(s) and site left in a condition satisfactory to the Consultant.

END OF SECTION

Section 03 30 10
Concrete Floor Slab on Grade

Part 1 General

1.1 GENERAL REQUIREMENTS

.1 Conform to Division 1 General Requirements.

.2 Section 31 23 33.01 Excavating, Backfilling, Compacting and Rough Grading

.3 Section 03 35 00 Concrete Finishing

.4 Section 06 10 00 Rough Carpentry

.5 Section 07 21 00 Building Insulation

.6 Section 09 91 00 Paint

1.2 WORK INCLUDED

.1 The work covered by this section includes but is not necessarily limited to the supply and installation of concrete floor slabs on grade, under slab vapour barrier and rigid insulation concrete floor finishing, including hardening and application of cure and seal products.

1.3 REFERENCE STANDARDS

.1 CSA A23.1:24/A23.2:24 Concrete materials and methods of concrete construction/test methods and standard practices for concrete

.2 ACI-PRC 302.1-15 Guide for concrete floor and slab construction

.3 ASTM E1155/E1155M-23 Standard test method for determining FF floor flatness and FL floor levelness numbers

1.4 SOURCE QUALITY CONTROL AND SAMPLES

.1 Section 01 33 00: Submission procedures.

.2 Upon request, provide Consultant with certified copy of mill test report of reinforcing steel, showing physical and chemical analysis, minimum 5 weeks prior to commencing reinforcing work.

.3 Upon request only, and at least 4 weeks prior to commencing work, inform Consultant of proposed source of reinforcing steel, aggregates, and cement and all proposed admixtures, and provide access for sampling.

.4 Before ordering any concrete, the Contractor shall obtain from the ready-mix manufacturer and submit to the Consultant for approval, recent test reports from an approved testing laboratory on samples of materials and concrete taken from the ready-mix supplier, and a statement giving the proportions by dry weight of cement, and fine and course aggregates that will be used in the manufacture of each class of concrete to be ordered by the Contractor.

.5 In case of doubt as to the quality of the concrete provided by the proposed supplier, the Consultant may, at his option, order the Contractor not to use the concrete on the Work from such proposed supplier and the Contractor shall arrange for another acceptable source of supply.

.6 Equipment used for mixing or agitating concrete shall be clean and in good mechanical condition. Trucks may be subject to examination and individual approval by the Consultant to check for accumulation of hardened material, blade wear, water gauging, general condition and efficiency, etc.

.7 The proportions of materials shall be such as to produce a mixture which will work readily into the corners and angles of the forms and around the reinforcement. The mix proportions shall be such that the concrete will not easily segregate or cause excess free water to collect on the surface.

.8 The slump test shall be used as a guide to workability, and to control the consistency of the concrete, especially from batch to batch. The value of slump for concrete shall be 2 1/2" (64mm) plus or minus 1" (25mm) unless otherwise approved by the Consultant.

.9 No other admixtures will be permitted without the approval of the Consultant.

1.5 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 and ISO 14000 certification requirements.

.2 Perform Work in accordance with CSA-A23.1/A23.2.

.3 Maintain one (1) copy of document on site.

.4 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.6 MATERIAL HANDLING AND TESTING

.1 Conform to Section 03 30 00 Cast-in-Place Concrete for reference to general material handling, Cold Weather Requirements, and Field Quality Control.

.2 Deliver materials in manufacturer's packaging including application instructions.

1.7 SITE CONDITIONS (CONCRETE FINISHING)

.1 Temporary Lighting: Minimum 200 W light source, placed 2.5 m (8 ft) above the floor surface, for each 40 sq m (425 sq ft) of floor being finished.

.2 Do not finish floors until interior heating system is operational.

.3 Temporary Heat: Ambient temperature of 10 degrees C (50 degrees F) minimum.

.4 Ventilation: Sufficient to prevent injurious gases from temporary heat or other sources affecting concrete.

Part 2 Products

2.1 MATERIALS

.1 Concrete used for all floor slabs on grade shall have a minimum compressive strength of 25 MPa (3625 psi) at 28 days.

.2 Minimum Portland cement content for concrete floor slabs on grade: 350 kg/cubic metre.

.3 Welded wire mesh where indicated on the drawings shall conform to **ASTM A 1064/A 1064/M**. Sizes shall be as noted on the drawings. Provide in flat sheets only.

.4 Chairs (for welded steel wire fabric support): shall be Type B, No. 87, 5/16" gauge galvanized wire 3 1/2" high as manufactured by Dayton Superior Canada, Acron, Richmond. Approved alternates will be accepted by Consultant.

.5 Pre-moulded joint filler: non-extruding and resilient flexible synthetic or PVC foam type conforming to the requirements of ASTM D 1752, and shall be used at all locations where floor slabs abut foundation walls W.R. Meadows Ceramic.

.6 Liquid densifying/hardening compound: propriety blend of siliconate polymers:

- .1 "Ashford Formular" by Duracon Consulting
- .2 Euclid "Euco Diamand Hard"
- .3 Dayton Superior "Day-Chem Sure Hard" (J-17)
- .4 W.R. Meadows "Liquid Hard"
- .5 Sika "Sikafloor 35"
- .6 Master Builders Mastertop CST

.7 Concrete floor curing and sealing compound: approved clear, acrylic polymer type, free flowing liquid which will adhere to damp concrete and meets the moisture retention requirements of ASTM C 309, Type 1, Class B, and will not affect the bond of finished floor adhesives and/or joint sealants:

- .1 Sealtight, Vocomp-20 by W.R. Meadows
- .2 Flortec by Sternson Construction Products
- .3 Acryseal by Master Builders Technologies
- .4 Super Aquacure by the Euclid Chemical Company

.8 Sawcut filler: Sealtight Rezi-Weld Flex or Thoroc EP280 as manufactured by Chamrex.

.9 Non-Slip Strips: Non-slip abrasive cement strip filler shall be two parts fine aluminum oxide to one part cement, in colour selected by the Consultant. Non-slip channel inserts shall be zinc, 10mm x 10mm x 20 gauge, dovetail shaped channels with anchors.

.10 Vapour barrier: commercial quality stego wrap vapour barrier, 15 mil thickness with taped joints.

.11 Rigid insulation: extruded, conforming to CAN/ULC-S701.1:2017, Type 4, 30 psi, DOW SM or equal.

Part 3 Execution

3.1 PLACING FABRIC REINFORCING

.1 Place fabric reinforcing accurately and secure in position using steel chairs specified and annealed tie wires. Fabric to sit on chairs spaced in a 24" (600mm) grid each way. The fabric reinforcing shall be lapped 6" (150mm) minimum and tied securely to the chair.

3.2 PREPARATION AND PLACEMENT

.1 The floor slab shall be poured on a level, well compacted sub-base. The sub-base must not deviate by more than 3/8" (10mm) in either way from the specified profile.

.2 Water-cement ratio may under no circumstances exceed 0.55. The concrete workability may be improved by the use of plasticizers.

.3 Floor slabs shall be placed by a continuous pour the limits of each room. Placement of concrete shall be in accordance with good construction practices.

3.3 FLOOR FINISH

.1 Finish concrete floor surfaces to CSA-A23.1/A23.2.

.2 Refer to 03 35 00 Concrete Finishing

.3 All building floor surfaces, unless otherwise specified, after wood floating, shall be finished with a steel trowel or finishing machine. Trowelling shall be continued until the required finish is obtained during which time the temperature shall be maintained at a minimum of 10 degrees C. In order to prevent excess fines from working to the surface, steel trowel finishing shall be delayed until the concrete surface can no longer be dented with the finger. Dry cement or cement and sand shall not be used to blot up excess water.

.4 Concrete floor slabs shall have surfaces sealed with one coat of specified sealer at a rate of 7.2 sq.m./litre (300 s.f./gal). Apply in accordance with manufacturer's written instructions.

.5 Concrete floor slabs on grade which will be left exposed in the finished structure shall have its surface hardened with a liquid densifier. Apply in strict accordance with the manufacturer's written instructions.

.6 Cut shrinkage joints as quickly as possible after the concrete has hardened in such a way that the edges of the joints do not crumble. Saw cuts shall be 1/8" (3mm) wide with a depth of 1/3 of slab thickness. Saw cut joints shall be made so that the distance between joints does not exceed 20'-0" (6100mm). For joint layout, the location of columns, recesses, and changes of width of the floor must be taken into account. The contractor of this section shall submit joint location drawings to the Consultant for review at an agreed date prior to casting the floor.

.7 Fill all sawcuts exposed in the finished building with sawcut filler specified.

.8 In areas with floor drains, maintain design floor elevation at walls; slope surfaces uniformly to drains at nominal 10 mm per m (3/8 inch per ft) or dimension as indicated on Drawings.

3.4 CLEAN UP

.1 On completion of the work of this section, all protection erected under this section shall be removed, all damage to this work and to the work of other trades resulting from the execution of the work of this section shall be made good, and all surplus materials, debris, tools, plant, and equipment shall be removed from the premises, and the building(s) and site left in a condition satisfactory to the Consultant.

END OF SECTION

Section 03 35 00
Concrete Finishing

Part 1 General

1.1 SECTION INCLUDES

.1 Finishing slabs-on-grade, monolithic floor slab, and separate floor toppings.

.2 Surface treatment with concrete hardener, sealer, or slip resistant coatings.

1.2 RELATED REQUIREMENTS

.1 Section 03 30 00 - Cast-in-place Concrete: Prepared concrete floors ready to receive finish.

.2 Section 07 92 00 - Joint Sealants.

1.3 REFERENCE STANDARDS

.1 ACI 301 Specifications for concrete construction (SI units)

.2 ACI 302.1 Guide for concrete floor and slab construction

.3 ASME A17.1/CSA B44 Safety Code for Elevators and Escalators.

.4 ASTM E1155/E1155M Standard test method for determining FF floor flatness and FL floor levelness numbers

.5 COFI Exterior plywood for concrete formwork. (Withdrawn)

.6 CSA A23.1/A23.2 Concrete materials and methods of concrete construction/test methods and standard practices for concrete

.7 CSA O121 Douglas fir plywood

.8 CSA O151 Canadian softwood plywood

.9 CSA O153 Poplar plywood

.10 CSA O437 SERIES Standards on OSB and waferboard. (Withdrawn)

.11 CSA S269.1 Falsework and formwork

.12 CSA S269.3 Concrete formwork

.13 ISO 9000 Quality Management.

.14 ISO 14000 Environmental Management.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination: Coordinate with concrete floor placement and concrete floor curing, and other work having a direct bearing on work of this section.

1.5 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide data on concrete hardener, sealer and slip resistant treatment, compatibilities, and limitations.

1.6 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

.2 Maintenance Data: Provide data on maintenance renewal of applied coatings.

1.8 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 / ISO 14000 certification requirements.

.2 Perform Work in accordance with CSA-A23.1/A23.2.

.3 Maintain one (1) copy of document on site.

.4 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.9 MOCK-UPS

.1 Section 01 43 00: Requirements for mock-up.

.2 Provide a mock-up for evaluation of surface preparation techniques and application workmanship

.3 Locate where directed by Consultant.

.4 Approved mock-up may or may not remain as part of the Work.

.1 Refinish mock-up area as required to produce acceptable work.

1.10 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Deliver materials in manufacturer's packaging including application instructions.

.3 Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

.4 Protect materials from dirt, corrosion, oil, grease and other contaminants.

1.11 SITE CONDITIONS

.1 Temporary Lighting: Minimum 200 W light source, placed 2.5 m (8 ft) above the floor surface, for each 40 sq m (425 sq ft) of floor being finished.

.2 Do not finish floors until interior heating system is operational.

.3 Temporary Heat: Ambient temperature of 10 degrees C (50 degrees F) minimum.

.4 Ventilation: Sufficient to prevent injurious gases from temporary heat or other sources affecting concrete.

Part 2 Products

2.1 FLOOR AND SLAB TREATMENT

.1 General: Comply with ACI 302.1R recommendations for screeding, re-straightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

.2 Refer to Part 3 for locations to receive trowelled or broom finishes.

.3 Floor Hardeners and Sealants as specified in Section 03 30 10 Concrete Floor Slab on Grade

.4 All exposed concrete floors at columns are to receive a "diamond" cut pattern to reduce stress and potential for cracking.

.5 All slabs within buildings shall receive Floor Hardener or Epoxy Coating, refer to drawings for locations of Epoxy.

.1 Epoxy Floor Coating:

.1 Sika Canada - Sikafloor 156 CA (Primer)

.2 Sika Canada - Sikafloor 261 CA (Base / Body coat)

.3 Approved installer: Sentinel Polymers

2.2 EPOXY FLOORING SYSTEM

.1 Approved supplier and installer:
Sentinel Polymers
Joey DeNuke jsdenuke@sentinelpolymers.com
410 Industrial Rd
London ON N5V 1T5
519-451-7677

.1 System to be installed by qualified applicator approved by manufacturer

.2 Provide mock-up for colour, texture, and finish approval

.3 Coordinate with concrete section for slab preparation and curing

.2 EPX 1: Provide a multi-component, high-build epoxy floor coating system, including surface preparation, primer, body coat, optional decorative flake broadcast, and clear topcoat.

.1 Primer: Two-component, low viscosity epoxy primer with high penetration and adhesion properties (Sikafloor-156CA).

.2 Base / Body Coat: High solids, self-priming epoxy coating providing a seamless, durable finish (Sikafloor-261CA)

.3 EPX 2: Provide a multi-component, high-build epoxy floor coating system, including surface preparation, primer, body coat, optional decorative flake broadcast, and clear topcoat.

.1 Primer: Two-component, low viscosity epoxy primer with high penetration and adhesion properties (Sikafloor-156CA).

.2 Base / Body Coat: High solids, self-priming epoxy coating providing a seamless, durable finish (Sikafloor-261CA)

.3 Decorative Flake System: Multi-coloured vinyl flakes broadcast into wet epoxy base coat to achieve decorative finish (slip resistant) and texture (Senfloor® DecoFlake® system).

.4 Topcoat: Clear epoxy or polyurethane coating to encapsulate flakes and provide abrasion, chemical, and moisture resistance.

.4 System Requirements:

.1 System Thickness: Provide minimum dry film thickness recommended by manufacturer for the specified system and intended service.

.1 EPX 2 Decorative Flake System**:** Minimum total system thickness: 1.5 mm (1/16").

.2 Substrate preparation: Mechanical preparation to ICRI CSP 3–4 minimum

.3 Compressive strength: Minimum 50–70 MPa

.1 Refers to the compressive strength of the epoxy system, not to the compressing strength of the concrete substrate.

.4 Slip resistance: Provide slip-resistant finish by aggregate additive and/or decorative flake broadcast incorporated into the epoxy flooring system. Provide degree of slip resistance suitable for the intended service conditions and as recommended by the flooring manufacturer.

.1 Provide increased slip resistance in wet areas and other locations indicated on Drawings.

.5 VOC: Low VOC, compliant with applicable regulations

.6 Finish: Smooth, satin, or gloss as selected

.5 Application:

.1 Apply in strict accordance with manufacturer’s written instructions

.2 Do not apply to substrates with moisture content exceeding 4% or RH exceeding 85% (ASTM F2170)

.3 Maintain substrate temperature minimum 3°C above dew point

.4 Provide continuous, seamless finish with integral cove base where indicated

.5 Provide moisture mitigation system where slab moisture exceeds manufacturer limits

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that floor surfaces are acceptable to receive the work of this section.

3.2 GENERAL

.1 All concrete slabs not otherwise indicated shall have a steel troweled monolithic finish.

.2 Slab at rooms to receive ceramic tile shall have a “light broom” finish.

.3 Trash Enclosure slab shall have a “medium broom” finish.

.4 Exterior flatwork surfaces such as sidewalks and shall receive a “medium broom” finish.

.5 Refer to 03 30 00 Cast-in-Place for Curing and Protection of Concrete

3.3 EXPOSED CONCRETE FINISH AND FORMED SURFACES

.1 Finish concrete floor surfaces in accordance with CSA-A23.1/A23.2.

.2 Immediately after the removal of forms, remove or cut back all bolts, ties, nails, or other metal not required for construction purposes, to a depth of 1" (25mm) from the surface of the concrete.

.3 Moisten all cut-out areas with water and fill completely with a stiff mortar of cement and fine aggregate in the proportions of the concrete being finished.

.4 Do not repair honeycombed areas discovered after the removal of the forms until inspected by the Consultant. In non-structural elements, cut out the affected honeycombed area and fill with mortar as previously described. In structural elements, the method of treatment of the honeycombing shall be as directed by the Consultant.

.5 Neatly chip off and rub off fins, unsightly ridges, or other imperfections flush with the general surface. Rub all concrete surfaces to be left exposed with course carborundum brick to produce a surface that is perfectly straight, smooth and free from marks and roughness.

.6 The appearance of the finished concrete shall be uniform as to colour, pattern and texture when viewed from a distance of 50'-0" (15m). If this appearance is not achieved by the methods specified above, additional treatment will be required at the Contractor's expense and as directed by the Consultant.

.7 Medium broom finish shall be applied where shown on the Drawings and indicated in Specifications. The finish shall be applied by a non-staining broom, producing a medium grain of even depth and appearance at right angle to the slope of the area. The edges shall be neatly tooled.

.8 Light broom finish shall be applied where shown on the Drawings and indicated in Specifications. The finish shall be applied by a non-staining broom, producing a light grain of even depth and appearance at right angle to the slope of the area. The edges shall be neatly tooled.

.9 Immediately after the removal of forms, remove or cut back all bolts, ties, nails, or other metal not required for construction purposes, to a depth of 1" (25mm) from the surface of the concrete.

3.4 FLOOR FINISHING

.1 Finish concrete floor surfaces to CSA-A23.1/A23.2.

.2 The tops or other exposed unformed surfaces of concrete placed in all types of structures shall conform accurately to the grades and elevations shown on the drawings

.3 Finish all unformed surfaces by screeding followed by floating

.4 These surfaces are to be free from open texturing, plucked aggregates, local projections, and shall be such that when tested with a 10'-0" (3m) long straight edge (provided by the Contractor at his own expense) placed any where in any direction on the surface, there shall be no gaps greater than 1/8" (3mm) between the bottom of the straight edge and the surface of the concrete. No variation will be permitted across any joint.

.5 Areas that do not meet the required surface accuracy shall be rectified as follows at the Contractor's expense:

.1 Grind down any areas higher than 1/8" (3mm) above the correct surface.

.2 Grind down any areas higher than 1/8" (3mm) above the correct surface.

.3 All grinding shall be carried out by an approved machine of a type and capacity suitable for the total area of grinding involved until the surface meets the specified requirements.

.6 Screeding shall consist of moving a straight edge or template with a sawing motion along wood or metal strips established as guides. This shall be done immediately after consolidation of the concrete to give the surface its approximate shape and elevation.

.7 After screeding, bring the surface to the specified uniformity and accuracy with a wood float held in a floating position and worked in a circular or sawing motion slowly from one side of the surface to the other and back again

.8 Wood float surfaces which will receive ceramic tile with full bed setting system.

.9 Steel trowel surfaces which will receive carpeting, resilient flooring, seamless flooring, thin set terrazzo, thin set quarry tile, and thin set ceramic tile.

.10 Steel trowel surfaces that are scheduled to be exposed.

.11 All building floor surfaces, unless otherwise specified, after wood floating, shall be finished with a steel trowel or finishing machine. Trowelling shall be continued until the required finish is obtained during which time the temperature shall be maintained at a minimum of 10 degrees C. In order to prevent excess fines from working to the surface, steel trowel finishing shall be delayed until the concrete surface can no longer be dented with the finger. Dry cement or cement and sand shall not be used to blot up excess water.

.12 Concrete floor slabs shall have surfaces sealed with one coat of specified sealer at a rate of 7.2 sq.m./litre (300 s.f./gal). Apply in accordance with manufacturer's written instructions.

.13 Concrete floor slabs on grade which will be left exposed in the finished structure shall have its surface hardened with a liquid densifier. Apply in strict accordance with the manufacturer's written instructions

.14 Cut shrinkage joints as quickly as possible after the concrete has hardened in such a way that the edges of the joints do not crumble. Saw cuts shall be 1/8" (3mm) wide with a depth of 1/3 of slab thickness. Saw cut joints shall be made so that the distance between joints does not exceed 20'-0" (6100mm). For joint layout, the location of columns, recesses, and changes of width of the floor must be taken into account. The contractor of this section shall submit joint location drawings to the Consultant for review at an agreed date prior to casting the floor.

.15 Fill all sawcuts exposed in the finished building with sawcut filler specified.

.16 In areas with floor drains, maintain design floor elevation at walls; slope surfaces uniformly to drains at nominal dimension as indicated on Drawings, if no dimensions indicated provide 10 mm per m (3/8 inch per ft).

3.5 FLOOR SURFACE TREATMENT

.1 General:

.1 With Applicator present, examine substrates and conditions under which coatings will be applied, for compliance with coating application requirements.

.2 Apply coatings only after unsatisfactory conditions have been corrected and surfaces to receive coatings are thoroughly dry.

.3 Start of application is construed as Applicator's acceptance of surfaces within that particular area.

.4 Coordination of Work: Review other Sections in which primers or other coatings are provided to ensure compatibility of total systems for various substrates. On request, furnish information on characteristics of specified finish materials to ensure compatible primers.

.2 Preparation:

.1 General: Remove plates, machined surfaces, and similar items already in place that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating.

.2 Use abrasive blast-cleaning methods if recommended by coating manufacture

.3 Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not coat surfaces if moisture content exceeds that permitted in manufacturer's written instructions.

.4 After completing coating operations, reinstall items that were removed; use workers skilled in the trades involved.

.5 Application:

.1 Refer to Section 03 30 00

.6 Apply liquid hardener to manufacturer's written instructions on floor surfaces.

.7 Apply slip resistant finish to manufacturer's written instructions on floor surfaces.

.8 Apply sealer to manufacturer's written instructions on floor surfaces.

.9 Apply retarder to trowelled finish to manufacturer's written instructions on floor surfaces.

3.6 TOLERANCES

.1 Maximum Variation of Surface Flatness For Exposed Concrete Floors: 3 mm in 3 m (1/8 inch in 10 ft).

.2 Maximum Variation of Surface Flatness Under Seamless Resilient Flooring: 3 mm in 3 m (1/8 inch in 10 ft).

.3 Maximum Variation of Surface Flatness Under Carpeting: 3 mm in 3 m (1/8 inch in 10 ft).

.4 Measure for floor flatness (FF) and floor levelness (FL) tolerances for floors to ASTM E1155M / ASTM E1155, within forty-eight (48) hours after slab installation.

.5 Finish concrete to achieve the following tolerances:

.1 Under Glazed Tile on Setting Bed: F (FF) 25 and F (FL) 20.

.2 Under Glossy Resilient Finishes: F (FF) 25 and F (FL) 20.

.3 Exposed to View and Foot Traffic: F (FF) 35 and F (FL) 25.

.6 Correct the slab surface if the actual F (FF) or F (FL) number for the floor installation measures less than required.

.7 Correct defects in the defined traffic floor by grinding or removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.7 WORKMANSHIP

.1 The finishing of all concrete shall be of highest quality. Surfaces shall have neat patterns, tooled edges and joints

.2 All cracked and/or chipped slabs shall be repaired at no additional cost to the Owner.

3.8 SCHEDULES

.1 Storage Area #106: Sealer, clear mineral type, surface flatness tolerance of 3 mm in 3 m (1/8 inch in 10 ft).

END OF SECTION

Section 06 10 00
Rough Carpentry

Part 1 General

1.1 SECTION INCLUDES

.1 Miscellaneous rough carpentry, including:

.1 Wood blocking, cants, and nailers.

.2 Wood sleepers.

.3 Wood shelving.

.4 Telephone and electrical panel backboards.

.2 Fasteners.

.3 Preservative treatment.

.4 Fire retardant treatment.

1.2 RELATED REQUIREMENTS

.1 Section 03 30 00 - Cast-in-Place Concrete: Setting anchors in concrete.

.2 Section 06 11 00 - Wood Framing

.3 Section 06 16 00 - Sheathing

.4 Section 08 11 13 - Metal Doors and Frames: Door openings to receive wood blocking.

.5 Section 08 51 13 - Aluminum Windows: Window openings to receive wood blocking.

1.3 REFERENCE STANDARDS

.1 ASTM A123/A123M-17 Standard specification for zinc (hot-dip galvanized) coatings on iron and steel products

.2 ASTM A153/A153M-16a Standard specification for zinc coating (hot-dip) on iron and steel hardware

.3 ASTM A653/A653M-20 Standard specification for steel sheet, zinc-coated (galvanized) or zinc-iron alloy-coated (galvannealed) by the hot-dip process

.4 CAN/CGSB 11.3-M87 Hardboard

.5 Canadian plywood handbook

.6 CSA O80 SERIES:21 Wood preservation

.7 STD O121-17 Douglas fir plywood

.8 CSA O325:21 Construction sheathing (adopted NIST PS 2-18, with Canadian deviations)

.9 Standard grading rules for Canadian lumber

.10 STD A208.1-2016 Particleboard

1.4 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide technical data on insulated sheathing, wood preservative materials, application instructions.

.3 Shop Drawings:

.1 Provide Shop Drawings stamped and signed by a Professional Engineer registered or licensed in the Province of Ontario, Canada.

1.5 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

1.6 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

1.7 QUALITY ASSURANCE

.1 Perform Work in accordance with the following agencies:

.1 Lumber Grading Agency: Certified by NLGA Grading Rules.

.2 Plywood Grading Agency: Certified by CANPLY.

.3 Wood Based Panel Products: Marked with a recognized, visible grade stamp showing Grade or span rating as required.

.2 Pressure Preservative Treated Wood: Marked with certification mark authorized by the Canadian Wood Preservers Bureau (CWPB) indicating producer, preservative type, retention and Use Category (UC).

.3 Design structural site fabricated trusses, rafters, & floor joists under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed at the place where the Project is located.

1.8 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Store plywood panels flat and level.

.3 Keep finish faces inward and cover stacks to protect from bumping and abrasion.

.4 Protect tongue and groove plywood panel edges and corners.

.5 Protect panels from sunlight, water or excessive humidity.

.6 Store materials off the ground, covered with weatherproof tarps or indoors in dry, well-ventilated area.

Part 2 Products

2.1 LUMBER MATERIALS

.1 Dimension Lumber: CSA-O141, softwood lumber unless indicated otherwise, S4S, maximum moisture content 19%; graded to NLGA Grading Rules Standard Grading Rules for Lumber. Finger jointed lumber not acceptable.

.1 Studs - Non-Structural: Grade Stud, species: Spruce-Pine-Fir.

.2 Studs - Structural: Grade No. 2, species: Spruce-Pine-Fir species.

.3 Floor joists: No. 2, species: Spruce-Pine-Fir species.

.4 Built-up Beams: Grade No. 1 / No. 2, species: Spruce-Pine-Fir.

.5 Rafters & Trusses: Grade No. 2, species: Spruce-Pine-Fir, kiln dried; CSA O86 and NBC/OBC loading requirements.

.6 Utility Shelving: Grade No. 2, species: any species.

.7 All Furring, Blocking, Nailing Strips, Grounds and Rough Bucks, Cants, Curbs, Fascia, Sleepers: Grade No. 2, species: any species; exterior wood pressure preservative treated.

2.2 PANEL MATERIALS

.1 Refer to 06 16 00 for sheathing

2.3 FASTENERS AND ANCHORS

.1 Provide and install all fastenings and hardware (except finishing hardware specified in Section 08 71 00) as shown on the Drawings, specified herein, or required for proper installation of rough carpentry. Fastenings not shown or specified shall be of a suitable quality, size, strength, finish, and durability to provide adequate performance and/or appearance as required by their location in the Work.

.2 Screws and Nails: Galvanized steel or Stainless steel for pressure treated wood; type and size suitable for application.

.3 Anchors: Galvanized steel; toggle bolt type for anchorage to hollow masonry expansion shield and lag bolt type for anchorage to solid masonry or concrete bolt or ballistic fastener for anchorages to steel, as required.

2.4 CONNECTORS AND PLATES

.1 Steel Plate Connectors: Galvanized steel, die stamped with integral teeth, 18 gauge thickness.

.2 Bearing Plates: Hot-dip Galvanized steel, size and thickness as indicated.

.3 Joist Hangers: Galvanized steel, sized to suit framing conditions.

2.5 MISCELLANEOUS ACCESSORIES

.1 Sill Gasket (top of foundation wall): 6 mm (1/4 inch), as indicated thick, plate width Closed cell polyethylene foam, acceptable alternative; Closed cell urethane foam.

.2 Flexible Flashing: Rubberized-asphalt compound, self-adhesive, bonded to a high-density, polyethylene film, minimum thickness 1.0 mm (40 mil). Compatible primer recommended by membrane manufacturer.

.3 Adhesives: Waterproof adhesive, approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.

.1 Construction adhesive compatible with wood framing

.4 Roof Sheathing Clips: Purpose made H-shape clips, galvanized steel, minimum 20 gauge metal thickness, size to suit panel material.

.5 Termite Shield: Galvanized sheet steel, 0.46mm (26 gauge) thick.

2.6 FINISHES

.1 Galvanized Coatings for Untreated Wood:

.1 Connectors: Hot dip galvanized to ASTM A653/A653M, G90 zinc coating designation.

.2 Bearing Plates & Angles: Hot dip galvanized after fabrication to ASTM A123/A123M.

.3 Fasteners and Anchors: Hot dip galvanized to ASTM A153/A153M.

.2 Galvanized Coating for Use with Treated Wood and High Humidity Areas:

.1 Connectors: Hot dip galvanized to ASTM A653/A653M, G185 zinc coating designation.

.2 Bearing Plates & Angles: Hot dip galvanized after fabrication to ASTM A123/A123M.

.3 Fasteners and Anchors: Hot dip galvanized to ASTM A153/A153M.

2.7 PRESERVATIVE TREATMENT

.1 Wood Preservative (Pressure Treatment): CAN/CSA-O80, and in accordance with Table 2 - Use Categories for Specific Products, Uses, and Exposures.

.1 UC1: Interior construction, above-ground and dry applications; use inorganic boron (SBX) preservative.

.2 UC2: Interior construction, above-ground and potentially damp applications; use . waterborne alkali-based, type ACQ.

.3 UC3.1: Exterior construction, protected, above-ground applications (coated millwork, cants, siding, trim); use waterborne alkali-based, type CA -Bor waterborne alkali-based, type ACQ.

.4 Retention for UC2 : As required by CSA O80.1. .

.2 Wood Preservative (Surface Application): CAN/CSA-O80, copper naphthenate.

.3 Fire retardant (FRT): CAN/CSA-O80, chemically treated and pressure impregnated; capable of providing a maximum flame spread/smoke development rating of 25/50, to CAN/ULC-S102.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that site conditions are ready to receive work and opening dimensions are as indicated on Shop Drawings.

3.2 FRAMING

.1 Set structural members level and plumb, in correct position.

.2 Make provisions for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in true alignment until completion of erection and installation of permanent bracing.

.3 Provide blocking, framing, nailers and backing required for roof, wall and soffit construction and for attachment of finishes, flashings and other components indicated on Drawings.

3.3 FLEXIBLE FLASHING

.1 Install flexible flashing to manufacturer's written instructions.

.2 Lap seams and junctions with other materials minimum 100 mm (4 inches).

.3 At new roof-to-existing building connection, extend ice and water shield continuously from roof sheathing up new plywood sheathing at existing wall and over existing parapet, as indicated on Drawings.

.4 Lap and seal flexible flashing with adjacent air barrier, roofing membrane, sheet metal flashing and other components to provide a continuous weather-resistant assembly.

.5 Install flexible flashing at exterior wall openings and penetrations where indicated. Lap flashing with wall air barrier to shed water to exterior.

3.4 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Framing Members: 6 mm (1/4 inch) from true position, maximum.

.3 Surface Flatness of Floor: 2 mm in 1 m (1/4 inch in 10 ft) maximum, and 13 mm in 9 m (1/2 inch in 30 ft) maximum.

3.5 INSTALLATION

.1 On completion of the work of this section, all protection erected under this section shall be removed, all damage to this work and to the work of other trades resulting from the execution of the work of this section shall be made good, and all surplus materials, debris, tools, plant, and equipment shall be removed from the premises, and the building(s) and site left in a condition satisfactory to the Consultant.

