GWEKWAADZIWIN MIIKAN
SHOWER HOUSE

Aundeck Omni Kaning, ON

ISSUED FOR TENDER, PERMIT AND CONSTRUCTION

2023 03 14
Project No. 2347

ARCHITECTS
3RDLINE.STUDIO

3rdLine.Studio Inc. *have prepared the following specification except where noted.*

SPECIFICATIONS / drawings INDEX

SPECIFICATION INDEX **PAGE NO.**

DIVISION 00 - PROCUREMENT + CONTRACTING

1.0 - GENERAL

1. The Owner is seeking the services of qualified contractors to supply labour, materials and equipment to construct the interior renovations,, exterior star and landing, mechanical plumbing and exhaust fans, electrical lighting, hot water tank, base board heaters, heat tracing of drains, wood cribs with duck billed anchors, for **GWEKWAADZIWIN SHOWER HOUSE, 2027 HWY 50, AUNDECK OMNI KANING, ON.**
2. The Owner hereby invites you to submit quotations for the construction work as described in the contract documents.

2.0 – CONTRACT DOCUMENTS

1. Bidders to consult the Contract Documents.
   - **.1** Agreement between Owner and Contractor - CCDC-2 2020
   - **.2** Definitions
   - **.3** Supplemental General Conditions
   - **.4** General Conditions of the Contract - CCDC-2 2020
   - **.5** Division 00/01 of the Specifications
   - **.6** technical specifications
   - **.7** material and finishing schedules
   - **.8** the drawings.
2. Bidders must familiarize themselves with the requirements of the contract documents **prior** to tender submission. No consideration will be given to a Bidder's failure to comply with the requirements of the contract documents.
3. Examine the Tender Documents upon receipt thereof, and should you discover any errors, contradictions, or omissions therein, immediately notify the Consultant so that further instructions in writing may be issued to Bidders before the Tender Closing Date.
4. If there is a conflict within the Contract Documents:
   - **.1** The order of priority of documents, from highest to lowest, to be;
     - .1 the Agreement between the Owner and the Contractor
     - .2 the Definitions
     - .3 Supplementary General Conditions
     - .4 the General Conditions
     - .5 Divisions 00/01 of the Specifications
     - .6 Divisions 02 to 32 of the Specifications
     - .7 Material, Room Finish, Door and Window Schedules
     - .8 the Drawings
   - **.2** Drawings of larger scale to govern over those of smaller scale of the same date.
   - **.3** Dimensions shown on Drawings to 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.

2.0A - LOCAL CONTENT CONDITIONS

1. It is a requirement of this Contract and tender submission that a **minimum of thirty percent (30%)** of the Tender Amount be allocated for Local Content. In general, the balance should be 10% local labour & 20% local material, however, the Owner reserves the right to evaluate content submitted by each bidder.
2. Local Content is anything purchased directly from the UCCM Castle Building Supply or labour hired or contracted in the ***Aundeck Omni Kaning First Nation,*** and those contractors on the Local Content list are also acceptable (it is noted some of the contractors on the list have addresses outside the First Nation, however these will be accepted as local content at the discretion of Chief and Council). In addition, any Aundeck Omni Kaning First Nation ***Band Members*** (residing on or off reserve) will also be acceptable as contributing to the Local Content. Receipts and/or CV's may be required to support claims for compliance with Local Content requirements.
3. Bidders shall be responsible for determining the availability of Local Content and must negotiate rates for Local Content directly with local contractors and/or suppliers. A list of local contractor and supply business will be provided via Addenda.
4. The Bidders are required to submit, on company letterhead, a detailed summary of their proposed use and cost of the Local Content included with their bid, 1 hour after the time of Tender close or 3:00pm (local time). Submission to be in a sealed envelope clearly marked "Local Content". Bidders that do not submit a Local Content summary may be declared informal and not accepted at the discretion of the Owner.
5. The successful General Contractor will be responsible for verifying with the Consultant the use of Local Content identified in their detailed summary in order to receive payment and in accordance with the following conditions:
   - **.1** In addition to holdback required by legislation and statutory regulations, a Local Content Holdback shall be retained by the Owner from each monthly progress claim. The Local Content Holdback amount shall be 10% of the work completed to date minus the Local Content used to date as verified by the Consultant.

.2 When the Local Content Holdback is positive as verified by the Consultant, the Local Content Holdback will be deducted from that month's progress payment.

.3 When the Local Content Holdback is less than the Local Content actually utilized to date as verified by the Consultant, the Local Content Holdback will equal zero for that month's progress payment.

.4 By the date of substantial completion of the Contract, any remaining Local Content Holdback amount will be retained by the Owner as unused Local Content amounts.

6. The percentage identified in paragraph .1 above is the **minimum** percentage required for the project. All Tenderers are encouraged to utilize Local Content to the fullest extent.

3.0 – EXAMINATION OF THE SITE

1. Bidders are required to submit their bids upon the following express conditions:

.1 The bidder and trade contractors to examine the bid documents and make personal examination of the site(s) in order to become acquainted with the conditions under which the bidder will be obliged to work.

.2 The bidder shall make the investigations necessary to become thoroughly informed regarding facilities for access to the site(s) such as may be required to execute the work.

.3 The bidder shall be wholly responsible for the completeness and accuracy of the information obtained by the bidder's personal examination and study. No plea for ignorance of conditions that exist, or that may exist hereafter, or of conditions, or difficulties that may be encountered in the execution of the work under the resulting contract as a result of failure to make the necessary examinations and investigation, or ascertaining the required information will be accepted as an excuse for any failure or omission on the part of the bidder to fulfil in every detail the requirements of the said contract documents, or will be accepted as a basis for any claims whatsoever for extra compensation, or for an extension of time.

4.0 – QUESTIONS

1. Matters and inquiries relating to the execution of this Contract to be directed to:

.1 Mike Ladyk, t: 705.674.2300 x 422 e: ***mladyk@3rdline.studio***

5.0 - COPIES OF CONTRACT DOCUMENTS

1. Electronic copies (pdf format only) of drawings and specifications will be provided to each bidder.

6.0 – ADDENDA / AMENDMENTS

1. If necessary, written instructions or explanations in the form of Addenda or Amendments will be sent to bidders.
2. Bidders to state on the Tender Form in the space provided, the numbers of Addenda and/or Amendments received and included by Bidders in the preparation of their Tender.

7.0 – PRETENDER SITE MEETING

1. A pre-tender site tour and meeting will be conducted by the Owner and Consultant, Bidders are requested to attend. The date and time is established as follows: **Not Required.**

8.0 – TENDERS

1. All bids to be submitted on the tender form provided by the Architect. The tender form to be provided by the Architect in a 'pdf' format that can be printed by the Contractor on letter sized paper.
2. All bids to be Stipulated Lump Sum in Canadian currency, and to reflect the bidder's total proposed price for the work including, without limitation, labour, materials, coordination, management, supervision, expediting, administration of work of the Contract, work of trades and subcontracts, taxes (including HST), assessments, levies and custom duties, overhead and profit. Bids to be without qualification and in complete compliance with the Contract Documents.
3. Emailed, faxed, oral, telegraphed or telephone proposal, or modifications to submitted proposals will not be accepted or considered.
4. Enclose the Tender Forms in a sealed envelope clearly marked:

GWEKWAADZIWIN SHOWER HOUSE, 2027 HWY 50, AUNDECK OMNI KANING, ON
and marked with the Bidder's Company Name,
Deliver this hardcopy or email quotation to the office of:

3rdLine Studio Inc.
289 Cedar Street, suite 300
Sudbury, On P3B 1M8
Attn: Mike Ladyk
No later than 2pm (local time), Thursday March 23, 2021.

Or

Gwekwaadziwin Miikan
2027 Hwy 50, Aundeck Omni Kaning, On
Attn: Sam Gilchrist
No later than 2pm (local time), Thursday March 23, 2023.

5. Bidders finding any discrepancies in, or omissions from the Tender Documents, or having any doubt as to the meaning or intent of any part thereof, to at once notify the Architect. Neither the Owner, Consultants, nor the Architect will be responsible for verbal instructions. A discrepancy in the contract documents to not limit the obligation of the Bidder to perform the aggregate of work described by the contract documents.
6. All Tenders will be opened and reviewed privately by the Owner and Architect.
7. It is agreed and understood by each bidder that the Owner and/or the Architect reserve the right to reject any or bids, to waive informalities or to accept any proposal that is deemed desirable without regard to whether such bid is the low bid. Of particular importance to the Owner and the Architect will be a Bidder's reputation for quality workmanship and proven ability to perform work on schedule.
8. Alternate, itemized, separate and unit prices, where required by the Tender Documents, must include, without limitation, taxes (except HST) assessments, levies and custom duties, overhead and profit.
9. In the case of a Provincial Sales Tax, levy or custom duty revision effective prior to the acceptance of this proposal, it is assumed that Contractors have taken into account any notice of such revision and have included for any such revision in their contract price.

9.0 - TENDER VALIDITY

1. Tenders to remain valid and open for acceptance for a period of **THIRTY (30) DAYS** from the Tender Closing Date. General Contractors to ensure that sub-trade and supply quotations are valid for a sufficient length of time to accommodate the above validity period for General Contract Tenders.

10.0 – SUBCONTRACTORS

1. Each bidding Contractor is encouraged to maximize the utilization of qualified local labour and suppliers for the execution of this project.
2. Each bidding Contractor to list, in the appropriate place in the Tender Form, the name of the individual Subcontractor or major supplier he proposes to use in the execution of the Contract, and whose sub-trade or supply quotation he has used in compiling the Stipulated Sum quoted in his Tender.
3. Should the Owner be unable to approve of a Subcontractor recommended by a Tenderer, then another subcontractor may be selected by the Owner, and the Stipulated Sum Tender Figure adjusted accordingly. If no changes are required by the Owner to the list of subcontractors proposed by the Successful Tenderer then those subcontractors named by the successful Tenderer in his subcontractors list to be employed on the work, unless express written approval is received from the Owner for a proposed change.

11.0 – BONDING – NOT REQUIRED

12.0 – INSURANCES

1. The Contractor to provide, maintain and pay for insurances as specified in the General Conditions of the Stipulated Price Contract CCDC 2-2020.
2. The Contractor are responsible for paying insurance deductible and uninsured losses as applicable to their operations.
3. The Owner and members of the Consultant Team to be named as additional named insured under the Contractor's insurance policies. Each insurance policy to be endorsed to waive rights of subrogation or cross-claim against the Owner and the Consultant. Each policy to state that it cannot be cancelled, lapsed or materially altered without at least thirty (30) days prior written notice to the Owner.
4. Prior to commencing work on site, the Trade Contractor to submit to Owner / Architect, a letter of good standing from the Workplace Safety & Insurance Board (WSIB), a form 1000, and a current Health and Safety Policy and Procedures document.

13.0- CASH ALLOWANCES

1. Selection of Products:
   - **.1** Provide the following services and/or information:
     - .1 Determining qualified and/or acceptable suppliers.
     - .2 The consultant will assist the contactor in determining qualified and/or acceptable suppliers.
     - .3 Obtain proposals from suppliers and/or sub-contractors.
     - .4 Make appropriate recommendations for consideration of Consultant.
     - .5 Notify Consultant of any effect anticipated by selection of product or supplier under consideration, on construction schedule and contract sum.
   - **.2** On notification of selection, enter into purchase agreement / contract with designated suppliers and/or sub-contractors.

2. General:

.1 All testing and inspection work will be paid for by the Owner through a cash allowance. Refer to the requirements of specification Section 01 45 00, Quality Control and specific sections in the specifications.
.2 The Cash Allowances shall be expended as the Owner directs and only through the Consultant's written instructions.
.3 If a test made proves that the material or system is not in accordance with the Documents, then the subsequent testing including Owner's testing of replacement materials or systems shall be Contractor's expense.
.4 Add or deduct any variation in cost from the Cash Allowance. No adjustment will be made to Contractor's expense.
.5 Cash Allowances do not include Harmonized Sales Tax (HST)
.6 Cash Allowances, unless otherwise specified, cover net cost to Contractor of services, products, construction machinery and equipment, freight, handling, unloading, storage and other authorized expenses incurred in performing Work.
.7 The Contract Price includes the allowance amount listed below including the Contractors overhead and profit. Expenditures from the cash allowance through the Contractor will be at a cost with no mark-up. Individual subtrade pricing for each allowance item as required will be permitted an allowance for overhead and profit as outlined by the contract.
.8 The cash allowance amount will be decreased on a continuous basis by way of CAD – Cash Allowance Directive, issued by the consultant to confirm cash allowance monies are to be spent by the contractor.
.9 Progress payments on accounts of work authorized under cash allowances shall be included in Consultant's monthly certificate for payment.
.10 The allowance money as included within the contract can be expended by the consultant as required on any item. Upon total depletion of the allowance amount, any further expenditure will be completed by way of change order, as per CCDC 6.1, 6.2 and 6.3 as required.
.11 Should the entire contingency amount not be spent during the contract, a credit change order shall be issued by the consultant, including an amount of 5% for Contractors overhead and profit.
.12 The contractor shall provide services to call for competitive bids for portions of the work to be paid for by cash allowances, if requested by the Consultant.

3. Cash Allowances:
.1 Include in Contract Price a cash allowance as listed below.
.2 Expenditures under allowance will be authorized in accordance with procedures provided in CCDC 2, GC 6.1 Changes CCDC 2, 6.2 Change Order and CCDC 2, 6.3 Change Directive, and item 2.8, above by way of CAD as required and directed by the consultant.
.3 Unused amounts of the cash allowance can be interchanged with other divisions of the cash allowance.

A	B	C
ITEM NO.	**DESCRIPTION OF WORK**	**SCHEDULED VALUE**
1	*Testing + Inspections*	*$5,000*
2	*Door hardware*	*$8,400*

14.0 – PERMITS

4. The Contractor to obtain and pay for other permits required to complete the work of this Contract.

15.0 – ACCEPTANCE PERIOD

1. The Tender to be valid and subject to acceptance by the Owner for a period of **Thirty (30) DAYS** from the date of closing Tenders.

16.0 – CONSTRUCTION SCHEDULE + COMPLETION OF THE WORK

1. Work under this Contract to commence immediately upon receipt of written acceptance of tender and to be continued, without interruption, to completion as soon as possible.

17.0 – COMMENCEMENT OF THE WORK

1. The submission of a Tender constitutes the bidder's agreement to commence work promptly and to execute the work without interruption until completion, in accordance with the schedule prepared by Owner.
2. As time is of the essence, the successful Contractor to immediately upon receipt of a letter of acceptance proceed with the preparation of shop drawings and/or samples and procurement of major component materials and equipment to avoid delay to the work.

18.0 – ASSIGNMENT OF THE CONTRACT

1. The successful bidder to not assign the whole or any part of the resulting contract without the prior written consent of the Owner, which consent may be withheld by the Owner in its sole discretion or may be given subject to such terms and conditions that the Owner may impose.

19.0 – DISCREPANCIES AND / OR OMISSIONS

1. If the Contractor finds discrepancies in, or omissions from the Drawings, Specifications or other Contract Documents or has any doubt as to the meaning or intent of any part thereof the Consultant to be notified at once. The Consultant will send written instructions or explanations. Neither the Owner nor the Consultant will be responsible for oral instructions.

20.0 – EXAMINATION

1. Make a careful examination of the site of the project, and investigate and be satisfied as to matters relating to the nature of the work to be undertaken, as to the means of access and egress thereto and there from, as to the obstacles to be met with, as to the rights and interests which may be interfered with during the construction of the work, as to the extent of the work to be performed and any and matters which are referred to in the Drawings, Specifications and other Contract Documents, or which are necessary for the full and proper understanding of the work and the conditions under which it will be performed. No allowance to be made subsequently in this connection on behalf of the Contractor for any error or negligence on its part. Before commencing the work of any Section, the work of other Sections upon which it may depend, to be carefully examined. Report any defects which might affect the new work in writing to the Consultant. Commencement of new work to imply acceptance of work by other Sections upon which the new work depends. Verify dimensions of prepared work before fabrication of that work which is dependent on the prepared work.

21.0 – EXISTING CONDITIONS

1. Make good surfaces and finishes damaged or disturbed due to Work of this Contract to match existing. Ensure that material used to repair damage is compatible with existing work. Term "make good" to mean repairing or filling operations performed on existing floors, walls, ceiling or any other exposed surfaces. Perform cutting and patching where applicable as specified herein. It is intended that finished surfaces match and line with existing adjoining surfaces. Restore Site to condition equal to or, if specified elsewhere, to condition better than existing conditions. Restore lands outside of limits of Work which are disturbed due to Work to original condition in addition to complying with requirements of General Conditions of the Contract.

TENDER FORM

To:
Gwekwaadziwin Shower House
2027 Hwy 50, Aundeck Omni Kaning, On

Herein referred to as the "OWNER".
The UNDERSIGNED, herein referred to as the "CONTRACTOR"

With the legal company name of _____

A company duly incorporated under the laws of _____

And having its Head Office at _____

.1 HEREBY UNDERTAKES AND AGREES WITH THE OWNER AS FOLLOWS:
Having examined the Tender Documents, entitled **Gwekwaadziwin Shower House,** 2027 Hwy 50, Aundeck Omni Kaning, On and including:

.1 All Drawings dated: **2023 03 13**
.2 Specifications dated: **2023 03 14**
.3 Addenda Numbers _____
Issued _____
And having visited the site, and having examined and become familiar with conditions affecting the proposed work,

WE UNDERTAKE TO DO WORK, AND SUPPLY MATERIALS AND SERVICES IN ACCORDANCE WITH THE TENDER DOCUMENTS, FOR THE **CONTRACT PRICE**, WHICH ***EXCLUDES*** HARMONIZED SALES TAX (HST),

OF _____

_____**and**_____**/100 DOLLARS ($**_____**).**

.2 The UNDERSIGNED hereby submits that amounts are in Canadian funds and that these amounts to be subject to adjustments as provided in the Contract documents.
.3 The UNDERSIGNED further submits that costs for supervision, administration, co-ordination, handling, management, expediting, scheduling, overhead and profit and assuming full responsibility and warranty for the assigned work are included in the Contract Price Tendered.
.4 That the UNDERSIGNED, if notified of proposal acceptance within **THIRTY (30) DAYS** of Tender Closing Date agrees to enter into a formal Contract with the Owner for the work, in the form of the Canadian Standard Construction Document, CCDC 2-2020, Stipulated Price Contract.
.5 The UNDERSIGNED undertakes to commence the work under the Contract forthwith after execution of the formal Contract and when notified so to do by the Owner and to carry out work without interruption to completion of the Contract.
.6 The UNDERSIGNED declares that the above quoted Contract Price includes the Cash Allowances as indicated in Division 00 - Procurement + Contracting.
.7 The UNDERSIGNED agrees to complete the work in accordance with the construction schedule in Division 00, item 16.

IN WITNESS WHEREOF THE UNDERSIGNED CONTRACTOR HAS HERETO set its Corporate Seal and the hands of its' proper officers in that behalf at

_____ (Province),
(City)

This _____DAY OF_____ (Month), 20____ (Year).