.2 Miscellaneous Interior Carpentry:

.1 Provide plywood, blocking, furring, nailers, rough carpentry, grounds and nailing strips as indicated and/or as required for proper installation. Provide furring, blocking as required to support miscellaneous work indicated on Drawings or as required to meet design requirements.

.2 Miscellaneous interior carpentry non-exhaustively includes supports for:

- wall-mounted equipment and accessories;
- washroom accessories;
- millwork and cabinetry;
- door and wall-mounted hardware;
- fascia and soffit construction;
- plywood substrates and backing; and
- other similar items indicated on Drawings.

3.6 CLEAN UP

.1 On completion of the work of this section, all protection erected under this section shall be removed, all damage to this work and to the work of other trades resulting from the execution of the work of this section shall be made good, and all surplus materials, debris, tools, plant, and equipment shall be removed from the premises, and the building(s) and site left in a condition satisfactory to the Consultant.

END OF SECTION

Section 06 11 00
Wood Framing

Part 1 General

1.1 SECTION INCLUDES

.1 Structural wood wall framing.

.2 Wood sill plates, top and bottom plates.

.3 Wood blocking associated with structural framing.

.4 Framing connectors, anchors, and fasteners.

.5 Installation of wood sheathing where indicated.

1.2 RELATED SECTIONS

.1 03 30 00 Cast-in-Place Concrete

.2 06 10 00 Rough Carpentry

.3 06 16 00 Sheathing

.4 07 21 00 Thermal Insulation

.5 07 27 00 Air and Moisture Barriers

.6 09 21 16 Gypsum Board Assemblies

1.3 REFERENCES

.1 Ontario Building Code (OBC).

.2 CSA O86 – Engineering Design in Wood.

.3 CSA O141 – Softwood Lumber.

.4 CSA O151 – Canadian Softwood Plywood.

.5 CSA O325 – Construction Sheathing.

.6 NLGA Standard Grading Rules for Canadian Lumber.

.7 CSA G40.20/G40.21 where steel connectors are specified.

1.4 ADMINISTRATION REQUIREMENTS

.1 Coordinate installation of framing with foundations, structural steel, mechanical, electrical and other work.

.2 Verify dimensions and site conditions before commencing framing.

.3 Report discrepancies to the Consultant prior to proceeding.

.4 Do not conceal framing until required inspections have been completed.

1.5 SUBMITTALS FOR REVIEW

.1 Submit product data for:

- .1 pressure-treated lumber
- .2 engineered wood products
- .3 prefabricated roof trusses
- .4 framing connectors
- .5 proprietary fasteners

.2 Submit sealed truss shop drawings prepared by a Professional Engineer licensed in Ontario.

.3 Submit manufacturer's installation instructions for proprietary framing systems.

1.6 CLOSE OUT SUBMITTALS

.1 Submit closeout documents in accordance with Section 01 78 00 – Closeout Submittals.

.2 Submit warranties, truss engineering certifications, and record documentation applicable to this Section.

1.7 QUALITY ASSURANCE

.1 Perform work in accordance with the Ontario Building Code.

.2 Comply with CSA O86.

.3 Lumber grading agency stamp shall be visible on all structural lumber.

1.8 DELIVERY, STORAGE AND HANDLING

.1 Deliver lumber dry and protected.

.2 Store clear of ground on blocking.

.3 Protect from moisture and damage.

.4 Remove warped or damaged material from the site.

Part 2 Products

2.1 MANUFACTURERS

.1 Approved engineered wood products meeting performance requirements.

- .1 Ontario manufactures preferred

.2 Framing connectors:

- .1 Simpson Strong-Tie.
- .2 Mitek Canada.
- .3 Approved equivalent.

2.2 PERFORMANCE CRITERIA

.1 Design wood framing in accordance with CSA O86 and the Ontario Building Code.

.2 Prefabricated roof trusses shall be designed by a Professional Engineer licensed in the Province of Ontario.

.3 Structural members shall safely support the design loads indicated on the Structural Drawings.

.4 Fabricate and install framing to maintain specified tolerances and provide a complete structural framing system.

2.3 MATERIALS

.1 Dimension Lumber

- .1 SPF No. 2 grade or better unless noted otherwise.
- .2 Moisture content not exceeding 19% at time of installation.

.2 Pressure Treated Lumber

- .1 Pressure-treated in accordance with CSA O80.
- .2 Use wherever wood is in contact with concrete, masonry, or exposed to moisture.

.3 Engineered Wood Products

- .1 Laminated Veneer Lumber (LVL) where indicated.
- .2 PSL or LSL where indicated.
- .3 As manufactured by approved manufacturer.

.4 Roof Trusses

- .1 Factory fabricated.
- .2 TPIC certified.
- .3 Designed for project loading.
- .4 Provide permanent bracing as required.

.5 Fasteners

- .1 Galvanized where exposed or in contact with treated lumber.
- .2 Nails, screws and bolts complying with CSA requirements.

.6 Framing Connectors

- .1 Hot-dip galvanized.
- .2 Simpson Strong-Tie or approved equivalent.
- .3 Install with manufacturer's specified fasteners.

2.4 FABRICATION

.1 Fabricate framing members to dimensions shown on the Drawings.

.2 Prefabricated roof trusses shall be manufactured in accordance with TPIC requirements.

.3 Fabricate engineered wood members in accordance with manufacturer's recommendations.

Part 3 Execution

3.1 PREPARATION

.1 Verify that foundations, bearing surfaces, and supporting construction are complete, level, plumb, and within specified tolerances.

.2 Verify dimensions and locations of anchor bolts, embedded items, and bearing points prior to commencing framing.

.3 Report discrepancies to the Consultant. Do not proceed until deficiencies have been corrected.

.4 Protect framing materials from moisture during installation.

3.2 INSTALLATION

.1 Install wood framing in accordance with CSA O86, the Ontario Building Code, approved shop drawings, and manufacturer's written instructions.

.2 Install framing plumb, true, level, and accurately aligned.

.3 Secure framing members with specified fasteners and connectors.

.4 Install pressure-treated sill plates at all concrete and masonry bearing surfaces.

.5 Install engineered wood members and prefabricated roof trusses in accordance with the manufacturer's requirements and sealed shop drawings.

.6 Install solid blocking, fire blocking, bracing, and bridging where indicated and as required by the Ontario Building Code.

.7 Do not cut, notch, or drill structural framing members except as indicated on the Drawings or approved by the Structural Engineer.

.8 Coordinate framing with mechanical, electrical, plumbing, and other trades to accommodate openings, penetrations, and built-in work.

.9 Repair or replace damaged framing members to the satisfaction of the Consultant.

3.3 FIELD QUALITY CONTROL

.1 Field review of wood framing will be carried out by the Consultant in accordance with Section 01 45 00 – Quality Control.

.2 Correct deficiencies identified during field review prior to proceeding with subsequent work.

.3 Where required, provide access for inspection of concealed framing before enclosure.

.4 Replace warped, split, damaged, or improperly installed framing members.

3.4 TOLERANCES

.1 Construct framing true to line and level.

.2 Maximum variation from plumb: **6 mm in 3 m**.

.3 Maximum variation from level: **6 mm in 3 m**.

.4 Maximum variation in location of framed openings: **±6 mm**.

3.5 PROTECTION

.1 Protect completed framing from weather until enclosed.

.2 Replace framing damaged by moisture, decay, or construction activities.

3.6 CLEANING

.1 Perform cleaning in accordance with Section 01 74 11 – Cleaning.

.2 Remove waste materials and leave the work area clean and ready to receive subsequent work.

END OF SECTION

Section 06 16 00
Sheathing

Part 1 General

1.1 SECTION INCLUDES

.1 Sheathing.

.2 Fasteners.

1.2 RELATED REQUIREMENTS

.1 Section 06 10 00 - Rough Carpentry

.2 Section 06 11 00 - Wood Framing

.3 Section 08 11 13 - Metal Doors and Frames: Door openings.

.4 Section 08 51 13 - Aluminum Windows: Window openings.

1.3 REFERENCE STANDARDS

.1 ASTM A153/A153M Standard specification for zinc coating (hot-dip) on iron and steel hardware

.2 ASTM A653/A653M Standard specification for steel sheet, zinc-coated (galvanized) or zinc-iron alloy-coated (galvannealed) by the hot-dip process

.3 ASTM C208 Standard specification for cellulosic fiber insulating board

.4 ASTM C578 Standard specification for rigid, cellular polystyrene thermal insulation

.5 ASTM C1177/C1177M Standard specification for glass mat gypsum substrate for use as sheathing

.6 ASTM C1280 Standard specification for application of exterior gypsum panel products for use as sheathing

.7 ASTM C1289 Standard specification for faced rigid cellular polyisocyanurate thermal insulation board

.8 ASTM C1396/C1396M Standard specification for gypsum board

.9 CANPLY Canadian plywood handbook

.10 CPA A135.4 Basic hardboard

.11 CPA A208.1-2022 Particleboard

.12 CSA O80 SERIES Wood preservation

.13 CSA O121 Douglas fir plywood

.14 CSA O151 Canadian softwood plywood

.15 CSA O153 Poplar plywood

.16 CSA O325 Construction sheathing

.17 GA 253 Application of gypsum sheathing

.18 ULC S102 Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

.19 ULC S701.1 Standard for Thermal Insulation, Polystyrene Boards.

.20 ULC S704.1 Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.

.21 ULC S706.1 Standard for Wood Fibre Insulating Boards for Buildings.

1.4 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide technical data on insulated sheathing, wood preservative materials, application instructions.

1.5 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

1.6 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

1.7 QUALITY ASSURANCE

.1 Perform Work in accordance with the following agencies:

.1 Plywood Grading Agency: Certified by CANPLY.

.2 Wood Based Panel Products: Marked with a recognized, visible grade stamp showing Grade or span rating as required.

.2 Pressure Preservative Treated Wood: Marked with certification mark authorized by the Canadian Wood Preservers Bureau (CWPB) indicating producer, preservative type, retention and Use Category (UC).

1.8 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Store plywood panels flat and level.

.3 Keep finish faces inward and cover stacks to protect from bumping and abrasion.

.4 Protect tongue and groove plywood panel edges and corners.

.5 Protect panels from sunlight, water or excessive humidity.

.6 Store materials indoors in dry, well-ventilated area.

.7 Store within temperature limits required by manufacturer.

.8 Store air- and water-resistive sheathing board supported on risers on a flat platform.

.9 Comply with manufacturer's written instructions for safety and handling.

Part 2 Products

2.1 PANEL MATERIALS

.1 Plywood: CSA-O151, or as indicated in schedule below, CANPLY certified and graded, meeting the requirements of CSA-O325.

.1 Wall Sheathing: Sheathing grade, as indicated thickness, square edges.

.2 Roof Sheathing: Sheathing grade, thickness 16 mm (5/8", square edges.

.3 Telephone and Electrical Panel Back Boards: Plywood, thickness 19 mm (3/4 inch), S1S.

.2 OSB: Oriented strands set with waterproof resin binder, meeting the requirements of CSA-O325 and CSA-O437.

.1 Wall Sheathing: O-3 grade, thickness as indicated.

.2 Roof Sheathing: O-3 grade, thickness as indicated.

2.2 FASTENERS AND ANCHORS

.1 Screws and Nails: Zinc coated; type and size suitable for application of interior dry use

.2 Screws and Nails: Stainless steel Type 316; type and size suitable for application of wet, humid, arenas, salt exposure, and long-life critical use.

.3 Galvanized Coating for General Exterior Work : Hot dip galvanized to ASTM A153/A153M.

.4 Galvanized Coating for Treated Wood: Hot dip galvanized to ASTM A153/A153M.

2.3 MISCELLANEOUS ACCESSORIES

.1 Flexible Flashing: Rubberized-asphalt compound, self-adhesive, bonded to a high-density, polyethylene film, minimum thickness 0.64 mm (25 mil). Compatible primer recommended by membrane manufacturer.

.2 Adhesives: Waterproof adhesive, approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.

.3 Refer to Section 07 27 00 for Air and Moisture Barriers

.4 Roof Sheathing Clips: Purpose made H-shape clips, galvanized steel, minimum 0.91 mm (18 ga) or as indicated metal thickness, size to suit panel material.

2.4 PRESERVATIVE TREATMENT

.1 Wood Preservative (Pressure Treatment): CSA-O80, and in accordance with Table 2 - Use Categories for Specific Products, Uses, and Exposures of CSA-O80.1.

.1 UC1: Interior construction, above-ground and dry applications; use inorganic boron (SBX) preservative.

.2 UC2: Interior construction, above-ground and potentially damp applications; use waterborne alkali-based, type ACQ.

.3 UC3.1: Exterior construction, protected, above-ground applications (coated millwork, cants, siding, trim); use waterborne alkali-based, type CA-B or waterborne alkali-based, type ACQ.

.4 Retention for specified use category: as per CSA O80.1.

.2 Wood Preservative (Surface Application): CSA-O80.3, copper naphthenate.

.3 Fire retardant (FRT): CSA-O80, chemically treated and pressure impregnated; capable of providing a maximum flame spread/smoke development rating of 25/50, to ULC-S102.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that site conditions are ready to receive work and opening dimensions are indicated on Shop Drawings.

3.2 WOOD PANEL INSTALLATION

.1 Secure roof sheathing with longer edge perpendicular to framing members and with ends staggered and sheet ends over bearing.

.2 Use sheathing clips between sheets between roof framing members.

.3 Secure wall sheathing with long dimension perpendicular to wall studs, with ends over firm bearing and staggered.

.4 Place plywood or structural-use panel sheeting at building corners for a horizontal distance of 1200mm (48 inches). Provide sheet steel corner bracing.

3.3 GYPSUM BOARD INSTALLATION

.1 Install components to GA-253 and manufacturer's written instructions.

.2 Coordinate location of openings and through-wall components with other work.

.3 Use screws when fastening gypsum board to furring or framing.

.4 Place corner beads at external corners as indicated.

.1 Use longest practical length.

.2 Place edge trim where gypsum board abuts dissimilar materials as indicated.

3.4 FLASHING

.1 Install flexible flashing to manufacturer's written instructions.

.2 Lap seams and junctions with other materials minimum 100 mm (4 inches).

.3 At exterior wall openings, install flashing to provide positive drainage to exterior. Lap and seal flashing with adjacent air barrier in shingle fashion to maintain continuity of the weather barrier.

.4 At new roof-to-existing building connection, extend ice and water shield continuously from roof sheathing up new plywood sheathing at existing wall and over existing parapet, as indicated on Drawings.

.5 Coordinate flexible flashing and membrane with prefinished metal roof flashing, cap flashing, roofing, siding and air barrier to provide a continuous weather-tight assembly.

3.5 SITE APPLIED WOOD TREATMENT

.1 Apply preservative treatment to manufacturer's written instructions.

.2 Brush apply two (2) coats of preservative treatment on wood requiring cutting or drilling after treatment and on wood in contact with cementitious materials.

.3 Allow preservative to dry prior to erecting members.

END OF SECTION

Section 06 17 53
Shop-Fabricated Wood Trusses

Part 1 General

1.1 SECTION INCLUDES

.1 Plate connected wood trusses for roof framing.

.2 Bridging, bracing, and anchorage.

.3 Preservative treatment of wood.

1.2 RELATED REQUIREMENTS

.1 Section 03 30 00 - Cast-in-Place Concrete: Setting anchors in concrete.

.2 Section 06 10 00 - Rough Carpentry: Miscellaneous wood blocking, spacers, and bridging; dimension lumber framing.

.3 Section 06 11 00 – Wood Framing: Structural wood wall framing and bearing assemblies.

.4 Section 06 16 00 – Sheathing: Roof and wall sheathing

1.3 DEFINITIONS

.1 Delegated Design Professional: The specialist or supporting design professional contracted to the contractor, fabricator or manufacturer to design and/or review specific building components or sub-components, and provide Shop Drawings and Delegated Design Submittals to meet the requirements of authorities having jurisdiction.

1.4 REFERENCE STANDARDS

.1 ASTM A123/A123M Standard specification for zinc (hot-dip galvanized) coatings on iron and steel products

.2 ASTM A153/A153M Standard specification for zinc coating (hot-dip) on iron and steel hardware

.3 ASTM A653/A653M Standard specification for steel sheet, zinc-coated (galvanized) or zinc-iron alloy-coated (galvannealed) by the hot-dip process

.4 CSA O80 SERIES Wood preservation

.5 CSA O86 Engineering design in wood

.6 CSA O141 Canadian standard lumber

.7 NLGA Standard grading rules for Canadian lumber

.8 TPIC Truss design procedures and specifications for light metal plate connected wood trusses

.9 ULC S102 Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

.10 CSA O325 – Construction Sheathing

1.5 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide truss configurations, bearing and anchor details, bridging and bracing.

.3 Provide Manufacture's literature for:

.1 Wood trusses.

.2 Truss connector plates.

.3 Framing connectors and anchors.

.4 Permanent bracing systems, where proprietary.

.5 Preservative-treated wood products, where applicable.

.4 Shop Drawings:

.1 Shop drawings shall include:

.1 Truss layout plan identifying truss types and locations.

.2 Truss profiles and dimensions.

.3 Member sizes and grades.

.4 Plate sizes and locations.

.5 Design loads, including dead, live, snow, wind, and uplift loads.

.6 Bearing locations and required reactions.

.7 Heel heights and overhangs.

.8 Permanent lateral bracing requirements.

.9 Framed openings.

.10 Connection and anchorage details.

.11 Truss cambers, where applicable.

.2 Indicate any special installation or temporary bracing requirements.

.3 Provide Shop Drawings stamped and signed by the delegated design professional.

1.6 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Delegated Design Submittals:

.1 Submit documentation (Delegated Design Submittals) indicating compliance to performance/design criteria, signed and sealed by the delegated design professional responsible for their preparation.

.1 Design Data: Include material data, calculations and details.

.2 Letters of Assurance: Submit the following documents as required by authorities having jurisdiction or as specified in Section 01.

.1 Letter of General Review: Submit concurrently with Shop Drawings.

.2 Letter of Compliance: Submit after completion of Work of this Section.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

1.8 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to TPIC certification requirements.

.2 Design trusses, bracing, bridging and connectors in accordance with CSA-O86 and TPIC Truss Design Procedures. Maintain one (1) copy of document on site.

.3 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

.4 Delegated Design Professional Qualifications: Professional Structural Engineer experienced in design of this Work and licensed in the province where the project is located.

.5 Pressure Preservative Treated Wood: Marked with certification mark authorized by the Canadian Wood Preservers Bureau (CWPB) indicating producer, preservative type, retention and Use Category (UC).

1.9 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Store truss depth in vertical position resting on intermittent bearing pads.

Part 2 Products

2.1 MANUFACTURERS

.1 Truss manufacturer certified by TPIC.

.1 Manufactures to be Ontario based or Canada.

2.2 DESCRIPTION

.1 Regulatory Requirements:

.1 Conform to applicable code for loads and other governing load criteria, fire retardant requirements, and seismic zoning.

2.3 PERFORMANCE / DESIGN CRITERIA

.1 Delegated Design: Design trusses and connections by a licensed design professional using performance and design criteria as indicated.

.2 Design Floor Live Load: **As indicated on Structural Drawings.**

.3 Design Roof Snow Load: **As indicated on Structural Drawings.**

.4 Minimum Truss Opening: **As indicated on drawings.**

.5 Seismic Loads: Design and size components to withstand seismic loads and sway displacement as calculated in accordance with applicable code.

2.4 MATERIALS

.1 Dimension Lumber: CSA-O141, softwood lumber unless indicated otherwise, S4S, maximum moisture content 19%; graded to CSA-O86 with specified strengths to NLGA Grading Rules.

.1 Wood Chord Members: No. 2 grade, Spruce-Pine-Fir or better.

.2 Web Members: SPF, graded as required by engineered design.

.2 Truss Plates: Galvanized steel connector plates; minimum 20 gauge (0.84 mm).

.3 Truss Bridging: Type, size and spacing recommended by truss manufacturer.

2.5 ACCESSORIES

.1 Miscellaneous Wood Blocking: Softwood lumber, SPF, No. 2 grade.

.2 Steel Connectors:

.1 Connectors: Simpson Strong-Tie or approved equal, size and thickness as shown.

.2 Bearing Plates and Angles: Galvanized steel, size and thickness as indicated.

.3 Fasteners and Anchors:

.1 Fasteners: Galvanized steel, type and size suitable for application.

.2 Anchors: Galvanized steel, anchors as detailed.

2.6 FINISHES

.1 Galvanized Coatings for Untreated Wood:

.1 Structural Steel:

.1 Hot dip galvanized after fabrication to ASTM A123/A123M.

.2 Hot dip galvanized to ASTM A653/A653M, G90 zinc coating designation

.2 Miscellaneous Steel: Hot dip galvanized after fabrication to ASTM A123/A123M.

.3 Fasteners and Anchors: Hot dip galvanized to ASTM A153/A153M.

.2 Galvanized Coating for Treated Wood and High Humidity Areas:

.1 Structural Steel:

.1 Hot dip galvanized after fabrication to ASTM A123/A123M.

.2 Hot dip galvanized to ASTM A653/A653M, G185 zinc coating designation (treated wood/high humidity) zinc coating designation

.2 Miscellaneous Steel: Hot dip galvanized after fabrication to ASTM A123/A123M.

.3 Fasteners and Anchors: Hot dip galvanized to ASTM A153/A153M.

2.7 FABRICATION

.1 Fabricate trusses to achieve structural requirements specified.

.2 Brace wood trusses for support to TPIC Truss Design Procedures.

.3 Provide top chord extensions as indicated.

.4 Fabricate to achieve minimum end bearing of:

.1 89 mm (3 1/2 inches) on steel.

.2 89 mm (3 1/2 inches) on masonry.

.5 Frame special sized openings in web framing as detailed.

2.8 WOOD TREATMENT

.1 Wood Preservative (Pressure Treatment): CSA-O80, and in accordance with Table 2 - Use Categories for Specific Products, Uses, and Exposures of CSA-O80.1.

.1 UC1: Interior construction, above-ground and dry applications; use inorganic boron (SBX) preservative.

.2 UC2: Interior construction, above-ground and potentially damp applications; use micronized copper azole (MCA) or alkaline copper quaternary (ACQ)..

.3 Retention for UC2: As required by CSA O80.1. .

.2 Wood Preservative (Surface Application): CSA-O80.3, copper naphthenate.

.3 Fire Retardant (FRT): CSA-O80, chemically treated and pressure impregnated; capable of providing a maximum flame spread/smoke development rating of ULC-S102, to 25/50 maximum.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that supports and openings are ready to receive trusses.

3.2 PREPARATION

.1 Coordinate placement of support and bearing items.

3.3 INSTALLATION

.1 Install trusses to TPIC Truss Design Procedures and manufacturer's written instructions.

.2 Set members level and plumb, in correct position.

.3 Make provisions for erection loads, and for sufficient temporary bracing to maintain structure plumb, and in true alignment until completion of erection and installation of permanent bracing.

.4 Do not field cut or alter structural members without approval of Consultant.

.5 Place headers and supports to frame openings.

.6 Frame openings between trusses with lumber in accordance with Section 06 10 00 Rough Carpentry.

.7 Coordinate placement of decking, sheathing, mechanical, electrical, and plumbing penetrations with work of this section.

.8 After erection, touch-up damaged surfaces with primer consistent with shop coat.

3.4 SITE APPLIED WOOD TREATMENT

.1 Apply preservative treatment to manufacturer's written instructions.

.2 Brush apply two (2) coats of preservative treatment on wood requiring cutting or drilling after treatment and on wood in contact with cementitious materials.

.3 Allow preservative to dry prior to erecting members.

3.5 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Framing Members: 6 mm (1/4 inch) maximum, from true position.

END OF SECTION

Section 06 41 00
Architectural Wood Casework

Part 1 General

1.1 SECTION INCLUDES

.1 Cabinet units.

.2 Countertops.

.3 Cabinet hardware.

1.2 RELATED REQUIREMENTS

.1 Section 06 10 00 - Rough Carpentry: Grounds and support framing.

.2 Division 22 - Plumbing: Sinks, faucets and plumbing connections.

.3 Division 26 - Electrical: Power, signal, and data wiring.

1.3 REFERENCE STANDARDS

.1 AWMAC NAAWS - North American architectural woodwork standards

.2 BHMA A156.9 Cabinet hardware

.3 CPA A135.4 Basic Hardboard

.4 CPA A208.1 Particleboard

.5 CPA A208.2 Medium density fiberboard (MDF) for interior applications

.6 NEMA LD 3 High-pressure decorative laminates (HPDL). (Withdrawn)

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

1.5 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data:

.1 Provide data for hardware accessories.

.1 Submit manufacturer's data for cabinet hardware and accessories.

.3 Shop Drawings: Indicate materials, component profiles and elevations, assembly methods, joint details, fastening methods, accessory listings, hardware location and schedule of finishes.

.1 Indicate materials and thicknesses; construction and assembly methods; joint details; fastening and anchorage methods; hardware; countertop construction; sink and equipment openings; and schedule of finishes.

.2 Verify dimensions and locations of plumbing fixtures, appliances and Owner-supplied equipment prior to fabrication.

.4 Samples:

.1 Submit samples of each specified plastic laminate, countertop finish and exposed hardware finish for review.

1.6 QUALITY ASSURANCE

.1 Perform fabrication and installation to AWMAC NAAWS , Premium Grade, except where otherwise indicated .

.2 Manufacturer Qualifications: Company specializing in fabrication of architectural casework with minimum five (5) years documented experience.

.3 Installer Qualifications: Company experienced in installation of architectural casework and approved by casework manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.1 Protect casework from damage and moisture

.2 Deliver materials after area of operation is fully enclosed; plaster and concrete work dry and area broom clean.

.3 Protect units from moisture damage as specified in AWMAC requirements.

1.8 SITE CONDITIONS

.1 Ambient Conditions:

.1 Maintain indoor temperature and humidity during and after installation within range recommended by AWMAC NAAWS for location of the project.

Part 2 Products

2.1 MANUFACTURERS

.1 Architectural casework to be shop fabricated by a qualified architectural millwork manufacturer experienced in work of similar type and complexity.

.2 Substitutions: Refer to Section 01 25 00.

2.2 SHEET MATERIALS

.1 Wood Sheet Materials: Panel grades as required for intended application and complying with AWMAC NAAWS requirements for grade specified.

.1 Plywood: Good-one-side plywood, thickness as indicated, suitable for intended application.

.2 Exterior Grade Plywood: Exterior grade plywood at countertop, sink and other locations indicated on Drawings.

.3 Particleboard: CPA A208.1, medium density, thickness as indicated. Provide moisture-resistant grade at wet locations.

.4 Medium Density Fibreboard (MDF): CPA A208.2, thickness as indicated, where specifically indicated.

.5 Hardboard: CPA A135.4, tempered hardboard, 6 mm (1/4 inch) thick, for cabinet backs where indicated.

2.3 PLASTIC LAMINATE MATERIALS

.1 Acceptable Manufacturers:

.1 Formica Corporation.

.2 Substitutions: Refer to Section 01 25 00.

.3 High Pressure Decorative Laminate (HPDL): NEMA LD 3, grade and thickness suitable for intended application.

.4 Backing Sheet: Compatible backing sheet as required to balance laminated panels.

.5 Thermofused Melamine: White, for cabinet interiors, backs and other locations indicated.

.6 Backer sheet shall be supplied by the same manufacturer as facing sheet.Backer sheet shall be supplied by the same manufacturer as facing sheet.

.7 Colours and Finishes: Selected by Consultant from manufacturer's standard range.

.8 Cabinet Exteriors: High pressure decorative laminate.

.9 Countertops and Window Sills: High pressure decorative laminate.

.10 Cabinet Interiors, Backs and Shelves: White thermofused melamine, unless otherwise indicated.

2.4 EDGEBANDS

.1 PVC Edge Banding: Matching plastic laminate colour, minimum 2 mm thick, applied to exposed panel edges as indicated.

.2 Apply edge banding using manufacturer's recommended adhesive and equipment to provide continuous, permanently bonded finish.

2.5 ACCESSORIES

.1 Adhesive: Type recommended by manufacturer for materials and application; waterproof at wet locations .

.2 Fasteners: Corrosion-resistant fasteners , of size and type to suit application.

.3 Tape: Aluminum foil, insulating and heat dissipating tape.

.4 Sheet Metal:

.1 Sheet steel galvanized to Z275 / G90; 0.46 mm (26 gauge) thick.

.2 Stainless steel, Type 304 with No. 4 satin finish; 0.8 mm (22 gauge) thick.

.5 Door bumpers

.6 Sealant: Mildew-resistant sealant at casework and countertop joints with walls, sinks and dissimilar materials.

2.6 HARDWARE

.1 Hardware: Commercial grade, complying with AWMAC NAAWS and BHMA A156.9 where applicable. .

.2 Door and Drawer Pulls: Stainless steel or brushed nickel metal pulls, style as indicated/selected

.1 Manufacture: Richelieu or approved equivalent.

.3 Drawer Slides: Galvanized steel construction, ball bearings separating tracks, full extension type.

.1 Manufacture: Accuride, Hettich, or approved equivalent.

.4 Hinges: Concealed European type, steel - self-closing with nickel plated finish.

.1 Manufacture: Hafele, Blum, or approved equivalent.

.5 Shelf Standards and Rests: Formed steel channels and rests, cut for fitted rests spaced at 25 mm (1 inch) centres; satin finish.

.1 Manufacture: Hafele

2.7 PLASTIC LAMINATE CASEWORK

.1 Casework Construction: Meeting AWMAC NAAWS, Premium grade.

.1 Cabinet Construction: Frameless, flush overlay construction, with adjustable shelving, as detailed on Drawings.

.2 Cabinet Components: Particleboard, plywood and hardboard construction of thicknesses and types indicated on Drawings.

.3 Exposed Surfaces:

.1 High-pressure decorative laminate, colour as specified.

.2 Cabinet Interiors: White thermofused melamine unless otherwise indicated.

.3 Drawers and Drawer Fronts: Construction as indicated on Drawings with plastic laminate finish to exposed surfaces and matching PVC edge banding.

.4 Base Kicks: Plywood construction with finish as indicated on Drawings.

.4 Semi-exposed Surfaces:

.1 Adjustable Shelves: construction and finish as indicated on Drawings. .

.2 Drawer Sides and Backs: 6 mm (1/4 inch) hardboard with white melamine finish where indicated. .

.5 Provide blocking, reinforcing and hardware necessary for complete installation.

2.8 PLASTIC LAMINATE COUNTERTOPS AND WINDOW SILLS

.1 Meeting the requirements of AWMAC NAAWS Quality Standards, Premium grade for counter construction supplemented as follows:

.2 Finish: High-pressure decorative laminate, colour and finish as specified.

.3 Core: 19 mm (3/4 inch) particleboard except provide water-resistant core at wet locations and exterior-grade plywood where indicated on Drawings.

.4 Provide plywood undercounter support where indicated.

.5 Backsplash: 100 mm (4 inches) high unless otherwise indicated.

.6 Edge Treatment: Eased edge or bullnose as detailed on Drawings.

.7 Provide cut-outs for sinks, appliances and equipment from field-verified dimensions and manufacturer's templates.

.8 Seal exposed core material at sink and other wet-area cut-outs against moisture penetration

2.9 FABRICATION

.1 Shop prepare and identify components for matching during site assembly.

.2 Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings.

.3 When necessary to cut and fit on site, provide materials with ample allowance for site cutting and scribing.

.4 Field verify dimensions, locations of services, plumbing fixtures, appliances and Owner-supplied equipment prior to fabrication.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that field measurements are as indicated on Shop Drawings.

.3 Verify adequacy of backing and support framing.

.4 Verify mechanical, electrical, plumbing, HVAC and other building components, affecting work in this Section are in place and ready.

3.2 INSTALLATION

.1 Install Work to accordance with AWMAC NAAWS , and reviewed Shop Drawings .

.2 Set and secure casework in place; rigid, plumb, and level.

.3 Use fixture attachments in concealed locations for wall mounted components.