_____
COMPANY NAME

_____
ADDRESS, POSTAL CODE, PHONE

Corporate
Seal (or)

_____
SIGNATURE

_____
WITNESS

_____
PRINTED NAME AND TITLE

SUPPLEMENTAL GENERAL CONDITIONS

GENERAL

1. The General Conditions of the Stipulated Price Contract Canadian Standard Construction Document – CCDC 2-2020, Articles GC1 through GC13 inclusive, form part of this Contract.
2. The following Supplementary Conditions modify, change, delete from and/or add to the Articles of Agreement, the Definitions, and the General Conditions of the Stipulated Price Contract, Standard Construction Document CCDC 2-2020.
3. Where any Article, Paragraph or Sub-paragraph in the Agreement and/or General Conditions is supplemented by one of the following paragraphs, the provisions of such Article, Paragraph or Sub-paragraph to remain in effect and the supplemental provisions to be considered as added thereto.
4. 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 to remain unchanged, and the numbering of the deleted item will be retained, unused.
5. Where any article, paragraph, or sub-paragraph in the Agreement and/or General Conditions is amended, voided, or superseded by any of the following paragraphs, the provisions of such article, paragraph, or sub-paragraph not so amended, voided, or superseded to remain in effect.
6. The term "provide" as used in the Contract Documents, to mean the furnishing of labour, materials, equipment, transportation and other services required, including costs in connection therewith, to complete the Work.
7. Wherein the word "submit" is used in the Contract Documents, it to be followed by the words "to the Consultant" unless the context provides otherwise. Wherein the words "approved", "designated", "directed", "inspected", "instructed", "permitted", "required", "satisfactory", and "selected" are used in the Contract Documents, they to be followed by the words "by the Consultant" unless the context provides otherwise.
8. Articles, Definitions, General Conditions, paragraphs, subparagraphs or clauses thereof have been modified in these Supplementary General Conditions as described in this section

MODIFICATIONS TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

ARTICLE A-5 PAYMENT

1. Add the following Paragraph:
   .1 "5.3 The Consultant may withhold or nullify, in whole or in part, any application for payment represented by the Contractor's estimate or any Certificate for Payment to such extent as may be necessary to protect the Owner from loss because of the following:
      .1 Defective work not remedied.
      .2 Claims filed or reasonable evidence indicating probably filing of claims.
      .3 Failure of contractor to make payment properly to subcontractor or suppliers for materials and/or labour.
      .4 Reasonable doubt that the contract can be completed, and unpaid claims, charges, liens and encumbrances satisfied, for balance then unpaid.
      .5 Damage to the work of another contractor.
      .6 Erroneous or inflated estimates by the contractor of value of work performed.
      .7 Unauthorized deviations by contractor from contract documents.
      .8 Unsatisfactory progress of project work by contractor.
      .9 Record drawings not current and up-to-date with changes.
      .10 Legal costs related to lien action(s).
      .11 When the above noted grounds are resolved, payments will be made for amounts withheld because of them. No interest will be paid on payments withheld. The Consultant's determination as to issuance or withholding of, or amount of payment reflected by Certificates for Payment, to be final and binding, and to not subject the Consultant to any liability whatsoever to the Owner, Contractor, Surety, or any other person."

MODIFICATIONS TO DEFINITIONS

1. Add the following:
   .1 Submittals
      .1 *Submittals* are documents or items required by the *Contract Documents* to be provided by the *Contractor*, 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*.
2. Add the following to, "Value Added Taxes"
   .1 "Value Added Taxes to be as levied by the Federal Government and is computed at **Thirteen (13)** percent of the Contract Price. The payment or collection of which is by the legislation imposing such tax an obligation of the Contractor".

MODIFICATIONS TO GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

GENERAL PROVISIONS

GC 1.1 CONTRACT DOCUMENTS

1. Add the following items to the end of sentence 1.1.7.1:
   .1 "All other information provided such as appended documents, specifications, reports, etc."
2. Paragraph 1.1.5.1 is amended by adding new subparagraphs 6, .7, and .8
   .1 "Architectural drawings to have precedence over structural, plumbing, mechanical, electrical and landscape drawings insofar as outlining, determining and interpreting conflicts over the required design intent of architectural layouts and architectural elements of construction. It to be understood that the integrity and installation of the engineered systems are to remain with each of the applicable engineering disciplines.
   .2 "In the case of conflict, other documents to govern over the colour schedule and colour schedule drawings."
   .3 "Addenda to have priority over the documents they refer to or amend and addenda of a later date to have priority over earlier documents of the same type."
3. Add paragraph 1.1.12 as follows:
   .1 The Contractor will rely on electronic Documents and Specifications made available by the Owner. Paper Copies can be provided to the Contractor at cost."
4. Add paragraph 1.1.13 as follows:
   .1 The Contractor to be provided with an electronic PDF copy of Architectural, Structural, Mechanical and Electrical Drawings for the purpose of assisting in the preparation as-built drawings. A service charge of $750.00 (Seven Hundred and Fifty-Five and xx/100 Dollars) will apply for each/any electronic AUTOCAD drawing file requested. The Contractor is responsible for distribution of files and recovery of costs from subcontractors.
5. Add paragraph 1.1.14 as follows;
   .1 The digital data supplied by the Consultant will be provided to the Contractor as a matter of courtesy and convenience and is in no way to be taken as appurtenant to, associated with, or in placement of the officially signed and sealed contract documents. The data contained will be provided "as is" without warranty of any kind either expressed or implied and to be relied upon as such. Although every care and diligence is taken to ensure the accuracy and correctness of supplied data, any and liabilities for damage, direct or indirect, however caused and resulting in any from the use of the supplied digital data will be the full responsibility of the Contractor. The Contractor accepts these conditions upon acceptance of the digital data.

ADMINISTRATION OF THE CONTRACT

GC 2.2 ROLE OF THE CONSULTANT

1. Add at the end of paragraph 2.2.8 add the following items;
   .1 "The Owner and the Contractor to waive any claims against the Consultant arising out of the making of such interpretations and findings made in accordance with paragraphs 2.2.6., 2.2.7. and 2.2.8 unless such interpretations and findings are the result of negligent actions or willful misconduct.
   .2 The consultant's obligation to make findings on a large claim or large numbers of claims is subject to the terms and conditions of the Owner/Consultant Agreement.

GC 2.4 DEFECTIVE WORK

1. Add new subparagraphs 2.4.1.1 and 2.4.1.2:
   .1 "2.4.1.1 The *Contractor* shall rectify, in a manner acceptable to the *Owner* and the *Consultant*, defective work and deficiencies throughout the Work, whether or not they are specifically identified by the Consultant."
   .2 "2.4.1.2 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."

EXECUTION OF THE WORK

GC 3.1 CONTROL OF THE WORK

1. Add the following to Paragraph 3.1.2:
   .1 Add the word "schedules" after the word "techniques"
2. Add new paragraph 3.1.3:
   .1 Prior to commencing individual procurement, fabrication and construction activities, the Contractor to verify, at the Place of the Work, relevant measurements and levels necessary for proper and complete fabrication, assembly and installation of the Work and to 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 to immediately notify the Consultant in writing and obtain written instructions from the Consultant before proceeding with any part of the affected work."

GC 3.4 CONSTRUCTION SCHEDULE

1. Add sentence .4 to paragraph 3.5.1:

.1 "clearly indicate and communicate materials/products procurement and delivery dates paying particular attention to schedule."

GC 3.5 SUPERVISION

1. Add the following paragraphs:
   - **.1** 3.5.3 The Owner may, with reasonable cause, at any time during the course of the Work, request the replacement of the supervisor or the representative. Upon receipt of such request, the Contractor will immediately make arrangements to appoint an acceptable replacement. Costs associated with any removal(s) or replacement(s) of these individuals to be the responsibility of the Contractor.
   - **.2** 3.5.4 The Contractor shall employ an "Office Representative/Manager of the Work", in addition to the Superintendent of the Work, for the entire duration of the project.
     - .1 Coordinating, managing and expediting control of the project relating to matters of the project including, but not limited to authorities having jurisdiction, product suppliers, subtrades, Owner and Consultant etc.
     - .2 Project scheduling and management (i.e. trades, products, etc.)
     - .3 Work with the Site Superintendent of the Work as required to ensure compliance of the Work with the intent of the Construction Documents including but not limited to projects scheduling, coordination of subtrades, quality control and performance of the Work.
   - **.3** 3.5.5 The Site Superintendent of the Work shall perform duties and responsibilities at the Place of Work until completion of the work has been achieved and as issued by the Consultant.
   - **.4** 3.5.6 Both the Site Superintendent of the Work and the Office Representative/Manager of the Work shall have relevant and verifiable experience with undertaking and completing projects of this nature.

GC 3.6 SUBCONTRACTORS AND SUPPLIERS

1. Revise Paragraph 3.6.2 as follows:
   - **.1** After the word "if" in the first line add "when requested at the time of tender and within five (5) working days".
2. Add the following paragraph 3.6.7:
   - **.1** The contractor shall not change subcontractors and/or suppliers and agrees not to do so without the prior written consent of the Owner and the Consultant. The Contractor must substantiate cause for change.

GC 3.7 LABOUR AND PRODUCTS

1. Add to sentence 3.7.3
   - **.1** Where the Contract Documents permit the use of salvaged materials and /or where those salvaged materials are provided by the Owner it to be the responsibility of the Contractor to be responsible for transportation to the project site, any taxes, handling, on-site storage and protection.
2. Add new paragraph 3.7.4:
   - **.1** 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 relevant information on the Products supplied by the Owner."
3. Add new paragraph 3.7.5:
   - **.1** The responsibility as to which Subcontractor provides labour, products and services rests solely with the Contractor".

GC 3.8 SHOP DRAWINGS

1. Add the words "AND OTHER SUBMITTALS" to the Title after SHOP DRAWINGS to read "SHOP DRAWINGS AND OTHER SUBMITTALS"
2. Add "and Submittals" after the words "Shop Drawings in paragraphs 3.8.1, 3.8.2, 3.8.3, 3.8.4, and 3.8.7.
3. Revise 3.8.3 to read as follows; Prior to the first application for payment, the Contractor and the Consultant shall, together, prepare a schedule of the dates for submission and return of Shop Drawings and any Submittals. The schedule shall create an orderly sequence and have submissions 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.
4. Revise 3.8.7 to read as follows; 'The Consultant will review and return Shop Drawings in accordance with the schedule agreed upon or, in the absence of such schedule, within 10 working days for Architectural and Structural Trades and 15 working days for Mechanical and Electrical Trades or such longer period as may be reasonably required.'
5. Add the following paragraphs to GC- 3.8:
   - **.1** 3.8.8. The contractor acknowledges its responsibilities to submit complete shop drawings and other submittals. Incomplete submittals will be returned to the contractor unreviewed and will be not be deemed a bona fide submittal. No time extensions or cost increases will be allowed for delays caused by return of incomplete submittals.
   - **.2** 3.8.9 The contractor shall submit shop drawings and other submittals for each and every component of the Work as a requirement of completing the Work and for verification and audit purposes as stipulated in the Contract Documents.
   - **.3** 3.8.10 The Contractor shall not provide any of the Products nor include those products in the Work without reviewed shop drawings and other submittals. The Contractor will be totally responsible for rectifying and correcting the Work as required

including assuming responsibility for related costs should Products or the Work occur without approved Shop Drawings and Submittals

.4 3.8.11 The Consultant's review will not include review of dimensions, quantities, calculations, weights, fabrication processes, construction means or methods, the coordination of trades, or safety factors relating to the construction for which the Contractor has the sole responsibility in connection therewith.

.5 3.8.12 Should any errors in dimensions, or interference with other work be noted by the Consultant in his review of the shop drawings, the attention of the Contractor will be called to them, but review of shop drawings by the Consultant shall not in any way whatsoever relieve the Contractor from responsibilities required for the preparation and submission of shop drawings.

.6 3.8.13 Only shop drawings indicated as 'Reviewed', 'Reviewed for General Design', Reviewed as Noted' or 'Reviewed as Modified' and bearing the Consultant's review date and initials, shall be used at the Place of the work or for the manufacture of fabrication of Products.

.7 3.8.14 The review of shop drawings, by the Consultant, does not authorize a change in the Contract Price or Contract Time.

GC 3.9 PERFORMANCE BY CONTRACTOR

1. Add new General Condition 3.9.1
   .1 In performing its services and obligations under the Contract, the Contractor shall exercise a standard of care, skill and diligence that would normally be provided by an experienced and prudent Contractor supplying similar services for similar projects. The Contractor acknowledges and agrees that throughout the Contract, the Contractor's obligations, duties and responsibilities shall be interpreted in accordance with this standard. The Contractor shall exercise the same standard of due care and diligence in respect of any Products, personnel, or procedures which it may recommend to the Owner.
2. Add new General Condition 3.9.2
   .1 The *Contractor* further represents, covenants and warrants to the *Owner* that:
      .1 The personnel it assigns to the *Project* are appropriately experienced;
      .2 The Contractor has a sufficient staff of qualified and competent personnel to replace its designated supervisor and project manager, subject to the *Owner's* approval, in the event of death, incapacity, removal or resignation.

ALLOWANCES

GC 4.1 CASH ALLOWANCE

1. Delete paragraph 4.1.4 in its entirety and substitute new paragraph 4.1.4:
   .1 4.1.4 Where costs under a cash allowance exceed the amount of the allowance, unexpended amounts from other cash allowances shall be reallocated at the Consultant's direction to cover the shortfall.
2. Delete paragraph 4.1.5 in its entirety and substitute new paragraph 4.1.5:
   .1 4.1.5 The net amount of any unexpended cash allowances, after providing for any reallocations as contemplated in paragraph 4.1.4, to be deducted from the Contract Price by Change Order without any adjustment for the Contractor's overhead and profit on such amounts(s).
3. Delete paragraph 4.1.7 in its entirety and substitute new paragraph 4.1.7:
   .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 3.5, that items called for under cash allowances and items that are specified to be Owner purchased and Contractor installed or hooked up are required at the site to avoid delaying the progress of the Work.
4. Add new paragraph 4.1.8:
   .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.

PAYMENT

GC 5.2 APPLICATIONS FOR PAYMENT

1. Revise 5.2.5 to read as follows; The schedule of values shall be made out to reasonably reflect the nature and value of the Work in the Contract. The Consultant and Owner will determine the acceptance of the breakdown submitted. The Contractor will revise as directed".

GC 5.3 PAYMENT

1. Delete the word "calendar" and substitute the word "business" in sentence 5.3.1.1:
2. Delete the word "calendar" and substitute the word "business" in sentence 5.3.1.2:

GC 5.4 SUBSTANTIAL PERFORMANCE OF WORK AND PAYMENT OF HOLDBACK

1. Add the following paragraph 5.4.7: Procedures upon application by the Contractor for Certificate of Substantial Performance of the Work, and for statement of Completion of the contract, respectively, to be in accordance with OAA/OGCA Document No. 100 -2018, reissued Jan. 8 , 2019, Take-Over Procedures."
2. Add the following paragraph 5.4.8: In addition to the requirements of applicable lien legislation, a condition precedent to Substantial Performance of the Work to include submission to the Consultant of the following materials and documentations:

.1 Submission of warranties, operating and maintenance manuals, shop drawings and as-built records in acceptable manner;
.2 Systems demonstrations and instruction of Owner in the operation of systems;
.3 Receipt and submission of the OBC and Municipal Occupancy Permits;
.4 receipt and submission of sprinkler system approval from Insurance Advisory Organization;
.5 Submission to and acceptance by the Consultant of interim accounts of the Work showing additions and deletions to the Contract Price;
.6 Receipt and submission of elevator inspection and approval by governing authorities;
.7 Verification reports confirming systems and equipment started up and tested, except for final balancing;
.8 Verification reports confirming life safety systems verified by Contractor as complying with the requirements of the Contract Documents;
.9 Inspection reports from local fire authority confirming that life safety systems installed are acceptable;
.10 Submission of spare parts and maintenance materials

3. Add the following paragraph 5.4.9: The Contractor to co-operate with the Consultant and Owner in establishing a Deficiency List before Substantial Performance of the Work. The Contractor to complete the Work noted on the Deficiency List expeditiously and at the discretion and convenience of the Owner. If more than one (1) inspection is required to review deficiency completion each subsequent site visit will be charged at $750.00 per visit per consultant required to attend the visit.
4. Add the following paragraph 5.4.10: Acceptance of the Work by the Owner does not relieve that Contractor from correcting deficiencies that are missed at the time of preparing the deficiency list, or hidden deficiencies, which become apparent during warranty period.
5. Add the following paragraph 5.4.11: The publication by the Contractor of the Certificate of Substantial Performance of the Work to constitute a waiver by the Contractor, whether for a change in the Contract Price, extension of Contract Time or otherwise, except those made in writing, prior to the Contractor's application for payment upon Substantial Performance of the Work, and still unsettled.
6. Add the following paragraph 5.4.12: If a lien is registered by a Subcontractor, supplier, labourer, or mechanic, the Contractor shall reimburse the Owner for damages and costs which may result from such action, and the Contractor to pay for legal costs incurred in the removing of such lien."

GC 5.5 FINAL PAYMENT

1. Add the following to paragraph 5.5.1: 'The Contract to be deemed to be completed when the price of completion or correction of known defects is not more than the lesser of
   .1 one percent (1%) of the contract price; and
   .2 $1,000.00.'
2. Revise paragraph 5.5.4 to read as follows: 'Subject to the provision of paragraph 10.4.1 of GC 10.4 - WORKERS' COMPENSATION, and any lien legislation applicable to the Place of the Work, the Owner shall, no later than (20) calendar days after the issuance of a final certificate for payment, pay the Contractor as provided in Article A-5 of the Agreement - PAYMENT.'

CHANGES IN THE WORK

GC 6.2 CHANGE ORDER

1. Add the following paragraph 6.2.3: 'The value of a change shall be determined in one or more of the following methods:
   .1 By estimate and acceptance in a lump sum substantiated by an itemized cost breakdown satisfactory to the consultant with the applicable overhead and profit percentage fees applied.;
   .2 By unit prices set out in the contract or subsequently agreed upon;
   .3 By cost and a fixed or percentage fee.'
2. Add the following paragraph 6.2.4: 'In the case of changes in the Work to be paid for under methods (.1) and (.3) of paragraph 6.2.3, the Contractor and Subcontractor, respectively, may add to the reasonable net cost of additional work a fee, or mark-up, inclusive of overhead and profit, limited to the following:
   .1 The Subcontractor may add to the total net cost of labour and materials, a fee, or mark-up, equal to ten percent (10%) of such cost for Work done by the Subcontractor.
   .2 The Contractor may add to the net cost of additional work by a Subcontractor, a fee, or mark-up, equal to ten percent (10%) of the total sum quoted by such Subcontractor.
   .3 The Contractor may add to the total net cost of labour and materials of additional work to be carried out by his own forces a fee, or mark-up equal to fifteen percent (15%) of such cost.
   .4 In the event that owner-initiated changes in the Work result in delays to the completion of the Project, the Contractor and/or the Subcontractor(s) who are executing the Work to each be allowed an additional one (1%) percent of the cost of the changes as compensation in full for the delay.
   .5 For Owner requested substitution of building material(s) and/or building component(s) with *no additional labour content* by the Contractor, a total mark-up of five (5%) percent to be allowed on such changes regardless of the value of the change
   .6 For Owner requested substitution of building material(s) and/or building component(s) with *no additional labour content* by Subcontractor(s), the Subcontractor(s) to be allowed a total mark-up of five (5%) percent and the Contractor to be allowed an additional total mark-up of five (5%) percent regardless of the value of the change.

.7 Such fee or mark-up, by Contractor and Sub-contractor respectively, to be based on net additional cost for any one change in the Work, such net additional cost being derived by deducting credits for labour and materials involved in deleted work from the cost of labour and materials involved in additional work. When quantities of the same product or material are changed in the same Change in the Work, the change in the Contract Price to be based on the net difference in quantity between the product or material deleted and the same product or material added. The procedure of crediting deleted material at a certain unit cost and then charging the aggregate quantity of the same material at a higher unit cost will not be accepted.

.8 The Consultant alone to determine the scope of change

.9 Consideration for Unusual Changes: unusual and/or peculiar changes requiring consideration to be reviewed on an individual basis. The consultant alone to determine what constitutes an unusual and/or peculiar change.

.10 Changes for Cause and/or Changes for Convenience: The Contractor and sub-contractors must demonstrate, by way of their submissions that any/all products and/or substitutions are made as substitutions for 'cause' in support of the intent of the contract documents.

.11 Changes and/or Substitutions deemed 'for convenience' will not be considered and allowed. The Consultant alone will determine the acceptance of a change or Substitution.'

3. Add the following paragraph: 6.2.5: 'In the case of a Change in the Work to be paid for under method (.2) of Paragraph 6.2.3, involving a class of work for which a unit price was required to be quoted in the Tender proposal, the cost to be paid for such class of work, derived by deducting quantity of deleted work involved in such change from the quantity of additional work involved in such change, multiplied by the applicable unit prices quoted.'

4. Add the following paragraph 6.2.6: 'Overhead to include any additional charges and/or premiums for Permits, Bonds, Insurance, Site Supervision, Office Administration and the like, which may result from Changes in the Work, whether calculated on the basis of quoted Unit Prices, or on the basis of Cost Plus Fee or Mark-up.'

5.

6. Add the following paragraph 6.2.7: 'Except where Unit Prices have been quoted, the value of a change in the Work to be determined by method (3) of Paragraph 6.2.3.'

7.

8. Add the following paragraph 6.2.8: 'Where the additional cost of a change in the Work has been quoted by the Contractor and accepted by the Owner in the form of a lump sum as evidenced by the issuance of a Change Order, such quoted cost to be deemed to have included costs, including any costs for delay of work, which are or may be occasioned by such change. No later claims for additional costs will be considered.'

9.

10. Add the following paragraph 6.2.9: 'The Contractor's fee, or mark-up, inclusive of overhead and profit, is understood to include, without limitation, the following:

.1 The Contractor's head office and administration expenses, associated travelling /

.2 Accommodation / meals costs, financing costs including holdback, bonding and insurance costs;

.3 All supervision, co-ordination, administration, margin and risk of undertaking within stipulated a mount;

.4 The salaries of superintendents, project managers, engineers, timekeepers, accountants,

.5 Clerks, and other Site supervision staff above foreperson level employed directly on the Work;

.6 The Contractor's mark-up and profit;

.7 Use of temporary offices, sheds and other general temporary Site support facilities and utilities used therein;

.8 Miscellaneous additional costs related to:

.1 Licenses, building permit and statutory fees, except when these are

.2 Special for a particular item of Work;

.3 Purchase of rental material, plant and equipment;

.4 Purchase of small tools and supplies;

GC 6.3 CHANGE DIRECTIVE

1. Delete Paragraph 6.3.11 in its entirety.

GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

1. Add new subparagraph 6.4.5: The Contractor confirms that, prior to bidding the Project, the Contractor carefully investigated the Place of the Work and applied to that investigation the degree of care and skill described in paragraph 3.9.1, 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.

GC 6.5 DELAYS

1. Amend paragraph 6.5.1 by delete the period at the end of the paragraph and adding: 'but excluding any consequential, indirect or special damages.'
2. Amed paragraph 6.5.2 by deleting the period at the end of the paragraph and adding: 'but excluding any consequential, indirect or special damages.'

3. Add new subparagraph 6.5.6: 'If the Contractor is delayed in the performance of the Work by an act or omission of the Contractor or anyone directly or indirectly employed or engaged by the Contractor, 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 reasonable costs incurred by the Owner as the result of such delay, including, but not limited to, the cost of additional services required by the Owner from the Consultant or any sub consultants, project managers, or others employed or engaged by the Owner. 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 directly or indirectly, or by stop work order or by a court or public authority as the result or an act of the contractor, or by unusual delay by common carriers or unavoidable casualties or, without limit to any of the forgoing, by any cause within the Contractor's control.'

GC 6.6 CLAIMS FOR CHANGE IN CONTRACT PRICE

1. Amend paragraph 6.6.5 to read as follows; The Consultant's findings, with respect to a claim made by either party, will be given Notice in Writing to both parties within 30 Working Days after the receipt of the claim, **as noted in paragraph 6.6.3**, by the Consultant, or within such other time period as may be agreed by the parties **and the Consultant**.'

DISPUTE RESOLUTION

GC 8.1 AUTHORITY OF THE CONSULTANT

1. Amend paragraph 8.1.2 to read as follows.
   .1 A party shall be conclusively deemed to have accepted a finding of the Consultant under GC 2.2 - ROLE OF THE CONSULTANT and shall 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 to send a notice in writing of reply to the dispute within 10 Working Days after receipt of the notice of dispute setting out particular of this response and any relevant provisions of the Contract Documents."
2. Add the following paragraphs:
   .1 It is agreed that no act by either party to be construed as a renunciation or waiver of their rights or recourses, provided they have given the notices in accordance with paragraph 8.1.2 and have carried out the instructions as provided in paragraph 8.1.3."
   .2 If the dispute is not resolved in the first instance by the decision of the Consultant, then either party may submit the dispute to such judicial tribunal as the circumstances may require."
   .3 In recognition of the obligation by the Contractor to perform the disputed work as provided in paragraph 8.1.3, it is agreed that settlement of dispute proceedings may be commenced immediately following the dispute in accordance with the aforegoing settlement of dispute procedures."

GC 8.3 NEGOTIATION, MEDIATION AND ARBITRATION

1. Add the following new paragraph 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 to 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.'
2. Add the following new paragraph 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 8.2.6, and,
   .4 Agrees to be bound by the arbitral award made in the arbitration.
3. Add the following new paragraph 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 to begin to run from the date the respondent receives a copy of the notice of arbitration.'
4. Add the following new paragraph 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. '
5. Add the following new paragraph 8.3.13: 'The provisions of paragraph 8.2.9 to apply mutatis mutandis to written notice to be given by the *Consultant* to any sub-consultant.'

6. Add the following new paragraph 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.'

PROTECTION OF PERSONS AND PROPERTY

GC 9.1 PROTECTION OF WORK AND PROPERTY

1. Delete subparagraph 9.1.1.1 in its entirety and substitute new subparagraph 9.1.1.1
   .1 Errors in the *Contract Documents* which the *Contractor* could not have discovered applying the standard of care described in paragraph 3.9.1;
2. Delete paragraph 9.1.2 in its entirety and substitute the following new paragraph 9.1.2:
   .1 Before commencing any *Work*, the *Contractor* to determine the locations of underground utilities and structures indicated in the *Contract Documents*, or that are discoverable by applying to an inspection of the *Place of the Work* the degree of care and skill described in paragraph 3.9.1.

GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

1. Add the word 'designated' to the words "toxic "and "hazardous" in this General Condition
2. Add the following sentence to paragraph 9.2.1:
   .1 Designated substances to be as defined by applicable legislation and the Occupational Health and Safety Act.
3. Add to paragraph 9.2.6 after the word "responsible", the following new words:
   .1 "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, "
4. Subparagraph 9.2.7.4 is deleted.
5. Add to paragraph 9.2.8 after the word "responsible", the following new words:
   .1 "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,"
6. Add the following to subparagraph 9.2.8.4 :
   .1 Add "and the Consultant" after the word "Owner"

GC 9.5 MOULD

1. Add the following to Subparagraph 9.5.2.4:
   .1 Add "and the Consultant" after the word "Owner"
2. Delete Subparagraph 9.5.3.4.

GOVERNING REGULATIONS

GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

1. Delete from the first line of paragraph 10.2.5 the word, "The" and substitute the words:
   .1 "Subject to paragraph 3.9.1, the".

INSURANCE AND CONTRACT SECURITY

GC 11.1 INSURANCE

1. Delete paragraph 11.1.1.3; 'Unmanned aerial vehicle aircraft, manned aircraft or watercraft liability' insurance is not required for the project.
2. Paragraph 2 of CCDC 41 – CCDC Insurance Requirements to be amended by replacing the amount of $10,000,000 with the amount of $5,000,000 for the automobile liability insurance.

INDEMNIFICATION, WAIVER OF CLAIMS AND WARRANTY

GC 13.1 INDEMNIFICATION

1. Add new clause 13.1.1.3.
   .1 13.1.1.3. The *Contractor* shall indemnify and hold harmless the *Consultant*, its agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings by third parties that arise out of, or are attributable to, the *Contractor's* performance of the *Contract*, provided such claims are attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, and caused by negligent acts or omissions of the *Contractor* or anyone for whose acts the *Contractor* may be liable, and made in writing within a period of 6 years from the date of *Substantial*

Performance of the Work as set out in the certificate of *Substantial Performance of the Work*, or within such shorter such period as may be prescribed by any limitation statute or the province or territory of the *Place of Work*.

GC 12.3 WARRANTY

1. Delete from the first line of paragraph 12.3.2 the word, “The” and substitute the words: "Subject to paragraph 3.9.1, the…"
2. Add the following paragraphs 12.3.7: ‘Faulty materials or workmanship to include but not be limited to shrinkage, expansion and movement. Make good deficiencies outstanding within thirty (30) days from the end of warranty period.’
3. Add the following paragraph: 12.3.8: ‘The Contractor or Subcontractor responsible to also bear costs involved in removing or replacing adjacent affected materials, including owners’ Goods and equipment, that may be disturbed and which to be required in the complete restoration of the original finish.’

GENERAL

1. The General Conditions of the Stipulated Price Contract Canadian Standard Construction Document - CCDC 17 - 2010, Articles GC1 through GC12 inclusive, form part of this Contract.
2. The following Supplementary Conditions modify, change, delete from and/or add to the Articles of Agreement, the Definitions, and the General Conditions of the Stipulated Price Contract, Standard Construction Document CCDC 17 - 2010.
3. Where any Article, Paragraph or Sub-paragraph in the Agreement and/or General Conditions is supplemented by one of the following paragraphs, the provisions of such Article, Paragraph or Sub-paragraph shall remain in effect and the supplemental provisions shall be considered as added thereto.
4. 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.
5. Where any article, paragraph, or sub-paragraph in the Agreement and/or General Conditions is amended, voided, or superseded by any of the following paragraphs, the provisions of such article, paragraph, or sub-paragraph not so amended, voided, or superseded shall remain in effect.
6. The term "provide" as used in the Contract Documents, shall mean the furnishing of all labour, materials, equipment, transportation and all other services required, including all costs in connection therewith, to complete the Work.
7. Wherein the word "submit" is used in the Contract Documents, it shall be followed by the words "to the Consultant" unless the context provides otherwise. Wherein the words "approved", "designated", "directed", "inspected", "instructed", "permitted", "required", "satisfactory", and "selected" are used in the Contract Documents, they shall be followed by the words "by the Consultant" unless the context provides otherwise.
8. Throughout the Contract Documents, wherein the term "Value Added Taxes" is used, amend to read "Harmonized Sales Tax" (i.e. HST).
9. Throughout the Contract Documents, wherein the term "Certificate of Total Performance of the Work" is used, amend to read: "Statement of Completion of the Contract", and any other reference to the word "Certificate" then referring to "Certificate of Total Performance" shall be amended to read "Statement".
10. Articles, Definitions, General Conditions, paragraphs, subparagraphs or clauses thereof have been modified in these Supplementary General Conditions as described in this section

MODIFICATIONS TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

2.1 <u>ARTICLE A-5 PAYMENT</u>

1. Insert the following values in the blanks of Paragraph 5.1: "ten" AND "10".
2. Add the following Paragraph:

.1 "5.4 The Construction Manager may withhold or nullify, in whole or in part, any application for payment represented by the Contractor's estimate or any Certificate for Payment to such extent as may be necessary to protect the Owner from loss because of the following:

.1 .defective work not remedied
.2 .claims filed or reasonable evidence indicating probably filing of claims
.3 .failure of Contractor to make payment properly to Subcontractor or suppliers for materials and/or labour
.4 .reasonable doubt that the contract can be completed, and all unpaid claims, charges, liens and encumbrances satisfied, for balance then unpaid
.5 .damage to the work of another Contractor
.6 .erroneous or inflated estimates by the Contractor of value of work performed
.7 .unauthorized deviations by Contractor from Contract Documents
.8 .unsatisfactory progress of project work by Contractor
.9 .record drawings not current and up-to-date with changes
.10 .incomplete and/or unacceptable LBC/ILBI submissions
.11 .legal costs related to lien action(s)

WHEN THE ABOVE NOTED GROUNDS ARE RESOLVED, PAYMENTS WILL BE MADE FOR AMOUNTS WITHHELD BECAUSE OF THEM. NO INTEREST WILL BE PAID ON PAYMENTS WITHHELD. THE CONSTRUCTION MANAGER'S DETERMINATION AS TO ISSUANCE OR WITHHOLDING OF, OR AMOUNT OF PAYMENT REFLECTED BY CERTIFICATES FOR PAYMENT, SHALL BE FINAL AND BINDING, AND SHALL NOT SUBJECT THE CONSTRUCTION MANAGER TO ANY LIABILITY WHATSOEVER TO THE OWNER, CONTRACTOR, SURETY, OR ANY OTHER PERSON."

MODIFICATIONS TO DEFINITIONS

1. <u>Add</u> the following:

2. Submittals
   .1 *Submittals* are documents or items required by the *Contract Documents* to be provided by the *Contractor*, such as:
   .2 *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
   .3 As-built drawings and manuals to provide instructions to the operation and maintenance of the *Work*.

3. **3**Delete "Value Added Taxes" in its entirety and replace with **"Harmonized Sales Tax"** to read:
   "Value Added Taxes shall be as levied by the Federal Government and is computed at **Thirteen (13)** percent of the Contract Price. The payment or collection of which is by the legislation imposing such tax an obligation of the Contractor".

4. Add the following:
   .1 "Indirect and Direct Costs
      .1 Indirect Costs
         .1 Indirect costs include but are not limited to such soft cost items as:
            1. Head office overhead
            2. Off-site supervision (including non-working foremen)
            3. Change order preparation, research, negotiation, and associated travel
            4. Site supervision (including working foremen)
   .2 Direct Costs
      .1 Direct costs include but are not limited to such hard cost items as:
            5. Labour
            6. Material
            7. Off-site material carrying costs
            8. Shipping costs
            9. Restocking charges
            10. Additional performance and payment bond premiums
            11. Temporary protection
            12. Temporary heat, light, and power
            13. Material re-handling costs
            14. Safety equipment, staging, scaffolding, and lights".

MODIFICATIONS TO GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

GENERAL PROVISIONS

1. GC 1.1 CONTRACT DOCUMENTS
   .1 Add the following items to end of end of sentence 1.1.6.1:
      .1 All other information provided such as appended documents, specifications, reports, etc."
   .2 Paragraph 1.1.7.1 is amended by adding new subparagraphs .6, .7, and .8.
      .1 Architectural drawings shall have precedence over structural, plumbing, mechanical, electrical and landscape drawings insofar as outlining, determining and interpreting conflicts over the required design intent of all architectural layouts and architectural elements of construction. It shall be understood that the integrity and installation of the engineered systems are to remain with each of the applicable engineering disciplines.
      .2 In the case of conflict, other documents shall govern over the colour schedule and colour schedule drawings.
      .3 Addenda shall have priority over the documents they refer to or amend and addenda of a later date shall have priority over earlier documents of the same type."
   .3 Add the following paragraphs:
      .1 1.1.10 The Trade Contractor shall be provided with an electronic copy of Base AutoCAD Architectural, Structural, Mechanical and Electrical Drawings from the Consultant for the purpose of preparing shop drawings and as-built drawings. A service charge of $250.00 (Two Hundred and Fifty-Five and xx/100 Dollars) will apply for each electronic drawing file requested. The Trade Contractor is responsible for distribution of files and recovery of costs from subcontractors.
      .2 1.1.11 The digital data supplied by the Consultant will be provided to the Contractor as a matter of courtesy and convenience and is in no way to be taken as appurtenant to, associated with, or in placement of the officially signed and sealed contract documents. The data contained will be provided "as is" without warranty of any kind either expressed or implied and shall be relied upon as such. Although every care and diligence is taken to ensure the accuracy and correctness of all supplied data, any and all liabilities for damage, direct or indirect, however caused

and resulting in any from the use of the supplied digital data will be the full responsibility of the Contractor. The Contractor accepts these conditions upon acceptance of the digital data.

ADMINISTRATION OF THE CONTRACT

5.1 GC 2.2 ROLE OF THE CONSTRUCTION MANAGER AND CONSULTANT

1. Add the following item;
   .1 '2.2.2.3 The *Owner* and the *Trade Contractor* shall waive any claims against the *Construction Manager* or the *Consultant* arising out of the making of such interpretations and findings made in accordance with paragraphs 2.2.2.2 unless such interpretations and findings are the result of negligent actions or willful misconduct.
   .2 The consultants obligation to make findings on a large claim or large numbers of claims is subject to the terms and conditions of the Owner/Consultant Agreement.

5.2 GC 2.4 DEFECTIVE WORK

1. Add new subparagraphs 2.4.1.1 and 2.4.1.2:
   .1 "2.4.1.1 The Trade Contractor shall rectify, in a manner acceptable to the *Owner,* the *Construction Manager*, all defective work and deficiencies throughout the Work, whether or not they are specifically identified by the Construction Manager."
   .2 "2.4.1.2 The Trade 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."

EXECUTION OF THE WORK

6.1 GC 3.1 CONTROL OF THE WORK

1. Add the following to Paragraph 3.1.2:
   .1 add the word "schedules" after the word "techniques"
   .2 Add new paragraph 3.1.3:
      .1 "3.1.3 Prior to commencing individual procurement, fabrication and construction activities, the Trade Contractor shall verify, at the Place of the 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 Trade Contractor shall immediately notify the Consultant in writing and obtain written instructions from the Consultant before proceeding with any part of the affected work."

6.2 GC 3.4 DOCUMENT REVIEW

1. Delete paragraph 3.4.1 in its entirety and substitute new paragraphs 3.4.1 and 3.4.2:
      .1 "3.4.1 The Trade Contractor shall review the Contract Documents and shall report promptly to the Construction Manager any error, inconsistency or omission the Trade Contractor may discover and which may be reasonable determined by comparing the various Drawings and Specification documents. Such review by the Trade Contractor shall comply with the standard of care described in paragraph 3.14.1 of the Contract. Except for its obligation to make such review and report the result, the Trade Contractor does not assume any responsibility to the Owner or to the Construction Manager for the accuracy of the Contract Documents. The Trade Contractor shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the Contract Documents, which the Trade Contractor could not reasonably have discovered. If the Trade Contractor does discover any error, inconsistency or omission in the Contract Documents, the Trade Contractor shall not proceed with the work affected until the Trade Contractor has received corrected or missing information from the Consultant."
      .2 3.4.2 Notwithstanding the foregoing, inconsistencies and /or omissions shall not include lack of reference on Drawings or in Specifications or in the specifications to labour and or products that are required or normally recognized within respective trade practices as being necessary for the complete execution of the Work.

6.3 GC 3.5 CONSTRUCTION SCHEDULE

1. Add sentence .4 to paragraph 3.5.3:
   .1 .4"clearly indicate and communicate materials/products procurement and delivery dates paying particular attention to schedule"

6.4 GC 3.6 SUPERVISION

1. Add the following paragraphs:
   .1 3.6.3 The Owner may, with reasonable cause, at any time during the course of the Work, request the replacement of the supervisor or the representative. Upon receipt of such request, the Trade Contractor will immediately make arrangements to

appoint an acceptable replacement. Costs associated with any removal(s) or replacement(s) of these individuals shall be the responsibility of the Trade Contractor.

.2 3.6.4 The Trade Contractor shall employ an "Office Representative/Manager of the Work", in addition to the Superintendent of the Work, for the entire duration of the project.

.1 coordinating, managing and expediting control of the project relating to all matters of the project including ,but not limited to authorities having jurisdiction, product suppliers, subtrades, Owner and Consultant etc.

.2 Project scheduling and management (i.e. trades, products, etc.)

.3 Work with the Site Superintendent of the Work as required to ensure compliance of the Work with the intent of the Construction Documents including but not limited to projects scheduling, coordination of subtrades, quality control and performance of the Work.

.4 3.6.5 The Site Superintendent of the Work shall perform duties and responsibilities at the Place of Work until Total Performance of the Work has been achieved and as issued by the Consultant / Construction Manager.

.5 3.6.6 Both the Site Superintendent of the Work and the Office Representative/Manager of the Work shall have relevant and verifiable experience with undertaking and completing projects of this nature.