.4 Use concealed joint fasteners to align and secure adjoining cabinet units, and counter tops.

.5 Carefully scribe casework abutting other components, with maximum gaps of 1 mm (1/32 inch). Do not use additional overlay trim for this purpose.

.6 Secure base casework using concealed anchorage appropriate for substrate and anticipated loads.

.7 Countersink mechanical fasteners used at exposed and semi-exposed surfaces, excluding installation attachment screws and those securing casework end to end.

.8 Cut equipment cutouts shown on plans using templates provided.

.9 Seal exposed core material at sink cutouts and other penetrations subject to moisture.

.10 Provide continuous sealant at countertops, backsplashes, sinks and where casework abuts walls or other dissimilar materials. Provide straight and uniform sealant joints.

3.3 ADJUSTING

.1 Test installed work for rigidity and ability to support loads.

.2 Adjust hardware to function smoothly and correctly.

.3 Adjust doors and drawer fronts for uniform alignment and reveals.

.4 Fill and retouch minor nicks, chips and scratches using materials recommended by manufacturer. Replace damaged components that cannot be satisfactorily repaired.

3.4 CLEANING

.1 Section 01 74 10: Cleaning installed work.

.2 Clean casework, countertops, hardware and accessories following installation.

.3 Remove adhesives, sealants, pencil marks, labels and other installation residue without damaging finishes.

.4 Leave casework and countertops clean and ready for use.

3.5 PROTECTION

.1 Protect installed casework and countertops from damage for remainder of construction.

.2 Replace damaged components that cannot be satisfactorily repaired.

END OF SECTION

Section 07 21 00
Thermal Insulation

Part 1 General

1.1 SECTION INCLUDES

.1 Division 01, General Requirements, is a part of this Section and shall apply to the Work of this Section.

.2 Supply and install all insulation, interior and exterior, where indicated on drawings.

.3 Thermal insulation for exterior wall, roof/attic, foundation and floor slab assemblies as indicated on Drawings.

.1 Batt insulation in exterior and interior wall assemblies where indicated.

.2 Rigid board insulation at exterior walls, foundation walls, slab edges and below slabs on grade where indicated.

.3 Low-expansion foam insulation at exterior doors, windows, penetrations and other locations indicated.

.4 Insulation accessories, adhesives and mechanical fasteners required for complete installation.

1.2 RELATED SECTIONS

.1 Section 03 30 00 – Cast-in-Place Concrete.

.2 Section 03 30 10 - Concrete Floor Slab on Grade.

.3 Section 06 10 00 - Rough Carpentry

.4 Section 06 11 00 - Wood Framing

.5 Section 07 26 00 - Vapour Retarders: Vapour retarder materials to adjacent insulation.

.6 Section 07 27 00 - Air Barriers: Air barrier materials to adjacent insulation

.7 Section 07 46 19 - Steel Siding

.8 Section 07 84 00 - Firestopping.

.9 Section 09 21 16 - Gypsum Board Assemblies: Acoustic insulation.

1.3 REFERENCES

.1 ASTM C578-23 Standard specification for rigid, cellular polystyrene thermal insulation

.2 ASTM C612-14 Standard specification for mineral fiber block and board thermal insulation

.3 ASTM C665-23 Standard specification for mineral-fiber blanket thermal insulation for light frame construction and manufactured housing

.4 CAN/ULC-S102 - Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

.5 CAN/ULC-S701.1 - Standard for Thermal Insulation, Polystyrene Boards.

.6 CAN/ULC-S702 - Standard for Mineral Fibre Thermal Insulation for Buildings.

.7 ULC - Fire Resistance Directory.

1.4 ADMINISTRATION REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordinate with other work having a direct bearing on work of this section, such as adjacent construction to maintain continuity of thermal, air and vapour control layers.

.3 Coordinate work to ensure timely placement of insulation within construction spaces.

1.5 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Submit manufacturer's product data for each insulation type, including thermal resistance, thickness, density where applicable, installation requirements and accessories.

1.6 INFORMATION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements, perimeter conditions requiring special attention.

.3 Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.7 QUALITY ASSURANCE

.1 Installer Qualifications: Company experienced in installation of insulation systems specified and approved by product manufacturer where manufacturer approval is required.

1.8 SITE CONDITIONS

.1 Install insulation and associated adhesives only when substrates and environmental conditions comply with manufacturer's requirements.

1.9 DELIVERY, STORAGE AND HANDLING

.1 Deliver materials to site in their original wrapping with labels intact and store in ventilated areas, on site, protected from extreme changes of temperature or humidity.

.2 Store insulation on raised platforms and protect with waterproof covers. Prevent exposure of insulation to sun.

.3 Replace wet, damaged or deteriorated insulation.

1.10 WARRANTY

.1 Warrant work of the Section against defects or deficiencies for a period of two years from date. Work is certified as substantially performed in accordance with General Condition of the Contract.

.2 Promptly correct, at own expense, defects or deficiencies which become apparent within the warranty period.

Part 2 Products

2.1 PERFORMANCE CRITERIA

.1 Provide insulation types, thicknesses and thermal resistance values as indicated on Drawings.

.2 Insulation materials shall comply with applicable requirements of the Ontario Building Code and SB-10.

.3 Provide continuous thermal insulation at transitions and intersections of building assemblies to minimize thermal bridging and maintain continuity of the building thermal envelope.

2.2 INSULATION MATERIALS

.1 The Owner is subject to the Buy Ontario Act (Public Sector Procurement), 2025, and any applicable directives issued thereunder. Bidders shall ensure their submissions and proposed products, materials and services comply with all applicable procurement directives in effect at the time of bid closing. **THIS CLAUSE IS TO OVER RULE ANY APPROVED MANUFACTURES.**

.2 General: Provide insulation of types and thermal resistance values indicated on Drawings. Substitutions shall comply with Section 01 25 00.

.3 **Insulation Types:**

.1 **Semi-Rigid Mineral Wool Board Insulation (Exterior Walls):**

.1 Non-combustible semi-rigid stone wool insulation board suitable for exterior cavity wall application.

.2 Comply with CAN/ULC-S702 and ASTM C612.

.3 Thermal resistance and thickness: As indicated on Drawings.

.4 Water-repellent and dimensionally stable.

.5 Approved manufactures include:

- ROCKWOOL – Cavityrock.
- Owens Corning – equivalent exterior mineral wool board.
- Johns Manville – equivalent.
- Substitutions: Refer to Section 01 25 00.

.2 **Acoustic Batt Insulation (Interior Walls):**

.1 Unfaced mineral fibre or fibreglass batt insulation, friction-fit type, suitable for acoustic insulation of framed partitions.

.2 Thickness: Full depth of stud cavity unless otherwise indicated.

.3 Install at partitions indicated on Drawings.

.4 Approved manufactures include:

- ROCKWOOD - Safe'n'Sound
- ROCKWOOD - AFB (for ceiling space - non-duct return space)
- Owens Corning QuietZone.

.3 **Extruded Polystyrene (XPS) (Rigid insulation - Perimeter, Cavity wall Board, and Under Slab)**

.1 Closed-cell extruded polystyrene rigid insulation complying with CAN/ULC-S701.1.

.2 Type: Type 4 where installed below slab or where subject to loading; type suitable for application elsewhere.

.3 Compressive strength: Minimum 210 kPa (30 psi) for underslab applications.

.4 Thickness and thermal resistance: As indicated on Drawings.

.5 Provide boards with square or shiplapped edges suitable for application.

.6 Approved Manufactures:

- Owens Corning.
- Soprema.
- DuPont.
- Approved equivalent in accordance with Division 01.

.4 **Blown Insulation (Ceiling/Roof)**

.1 Loose-fill, pneumatically applied fibreglass thermal insulation suitable for horizontal attic applications.

.2 Comply with CAN/ULC-S702 and applicable requirements of the Ontario Building Code.

.3 Thickness and thermal resistance: As indicated on Drawings.

.4 Installed Thickness: As required by insulation manufacturer to achieve specified thermal resistance, based on settled thickness.

.5 Install uniformly to full required thickness without gaps, voids or areas of compression.

.6 Provide depth markers throughout attic space to permit verification of installed insulation thickness.

.7 Maintain required ventilation clearances at eaves and provide insulation stops/baffles to prevent insulation from obstructing soffit ventilation.

.8 Acceptable Manufacturers:

- Owens Corning.
- Johns Manville.
- CertainTeed.
- Approved equivalent in accordance with Division 01.

.4 **Rigid insulation adhesive:**

.1 Manufacturer-recommended adhesive compatible with insulation and substrate.

.2 Adhesive shall not contain solvents or other components detrimental to insulation, air barrier or dampproofing.

.3 Exterior adhesive shall be moisture resistant and suitable for intended exposure.

.4 Acceptable Products:

.1 Spray-applied polyurethane insulation adhesive:

.1 Soprema ALSAN Foam EPS/XPS Adhesive

.2 SOPRASEAL LM 200 T water-base XPS Adhesive

.2 Low-rise polyurethane insulation adhesive:

.1 W.R. Meadows MEADOWS FOAM ADHESIVE

.3 Or approved equivalent

.5 Performance Requirements :

.1

- Adhesive compatible with rigid insulation boards including EPS, XPS, and mineral wool.
- Suitable for application to substrates including concrete, masonry, gypsum sheathing, and metal
- Provide sufficient bond strength to resist wind loads and maintain insulation in position prior to cladding installation
- Moisture-resistant and suitable for exterior wall cavity applications

.5 **Primer:** As recommended by the adhesive manufacturer for the particular materials to be adhered to.

.6 **Mechanical Fasteners**

.1 Insulation fasteners specifically designed for securing mineral wool insulation to substrates:

.2 Approved Manufacturers:

.1 Hilti Insulation Fastening System (IDMS / IDP)

.2 SFS Intec Insulation Fasteners

.3 Rodenhouse Plasti-Grip PMF Anchors

.4 Or approved equivalent

.3 Fastener Type:

.1 Corrosion-resistant insulation fasteners specifically designed for insulation type and substrate.

.4 Plates/Washers:

.1 Provide integral or separate insulation retaining plates sized to prevent pull-through and excessive compression of insulation.

.5 Material:

.1 Stainless steel or coated steel fasteners suitable for exterior wall assemblies

.6 Length:

.1 Fastener length and spacing: As recommended by insulation manufacturer and as required to resist applicable design loads.

.7 Performance Requirements:

.1 Fasteners shall:

- Provide secure attachment of mineral wool insulation without compression or deformation
- Resist design wind loads and cladding support requirements
- Be compatible with insulation and adjacent materials (no chemical degradation)
- Plate size and fastener spacing to be sufficient to prevent insulation slippage or bowing

.7 **Low Expanding Foam Insulation / Air Barrier Sealant:**

.1 Single-component, low-expansion, closed-cell polyurethane foam suitable for perimeter sealing of exterior windows, doors and penetrations.

.2 Product shall remain flexible and shall not cause distortion of frames.

.3 Acceptable Product: Tremco ExoAir Flex Foam, or approved equivalent.

.4 Install at locations indicated and where required to maintain continuity of thermal insulation.

.8 **Acoustical Putty Pads:**

.1 Approved Manufactures:

.1 3M Fire Barrier Moldable Putty Pads MPP+

.2 QuietPutty 380 by QuietRock

.3 Approved equal in accordance with Division 01

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that substrate, adjacent materials, and insulation are dry and ready to receive insulation and adhesive where required.

.3 For insulation board verify substrate surface is flat, free of honeycomb, fins, irregularities and materials or substances that may impede adhesive bond.

.4 Verify substrate surface is flat, free of honeycomb, fins, irregularities and materials or substances that may impede adhesive bond.

.5 Verify that all work by other trades that may penetrates through the thermal insulation is in place and complete.

3.2 PREPARATION

.1 Clean substrates of materials that may interfere with proper installation or adhesion of insulation.

.2 Apply primer where required by insulation or adhesive manufacturer.

.3 Install insulation stops and ventilation baffles at eaves to prevent blown insulation from obstructing soffit ventilation and to maintain required ventilation path from soffit to attic.

.4 Coordinate installation with air barrier and vapour retarder systems to maintain continuity of building envelope.

3.3 WORKMANSHIP

.1 Install insulation after building substrate materials are dry.

.2 Install insulation to maintain continuity of thermal protection to building elements and faces.

.3 Fit insulation closely around electrical boxes, plumbing and heating pipes and ducts, around exterior doors and windows and other protrusions.

.4 Cut and trim insulation neatly to fit spaces. Butt joints tightly, offset vertical joints. Use only insulation panels free from ripped backs or chipped or broken edges.

.5 Replace damaged, wet or deteriorated insulation.

.6 Install insulation in accordance with manufacturer's written instructions and thicknesses and thermal resistance values indicated on Drawings.

3.4 BATT INSULATION

.1 Install batt insulation in framed cavities where indicated on Drawings.

.2 Friction fit insulation tightly between framing members without gaps, voids or compression.

.3 Cut and fit insulation closely around electrical boxes, piping, ducts, blocking and other interruptions.

.4 Split insulation around wiring and small services rather than compressing insulation behind services.

.5 Fill miscellaneous gaps and voids with insulation.

.6 Coordinate work of this section with construction of vapour retarder specified in Section 07 26 00.

.7 Coordinate work of this section with construction of air barrier seal specified in Section 07 27 00.

3.5 BLOWN ATTIC INSULATION

.1 Install blown insulation in attic/ceiling spaces indicated on Drawings to provide minimum RSI 10.57 (R60).

.2 Install in accordance with manufacturer's written instructions and published coverage requirements.

.3 Install insulation uniformly to the manufacturer's required settled thickness to achieve R60.

.4 Provide insulation stops and ventilation baffles at eaves. Maintain clear ventilation path between soffit vents and attic space.

.5 Do not obstruct soffit vents, roof ventilation openings or other required ventilation paths.

.6 Install insulation around framing, services and penetrations without gaps or voids.

.7 Provide permanently installed insulation depth markers throughout attic at intervals sufficient to permit verification of installed thickness.

.8 Do not cover electrical equipment, recessed fixtures or other components unless specifically rated for direct contact with insulation.

.9 Upon completion, provide manufacturer's installation certificate indicating insulation product, specified R-value, installed thickness, settled thickness and quantity of insulation installed.

3.6 PERIMETER FOUNDATION INSULATION

.1 Install rigid insulation at exterior face of foundation walls to limits and thicknesses indicated on Drawings.

.2 Install boards tightly butted with joints staggered.

.3 Install insulation over completed and cured dampproofing using adhesive compatible with insulation and dampproofing.

.4 Cut and fit insulation tightly around penetrations and other interruptions.

.5 Protect insulation from damage during backfilling.

.6 Do not commence backfilling until insulation installation has been reviewed where required.

3.7 UNDERSLAB INSULATION

.1 Place rigid insulation under slabs on grade after granular base has been compacted and accepted.

.2 Install boards tightly butted with joints staggered.

.3 Cut and fit insulation tight to protrusions or interruptions to the insulation plane

.4 Maintain continuity of insulation at slab edges and foundation conditions as indicated on Drawings.

.5 Prevent insulation from being displaced or damaged while placing vapour retarder and reinforcing and concrete

.6 Replace damaged insulation before proceeding with slab construction.

3.8 RIGID INSULATION ADHESIVE

.1 Install in accordance with manufacturer’s written instructions

.2 Ensure full contact between insulation and substrate with no voids

.3 Do not use adhesives that adversely affect dampproofing.

.1 Use only adhesives compatible with insulation, substrate, air barrier and dampproofing.

.4 Supplement adhesive with mechanical fasteners where required by system design or code

3.9 MECHANICAL FASTENERS

.1 Install fasteners in accordance with manufacturer’s written instructions

.2 Do not overdrive fasteners; maintain insulation thickness and integrity

.3 Install fasteners perpendicular to substrate

.4 Coordinate fastener layout with cladding support system

.5 Fastener type, spacing and quantity shall be sufficient to securely retain insulation for applicable substrate and service conditions.

.6 Increase fastening density at:

.1 Corners , Parapets , High wind zones

.7 Final spacing to suit project-specific wind load requirements

.8 Coordinate with z-girts / clip systems

.9 Ensure that plates are sized appropriately when using semi-rigid insulation (not too small) to avoid dimpling.

3.10 LOW EXPANDING FOAM INSULATION INSTALLATION

.1 Install low-expansion foam insulation at perimeter of exterior window and door frames and at other locations indicated on Drawings.

.2 Fill voids continuously to maintain continuity of thermal insulation and air barrier.

.3 Do not overfill cavities or cause distortion of frames.

.4 Trim excess foam after curing without damaging adjacent materials.

.5 Install in accordance with manufacturer's written instructions.

3.11 FIELD QUALITY CONTROL

.1 Inspection and Testing:

.1 Section 01 45 00: Field inspection.

.1 Do not conceal insulation until installation has been reviewed where required.

.2 Verify insulation is continuous, dry and installed to required thickness without gaps, voids or excessive compression.

.3 Verify blown attic insulation achieves specified R thermal resistance and required installed/settled thickness.

.4 Correct deficient insulation installation before concealment.

END OF SECTION

Section 07 26 00
Vapor Retarders

Part 1 General

1.1 SECTION INCLUDES

.1 Sheet vapour retarder and accessory sealing materials for controlling water vapour diffusion through building assemblies.

1.2 RELATED REQUIREMENTS

.1 Section 07 21 00 - Thermal Insulation

.2 Section 07 27 00 - Air Barriers: An air barrier as an integral part of a complete wall / window assembly.

.3 Section 07 92 00 - Joint Sealants: Sealants.

.4 Section 08 11 13 - Hollow Metal Doors and Frames

.5 Section 08 51 13 - Aluminum Windows: Window frames.

1.3 REFERENCE STANDARDS

.1 ASTM E96/E96M – Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials.

1.4 DEFINITION

.1 Vapour Retarder: A material or assembly of materials that resists water vapour diffusion through it.

1.5 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination: Coordinate with other work having a direct bearing on work of this section.

.3 Sequencing:

.1 Coordinate installation with insulation, air barrier, electrical, mechanical and other work penetrating or concealed by vapour retarder.

.2 Install vapour retarder to provide continuity at intersections, openings, penetrations and interfaces with adjacent construction.

1.6 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide data indicating material manufacturer's product data for sheet vapour retarder, tapes, sealants and accessory materials. .

Part 2 Products

2.1 DESCRIPTION

.1 System Description:

.1 Sheet vapour retarder and accessory materials required to provide a continuous vapour retarder at exterior wall and ceiling assemblies indicated.

.1 Provide continuity at joints, perimeter conditions, openings, electrical boxes, penetrations and interfaces with adjacent construction.

.2 Air barrier materials forming part of the exterior air barrier assembly are specified in Section 07 27 00 – Air Barriers.

2.2 PERFORMANCE / DESIGN CRITERIA

.1 Water Vapour Permeance: Maximum 60 ng/(Pa·s·m²), when tested in accordance with ASTM E96/E96M.

2.3 SHEET MATERIALS

.1 TYPE 1 - Wall / Ceiling

.1 Sheet Vapour Retarder: Polyethylene film for above-grade wall and ceiling applications, minimum 0.15 mm (6 mil) thick.

.2 Acceptable Product: CGSB-compliant polyethylene vapour barrier by approved manufacturer.

.2 TYPE 2 - Under Slab

.1 Sheet Vapour Retarder: Polyethylene film for under slab and at grade application, minimum 0.25 mm (10 mil) thick.

.2 Acceptable Product: CGSB-compliant polyethylene vapour barrier by approved manufacturer.

2.4 ACCESSORIES

.1 Tape: Pressure-sensitive adhesive tape recommended by sheet vapour retarder manufacturer for permanently sealing joints, laps, repairs and penetrations; minimum 50 mm wide.

.2 Acoustical Sealant: Non-skinning sealant compatible with polyethylene sheet, for sealing vapour retarder at perimeter and interfaces with adjacent construction.

.3 Electrical Vapour Barrier Boxes: Moulded polyethylene boxes or boots with integral flanges, designed to maintain continuity of vapour retarder at electrical boxes located in insulated exterior assemblies.

.4 Accessories: Provide tapes, sealants, gaskets, patches and other accessory materials recommended by vapour retarder manufacturer and required to provide a continuous sealed vapour retarder.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify condition of substrates and adjacent materials to receive vapour retarder.

3.2 PREPARATION

.1 Remove loose or foreign matter that might impair adhesion.

.2 Clean and prime substrate surfaces to receive tapes, sealants and adhesives in accordance with manufacturers' written instructions.

3.3 INSTALLATION

.1 Install vapour retarder and accessories in accordance with manufacturer's written instructions and to provide a continuous vapour retarder.

.2 Vapour Retarder For Solid Substrate: Secure sheet barrier Type 2 to solid construction with tape, and or continuous metal bar with anchors. Lap edges and ends 150 mm (6 inches) and seal to ensure complete and continuous seal.

.3 Stud-Framed Walls: Install sheet vapour retarder continuously over warm side of insulated stud-framed exterior walls. Secure to framing and maintain sheet free from tears and punctures. Lap adjacent sheets minimum 150 mm (6 inches), with laps occurring over framing where practicable. Seal laps continuously with compatible tape.

.1 Seal vapour retarder continuously at perimeter, floor, ceiling, openings, penetrations and interfaces with adjacent construction using compatible sealant or tape.

.4 Wall-to-Ceiling/Roof Junction: Extend wall vapour retarder to ceiling/roof vapour retarder and provide minimum 150 mm (6 inch) overlap. Seal continuously with compatible tape or sealant to maintain vapour retarder continuity.

.5 Electrical Boxes: Install vapour barrier boxes at electrical outlets, switches and other electrical boxes located in insulated exterior wall assemblies. Seal flanges continuously to sheet vapour retarder with compatible tape or sealant.

.6 Penetrations: Cut vapour retarder closely around pipes, ducts, conduits and other penetrations. Seal continuously around penetrations using compatible tape, sealant, gasket or prefabricated accessory

.7 Repairs: Repair tears, punctures and damaged areas using compatible sheet material and tape. Extend patches minimum 100 mm beyond damaged area and seal continuously around perimeter.

END OF SECTION

Section 07 27 00
Air and Moisture Barriers

Part 1 General

1.1 SECTION INCLUDES

.1 Exterior air and water-resistive barrier materials and assemblies.

.2 Transition membranes, flashings and accessory materials required to maintain continuity of air barrier.

.3 Air barrier connections at openings, penetrations, joints, transitions and interfaces with adjacent construction

1.2 RELATED REQUIREMENTS

.1 Section 03 30 00 - Cast-in-place Concrete: Concrete components functioning as an air seal.

.2 Section 06 16 00 - Sheathing: Exterior wall sheathing substrate

.3 Section 07 21 00 - Thermal Insulation

.4 Section 07 26 00 - Vapour Retarder: Coordinate vapour seal criteria with air barrier requirements.

.5 Section 07 62 00 - Sheet Metal Flashing and Trim

.6 Section 07 84 00 - Firestopping: Fire stopping materials.

.7 Section 07 92 00 - Joint Sealants: Sealant materials and installation techniques.

.8 Section 08 11 13 - Hollow Metal Doors and Frames

.9 Section 08 51 13 - Aluminum Windows

1.3 REFERENCE STANDARDS

.1 ASTM D1970/D1970M - Self-Adhering Polymer Modified Bituminous Sheet Materials.

.2 ASTM E96/E96M - Water Vapour Transmission of Materials.

.3 ASTM E2178 - Air Permeance of Building Materials.

.4 ASTM E2357 - Air Leakage of Air Barrier Assemblies.

.5 CAN/ULC-S741 - Standard for Air Barrier Materials – Specification.

.6 CAN/ULC-S742 - Standard for Air Barrier Assemblies – Specification.

.7 NABA - Air Barrier Quality Assurance Program.

1.4 DEFINITIONS

.1 Air Barrier: A continuous network of materials and joints providing air tightness, with adequate strength and stiffness to not deflect excessively under air pressure differences,

to which it will be subjected in service. It can be comprised of a single material or a combination of materials to achieve the performance requirements.

1.5 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination:

.1 Coordinate with other work having a direct bearing on work of this section.

.2 Coordinate the work of this section with all sections referencing this section.

.3 Pre-installation Meetings: Convene one (1) week before starting work of this section.

.4 Sequencing: Sequence work to permit installation of materials in conjunction with related materials and seals.

1.6 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide data on material for air barrier membrane, transition membranes, flashings, primers, sealants and accessories. Include material characteristics, air permeance, vapour permeance, application limitations, substrate requirements and compatibility information .

.3 Shop Drawings: Submit details of atypical or project-specific conditions including connections to windows and doors, wall-to-foundation transitions, wall-to-roof transitions, penetrations and changes in substrate.

.4 Compatibility: Submit written confirmation from air barrier manufacturer that membranes, flashings, primers, sealants and accessory materials used in the assembly are mutually compatible.

1.7 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements, including preparation, installation requirements and techniques, product storage and handling criteria.

1.8 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

.2 Manufacturer's installation and maintenance documentation.

.3 Warranty documentation.

.4 Field inspection reports where specified.

1.9 QUALITY ASSURANCE

.1 Manufacturer Qualifications: Manufacturer specializing in air barrier systems with minimum five (5) years documented experience.

.2 Installer Qualifications: Company specializing in installation of specified air barrier system with minimum three (3) years documented experience and approved or trained by air barrier manufacturer.

.3 Single-Source Responsibility: Obtain primary air barrier membrane, transition membranes, primers, sealants and accessory materials from or as approved by primary air barrier manufacturer to ensure compatibility.

1.10 SITE CONDITIONS

.1 Ambient Conditions:

.1 Maintain temperature and humidity recommended by the materials manufacturers before, during and after installation.

1.11 WARRANTY

.1 Section 01 78 00: Warranties.

.2 Provide a three (3) year warranty to include coverage for failure to meet specified requirements.

.3 Warranty: Include coverage of installed sheet materials and sealant that fail to achieve airtight seal, exhibit loss of adhesion or cohesion, or do not cure.

Part 2 Products

2.1 PERFORMANCE / DESIGN CRITERIA

.1 Air Barrier Assembly: Provide continuous air barrier assembly capable of accommodating anticipated building movements without loss of continuity.

.2 Air Barrier Material:

.1 Air permeance: Not greater than **0.02 L/(s·m²) at 75 Pa**, when tested in accordance with ASTM E2178 or CAN/ULC-S741.

.2 Vapour permeance: **Vapour permeable**, minimum 170 ng/(Pa·s·m²) unless otherwise indicated.

.3 Water resistance: Pass manufacturer's applicable water-resistance testing.

.3 Air Barrier Assembly: Tested in accordance with ASTM E2357 or CAN/ULC-S742.

.4 Materials: Compatible with substrates and adjacent air barrier, flashing, sealant and waterproofing materials.

.5 Service Temperature: Suitable for environmental conditions anticipated for project.

.6 UV Exposure: Suitable for anticipated exposure period during construction.

2.2 MATERIALS / MANUFACTURERS

.1 Products of the following manufacturers are acceptable subject to conformance to requirements of drawings, schedules and specifications.

.1 Henry Bakor Inc, www.ca.henry.com

.2 Soprema, www.soprema.ca

.3 3M Canada, www.3mcanada.ca

.4 Tremco, https://www.tremcosealants.com/

.5 Substitutions: Refer to Section 01 25 00.

.2 Henry Bakor Inc.:

.1 Building Envelope, Blueskin VP 160

.3 Soprema:

.1 Building Envelope, Sopraseal Stick VP

.4 3M Canada:

.1 Building Envelope, Air Barrier with Permeable Backing 3015 VP

.5 Tremco:

.1 Building Envelope, EXOAIR 210 AT

2.3 SEALANTS

.1 Refer to Section 07 92 00 Joint Sealants

.2 Sealants used as part of air barrier assembly shall be compatible with and approved by air barrier manufacturer.

2.4 ADHESIVES / PRIMERS

.1 Adhesives/Primers:

.1 Products recommended by air barrier manufacturer for membrane, substrate, application temperature and conditions of installation.

.2 Use low-VOC products where suitable for application.

.3 Provide primers required to achieve specified adhesion to substrates.

2.5 FLASHING AND TRANSITION MATERIALS

.1 Self-Adhered Flashing: Manufacturer's compatible self-adhered flashing membrane for openings, transitions, penetrations and interfaces.

.2 Liquid-Applied Flashing: Manufacturer's compatible liquid-applied flashing for complex penetrations, irregular substrates and locations where sheet flashing cannot be effectively installed.

.3 Transition Membranes: Manufacturer's compatible flexible transition membrane for connections between dissimilar materials and adjacent air barrier assemblies.

.4 Through-Wall Flashing: Self-adhered membrane compatible with air barrier system and masonry construction, where indicated.

.5 Provide primers, termination sealants, tapes and accessories recommended by manufacturer for complete installation.

2.6 ACCESSORIES

.1 **Tapes:** Air barrier manufacturer's recommended tape compatible with membrane and substrate.

.2 **Sealants:** Manufacturer's compatible termination and detailing sealants.

.3 **Fasteners:** Corrosion-resistant fasteners and washers recommended by membrane manufacturer where mechanical attachment is required.

.4 **Cleaners:** As recommended by membrane manufacturer.

.5 **Other Accessories:** Provide accessories required by air barrier manufacturer to achieve continuous, airtight and water-resistant installation.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that surfaces and conditions are ready to accept the Work of this section.

.3 Verify substrates are structurally sound, clean, dry, smooth and free of frost, dust, oil, release agents, protrusions and other conditions detrimental to adhesion.

.4 Verify sheathing joints, openings, penetrations and adjacent construction are ready to receive air barrier system.

.5 Do not commence installation until unsatisfactory conditions are corrected.

3.2 PREPARATION

.1 Remove loose or foreign matter that might impair adhesion of materials.

.2 Clean and prime substrate surfaces to receive sealants and adhesive to manufacturers written instructions.

.3 Fill gaps and voids exceeding membrane manufacturer's allowable limits before membrane installation.

.4 Prepare rough openings and penetrations to permit continuous flashing and air barrier installation.

3.3 INSTALLATION

.1 Install air barrier system in accordance with manufacturer's written instructions and reviewed Product Data.

.2 Install air barrier continuously over exterior wall sheathing in locations indicated.

.3 Apply primer where required by membrane manufacturer.

.4 Install membrane without wrinkles, fishmouths, voids or trapped air. Roll self-adhered membranes firmly to achieve full adhesion.

.5 Lap membrane edges in accordance with manufacturer's requirements, but not less than 50 mm. Install laps in shingle fashion where exposed to drainage.

.6 Seal membrane terminations, cut edges, reverse laps and other locations required by manufacturer.

.7 Maintain continuity of air barrier at inside and outside corners.

.8 Flash and seal penetrations, pipes, conduits, anchors and other interruptions through air barrier.

.9 Coordinate penetrations and attachments to minimize damage to installed membrane. Repair penetrations and damaged areas using manufacturer's approved methods.

.10 Rough Openings:

.1 Install flashing at window and door rough openings before installation of frames where required by construction sequence.

.2 Provide continuous connection between air barrier and window/door frame air seals.

.3 Install sill flashing with back dam and end dams where indicated and integrate with exterior drainage plane.

.4 Install jamb and head flashings in shingle fashion to direct water to exterior.

.5 Coordinate with Sections 08 41 13 and 08 51 13.

.11 Wall-to-foundation:

.1 Wall-to-Foundation Transition: Provide continuous sealed transition between wall air barrier and foundation/slab air-control layer as indicated.

.12 Wall-to-roof:

.1 Wall-to-Roof Transition: Provide continuous sealed transition between wall air barrier and roof air/vapour control layer.

.13 Masonry:

.1 Through-Wall Flashing: Install where indicated, with end dams, laps and terminations arranged to drain water to exterior. Coordinate with Section 07 62 00.

3.4 FIELD QUALITY CONTROL

.1 Consultant may review air barrier installation before concealment.

.2 Notify Consultant when air barrier installation is substantially complete and before installation of exterior insulation and cladding that would conceal the Work.

.3 Repair deficiencies identified during review in accordance with manufacturer's requirements.

.4 Where manufacturer inspection is required to obtain specified warranty, arrange inspection and submit written report to Consultant.

3.5 PROTECTION

.1 Section 01 78 23: Protecting installed work.