6.5 GC 3.7 TRADE SUBCONTRACTORS AND SUPPLIERS

1. Revise Paragraph 3.7.2 as follows:
2. After the word "if requested by the Construction Manager," in the first line add "when requested at the time of tender and within five (5) working days".
3. Add the following paragraph 3.7.7:
4. "3.7.7 The Trade Contractor shall not change subcontractors and/or suppliers and agrees not to do so without the prior written consent of the Owner and the Consultant. The Trade Contractor must substantiate cause for change.

6.6 GC 3.8 LABOUR AND PRODUCTS

1. Add to sentence 3.8.3:
   .1 Where the Contract Documents permit the use of salvaged materials and /or where those salvaged materials are provided by the Owner it shall be the responsibility of the Trade Contractor to be responsible for transportation to the project site, any taxes, handling, on-site storage and protection.
2. Add new paragraph 3.8.4:
   .1 "3.8.4 The Trade 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 Construction Manager. The Owner shall provide all relevant information on the Products to be supplied by the Owner."
3. Add new paragraph 3.8.5:
   .1 "3.8.5 The responsibility as to which Trade Subcontractor provides labour, products and services rests solely with the Trade Contractor".

6.7 GC 3.10 SHOP DRAWINGS

1. Add the words "AND OTHER SUBMITTALS" to the Title after SHOP DRAWINGS to read "SHOP DRAWINGS AND OTHER SUBMITTALS"
2. Add "and Submittals" after the words "Shop Drawings in all paragraphs of this section GC 3.10.
3. Delete 3.10.3 in its entirety and substitute new paragraph 3.10.3
   .1 GC.3.10.3 Prior to the first application for payment, the Trade Contractor and the Construction Manager shall together prepare a schedule of the dates for submission and return of Shop Drawings and any Submittals.
4. In item 3.10.2, and item 3.10.13, delete the words "with reasonable promptness so as to cause no delay in the performance of the Work" and replace with "within 10 working days for Architectural and Structural Trades and 15 working days for Mechanical and Electrical Trades or such longer period as may be reasonably required".
5. Add the following paragraphs to GC- 3.10:
   .1 3.10.14 The Trade Contractor acknowledges its responsibilities to submit complete shop drawings and other submittals. Incomplete submittals will be returned to the Trade Contractor unreviewed and will be not be deemed a bona fide submittal. No time extensions or cost increases will be allowed for delays caused by return of incomplete submittals.
   .2 3.10.15 The Trade Contractor shall submit shop drawings and other submittals for each and every component of the Work as a requirement of completing the Work and for verification and audit purposes as stipulated in the Contract Documents.
   .3 3.10.16 The Trade Contractor shall not provide any of the Products nor include those products in the Work without reviewed shop drawings and other submittals. The Trade Contractor will be totally responsible for rectifying and correcting the Work as required including assuming responsibility for all related costs should Products or the Work occur without approved Shop Drawings and Submittals.

.4 3.10.17 The Consultant's review will not include review of dimensions, quantities, calculations, weights, fabrication processes, construction means or methods, the coordination of trades, or safety factors relating to the construction for which the Contractor has the sole responsibility in connection therewith.

.1 Should any errors in dimensions, or interference with other work be noted by the Consultant in his review of the shop drawings, the attention of the Trade Contractor will be called to them, but review of shop drawings by the Consultant shall not in any was whatsoever relieve the Trade Contractor from responsibilities required for the preparation and submission of shop drawings.

.5 3.10.18 Only shop drawings indicated as 'Reviewed', 'Reviewed for General Design', Reviewed as Noted' or 'Reviewed as Modified' and bearing the Consultant's review date and initials, shall be used at the Place of the work or for the manufacture of fabrication of Products.

.6 3.10.19 The review of shop drawings, by the Consultant, does not authorize a change in the Contract Price or Contract Time.

6.8 GC 3.11 USE OF THE WORK

1. Add the following new paragraphs:

.1 3.11.3 The Owner shall have the right to enter and occupy the Work in whole or in part prior to Total Performance of the Contract if in the opinion of the Consultant this does not interfere with the Work or the Schedule. And, any entry or occupancy by the Owner shall not be considered acceptance of the Work or relieving the Trade Contractor of Contract obligations to completing the Work or to provide and maintain the specified warranties.

.2 3.11.4 The Owner shall have the right to occupy the Work as described elsewhere in this Contract.

.3 3.11.5 The Owner and the Trade Contractor shall cooperate together where occupancy may be required prior to Total Performance of the Contract.

6.9 GC 3.14 PERFORMANCE BY TRADE CONTRACTOR

1. Add new General Condition 3.14.1

.1 3.14.1 In performing its services and obligations under the Contract, the Trade Contractor shall exercise a standard of care, skill and diligence that would normally be provided by an experienced and prudent contractor supplying similar services for similar projects. The Trade Contractor acknowledges and agrees that throughout the Contract, the Trade Contractor's obligations, duties and responsibilities shall be interpreted in accordance with this standard. The Contractor shall exercise the same standard of due care and diligence in respect of any Products, personnel, or procedures which it may recommend to the Owner.

2 Add new General Condition 3.14.2

3.14.2 The Trade *Contractor* further represents, covenants and warrants to the *Owner* that:

.1 The personnel it assigns to the *Project* are appropriately experienced;

.2 It has a sufficient staff of qualified and competent personnel to replace its designated supervisor and project manager, subject to the *Owner's* approval, in the event of death, incapacity, removal or resignation.

PAYMENT

7.1 GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

1. Add the following to sentence 5.2.5:

.1 "The Construction Manager, Payment Certifier and Owner will determine the acceptance of the breakdown submitted. The Trade Contractor will revise as directed".

2. Add the following new paragraph:

.1 "5.2.8 The second and all subsequent applications for payment including application for release of holdback shall be accompanied by:

.1 Statutory Declaration, required by the Contract Documents executed by the Trade Contractor, in the form prescribed by the Construction Manager, declaring that all accounts for labour, subcontracts, products, construction machinery and equipment and other indebtedness which may have been incurred by the Trade Contractor in the performance of the work for which the Owner might in any way be held responsible have been paid in full except holdback monies properly retained."

.2 any other documents required by the Contract Documents

.3 The second and all subsequent applications for payment, including application for release of holdback, shall be accompanied by a Workplace Safety and Insurance Board (WSIB) Clearance Certificate and a Statutory Declaration. The Statutory Declaration shall be executed by the Contractor, in the form prescribed by the Consultant, declaring that all accounts for labour, subcontracts, products, construction machinery and equipment and other indebtedness, which may have been incurred by the Trade Contractor in the performance of the work, and for which the Owner might in any way be held responsible, have been paid in full except holdback monies properly retained.

3. Add the following new paragraph:

.1 5.2.10 Payment at the end of each month is subject to submission of the following Prerequisite documentation. Furthermore, payment will only be made upon receipt of complete information:

.1 Regarding Mitigation Measure/Requirements: Written Proof and documentation that mitigation measures/requirements have been met on an item by item basis.

.2 Each payment and Final payment is subject to receipt of all required documentation.

7.2 GC 5.3 PROGRESS PAYMENT

4. Delete the word "calendar" and substitute the word "business" in sentence 5.3.1.2:
5. .Delete the word "calendar" and substitute the word "business" in sentence 5.3.1.3:
6. Delete the last two bulleted sentences and insert "after receipt by the Owner of the Application for Payment from the Payment Certifier or Construction Manager.

7.3 GC 5.4 SUBSTANTIAL PERFORMANCE OF WORK

1. Add the following paragraph:

.1 "5.4.4 Procedures upon application by the Trade Contractor for Certificate of Substantial Performance of the Work, and for statement of Completion of the contract, respectively, shall be in accordance with OAA/OGCA Document No. 100, November 1983, Take Over Procedures."

2. Add the following paragraph:

.1 "5.4.5 In addition to the requirements of applicable lien legislation, a condition precedent to Substantial Performance of the Work shall include submission to the Construction Manager of the following materials and documentations:

.1 submission of warranties, operating and maintenance manuals, shop drawings and as-builts records in acceptable manner;

.2 systems demonstrations and instruction of Owner in the operation of systems;

.3 receipt and submission of the OBC and Municipal Occupancy Permits;

.4 receipt and submission of sprinkler system approval from Insurance Advisory Organization;

.5 Submission to and acceptance by the Consultant of interim accounts of the Work showing all additions and deletions to the Contract Price;

.6 receipt and submission of elevator inspection and approval by governing authorities;

.7 verification reports confirming systems and equipment started up and tested, except for final balancing;

.8 verification reports confirming all life safety systems verified by Contractor as complying with the requirements of the Contract Documents;

.9 Inspection reports from local fire authority confirming that life safety systems installed are acceptable;

.10 submission of all spare parts and maintenance materials

.2 5.4.7 The Trade Contractor shall co-operate with the Consultant and Owner in establishing a Deficiency List before Substantial Performance of the Work. The Contractor shall complete the Work noted on the Deficiency List expeditiously and at the discretion and convenience of the Owner

.3 5.4.8 Acceptance of the Work by the Owner does not relieve that Trade Contractor from correcting deficiencies that are missed at the time of preparing the deficiency list, or hidden deficiencies, which become apparent during warranty period.

.4 5.4.9 The publication by the Trade Contractor of the Certificate of Substantial Performance of the Work shall constitute a waiver by the Contractor, whether for a change in the Contract Price, extension of Contract Time or otherwise, except those made in writing, prior to the Trade Contractor's application for payment upon Substantial Performance of the Work, and still unsettled.

7.4 GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL COMPLETION OF THE WORK

1. Add the following to Paragraph 5.5.1:

.1 `The Trade Contractor shall submit a written request for release of holdback including a declaration that no written notices of lien have been received and shall submit a Workplace and Insurance Board Certificate of Clearance.'

2. Delete paragraph 5.5.3 in its entirety.
3. Add the following Paragraph:

.1 "5.5.6 If a lien is registered by a Subcontractor, supplier, labourer, or mechanic, the Trade Contractor shall reimburse the Owner for damages and costs which may result from such action, and the Trade Contractor shall pay for all legal costs incurred in the removing of such lien."

7.5 GC 5.7 FINAL PAYMENT

1. Add the following to Paragraph 5.7.1:

.1 "5.7.1 (cont'd)

.2 The Contract shall be deemed to be completed when the price of completion or correction of known defects is not more than the lesser of
.3 One percent (1%) of the contract price; and
.4 $1,000.00."

2. Amend paragraph 5.7.4 to read as follows:
   .1 "5.7.4 Subject to the provision of paragraph 10.4.1 of GC 10.4 - WORKERS' COMPENSATION, and any lien legislation applicable to the Place of the Work, the Owner shall, no later than (20) calendar days after the issuance of a final certificate for payment, pay the Trade Contractor as provided in Article A-5 of the Agreement - PAYMENT."

CHANGES IN THE WORK

8.1 GC 6.2 CHANGE ORDER

1. Add the following paragraphs:

.1 "6.2.3 The value of a change shall be determined in one or more of the following methods:
   .1 By estimate and acceptance in a lump sum substantiated by an itemized cost breakdown satisfactory to the Consultant with the applicable overhead and profit percentage fees applied.;
   .2 By unit prices set out in the Contract or subsequently agreed upon;
   .3 By cost and a fixed or percentage fee.

.2 "6.2.4 In the case of changes in the Work to be paid for under methods (.1) and (.3) of paragraph 6.2.3, the Trade Contractor and Subcontractor, respectively, may add to the reasonable net cost of additional work a fee, or mark-up, inclusive of overhead and profit, limited to the following:
   .1 The Trade Subcontractor may add to the total net cost of labour and materials, a fee, or mark-up, equal to ten percent (10%) of such cost for Work done by a subcontractor.
   .2 The Trade Contractor may add to the total net cost of labour and materials of additional work to be carried out by his own forces a fee, or mark-up equal to fifteen percent (15%) of such cost.

.3 In the event that Owner initiated changes in the Work result in delays to the completion of the Project, the Trade Contractor and/or the subcontractor(s) who are executing the Work shall each be allowed an additional one (1%) percent of the cost of the changes as compensation in full for the delay.

.4 For Owner requested substitution of building material(s) and/or building component(s) with *no additional labour content* by the Trade Contractor, a total mark-up of five (5%) percent shall be allowed on such changes regardless of the value of the change

.5 For Owner requested substitution of building material(s) and/or building component(s) with *no additional labour content* by the subcontractor(s), the subcontractor(s) shall be allowed a total mark-up of five (5%) percent and the Trade Contractor shall be allowed an additional total mark-up of five (5%) percent regardless of the value of the change.

.6 Such fee or mark-up, by Trade Contractor and subcontractor respectively, shall be based on net additional cost for any one change in the Work, such net additional cost being derived by deducting credits for labour and materials involved in deleted work from the cost of labour and materials involved in additional work. When quantities of the same product or material are changed in the same Change in the Work, the change in the Contract Price shall be based on the net difference in quantity between the product or material deleted and the same product or material added. The procedure of crediting deleted material at a certain unit cost and then charging the aggregate quantity of the same material at a higher unit cost will not be accepted.

.7 The Consultant alone shall determine the scope of change.

.8 Consideration for Unusual Changes: unusual and/or peculiar changes requiring consideration shall be reviewed on an individual basis. The consultant alone shall determine what constitutes an unusual and/or peculiar change.

.9 Changes for Cause and/or Changes for Convenience: The Trade Contractor and all sub-contractors must demonstrate, by way of their submissions, that any/all products and/or substitutions are made as substitutions for ‘cause’ in support of the intent of of the contract documents.

.10 Changes and/or Substitutions deemed ‘for convenience’ will not be considered and allowed. The Construction Manager alone will determine the acceptance of a change or Substitution.
   .1 "6.2.5 In the case of a Change in the Work to be paid for under method (.2) of Paragraph 6.2.3, involving a class of work for which a unit price was required to be quoted in the Tender proposal, the cost to be paid for such class of work, derived by deducting quantity of deleted work involved in such change from the quantity of additional work involved in such change, multiplied by the applicable unit prices quoted.
   .2 "6.2.6 'Overhead' shall include any additional charges and/or premiums for Permits, Bonds, Insurance, Site Supervision, Office Administration and the like, which may result from Changes in the Work, whether calculated on the basis of quoted Unit Prices, or on the basis of Cost Plus Fee or Mark-up."
   .3 "6.2.7 Except where Unit Prices have been quoted, the value of a change in the Work shall be determined by method (3) of Paragraph 6.2.3”
   .4 "6.2.8 Where the additional cost of a change in the Work has been quoted by the Trade Contractor and accepted by the Owner in the form of a lump sum as evidenced by the issuance of a Change Order, such quoted cost shall

be deemed to have included all costs, including any costs for delay of work, which are or may be occasioned by such change. No later claims for additional costs will be considered."

.5 6.2.9 The Trade Contractor's fee, or mark-up, inclusive of overhead and profit, is understood to include, without limitation, the following:

.1 The Trade Contractor's head office and administration expenses, associated travelling /
.2 Accommodation / meals costs, financing costs including holdback, bonding and insurance costs;
.3 All supervision, co-ordination, administration, margin and risk of undertaking within stipulated a mount;
.4 The salaries of superintendents, project managers, engineers, timekeepers, accountants,
.5 Clerks, and all other Site supervision staff above foreperson level employed directly on the Work;
.6 The Trade Contractor's mark-up and profit;
.7 use of temporary offices, sheds and other general temporary Site support facilities and utilities used therein;

.6 miscellaneous additional costs related to:

.1 licenses, building permit and statutory fees, except when these are special for a particular item of Work;
.2 purchase of rental material, plant and equipment;
.3 purchase of small tools and supplies;

8.2 GC 6.3 CHANGE DIRECTIVE

1. Delete Paragraph 6.3.11 in its entirety.

8.3 GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

1. Add new subparagraph 6.4.5:

.1 6.4.5 The Trade 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 3.14.1. The Trade Contractor is not entitled to compensation or to an extension of the Contract Time for conditions which could reasonably have been ascertained by the Trade Contractor by such careful investigation undertaken prior to the submission of the bid.

8.4 GC 6.5 DELAYS

1. Delete the period at the end of paragraph 6.5.1, and substitute the following words:

.1 ", but excluding any consequential, indirect or special damages."

2. Paragraph 6.5.2 shall be amended by deleting the period at the end of the paragraph and adding: "but excluding any consequential, indirect or special damages."
3. Add new subparagraph 6.5.6.

.1 6.5.6 "If the Trade Contractor is delayed in the performance of the Work by an actor omission of the Trade Contractor or anyone directly or indirectly employed or engaged by the Trade Contractor, or by any cause within the Trade Contractor's control, then the Contract Time shall be extended for such reasonable time as the Consultant may decide in consultation with the Trade Contractor. The Owner shall be reimbursed by the Trade Contractor for all reasonable costs incurred by the Owner as the result of such delay, including, but not limited to, the cost of all additional services required by the Owner from the Consultant or any trade sub consultants, project managers, or others employed or engaged by the Owner. 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 directly or indirectly, or by stop work order or by a court or public authority as the result or an act of the contractor, or by unusual delay by common carriers or unavoidable casualties or, without limit to any of the forgoing, by any cause within the Trade Contractor's control."

DISPUTE RESOLUTION

9.1 GC 8.1 AUTHORITY OF THE CONSULTANT

1. Amend paragraph 8.1.2 to read as follows.

.1 "8.1.2 A party shall be conclusively deemed to have accepted a finding of the Construction Manager and Consultant under GC 2.2 - ROLE OF THE CONSTRUCTION MANAGER AND 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 the notice of dispute setting out particular of this response and any relevant provisions of the Contract Documents."

2. Add the following paragraphs:

.1 It is agreed that no act by either party shall be construed as a renunciation or waiver of their rights or recourses, provided they have given the notices in accordance with paragraph 8.1.2 and have carried out the instructions as provided in paragraph 8.1.3."

.2 "8.1.5 If the dispute is not resolved in the first instance by the decision of the Construction Manager and Consultant, then either party may submit the dispute to such judicial tribunal as the circumstances may require."

.3 "8.1.6 In recognition of the obligation by the Trade Contractor to perform the disputed work as provided in paragraph 8.1.3, it is agreed that settlement of dispute proceedings may be commenced immediately following the dispute in accordance with the aforegoing settlement of dispute procedures."

9.2 GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION

1. Add the following new paragraphs 8.2.9, 8.2.10, 8.2.11, 8.2.12., 8.2.13., and 8.2.14.

.1 8.2.9 Within five days of receipt of the notice of arbitration by the responding party under paragraph 8.2.6, the *Owner* and the Trade *Contractor* shall give the Construction Manager and the *Consultant* a written notice containing:

.1 A copy of the notice of arbitration

.2 A copy of supplementary conditions 8.2.9 to 8.2.14 of this *Contract*, and;

.3 Any claims or issues which the Trade *Contractor* or the *Owner*, as the case may be, wishes to raise in relation to the Construction Manager or *Consultant* arising out of the issues in dispute in the arbitration

.2 8.2.10 The *Owner* and the Trade *Contractor* agree that the Construction Manager or *Consultant* may elect, within ten days of receipt of the notice under paragraph 8.2.9, to become a full party to the arbitration under paragraph 8.2.6 if the Construction Manager and *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 Trade *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 8.2.6, and,

.4 Agrees to be bound by the arbitral award made in the arbitration.

.3 8.2.11 If an election is made under paragraph 8.2.10, the Construction Manager or *Consultant* may participate in the appointment of the arbitrator and, notwithstanding the rules referred to in paragraph 8.2.6, 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.

.4 8.2.12 The arbitrator in the arbitration in which the Construction Manager or *Consultant* has elected under paragraph 8.2.10 to become a full party may:

.1 On application of the *Owner* or the Trade *Contractor*, determine whether the Construction Manager or *Consultant* has satisfied the requirements of paragraph 8.2.10, and;

.2 Make any procedural order considered necessary to facilitate the addition of the Construction Manager or *Consultant* as a party to the arbitration.