.2 Do not permit adjacent work to damage work of this section.

.3 Protect completed air barrier from damage by subsequent construction.

.4 Repair damaged membrane before concealment.

.5 Do not exceed manufacturer's allowable UV exposure period.

3.6 CLEANING

.1 Remove surplus materials, waste and debris resulting from Work of this Section.

.2 Clean adjacent surfaces soiled by installation.

.3 Remove excess primers, adhesives and sealants using methods recommended by manufacturer without damaging adjacent construction.

END OF SECTION

Section 07 46 19
Steel Siding

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 06 16 00 - Sheathing

.2 Section 07 21 00 - Thermal Insulation

.3 Section 07 27 00 - Air and Moisture Barriers

.4 Section 07 62 00 - Sheet Metal Flashing and Trim

.5 Section 07 92 00 - Joint Sealants

1.2 DEFINITIONS

.1 Environmental product declaration: Third-party verified documentation with the supporting product category rule and life cycle assessment information, including at least a cradle-to-gate scope. Prepared in accordance with ISO 14025, ISO 14040, ISO 14044, and EN 15804 or ISO 21930.

.2 Industry average environmental product declaration: Developed by an industry association and represents the average product of multiple companies. Products covered by industry average environmental product declarations are required to follow the same product category rule. Industry average environmental product declarations cannot represent a certain manufacturer or its product. Industry average environmental product declarations may be referred to as "industry-wide environmental product declarations" or "generic environmental product declarations."

.3 Product-specific type III environmental product declaration: Provides data on one product made by one manufacturer, but can involve multiple factories. Product-specific type III environmental product declarations can cover a product produced by a manufacturer in several plants throughout the world if all plants use the same processes. Product-specific environmental product declarations cannot represent several products and several manufacturers.

1.3 REFERENCE STANDARDS

.1 American Society of Mechanical Engineers (ASME):

.1 ASME B18.6.3-2024, Machine Screws, Tapping Screws, and Metallic Drive Screws (Inch Series)

.2 ASTM International (ASTM):

.1 ASTM A653/A653M-18, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

.2 ASTM F1667-18a, Standard Specification for Driven Fasteners: Nails, Spikes, and Staples

.3 CSA Group (CSA):

.1 CSA B111-1974, Wire Nails, Spikes and Staples

.2 CSA Z809:16, Sustainable forest management

.4 Forest Stewardship Council (FSC):

.1 FSC-STD-01-001-v5-3, FSC Principles and Criteria for Forest Stewardship

.5 International Organization for Standardization (ISO):

.1 ISO 14025:2006, Environmental labels and declarations — Type III environmental declarations — Principles and procedures

.2 ISO 14040:2006, Environmental management — Life cycle assessment — Principles and framework

.3 ISO 14044:2006, Environmental management — Life cycle assessment — Requirements and guidelines

.4 ISO 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification

.5 ISO 21930:2017, Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services

.6 ULC Standards (ULC):

.1 CAN/ULC-S706.1:2016, Standard for Wood Fibre Insulating Boards for Buildings

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Pre-installation meeting: Conduct a site meeting in accordance with Section 01 31 00 – Project Management and Coordination attended by the **Contractor, steel siding installer, Consultant, and affected Subcontractors** to:

.1 Verify project requirements.

.2 Review delivery, storage, and handling requirements.

.3 Review installation and substrate conditions.

.4 Coordination with other Subcontractors.

.5 Review manufacturer’s instructions and warranty requirements.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product data: Product literature and data sheets for steel siding, including product characteristics, performance criteria, physical sizes, finishes, available colours, installation requirements and limitations.

.3 Shop drawings:

.1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Ontario, Canada.

.2 Signed and sealed by a qualified professional in accordance with Section 01 43 00 - Quality Assurance.

.3 Show location of each component, dimensioned plans and elevations, large scale details, trim and closure pieces, soffits, fascia, furring, flashing details and attachment details.

.4 Samples:

.1 Samples for initial selection: Representing manufacturer's standard range of available colours, patterns, textures, sheens and finishes.

.1 Submit samples for:

.1 steel siding

.2 soffits

.3 each type of exposed trim

.4 each type of exposed flashing

.5 Colour chips showing full manufacturer's standard colour range.

.2 Samples for verification: Submit two (2) samples to verify selected colours, patterns, textures, sheens and finishes.

.1 Submit samples for:

.1 steel siding

.2 soffits

.3 each type of exposed trim

.4 each type of exposed flashing

.5 Manufacturer's colour sample.

.5 Delegated design submittals:

.1 Signed and sealed by a qualified professional in accordance with Section 01 45 00 - Quality Control.

.2 Submit in formats acceptable to the Consultant and the authority having jurisdiction (AHJ):

.1 Letter of assurance of professional design and compliance, and commitment for field review indicating the siding attachment system are designed to comply with the Ontario Building Code, applicable wind loads and manufacturer's engineering requirements. .

.1 Submit with shop drawings.

.2 Letter of assurance of professional field review and compliance indicating the installed work comply with the design and reviewed shop drawings.

.1 Submit promptly after final site visit.

.6 Manufacturer's instructions:

.1 Special delivery, storage, and handling requirements.

.2 Installation instructions.

.3 Recommended sequencing.

.4 Cleaning procedures.

1.6 EXISTING BUILDING MATCH

.1 Verify existing siding profile, rib spacing, gauge, finish and colour before fabrication.

.2 Notify Consultant of discrepancies prior to ordering materials.

.3 New siding shall match the existing building in profile and appearance.

.4 Minor colour variation due to weathering of the existing building will be accepted.

1.7 CLOSEOUT SUBMITTALS

.1 Submit in accordance with Section 01 78 00 - Closeout Submittals.

.2 Operation and maintenance data:

.1 Include, in the operation and maintenance manual, manufacturer’s maintenance instructions and recommended cleaning materials and methods.

1.8 QUALITY ASSURANCE

.1 Mock-ups: Erect in accordance with Section 01 45 00 - Quality Control.

.1 Erect part of one exterior wall, including the entire air barrier, insulation, sub-girts, flashings, trim and steel siding

.2 Minimum size: 2400mm x 2400mm (8'x8')

.3 Location: As directed by the Consultant.

.4 Approved mock-up may remain as part of the completed Work if undamaged and acceptable to the Consultant.

1.9 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, store, and handle materials in accordance with Section 01 61 00 - Common Product Requirements, and:

.1 Deliver and store cartons flat and supported along entire length.

.2 Store materials off ground, out of weather, in dry place. Provide ventilation. Protect from falling objects and construction activities.

.3 Protect factory finish from damage, staining, moisture and abrasion during delivery, storage and installation.

.4 Store materials under cover with adequate ventilation and slope bundles to drain condensation.

.5 Do not store materials directly on concrete or soil.

Part 2 Products

2.1 STEEL SIDING

.1 Sheet steel: To ASTM A653/A653M, commercial steel (CS), Type A, Grade 230, Z275 coating designation applied to both sides, with preformed interlocking joints.

.1 Base metal thickness: 0.46 mm (26 gauge) nominal.

.2 Surface texture: Smooth or lightly embossed as selected by Consultant.

.2 Profile:

.1 Narrow Rib.

.2 915 mm (36 inch) coverage.

.3 38 mm (1-1/2 inch) rib depth.

.3 Performance/design criteria:

.1 Exposed fastener panel system installed in accordance with manufacturer's recommendations.

.2 Installation orientation: Vertical.

.4 Finishes:

.1 Finish coating: Factory precoated with modified silicone polyester (SMP or PVDF) paint finish, two-coat system, minimum 25 µm dry film thickness.

.1 Two coat baked finish

.2 Colour: Match existing building.

.3 Existing Colour: QC18306 Charcoal

.4 Verify colour with existing building prior to fabrication.

2.2 STEEL SOFFITS

.1 Sheet steel: To ASTM A653/A653M, commercial steel (CS) with Z275 coating designation applied to both sides.

.1 Base metal thickness: 0.46 mm minimum.

.2 Surface texture: Smooth.

.2 Profile: Flat sheet V-crimped for stiffness, Ventilated V-groove steel soffit panel. .

.3 Finishes:

.1 Finish coating: Factory precoated with modified silicone polyester (SMP or PVDF) paint finish, two-coat system, minimum 25 µm dry film thickness.

.1 Two coat baked finish

.2 Colour: Match adjacent siding unless otherwise noted. .

2.3 STEEL FLASHING AND TRIM

.1 Sheet steel: To ASTM A653/A653M, commercial steel (CS) with Z275 zinc coating on both sides.

.1 Base metal thickness: 0.46 mm (26 gauge) minimum.

.2 Profiles: As indicated on Drawings.

.3 Finishes:

.1 Factory-applied silicone modified polyester (SMP) two-coat baked finish.

.2 Colour: Match adjacent wall panel unless otherwise indicated.

2.4 ACCESSORIES

.1 Fasteners:

.1 Nails: To ASTM F1667, purpose made.

.2 Screws: To ASME B18.6.3, purpose made.

.3 Material: Carbon steel with corrosion-resistant coating. Stainless steel where exposed to corrosive environments or where indicated. .

.4 Minimum length: 38 mm.

.5 Exposed fasteners shall be factory colour matched and complete with bonded EPDM sealing washers.

.2 Exposed flashing and trim: Inside corners, outside corners, cap strips, drip caps, undersill trim, starter strips, and window/door trim as indicated on Drawings and in accordance with Section 07 62 00 - Sheet Metal Flashing and Trim.

.3 Sealants: In accordance with Section 07 92 00 - Joint Sealants.

.4 Foam Closures:

.1 Closed cell polyethylene profile closures.

.2 Match panel profile.

.3 Install at eaves, ridges, wall bases and around openings.

Part 3 Execution

3.1 EXAMINATION

.1 Complete testing by 3rd party as required by consultant prior to installation

.2 Verification of conditions:

.1 Verify substrate and project conditions in accordance with Section 01 71 00 - Examination and Preparation, and:

.1 Verify the contractor has reviewed substrates to be concealed by work of this section and remedial work is complete and acceptable.

.2 Verify air barriers are installed in accordance with Section 07 27 00 Air and Moisture Barriers.

.3 Verify continuous exterior insulation is installed in accordance with Section 07 21 00 - Thermal Insulation.

.4 Verify mounting blocks are installed for wall-mounted handrails, doorbells, vents, light fixtures, utility connections, and similar exterior fixtures.

.5 Verify openings are properly flashed and prepared to receive siding.

3.2 PREPARATION

.1 Surface preparation:

.1 Prepare surfaces in accordance with Section 01 71 00 - Examination and Preparation, and:

.1 Furr surfaces to even plane and free from obstructions.

.2 Do not begin installation until unsatisfactory conditions have been corrected.

3.3 INSTALLATION

.1 Install steel siding and soffits true to line and in accordance with manufacturer’s instructions and reviewed shop drawings.

.1 Fastener spacing in accordance with the manufacturer's engineered recommendations and reviewed shop drawings.

.2 Attach components in manner not restricting thermal movement.

.3 Provide continuous panels where practical. Where end laps occur, install in accordance with manufacturer's written recommendations.

.2 Install continuous starter strips, inside and outside corners, edgings, drip flashings, head flashings, sill flashings, and flashings at openings in accordance with Section 07 62 00 - Sheet Metal Flashing and Trim.

.3 Install outside corners, fillers and closure strips with carefully formed and profiled work.

.4 Apply sealant at all junctions with adjoining construction, penetrations and dissimilar materials in accordance with Section 07 92 00.

.5 Install foam closure strips at eaves, wall bases, corners and around openings where recommended by the manufacturer.

.6 Touch up minor scratches using the manufacturer's approved touch-up coating. Replace panels with excessive damage.

.7 Match existing work:

.1 Align panel ribs with existing building.

.2 Align horizontal trim with existing construction.

.3 Verify all dimensions in the field prior to fabrication.

.4 Notify the Consultant of discrepancies before proceeding.

3.4 CLEANING

.1 Clean in accordance with Section 01 74 00 - Cleaning, and:

.1 Remove protective film immediately after installation.

.2 Waste management:

.1 Manage waste in accordance with Section 01 74 19 - Waste Management and Disposal, and:

.1 Remove metal filings, drill shavings and construction debris from finished surfaces daily.

.2 Clean exposed surfaces in accordance with manufacturer's written recommendations.

3.5 PROTECTION

.1 Protect partially installed and completed work from damage in accordance with Section 01 76 00 - Protecting Installed Construction, and:

.1 Protect completed work from damage during construction.

.2 Replace damaged panels that cannot be repaired to the satisfaction of the Consultant.

.3 Prevent contact between dissimilar metals that may result in galvanic corrosion.

.4 Do not permit traffic or storage of materials against completed wall panels.

END OF SECTION

Section 07 61 00
Sheet Metal Roofing

Part 1 General

1.1 SECTION INCLUDES

.1 Sheet metal roofing panels.

.2 Panel clips, fasteners and attachment systems.

.3 Self-adhered roofing underlayment.

.4 Flashings, closures and trim associated with sheet metal roofing.

.5 Roof ventilation components associated with roofing system where indicated.

1.2 RELATED REQUIREMENTS

.1 Section 06 10 00 - Rough Carpentry: Wood blocking, nailers and plywood substrates.

.2 Section 07 21 00 - Thermal Insulation.

.3 Section 07 27 00 - Air and Moisture Barriers.

.4 Section 07 62 00 - Sheet Metal Flashing and Trim.

.5 Section 07 92 00 - Joint Sealants.

1.3 REFERENCE STANDARDS

.1 ASTM A653/A653M Standard specification for steel sheet, zinc-coated (galvanized) or zinc-iron alloy-coated (galvannealed) by the hot-dip process

.2 ASTM A792/A792M Standard specification for steel sheet, 55% aluminum-zinc alloy-coated by the hot-dip process

.3 ASTM C920 Standard specification for elastomeric joint sealants

.4 CRCA Roofing specifications manual

.5 SMACNA 1120 Architectural sheet metal manual

.6 ULC S107 Standard Methods of Fire Tests of Roof Coverings.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination:

.1 Coordinate Work with structural supports, roof deck, insulation, air/vapour barrier systems, flashings, penetrations and adjacent construction.

.2 Coordinate roof penetrations and openings with panel layout to minimize penetrations through seams.

.3 Coordinate flashings with Section 07 62 00 where specified separately.

.3 Pre-installation Meetings: Convene prior to commencement of roofing Work when required by Project specifications. Review substrate conditions, panel layout, penetrations, flashings, sequencing, weather protection and manufacturer's installation requirements before starting Work of this section.

1.5 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide data on roofing panels, clips, fasteners, underlayments, closures, flashings, sealants, snow retention systems and accessories applicable to Project , including dimensions of components and profiles.

.3 Shop Drawings:

.1 Indicate panel profiles, dimensions, layout, seam locations, jointing pattern, clip and fastener types and spacing, flashings, closures, penetrations, terminations, expansion provisions and interfaces with adjacent construction.

.2 Indicate details at eaves, ridges, hips, valleys, walls, curbs, penetrations and changes in roof slope.

.3 Roofing manufacturer shall confirm attachment system and fastener spacing are suitable for substrate, roof slope and project design loads.

.4 Samples:

.1 Submit manufacturer's standard colour and finish samples for exposed roofing panels and trim for selection by Consultant.

1.6 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements.

.3 Manufacturer's Certificate: When requested, certify roofing system complies with specified requirements.

.4 Installer Qualifications: Submit evidence of manufacturer's approval where required for specified warranty

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

.2 Operation and Maintenance Data: Provide manufacturer's maintenance data for roofing system.

.3 Warranty Documentation: Submit executed warranties specified herein.

1.8 QUALITY ASSURANCE

.1 Perform sheet metal roofing Work in accordance with manufacturer's requirements, CRCA recommendations and SMACNA standards applicable to specified roofing system.

.2 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five (5) years documented experience.

.3 Installer Qualifications: Company specializing in performing the Work of this section with minimum five (5) years documented experience and approved by the manufacturer.

1.9 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Stack roof materials on platforms or pallets, covered with suitable weathertight and ventilated covering.

.3 Store materials in a manner to prevent twisting, bending, or abrasion.

.4 Prevent contact with materials which may cause discolouration or staining.

.5 Store panels sloped to permit drainage and prevent accumulation of condensation.

.6 Protect factory finishes from abrasion and damage.

1.10 WARRANTY

.1 Section 01 78 00: Warranties.

.2 Roofing System Warranty: Provide manufacturer's standard written warranty covering defects in roofing panels and system components for minimum five (5) years.

.3 Installation Warranty: Provide Contractor's written warranty against water penetration resulting from defective installation for minimum two (2) years.

.4 Finish Warranty: Provide manufacturer's written warranty covering cracking, checking, peeling, loss of adhesion, chalking and colour fade of factory-applied finish for minimum twenty (20) years, subject to manufacturer's standard limitations.

Part 2 Products

2.1 MANUFACTURERS

.1 Basis-of-Design Manufacturer and Product: Vicwest TSR

.2 Other acceptable manufacturers offering functionally and aesthetically equivalent products.

.3 Substitutions: Refer to Section 01 25 00.

2.2 DESCRIPTION

.1 System Description:

.1 Complete factory-prefinished steel standing-seam roofing system installed over continuous 5/8" plywood sheathing and self-adhered roofing underlayment, complete with concealed clips, fasteners, closures, flashings, sealants and accessories required for a complete weathertight installation.

.2 Roof Slope: As indicated on Drawings, approximately 1-1/4:12.

.3 Roofing system shall be specifically approved by manufacturer for installation at roof slope indicated.

.2 Regulatory Requirements:

.1 Comply with applicable requirements of governing Building Code.

.2 Fire Classification: Provide roof-covering classification required by applicable Code.

2.3 PERFORMANCE / DESIGN CRITERIA

.1 Structural Performance: Roofing panels, clips, fasteners and attachment system shall resist positive and negative wind pressures and other environmental loads applicable to Project without permanent deformation, disengagement or failure.

.2 Low-Slope Application: Roofing system shall be manufacturer-approved for roof slope indicated on Drawings.

.3 Weathertightness: Roof system shall prevent water infiltration and maintain weathertightness under anticipated service conditions.

.4 Attachment: Clip type, spacing and fasteners shall be in accordance with roofing manufacturer's engineered requirements for project design loads.

.5 Thermal Movement: Design roof system as a floating system to accommodate thermal expansion and contraction without distortion, buckling, opening of seams, failure of sealants or undue stress on fasteners and substrate.

.6 Compatibility: Materials in contact shall be chemically and galvanically compatible or isolated from one another.

.7 Coordinate roofing system with roof curbs, penetrations, flashings and adjacent construction.

2.4 METAL PANEL MATERIALS

.1 Roof system to be a standing seam, concealed fastener metal roof system.

.2 Basis-of-Design Product: Vicwest TSR.

.3 Roof Panels:

.1 Profile: TSR, seamed joint at 610 mm (24 inches) o.c., with seams minimum 50 mm (2 inches) high above bottom of ribbed profile.

.2 Minimum 24 gauge (0.61 mm) steel.

.3 Material: ASTM A792/A792M aluminum-zinc alloy-coated steel (Galvalume), AZM150 minimum.

.4 Factory Finish: Silicone modified polyester (SMP) coating, manufacturer's standard colour series. Colour as selected by Consultant.

.5 Panels to be factory roll-formed with concealed side laps and integral sealant.

.6 Seal panel laps with butyl tape in accordance with manufacturer's requirements.

2.5 SYSTEM COMPONENTS

.1 Metal Roof Panels:

.1 Type: Mechanically seamed standing seam, concealed fastener roofing system.

.2 Basis-of-Design: Vicwest TSR.

.3 Panel Profile: Standing seam (TSR).

.4 Panel Width: 610 mm (24 inches).

.5 Seam Height: Minimum 50 mm (2 inches).

.6 Panel Length: Continuous from eave to ridge or wall termination where practical.

.7 Colour: As selected by Consultant from manufacturer's standard colour range..

.2 Substrate Boards:

.1 Substrate: 5/8 inch plywood roof sheathing as indicated on Drawings.

.3 Underlayment:

.1 High-temperature self-adhered roofing membrane specifically designed for use beneath metal roofing.

.2 Install continuously over entire plywood roof substrate.

.3 Membrane shall be suitable for service temperatures anticipated beneath factory-prefinished metal roofing.

.4 Primer: As recommended by membrane manufacturer.

.4 Panel Support System:

.1 Purpose-made concealed sliding clips designed for Vicwest TSR roofing system and to accommodate thermal expansion and contraction of roof panels.

.2 Clip type, height, gauge and configuration: As recommended by roofing manufacturer to suit plywood substrate and roof assembly indicated.

.3 Clip spacing: In accordance with manufacturer's engineered requirements for project design loads.

.4 Clips: Galvanized steel.

.5 Fasteners:

.1 Concealed fasteners only at panel attachment locations.

.2 Fasteners to be compatible with clip system and plywood substrate and sized to resist project design loads.

.3 Exposed fasteners through roofing panels are not permitted except where specifically detailed and accepted by roofing manufacturer.

.6 Roof Vents:

.1 Roof Ventilation Components: Prefinished components compatible with roofing system, complete with flashings, closures and insect screening where indicated. Colour and finish to match roofing.

.7 Flashing and Trim: Formed from material compatible with roofing panels, with factory-applied finish to match roofing unless otherwise indicated. Fabricate to details shown on Drawings and roofing manufacturer's requirements.

.8 Closures: Manufacturer's standard metal and/or foam closures shaped to roofing panel profile and required to provide complete weathertight installation.

2.6 ACCESSORIES

.1 Miscellaneous Fasteners: Corrosion-resistant fasteners compatible with roofing materials, clips and substrate, and sized to resist project design loads. Exposed fasteners not permitted through roof panels except where specifically detailed or required by roofing system manufacturer. Where exposed fasteners are permitted at flashings or accessories, provide colour-matched heads with weather-sealing washers.

.2 Panel Sealants:

.1 Sealant: ASTM C920, polyurethane or silicone, as recommended by manufacturer.

.2 Sealant Tape: Non-hardening butyl sealant tape recommended by roofing system manufacturer for concealed panel laps, closures, flashings and terminations.

.3 Pipe Flashings: Premoulded EPDM or silicone flashing assemblies suitable for anticipated service temperature and compatible with roofing system.

.4 Isolation Materials: Provide materials as required to prevent galvanic or chemical incompatibility between roofing components and adjacent materials.

2.7 FABRICATION

.1 Factory roll-form roof panels in continuous lengths from eave to ridge or wall termination where practical.

.2 Fabricate panels true to shape, square and free from objectionable distortion or defects.

.3 Form standing seams to Vicwest TSR profile, 610 mm (24 inches) o.c., with seams minimum 50 mm (2 inches) high above bottom of ribbed profile.

.4 Form panel ends at walls, curbs, ridges and other terminations with watertight pan folds or manufacturer's standard details required for low-slope roofing application.

.5 Fabricate eave terminations to permit positive drainage and thermal movement without exposed fasteners through roof panels where system permits.

.6 Fabricate flashings, closures and trim in longest practical lengths and in accordance with roofing system manufacturer's details and Section 07 62 00.

.7 Fabricate components to accommodate thermal movement of roofing panels without buckling, distortion, opening of seams or failure of attachments.

.8 Fabricate exposed components with factory-applied finish matching roof panels unless otherwise indicated.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting Work.

.2 Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections.

.3 Verify deck is dry and free of snow or ice, and decking joints solidly supported and fastened.

.4 Verify roof openings and sleeves for components and systems penetrating metal roof system are properly positioned relative to seam locations before metal roof installation.

.5 Verify substrates, blocking, curbs and penetrations comply with roofing manufacturer's tolerances and requirements.

.6 Do not commence installation until unsatisfactory conditions are corrected.

3.2 INSTALLATION - SUBSTRATES AND UNDERLAYMENTS

.1 Install high-temperature self-adhered roofing underlayment continuously over entire plywood roof substrate in accordance with manufacturer's written instructions.

.2 Prime substrate where required by underlayment manufacturer.

.3 Install membrane in shingle fashion, commencing at low point of roof, with side and end laps in accordance with manufacturer's requirements.

.4 Roll membrane firmly to substrate to provide continuous adhesion without wrinkles, fishmouths, voids, or trapped air.

.5 Integrate underlayment with eave, rake, wall, curb, and penetration flashings to provide continuous drainage to exterior.

.6 At connection to existing building, extend and seal underlayment to existing wall and parapet construction as indicated on Drawings to maintain continuity of weather protection.

.7 Seal penetrations through underlayment with compatible materials recommended by membrane manufacturer.

.8 Repair tears, punctures, open laps, and damaged areas before installation of metal roofing.

.9 Protect completed underlayment from damage and exposure beyond manufacturer's permitted exposure period.

3.3 INSTALLATION - ROOF PANELS

.1 Install roofing panels in accordance with manufacturer's written instructions and reviewed Shop Drawings.

.2 Install Vicwest TSR standing-seam roofing system in accordance with manufacturer's written instructions, reviewed Shop Drawings, and requirements specified herein.

.3 Install panels straight, true and parallel to roof slope, with seams aligned and uniformly spaced.

.4 Secure panels using manufacturer's purpose-made concealed sliding clips and fasteners suitable for plywood substrate.

.5 Space clips and fasteners in accordance with roofing manufacturer's engineered requirements for project design loads.

.6 Install roofing as a floating system to accommodate thermal expansion and contraction without distortion, buckling, or damage to panels or attachments.

.7 Mechanically seam panels in accordance with Vicwest TSR installation requirements to provide a complete weathertight roofing system suitable for roof slope indicated.

.8 Install manufacturer's recommended butyl sealant tape at concealed panel laps, closures, flashings, and terminations where required by roofing system manufacturer.

.9 Install closures at eaves, walls, penetrations, and other locations required to provide complete weathertight installation.

.10 Isolate dissimilar metals and incompatible materials.

.11 Coordinate roof penetrations with panel layout. Locate penetrations clear of standing seams wherever practical.

.12 Do not cut roofing panels with abrasive cutting tools that may damage factory finish or deposit hot metal particles on finished surfaces.

.13 Do not penetrate roof panels with exposed fasteners except where specifically detailed or required by roofing system manufacturer.

.14 Provide curbs, crickets and flashings at penetrations as indicated and as required to maintain positive drainage.

.15 Install roof vents in accordance with manufacturer's written instructions where indicated.

.16 Do not permit exposed fasteners through roofing panels except where specifically permitted by roofing system manufacturer and detailed on reviewed Shop Drawings.

3.4 FLASHINGS

.1 Install flashings in accordance with roofing manufacturer's details, SMACNA recommendations and Section 07 62 00.

.2 Install roof-system flashings, closures, and trim in accordance with roofing manufacturer's written instructions and reviewed Shop Drawings.

.3 Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.

.4 Provide cleats, seams, laps and expansion provisions required for weathertight installation and thermal movement.

.5 Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

.6 Integrate flashings with underlayment and adjacent air/water barrier assemblies in shingle fashion to direct water to exterior.

.7 Provide expansion and movement provisions necessary to accommodate thermal movement without buckling, distortion, or failure of joints.

.8 Seal joints using materials compatible with roofing system.

.9 At connection to existing building, integrate new roof panels, underlayment, closures, and flashings with existing wall and parapet construction as indicated on Drawings to provide continuous weather protection.

.10 Do not rely on exposed sealant as the primary means of preventing water penetration where flashing or lapped construction can provide positive drainage.

3.5 ROOF VENTILATION COMPONENTS

.1 Install roof ventilation components where indicated in accordance with manufacturer's written instructions.

.2 Coordinate locations with roof panel layout and avoid penetrations through standing seams.

.3 Integrate vent flashings with roofing panels and underlayment to provide positive drainage and weathertight installation.

.4 Provide closures and insect screening as specified and required for complete installation.

.5 Finish exposed components to match roofing unless otherwise indicated.

3.6 FIELD QUALOTY CONTROL

.1 Consultant may review roofing installation for compliance with Contract Documents.

.2 Correct roofing panels, seams, clips, flashings, closures, and other components that do not comply with specified requirements.

.3 Remove and replace components that cannot be satisfactorily repaired without affecting appearance, performance, or warranty.

3.7 CLEANING

.1 Remove protective films from exposed roofing components in accordance with manufacturer's requirements.

.2 Remove sealant, adhesive, dirt, markings, and other contaminants from exposed surfaces using methods recommended by roofing manufacturer.

.3 Remove metal filings, drill shavings, cuttings, fasteners, and other ferrous debris from roof surfaces daily.

.4 Clean exposed surfaces without damaging factory-applied finish.

3.8 PROTECTION

.1 Section 01 78 23: Protecting installed Work.

.2 Do not permit traffic over unprotected roof surface.

.3 Protect completed roofing from damage by subsequent Work.

.4 Remove metal filings, drill shavings, fasteners and other ferrous debris from roofing surfaces daily.

.5 Replace panels exhibiting permanent dents, scratches through factory finish, distortion or other visible damage.

END OF SECTION

Section 07 62 00
Sheet Metal Flashing and Trim

Part 1 General

1.1 SECTION INCLUDES

.1 Pre-finished sheet metal flashings and trim.

.2 Fascias, closures, copings, sills, lintel and head flashings where indicated.

.3 Counterflashings and miscellaneous flashings.

.4 Gutters and downspouts.

.5 Accessories required for complete installation.

1.2 RELATED REQUIREMENTS

.1 Section 06 10 00 - Rough Carpentry: Wood blocking and battens for metal roofing substrate profiles.

.2 Section 07 27 00 - Air and Moisture Barriers: Integration of flashings with air and water-resistive barrier.

.3 Section 07 46 16 - Steel Siding

.4 Section 07 61 00 - Sheet Metal Roofing.

.5 Section 07 92 00 - Joint Sealants.

.6 Division 23 – Heating, Ventilating, and Air-Conditioning (HVAC): Prefabricated curb for mechanical equipment.

.7 Division 26 - Electrical: Flashing sleeves and collars for electrical items protruding through roofing membrane.

1.3 REFERENCE STANDARDS

.1 ASTM A653/A653M-23 Standard specification for steel sheet, zinc-coated (galvanized) or zinc-iron alloy-coated (galvannealed) by the hot-dip process, American Society for Testing and Materials

.2 ASTM D226/D226M-17 Standard specification for asphalt-saturated organic felt used in roofing and waterproofing

.3 ASTM C920 - Elastomeric Joint Sealants.

.4 Province of Ontario Roofing Contractors Association - Roofing Specifications Manual.

.5 CRCA - Roofing Specifications Manual.

.6 SMACNA Architectural sheet metal manual

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination:

.1 Coordinate with other work having a direct bearing on work of this section.

1.5 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Shop Drawings: Indicate material, thickness, profiles, jointing patterns, fastening methods, expansion provisions, flashings, terminations, interfaces with adjacent construction and installation details.

.3 Samples: Submit manufacturer's colour samples for exposed prefinished sheet metal for selection by Consultant.

1.6 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

.2 Manufacturer's maintenance and cleaning instructions for prefinished sheet metal.

.3 Warranty documentation where specified.

1.8 QUALITY ASSURANCE

.1 Perform sheet metal work in accordance with SMACNA Architectural Sheet Metal Manual and CRCA Roofing Specifications Manual, except where more stringent requirements are indicated.

.2 Fabricator Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

.3 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.9 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Stack material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

.3 Prevent contact with materials which may cause discolouration or staining.

Part 2 Products

2.1 SHEET MATERIALS

.1 Pre-Finished Galvanized Steel: ASTM A653/A653M, Z275 (G90) zinc coating designation; minimum 0.61 mm (24 ga) core steel unless otherwise indicated.

.1 **Finish:** Factory-applied coating system suitable for exterior architectural applications.

.2 Colour and gloss: To match adjacent sheet metal roofing and steel siding, as selected by Consultant.

.3 Exposed flashings associated with roofing and wall cladding shall match adjacent factory-finished material.

.2 Galvanized Steel: ASTM A653/A653M, Z275 (G90); minimum 0.61 mm (24 ga), for concealed applications.

2.2 ACCESSORIES

.1 Fasteners: Corrosion-resistant fasteners compatible with sheet metal and substrate, designed to withstand imposed loads. Exposed fasteners to have colour-matched heads and weather-sealing washers where permitted.

.2 Cleats: Same material and finish as associated sheet metal; minimum 50 mm wide and of thickness sufficient for application.