.5 8.2.13 The provisions of paragraph 8.2.9 shall apply mutatis mutandis to written notice to be given by the Construction Manager or *Consultant* to any trade sub-consultant;

.6 8.2.14 In the event of notice of arbitration given by the Construction Manager or *Consultant* to a trade sub-consultant, the trade sub-consultant is not entitled to any election with respect to the proceeding as outlined in 8.2.10, and is deemed to be bound by the arbitration proceeding.

PROTECTIONS FOR PERSONS AND PROPERTY

10.1 GC 9.1 PROTECTION OF WORK AND PROPERTY

1. Delete subparagraph 9.1.1.1 in its entirety and substitute new subparagraph 9.1.1.1:

.1 9.1.1.1 Errors in the *Contract Documents* which the *Trade Contractor* could not have discovered applying the standard of care described in paragraph 3.14.1;

2. Delete paragraph 9.1.2 in its entirety and substitute the following new paragraph 9.1.2:

.1 9.1.2 Before commencing any *Work*, the *Trade Contractor* shall determine the locations of all underground utilities and structures indicated in the *Contract Documents*, or that are discoverable by applying to an inspection of the *Place of the Work* the degree of care and skill described in paragraph 3.14.1.

10.2 GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

1. .Add the word ‘designated’ to the words “toxic “and “hazardous” in this General Condition
2. .Add the following sentence to paragraph 9.2.1:
3. Designated substances shall be as defined by applicable legislation and the Occupational Health and Safety Act.
4. Add to paragraph 9.2.6 after the word "responsible”, the following new words:

.1 “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 Trade *Contractor* or anyone for whom the Trade *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. Subparagraph 9.2.7.4 is deleted.
6. Add to paragraph 9.2.8 after the word "responsible", the following new words:
   .1 "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 Trade *Contractor* or anyone for whom the Trade *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,"

.6 Add the following to subparagraph 9.2.8.4:
   .1 Add "and the Construction Manager and the Consultant" after the word "Owner"

10.3 GC 9.5 MOULD

1. Add the following to Subparagraph 9.5.2.4:
   .1 Add "and the Construction Manager and Consultant" after the word "Owner"
2. Delete Subparagraph 9.5.3.4.

GOVERNING REGULATIONS

11.1 GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

1. Delete from the first line of paragraph 10.2.5 the word, "The" and substitute the words:
   .1 "Subject to paragraph 3.14.1, the".

INSURANCE AND CONTRACT SECURITY

12.1 GC 11.1 INSURANCE

1. .Delete paragraph 11.1.1.2 (aircraft and watercraft liability insurance requirements).
2. .Refer to CCDC 41 – CCDC Insurance Requirements, revise paragraph 2 (automobile liability insurance) by replacing the amount of $5,000,000 with the amount of $2,000,000.
3. Revise paragraph 11.1.3 by replacing the amount of deductible amount of $10,000 with $2,500 and by replacing the limits of insurance of $10,000,000 with $5,000,000.

INDEMIFICATIONS, WAIVER OF CLAIMS AND WARRANTY

13.1 GC 12.1 INDEMNIFICATION

1. Paragraphs 12.1.1, 12.1.2, and 12.1.3 of the General Conditions are deleted and replaced with the following:
   .1 12.1.1 The Trade Contractor shall indemnify and hold harmless the Owner, its officers, elected and non-elected officials, partners, agents and employees from and against all actions, claims, demands, losses, costs, damages, suits or proceedings whatsoever which may be brought against or made upon the Owner and against all loss, liability, judgments, claims, suits, demands or expenses, including interest and legal costs, which the Owner may sustain, suffer or be put to resulting from or arising out of the Trade Contractor's failure to exercise reasonable care, skill or diligence or omissions in the performance or rendering of any work or service required hereunder to be performed or rendered by the Trade Contractor, its agents, officials and employees.

13.2 GC 12.3 WARRANTY

1. Delete from the first line of paragraph 12.3.2 the word, "The" and substitute the words:
   .1 "Subject to paragraph 3.14.1, the…"
2. Add the following Paragraphs:
   .1 "12.3.8 Faulty materials or workmanship shall include but not be limited to shrinkage, expansion and movement. Make good all deficiencies outstanding within thirty (30) days from the end of warranty period.
   .2 "12.3.9 The Trade Contractor or Trade Subcontractor responsible shall also bear all costs involved in removing or replacing adjacent affected materials, including owners' Goods and equipment, that may be disturbed and which shall be required in the complete restoration of the original finish.

DIVISION 01 - GENERAL REQUIREMENTS

01 00 00 – GENERAL REQUIREMENTS

1. Division One Requirements:
   .1 The provisions of sections of division one to apply to each section of the Specifications, including those of Divisions 21 to 27.
2. Sleeving:
   .1 Assess requirements for sleeving the structural elements for passing of pipes, conduits and other mechanical or electrical components, and include work required for approved interfacing between the structure, mechanical and electrical work, and other components of the work. Confirm and coordinate sleeving locations with mechanical and electrical trades as required during the construction of the work.
3. Concealing of Mechanical and Electrical Components:
   .1 Include work required to modify indicated location of pipes, ducts, conduits, and other mechanical or electrical components to fully conceal such components from view in finished spaces, except where indicated otherwise.
4. Drainage:
   .1 Ensure that positive drainage is provided to roof, floor, site drains and catch basins, as set in their final positions, and at other locations to prevent water infiltration into the building. Provide constant slopes for drained surfaces to drains and drainage courses.
   .2 Verify the extent of each area served by a drain, or drainage course, to eliminate possible undrained surfaces. Co-ordinate the work of involved Subcontractors before each of their work proceeds.
   .3 If water is found to be ponding on roof areas due to improperly placed drains, install additional drains to alleviate water ponding at no cost to the Owner. If extra drains are required co-ordinate the location of rainwater leaders with the Consultant.
5. Documents at Job Site:
   .1 Maintain at job site, one copy each of the following and make same available to the Consultant upon request:
      .1 current contract documents including drawings, specifications and addenda
      .2 change orders, change directives and supplementary instructions,
      .3 reviewed shop drawings, product data and samples,
      .4 field test reports and records
      .5 construction progress schedule,
      .6 meeting minutes
      .7 manufacturer's certifications, installation and application instructions.
      .8 permits, inspections certificates and other documents required by authorities having jurisdiction,
      .9 current as built drawings,
      .10 material safety data sheets (MSDS) for all controlled products.
      .11 Ontario Building Code and Guide to the Ontario Building Code, 2012 edition.
6. Cutting and Patching:
   .1 Do not cut, drill or sleeve load-bearing members without obtaining Consultant's written approval for each condition.
   .2 Schedule and coordinate Work to minimize cutting and patching. Cut and patch as required to make work fit. Use workers qualified in work being cut and patched to ensure that it is correctly done.
   .3 Cut, patch and make good to accommodate Work and to leave Work in finished condition. Cutting in this sense to mean actual cutting of components to allow new components to pass through or to provide new openings. Cutting to not mean mere drilling of holes to accommodate screws, anchors, bolts or other fasteners as such. Such drilling is part of Section's installation function.
   .4 Use workers qualified in work being cut and patched to ensure that it is correctly done.
   .5 Make cuts with clean, true, smooth edges to tolerances required and in conformance with industry practice for applicable class of work. Make patches undetectable in finished work.
7. Cold Weather Construction:
   .1 Work of this Contract to be carried forward to completion with possible speed for the full twelve (12) months of every year and to commence when the Contract is awarded.
   .2 The Contractor to be deemed to have included in his pricing ample funds for the provision of necessary temporary heating, temporary enclosures and other cold weather measures during cold weather construction period from September 15th of each year to May 31st of the following year.
   .3 Provide labour, plant, equipment and services to provide and maintain adequate heat for work of trades within the building. The use of open fires or salamanders is not permitted. Temperatures attained to not be injurious to materials or finishes of any trade.
   .4 During cold weather periods, maintain the ambient air temperature at working areas at or above 5° Celsius for trades requiring above freezing temperatures to ensure specified quality of work and workmanship. Erect and maintain temporary enclosures as required.

.5 The use of the permanent heating plant for temporary heat in areas of the building not occupied by the public will not be permitted unless authorized by the Consultant in writing and then only under conditions set out in the mechanical sections of these Specifications and in a manner which guarantees and warrantees on equipment will not be affected.

.6 Maintain adequate venting, ventilation and humidity to ensure proper curing of materials, safeguard finishes and to prevent build-up of combustion gases within enclosures.

.7 In cold weather, the Contractor to provide ambient minimum protection as follows:

Outdoor Air Temperature		*Type of Heat*	*Enclosure*
5 degC to 2 degC	(41 degF to 36 degF)	None	None
2 degC to -4 degC	(36 degF to 25 degF)	Vented heater	Windbreak tarpaulin or plastic / canvas enclosure
-4 degC to -8 degC	(25 degF to 18 degF)	Vented heater	Windbreak tarpaulin or plastic / canvas enclosure
-8 degC to -18 degC	(18 degF to 0 degF)	Temporary heating	Full enclosure of approved type
below -18 degC	(below 0 degF)	Temporary heating	Full enclosure of approved type

8. Labels and Nameplates:
   .1 Do not install permanent or permanently attached labels, trademarks, and nameplates in visible locations on materials and components, unless required for operating instructions or by Jurisdictional Authorities.
9. Work of Other Consultants:
   .1 Refer also to the work of other consultants included in this package and / or retained by the Owner. Coordinate requirements defined by others as required.
10. Air Leakage and Expansion Control:
   .1 Recognizing that wall and roof materials are not dimensionally stable, and that they move differentially from the structural frame, the location of cracks should be anticipated and an airtight diaphragm and/or flexible sealants incorporated to maintain air-tightness, and to prevent problems due to vapour condensation.
   .2 In addition, connections between structural steel members are not airtight and perimeter connections must be made airtight.
   .3 Although concealed behind convectors, paneling, wallboard or suspended ceilings, the interior surfaces of exterior walls and roofs to be made airtight. Ensure that backup masonry walls are well laid with full mortar joints, and wallboard joints are sealed.
   .4 The manner of installation of pipes, ducts, conduits, and electrical outlets to be thoroughly coordinated to prevent the occurrence of air leaks: When pipes or conduits run adjacent to exterior walls and are to be furred in, not only to the exterior wall be airtight, but it to be adequately insulated to prevent cold spots on which condensation could occur in the cold space. Provide a continuous air seal between the airtight part of a wall or ceiling and the frames of openings such as windows, doors, hatches, ducts, grilles, louvres, structural steel members and the like.
   .5 As a general rule, the air / vapour barrier must be on the interior (warm) side of the insulation and should be in contact with it.
   .6 In addition to the specific requirements in each technical section of the Specification, make allowance for expansion control throughout the construction. Ensure that poured paving and slabs, exterior to the building structure, together with applied materials are not tight to building face, and that expansion control joints are left to accommodate movement.
   .7 Take particular care in constructing walls around wet areas such as showers, to avoid moisture transfer to adjacent building areas.
11. Division of the Work: Division of the work among the subcontractors and suppliers is solely the Contractor's responsibility. The Architect and Owner assume no responsibility to act as an arbiter to establish subcontract limits between sections or Division of the work.

01 18 00 – PUBLIC UTILITIES AND SERVICES

1. At public utilities and services complete the following:
   .1 Verify limitations imposed on project work by presence of utilities and services, and ensure no damage occurs to them.
   .2 Notify service authorities concerned so that they protect, remove, relocate or discontinue them, as they may require.
   .3 Make arrangements for services required for project work.
   .4 Locate poles, pipes, conduit, wires, fill pipes, vents, regulators, meters, and sanitary service work in inconspicuous locations. If not shown on drawings, verify location of service work with Consultant before commencing installation.

01 31 00 – BUILDING DIMENSIONS AND COORDINATION

1. Ensure that necessary job dimensions are taken and trades are co-ordinated for the proper execution of the work. Assume complete responsibility for the accuracy and completeness of such dimensions, and for co-ordination.
2. Verify that work, as it proceeds, is executed in accordance with dimensions and positions indicated which maintain levels and clearances to adjacent work, as set out by requirements of the drawings, and ensure that work installed in error is rectified before construction resumes.

3. Check and verify dimensions referring to the work and the interfacing of services. Verify dimensions, with the trade concerned when pertaining to the work of other trades. Be responsible to see that Subcontractors for various trades cooperate for the proper performance of the Work.
4. Avoid scaling directly from the drawings. If there is ambiguity or lack of information, immediately inform the Consultant. Be responsible for any change through the disregarding of this clause.
5. All details and measurements of any work which is to fit or to conform to work installed to be taken at the building.
6. Advise Consultant of discrepancies and if there are omissions on drawings, particularly reflected ceiling plans and jointing patterns for paving, ceramic tile, or carpet tile layouts, which affect aesthetics, or which interfere with services, equipment or surfaces. DO NOT PROCEED without direction from the Consultant.
7. Ensure that each Subcontractor communicates requirements for site conditions and surfaces necessary for the execution of the Subcontractor's work, and that he provides setting drawings, templates and other information necessary for the location and installation of material, holes, sleeves, insets, anchors, accessories, fastenings, connections and access panels. Inform other Subcontractors whose work is affected by these requirements and preparatory work.
8. Prepare interference drawings to properly coordinate the work where necessitated. Refer to Section 01 33 00.
9. Where work incorporates metric modular components, the following rules apply:
   .1 Actual opening dimensions in masonry including doors, windows, walls, louvres and actual room sizes are 10mm (3/8") greater than nominal dimensions given on Drawings. Actual thicknesses of walls, piers and overall lengths of walls or buildings are 10mm (3/8") less than nominal dimensions given on Drawings unless indicated otherwise.
   .2 Unless indicated otherwise drawing details at scales of 1/2" = 1'-0" (1:10) or larger indicate "actual" rather than "nominal" dimensions.

01 33 00 – SUBMITTAL PROCEDURES

1. Submit shop drawings in accordance with the attached schedule. Refer also to structural, mechanical, electrical drawings for additional submittals that may be required.
2. Submit one electronic copy in pdf format of each submittal and or shop drawing. The review by the Consultant is for the sole purpose of ascertaining conformance with the general design concept. The review does not mean that the Consultant approves the detail design inherent in the shop drawings, responsibility for which to remain with the Contractor submitting same, and such review does not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting requirements of the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation, and for coordination of the work of trades. The review of this drawing and/or any notes added to it, does not constitute authorization to proceed with any work which, in the Contractor's or Supplier's opinion, will involve extra cost to the Owner. In the event of any conflict between the Contract Documents and a shop drawing, the Contract Documents to govern. Shop drawings to show;
   .1 The name of the project.
   .2 Kinds of material and finishes.
   .3 Sections, arrangements and details which indicate complete construction, as well as interconnections with other work.
   .4 Fabrication and erection dimensions, together with quantities and/or locations.
   .5 Assumed design loadings, dimensions of elements and material specifications for load-bearing members.
   .6 Data verifying that superimposed loads will not affect function, appearance and safety of work shown on shop drawings, as well as other work interconnected.
   .7 Proposed chases, sleeves, cuts, and holes in structural members.

SUBMITTAL SCHEDULE							
product / system description	***samples***	***product literature / data sheets***	***maintenance instructions***	***shop drawings***	***field review report***	***report / modelling analysis***	***additional requirements (refer to notes to submittal schedule)***
Compaction Test Results						x	Provide compaction testing at frequency as defined by the specifications – refer to civil structural drawings

Hollow Metal Door and Frame Shop Drawings		x	x	x			In addition to typical shop drawings / schedule, provide detailed product literature that describes typical doors and frames.
Hardware Schedule and Catalogue Cuts		x	x	x			

Record Drawings				x			Record drawings to be prepared by the Contractor. Maintain one full set of drawings and specification on the site. Accurately record changes to the contract documents on these drawings and submit to the Architect at substantial completion of the work.
Electrical Safety Authority (ESA) Certificate						x	
Warranties						x	Provide copies of warranties and extended warranties signed and sealed by the Contractor and Trade Contractors. Where applicable provide extended warranties as required by the specifications.
Contractor / Trade Contractor Contact List Index						x	Provide a list of trades, contractors and suppliers that have contributed to the project. Provide corporate names, addresses, email telephone numbers and contact names for each.
Project Manual						x	At substantial completion provide a hardcopy and pdf copy of the project manual. Provide a detailed index of materials. Include copies of items in this schedule. Samples are not required.

3. Submittals When Project is Substantially Performed
   .1 Manufacturer's Data Book and Shop Drawings:
      .1 Provide the Owner with shop drawings and Manufacturer's Data Books at the completion of the Project.
      .2 Shop drawings shall consist of two complete sets of final "REVIEWED" and "REVIEWED AS MODIFIED" shop drawings, on which corrections have been recorded of changes made during fabrication and installation of unforeseen conditions. Do not include drawings which were noted "REVISE AND RESUBMIT".
      .3 The Manufacturer's Data Book shall consist of two (2) bound copies of hard, black, vinyl-covered loose leaf binders, to accommodate 8-1/2" x 11" sheets. Binders shall match in all dimensions. A title sheet labelled "Manufacturer's Data Book" with project name, and the date of Substantial Performance and list of contents shall precede data. Organize required material into applicable sections of work. Each section shall be marked by labelled tabs protected with celluloid covers fastened to hard paper dividers.
      .4 The Manufacturer's Data Book shall contain:
         .1 Equipment and operating instructions on all operable equipment and on all mechanical and electrical equipment, plumbing fixtures, and architectural hardware. Notes shall be typed. Drawings shall be neatly drafted and inked, or white-printed. Refer to Divisions 15 and 16 for additional requirements.
         .2 Maintenance instructions for all exterior, and interior floors, walls and ceiling surfaces.
         .3 Operating and maintenance instructions for all mechanical and electrical equipment.
         .4 Original brochures on all equipment.
         .5 Parts lists on all equipment including a list of suppliers.
         .6 All additional material used in the project beyond that indicated by brochures listed under the various sections, showing manufacturers and sources of supply.
         .7 Names, addresses and telephone numbers of the designer(s) and major contractor(s) who worked on the building.
         .8 Commissioning data such as air and water flows and regulating valve positions.

01 35 00 – SAFETY

1. The Contractor shall conform to and enforce strict compliance with the Occupational Health & Safety Act and Construction Regulations, the Environmental Protection Act, Workplace Hazardous Materials Information System (WHMIS), Transportation of Dangerous Goods Act, and any other pertinent legislation for construction projects.
2. The Contractor for purposes of the Occupational Health & Safety Act, will be designated as the constructor for this project and will assume all of the responsibilities of the constructor set out in that Act and its Regulations.
3. The Contractor shall monitor the Work to ensure that all applicable Health & Safety Regulations are followed. Violations will be documented, appropriate action taken, and records kept on file.
4. The Contractor shall be informed of any minor violations of the Occupational Health & Safety Act or its Regulations and shall correct such minor violations immediately.
5. The Consultant or its authorized representative shall stop the Work immediately for any major violation of the Occupational Health & Safety Act or its Regulations. The Contractor shall not resume the Work until any such violation has been rectified.
6. The Contractor shall be responsible for any delay in the progress of the Work due to a violation of legislated health and safety requirements, and shall take the necessary steps to avoid delay in the final completion of the Work without additional cost to the Owner.
7. The Contractor shall provide procedures, equipment and plan the sequence and methods of construction so that all persons in the place of work are safe given the current COVID -19 pandemic.
8. The Contractor shall develop a site operations safety policy to address and describe all strategies required to keep person safe on the site(s) and places of work used to fulfil this contract with respect to the COVID-19 pandemic. The policy shall address the following;
   .1 roles and responsibilities,

.2 best practices / preventative measures; hygiene, social / work place distancing, self-diagnoses / symptom monitoring, travel, site attendance records, screening procedures, duty to communicate, outbreak procedures, the use of personal protective equipment,

.3 privacy + confidentiality

9. When made possible by availability of covid-19 vaccines, all persons executing work on the project are encouraged to be vaccinated.
10. All persons working on the site shall submit to screening protocol at interval as required by the Owner.
11. The Contractor shall provide a telephone, first aid kit, stretcher, blanket, eye wash station, hand sanitizers, face masks, and any other measures foreseeable in the site office, or other appropriate location, for routine and / or emergency use.
12. The Contractor to perform the Work in a safe manner and to comply with applicable municipal, provincial, and federal legislation and any other regulation by authorities having jurisdiction of construction projects. In the event of conflict between any provisions on the above authorities, the most stringent provision to apply.

01 35 26 – LIFE AND FIRE SAFETY

1. General:
   - **.1** Enforce requirements established by Jurisdictional Authorities and Underwriters for life safety, fire prevention, and fire protection.
   - **.2** Be **proactive** by means of communication with Building Controls and Local Fire Department regarding ongoing Life and Fire Safety.
2. Fire Safety Plan:
   - **.1** All Contractors and their personnel shall be familiar with this section and its requirements. And, the contents of this section shall not diminish or relieve the contractor of his/her/ contractual obligations to the Owner.
3. Fire Department Briefing:
   - **.1** The General Contractor shall coordinate arrangements for the trade Contractors to be briefed on Fire Safety at their pre-work conference by the Fire Chief before any work is commenced.
4. Reporting Fires:
   - **.1** Know the location of nearest fire alarm box and telephone, including the emergency phone number.
   - **.2** Report immediately all fire incidents to the Fire Department as follows:
     - .1 Activate nearest fire alarm box, or
     - .2 Telephone.
   - **.3** Person activating fire alarm box shall remain at the box to direct Fire Department to scene of fire.
   - **.4** When reporting a fire by telephone, give location of fire, name or number of building and be prepared to verify the location.
5. Interior and Exterior Fire Protection and Alarm Systems:
   - **.1** Fire protection and alarm systems shall not be:
     - .1 Obstructed,
     - .2 Shut Off, or
     - .3 Left inactive at the end of a working day or shift without notification and authorization from the Fire Chief or his representative.
   - **.2** Fire hydrants, standpipes and hose systems shall not be used for other than firefighting purposes unless authorized by the Fire Chief.
   - **.3** Fire Extinguishers:
     - .1 The Contractor shall supply fire extinguishers, as scaled by the Fire Chief, necessary to protect, in an emergency, the work in progress and the Contractor's physical plant on site.
6. Blockage of Roadways:
   - **.1** The Fire Chief shall be advised of any work that would impede fire apparatus response. This includes violation of minimum overhead clearance, as prescribed by the Fire Chief, erecting of barricades and digging of trenches.
7. Smoking Precautions:
   - **.1** Although smoking is not permitted in hazardous areas, care must still be exercised in the use of smoking materials in non-restricted areas.
   - **.2** Smoking is not permitted within the building.
8. Rubbish and Waste Materials:
   - **.1** Rubbish and waste materials are to be kept to a minimum.
   - **.2** The burning of rubbish is prohibited.
   - **.3** All rubbish shall be removed from the work site at the end of the work day or shift or as directed.
   - **.4** Extreme care is required where it is necessary to store oily waste in work areas to ensure maximum possible cleanliness and safety.
   - **.5** Greasy or oily rags or materials subject to spontaneous combustion shall be deposited and kept in an approved receptacle and removed as required.
9. Flammable Liquids:
   - **.1** The handling, storage and use of flammable liquids are to be governed by the current National Fire Code of Canada.

.2 Flammable liquids such as gasoline, kerosene and naphtha may be kept for ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing the Underwriter's Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable liquids exceeding 45 litres for work purposes, requires the permission of the Fire Chief.

.3 Transfer of flammable liquids is prohibited within buildings or on jetties.

.4 Transfer of flammable liquids shall not be carried out in the vicinity of open flames or any type of heat-producing devices.

.5 Flammable liquids having a flash point below 38 degC such as naphtha or gasoline shall not be used as solvents or cleaning agents.

.6 Flammable waste liquids for disposal, shall be stored in approved containers located in a safe ventilated area. Quantities are to be kept to a minimum and the Fire Department is to be notified when disposal is required.

10. Hazardous Substances:
    .1 If the work entails the use of any toxic or hazardous materials, chemicals and/or explosives, or otherwise creates a hazard to life, safety or health, work shall be in accordance with the National Fire Code of Canada.
    .2 The Fire Chief is to be advised, and a 'Hot Work' permit issued in all cases involving welding, burning or the use of blow torches and salamanders, in buildings or facilities. Special precautions are necessary to safeguard life and property from damage by fire or explosives.
    .3 Wherever work is being carried out in dangerous or hazardous areas involving the use of heat, fire watchers, equipped with sufficient fire extinguishers shall be provided. The determination of dangerous or hazardous areas along with the level of precaution necessary for Fire Watch shall be at the discretion of the Fire Chief. Contractors are responsible for providing fire watch service for their work on a scale established and in conjunction with the Fire Chief at the pre-work conference.
    .4 Where flammable liquids, such as lacquers or urethanes are to be used, proper ventilation shall be assured and all sources of ignition are to be eliminated. The Fire Chief is to be informed prior to and at the cessation of such work.
11. Questions and/or Clarifications:
    .1 Any questions or clarification on Fire Safety in addition to the above requirements shall be directed to and cleared through the Fire Chief.

01 41 00 – REGULATORY REQUIREMENTS

1. Minimum Standard: Unless reference is made in the Contract Documents to other standards, work to conform to or exceed the minimum applicable standards of The Ontario Building Code, and/or the governing Jurisdictional Authorities.
2. Construction Safety: Include provisions for construction safety, such as fences, barricades, bracing supports, storage facilities, sanitation facilities, fire protection, standpipes, electrical supply, temporary heat, ventilation, construction equipment with its supports and guards, stairs, ramps, platforms, runways, ladders, scaffolds, guardrails, temporary flooring, rubbish chutes, walkway lighting and as required by the Occupational Health and Safety Act, and amendments thereto and the Ontario Fire Code Regulation as well as other applicable regulations of Jurisdictional Authorities.

01 42 13 – ABBREVIATIONS AND ACRONYMS

1. Many words or expressions that are repeated frequently on the drawings are abbreviated to reduce the amount of wording that might obscure the detailing. In some instance and to avoid misinterpretation, these abbreviations are listed, with their full meaning, on a tables / legends located on the drawings or near schedules where the abbreviations are used.

01 43 00 – QUALITY ASSURANCE

1. Each contractor / trade contractor to have a minimum of five (5) years' experience with materials and methods of their trade and if required, be able to provide references and evidence to substantiate this requirement. A contractor's / trade contractor's inability to provide this documentation to constitute grounds for dismissal from the project at no cost to the Owner.

01 43 13 – MANUFACTURER QUALIFICATIONS

1. Install materials in accordance with manufacturer's printed instruction. Where instructions in this package conflict with the manufacturer's recommendations identify the conflict to the Architect immediately.

01 43 39 – MOCK UPS

1. Prior to proceeding with the Work, prepare mock-ups as requested in the individual sections of the specifications and in this section. Include for Work of all Sections required to provide mock-ups.
2. Construct in specified locations or as selected by the 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 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.

01 45 00 – QUALITY CONTROL

1. The Owner / Architect will identify inspection testing companies. Testing will be paid for by the Owner unless noted otherwise.
2. Contractor to be responsible for coordinating completion of the required testing to suit the progress of the project and the required frequencies of the test defined in the specifications or requested by the Consultant Team.
3. Contractor to give the Consultant team notice of the progress of the work to provide reasonable opportunity to review the work for compliance with the Contract Documents. Failure to do so will be cause for the Consultant to classify the work as defective.
4. If the initial inspections and tests required to establish compliance with the Contract Documents indicates non-compliance with the Contract Documents, subsequent testing or re-inspection occasioned by non-compliance to be performed by the same Inspector(s) and the cost thereof borne by the Contractor. Where factual evidence exists, that defective workmanship has occurred or that work has been carried out incorporating defective materials, the Consultant may have tests, inspections or surveys performed, analytical calculation of structural strength made and the like in order to help determine whether the work must be replaced. Tests, inspections or surveys carried out under these circumstances will be made at the Contractor's expense, regardless of their results, which may be such that, in the Consultant's opinion, the work may be acceptable. Testing to be conducted in accordance with the requirements of the Ontario Building Code, except where this would in the Consultant's opinion cause undue delay or give results not representative of the rejected material in place. In this case, the tests to be conducted in accordance with the standards given by the Consultant. Materials or workmanship which fails to meet specified requirements may be rejected by the Consultant whenever found at any time prior to final acceptance of the work regardless of previous inspection. If rejected, defective materials or work incorporating defective materials or workmanship to be promptly removed and replaced or repaired to the satisfaction of the Consultant, at no expense to the Owner.
5. Construction Tolerances:
   .1 Unless more restrictive/demanding requirements are specified, the following construction tolerances are acceptable:
      .1 "Plumb and level" - 3mm in 3m (1/8" in 10'-0").
      .2 "Square" - 10 seconds more or less than 90 degrees.
      .3 "Straight" - 3mm (1/8") under a 3m (10'-0") long straight edge.
      .4 Tolerances to not be cumulative.

01 50 00 – TEMPORARY FACILITIES AND CONTROLS

1. The Contractor shall be responsible to ensure that activities are in compliance with applicable legislation. The Contractor shall be responsible for the provision of and removal of temporary provisions and controls for the project including but not limited to the following;
   .1 Identification and enclosure of materials / spaces required to develop an appropriate 'field of operations / staging / storage areas' to permit the execution of the project. Refer to drawings for extent of the site available to the Contractor for the 'field of operations'.
   .2 The provision of parking areas for the Contractors / Trade Contractors personnel. Onsite parking is available and limited to the Contractor's 'field of operations' identified on the drawings.
   .3 The provision of hoisting, scaffolding, roads, walkways and other construction aids as required.
   .4 The provision of field offices / sheds to be located in the Contractor's 'field of operations' identified on the drawings.
   .5 The provision of temporary heat. Salamanders to not be permitted.
   .6 The provision of temporary lighting and power systems. Maintain not less than 160 LUX level. Temporary power distribution wiring to comply with the Ontario Hydro Electrical Safety Code. Obtain inspection certificates and approvals for temporary electrical work.
   .7 Temporary washroom facilities for use by the Contractor and Subcontractors the duration of the project.
   .8 The provision of protection of completed construction where ongoing work or exposure to weather may cause damage.
   .9 **The provision of building enclosures**; Work to include temporary enclosure for building as required to protect it, in its entirety, or its parts, against vandals, the elements, and to maintain temperatures which ensure conditions for installation that prevent harm to materials. Erect temporary enclosures to allow accessibility for the installation of materials during the time the enclosures remain in place. Design temporary enclosures to withstand wind pressures. Structural framing of the building may be used within load limits for which the framing is designed, for support of temporary enclosures. Keep surfaces of temporary enclosures free of snow and ice, to avoid overloading of building framing.
   .10 **Dust Nuisance, Mud, Snow and Ice Removal;** Prevent nuisance to adjacent properties near the works from dust raising and mud deposits, by taking appropriate anti-dust and mud measures, at such times as found necessary, and as directed by the Consultant, or at any other times complaints of dust or mud are received from the public by either the Contractor, the Consultant, or the Owner.
   .11 The provision of dust / air tight and protective partitions to protect occupants, existing equipment, maintain exits and keep existing area free of construction contaminants in accordance with the following;
      .1 Provide dust tight screens or partitions to localize dust generating activities, and for the protection of workers, areas scheduled to remain occupied during construction, finished areas of work and the public. Maintain and relocate, as required, to suit construction sequencing and until such work is complete.

.2 Maintain existing exits and accesses to exits and vehicle access points serving portions of the building scheduled to remain in use by the Owner, including corridors and doorways (man doors and overhead doors), free of impediments and obstructions.

.3 Where an exit or access to exit is unavoidably blocked provide an acceptable alternate exit and/or access route, clearly defined and protected so that it is separated from the construction area by a smoke and dust tight partition equivalent to a 45 minute fire separation. Proposed alternate exits to be to the satisfaction of authorities having jurisdiction.

.4 At existing occupied floor areas exposed to new construction, provide a temporary dust tight partition equivalent to a 45 minute fire separation. Proposed partition to be to the satisfaction of authorities having jurisdiction.

.12 Water, reasonably used, to be provided by the Owner at no cost.

.13 Electricity, reasonably used, to be provided by the Owner at no cost. Contractor may connect to existing electricity for use of trades except for purpose of power welding and electric heating.

01 60 00 – PRODUCT HANDLING

1. Provide the required facilities to receive, store and secure construction products at the job site as required for the duration of construction.
2. Where require provide system to heat, cool or humidify interior spaces to support the safe storage of materials. Refer to manufacturer of products for environmental requirements.
3. Protect products from damage.

01 62 00 – PRODUCT OPTIONS

4. Substitution(s) for 'Cause" and/or 'Convenience':
   .1 The Contractor (and all sub-contractors) must demonstrate, by way of their submissions that any/all products and/or substitutions are made as substitutions for 'cause' and the intent of the contract documents. Substitutions deemed as substitutions for 'convenience' will not be considered and allowed.
   .2 The distinction made regarding substitution for 'cause' or 'convenience' identified for substitution is intended to allow the contractor to access the marketplace for legitimate options and it is intended to discourage frivolous, inadequately researched or untimely substitutions.
5. Exceptions:
   .1 During bidding, the Consultant will consider written requests from prime bidders for substitutions, received at least seven (7) working days prior to bid closing date; requests received after that time will not be considered.
   .2 All considerations/requests for product options and /or, for substitution be it during bidding or at construction stage shall include complete data substantiating compliance with the Contract Documents. The onus and responsibility resides with the contractor to demonstrate product compliance.
      .1 <u>For Cause:</u> Demonstrate rational/reason for substitution and/or Product Option proposed. Submit in writing.
      .2 For Products:
         .1 Product identification, including manufacturer's name and address.
         .2 Manufacturer's literature:
            15. Product description.
            16. Performance test data.
            17. Reference standards.
            18. Living Building Challenge Requirements compliance demonstrating specific applicable prerequisite requirements.
         .3 Samples.
         .4 Name and address of similar projects on which product was used, and date of installation, where possible.
         .5 Any 'Exceptions' status acceptance documentation.
      .3 For Construction Methods:
         .1 Detailed description of proposed method.
         .2 Drawings illustrating methods.
         .3 Itemized comparison of proposed substitution with product or method specified.
      .4 <u>For Construction Schedule:</u> Support documentation vis a vis any impact on project schedule.
      .5 <u>For Cost Consideration (s):</u> Indicate whether Product Option or a proposed substitution is cost saving, cost neutral or a cost increase. Submit cost back-up. Provide additional information as requested by consultant.
      .6 Relation to (any) separate contracts.
   .3 In making request for substitution and/or Product Options, the Contractor represents:
      .1 Substitution for 'Cause'
      .2 He/she has thoroughly investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.
      .3 He/she will provide the substitution with the same guarantee as that for product or method specified.

.4 He/she will coordinate installation of accepted substitution into work, making such changes as may be required for work to be complete in all respects.
.5 Requests for substitutions during construction shall state what cost difference if any, will be made in the Contract Price for each substitution, should it be accepted.

.4 Substitutions and/or Product Options will not be considered if:
.1 Substitution for 'Cause' is not demonstrated, whereupon the consultant will reject the proposed substitution
.2 They are indicated or implied on shop drawings or project data submittals without formal request.
.3 Acceptance will require revision to Contract Documents.

01 73 00 – VERIFICATION OF INVERTS

1. Immediately after award of the Contract, verify field service connections to ensure that drainage runs can meet the inverts of the site services. Give notification immediately of any apparent difficulties or discrepancies.

01 74 00 – CLEAN UP REQUIREMENTS

1. General:
   .1 Maintain the work in a tidy condition and free from the accumulation of waste products and debris, other than that caused by the Owner, other Contractors or their employees. Conform to requirements established by jurisdictional authorities for environmental and pollution control. Prevent dust from spreading to adjoining properties. Keep roads and sidewalks free from excavated materials, dirt and debris, snow, and ice.
2. Clean-up:
   .1 Contractor will be responsible for clean up on a daily basis. If the site is not cleaned each day Owner will arrange for site clean-up and the Contractor will be charged the cost as determined by Owner.
   .2 Contractor will be responsible for the clean-up and removal of rubbish and surplus material associated with his work. Clean up is to be scheduled and carried out to the satisfaction of Owner.
   .3 Contractor will be responsible for daily general housekeeping.
   .4 Should the Contractor repeatedly fail or refuse to perform his own clean-up, Owner to perform this work after 48 hours' notice and cost to be assessed to the Contractor's account.
   .5 At completion of the work, each Contractor to remove tools, equipment, machinery, storage sheds, temporary protection and surplus material leaving the project clean and ready for occupancy.
3. Final Clean-up:
   .1 Contractor to be responsible for the final clean-up of the project prior to achieving substantial completion. This to be completed by experienced personnel or professional cleaners to the satisfaction of Owner / Architect and to generally include the following;
      .1 All excess construction materials and construction debris to be removed from the site.
      .2 All interior surfaces and fixtures to be vacuum clean, mopped and wiped. Clean and polish glass and mirrors.
      .3 All manufacturer's labels, stickers, markings to be removed.
      .4 Exterior building surfaces to be cleaned, washed and wiped. Dust, efflorescence or other markings, debris to be removed. Clean and polish glass.
      .5 Exterior hard surfaces to be broom clean, soft landscaping to be rake clean.

01 92 00 – FACILITY OPERATIONS

1. During construction of the work, the Owner and the Owner's Tenant shall continue to occupy parts of the site. The Contractor shall coordinate the work around the continuous and uninterrupted operation of the Owner and the Owner's Tenant.
2. Apart from those area in use by the Owner and the Owner's Tenant, the Contractor shall have the access to the area of operations at all times in order to perform the work and achieve the phased completion of the project as described in these specifications.
3. Where services are required to be disconnected to permit construction of the work, the Contractor shall arrange to have these services shut down and work completed outside normal business hours of Monday to Friday, 8 am to 5pm.
4. The Contractor shall communicate and cooperate with the occupants of the building and develop schedules for shut downs where required that are reasonable and acceptable to all parties.

DIVISION 02 – EXISTING CONDITIONS

02 00 00 – EXISTING CONDITIONS

1. Make good surfaces and finishes damaged or disturbed due to Work of this Contract to match existing. Ensure that material used to repair damage is compatible with existing work.
2. Term “make good” to mean repairing or filling operations performed on existing floors, walls, ceiling or any other exposed surfaces. Perform cutting and patching where applicable as specified herein. It is intended that finished surfaces match and line with existing adjoining surfaces.
3. Restore Site to condition equal to or, if specified elsewhere, to condition better than existing conditions.
4. Restore lands outside of limits of Work which are disturbed due to Work to original condition in addition to complying with requirements of General Conditions of the Contract.

DIVISION 05 – METALS

05 50 00 - METAL FABRICATIONS

Part 1. **General:**

1. **Scope:** Provide required labour and materials to supply and install miscellaneous metals items and described on the drawings including all miscellaneous metal items listed herein.
2. **Submittals:**
   - **.1** Retain a Professional Structural Engineer registered in the Province of Ontario to design miscellaneous metals items; to prepare, seal and sign shop drawings for system including load bearing and/or force-resulting components and perform field review of installed assemblies. Shop Drawings to indicate both design and installation requirements.
   - **.2** Indicate design loads, member sizes, description of materials, design thickness / gauge, exclusive of coatings, connection and bracing details, screw sizes and spicing, and anchors as well as other pertinent data and information, for Consultant's review before fabrication.
   - **.3** Indicate locations, dimensions, openings and requirements of related work.
   - **.4** Indicate welds by welding symbols as defined in CSA W59.
   - **.5** Submit copies of engineering calculations or data verifying the capacity of the members and the ability of the assemblies to meet the design requirements.
3. **Shop Drawings:**
   - **.1** Submit shop drawings in accordance with Section 01340, of all the work of this Section, including large-scale detail of members and materials, of connection and jointing details, and of anchorage devices, dimensions, gauges, thicknesses, description of materials, metal finishing, as well as all other pertinent data and information, for Consultant's review before fabrication.
   - **.2** Shop drawings of all load bearing and or force bearing, seismic (as defined by part 4 of the Ontario Building Code and item OBC 4.1.8.17) and/or force-resulting components shall bear the seal and signature of a Professional Structural Engineer registered in the Province of Ontario.
4. **Product Delivery, Storage, and Protection:**
   - **.1** Maintain protection provided for work of this Section from time of installation until final finishes are applied or to final clean up.
   - **.2** Protect prime-painted surfaces from damage.
   - **.3** Protect exposed surfaces of prefinished metal work which does not receive site finishing with protective coatings or wrappings. Use materials recommended by finishers or manufacturers of metals, to ensure that method is sufficiently protective, easily removable, and harmless to the finish.