.3 Sealant: Exterior elastomeric sealant specified in Section 07 92 00.

.4 Sealant Tape: Non-hardening, permanently elastic butyl sealant tape recommended for sheet metal applications.

.5 Underlayment: Where required, compatible underlayment recommended for sheet metal and substrate conditions.

.6 Isolation Material: Material suitable to prevent direct contact between incompatible metals and between sheet metal and corrosive substrates.

.7 Accessories: Clips, closures, anchors and other accessories required for complete installation.

2.3 COMPONENTS

.1 Gutters: Pre-finished galvanized steel, profile and size as indicated on Drawings; colour to match adjacent roofing/fascia.

.2 Downspouts: Pre-finished galvanized steel, rectangular profile, size as indicated on Drawings; colour to match adjacent wall cladding.

.3 Gutter Accessories: End caps, outlets, expansion provisions, corners, hidden hangers and other accessories required for complete installation.

.4 Downspout Accessories: Elbows, shoes, straps and connections required for complete installation.

.5 Splash Pads: Precast concrete, where downspouts discharge at grade, 12"x30"x3"

.6 Miscellaneous Flashings and Trim: Profiles and dimensions as indicated on Drawings.

2.4 FABRICATION

.1 Form sections true to shape, accurate in size, square, and free from distortion or defects.

.2 Fabricate sheet metal in longest practical lengths.

.3 Hem exposed edges on underside 13 mm (1/2 inch); mitre and seam corners.

.4 Fabricate corners from one piece with minimum 450 mm (18 inch) long legs; seam for rigidity, seal with sealant.

.5 Form exposed vertical faces with hemmed drip edge.

.6 Fabricate cleats and accessories from material compatible with sheet metal being installed.

.7 Provide expansion provisions for thermal movement of exposed sheet metal without distortion or failure of joints.

.8 Do not use graphite pencils or other materials that may cause corrosion or staining to mark exposed metal surfaces.

.9 Fabricate exposed sheet metal to profiles and dimensions indicated on Drawings.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify substrates and adjacent construction are complete, sound and ready to receive sheet metal work.

.3 Verify blocking, openings, curbs, penetrations and attachment surfaces are correctly located and securely installed.

.4 Verify air barrier, roofing and other underlying membranes are installed where required before installation of sheet metal.

.5 Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

.1 Install cleats, starter strips, edge strips and other concealed attachment components required before installation of exposed sheet metal.

.2 Coordinate sheet metal installation with air barrier, roofing and wall cladding to maintain continuity of drainage plane.

.3 Provide isolation between incompatible metals and substrates.

3.3 INSTALLATION

.1 Install sheet metal in accordance with SMACNA recommendations and approved Shop Drawings.

.2 Install exposed sheet metal straight, true and aligned with adjacent construction.

.3 Install sheet metal in longest practical lengths with joints evenly spaced and aligned where exposed.

.4 Secure sheet metal using concealed fasteners wherever possible. Where exposed fasteners are required, use colour-matched fasteners with weather-sealing washers.

.5 Install flashings to shed water to exterior and integrate with roofing, wall cladding and air/moisture barrier in shingle fashion.

.6 Provide positive drainage. Do not form open joints, pockets or configurations that retain water.

.7 Seal joints and penetrations watertight using sealants specified in Section 07 92 00.

.8 Provide expansion joints and slip joints as required to accommodate thermal movement without buckling, distortion or failure of joints.

.9 Isolate sheet metal from incompatible metals and corrosive substrates.

.10 Install gutters to positive drainage toward outlets.

.11 Secure gutters using concealed hangers at spacing recommended for anticipated snow, ice and water loads.

.12 Install downspouts plumb and securely fastened to wall construction.

.13 Connect downspouts to storm drainage or discharge at grade as indicated on Drawings.

.14 Coordinate flashings at windows, doors and other openings with air/moisture barrier and adjacent cladding to provide continuous drainage to exterior.

.15 Repair or replace damaged, dented, scratched or improperly installed sheet metal.

3.4 FIELD QUALITY CONTROL

.1 Inspection and Testing:

.1 Section 01 45 00: Field Quality Control.

.2 Consultant may review installation for compliance with specified requirements.

.3 Correct deficiencies identified during review.

END OF SECTION

Section 07 84 00
Firestopping

Part 1 General

1.1 SECTION INCLUDES

.1 Tested and listed firestopping systems.

.2 Division 1, General Requirements is a part of this section and shall apply to this section. Conform with requirements of all sections of the General Requirements and any supplements and/or addenda, as it applies to the work of this section.

.3 The work of this Section comprises the furnishing of all labour, materials and equipment required for the firestopping and smoke seals at penetrations through walls and floor openings as applicable on this Project.

.4 Firestopping and smoke seals, in vertical and horizontal openings in fire-rated assemblies, hereinafter titles "Joint Firestop Systems", will be installed as per U.L.C. numbers

.5 Firestopping and smoke seals within electrical assemblies (i.e. inside ducts, dampers) and electrical assemblies (ie. Inside cable trays) are specified in Division 21 and 26 respectively

.6 Refer to the schedules attached to the end of this section for ULC data and detailed requirements.

1.2 RELATED REQUIREMENTS

.1 Section 06 10 00 - Rough Carpentry

.2 Section 06 11 00 - Wood Framing

.3 Section 06 17 53 - Shop-Fabricated Wood Trusses

.4 Section 07 26 00 - Vapour Retarders: Vapour retarder materials to adjacent insulation.

.5 Section 07 27 00 - Air Barriers: Air barrier materials to adjacent insulation.

.6 Section 09 21 16 - Gypsum Board Assemblies: Gypsum wallboard fireproofing.

.7 Division 23 – Heating, Ventilating, and Air-Conditioning (HVAC): Mechanical work requiring firestopping.

.8 Section 26 - Electrical: Electrical work requiring firestopping.

1.3 REFERENCE STANDARDS

.1 ASTM E84 Standard test method for surface burning characteristics of building materials

.2 ASTM E119 Standard test methods for fire tests of building construction and materials

.3 ASTM E814 Standard test method for fire tests of penetration firestop systems

.4 ASTM E1966 Standard test method for fire-resistive joint systems

.5 FCIA Firestop industry manual of practice

.6 FM 4991 Approval Standard for Firestop Contractors.

.7 ISO 9000 Quality Management.

.8 ISO 14000 Environmental Management.

.9 NFPA 251 Standard Methods of Tests of Fire Endurance of Building Construction and Materials.

.10 OPL (Omega Point Laboratories).

.11 UL 263 Standard for Fire Tests of Building Construction and Materials.

.12 UL 1479 Standard for Fire Tests of Through-Penetration Firestops.

.13 UL 1709 Standard for Rapid Rise Fire Tests of Protection Materials for Structural Steel.

.14 UL 2079 Standard for Tests for Fire Resistance of Building Joint Systems.

.15 ULC Fire Resistance Directory.

.16 ULC S101 Standard Methods of Fire Endurance Tests of Building Construction and Materials.

.17 ULC S102 Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

.18 ULC S102.2 Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings and Miscellaneous Materials and Assemblies.

.19 ULC S115 Standard Method of Fire Tests of Firestop Systems.

.20 WHI (Intertek/Warnock Hershey).

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination: Coordinate with other work having a direct bearing on work of this section.

.3 Pre-Installation Meeting: Convene one (1) week before starting work of this section.

.4 Sequencing: Coordinate and sequence firestopping installation with all affected trades.

1.5 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide manufacturer's written data on product characteristics, performance.

.3 System Design Listings: Submit system design listings including illustrations from a qualified nationally recognized testing and inspection agency applicable to each firestop configuration.

.4 Unlisted Firestopping Systems: Obtain an Engineering Judgment (EJ) or Equivalent Fire Resistance Rated Assembly (EFRRA) from firestop manufacturer where no specific third

party tested, listed and classified firestop system is available for a particular firestop configuration.

1.6 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's written special preparation and installation requirements and tested and listed firestop systems designs.

.3 Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

1.8 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 and ISO 14000 certification requirements.

.2 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum ten (10) years documented experience and FCIA Manufacturer Member in good standing.

.3 Contractor Qualifications: Company specializing in performing the work of this section and as follows:

.1 FCIA Member in good standing.

.2 Minimum one (1) person employed at the firm who has passed the ULC Firestop Exam.

.3 ULC Qualified Firestop Contractor Program.

.4 FM approved in accordance with FM standard 4991 - Approval of Firestop Contractors.

.5 FCIA Member in good standing.

.6 Licensed by the province or local authority where applicable.

.7 Completed not less than five (5) comparable scale projects.

.4 Single Source Responsibility: Obtain firestop systems for each type of penetration and construction situation from a single primary firestop systems manufacturer. Obtain firestop systems for complete project, from a single primary firestop systems manufacturer, to the greatest extent possible.

1.9 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Deliver firestopping products in original, unopened containers with labels intact and legible, identifying product and manufacturer.

.3 Store and handle firestopping materials to manufacturer's instructions.

1.10 SITE CONDITIONS

.1 Ambient Conditions:

.1 Do not apply materials when temperature of substrate material and ambient air is below 15 degrees C (60 degrees F).

.2 Maintain this minimum temperature before, during, and for three (3) days after installation of materials.

.3 Provide ventilation to manufacturer's instructions in areas to receive solvent cured materials.

Part 2 Products

2.1 MANUFACTURERS

.1 Acceptable Manufacturers:

.1 3M Fire Protection Products.

.2 Tremco, Inc.

.3 A/D Fire Protectio Systems Inc.

.4 Nuco Inc.

.5 HILTI, Inc.

.2 Substitutions: Refer to Section 01 25 00.

2.2 DESCRIPTION

.1 System Description:

.2 Tested and listed firestopping systems consisting of a material or materials, the wall or floor assembly, and penetrating items or gaps, assembled or placed in spaces, gaps, joints and building perimeters, to restore the fire resistance rating and or smoke resistant properties of a fire resistance rated assembly or smoke resistant assembly.

.3 Regulatory Requirements:

.1 Conform to applicable code for fire resistance ratings and surface burning characteristics.

.2 Provide certificate of compliance from authority having jurisdiction indicating approval of materials, tested and listed systems or engineering judgments used.

2.3 PERFORMANCE / DESIGN CRITERIA

.1 Materials, accessories and application procedures listed by ULC and UL, or tested to ULC-S115 to comply with applicable building code requirements.

.2 Firestopping Materials: ASTM E119, ASTM E814, and ULC-S101, to achieve a fire rating as noted on Drawings.

.3 Surface Burning Characteristics: ULC-S102 or ULC-S102.2, as applicable.

.4 Smoke Resistance: For areas where smoke resistance is required, provide firestop systems with L-ratings of maximum 25.4l/sec/sq m (5.0 cfm/sq ft) opening area.

.5 Environmental Resistance: Systems to be resistant to environmental conditions they will be exposed to, as apparent at design stage.

2.4 MATERIALS

.1 Fire Stopping Systems and Materials: Tested and listed by ULC, and conforming to construction type, penetrant type, annular space requirements and fire rating involved in each separate instance.

2.5 ACCESSORIES

.1 Primer: Type recommended by firestopping manufacturer for specific substrate surfaces.

.2 Forming/Packing Material: Permanent type, suitable for application.

.1 Mineral fiberboard

.3 Installation Accessories: Clips, collars, fasteners, temporary stops or dams, and other devices required to position and retain materials in place.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify opening configurations, penetrating items, substrates, and other conditions affecting performance of firestopping are ready to receive the work of this section.

.3 Verify tested and listed systems selected are applicable to the conditions encountered.

.4 Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

.1 Clean substrate surfaces as recommended in manufacturer's written instructions, of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material and performance of firestop system for fire or smoke resistant situations.

.2 Prime substrates in accordance with manufacturer's written instructions.

.3 Do not apply firestopping and smoke seals to surfaces previously painted or treated with sealers, curing compounds, water repellents or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.

.4 Ensure that anchoring devices, back-up materials, clips, sleeves, supports and other related materials used in actual fire tests are provided.

.5 Mask where necessary to prevent firestopping materials from contacting adjoining surfaces that will remain exposed upon completion of work. Remove tape as soon as it is possible to do so without damaging firestop material or substrate.

.6 Remove incompatible materials which may affect bond.

.7 Install damming and/or backing materials to arrest liquid material leakage.

3.3 APPLICATION

.1 Apply primer and firestopping materials to manufacturer's written instructions.

.2 Install material at walls or partition openings which contain penetrating sleeves, piping, ductwork, conduit and other items, requiring firestopping to tested and listed system or engineering judgment.

.3 Apply firestopping material, thickness sufficient to achieve rating, to uniform density and texture.

.4 Compress fibred material to achieve a density of 40% of its uncompressed density.

.5 Place foamed material in layers to ensure homogenous density, filling cavities and spaces.

.6 Place sealant to completely seal junctions with adjacent dissimilar materials

.7 Place intumescent coating in sufficient coats to achieve rating required.

.8 Dam Material: Remove dam material after firestopping material has cured.

.9 Tool or trowel exposed surfaces to a neat finish

.10 Remove excess compound promptly as work progresses and upon completion.

3.4 CLEANING

.1 Section 01 74 10: Cleaning installed work.

.2 Clean adjacent surfaces of firestopping materials.

3.5 PROTECTION

.1 Section 01 78 23: Protecting installed work.

.1 Protect installed work. Remove and replace all damaged areas.

.2 Protect adjacent surfaces from damage by material installation.

3.6 SCHEDULES

.1 Floor plan fire separation walls: as noted on drawings

.2 Stair walls: as noted on drawings

.3 Service rooms: as noted on drawings

.4 Fire Separation between floors as indicated on OBC matrix

.5 Refer to drawings for ULC rating where provided, it is the responsibility to ensure all penitrations are sealed

.6 Smoke resistance: For areas where smoke resistance is required, provide firestop systems with L-Ratings of 25.4 l/sec/sq m (5.0 cfm/sq ft).

.7 Provide firestopping of all conduit, duct, piping and other miscellaneous penetrations as required by the Ontario Building Code current edition.

.8 Fire resistance rating of installed firestop system will not be less than the fire resistance rating of surrounding floor and wall assembly.

.9 Alternative U.L.C. Designs are acceptable providing the system complies with the requirements of the specified systems.

.10 If alternative U.L.C. Designs are proposed, the contractor must submit in writing within 30 days of award of contract, the systems intended to be used, along with all U.L.C. Design data

.11 The contractor is responsible for including an updated schedule, listing all joint firestop systems (JF) and service penetration systems (SP) as part of the as-built drawing submittal. The location of each joint firestop system used will be indicated on the as-built drawings.

END OF SECTION

Section 07 92 00
Joint Sealants

Part 1 General

1.1 SECTION INCLUDES

.1 Preparing substrate surfaces.

.2 Interior and exterior joint sealants.

.3 Joint backing, bond breakers, primers and accessories.

.4 Acoustical sealants.

.5 Sanitary sealants.

1.2 RELATED REQUIREMENTS

.1 Section 03 30 00 - Cast-in-Place Concrete: Sealants required in conjunction with precast and cast-in-place concrete.

.2 Section 07 21 00 Thermal Insulation

.3 Section 07 26 00 - Vapour Retarders: Sealants required in conjunction with vapour retarder.

.4 Section 07 27 00 - Air Barriers: Sealants required in conjunction with air barrier.

.5 Section 07 46 19 - Steel Siding

.6 Section 07 61 00 Sheet Metal Roofing

.7 Section 07 84 00 - Firestopping: Sealants required in conjunction with firestopping.

.8 Section 07 62 00 - Sheet Metal Flashing And Trim: Sealants required in conjunction with metal flashings and roofing.

.9 Section 08 11 13 - Metal Doors and Frames: Sealants required in conjunction with door frames.

.10 Section 08 51 13 - Aluminum Windows: Sealants required in conjunction with aluminum windows.

.11 Section 08 80 00 – Glass and Glazing: Sealants required in conjunction with glazing methods.

1.3 REFERENCE STANDARDS

.1 ASTM C834-17 Standard specification for latex sealants

.2 ASTM C919-24 Standard practice for use of sealants in acoustical applications

.3 ASTM C920-18 Standard specification for elastomeric joint sealants

.4 ASTM C1193-16 Standard guide for use of joint sealants

.5 ASTM C1330-23 Standard specification for cylindrical sealant backing for use with cold liquid-applied sealants

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination:

.1 Coordinate with other work having a direct bearing on work of this section.

.2 Coordinate the work with all sections referencing this section.

1.5 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations and colour availability.

.3 Samples: Submit samples in accordance with Division 01. Provide cured, colour samples of manufacturer's standard range of colours in each type of sealant and caulking compound for colour selection by Consultant. Submit samples of primer, bond breaker tape and joint backing material, if requested.

.4 Colour: Submit sealant colours for acceptance in accordance with following general colour hierarchy. Between 2 dissimilar materials, colour the sealant to match the material with the higher relative position on the colour hierarchy scale (highest is at ".1"):

.1 Concrete

.2 Masonry

.3 Metal Extrusions

.4 Metal - formed

.5 Material Safety Data Sheets: Submit MSDS for inclusion in Operation and Maintenance Manual without limitations for adhesives, sealants and other materials later designated by Consultant

1.6 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements.

.1 Indicate special procedures, surface preparation, perimeter conditions requiring special attention and field quality control testing, including substrate preparation, priming and installation procedures .

.3 Manufacturer's Certificate: Certify that Products meet or exceed specified requirements, when requested.

.4 Submit written confirmation of compatibility where sealants contact air barrier, vapour retarder, glazing or other sensitive materials.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

.2 Manufacturer's maintenance data.

.3 Warranty documentation.

1.8 QUALITY ASSURANCE

.1 Perform sealant application work to ASTM C1193 and manufacturer's written instructions.
.

.2 Perform acoustical sealant application work to ASTM C919.

.3 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

.4 Applicator Qualifications: Company specializing in joint sealant installation with minimum three (3) years documented experience.

1.9 SITE CONDITIONS

.1 Ambient Conditions:

.1 Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.10 DELIVERY, STORAGE AND HANDLING

.1 Accept materials on site in manufacturer's unopened original packaging

.2 Store materials in accordance with manufacturer's written requirements. Protect from freezing, excessive heat, moisture and contamination.

1.11 ENVIRONMENTAL REQUIREMENTS

.1 Install sealants only when ambient and substrate temperatures are within manufacturer's recommended application range.

.2 Do not install sealants on wet, damp, frozen or contaminated substrates unless specifically permitted by manufacturer.

1.12 WARRANTY

.1 Section 01 78 00: Warranties.

.2 Provide five (5) year warranty against failure of installed joint sealants to maintain watertight or airtight seal, loss of adhesion or cohesion, or failure to cure.

.3 Include coverage for installed sealants and accessories which fail to achieve water tight seal, air tight seal and, exhibit loss of adhesion or cohesion, or do not cure.

Part 2 Products

2.1 MANUFACTURERS

.1 Products of following manufacturers are acceptable subject to conformance to requirements of Drawings, Schedules and Specifications:

.1 Tremco Canada; www.tremcosealants.com

.2 Dow Corning; www.dowcorning.com

.3 W. R. Meadows; www.wrmeadows.com

.4 Euclid Chemical Canada Ltd.; www.euclidchemical.com

.5 Sika Canada Inc.; www.sikacanada.com

.6 Hilti: www.hilti.ca

.2 A single manufacturer has been specified in Part 2. If the Contractor wishes to use one of the approved manufacturers, submit the product data sheet for the proposed equivalent product and clearly identify the specified product to which it is being compared.

2.2 GENERAL

.1 General Materials:

.1 VOC Content for Interior Applications: Provide sealants and sealant primers complying with the following VOC content limits per 40 CFR 59, Subpart D (EPA Method 24):

.1 Architectural Sealants: 250 g/L.

.2 Sealant Primers for Nonporous Substrates: 250 g/L.

.3 Sealant Primers for Porous Substrates: 775 g/L.

.2 Compatibility: Provide joint sealants and accessory materials that are compatible with one another, and with adjacent materials, as demonstrated by sealant manufacturer using ASTM C 1087 testing and related experience.

.3 Joint Sealant Standard: Comply with ASTM C 920 and other specified requirements for each joint sealant.

.4 Stain Test Characteristics: Where sealants are required to be nonstaining, provide sealants tested per ASTM C 1248 as non-staining on porous joint substrates specified.

2.3 SEALANTS

.1 Acrylic Emulsion Latex (Type C): ASTM C834, Type OP, Grade NF; single component, non-staining, non-bleeding, non-sagging; colour as selected.

.1 Elongation Capability 2% to 5%.

.2 Service Temperature Range -17 to 71 degrees C (2 to 160 degrees F).

.3 Shore A Hardness Range 15 to 40.

.4 Product: Tremflex 834, manufactured by Tremco.

.1 Application: Interior non-moving joints between painted surfaces, interior frames and adjacent construction, and other low-movement interior joints.

.2 Acoustic Sealant (Type G): ASTM C1311, Acoustic grade, single component, solvent release, non-skinning, non-sagging, Grey colour.

.1 Service Temperature Range -28 to 82 degrees C (-20 to 180 degrees F).

.2 Shore A Hardness Range 10 to 30.

.3 Product: Tremco Acoustical/Curtainwall Sealant, manufactured by Tremco.

.1 Application: Concealed acoustical seals and perimeter seals at polyethylene vapour retarder.

.3 Polyurethane Sealant (Type P): ASTM C920, Grade NS, Class 35, Use NT; single component, moisture-curing, non-staining, non-bleeding, non-sagging type; colour as selected.

.1 Service Temperature Range -40 to 82 degrees C (-40 to 180 degrees F).

.2 Shore A Hardness Range 20 to 35.

.3 Product: Dymonic FC, manufactured by Tremco.

.1 Low-modulus, one-component, moisture-cure, polyurethane hybrid sealant, formulated with proprietary silane end-capped polymer technology it provides the best performance characteristics of polyurethane and silicone sealants.

.2 Application: Exterior perimeter joints at windows, doors, metal siding, masonry, concrete, flashings and other dissimilar materials.

.4 Silicone Sealant (Type L): ASTM C920, Grade S, Class 50, Use NT; single component, neutral curing, non-sagging, non-staining, non-bleeding, ASTM C 920; colour as selected.

.1 Service Temperature Range -54 to 82 degrees C (-65 to 180 degrees F) .

.2 Shore A Hardness Range 15 to 35.

.3 Product: Spectrem 2, manufactured by Tremco.

.1 Medium-modulus, one-part, high-performance, neutral-cure silicone sealant ideal for a variety of perimeter caulking and glazing applications.

.2 Application: Glass-to-frame seals, glazing weather seals and locations requiring silicone compatible with glazing components.

.3 Staining, ASTM C 1248: None on concrete, marble, granite, limestone, and brick.

.5 Sanitary Silicone Sealant (Type N): ASTM C920, Grade NS, Class 25, Use NT; single component, acid- curing, non-sagging, non-staining, mildew resistant; colour as selected.

.1 Service Temperature Range -54 to 82 degrees C (-65 to 180 degrees F).

.2 Shore A Hardness Range 15 to 35.

.3 Product: Tremsil 200 Sanitary, manufactured by Tremco.

.1 One-part, acetoxy silicone sealant for general construction use, and cures to a flexible rubber when exposed to moisture present in the air.

.2 Application: Plumbing fixtures, countertops, backsplashes and other wet-area joints.

.3 It produces a weathertight seal to glass, metal, porcelain, ceramic and most painted surfaces. White (with fungicide) and Clear (available with or without fungicide) colors are suitable for use where sanitary joints need added protection against fungi and bacteria.

2.4 ACCESSORIES

.1 Primer: Non-staining type, as recommended by sealant and EIFS manufacturer to suit application.

.2 Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant and EIFS manufacturer; compatible with joint forming materials.

.1 Cleaners: Chemical cleaners acceptable to joint sealant manufacturer

.3 Joint Backing: ASTM C1330; round, compressible, non-staining backing material compatible with sealant; type recommended by sealant manufacturer for joint conditions. Size 25 to 50 percent larger than joint opening.

.4 Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

.5 Masking tape: Non-staining, non-absorbent type compatible with sealant and adjacent surfaces.

.6 Setting Blocks and Spacers: Compatible with silicone sealant and recommended by sealant manufacturer.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that substrate surfaces and joint openings are clean, dry, and free of frost and ready to receive work.

.3 Verify that joint backing and release tapes are compatible with sealant and EIFS materials.

3.2 PREPARATION

.1 Remove loose materials and foreign matter which might impair adhesion of sealant.

.2 Clean and prime joints in accordance with sealant manufacturer's written instructions.

.3 Prepare joints in accordance with ASTM C1193.

.4 Protect elements surrounding the work of this section from damage or disfiguration.

3.3 INSTALLATION

.1 Install sealants in accordance with ASTM C1193 and manufacturer's written instructions.

.2 Install acoustical sealants in accordance with ASTM C919.

.3 Install joint backing to provide sealant depth and profile recommended by sealant manufacturer.

.4 Install bond breaker tape where backing cannot be installed and where required to prevent three-sided adhesion.

.5 Install sealant free of air pockets, voids, foreign material, ridges and sags.

.6 Apply sealant within manufacturer's recommended temperature range.

.7 Tool exposed joints to smooth, slightly concave profile unless otherwise indicated.

.8 Remove excess sealant and masking materials before sealant cures.

3.4 CLEANING

.1 Section 01 74 10: Cleaning installed work.

.2 Clean adjacent soiled surfaces.

3.5 PROTECTION

.1 Section 01 78 23: Protecting installed work.

.2 Remove masking tape and excess sealant.

.3 Protect sealants until cured, remove temporary glass supports.

3.6 SCHEDULE

.1 Exterior perimeter joints at aluminum windows: Type P.

.2 Exterior perimeter joints at hollow metal doors and frames: Type P

.3 Exterior joints between steel siding, flashings and dissimilar materials: Type P.

.4 Exterior joints at concrete and masonry: Type P.

.5 Exterior concealed transition joints associated with air barrier assembly: Sealant compatible with and approved by air barrier manufacturer.

.6 Glazing weather seals and glass-to-frame joints: Type L.

.7 Interior perimeter joints at exterior windows and doors: Type C, except where elastomeric sealant is required for movement.

.8 Interior non-moving joints between painted surfaces and adjacent materials: Type C.

.9 Concealed acoustical seals at gypsum board assemblies: Type G.

.10 Concealed seals at polyethylene vapour retarder: Type G.

.11 Sanitary joints at plumbing fixtures, countertops, backsplashes and other wet-area locations: Type N.

.12 Other exterior weather-exposed non-traffic joints: Type P.

END OF SECTION

Section 08 11 13
Hollow Metal Doors and Frames

Part 1 General

1.1 SECTION INCLUDES

.1 Hollow metal steel frames.

.2 Pressed steel doors.

.3 Exterior and interior glazed light frames; glass and glazing.

.4 Louvres in hollow metal doors where indicated.

1.2 RELATED REQUIREMENTS

.1 Section 07 92 00 - Joint Sealants: Perimeter sealants.

.2 Section 08 80 00 - Glazing.

.3 Section 09 91 00 - Painting: Field painting of doors.

1.3 REFERENCE STANDARDS

.1 ASTM A653/A653M-23 Standard specification for steel sheet, zinc-coated (galvanized) or zinc-iron alloy-coated (galvannealed) by the hot-dip process

.2 ASTM E90-23 Standard test method for laboratory measurement of airborne sound transmission loss of building partitions and elements

.3 CAN/ULC-S104 - Standard Method for Fire Tests of Door Assemblies.

.4 CAN/ULC-S105 - Standard Specification for Fire Door Frames Meeting the Performance Required by CAN/ULC-S104.

.5 CAN/ULC-S701.1 - Standard for Thermal Insulation, Polystyrene Boards.

.6 STD G40.20/G40.21-13 General requirements for rolled or welded structural quality steel/structural quality steel

.7 STD W59-18 Welded steel construction

.8 CSDMA (Canadian Steel Door Manufacturers Association).

.1 Recommended Dimensional Standards for Commercial Steel Doors and Frames.

.2 Recommended Selection and Usage Guide for Commercial Steel Doors and Frame Products.

.9 NFPA 80 - Standard for Fire Doors and Other Opening Protectives.

.10 ULC - Fire Resistance Directory.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination:

.1 Coordinate with other work having a direct bearing on work of this section.

.2 Coordinate the work with frame opening construction, door, and hardware installation.

.3 Sequencing: Coordinate installation of doors and frames with wall construction, glazing, hardware, electrical work and security devices where applicable.

1.5 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Indicate door and frame construction, materials, gauges, cores, configurations, finishes, fire ratings, louvre cut-outs, glazing provisions and hardware reinforcements.

.3 Shop Drawings:

.1 Indicate frame elevations, reinforcement, anchor types and spacing, location of cut-outs for hardware, and finish.

.2 Indicate door elevations, internal reinforcement, closure method, and cut-outs for glazing and louvres.

.3 Include schedule identifying each unit with door marks and numbers relating to numbering on drawings and in the door schedule.

1.6 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements.

.3 Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

.2 Submit manufacturer's cleaning and maintenance instructions.

.3 Submit warranty documentation.

1.8 QUALITY ASSURANCE

.1 Manufacture hollow metal doors and frames in accordance with CSDMA requirements.

.2 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum four (4) years documented experience.

.3 Fire-rated assemblies: Listed and labelled by an accredited testing agency acceptable to authorities having jurisdiction.

1.9 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Remove doors and frames from wrappings or coverings upon receipt on site and inspect for damage.

.3 Store in vertical position, spaced with blocking to permit air circulation between components.

.4 Store materials on planks or dunnage, out of water and covered to protect from damage.

.5 Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.

Part 2 Products

2.1 MANUFACTURERS

.1 All Steel Doors 2000 Ltd: www.allsteeldoors.ca

.2 Daybar Industries Ltd: www.daybar.com

.3 Fleming-Baron Doors: www.flemingdoor.com & www.baronmetal.com

.4 Vision Hollow Metal Ltd: www.visionhollowmetal.com

.5 Or other approved manufacturers offering functionally and aesthetically equivalent products.

.6 Substitutions: Refer to Section 01 25 00.

2.2 DESCRIPTION

.1 Fire-Rated Door and Frame Assemblies: Listed and labelled to CAN/ULC-S104 and CAN/ULC-S105 for fire-protection ratings indicated on Drawings.

.2 Install fire-rated door and frame assemblies in accordance with NFPA 80 and requirements of authorities having jurisdiction.

.3 Exterior Door and Frame Assemblies: Provide thermally broken frames and insulated doors suitable for exterior exposure and project energy-performance requirements.

2.3 MATERIALS

.1 Sheet Steel: ASTM A653/A653M, commercial quality steel.

.1 Exterior Doors and Frames: Galvanized steel, coating designation Z275 (G90).

.2 Interior Doors and Frames: Galvannealed steel, coating designation ZF75 minimum.

.2 Reinforcement: Steel suitable for required application and hardware loads.

2.4 DOOR CORE MATERIALS

.1 **Interior Door:**

.2 Honeycomb Core: Structural small cell 25.4 mm (1") maximum kraft paper honeycomb; weight 36.3 kg (80 lbs) per ream minimum, density 16.5 kg/cu m (1.03 pcf) minimum, sanded to required thickness.

.1 Used for: Interior, low-traffic areas, offices, meeting rooms, storage rooms, Non-rated or light-duty applications.

.3 **Fire-Rated Doors:**

.4 Polystyrene Core: ASTM C578, Type 1, rigid extruded fire retardant, closed cell board, density 16 to 32 kg/cu m (1 to 2 pcf), thermal values R-6.0 minimum.

.1 Used for: Mechanical rooms where thermal separation matters, light commercial applications, Doors requiring higher thermal performance.

.5 **Exterior Doors:**

.6 Polyisocyanurate Core: ASTM C591 (unfaced) or ASTM C1289, (faced), rigid modified polyisocyanurate, closed cell board, 32 kg/cu m (2.0 pcf), thermal value minimum R-11.0.

.1 Used for: Exterior commercial doors, Energy-efficient buildings (SB-10 compliance),

2.5 PRIMERS

.1 Primer: Manufacturer's standard rust-inhibitive primer for touch-up of fabrication damage.

2.6 ACCESSORIES

.1 Door Silencers: Resilient rubber or neoprene, colour to suit frame finish.

.2 Exterior Door Top Caps: Manufacturer's standard weather-resistant closure.

.3 Frame Thermal Breaks: Manufacturer's standard continuous thermal-break system for exterior frames.

.4 Removable Glazing Stops: Formed steel, accurately fitted and securely fastened with countersunk tamper-resistant screws.

.5 Weatherstripping: Specified on hardware schedule.

.6 Louvres: Steel louvres where indicated on Drawings; finish to match door.

.7 Glass: Specified in Section 08 80 00.

2.7 FABRICATION - DOORS

.1 Exterior Doors: Laminated insulated-core construction.

.2 Interior Doors: Laminated honeycomb-core construction unless otherwise indicated.

.3 Longitudinal Edges: continuously welded, filled and ground smooth vertical edges with no visible edge seams.

.4 Fire-Rated Doors: Construction as required by listed assembly.

.5 Mortised, blanked, reinforced, drilled and tapped for templated hardware, in accordance with templates provided by hardware supplier.

.6 Reinforce for surface mounted hardware, anchor hinges, thrust pivots, pivot reinforced hinges, or non-templated hardware.

.7 Top and Bottom Channels: Inverted, recessed, welded steel channels.

.8 Close exterior door tops with weather-resistant top caps.

.9 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.

2.8 LAMINATED CORE CONSTRUCTION

.1 Exterior Doors: Both face sheets 16 ga (1.6 mm) steel, with polyisocyanurate core, laminated under pressure to face sheets.

.2 Interior Doors: Both face sheets (16 ga) 1.6 mm steel with polystyrene core and temperature rise rated core where scheduled, laminated under pressure to face sheets.

.3 Fire-rated doors: Gauge and core construction as required by listed assembly, but not less than specified minimum face-sheet thickness.

.4 Laminate vertical steel stiffeners to each face sheet at 150 mm (6 inches) on center maximum.

.5 Fill voids between vertical stiffeners with fibreglass batt insulation.

2.9 FABRICATION - FRAMES

.1 Exterior Frames: 16 ga (1.6 mm) thick base metal thickness.

- .1 Frames: Welded type construction, thermally broken.
- .2 Transom Frames, Sidelight and Window Assemblies: Welded type construction, thermally broken.

.2 Interior Frames: 16 ga (1.6 mm) thick base metal thickness.

- .1 Door Frames and Window Assemblies: Welded type construction.
- .2 Transom Frames: Welded type construction.
- .3 Sidelight Assemblies: Welded type construction.

.3 Mullions for Double Doors: Removable type, of same profiles as jambs.

.4 Transom Bars for Glazed Lights: Fixed type, of same profiles as jamb and head.

.5 Mortised, blanked, reinforced, drilled and tapped for templated hardware, in accordance with templates provided by hardware supplier. Provide mortar guard boxes.

.6 Reinforce frames wider than 1 200 mm 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.

.7 Terminate door stops 150 mm (6 inches) above finished floor. Cut stop at 45 degree angle and close.

.8 Prepare frames for silencers. Provide three (3) single silencers for single doors and mullions of double doors on strike side. Provide two (2) single silencers on frame head at double doors without mullions.

.9 Configure exterior frames with special profile to receive recessed weatherstripping.

.10 Attach fire rated label to each fire rated door unit.

2.10 FINISHES

.1 Doors and Frames: Factory prime coat compatible with field-applied finish specified in Section 09 91 00.

.2 Prepare galvanized and galvannealed surfaces as required for adhesion of factory primer and subsequent field-applied coatings.

.3 Touch up damaged factory primer after fabrication.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that opening sizes and tolerances are acceptable; check floor area within path of door swing for flatness.

.3 Verify doors and frames are correct size, swing, rating and opening number.

.4 Remove temporary shipping spreaders.

3.2 INSTALLATION

.1 Install doors and frames to CSDMA.

.2 Install fire-rated doors and frames in accordance with NFPA 80, and local authority having jurisdiction.

.3 Coordinate with masonry and gypsum board wall construction for anchor placement.

.4 Coordinate installation of glass and glazing.

.5 Coordinate glazing with Section 08 80 00.

.6 Coordinate door hardware with hardware supplier.

.7 Set frames plumb, square, level and at correct elevation.

.8 Secure anchorages and connections to adjacent construction.

.9 Ensure integrity of lead-lining between interior of frame and adjacent wall assembly.

.10 Brace frames rigidly in position while building-in. Install wood spreaders at third points of frame rebate height to maintain frame width. Provide vertical support at centre of head for openings exceeding 1 200 mm [48 inches] in width.

.11 Remove wood spreaders after frames have been built-in.

.12 Make allowance for deflection to ensure structural loads are not transmitted to frame product.

.13 Install doors, and hardware in accordance with hardware templates and manufacturer's instructions.

.14 Adjust operable parts for correct clearances and function.

.15 Install louvers, glazing and door silencers.

.16 Finish paint as specified in Section 09 91 00.

.17 Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

3.3 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Maximum Diagonal Distortion: 1.5 mm [1/16 inch] measured with straight edges, crossed corner to corner.

3.4 SCHEDULE

.1 This section is associated with an Appendix of door and frame hardware listing.

.1 Refer to Door and Frame Schedule on Drawings for door marks, sizes, types, fire ratings, glazing and other requirements.

.2 Allowance provided for Hardware. Schedule to be provided after project awarded and hardware suppliers will be invited to bid the hard schedule provided.

END OF SECTION

Section 08 51 13
Aluminum Windows

Part 1 General

1.1 SECTION INCLUDES

.1 Aluminum windows.

1.2 RELATED REQUIREMENTS

.1 Section 06 10 00 - Rough Carpentry: Wood framed openings; perimeter shims.

.2 Section 07 26 00 - Vapour Retarders: Perimeter vapour seal between window frame and adjacent construction.

.3 Section 07 27 00 - Air Barriers: Perimeter air seal between window frame and adjacent construction.

.4 Section 07 92 00 - Joint Sealants: Perimeter sealant and back-up materials.

.5 Section 08 80 00 – Glass and Glazing.

1.3 REFERENCE STANDARDS

.1 AAMA CW11-85 Curtain wall manual no. 11 - design windloads for buildings and boundary layer wind tunnel testing

.2 STD AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS - North American fenestration standard/Specification for windows, doors, and skylights

.3 AAMA 611-14 Voluntary standards for anodized architectural aluminum

.4 ASTM B209/B209M-21a Standard specification for aluminum and aluminum-alloy sheet and plate

.5 ASTM B221M-21 Standard specification for aluminum and aluminum-alloy extruded bars, rods, wire, profiles, and tubes (metric)

.6 ASTM B221-21 Standard specification for aluminum and aluminum-alloy extruded bars, rods, wire, profiles, and tubes

.7 ASTM E283/E283M-19 Standard test method for determining rate of air leakage through exterior windows, skylights, curtain walls, and doors under specified pressure differences across the specimen

.8 ASTM E330/E330M-14 Standard test method for structural performance of exterior windows, doors, skylights and curtain walls by uniform static air pressure difference

.9 ASTM E331-00(2016) Standard test method for water penetration of exterior windows, skylights, doors, and curtain walls by uniform static air pressure difference

.10 ASTM F588-17 Standard test methods for measuring the forced entry resistance of window assemblies, excluding glazing impact

.11 CSA A440.2:19/A440.3:19 Fenestration energy performance/User guide to CSA A440.2:19, Fenestration energy performance

.12 CSA A440.4:19 Window, door, and skylight installation

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Pre-Installation Meeting: Convene one (1) week before starting work of this section.

1.5 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide component dimensions, anchorage and fasteners, glass, internal drainage details and sealants, thermal break, glazing system, finishes and performance data .

.3 Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related work and installation requirements.

.1 Indicate window types and sizes, opening dimensions, frame profiles, glazing, anchorage, perimeter flashing, sill pan, air/vapour barrier connections, drainage provisions and installation requirements.

1.6 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Manufacturer's Certificate: Certify that Products meet or exceed specified requirements and performance criteria tests.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

.2 Operation and Maintenance Data: Provide manufacturer's cleaning and maintenance instructions.

.3 Warranty Documentation: Submit executed manufacturer warranties.

1.8 QUALITY ASSURANCE

.1 Comply with AAMA/WDMA/CSA 101/I.S.2/A440, CSA-A440S1.

.2 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

.3 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.9 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Protect factory finished aluminum surfaces with strippable coating. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.

1.10 SITE CONDITIONS

.1 Ambient Conditions:

.1 Do not install sealants when ambient temperature is less than 5 degrees C (40 degrees F).

.2 Maintain this minimum temperature during and after installation of sealants.

1.11 WARRANTY

.1 Section 01 78 00: Warranties.

.2 Correct defective Work within a five (5) year period after Date of Substantial Completion.

.3 Insulating Glass Unit Warranty: Provide manufacturer's written warranty against failure of hermetic seal resulting in interpane dusting, misting or condensation for minimum ten (10) years.

.4 Aluminum Finish Warranty: Provide manufacturer's standard written warranty against abnormal deterioration of anodized finish.

.5 Warranty: Include coverage for degradation of colour finish.

Part 2 Products

2.1 MANUFACTURERS

.1 Basis-of-Design: Commdoor Aluminum; Product: 525 Series Fixed Window System.

.2 Other acceptable manufacturers offering functionally and aesthetically equivalent products.

.1 Commdoor Aluminum.

.2 Windspec Inc; Product: 855/875 series where meeting specified configuration, dimensions and performance requirements. .

.3 Other manufacturers offering functionally and aesthetically equivalent products meeting specified performance requirements.

.3 Substitutions: Refer to Section 01 25 00, must be approved by consultant.

2.2 DESCRIPTION

.1 System Description:

.1 System Description: Factory-fabricated, thermally broken aluminum fixed window system, complete with insulating vision glass, flashings, drainage provisions, anchorage, attachment devices, perimeter seals and accessories required for complete installation.

.2 Configuration: Fixed (F).

.3 Glazing: Exterior insulating glass Type SG-B as specified in Section 08 80 00. .

2.3 PERFORMANCE / DESIGN CRITERIA

.1 Windows: Tested, rated and labelled in accordance with AAMA/WDMA/CSA 101/I.S.2/A440 and CSA A440S1. Provide minimum Performance Grade PG25 or greater as required to resist project design loads.

.2 System Design: Design and size components to withstand dead loads and live loads caused by positive and negative wind loads acting normal to plane of wall:

.3 To AAMA/WDMA/CSA 101/I.S.2/A440, Canadian Supplement

.1 As calculated in accordance with applicable code.

.2 Design windows and anchorage to withstand positive and negative wind pressures calculated in accordance with the Ontario Building Code, but not less than 1.20 kPa (25 psf), without permanent deformation or failure.

.3 As measured in accordance with ASTM E330/E330M.

.4 Member Deflection: Limit member deflection to 1/175 of the longer dimension with full recovery of glazing materials.

.5 Assembly: To accommodate, without damage to components or deterioration of seals, movement between window and perimeter framing, deflection of lintel.

.6 Thermal Transmittance: Overall window assembly U-value not greater than 2.0 W/m²·K, or more stringent value required by project energy compliance documentation, determined in accordance with CSA A440.2.

.7 Air Infiltration/Exfiltration: Limit air infiltration/exfiltration for fixed windows to 0.10 L/s·m² , measured at a reference differential pressure across assembly of 75 Pa (1.57 psf) as measured to ASTM E283.

.8 Condensation Resistance Factor: 45 minimum when measured to AAMA/WDMA/CSA 101/I.S.2/A440.

.9 Water Leakage: None, in accordance with AAMA/WDMA/CSA/101/I.S.2/A440, when measured in accordance with ASTM E331.

.10 System Internal Drainage: Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to the exterior by a weep drainage network.

.11 **Air and Vapour Seal:** Maintain continuity of wall air barrier and vapour retarder systems at window perimeter. Coordinate window-frame connections with Sections 07 26 00 and 07 27 00.

2.4 MATERIALS

.1 Extruded Aluminum: sections to be; 6063-T5 alloy and temper.

.2 Frame: Members size will be based on published wind load charts to meet specified wind load. Available section sizes 5" (101.6mm), 6" (127.0mm) and 7" (152.4mm).

.3 Thermal Break: Manufacturer's standard continuous thermal barrier system for specified window series, preventing direct metal-to-metal contact between interior and exterior aluminum portions.

2.5 COMPONENTS

.1 Frames: Aluminum, thermally broken extruded aluminum window framing , profile size 127 mm (5 inches) depth; with integral glass stops of glazing pockets, drainage cavities and weep provisions as required for complete window assembly type.

.2 **Frame Profiles:** Manufacturer's standard extruded aluminum profiles of dimensions and wall thicknesses required to meet specified structural and performance requirements.

.3 **Head, Jamb and Sill Members:** Thermally broken extruded aluminum sections, nominal 127 mm (5 inches) deep, configured to receive sealed insulating glass units and incorporating glazing stops, gaskets and internal drainage provisions.

.4 **Sill:** Extruded aluminum sill section incorporating positive drainage to exterior and weep provisions. Provide end dams and closures where required by window manufacturer.

.5 **Thermal Break:** Manufacturer's standard continuous thermal barrier separating interior and exterior aluminum portions of frame. Provide construction preventing direct metal-to-metal thermal bridging between interior and exterior portions.

.6 **Glazing Stops:** Extruded aluminum, snap-in or mechanically retained type, removable as required for glass replacement; finish to match window framing.

.7 **Glazing:** Sealed insulating glass units as specified in Section 08 80 00 – Glazing.

.8 **Glazing Gaskets:** Manufacturer's standard replaceable elastomeric glazing gaskets, continuous at perimeter of glazing and compatible with insulating glass units and framing system.

.9 **Anchors and Fasteners**: Manufacturer's standard non-corrosive anchors and fasteners suitable for attachment to rough-opening construction indicated. Conceal fasteners wherever possible.

.10 **Perimeter Flashing:** Provide flexible self-adhered or liquid-applied flashing membrane at window heads, jambs and sills, compatible with window framing and specified exterior air barrier. Install to provide positive drainage to exterior.

.11 **Sill Pan:** Provide continuous sill pan flashing below window units, with back dam and end dams, extending to exterior drainage plane. Form and install to prevent water migration into wall assembly.

.12 **Air Barrier Connection:** Provide continuous sealed connection between window frame and exterior wall air barrier at entire perimeter of window opening. Use compatible transition membrane, sealant and accessories recommended by air barrier manufacturer.

.13 **Interior Air/Vapour Seal:** Provide continuous seal between interior side of window frame and rough opening to maintain continuity of the air and vapour control layers.

.14 **Exterior Weather Seal:** Provide continuous exterior perimeter sealant joint between window frame and adjacent exterior construction, complete with backer rod and bond breaker as required. Do not block window drainage or weep openings.

.15 **Accessories:** Provide anchors, clips, closures, flashings, end dams, back dams, transition membranes, sealants, backer rods, isolators and other accessories required for a complete, drained and weathertight installation.

2.6 GLASS AND GLAZING MATERIALS

.1 Glass and Glazing Materials: As specified in Section 08 80 00 of Types described below:

.1 Glass in Exterior Lights: Type SG-B.

.2 Provide fully tempered safety glazing where indicated on Drawings and where required by the Ontario Building Code.

2.7 SEALANT MATERIALS

.1 Sealant and Backing Materials: As specified in Section 07 92 00 of Types described below.

.1 Perimeter Sealant: Type M.

.2 Sealant Used Within System (Not Used for Glazing): Type F, compatible with window framing, glazing materials, air barrier and adjacent materials. .

.3 Interior Perimeter Air/Vapour Seal: Sealant type recommended for substrates and application, as specified in Section 07 92 00.

.4 Sealants shall be compatible with aluminum finishes, insulating glass unit edge seals, glazing gaskets and adjacent construction.

2.8 HARDWARE

.1 General:

.1 Provide hardware as required for complete installation of fixed aluminum window system.

.2 Hardware to be manufacturer’s standard for system specified.

.2 Fasteners:

.1 Fasteners exposed to exterior or moisture: Stainless steel.

.2 Concealed fasteners: Stainless steel, galvanized steel, or other corrosion-resistant material compatible with aluminum framing and adjacent construction.

.3 Provide anchors suitable for attachment to wood-framed rough openings.

.4 Conceal fasteners and anchors from view wherever possible.

.5 Isolate dissimilar metals to prevent galvanic action.

2.9 FABRICATION

.1 Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.

.2 Accurately fit and secure joints and corners. Make joints flush, hairline and weatherproof.

.3 Prepare components to receive anchor devices. Fabricate anchors.

.4 Arrange fasteners and attachments to ensure concealment from view.

.5 Mechanically secure frame joints using manufacturer's standard brackets, fasteners and joint-sealing procedures.

.6 Seal frame joints and intersections to prevent water penetration into wall construction.

.7 Permit internal drainage weep holes and channels to migrate moisture to exterior. Provide internal drainage of glazing spaces to exterior through weep holes.

.8 Do not obstruct drainage paths or weep openings with sealants, setting blocks or other materials.

.9 Provide thermal breaks continuous through frame members and intersections to minimize thermal bridging.

.10 Fabricate window assemblies to accommodate sealed insulating glass units specified in Section 08 80 00.

.11 Fabricate assemblies in accordance with reviewed Shop Drawings and manufacturer's written requirements. Assemble joints tightly using manufacturer's standard brackets and fastening systems required to maintain specified performance.

2.10 FINISHES

.1 Aluminum Finishes:

.1 Exterior exposed aluminum surfaces: Clear anodized finish, Class II, Architectural Class II anodic coating, minimum 10 microns (0.4 mil), in accordance with AAMA 611.

.2 Finish: Clear anodized, unless otherwise indicated.

.3 Colour and gloss of exposed aluminum components to be uniform throughout window assemblies.

.2 Fabrication and Finish Requirements:

.1 Finish exposed aluminum components after fabrication where practicable.

.2 Repair minor finish damage using methods and materials recommended by finish manufacturer.

.3 Components with damaged finishes that cannot be satisfactorily repaired are not acceptable.

.3 Steel Components:

.1 Concealed carbon steel components: Galvanized or protected with corrosion-resistant coating.

.2 Repair damaged galvanized coatings with zinc-rich coating.

.4 Isolation Coating:

.1 Isolate aluminum from concrete, masonry, pressure-treated wood and dissimilar metals using compatible membrane, coating or other approved means.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify wall openings and adjoining air and vapour seal materials are ready to receive work of this Section.

.3 Verify substrates and adjoining air barrier, vapour barrier and flashing materials are ready to receive Work of this Section.

.4 Verify rough openings are clean, dry and free of conditions that may adversely affect installation.

.5 Do not commence installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

.1 Install window frames, glazing, hardware to manufacturer's written instructions.

.2 Install window assembly to CSA-A440.4.

.3 Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.

.4 Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

.5 Install sill pan flashing, end dams and window sill components to provide positive drainage to exterior. .

.6 Insulate perimeter shim spaces with low-expansion polyurethane foam insulation or other insulation recommended by window manufacturer. Do not overfill or distort window frames. Insulation does not replace specified perimeter air/vapour seals.

.7 Coordinate attachment and seal of perimeter air barrier and vapour retarder materials.

.8 Install sill pan and perimeter flashing before completion of exterior air-barrier connections. Lap and seal membranes in shingle fashion to direct incidental moisture to exterior.

.9 Maintain continuity of air barrier and vapour retarder at entire window perimeter.

.10 Do not obstruct frame drainage paths or weep openings.

.11 Install glass and infill panels as specified in Section 08 80 00, to glazing method required to achieve performance criteria.

.12 Install perimeter sealant with backing materials, and installation criteria in accordance with Section 07 92 00.

3.3 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Material and Unit Size Tolerances: As specified in AAMA/WDMA/CSA 101/I.S.2/A440.

3.4 ADJUSTING

.1 Adjust and correct installed window assemblies as required to maintain alignment, drainage, perimeter seals and specified performance.

.2 Replace components that cannot be satisfactorily adjusted or repaired.

3.5 CLEANING

.1 Section 01 74 10: Cleaning installed work.

.2 Remove protective material from factory finished aluminum surfaces.

.3 Wash surfaces by method recommended and acceptable to sealant and window manufacturer; rinse and wipe surfaces clean.

END OF SECTION

Section 08 71 13
Automatic Door Operators

Part 1 General

1.1 SECTION INCLUDES

.1 Electric operated door equipment.

.2 Control devices.

1.2 RELATED REQUIREMENTS

.1 Section 08 11 13 - Hollow Metal Doors and Frames

.2 Section 26 00 00 - Electrical

1.3 REFERENCE STANDARDS

.1 BHMA A156.10-2017 - Power Operated Pedestrian Doors.

.2 BHMA A156.19-2013 - Power Assist And Low Energy Power Operated Doors.

.3 CSA-C22.1-18 - Canadian Electrical Code, Part I, Safety Standard for Electrical Installations (24th Edition).

.4 CSA-C22.2 No. 100-14 (R2019) - Motors and Generators.

.5 CSA-C22.2 No. 247-14 (R2019) - Operators and Systems of Doors, Gates, Draperies and Louvres.

.6 NEMA MG 1-2016 - Motors and Generators.

.7 NFPA 70 - National Electrical Code (NEC), 2017 Edition.

.8 UL 325-2017 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems (7th Edition).

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination: Coordinate with other work having a direct bearing on work of this section.

.3 Sequencing: Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

1.5 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide data on system components, sizes, features, and finishes.

.3 Shop Drawings:

.1 Indicate layout and dimensions; head, jamb, and sill conditions; elevations; components, anchorage, recesses, materials, and finishes, electrical characteristics and connection requirements.

.2 Identify installation tolerances required, assembly conditions, routing of service lines and conduit, and locations of operating components and boxes.

1.6 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements indicating special procedures, perimeter conditions requiring special attention, and manufacturer's hardware and component templates.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

.2 Maintenance Contracts: Provide service and maintenance of operating equipment for one year from Date of Substantial Completion.

.3 Operation and Maintenance Data: Include manufacturer's parts list and maintenance instructions for each type of hardware and operating component.

.4 Warranty Documentation: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

.5 Record Documentation: Record actual locations of concealed equipment, services, and conduit.

1.8 MAINTENANCE MATERIAL SUBMITTALS

.1 Section 01 78 23: Maintenance extra material requirements.

.2 Tools: Provide wrenches and tools required for maintenance of equipment.

1.9 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 certification requirements.

.2 Perform Work in accordance with BHMA A156.10 and BHMA A156.19. Maintain one (1) copy of document on site.

.3 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five (5) years documented experience.

.4 Installer Qualifications: Company specializing in performing the work of this section with minimum five (5) years documented experience and approved by the manufacturer.

1.10 WARRANTY

.1 Section 01 78 00: Warranties.

.2 Provide five (5) year manufacturer warranty for operating unit.

Part 2 Products

2.1 MANUFACTURERS

.1 Horton; Product: PowerSwing - LE4100.

.2 Other acceptable manufacturers offering functionally and aesthetically equivalent products.

.1 Stanley Access Technologies; Product: M-Force.

.2 Record USA; Product: 8100.

.3 Rhinoteck; Product: 4000XL.

.3 Substitutions: Refer to Section 01 25 00.

2.2 DESCRIPTION

.1 System Description:

.1 Automatic Door Equipment: Electrically operated with push plate and button control device.

.2 Door: Single swing, hinged operation.

.3 Provide for manual open, close, and break-open operation of door leaves in the event of power failure.

.4 Maximum Force for Break-Open Feature: as per OBC and ANSI/BHMA A156.19 .

.2 Regulatory Requirements:

.1 Conform to applicable code for automatic release of control drive unit to permit manual opening of doors.

.2 Provide shielded and explosion proof electrical devices at hazardous location.

.3 Products Requiring Electrical Connection: Listed and classified by CSA as suitable for the purpose specified and indicated.

2.3 PERFORMANCE / DESIGN CRITERIA

.1 Automatic Door Equipment: Accommodate heavy pedestrian traffic, and weight of doors.

.2 System Design: Operate, hold open, and close doors under design wind and suction loads calculated in accordance with applicable code.

.3 Able to operate on an exterior vestibule door in a typical Ontario winter.

.4 Operators: Fully adjustable for opening and closing speeds, hold open time, cancellation on activation of fire alarm and smoke detection system.

2.4 POWER UNITS

.1 Operation: Power open, spring close, power boost, power close operation.

.2 Electric Type: 120 VAC, 5 amps min., 50/60 HZ, self-contained, gear driven, with release clutch.

2.5 AUTOMATIC PIVOT OPERATOR

.1 Surface mounted operator for accommodating door action.

.2 Constant speed control for opening and closing cycles.

.3 Hold Open: Toggle switch at inside head of doors.

2.6 PUSH PLATE / BUTTON CONTROL DEVICE

.1 Standard wall mounted, surface mounted momentary contact type.

.1 Manufacture: Camden

.1 4-1/2" Round Push Plate Switch (CM-40)

.2 Surface, Round standard depth. Heavy gauge stainless steel 9-5/8 x 1-1/2" (CM-89S)

.3 Provide all additional components, interfaces, relays, wiring connections, and accessories required for proper coordination of the device with the automatic door operator provided under this Section.

2.7 ELECTRICAL CHARACTERISTICS AND COMPONENTS

.1 Electrical Characteristics:

.1 1/8 hp.

.2 120 volts, single phase, 60 Hz.

.3 5 amperes maximum circuit breaker size. 15 A minimum circuit capacity.

.4 90% minimum power factor at rated load.

.5 Refer to Section 26 05 83 - Equipment Wiring: Electrical connections.

.2 Motor: CSA-C22.2 No. 100, NEMA MG 1 and Refer to Section 23 05 13.

.3 Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Enclose terminal lugs in terminal box sized to CSA-C22.1.

.4 Disconnect Switch: Factory mount disconnect switch lockable, integral with operator..

2.8 FINISHES

.1 Exposed Operator and Components: Finish selected from manufacturer's standard range.

.2 Steel Clips, Supports and Steel Anchors: One (1) coat of steel primer.

.3 Steel Clips, Supports and Steel Anchors: Galvanized to 380 g/sq m (1.25 oz/sq ft).

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that surfaces are ready to receive work and dimensions are as indicated on Shop Drawings.

.3 Verify that electric power is available and of the correct characteristics.

3.2 INSTALLATION

.1 Install equipment to manufacturer's written instructions.

.2 Provide for thermal expansion and contraction of door and frame units and live and dead loads that may be transmitted to operating equipment.

.3 Provide for dimensional distortion of components during operation.

.4 Install pneumatic lines and door power units in a manner to prevent condensation or freezing.

.5 Coordinate installation of components with related and adjacent work; level and plumb.

3.3 ADJUSTING

.1 Adjust door equipment for correct function and smooth operation.

3.4 CLEANING

.1 Section 01 74 10: Cleaning installed work.

.2 Remove temporary protection, clean exposed surfaces.

3.5 DEMONSTRATION AND INSTRUCTIONS

.1 Section 01 79 00: Demonstrating installed work.

.2 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

END OF SECTION

Section 08 80 00
Glazing

Part 1 General

1.1 SECTION INCLUDES

.1 Glass and glazing for hollow metal work.

.2 Interior and exterior glazing, where indicated.

.3 Safety glazing.

.4 Glazing accessories, including setting blocks, spacers, glazing tape, gaskets, sealants, and related materials required for a complete installation.

1.2 RELATED REQUIREMENTS

.1 Section 06 20 00 - Finish Carpentry: Glazed finish carpentry components.

.2 Section 06 41 00 - Architectural Wood Casework: Cabinets with requirement for glass shelves.

.3 Section 07 92 00 - Joint Sealants: Sealant and back-up materials.

.4 Section 08 11 13 - Standard Metal Doors and Frames: Glazed metal doors, frames, sidelights, transoms.

.5 Section 08 51 13 - Aluminum Windows.

1.3 REFERENCE STANDARDS

.1 16 CFR 1201 - Safety standard for architectural glazing materials

.2 AAMA CW11 Curtain wall manual No. 11 - design windloads for buildings and boundary layer wind tunnel testing

.3 ASTM C542 Standard specification for lock-strip gaskets

.4 ASTM C864 Standard specification for dense elastomeric compression seal gaskets, setting blocks, and spacers

.5 ASTM C920 Standard specification for elastomeric joint sealants

.6 ASTM C1036 Standard specification for flat glass

.7 ASTM C1048 Standard specification for heat-strengthened and fully tempered flat glass

.8 ASTM C1172 Standard specification for laminated architectural flat glass

.9 ASTM D2240 Standard test method for rubber property—durometer hardness

.10 ASTM E84 Standard test method for surface burning characteristics of building materials

.11 ASTM E119 Standard test methods for fire tests of building construction and materials

.12 ASTM E283/E283M Standard test method for determining rate of air leakage through exterior windows, skylights, curtain walls, and doors under specified pressure differences across the specimen

.13 ASTM E330/E330M Standard test method for structural performance of exterior windows, doors, skylights and curtain walls by uniform static air pressure difference

.14 ASTM E546 Standard test method for frost/dew point of sealed insulating glass units

.15 ASTM E576 Standard test method for frost/dew point of sealed insulating glass units in the vertical position

.16 ASTM E2190 Standard specification for insulating glass unit performance and evaluation

.17 CGSB 12.8 Insulating glass units

.18 GANA Glazing manual

.19 GANA Laminated glazing reference manual

.20 GISC Z97.1 Safety glazing materials used in buildings - safety performance specifications and methods of test

.21 IGMA (Insulating Glass Manufacturers Alliance).

.22 ISO 9000 Quality Management.

.23 ISO 14000 Environmental Management.

.24 NFPA 251 Standard Methods of Tests of Fire Endurance of Building Construction and Materials.

.25 NFPA 252 Standard Methods of Fire Tests of Door Assemblies.

.26 NFPA 257 Standard on Fire Test for Window and Glass Block Assemblies.

.27 UL 263 Fire tests of building construction and materials.

.28 ULC S101 Standard Methods of Fire Endurance Tests of Building Construction and Materials.

.29 ULC S104 Standard Method for Fire Tests of Door Assemblies.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

1.5 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Product Data:

.1 Glass Sheets & Plastic Sheets: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.

.2 Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colours.

1.6 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

.2 Certificates: Certify that Products meet or exceed specified requirements.

.3 Manufacturer's Certificate: Certify that sealed insulated glass, meets or exceeds specified requirements.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

1.8 MAINTENANCE MATERIAL SUBMITTALS

.1 Section 01 78 23: Maintenance and extra material requirements.

1.9 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 certification requirements.

.2 Perform Work in accordance with GANA Glazing Manual for glazing installation methods. Maintain one (1) copy of document on site.

.3 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.10 SITE CONDITIONS

.1 Ambient Conditions:

.1 Do not install glazing when ambient temperature is less than 10 degrees C (50 degrees F).

.2 Maintain minimum ambient temperature before, during and twenty-four (24) hours after installation of glazing compounds.

1.11 WARRANTY

.1 Section 01 78 00: Warranties.

.2 Provide a five (5) year warranty to include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement of same.

.3 Provide a five (5) year warranty to include coverage for delamination of laminated glass and replacement of same.

Part 2 Products

2.1 MANUFACTURERS

.1 Glazing:

.2 Vitro Architectural Glass; Product: Low-E and tinted glass products www.vitroglazings.com.

.3 Other acceptable manufacturers offering functionally and aesthetically equivalent products.

.1 Guardian Glass; Product: Float Glass and coated glazing products, www.guardian.com.

.2 AGC Glass; Product: Float and performance coated glass, www.na.agc-flatglass.com.

.3 Pilkington (NSG Group); Product: Float and specialty glazing products, www.pilkington.com.

.4 Substitutions: Refer to Section 01 25 00.

2.2 DESCRIPTION

.1 Regulatory Requirements:

.1 Conform to applicable code for fire rating, temperature rise, and impact safety rating requirements.

2.3 PERFORMANCE / DESIGN CRITERIA

.1 Provide glass and glazing materials for continuity of building enclosure vapour retarder and air barrier:

.2 In conjunction with materials described in Section 07 26 00, 07 27 00, 07 92 00.

.3 To utilize the inner pane of multiple pane sealed units for the continuity of the air barrier and vapour retarder seal.