Products

1. **Products:** Miscellaneous metals products to have the following characteristics;
   - **.1** Welding must conform to CSA W59, S16.1 and W47.1. Protect combustible materials and finishes during welding operations.
   - **.2** Reinforcing steel to conform to G30.18-M92 – Grade 400.
   - **.3** Provide structural steel as noted on the drawings. Structural steel to conform to CAN/CSA G40.21M.
     - .1 Wide Flanges: Grade 350W.
     - .2 HSS Sections: Grade 350W, Class H for 102mm (4”) or larger sections, Class C for smaller sections.
     - .3 Anchor Bolts: Grade 300W.
     - .4 Other Steel: Grade 300W.
   - **.4** Metals:

.1 Steel: Structural: hot rolled to meet requirements of CAN3-G40.21, Grade 350W for plates, tubes and hollow sections. Sheet: cold-rolled furniture steel, double annealed, mill stretched and levelled, and fully pickled. Otherwise, steel shall be hot-rolled or cold-rolled of alloy to suit needs of fabrication, use, and appearance.
.2 Exterior Steel: Hot dip galvanized conforming to CSA G164, minimum Z350 coating.
.3 Stainless Steel: Type 304 alloy conforming to ASTM A167, No. 4 finish.

.5 Drilled concrete anchors (DCA) to be Hilti Kwik Bolts or equivalent. Drilled masonry anchors (DMA) to be Hilti SVA sleeve anchors or equivalent. Pull test anchors to rated capacity and report results.

.6 Provide 1/4" thick steel saddles at steel columns which support wood beams and lintels.

.7 Submit shop drawings for miscellaneous structural steel and reinforcing for review prior to commencing fabrication.

.8 Make field measurements necessary for fabrication and erection.

.9 Prepare and submit shop drawings of miscellaneous metals items. Steel components and connections must be designed by a Professional Engineer licensed in the province of Ontario and retained by the Contractor. Shop drawings for connection details must be submitted with the Engineer's seal and signature.

.10 Bituminous Paint: Alkali-resisting to meet specified requirements of CAN/CGSB-1.108, Type 2.

2. **Design and Fabrication:**

.1 Generally:
.1 Fabricate work of this Section with machinery and tools specifically designed for the intended manufacturing processes, and with skilled tradesmen.
.2 Fit and assemble work in the shop. When this is not possible, make a trial shop assembly.

.2 Construction:
.1 Fabricate work with materials, component sizes, metal gauges, reinforcing, anchors, and fasteners of adequate strength to withstand intended use, and with allowable design factors imposed by Jurisdictional Authorities.
.2 Ensure that work will remain free of warping, buckling, opening of joints and seams, distortion, and permanent deformation.

.3 Assembly:
.1 Accurately cut, machine, and fit joints, corners, copes and mitres so that junctions between components fit together tightly, and in true planes.
.2 Fasten work with concealed methods, unless otherwise indicated on the Drawings.
.3 Weld all connections where possible, and bolt where not possible, and cut off bolts flush with nuts. Countersink bolt heads and provide method to prevent loosening of nuts. Ream holes drilled for fastenings.
.4 Make welded joints tight, flush, and in true planes with base metals, and continuous at joints where entry of water into building or into voids of members or assemblies is possible. Continuously grind and make smooth welds in exposed locations.
.5 Provide for differential movements within assemblies and at junctions of assemblies with surrounding work.
.6 Fabricate shims of steel of sizes required.

.4 Finish Work:
.1 Provide holes and connections for work installed under other Sections of this Specification.
.2 Cleanly and smoothly finish exposed edges of materials, including holes.
.3 Cap open ends of sections exposed to view, such as pipes, channels, angles, and other similar work.

.5 Prime Painting of Steel: Clean all loose mill scale, rust, dirt, weld flux, and spatter from work after fabrication. Grind smooth sharp projections. Prepare for prime painting by blast cleaning to SSPC-SP6. Apply to steel a shop prime coat of paint. Work paint into corners, and onto open areas smoothly. Deliver work to site with primer undamaged. Paint all surfaces except those to be welded in field. Paint surfaces that are inaccessible to finish field painting with two coats of primer.

.6 List of Miscellaneous Metals: This Section includes, but is not necessarily limited to, the following:
.1 Concealed support elements, anchors, bolts, inserts, sleeves, angles or other shapes cast in concrete, hangers, supports, sleeves for work in this Section only.

Execution:

1. **Inspection of Site:**

.1 Take site measurements to ensure that work is fabricated to fit surrounding construction around obstructions and projections in place, or yet to be put in place to suit service locations, and inaccuracies of construction.

2. **Installation:**

.1 Install work plumb, true, square, straight, level, and accurately and tightly fitted together and to surrounding work.

.2 Work includes anchor bolts, bolts, washers and nuts, lag screws, expansion shields, toggles, straps, sleeves, brackets, clips, shims and other items necessary for secure installation, as required to support and/or resist loads and forces, and as required by Jurisdictional Authorities.

.3 Provide anchors at 24" (600mm) o.c. for cast-in-place work unless shown otherwise.

.4 Attach work to wood by screws through countersunk holes in metal.

.5 Attach work to masonry with lead plugs and non-corrosion fastenings to support load with a safety factor of three (3).

.6 Insulate between dissimilar metals, or between metals and masonry or concrete with bituminous paint to prevent electrolysis.

3. **Patching and Refinishing:**
   - **.1** After erection, touch up prime paint finishes damaged or removed during installation.
   - **.2** Remove damaged, dented, defaced, defectively finished, or tool-marked components and replace with new.
   - **.3** Refinish shop-applied finishes in field only with approval of Consultant.
   - **.4** Clean off dirt on surfaces resulting from installation work.

4. **Miscellaneous Items:**
   - **.1** Generally:
     - .1 This schedule does not list all items included in work of this Section. Items not listed are shown on Drawings.
     - .2 Ensure that all Drawings and Specification Sections, including those for structural, mechanical, and electrical work as applicable are consulted to establish the limits of work included in this Section.
   - **.2** Support Elements and Framing:
     - .1 Supply and install all support elements and framing as shown on the Drawings except where framing is part of building structural steel. Construct supports from rolled steel sections assembled by welding.
     - .2 Design supports to withstand, within acceptable deflection limitations, their own weight, the weight of the items to be supported, loads imposed by the motion of supported items, where applicable, and all live loads, static and dynamic which might be applied to the supported items in the course of their normal function. Design supports with a safety factor of three (3). Design supports further as required to accommodate structural deflection.
     - .3 Provide all accessories, inserts and fixings necessary for attachment of supports to building structure. Drill supports, as required, to receive attachment of supported items. Arrange supports to avoid conflicts with pipes, ducts, connections, thermal and vapour barrier construction, framing provided under other sections, and such that supports and their fixings are fully concealed from view within the finished work.

DIVISION 06 – WOOD, PLASTICS + COMPOSITES

06 10 00 - ROUGH CARPENTRY

Part 1. General:

1. Rough Carpentry systems and materials to be provided in accordance with the following;
   - **.1** **Scope:** Provide required labour and materials to supply and install rough carpentry items and described on the drawings including the rough carpentry items listed herein.
2. **Quality Assurance**
   - **.1** N.L.G.A. 2017 National Lumber Grades Authority, Standard Grading Rules for Canadian Lumber.
   - **.2** Identify lumber by grade stamp of an agency certified by Canadian Lumber Standards Administration Board.
   - **.3** Plywood identification: by grade mark in accordance with applicable CSA Standards.
   - **.4** Each panel of plywood required to be fire retardant treated to bear ULC label indicating Flame Spread Classification (FSC) and smoke developed.
3. **Referenced Standards**

.1	CSA O86:19	Engineering Design in Wood
.2	CSA-B111 (R2003)	Wire Nails, Spikes and Staples
.3	CSA-O121-17	Douglas Fir Plywood
.4	CSA-O151-05 (R2019)	Canadian Softwood Plywood
.5	CAN/CSA-O141-91	Softwood Lumber
.6	CAN/CSA -O80 SERIES-15 (R2020)	Wood Preservation
.7	CAN/ULC-S102-M88	Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies
.8	CAN/CSA G164-M92	Hot Dip Galvanizing of Irregularly Shaped Objects
.9	NFPA 80-1999	Fire Doors and Windows.

Products:

1. **Materials:**
   - **.1** Except as indicated or specified otherwise lumber to be softwood S4S, SPF Species moisture content (MC) not greater than 19% at time of installation in accordance with the following standards;
     - .1 CSA 0141.
     - .2 NLGA Standard grading rules for Canadian Lumber.
   - **.2** Machine stress - rated lumber is acceptable for purposes.
   - **.3** Lumber:
     - .1 S-DRY, graded and stamped to National Lumber Grades Authority, Standard Grading Rules for Canadian Lumber.
       - .1 Studs: No. 1/No. 2 (SPF), 121c. "STUD".
       - .2 Blocking, furring, strapping, battens, nailers, bracing, and bridging: spruce, pine or fir (SPF), standard or better grade.
   - **.4** Plywood: Canadian softwood plywood conforming to CSA 0151, "G1S".
     - .1 Pressure Treated Plywood: Pressure treated plywood conform to CSA 0151, “G1S”.
   - **.5** Nails, Spikes, Staples and Other Connectors: to CSA B111, galvanized for exterior work, interior highly humid areas and for treated lumber; plain finish elsewhere.
   - **.6** Bolts, Nuts, Washers, Screws and Pin Type Fasteners: Hot dip galvanized to CAN/CSA G164 for exterior work. Elsewhere for sight exposed surfaces, prime paint. Use surface fastenings of following types, except where specified type is indicated:
     - .1 To hollow masonry, gypsum board and panel surfaces use toggle bolts.
     - .2 To solid masonry and concrete use expansion shield with lag screw, or lead plug with wood screw.
2. **Fabrication:**
   - **.1** Comply with CAN3-086 or CAN3-086.1 for fabrication and assembly of structural components off site, or on site.
   - **.2** Design construction details for expansion and contraction of materials.
   - **.3** Machine sand surfaces exposed in the finished work. Hand sand to an even smooth surface free from scratches.
   - **.4** List of Rough Carpentry Items: This Section includes, but is not necessarily limited to, the following:
     - .1 Concealed support elements, anchors, bolts, inserts, sleeves for work in this section.
     - .2 Wood Blocking for Millwork: Provide wood blocking on and within partitions as required to support millwork and other wall mounted specialty items.
     - .3 Plywood Roof Sheathing: Provide 12.5mm thick T+G plywood exterior grade sheathing and required fasteners over roof truss system as detailed on the drawings. Refer to Structural Documents.
     - .4 Provide 19mm thick exterior grade plywood sheathing at fascia as detailed in the drawings.
     - .5 Provide 16mm exterior grade plywood sheathing and 2” x 6” pressure treated wood framing at windowsill, jambs and heads as detailed on the drawings.

.6 Pressure treated lumber; 2" x 4", 1"x 6" for the construction of the garbage enclosure.

.7 Wood framing at window openings: Provide 16mm thick exterior grade plywood sheathing and pressure treated wood framing in dimensions as detailed on the drawings around window opening.

Execution:

1. **Examination**

.1 Examine areas of work of this section, report any discrepancies and unsatisfactory conditions to the consultant, commencement of work implies acceptance of conditions.

2. **General:**

.1 Lay out work carefully and to accommodate work of others. Cut and fit accurately. Erect in position indicated on drawings. Align, level, square, plumb and secure work permanently in place. Join work only over solid backing.

.2 Bore holes true to line, and to same size as bolts. Drive bolts into place for snug fit, and use plates or washers for bolt heads and nut bearings. Turn up bolts and lag screws tightly when installed, and again just before being concealed by other work or at completion of work.

.3 Co-operate with work of other Sections to ensure that unity of actions will ensure orderly progress to meet construction schedule.

.4 Provide anchors, bolts and inserts required for attachment of the work of this Section to those performing the work of other Sections, and who are responsible for their installation.

.5 Work to include such rough hardware as nails, bolts, nuts, washers, screws, clips, hangers, connectors, and strap iron required for installation of work, and operating hardware required on work of this Section for temporary work.

3. **Grounds, Blocking, Strapping, Furring, Sleepers and Nailers:**

.1 Do not regard grounds, blocking, furring, and such other fastening provisions as shown on drawings as exact or complete. Provide required provisions for fastenings, located and secured to suit site conditions and adequate for intended support.

.2 Cut fastening work into lengths as long as practicable, and with square ends. Erect work plumb, in true planes, and fastened rigidly in place.

.3 Provide wood furring and strapping for applied facings, caseworks, etc.

.4 Except where steel is specifically shown, provide wood blocking and supports in metal stud partitions for fastening of items anchored to stud partitions. Provide wood blocking and supplementary supports in metal studs supporting counters and similar items.

.5 Co-ordinate with Section 09 21 16, for the installation of wood blocking for fastening of wall mounted accessories and casework.

DIVISION 07 – THERMAL + MOISTURE PROTECTION

07 10 00 – WATERPROOFING

Part 1. General:

1. Provide labour and materials as required to supply and install waterproofing membrane as follows:

Products:

1. **Waterproofing Membrane:** Apply 'Blueskin WP 200' self-adhesive, SBS rubberized asphalt waterproofing membrane as manufactured by Henry Company or approved equal, conforming to the requirements of CCMC 13297-R. System to have the following characteristics;
   - **.1** Thickness: 60mill (1.5mm)
   - **.2** Application temp (min): -3 degC
   - **.3** Water vapour permeance: 0.02 perms; ASTM E96 / E96M.
   - **.4** Tensile strength; 325psi; ASTM D903.
2. **Primer:** Before applying primer ensure surface is dry and free from dust, dirt, grease, oil, excess mortar/grout and other foreign matter. Prime surface with 'Aquatac Emulsion Primer' as manufactured by Henry Company. Apply with spray and/or roller at a rate of 7m2/litre (300ft2/3.78L can). Allow for manufacturer's recommended dry time. Primed surfaces not covered by membrane during the same working day must be reprimed. Install at temperatures above –3degC.
3. **Protection Board:** Provide Henry DB Drain Boards covering waterproof membrane.

Execution:

1. Brush clean surface. Surfaces must be clean of oil, wax, pigments, dust and excess mortar.
2. Concrete / grout must be free of frost and cured for a minimum of 7 days prior to installation of waterproofing.
3. Pre-treat cracks in surface 1.5mm to 3mm wide with Henry 925 BES Sealant filling crack.
4. Surface must be smooth and without large voids, spalled areas, sharp protrusions or discontinuous surfaces.
5. Remove protrusions.
6. Strike masonry joints full-flush.
7. Fill voids and smooth discontinuous surfaces with non-shrink, dry packed grout. Allow grout to set completely.
8. Follow manufacturer's installation instructions for waterproofing membrane.
9. Provide 65mm (2.5") laps at both sides and 75mm (3") at ends.
10. Inside Corners: Horizontal to vertical inside corner transition areas are to be pretreated with Henry 925 BES Sealant fillet extending 19mm (3/4") vertically and horizontally from the corner. Apply a 225mm (9") wide strip centered at this joint.
11. Outside Corners: outside corner transition areas are to be pretreated with a 225mm (9") wide strip centered at this joint.
12. Drains: At drains, apply waterproofing membrane collar centered on drain and extend 6" beyond flange onto deck. Apply field membrane in full width centered over drain. Apply clamping ring in a 60-mil bed of 925 BES Sealant
13. Projections: Extend waterproof membrane tight to projection and seal with 925 BES Sealant extending 2" along projection and 2" onto waterproof membrane.
14. Apply waterproofing membrane to prepared substrate in lengths of 8' or less.
15. Apply vertical rows in a shingle fashion. Roll laps with a counter top roller to effect seal.
16. Provide 2 ½" laps at both sides and ends. Position for alignment and remove protective film. Press firmly into place. Promptly roll laps with a counter top roller to effect seal. If more than one length is required on a vertical surface, apply a shingle fashion.
17. Terminate membrane using 925 BES Sealant and as indicated. Laps are to be sealed with 925 BES Sealant.
18. Install at temperature above -5 degC.
19. Install protection board to cover parts of the installed waterproof membrane prior to placing backfill.

07 21 00 – BUILDING INSULATION

Part 1. General:

1. **Scope:** Provide fibreglass batt, blanket and mineral wool semi-rigid thermal insulation with accessories.
2. **References:**
   - **.1** CGSB 71 GP 24M, Adhesive, Flexible, for Bonding Cellular Polystyrene Insulation
   - **.2** CSA A451.1, Polystyrene Insulation Adhesives
   - **.3** CAN/ULC S102, Surface Burning Characteristics
   - **.4** CAN/ULC S114, Standard Method of Test for Determination of Non-Combustibility in Building Materials.
   - **.5** CAN/ULC S124, Standard Method of Test for the Evaluation of Protective Coverings for Foamed Plastic.
   - **.6** CAN/ULC S701, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.
   - **.7** CAN/ULC S702, Thermal Insulation Mineral Fibre for Buildings
   - **.8** CAN/ULC S705.2, Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density - Application
   - **.9** CAN/ULC S770-03, Standard Test Method for Determination of Long-term Thermal Resistance of Closed-Cell Thermal Insulating Foams.
   - **.10** ASTM C 665, Specification for Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
   - **.11** ASTM C 518, Test Method for Steady State Thermal Transmission Properties by Means of the Heat Flow Meter.
   - **.12** ASTM C423, Test Method for Sound Absorption Coefficient by the Reverberation Room Method
   - **.13** ASTM D2842, Standard Test Method for Water Absorption of Rigid Cellular Plastics
   - **.14** ASTM D1621, Standard Test Method for Compressive Properties of Rigid Cellular Plastics
   - **.15** ASTM E 84, Test Method for Surface Burning Characteristics of Building Materials.
   - **.16** ASTM E 136, Test Method for Behavior of Materials in a Vertical Tube Furnace at 750□C.
   - **.17** ASTM E139, Standard Test Methods for Conducting Creep, Creep-Rupture, and Stress-Rupture Tests of Metallic Materials.
3. **Submittals:**
   - **.1** Provide submittals in accordance with Section 01 33 00.
   - **.2** Product Data: For each product provide data on published "R" value for thicknesses of insulation, product characteristics, performance criteria, limitations and fire ratings, if required.
   - **.3** Submit research and evaluation reposts for foam plastic insulation where required by authorities having jurisdiction.
   - **.4** Safety Data Sheets:
     - .1 Submit WHMIS safety data sheets for inclusion with project record documents. Keep one copy of WHMIS safety data sheets on site for reference by workers.
4. **Product Delivery, Storage, and Handling:**
   - **.1** Handle and store material in accordance with manufacturer's recommendations and Industrial Health and Safety Regulation requirements.
   - **.2** Materials will be delivered to job in their original packages and containers bearing manufacturer's labels intact and clearly visible.
   - **.3** Do not expose rigid insulation board to sunlight after installation. Protect with black polyethylene or tarpaulin cover as recommended by manufacturer if permanent covering is not completed within twenty-four (24) hours.
   - **.4** Store materials off ground in dry, watertight areas, under cover away from direct sunlight.
   - **.5** Protect to prevent damage by other trades.
5. **Project Conditions:**
   - **.1** Environmental Limitations: Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

Products:

1. **Rigid Insulation:**
   - **.1** For use below slabs / grade beams / finished grade and as indicated on the drawings insulation to be closed-cell, expanded, extruded polystyrene complying with CAN/ULC-S701.1-17, Type 4, and the following minimum requirements:
     - .1 Thermal resistance: RSI 0.87 per 25mm (R 5.0 per 1 inch) thickness.
     - .2 Compressive strength: 207 kPa (30 p.s.i.).
     - .3 Water absorption: less than 0.70% by volume.
     - .4 Water vapour permeance: 90 ng/Pa s m2 (1.5 perms).
     - .5 Provide insulation in thicknesses as indicated on drawings.
     - .6 Where required secure to structure with Dekfast fastener, #15 High Strength Phillips Head, 13 tpi, drill point with Grey Sentre XP coating. Predrill holes in structure where required. Cut fasteners if required to suit thickness of insulation and depth of penetration into predrilled holes in structure. Sharpen tips with grinder as required.
   - **.2** Acceptable manufacturers:
     - .1 “Styrofoam Brand SM” by Dow.