.4 To maintain a continuous air barrier and vapour retarder throughout the glazed assembly from glass pane to heel bead of glazing sealant.

.5 Loads: Size glass to withstand dead loads and positive and negative live loads acting normal to plane of glass.

.1 As calculated in accordance with applicable code.

.2 To a design pressure of as indicated on structural drawings.

.3 As measured in accordance with ASTM E330/E330M.

.6 Limit glass deflection to the lesser of the flexural limit of the glass or L/200 with full recovery of glazing materials, whichever is less.

2.4 FLAT GLASS MATERIALS

.1 Float Glass (Type FG-B): ASTM C1036, Type I, Class 1, Quality-Q3; clear; minimum 6 mm thick unless otherwise indicated.

.2 Heat-Treated Glass (Type FG-C): ASTM C1048; clear or tinted as indicated; minimum 6 mm thick. Provide heat-strengthened or fully tempered glass as indicated and as required by Code.

.3 Low-Emissivity Glass (Type FG-G): ASTM C1036 and ASTM C1376; clear float glass with sputter-coated low-emissivity coating; minimum 6 mm thick. Coating surface as required to achieve specified insulating glass unit performance.

.4 Safety Glass:

.1 Fully Tempered Safety Glass (Type FG-I): ASTM C1048; clear; minimum 6 mm thick; provide safety glazing conforming to applicable requirements of the Ontario Building Code and ANSI Z97.1, as applicable.

2.5 SEALED INSULATING GLASS UNITS

.1 Insulated Glass Units - Low E (Type SG-B): ASTM E2190, double pane; soft sputtered coating on #3 or as required by manufacturer surface within unit; interpane space filled with argon gas; with warm-edge spacer system edge seal; total unit thickness of 26mm (1").

.1 Exterior envelope

.2 *Solarban® 70* (2) *Optigray®* + Clear by Vitro Architectural Glass: Low-E Tinted Insulating Glass, ultra-neutral low-reflective exterior appearance

.3 Visible Light Transmittance: 46%.

.4 Solar Heat Gain Coefficient (SHGC): 0.23

.5 Solar Light Transmittance: 9%.

.6 U-Value: winter 0.28 maximum; summer 0.26 maximum.

2.6 GLAZING SEALANTS AND COMPOUNDS

.1 General:

.1 Provide sealants in accordance with Section 07 92 00 – Joint Sealants.

.2 Ensure compatibility with glass, coatings, spacers, setting blocks, and aluminum framing.

.3 Provide sealants suitable for glazing applications and tested in accordance with ASTM C920.

.2 Exterior Weather Seal (Face Seal / Cap Bead):

.1 Type M – Silicone Sealant (low-modulus, non-staining).

.2 Colour as selected by Consultant.

.3 Internal Glazing Seal (Heel Bead / Bedding):

.1 Type L – Silicone Sealant (medium-modulus glazing sealant).

.4 Concealed / Non-Exposed Seals within Glazing System:

.1 Type F – Butyl Sealant.

.5 Interior Glazing / Drywall Interfaces:

.1 Type P – Polyurethane Sealant.

.6 Prohibited Materials:

.1 Oil-based glazing putties are not permitted.

.2 Acrylic sealants are not permitted for exterior glazing.

2.7 GLAZING ACCESSORIES

.1 General:

.1 Provide glazing accessories compatible with glass, coatings, sealants, and framing systems.

.2 Coordinate with Section 07 92 00 – Joint Sealants.

.3 Ensure materials are non-staining and do not adversely affect glass or sealant performance.

.2 Compression Gaskets:

.1 ASTM C864, preformed dense elastomeric compound.

.2 Extruded to suit glazing system; black colour.

.3 Setting Blocks:

.1 ASTM C864, ozone-resistant elastomeric material.

.2 Minimum length: 25 mm per 1 m² of glass, minimum 100 mm length.

.3 Width: glass thickness minus 1.5 mm.

.4 Height: to suit glazing system and loading.

.4 Spacer Shims:

.1 ASTM C864 elastomeric material.

.2 Minimum 75 mm long.

.3 Self-adhesive one face.

.5 Glazing Tape (Bedding / Isolation Only):

.1 Closed-cell foam or butyl-based glazing tape.

.2 Used only as temporary positioning, isolation, or secondary seal.

.3 Not permitted as primary air, vapour, or weather seal.

.6 Glazing Clips:

.1 Manufacturer’s standard, compatible with framing system.

.7 Compatibility:

.1 All glazing accessories to be compatible with:

.1 Type M and Type L silicone sealants (Section 07 92 00).

.2 Insulating glass unit edge seals.

.3 Aluminum framing finishes.

2.8 SOURCE QUALITY CONTROL AND TESTS

.1 Section 01 43 00: Provide testing and analysis of glass.

.2 Provide shop testing and inspection for installed glass.

.3 Test safety glass samples to GISC Z97.1.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that openings for glazing are correctly sized and within tolerance.

.3 Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

.4 Verify that weep and drainage provisions are clear and functional.

.5 Do not proceed with glazing installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

.1 Clean contact surfaces with solvent and wipe dry.

.2 Clean glazing channels, stops and other contact surfaces immediately before installation.

.3 Remove coatings, dirt, moisture and other contaminants that may interfere with adhesion of glazing materials.

.4 Seal porous glazing channels or recesses with substrate compatible primer or sealer.

.5 Prime surfaces scheduled to receive sealant.

.6 Install sealant in accordance with manufacturer's written instructions.

.1 Ensure glazing materials, sealants, gaskets, tapes, setting blocks and spacers are compatible with glass coatings, insulating glass unit edge seals and framing finishes.

3.3 INSTALLATION - GLAZING

.1 Install glass and glazing in accordance with GANA Glazing Manual, glass manufacturer's requirements, glazing system manufacturer's written instructions, and reviewed Shop Drawings.

.2 Install glass with sufficient edge and face clearances to prevent contact with framing members and to accommodate thermal movement.

.3 Install setting blocks of proper size and hardness at quarter points of glass unless otherwise recommended by glass or framing system manufacturer.

.4 Centre glass in openings and maintain uniform bite and edge clearances.

.5 Provide spacers, gaskets, glazing tapes and sealants required for complete installation.

.6 Do not allow glass to contact metal framing or other hard surfaces.

.7 Install insulating glass units with Low-E coated surface oriented as specified and in accordance with insulating glass unit manufacturer's requirements.

.8 Install insulating glass units with manufacturer's identification and glazing orientation maintained until installation has been verified.

.9 Provide fully tempered safety glazing where indicated on Drawings and where required by the Ontario Building Code.

.10 Install exterior glazing using glazing system manufacturer's recommended method.

.11 Provide continuous internal glazing seal at perimeter of exterior glazing to maintain continuity of the building air and vapour barrier.

.12 Provide continuous exterior weather seal where required by glazing system.

.13 Tool exposed sealant to smooth, uniform profile. Remove excess sealant and glazing materials from adjacent finished surfaces.

.14 Ensure glazing installation does not obstruct drainage and weep provisions of framing systems.

3.4 FIELD QUALITY CONTROL

.1 Manufacturer's Services:

.1 Glass and glazing product manufacturers to provide field surveillance of the installation of their Products.

.2 Monitor and report installation procedures and unacceptable conditions.

.2 Inspect completed glazing for proper installation, alignment, edge clearances, sealant continuity and drainage.

.3 Replace glass that is cracked, chipped, scratched, damaged, improperly installed or otherwise does not comply with specified requirements.

.4 Replace insulating glass units exhibiting evidence of seal failure, condensation, fogging or contamination within interpane space.

3.5 CLEANING

.1 Section 01 74 10: Cleaning installed work.

.2 Remove glazing materials from finish surfaces.

.1 Glazing compounds, sealants and other installation materials from finished surfaces.

.3 Remove labels after Work is complete.

.1 Except permanent safety glazing identification.

.4 Clean glass and adjacent surfaces.

.1 As in accordance with glass manufacturer's recommendations.

.5 Do not use abrasive cleaners, tools or materials that may damage glass, coatings or adjacent finishes.

3.6 PROTECTION

.1 Section 01 78 23: Protecting installed work.

.1 Protect installed glazing from damage during remaining construction operations.

.2 After installation, mark pane with an 'X' by using removable plastic tape or paste. Do not mark heat absorbing or reflective glass units.

.3 Do not apply adhesive materials to coated glass surfaces unless approved by glass manufacturer.

.4 Replace damaged glazing before Substantial Performance of the Work.

END OF SECTION

Section 09 21 16
Gypsum Board Assemblies

Part 1 General

1.1 GENERAL REQUIREMENTS

.1 Conform to Division 1 General Requirements.

1.2 RELATED WORK

.1 Section 06 10 00 - Rough Carpentry

.2 Section 06 11 00 - Wood Framing

.3 Section 07 21 00 Thermal (Building) Insulation

.4 Section 07 84 00 Firestopping

.5 Section 07 92 00 - Joint Sealants

.6 Section 09 91 00 Painting

.7 Section 09 77 00 – Special Wall Surfacing

1.3 WORK INCLUDED

.1 The work included in this section is the complete installation of all gypsum drywall, gypsum sheathing, all corner beads, filling, topping, taping and sanding all joints, and installation of all galvanized metal J-mould where required and suspended framing system.

1.4 REFERENCE STANDARDS

.1 Aluminum Association (AA)

.1 AA DAF 45-03(R2009), Designation System for Aluminum Finishes.

.2 American Society for Testing and Materials (ASTM)

.1 ASTM C475-02(2015), Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.

.2 ASTM C514-04(2014), Standard Specification for Nails for the Application of Gypsum Board.

.3 ASTM C557-03(2009)e1, Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.

.4 ASTM C840-16, Standard Specification for Application and Finishing of Gypsum Board.

.5 ASTM C954-15, Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.

.6 ASTM C1002-14, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.

.7 ASTM C1047-14a, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.

.8 ASTM C1177/C1177M-13, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.

.9 ASTM C1178/C1178M-13, Standard Specification for Glass Mat Water-Resistant Gypsum Backing Board.

.10 ASTM C1280-13a, Standard Specification for Application of Gypsum Sheathing.

.11 ASTM C1396/C1396M-14a, Standard Specification for Gypsum board.

.3 Association of the Wall and Ceilings Industries International (AWCI)

.1 AWCI Levels of Gypsum Board Finish-GA-214-2015.

.4 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-51.34-M86(R1988), Vapour Barrier, Polyethylene Sheet for Use in Building Construction.

.2 CAN/CGSB-71.25-M88, Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.

.5 Green Seal Environmental Standards (GS)

.1 GS-11-2008, 2nd Edition, Paints and Coatings.

.6 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards

.1 SCAQMD Rule 1113-A2007, Architectural Coatings.

.2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

.7 Underwriters' Laboratories of Canada (ULC)

.1 CAN/ULC-S102-10, Standard Method of Test of Surface Burning Characteristics of Building Materials and Assemblies.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for gypsum board assemblies and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Shop Drawings:

.1 Submit gypsum board assembly drawings stamped and signed by professional engineer registered or licensed in Province of ON, Canada.

.2 Indicate components such as fastener type, dimensions, spacing and locations at gypsum board edges, ends and in field of board as well as installation methods. Components and work to confirm to ASTM C 840 standard specification for application and finishing of gypsum board.

.3 Indicate type of joint compound, and number of joint compound layers.

.4 Indicate number and location of electrical boxes for wall and ceiling.

.4 Samples:

.1 Submit for review and acceptance of each component specified or necessary for complete installation. Include technical descriptive data.

.2 Submit 300 x 300 mm size samples of vinyl faced gypsum board and 300 mm long samples of vinyl mouldings.

.3 Samples will be returned for inclusion into work.

.5 Certifications:

.1 Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address and applicable standard designation.

.3 Exercise care in unloading gypsum board materials shipment to prevent damage.

.4 Storage and Handling Requirements in accordance with ASTM C 840-16:

.1 Store gypsum board assemblies materials level flat in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Store and protect gypsum board assemblies from nicks, scratches, and blemishes.

.3 Protect gypsum board from direct exposure to rain, snow, sunlight, or other excessive weather conditions.

.4 Protect ready mix joint compounds from freezing, exposure to extreme heat and direct sunlight.

.5 Protect from weather, elements and damage from construction operations.

.6 Handle gypsum boards to prevent damage to edges, ends or surfaces.

.7 Protect prefinished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.

.8 Replace defective or damaged materials with new.

1.7 JOB CONDITION

.1 Maintain temperature 10 °C minimum, 21 °C maximum for 48 hours prior to and during application of gypsum boards and joint treatment, and for 48 hours minimumafter completion of joint treatment.

.2 Apply board and joint treatment to dry, clean, frost free surfaces.

.3 Ventilation: ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.

.4 Protection: protect work of this section against damage by others. Protect work of other sections against damage resulting from work of this Section. Repair and make good all damage to other sections caused by the work of this Section.

Part 2 Products

2.1 MATERIALS

.1 General: use materials specified herein or approved equal; acceptance of approved equal to be in writing by the Consultant.

.2 Standard board: to ASTM C1396/C1396M-14Type X,, 1200 mm wide x maximum practical length, ends square cut, edges bevelled.

.1 Thickness noted on drawings

.2 Abuse resistance noted on drawings.

.3 Type X for fire rated assemblies, thickness noted on drawings.

.3 Gypsum sheathing board: to ASTM C1396/C1396M-14, regular,, 1200 mm wide x maximum practical length.

.1 Exterior sheathing gypsum board: shall be Dens-Glass Gold Sheathing as manufactured by G-P Gypsum Corporation.

.4 Water-resistant board: to ASTM C1396/C1396M-14regular,, 1200mm wide x maximum practical length.

.5 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.

.6 Resilient drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.

.7 Nails: to ASTM C514-14

.8 Steel drill screws: to ASTM C1002-14

.9 Stud adhesive: to CAN/CGSB-71.25.

.10 Laminating compound: as recommended by manufacturer, asbestos-free.

.11 Casing beads, corner beads, control joints and edge trim: to ASTM C1047, [zinc-coated by hot-dip process], 0.5 mm base thickness, perforated flanges, one piece length per location.

.12 Sealants: in accordance with Section 07 92 00 - Joint Sealants.

.1 VOC limit 250 g/L maximum to SCAQMD Rule 1168.

.2 Acoustic sealant: in accordance with Section 07 92 00 - Joint Sealants.

.13 Polyethylene: to CAN/CGSB-51.34, Type 2

.14 Insulating strip: rubberized, moisture resistant, 3 mm thick closed cell neoprene strip, 12 mm wide, with self-sticking permanent adhesive on one face, lengths as required.

.15 Joint compound: to ASTM C475, asbestos-free

2.2 FINISHES

.1 Texture finish: asbestos-free standard white texture coating and primer-sealer, recommended by gypsum board manufacturer.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for gypsum board assemblies installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of DCC Representative.

.2 Inform Consultant of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from DCC Representative.

3.2 ERECTION

.1 Do application and finishing of gypsum board to ASTM C840-16 except where specified otherwise

.2 Do application of gypsum sheathing to ASTM C1280-13a

.3 Erect hangers and runner channels for suspended gypsum board ceilings to ASTM C840-16 except where specified otherwise

.4 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.

.5 Install work level to tolerance of 1:1200.

.6 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles, etc...

.7 Install 19 x 64 mm furring channels parallel to, and at exact locations of steel stud partition header track.

.8 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.

.9 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.

.10 Install wall furring for gypsum board wall finishes to ASTM C840-16, except where specified otherwise

.11 Furr openings and around built-in equipment, cabinets, access panels, mechanical equipment, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.

.12 Furr duct shafts, beams, columns, pipes and exposed services where indicated.

.13 Erect drywall resilient furring transversely across studs, spaced maximum 600 mm on centre and not more than 150 mm from ceiling/wall juncture. Secure to each support with [25] mm drywall screw.

.14 Install 150 mm continuous strip of 12.7 mm gypsum board along base of partitions where resilient furring installed.

3.3 APPLICATION

.1 Apply gypsum board after bucks, anchors, blocking, sound attenuation, electrical and mechanical work have been approved.

.2 Apply single layer gypsum board to metal furring or framing using screw fasteners, for second layer screw fasteners. Maximum spacing of screws 300 mm on centre.

.1 Single-Layer Application:

.1 Apply gypsum board on ceilings prior to application of walls to ASTM C840-16

.2 Apply gypsum board on walls vertically or horizontally, providing sheet lengths that will minimize number of board edges or end joints.

.2 Double-Layer Application:

.1 Install gypsum board for base layer and exposed gypsum board for face layer.

.2 Apply base layer to ceilings prior to base layer application on walls; apply face layers in same sequence. Offset joints between layers at least 250 mm.

.3 Apply base layers at right angles to supports unless otherwise indicated.

.4 Apply base layer on walls and face layers vertically with joints of base layer over supports and face layer joints offset at least 250 mm with base layer joints.

.3 Apply single layer gypsum board to concrete block or concrete surfaces, where indicated, using laminating adhesive.

.1 Comply with gypsum board manufacturer's recommendations.

.2 Brace or fasten gypsum board until fastening adhesive has set.

.3 Mechanically fasten gypsum board at top and bottom of each sheet.

.4 Exterior Soffits and Ceilings: install exterior gypsum board perpendicular to supports; stagger end joints over supports. Install with 6 mm gap where boards abut other work.

.5 Apply water-resistant gypsum board where wall tiles, coatings, slop sinks, janitors closets, and adjacent to millwork with plumbing. Apply water-resistant sealant to edges,

ends, cut-outs which expose gypsum core and to fastener heads. Do not apply joint treatment on areas to receive tile finish.

.6 Apply water-resistant gypsum board at walls and ceilings of Universal Shower 103A, behind FRP wall and ceiling panels specified in Section 09 77 00, and elsewhere as indicated. Apply water-resistant sealant to edges, ends, cut-outs and penetrations which expose gypsum core and to fastener heads. Provide substrate smooth, flush and suitable to receive adhered FRP panels.

.7 Apply 12 mm 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, and any misc. penitrations, in partitions where perimeter sealed with acoustic sealant.

.8 Arrange vinyl-faced gypsum board symmetrical about openings and wall areas, with butt joints.

.9 Apply board using stud adhesive on furring or framing.

.10 Install ceiling boards in direction that will minimize number of end-butt joints. Stagger end joints at least 250 mm.

.11 Install gypsum board on walls vertically to avoid end-butt joints. At stairwells and similar high walls, install boards horizontally with end joints staggered over studs, except where local codes or fire-rated assemblies require vertical application.

.12 Install gypsum board with face side out.

.13 Do not install damaged or damp boards.

.14 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

3.4 INSTALLATION

.1 Erect accessories straight, plumb 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 [150] mm on centre.

.2 Apply drywall with power-driven screws at right angles to framing using the longest board lengths possible to minimize joints. Locate all end joints over framing members. Stagger all end joints. Vertical joints in walls and partitions shall be located no closer than 12" (300mm) from door and window jambs. Space screws at 12" (300mm) o.c. on walls and at 12" (300mm) o.c. on ceilings. Screws shall be set with counter sunk heads slightly below the surface of the drywall. Start the application of the screws at the center of the individual board and proceed outward simultaneously, in all directions.

.3 Space 8 ga. hanger wires 1200mm (48") o.c. along carrying channels and within 150mm (6") of ends of carrying-channel runs. In concrete, anchor hangers by attachment to reinforcing steel, by loops embedded at least 50mm (2") or by approved inserts. For steel construction, wrap hanger around or through beams or joists.

.4 Install 38mm (1 1/2") carrying channels 1200mm (48") o.c. and within 150mm (6") of walls. Position channels for proper ceiling height, level, and secure with hanger wire saddle-tied along channels (see illustration). Provide 25mm (1") clearance between

runners and abutting walls and partitions. At channel splices, interlock flanges, overlap ends 300mm (12") and secure each end with double-strand 18 ga. wire.

.5 Erect metal furring channels at right angles to the carrying channels. Space furring with 150mm (6") of walls. Provide 25mm (1") clearance between furring ends and abutting walls and partitions. Attach furring channels to carrying channels with saddle-tie of double-strand 18 ga. tie wire. At splices, nest furring channels with at least 200mm (7 3/4") overlap and securely wire-tie each end with double-strand 18 ga. tie-wire.

.6 Install casing beads around perimeter of suspended ceilings.

.7 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.

.8 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior door frames, to provide thermal break.

.9 Install shadow mould at gypsum board/ceiling juncture as indicated. Minimize joints; use corner pieces and splicers.

.10 Construct control joints of two back-to-back casing beads set in gypsum board facing and supported independently on both sides of joint.

.11 Provide continuous polyethylene dust barrier behind and across control joints.

.12 Locate control joints at approximate [10] m spacing on long corridor runs.

.13 Install control joints straight and true.

.14 Ensure that screws or nails are properly applied in process of attaching gypsum board to framing without damaging of gypsum board edges and ends.

.15 Construct expansion joints as detailed, at building expansion and construction joints. Provide continuous dust barrier.

.16 Install expansion joint straight and true.

.17 Install cornice cap where gypsum board partitions do not extend to ceiling.

.18 Fit cornice cap over partition, secure to partition track with two rows of sheet metal screws staggered at 300 mm on centre.

.19 Splice corners and intersections together and secure to each member with 3 screws.

.20 Install access doors to electrical and mechanical fixtures specified in respective sections.

.1 Rigidly secure frames to furring or framing systems.

.21 At light troffers or any openings that interrupt the carrying or furring channels, install additional cross-reinforcing to restore the lateral stability of grillage.

.22 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.

.23 Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with AWCI Levels of Gypsum Board Finish:

.1 Levels of finish:

.1 Level 0: no tapping, finishing or accessories required.

.2 Level 1: embed tape for joints and interior angles in joint compound. Surfaces free of excess joint compound; tool marks and ridges are acceptable.

.3 Level 2: embed tape for joints and interior angles in joint compound and apply one separate coat of joint compound over joints, angles, fastener heads and accessories; surfaces free of excess joint compound; tool marks and ridges are acceptable.

.4 Level 3: embed tape for joints and interior angles in joint compound and apply two separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.

.5 Level 4: embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.

.6 Level 5: embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; apply a thin skim coat of joint compound to entire surface; surfaces smooth and free of tool marks and ridges.

.24 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.

.1 Secure corner bead along all external corners at 6" (150mm) o.c.. Apply joint filler flush with nose of the bead and feather at least 4" (100mm) onto surface of board each side of corner. Apply a thin coat of topping cement to each side of corner feathered at least 6" (150mm) onto board surface beyond the corner.

.2 Where drywall panel edges butt into concrete block, steel, concrete or aluminum provide steel casing bead along the entire edge.

.25 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board, invisible after surface finish is completed.

.26 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.

.1 After final coats of topping cement have dried at least 24 hours, sand the surface lightly with no. 100 sandpaper to leave it smooth, ready for decoration. Take care to avoid sanding the paper surface of the board adjacent to the filled joint.

.27 Completed installation smooth, level or plumb, free from waves and other defects and ready for surface finish.

.28 Apply one coat of white primer sealer over surface to be textured. When dry apply textured finish in accordance with manufacturer's instructions.

.29 Mix joint compound slightly thinner than for joint taping.

.1 Mix joint filler and topping cements with clean potable water in accordance with manufacturer's instructions.

.30 Apply thin coat to entire surface using trowel or drywall broad knife to fill surface texture differences, variations or tool marks.

.1 For tapered joints, end joints, and internal corners, apply a thin coat of joint filler over joint, embed joint tape, and cover edges of embedded tape with a thin coat of joint filler. After bedding is dry, apply a second coat extending at least 4" (100mm) each side of joint. After second coat is dry, apply a thin coat of topping cement, feathered at least 8" (200mm) each side of joint.

.31 Allow skim coat to dry completely.

.32 Remove ridges by light sanding or wiping with damp cloth.

3.5 CLEAN UP

.1 On completion of the work of this section, all protection erected under this section shall be removed, all damage to this work and to the work of other trades resulting from the execution of the work of this section shall be made good, and all surplus materials, debris, tools, plant, and equipment shall be removed from the premises, and the building(s) and site left in a condition satisfactory to the Consultant.

END OF SECTION

Section 09 51 00
Acoustical Ceilings

Part 1 General

1.1 GENERAL REQUIREMENTS

.1 Conform to Division 1 General Requirements.

1.2 RELATED WORK

.1 Section 09 21 16 Gypsum Board Assemblies

.2 Division 15 Mechanical

.3 Division 16 Electrical

1.3 WORK INCLUDED

.1 The work covered by this section includes the supply and installation, where shown or scheduled on the Drawings or in the Specification, of metal suspension grid system, acoustic ceiling panels, and all related accessories.

1.4 SUBMITTALS

.1 Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.

.2 Submit one sample of each type of acoustical panel, minimum size 6" x 6".

.3 Submit shop drawings, showing layout and details of acoustical ceilings, indicate all items to be coordinated with, or supported by the ceiling.

1.5 PROJECT CONDITIONS

.1 Do not install interior ceilings until space is enclosed and weatherproof; wet work in place is completed and nominally dry; work above ceilings is complete; and ambient conditions of temperature and humidity are continuously maintained at values near those intended for final occupancy. Building areas to receive ceilings shall be free of construction dust and debris.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver materials in original packages, containers and bundles, bearing brand and manufacturer's name as well as ULC or cUL labels (if applicable).

.2 Protect panels and assoicated materials from damage and store them in an area that is climatically controlled to normal operational levels.

.3 Deliver, store and handle products of this section in accordance with manufacturer's written instructions. Store materials in a covered area, off ground, on flat, smooth, dry surfaces. Protect from moisture. Remove damaged or deteriorated materials from site.

.4 Comply with ceiling panel manufacturer's recommendations regarding temperature and humidity conditions before, during and after ceiling installation.

.5 Prior to panel installation, ensure site is free of wet and dusty trades and climactic conditions are stabilized to normal operational levels. Allow panels to stabilize on site 24 hours minimum prior to installation.

1.7 WARRANTY

.1 Acoustical Panels and Grid System: submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail with the warranty period. Failures include, but are not limited to, the following:

.1 Acoustical Panels: sagging and warping.

.2 Grid System: Rusting and manufacturer's defects.

.2 The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.8 MAINTENANCE MATERIALS

.1 Provide two (2) unopened cartons of each acoustical tile type specified for maintenance materials and turn over to the Owner at completion of the Contract. Maintenance materials to be from same production run as installed materials.

Part 2 Products

2.1 MATERIALS

.1 General: Use materials specified herein or acceptable equivalent meeting specified performance requirements.

.2 Lay-in Suspension System: Armstrong Prelude XL 15/16" Exposed Tee suspension system, or acceptable equivalent meeting specified performance requirements.

.1 System: Prelude XL 15/16" Exposed Tee

.2 Hangers: 12 ga., mild steel, galvanized wire.

.3 Standard Main Tees: Zinc-coated steel, double-web design, exposed surfaces finished satin white enamel, manufacturer's standard components for specified suspension system.

.4 Standard Cross Tees: Zinc-coated steel, compatible with main tees, exposed surfaces finished satin white enamel, factory formed to interlock securely with main tees and provide flush joints.

.5 Edge mouldings: 15/16" (24mm) x 9/16" (14.3mm) wall mould finished satin white enamel.

.3 Acoustical tile: shall be as listed below:

.1 AT-1: 24" x 48" x 15/16", tegular edge

.1 Armstrong OPTIMA Lay-in and Tegular, Item No. 3153, or acceptable equivalent meeting specified performance requirements.

.2 Performance Requirements

.1 NRC: 0.90 minimum.

.2 CAC: 35 minimum.

.3 Light Reflectance: 0.85 minimum.

.4 Flame Spread: Class A.

.5 Colour: White.

.6 Surface: Fine-textured, non-directional.

Part 3 Execution

3.1 INSTALLATION

.1 Acoustical panels shall not be installed until all work above ceiling level has been inspected by the applicable Consultant(s).

.2 The ceiling grid shall be neatly and symmetrically fitted and run to true lines, evenly balanced in all areas to pattern shown on Drawings or as indicated.

.3 The suspension system shall support the ceiling assemblies shown on the Drawings, or as specified, with a maximum deflection of 1/360th of the span.

.4 All units shall be neatly scribed and fitted around columns, ducts, electrical outlets, etc., in a thorough, workmanlike manner.

.5 All ceiling systems shall be installed to provide adequate support for light fixtures, ceiling grilles, etc.

.6 Co-ordinate the work of this section with the work of other sections, with extra coordination with electrical and mechanical trades.

.7 The making of all connections for suspension wires, etc., to other construction is the responsibility of this Section, except the type and length of fasteners into cast-in-place concrete shall be approved by the Consultant. Fasteners extending into the concrete shall not interfere with the reinforcing steel.

.8 Erect main tees at 4'-0" (1.2m) o.c. in direction indicated on Shop Drawings.

.9 Main tees shall be anchored by means of hanger wires, spaced at 4'-0" (1.2m) o.c., along length of tees and fastened to structure above.

.10 Hangers shall have provision for leveling of grillage after completion of installation of main tees. Provide any necessary reinforcing if hanger must be spaced at greater distances.

.11 All hanger wires shall be plumb and securely fastened to the main tees through holes provided and securely fastened to tee and structure above.

.12 Install 4'-0" (1.2m) cross tees spaced at 2'-0" (0.6m) o.c., working from the center using tab wrench or narrow nose pliers for crimping the ends at the intersection with main tees.

.13 Install continuous wall mould where ceilings abut walls, columns, etc., by means of fibre plugs and wood screws, or approved method.

.14 Make adequate provision for expansion and contraction in the grid members or for any structural movement.

.15 Place acoustical tile in grid and provide hold down clips where required.

.16 Install four hanger wires for each recessed light fixture. Hangers must be located within 6" of the corners of the fixture.

.17 Acoustical panels shall not be installed until all wet work, including cement, plastering, etc., is completed and thoroughly dry.

3.2 CLEANING

.1 All dirty or discoloured surfaces of the acoustical units shall be cleaned and left free of defects, replacing any defective or damaged materials.

3.3 CLEAN UP

.1 On completion of the work of this section, all protection erected under this section shall be removed, all damage to this work and to the work of other trades resulting from the execution of the work of this section shall be made good, and all surplus materials, debris, tools, plant, and equipment shall be removed from the premises, and the building(s) and site left in a condition satisfactory to the Consultant.

END OF SECTION

Section 09 77 00
Special Wall and Ceiling Surfacing

Part 1 General

1.1 GENERAL REQUIREMENTS

.1 Conform to Division 1 General Requirements.

1.2 RELATED WORK

.1 Read carefully all other Sections of this Specification to determine the extent of work.

.2 Section 06 10 00 Rough Carpentry

.3 Section 09 21 16 Wall Board Assemblies

1.3 WORK INCLUDED

.1 The work covered by this Section includes furnishing and installing fibreglass reinforced plastic (FRP) panels at walls and ceilings where indicated on the Drawings, including adhesives, trims, mouldings, sealants, accessories and all components required for a complete installation.

.2 Provide FRP wall and ceiling finish at Universal Shower 103A.

.3 Coordinate gypsum board substrate with Section 09 21 16.

1.4 WARRANTY

.1 The work under this section shall be guaranteed against defects in accordance with Section 00 72 00 General Conditions.

.2 Warranties shall be submitted as outlined above in accordance with Section 00 73 03 Supplementary Conditions – Stipulated Price .

1.5 SHOP DRAWINGS

.1 Submit Shop Drawings in accordance with Section 01 00 10 General Requirements. Indicate colour, materials, thickness, seam connections and fastening details, installation details, and any other pertinent information.

.2 Provide samples to verify colour selection and finish.

.3 Submit certificate of installer's qualifications

1.6 MAINTENANCE DATA

.1 Provide maintenance data for panel wall covering specified in this Section.

1.7 DELIVERY, STORAGE, & HANDLING

.1 Storage and protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

.1 Store panels indoors.

.2 Lay panels Flat. Do not stand panel on edge.

.3 Protect Panels from moisture.

.4 Do not store panels in contact with floor or against an outside wall.

.5 Maintain optimum storage conditions of 60-70 degrees F (16-24 degrees C) at 35-55% relative humidity. Avoid extremes in temperature and humidity.

.2 Environmental Requirements:

.1 Installation shall not begin until building is enclosed, permanent heating and cooling equipment is in operation, and residual moisture plaster, concrete, or terrazzo work has dissipated.

.2 Install panels between 60 degrees F - 75 degrees (15 - 24 degrees C) and relative humidity below 55%, ideally at the same conditions as the room's normal operating temperatures after building is occupied.

.3 Provide ventilation to disperse fumes during application of adhesive as recommended by adhesive manufacturer.

.4 Do not install wall system until normal lighting conditions exist. Normal lighting conditions are described as those in place when project is finished.

.3 Field Measurements:

.1 Verify actual measurements / openings by field measurements before fabrication; show recorded measurements on shop drawings. coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

1.8 PROTECTION

.1 Protect finished plastic surface during shipment and installation. Do not remove protection until immediately prior to final inspection.

Part 2 Products

2.1 MATERIALS

.1 FRP – Wall and Ceiling Panels: FiberLite as manufactured by Nudo, or approved alternate.

.1 Distributed by: Davon Dales Inc. 50 Lansdowne Avenue Woodstock, Ontario N4T 1S3 Canada 519-537-2375 1-800-561-1706 info@davonsales.com

.2 Fibrelite: Fibreglass Reinforced Plastic (FRP)Panel

.3 Texture: Embossed

.4 Thickness: 0.090"

.5 Fire-Rating Class: C

.6 Colour: To be selected from standard Range of colours in the Class C embossed series.

.7 Size: 4'x8" (1.2m x 2.4m)

.8 Moldings: colour to match where required.

.9 Panels used at shower walls and ceilings shall be suitable for high-moisture/wet-area applications and for installation in the orientation indicated.

.10 Adhesive: Waterproof/moisture-resistant adhesive recommended by FRP panel manufacturer for the specified panel and water-resistant gypsum board substrate.

.11 Sealant: Mildew-resistant, waterproof sealant recommended by FRP manufacturer, colour to match panels.

.12 Trims: Manufacturer's division bars, inside corners, outside corners and termination mouldings, colour to match panels.

Part 3 Execution

3.1 INSTRUCTIONS

.1 Adhesive: Provide panel adhesive as recommended by panel manufacturer.

.2 Trim and Seam Treatment:

.1 Manufacturer: Acceptable to panel manufacturer.

.2 Caulk inside the shower with manufacturer's recommended mildew-resistant waterproof sealant compatible with the FRP system

.3 Material and colour: Colour matched acrylic latex caulk

.3 Fasteners: Provide appropriate fasteners and accessories as required to properly complete installation.

.4 Install FRP panels continuously on walls and ceiling of Universal Shower 103A where indicated.

.1 Install FRP over water-resistant gypsum board substrate specified in Section 09 21 16.

.2 Install panels using 100% adhesive coverage in accordance with FRP and adhesive manufacturer's written instructions.

.3 Install panels using 100% adhesive coverage in accordance with FRP and adhesive manufacturer's written instructions.

.4 Provide manufacturer's mouldings at panel joints, corners and exposed terminations.

.5 Seal panel joints, mouldings, perimeter conditions and penetrations with mildew-resistant waterproof sealant compatible with FRP system.

.6 Seal continuously at wall-to-ceiling intersections and wall-to-floor/epoxy cove transitions.

.7 Seal around shower controls, piping, grab bar fasteners, accessories and other penetrations.

.8 Coordinate panel layout to minimize joints within direct shower spray areas.

.9 Ceiling panels shall be installed in accordance with manufacturer's requirements for overhead applications, including supplemental mechanical fastening where required by the manufacturer.

.10 Completed installation shall provide a continuous, cleanable, moisture-resistant finish without open joints or unsealed penetrations.

3.2 PREPARATION

.1 Site Verification of Condition: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions. Verify that site conditions are acceptable for installation of durable, decorative wall panels. Examine back-up surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails are countersunk and joints and cracks are filled flush and smooth with the adjoining surface. Do not proceed with installation of durable, decorative wall panels until unacceptable conditions are corrected.

.2 Verify that Blocking has been installed for the grab bars, shower controls, hand-held shower head, recessed soap holder and seat prior to installing panel system.

3.3 INSTALLATION

.1 General:

.1 Prior to installing panels, remove packaging and allow panels to acclimate to room temperature and humidity for at least 48 hours.

.2 Wall substrate must be dry and free from dirt, dust, grease and other contaminants. Walls must be flat and even. Remove high spots and fill low spots with material acceptable to panel manufacturer.

.3 Remove wallpaper, soluble or loose paint, and other foreign matter that might interfere with proper adhesive bond.

.4 Painted walls must be prepared to adhesive manufacturer specifications for proper adhesion.

.2 General:

.1 Inspect panels for any defects immediately. Do not install panels of unacceptable quality. Field cutting of all wall systems should be accomplished using a circular saw with fine tooth carbide blade.

.2 Position panel so that the saw blade enters the finished HPL side first to avoid chipping or damage. Protect decorative laminate face of panel by covering work area, do not remove protective will until after installation.

.3 Follow adhesive manufacturer's recommendations for appropriate height of adhesive bead left by trowel and do not allow adhesive to skin over. When interior panelling is on an exterior wall or wet area, provide a barrier sheet and/or

follow the adhesive manufacturer's installation recommendations for a secure bond.

.3 Installation Using Caulk:

.1 Plan panel layout so seams are not directly over seams of substrate.

.2 Apply adhesive directly to back of composite wall panel with 100% adhesive coverage using crosshatch pattern. Extend adhesive to all edges of panel.

.3 Install panel. Place six-penny finishing nails at 1/8 inch (3.2mm) spacing against the panel about 2 feet (610mm) apart to hold panels in place while adhesive sets and provide proper spacing for colour caulk. Continue installing panels using this method, leaving nails in place during installation.

.4 Remove nails after adhesive sets.

.5 Place a narrow piece of masking tape along panel edge from top to bottom, exactly at joint edge. Firmly apply tape to both panels.

.6 Fill 1/8 inch (3.2mm) gap between the panels with caulk, making sure gap is completely filled.

.7 Tilt caulking tube back from vertical so that tip of tube advances first in direction of travel.

.8 Wet finger and smooth bead if necessary.

.9 Remove masking tape before bead cures. Clean off excess caulk with damp cloth.

.10 Install corner moldings as described in molding instructions.

3.4 CLEAN UP

.1 On completion of the work of this section, all protection erected under this section shall be removed, all damage to this work and to the work of other trades resulting from the execution of the work of this section shall be made good, and all surplus materials, debris, tools, plant, and equipment shall be removed from the premises, and the building(s) and site left in a condition satisfactory to the Consultant.

.2 Clean panel surfaces in compliance with manufacturer's recommendations:

.1 Use a clean, damp, non-abrasive cotton cloth and a mild liquid detergent or household cleaner.

.2 Rinse with clean water using a clean, non-abrasive cotton cloth.

.3 Dry panels with a soft, clean, non-abrasive cotton cloth.

.4 Do not use cleaners containing acid, alkali, or sodium hypochlorite.

END OF SECTION

Section 09 91 00
Painting

Part 1 General

1.1 SECTION INCLUDES

.1 Surface preparation.

.2 Painting.

.1 Interior painting and coating systems.

.2 Exterior painting and coating systems.

.3 Field painting of shop-primed surfaces.

.4 Touch-up of damaged shop-applied primers and finishes.

1.2 RELATED REQUIREMENTS

.1 Read carefully all other Sections of this Specification to determine the extent of prime and finish coats applied by others.

.2 Section 06 20 00 Finished Carpentry: Shop - Finished cabinet work

.3 Section 08 11 13 Hollow Metal Doors and Frames.

.4 Section 09 21 16 Gypsum Board Assemblies.

.5 Division 22 - Plumbing.

.6 Division 23 - Heating, Ventilating and Air Conditioning.

.7 Division 26 - Electrical

.8 Division 32

.9 Metal Fabrications: Shop-primed items

1.3 REFERENCE STANDARDS

.1 Master Painters Institute (MPI):

.1 Architectural Painting Specification Manual.

.2 Maintenance Repainting Manual.

.3 Approved Products List.

.2 AMPP – Association for Materials Protection and Performance:
Applicable surface preparation standards specified herein.

1.4 REGULATORY REQUIREMENTS

.1 Conform to applicable code for flame and smoke rating requirements for finishes, storage, mixing, application and disposal of paint and related waste materials.

.2 Comply with applicable federal, provincial, and municipal regulations, including environmental and occupational health and safety requirements.

.3 Handle, store, and dispose of materials in accordance with WHMIS requirements and manufacturer's safety data sheets (SDS).

.4 Do not use materials containing lead, mercury, or other hazardous substances in concentrations exceeding regulatory limits.

1.5 ADMINISTRATIVE REQUIREMENTS

.1 Coordination: Coordinate with other Work having a direct bearing on Work of this section.

.2 Scheduling:

.1 Schedule painting operations to prevent disruption of and by other trades.

1.6 WORK INCLUDED

.1 Painting and coating systems indicated in Room Finish Schedule, Finish Schedule, Drawings and this Section.

.2 Field painting of exposed shop-primed items scheduled to receive finish painting.

.3 Touch-up of damaged shop-applied primers and coatings where specified.

.4 Painting of exposed mechanical and electrical components only where specifically indicated or specified.

.5 Painting of other exposed substrates specifically indicated to receive paint or coating.

1.7 SURFACES NOT TO BE PAINTED

.1 Prime coats specified herein will not be required on items delivered with prime or shop coats already applied (see other sections of the Specification).

.1 Review the condition of the prime coating prior to applying the finish coat, notify Consultant of unsatisfactory or incompatible existing prime coatings before proceeding with the finish coat.

.2 Surfaces Not to be Painted:

.1 Factory-finished materials unless specifically indicated.

.2 Stainless steel.

.3 Aluminum, copper, brass and bronze unless indicated.

.4 Concealed surfaces unless specifically required.

.5 Equipment nameplates and identification labels.

.6 Sprinkler heads.

.7 Moving parts of operating equipment.

.8 Code-required labels and listings.

.9 Finished hardware.

.10 Glass, resilient flooring, tile and other inherently finished surfaces.

1.8 ACTION SUBMITTALS

.1 Product Data: Submit manufacturer's technical data for each coating system.

.2 Paint Schedule: Submit complete list of proposed products identifying manufacturer, product, MPI number where applicable, substrate and intended use.

.3 Samples:

.1 Colour Samples: Submit manufacturer's colour samples for selection.

.2 Samples: Submit painted samples where requested by Consultant.

1.9 CLOSEOUT SUBMITTALS

.1 Record Documentation: Upon completion, provide itemized list of products used including the following:

.1 Manufacturer's name.

.2 Product name, type and use.

.3 Colour coding number.

.4 Identify room or location where each colour and coating was used.

1.10 MAINTENANCE MATERIAL SUBMITTALS

.1 Extra Stock Materials: Provide properly packaged maintenance material as follows.

.1 Provide 1 L of each colour and finish used, from same production run where practical

.2 Label each container with colour, type, texture and room locations in addition to manufacturer's label.

.2 The painting contractor shall, when complete, provide a colour schedule 'As Built', if colours used were different from those specified on the Consultant's Colour Schedule. Manufacturer, colour code number and colour name are to be listed.

.3 Touch-Ups: Provide touch-up materials matching final approved colours for use by Owner.

1.11 QUALITY ASSURANCE

.1 Installer Qualifications: Painting contractor regularly engaged in commercial/institutional painting. .

.2 Materials, preparation and workmanship: Conform to MPI Architectural Painting Specification Manual except where more stringent requirements are specified.

.3 Products: MPI Approved Products List where an MPI category is specified

.4 Coating Systems: Use compatible primers, intermediate coats and finish coats recommended by coating manufacturer.

.5 Special Systems: Where special coating system applications are used, provide manufacturer's certification of all surfaces and conditions for specific paint or coating

system application including inspection and approval of their system application at no additional cost to Owner.

1.12 DELIVERY, STORAGE, AND HANDLING

.1 Deliver products to site in sealed and labeled containers showing manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, colour designation, and written instructions for mixing and reducing.

.2 Store paint materials in dry, ventilated area and as required by manufacturer's written instructions.

.3 Provide adequate fireproof storage lockers and warnings as required by authorities having jurisdiction for storing toxic and volatile/explosive/flammable materials.

1.13 SITE CONDITIONS

.1 Apply coatings only when ambient and substrate conditions are within limits recommended by coating manufacturer.

.2 Maintain substrate temperature minimum 3°C above dew point.

.3 Do not apply coatings to damp, wet, frosted or contaminated surfaces.

.4 Verify substrate moisture content is acceptable to coating manufacturer before application.

.5 For specialty floor coatings, review with manufacturer the moisture content prior to installation.

1.14 WASTE MANAGEMENT AND DISPOSAL

.1 Dispose of waste materials in accordance with Local authorities having jurisdiction.

.2 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

.3 Place non-reusable materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.

.4 To reduce contaminants entering waterways, sanitary/storm drain systems or into the ground, adhere to the following procedures:

.1 Retain cleaning water for water-based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.

.2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.

.3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.

.4 Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.

.5 Dry out empty paint cans prior to disposal or recycling.

.6 Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.

.5 Set aside and protect surplus and uncontaminated finish materials and deliver or arrange collection for verifiable re-use or re-manufacturing.

Part 2 Products

2.1 MATERIALS

.1 Paint and coating products shall be products listed in MPI Approved Products List where an MPI category is specified.

.2 Provide primers, intermediate coats and finish coats compatible with substrate and with each other.

.3 Provide components of each coating system from a single manufacturer unless otherwise approved.

.4 Provide low-VOC coatings complying with applicable Canadian regulatory requirements.

.5 Where indicated, provide materials with MPI E2 environmental rating or better.

.6 Fire Hazard: Flame spread and smoke developed ratings in accordance with local authorities having jurisdiction.

.7 Patching Materials: Latex filler.

.8 Fastener Head Cover Materials: Latex filler.

2.2 MIXING AND TINTING

.1 Coatings: Ready-mixed and pre-tinted; re-mix all paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

.2 Catalyzed and Multi-Component Coatings: Mix in strict accordance with manufacturer’s written instructions, including correct proportions, induction time, and pot life limitations. Do not use materials beyond their specified pot life.

2.3 FINISH AND COLOUR

.1 Finish: To MPI Premium Grade finish requirements.

.2 Colours and Finishes: Refer to Finish Schedule on Drawings.

.3 Colour Selection: Colours to be selected by Consultant from manufacturer’s full range unless noted otherwise.

.4 Colour Consistency: Ensure uniform colour and sheen throughout each area. Tint each batch to match approved colour standards.

2.4 GLOSS/SHEEN RATINGS

.1 Paint gloss is defined as the sheen rating of applied paint with the following values:

Gloss Level	Description	Gloss @ 60 degrees	Sheen @ 85 degrees
G1	Matte Finish (flat)	0 to 5	10 max.
G2	Velvet-Like Finish	0 to 10	10 to 35
G3	Eggshell Finish	10 to 25	10 to 35
G4	Satin-Like Finish	20 to 35	35 min.
G5	Traditional Semi-Gloss Finish	35 to 70	
G6	Traditional Gloss	70 to 85	
G7	High Gloss Finish	More than 85	

.2 Gloss level ratings of painted surfaces shall be as defined in the MPI Architectural Painting Specification Manual. .

2.5 MANUFACTURERS

.1 Paint Manufacturers:

.1 Benjamin Moore & Co., Limited. .

.2 Sherwin-Williams Company.

.3 PPG Architectural Coatings .

.4 Substitutions: Refer to Section 01 25 00.

.1 Products of other manufacturers may be considered provided they comply with MPI standards and are equivalent in performance, appearance, and durability, and are approved by the Consultant prior to tender closing.

.2 Basis-of-Design Products: Benjamin Moore products specified herein establish the required standard of performance, quality and finish.

.3 Equivalent Products: Equivalent products by acceptable manufacturers are permitted provided they meet the specified MPI category, substrate requirements and performance characteristics.

2.6 EXTERIOR PAINT SYSTEMS

.1 Steel – General Exposure

.1 Prepare steel in accordance with specified AMPP surface preparation requirements and coating manufacturer's written instructions.

.2 One (1) coat Benjamin Moore Ultra Spec HP Acrylic Metal Primer FP04.

.1 Shop-primed exterior steel, touch-up rather than repriming the entire member.

.3 Two (2) coats Benjamin Moore Ultra Spec HP D.T.M. Acrylic Enamel FP29.

.4 Finish: Semi-gloss unless otherwise indicated.

.5 Colour: As selected by Consultant.

2.7 INTERIOR PAINT SYSTEMS

.1 Gypsum Board – Typical Walls

- .1 One (1) coat Benjamin Moore Ultra Spec 500 Interior Latex Primer K534.
- .2 Two (2) coats Benjamin Moore Ultra Spec 500 Interior Eggshell Finish F538.
- .3 Finish: G3 – Eggshell (unless noted otherwise in finish schedule)
- .4 MPI: Provide products meeting applicable MPI requirements for interior latex primer and architectural latex finish.

.2 Gypsum Board – Ceilings

- .1 One (1) coat Benjamin Moore Ultra Spec 500 Interior Latex Primer K534.
- .2 Two (2) coats Benjamin Moore Ultra Spec 500 Interior Flat Finish F535.
- .3 Finish: G1 – Flat.
- .4 MPI: Provide products meeting applicable MPI requirements for interior latex primer and flat latex finish.

.3 Gypsum Board – High Moisture

- .1 One (1) coat Benjamin Moore Ultra Spec 500 Interior Latex Primer K534.
- .2 Two (2) coats Benjamin Moore Aura Bath & Spa Waterborne Interior Paint.
- .3 Finish: Matte.
- .4 Provide coating specifically formulated for high-humidity environments and resistant to mildew growth on coating film.

.4 Ferrous Steel – Shop Primed

- .1 Clean surfaces and touch up damaged or exposed areas of shop primer with compatible Benjamin Moore High Performance metal primer.
- .2 Two (2) coats Benjamin Moore Ultra Spec HP D.T.M. Acrylic Enamel FP29.
- .3 Finish: Semi-gloss.
- .4 Verify compatibility of field-applied coatings with shop primer before application.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that surfaces are ready to receive work as instructed by the product manufacturer.

.3 Verify shop primers are compatible with subsequent coatings.

.4 Verify steel surfaces are properly prepared and primed.

.5 Do not proceed until unsatisfactory conditions are corrected.

3.2 PREPARATION

.1 General

.1 Prepare surfaces in accordance with MPI requirements.

.2 Remove and store or mask miscellaneous hardware and surface fittings such as electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to painting. Clean and replace upon completion of painting Work in each area. Remove doors before painting to paint bottom and top edges and re-hang.

.3 Protect adjacent surfaces and areas, including rating and instruction labels on doors, frames, equipment, piping, from painting operations with drop cloths, shields, masking, templates, or other suitable protective means.

.4 Correct defects and clean surfaces which affect work of this section. Start of finish painting of defective surfaces indicates acceptance of substrate and making good defects will be at no cost to Owner.

.5 Asphalt, Creosote, or Bituminous Surfaces Scheduled for Paint Finish: Remove foreign particles to permit adhesion of finishing materials. Apply compatible sealer or primer.

.6 Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.

.2 Gypsum Board

.1

Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

.3 Ferrous Metal

.1 Confirm preparation and primer used with fabricator of steel items.

.2 Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

.3 Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Prime metal items including shop primed items.

.4 Previously Painted Surfaces

.1 Clean existing surfaces scheduled for repainting. Remove loose, peeling or poorly adhered coatings. Feather sound coating edges smooth. Spot-prime exposed substrate using primer compatible with existing coating and specified finish system.

3.3 APPLICATION

.1 Apply paint or stain in accordance with MPI Painting Manual Premium Grade finish requirements.

.2 Apply products to adequately prepared surfaces, within moisture limits and acceptable environmental conditions.

.3 Do not apply coatings to surfaces until substrate moisture, temperature, and environmental conditions comply with manufacturer requirements

.4 Apply paint finish in areas where dust is no longer being generated or when wind or ventilation conditions will not affect quality of finished surface.

.5 Apply each coat to uniform finish.

.6 Apply coatings to exposed edges, corners, and concealed surfaces where accessible

.7 Apply additional coats as required to provide uniform colour, sheen and complete hiding, without additional cost to Owner.

.8 Vacuum clean surfaces free of loose particles. Use tack cloth just prior to applying next coat.

.9 Allow applied coat to dry before next coat is applied.

.10 Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

.11 Continue paint finish behind wall-mounted items such as chalk and tack boards.

.12 Prime concealed surfaces of interior and exterior woodwork with primer paint.

.13 Do not paint prefinished, anodized, or factory-coated surfaces unless specifically noted.

3.4 MECHANICAL AND ELECTRICAL EQUIPMENT

.1 Refer to Divisions 21, 22, 23 and 26 for identification, colour coding and factory finish requirements.

.2 Paint exposed mechanical and electrical components only where indicated on Drawings, Finish Schedule or specifically specified to receive field painting.

.3 Where exposed mechanical and electrical components are scheduled to be painted, prepare substrate and apply coating system appropriate to substrate and exposure.

.4 Do not paint equipment nameplates, identification labels, operating instructions, sprinkler heads, moving components, or factory-finished equipment unless specifically indicated.

.5 Touch up damaged factory-applied finishes using materials recommended by equipment manufacturer.

.6 Reinstall cover plates, trim, escutcheons and fittings removed for painting.

3.5 FIELD QUALITY CONTROL

.1 Inspection and Testing:

.1 Section 01 45 00: Field inspection.

.2 Acceptable Surfaces:

.1 Finished surfaces shall be free of visible defects when viewed under normal lighting conditions from normal viewing distance.

.2 No visible defects are evident on ceiling, soffit and other overhead surfaces when viewed at normal viewing angles.

.3 Uniformity of colour, sheen, texture, and hiding across full surface area.

.4 no runs, sags, holidays, brush marks or visible defects; complete coverage.

3.6 CLEANING

.1 Section 01 74 10: Cleaning installed work.

.2 Collect waste material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

.3 Remove paint splatter and overspray from adjacent surfaces without damage.

END OF SECTION

Section 10 00 00
Specialties

Part 1 General

1.1 SECTION INCLUDES

.1 Conform to requirements of Division 01 – General Requirements, which apply to Work of this Section

.2 Work of this Section includes, but is not limited to, the following:

.1 Corner guards.

1.2 RELATED SECTIONS

.1 Section 06 10 00 - Rough Carpentry.

.2 Section 07 92 00 – Joint Sealants.

.3 Section 09 21 16 - Gypsum Board Assemblies.

1.3 REFERENCES

.1 ASTM International

.1 ASTM E84 – Surface Burning Characteristics of Building Materials.

1.4 SUBMITTALS FOR REVIEW

.1 Submit under provisions of Section 01 33 00

.2 Product Data: Provide data for components

1.5 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements including special procedures, perimeter conditions requiring special attention.

1.6 WARRANTY

.1 Provide manufacturer's full warranty for each product specified

1.7 DELIVERY, STORAGE AND HANDLING

.1 Package, crate and brace products to prevent distortion in shipment and handling. Label package and crates. Protect finish surfaces by sturdy wrappings.

.2 Deliver products to location at building site designated by Contractor.

Part 2 Products

2.1 CORNER GUARDS

.1 Products of the following manufacturers are acceptable subject to conformance to requirements of drawings, schedules and specifications.

.1 Construction Specialties Inc., www.c-sgroup.com

.2 Material: Stainless steel: to be 16 gauge type 304 alloy with #4 satin finish.

.3 Adhesive: Polyurethane sealant (Type P) in accordance with Section 07 92 00, such as Dymonic FC, used as a supplemental adhesive.

.4 Mechanical Fasteners: Stainless steel, tamper-resistant type, sized as required to securely fasten corner guards.

.5 CG:
Model CO-8 (Construction Specialties Inc.)
Provide 90° bend or rounded corner to suit bullnose concrete block profiles, and drywall partitions.

.1 Stainless steel corner guards to be CS Acrovyn: Surface mounted guards to be 16 gauge stainless steel

.1 Model CO-8 (Construction Specialties Inc.)

.2 90° stainless steel corner guard with 3/16" (4.8mm) radius

.3 3 1/2" (88.9mm) standard legs x 3' (914.4mm) long

.4 Bull nose 3/4" (19.1mm)

Part 3 Execution

3.1 PREPARATION

.1 Verify that substrates and site conditions are ready to receive Work of this Section.

.1 Ensure surfaces are level, plumb, and properly prepared in accordance with manufacturer’s written instructions.

.2 Do not proceed with installation until unsatisfactory conditions have been corrected.

.2 Coordinate installation with other trades to ensure proper placement of backing, supports, and adjacent construction.

.3 Confirm that required rough-ins, anchors, inserts, and supports are correctly located and installed.

.4 Protect adjacent surfaces and finishes from damage during installation.

.5 Ensure environmental conditions (temperature, humidity, ventilation) are suitable for installation of specialties in accordance with manufacturer’s requirements.

3.2 INSTALLATION

.1 Install Work in accordance with manufacturer's written instructions, reviewed shop drawings, and as indicated on Contract Documents.

.2 Coordinate installation with adjacent construction to ensure proper fit, alignment, and function.

.3 Ensure all anchorage devices, inserts, and supports are properly located and securely installed.

.4 Install specialties plumb, level, true, and rigid, tightly fitted to adjacent surfaces.

.5 Provide backing and reinforcement as required to support installed loads.

.6 Corner Guards:

.1 Install at locations indicated and where required to protect exposed corners.

.2 Anchor securely to substrate using manufacturer's recommended fasteners appropriate for wall construction.

.3 Install plumb, straight, and tight to adjacent surfaces with no gaps or misalignment.

.4 Align vertically continuous guards and ensure consistent height and joint alignment where installed in runs.

.5 Coordinate installation with wall finishes to ensure proper fit and full contact with substrate.

.6 Provide end caps and accessories for a complete installation.

.7 Seal edges where required to prevent moisture infiltration and maintain clean appearance.

3.3 FIELD QUALITY CONTROL

.1 Inspect installed Work to verify compliance with Contract Documents and manufacturer's written instructions.

.2 Verify that specialties are securely anchored, properly aligned, level, and free from defects or damage.

.3 Confirm proper operation of adjustable or movable components, including lockers, doors, and accessories.

.4 Check installation of tactile indicators for compliance with applicable accessibility standards and municipal requirements.

.5 Repair or replace damaged, defective, or improperly installed items to the satisfaction of the Consultant.

.6 Ensure protective covers, guards, and accessories are properly fitted and provide intended protection.

.7 Where applicable, coordinate with authority having jurisdiction for inspection of accessibility-related components.

3.4 ADJUSTING

.1 Verify that installed products function properly and adjust for proper operation in accordance with manufacturer's written instructions.

.2 Adjust components to ensure smooth operation, proper alignment, and intended performance.

.3 Repair or refinish damaged or defective Work so that no variation in surface appearance is visible. Perform refinishing at site only if approved by Consultant.

.4 Replace items that cannot be properly adjusted or repaired to achieve satisfactory performance and appearance.

3.5 CLEANING

.1 Section 01 74 10: Cleaning installed work.

.2 Remove protective coverings and clean exposed surfaces in accordance with manufacturer's written instructions.

.3 Clean adjacent surfaces affected by Work of this Section.

.4 Remove debris, excess materials, and waste resulting from installation.

.5 Repair damage to adjacent finishes caused by installation of specialties.

.6 Protect installed Work from damage until Substantial Performance.

.7 Replace or repair damaged items to the satisfaction of the Consultant at no additional cost to the Owner.

END OF SECTION

Section 10 28 00
Washroom Accessories

Part 1 General

1.1 GENERAL REQUIREMENTS

.1 Conform to Division 1 General Requirements.

1.2 RELATED WORK

.1 Section 06 20 00 - Finish Carpentry

.2 Section 08 80 00 – Glass and Glazing: Wall mirrors.

.3 Section 09 30 00 - Ceramic Wall Tiling: Ceramic accessories.

1.3 REFERENCE STANDARDS

.1 ASTM A269/A269M-15a(2019) Standard specification for seamless and welded austenitic stainless steel tubing for general service

.2 ASTM B456-17 Standard specification for electrodeposited coatings of copper plus nickel plus chromium and nickel plus chromium

.3 STD B651-18 Accessible design for the built environment

1.4 WORK INCLUDED

.1 The work covered by this section includes the supply and installation of all washroom accessories including, but not necessarily limited to: mirrors, grab bars, robe and coat hooks, soap dispensers, mirrors, garbage disposal, and toilet paper dispensers.

1.5 SHOP DRAWINGS

.1 Submit shop drawings and catalogue illustrations. Indicate size, description of components, base material, surface finish inside and outside, hardware, locks, attachment devices, description of rough-in frame, indicating fastening and installation.

Part 2 Products

2.1 MATERIALS

.1 Washroom accessories: as noted on the drawings. Refer to Washroom Accessories, sub-section 2.3 of this Section for manufacturers and model numbers.

.2 Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof.

.3 Expansion Shields: Fibre, lead, or rubber as recommended by accessory manufacturer for component and substrate.

.4 Adhesive: epoxy type contact cement.

2.2 MANUFACTURERS AND PRODUCTS

.1 Accessories Legend:

.2 A: Toilet Tissue Dispenser: Supplied by owner, installed by contractor.

.3 B: Paper Towel Dispenser Fixture: Supplied by owner, installed by contractor.

.4 D: Soap Dispenser: Supplied by owner, installed by contractor.

.5 E: Mirrors:

.1 MR-1: Mirrors in WR's / changerooms to be 24" x 36". Solid frame mirror Frost Code 941.

.2 MR-3: Mirrors in Changerooms to be 24" x 36". Solid frame mirror Frost Code 941 - FT (Tilt BF)

.6 G: Grab Bars: S.S., satin finish, exposed mounting: Where shown on drawings.

.1 G1: Horizontal as indicated on drawings Frost Code 1001NP - 24". (Behind Toilet)

.2 G3: Vertical as indicated on drawings Frost Code 1001SP - 42". (Shower)

.3 G4: B/F toilets: Frost Code 1003NP - 30" horizontal and 30" vertical "L" shape.

.4 G5: B/F showers: Frost Code 1003SP - 40" horizontal and 30" vertical "L" shape.

.5 G6: Folding grab bar: Frost Code 1055-S, and provide sufficient backing or provide Frost code: 1055-500 grab bar carrier stand within wall stud.

.7 H: Robe Hooks: Frost Code 1139-S.

.8 J: Shower Rod, Hooks and Curtain:

.1 Shower Rod: Frost 1145-S. 18 ga stainless steel, type 304, brushed finish, size to suit showers.

.2 Shower Curtain Hooks: Frost 1144-501L. Pack of 12. stainless steel, type 304.

.3 Shower Curtain: Frost 1144. size to suit shower.

.9 L: Napkin Disposal: Supplied by owner, installed by contractor.

.10 Q: Shower Seat: Frost Code 972.

.11 T: Full recessed soap holders: Frost Code 1132-HD.

.12 V: Shelf: Heavy duty, Frost Code 950-4x18, stainless steel.

.13 W: Waste Receptacle: Wall Mounted Waste Receptacle with Galvanized Liner - Frost 303

2.3 DESCRIPTION

.1 Regulatory Requirements:

.1 Conform to applicable code for accessibility requirements for the handicapped.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00 Examination and Preparation: Verify existing conditions before starting work.

.2 Verify that field measurements are as indicated on product data.

.3 Verify that site conditions are ready to receive work and dimensions are as indicated on Shop Drawings.

.4 Verify exact location of accessories for installation.

3.2 PREPARATION

.1 Deliver inserts and rough-in frames to site for timely installation.

.2 Provide templates and rough-in measurements as required.

3.3 INSTALLATION

.1 Install accessories to manufacturer's written instructions.

.2 Install plumb and level, securely and rigidly anchored to substrate.

.3 Verify exact location of washroom equipment prior to installation.

3.4 CLEAN UP

.1 On completion of the work of this section, all protection erected under this section shall be removed, all damage to this work and to the work of other trades resulting from the execution of the work of this section shall be made good, and all surplus materials, debris, tools, plant, and equipment shall be removed from the premises, and the building(s) and site left in a condition satisfactory to the Consultant.

END OF SECTION