.2 "Foamular C-300" by Owens-Corning.
.3 Or approved equal.

2. **Low Expansion Spray Foam Joint Insulation:**
   .1 'Froth Pak' by DOW, with min aged R value of 4.5 per inch or equal as approved by Architect. Ensure product is compatible with adjacent materials.
3. **Fibreglass Batt Insulation:**
   .1 **For use at exterior walls, roof insulation at attic spaces and or interior walls where acoustic insulation is scheduled;** Fibreglass batt insulation shall be 'Ecotouch Pink Fiberglass' as manufactured by Owens Corning, or approved equal having the following characteristics;
      .1 Compliance with CAN/ULC – S702 – Mineral Fibre Thermal Insulation for Buildings – Type 1.
      .2 Compliance with CAN/ULC – S114 – Test for Non-combustibility – noncombustible.
      .3 CAN ULC S102 Surface Burning Characteristics: Flame Spread – 0, Smoke Developed – 0.
      .4 Thermal Resistance – R24.0 / 6" inch (6" thick batt) or R14 / 3.5" inch (3.5" batt) or R54 / 16" (16" batt)
      .5 Compliance with CAN/ULC – S114 – Test for Non-combustibility – noncombustible.
      .6 Dimensions –
         .1 16" x 47" x 5.5" (413mm x 1194mm x 152mm)
         .2 16" x 47" x 3.5" (413mm x 1194mm x 194mm)
         .3 24" x 48" x 16" (610mm x 1219mm x 406mm)
         .4 Size the batt to suit the thickness of the wall / truss construction as scheduled.

Execution:

1. Installation (Mineral Fibre and Glass Fibre Batt):
   .1 Fit boards neatly around beams, pipes, ducts, openings and corners, reinforcing and bonding ties, and other obstructions.
   .2 Use the largest module of insulation possible where cutting is necessary, to reduce the number of joints. Patch holes and tears with the same material.
   .3 Insulation installations to be reviewed and approved by the Consultant prior to the installation materials that cover the insulation.
2. Installation (Rigid Installation):
   .1 Verify that surfaces and conditions are ready to accept the Work of this section.
   .2 Ensure concrete has been cured for a minimum of fourteen (14) days. substrates to be clean of oil or excess dust, pigments and waxes; masonry joints struck flush; concrete surfaces to be free of large voids, spalled areas or sharp protrusions.
   .3 Ensure existing granular material is flat and compacted.
   .4 Fit boards neatly around beams, pipes, ducts, openings and corners, reinforcing and bonding ties, and other obstructions.
   .5 Butt insulation boards together and stagger joints. Apply firm hand pressure to level insulation boards
   .6 Use the largest module of insulation possible where cutting is necessary, to reduce the number of joints. Patch holes and tears with the same material.
   .7 Permanently seal vapour barrier at points where it is impaled by screws, staples, masonry reinforcing, or other fastening devices.
   .8 Insulation installations to be reviewed and approved by the Consultant prior to the installation of covering materials.

07 72 00 – JOINT SEALANTS

Part 1. General

1. **Scope:** Provide sealants of the following types and at the specified locations. Provide sealant backing as conditions require. Provide cleaning materials as required to remove excess sealant from adjacent material without damage. Protect the work from damage.

Part 2. Products:

1. Schedule:
   - **.1** **Type A** – exterior, non-traffic bearing weather side of construction, multi component urethane based chemical curing sealant conforming to ASTM C920 Type S, Grade NS, Class 35; Dymonic FC manufactured by Tremco Limited, or approved equal. Provide sealant at joints between window / door frames and adjacent wall construction, at control joints in masonry, between and at other exterior locations as noted on the drawings.
   - **.2** **Type B** – interior, non-traffic bearing, one component, interior polyurethane sealant conforming to CAN/CGSB-19.13-M87; Sikaflex 1a manufactured by Sika. Provide sealant at joints between interior window / door frames and adjacent wall construction and at other interior locations as noted on the drawings.
   - **.3** **Type C** – interior sanitary caulking: one (1) component, chemical curing, mildew resistant, silicone conforming to CAN/CGSB-19.22-M, containing non-toxic fungicidal agents; DOWSIL 786 as manufactured by Dow Corning Canada Limited, Sanitary 1700 as manufactured by GE Silicones Canada or Proglaze as manufactured by Tremco Limited. Provide sealant at joints between washroom vanities, urinals, toilets, counters and backsplashes and adjacent wall / floor surfaces in kitchens, washrooms, kitchens and wet areas and as noted on the drawings.
   - **.4** **Backing**: Provide polyurethane backer rods as recommended by the caulking manufacture. Ensure backer rods and caulking materials are compatible.
   - **.5** **Masking Material**: Removable painting / masking tape.
   - **.6** **Cleaning Materials**: Commercial grade solvent as recommended by the caulking manufacturer.

Part 3. Execution

1. Review project and identify areas where caulking is required. Refer to schedule noted in Part 2 of this section.
2. Ensure bonding surfaces are clean, dry and free of dust, frost and soap residue. Wipe surfaces busing rag saturated in solvent such as alcohol; or mineral spirits.
3. Select colour of caulking to match adjacent finished surfaces.
4. Where required provide sealant backing. Install securely in joint, recess backing to allow space for installation of the caulking.
5. Provide masking of the areas adjacent line of caulking.
6. Install caulking in accordance with manufacturer's printed instructions.
7. Remove excess caulking. Tool joint in one continuous stroke.
8. Remove masking within 10 minutes of caulking installation.
9. Remove excess caulking from areas adjacent the proposed joint prior to curing of the caulked joint.
10. Provide wood planks or other approved, non-staining means of protection for the completed caulking and sealants installations where required to protect the work from mechanical, thermal, chemical and other damage by other construction operations and traffic.
11. Maintain protection securely in place until project completion.
12. Clean caulking if required.
13. Replaced damaged caulking where required.

DIVISION 08 – OPENINGS

08 13 13 - HOLLOW METAL DOORS AND FRAMES

Part 1. General:

1. **Scope:** Provide labour and materials as required to supply hollow metal doors and frames.
2. **Submittals:**
   - **.1** Shop Drawings: Provide shop drawings that note / illustrate the following; manufacturer, number, size, door types, frame types / profiles, jamb type and depth, fire rating, gauge, glass units, anchor types, finish, door core.
   - **.2** Manufacturer's Literature: Provide manufacturer's literature on door and frame types and maintenance requirements.
3. **Warranty:**
   - **.1** Submit manufacturers' standard warranty covering the maintenance, repair or replacement of defective work for a period of one (1) year from the expiration of the standard one (1) year warranty included in the Contract under the General Conditions.
   - **.2** Structural failure, leaking, loosening, fading, discolouration, deforming and failure of doors and frames to be judged as defective work.
   - **.3** Total warranty period to be two (2) years.
4. **Product Delivery, Storage, and Handling:**
   - **.1** Brace frame units to prevent distortion in shipment, and protect finished surfaces by sturdy protective wrappings.
   - **.2** Store doors in protective wrappings in a secure dry location, to ensure that they are not damaged until hung. Install them only when work has progressed to a stage when no damage will occur to them in place.
5. **Steel Fire Rated Doors and Frames:** Doors and frames to be labelled and listed by an organization accredited by Standards Council of Canada in conformance with CAN/ULC S-104-2015, CAN4 S105-2016 and NFPA-80, 2016 edition for ratings specified or indicated.

Part 2. Products:

1. **Manufacturers:**
   - **.1** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include; but are not limited to, the following:
     - .1 Fleming Steel Doors & Frames.
     - .2 Baron Metal Doors & Frames.
     - .3 Artek Door Ltd.
     - .4 Or approved equal.
2. **Materials:**
   - **.1** Steel: commercial grade steel to ASTM A568, Class 1, wiped coat galvanized to ASTM A527, coating designation ASTM A525, ZF75 typical.
3. **Doors and Panels:**
   - **.1** Facings, rails, stiles: 5/64" (1.2mm) (18 ga.) base steel thickness.
   - **.2** Interior Stiffeners: 0.914mm base steel thickness.
   - **.3** Hardware Reinforcement: 1/8" (3mm) base steel thickness.
   - **.4** Interior Doors - Sound Deadening Material: semi-rigid fibreglass 24 kg/m3 minimum density, to fill core space. Honeycomb structural core consisting of kraft paper with 3/4" (19mm) cells x core thickness may be used at interior locations.
   - **.5** Exterior Doors - Insulating Material: 22 ga. steel stiffeners at 6" o/c with injected polyurethane foam, min U factor (imperial) 0.29, R3.4
   - **.6** Interior Doors: door panels shall be D Series Doors by Fleming Door Products or equivalent.
   - **.7** Glazing Stops: 1/16" (1.6mm) base steel thickness, formed, drilled and countersunk for fasteners.
4. **Interior Frames:**
   - **.1** Steel: 1/16" (1.6mm) (16 ga.) base thickness.
   - **.2** Hardware Reinforcement: 1/8" (3mm) base steel thickness.
   - **.3** Mortar Guards: 0.762mm base steel thickness.
   - **.4** Rubber Bumpers: Glynn-Johnson GJ64 or approved equivalent.
5. **Exterior Frames:**
   - **.1** Steel: 1/16" (1.6mm) (16 ga.) base thickness.
   - **.2** Hardware Reinforcement: 1/8" (3mm) base steel thickness.
   - **.3** Mortar Guards: 0.762mm base steel thickness.
   - **.4** Rubber Bumpers: Glynn-Johnson GJ64 or approved equivalent.
   - **.5** Insulation: Fill solid with polyurethane foam, min U factor (imperial) 0.69, R1.45
6. **Anchors:**
   - **.1** Frames in Masonry: adjustable "T" strap anchors.
   - **.2** Labelled Frames: to conform to ULC requirements.
   - **.3** Frames in Gypsum Board Partitions: steel anchor clips and floor anchors of suitable design securely welded inside each jamb.

.4 Anchorage to Floor: minimum 1/8" (3mm) thick clip angles with 2 holes for expansion bolting to floor.

7. **Galvanizing:**

.1 Typical interior units: steel sheet wipe coated with zinc-iron alloy to a total mass coating both sides of 75 g/m2 to conform to ASTM A525M, Z275 coating designation.

.2 Exterior units, and interior units in unheated areas: steel sheet coated with zinc to a total mass coating both sides of 275 g/m2 to conform to ASTM A525M, Z275 coating designation. Mill phosphatize to provide for good paint adhesion.

8. **Fabrication:**

.1 General:

.1 Fit and assemble work in the shop, where possible. Make trial assembly in shop when not possible.

.2 Fabricate, reinforce and anchor component parts and assemblies to support loads that usage will impose without deflection detrimental to function, appearance or safety. For interior doors either the use of metal stiffeners with the spaces between stiffeners filled with insulation, or honeycomb structural core will be acceptable. For exterior doors the core is to be completely filled with insulation.

.3 Reinforce components to resist in-use stresses imposed by finishing and security hardware.

.4 Prepare frames and doors for finish hardware with mortises and reinforcement. Drill and tap to template information. Reinforce for surface-mounted hardware and for door closer brackets. Provide for concealed door closers where specified. Install mortar guards at cut-outs and reinforcing plates in frame. For cylindrical locks install reinforcing units to lock manufacturer's specification. For mortise locks provide a suitable internal bracket to hold the lock case rigidly in the centre of the door.

.5 Provide for anticipated expansion and contraction of frames and supports.

.6 Fit elements at intersections and joints accurately together in true planes, plumb and level.

.7 Weld frame and door assemblies. Weld continuously at joints exposed to view including door edge seams, or at joints through which air or water could penetrate from the exterior of the building to the interior. Seams shall be welded, filled and sanded flush.

.8 Where welding is impossible, connections may be bolted. Ream drilled holes and leave exposed edges clean and smooth.

.9 Isolate from each other dissimilar metals and metal from concrete or masonry, to prevent electrolysis.

.10 Ensure that exterior doors and frames are tightly fitted, and that entry of water is prevented by drips on head frames of out swinging doors exposed to weather.

.11 Make allowance in frames and doors to receive electrical conduits for security strikes and contactors which may be installed in doors and frames. Provide electrical conduit protection mortar boxes to receive conduit for electric strikes, locks, door closers, and hinges as detailed.

.12 Fabricate hollow metals and frames and screens in accordance with CSDFMSA, Specifications for Commercial Steel Doors and Frames, Latest Edition.

.13 Coordinate fabrication of hollow metal doors, frames, and screens with hardware schedule.

.2 Doors and Frames:

.1 Fabricate interior and exterior doors and panels with sheet steel in specified base steel thickness.

.2 Minimum panel thickness applies only to doors not otherwise requiring heavier gauges to meet specified fire-rated construction.

.3 Fabricate doors with faces true and smooth, and with no dimples or welds visible.

.4 Bevel edges of stiles to suit door swing.

.5 Locate hardware to Canadian Steel Door & Frame Manufacturer's Association Standard, unless shown otherwise on Drawings or Door Schedule.

.6 Fill solid all voids within doors and panels with insulation, or honeycomb core. For exterior doors and panels, fill voids with insulation.

.7 Fabricate muntins, removable stops, and glass mouldings of minimum 1.2mm steel.

.8 Prepare doors to receive glass and grilles. Install grilles. Secure removable stops with countersunk Phillips oval head screws symmetrically spaced on stop lengths.

.9 Close top and bottom edges of exterior doors to make a weathertight seal, and doors to which the tops can be seen from stair landings or other high elevations, so that they are flush with face edges.

.3 Anchors:

.1 Provide frames for installation in masonry walls with the following number of anchors:

.1 Frames up to 7'-6" (2300mm) height, 3 anchors

.2 Frames 7'-6" (2300mm) to 8'-0" (2400mm), 4 anchors

.3 Frames over 8'-0" (2400mm), 1 anchor for each 2'-0" (600mm) or fraction thereof in height over 8'-0" (2400mm).

.2 Provide frames for installation in stud partitions with the following number of anchors:

.1 Frames up to 7'-6" (2300mm height, 4 anchors

.2 Frames 7'-6" (2300mm) to 8'-0" (2400mm),, 5 anchors

.3 Frames over 8'-0" (2400mm),, 5 anchors, plus 1 additional for each 2'-0" (600mm) or fraction thereof in height over 8'-0" (2400mm).

.3 Provide frames to be anchored to previously-placed concrete, masonry, or structural steel, with anchors of suitable design, as shown on reviewed shop drawings.

.4 Securely weld adjustable floor anchors to inside of each jamb profile, with two holes provided at each jamb for floor anchorage.

.5 Anchors shall have minimum gauges: "T" strap type, 1/16" (1.6mm) "L" type, 3/64" (1.2mm); wire type, 5/32" (3.9mm) diameter; stirrup type, 1/16" (1.6mm); stud type, 3/64" (1.2mm); jamb spreaders; 3/64" (1.2mm).

9. **Finishing:**

.1 Carbon Steel: Clean and smooth work at welds which has been ground. Fill if necessary, and prime all areas from which zinc has been removed.

10. **Fire Rated Hollow Metal Doors and Frames:**

.1 Construct fire-rated doors and frames of ratings indicated, in accordance with ULC Section 120 IDO, and as otherwise required by Jurisdictional Authorities. Fire rated screens containing doors shall be labelled (whole assembly).

.2 Ensure that hardware used meets requirements of ULC 120 ID16, and installed to NFPA 80 requirements.

.3 Doors and frames indicated as labelled shall have attached ULC labels. Attach labels on the inside of the hinge jamb midway between the top hinge and the head of the door frame. Where fire doors are shown in pairs swinging in the same or opposite directions they shall bear a ULC label of a category that does not require astragals.

11. **Temperature Rise Limit:**

.1 In addition to fire protection rating, certain doors require a maximum temperature rise limit, and are indicated on the Door Schedule by the designation "TRL".

.2 Provide combination temperature rise and fire protection rating label, attach to the door at the same location specified for fire rated doors.

Part 3. Execution:

1. **Examination:**

.1 Examine areas which are to receive the work of this section. Correct unsatisfactory conditions prior to start of work. Commencement of work implies acceptance of conditions as they exist and no extra will be allowed for failure to ensure satisfactory substrate condition.

2. **Installation:**

.1 Installation of the work of this Section is specified in other Sections.

08 71 00 - DOOR HARDWARE – SUPPLY

1. **Scope:** Provide door hardware in accordance with Owners requirements and in compliance with the Ontario Building Code 2012,
   - **.1** Submittals:
     - .1 Shop Drawings: Provide an updated hardware schedule prepared by an accredited architectural hardware consultant (AHC).
     - .2 Manufacturer's Literature: Provide manufacturer's literature on hardware types and maintenance requirements.
   - **.2** Warranty:
     - .1 Submit a warranty covering the maintenance, repair or replacement of defective work for a period of one (1) year from the expiration of the standard one (1) year warranty included in the Contract under the General Conditions.
     - .2 Structural or operational failure, loosening, discolouration, deforming of the hardware to be judged as defective work.
     - .3 Total warranty period to be two (2) years.
   - **.3** Schedule:
     - .1 Aluminum Doors
       - .1 Pulls
       - .2 Locksets
       - .3 Automatic Operators, push buttons, related equipment
       - .4 Electric Strikes, where required
       - .5 Closers
       - .6 Overhead Friction Stops
       - .7 Thresholds
     - .2 Interior HM Doors:
       - .1 Latchset
       - .2 Hinges
       - .3 Deadlock
       - .4 Kickplate
       - .5 Top and bottom bolt
       - .6 Overhead Friction Stop or Wall Stop (as required)
       - .7 Smoke Sweep (if required, refer to Door Schedule)
       - .8 Set Smoke Seal (if required, refer to Door Schedule)
     - .3 Exterior HM Doors:
       - .1 Hinges
       - .2 Lockset
       - .3 Deadlock
       - .4 Lockguard
       - .5 Closer
       - .6 Kickplate
       - .7 Threshold
       - .8 Door sweep
       - .9 Weatherstripping
     - .4 Door Hardware shall be from the following manufacturers, or equal:
       - .1 Stanley: Hinges
       - .2 Best: Lockets, cylinders
       - .3 Sargeant: Locks, closers
       - .4 CBH: Kickplates

08 71 10 – DOOR HARDWARE – INSTALLATION

1. **Scope:** Provide labour and materials required to install doors and hardware scheduled for the project. Complete work in accordance with the following;
   - **.1** **Fire Rated Doors, Frames and Hardware:** Install fire rated assemblies in accordance with NFPA-80-2016 edition, CAN/ULC S-104-2015, CAN4 S105-2016 for ratings specified or indicated.
   - **.2** **Product Handling:** Accept delivery of doors and finish hardware. Inspect doors for damage, upon delivery to the site. Hollow metal doors which cannot be readily corrected by sanding, to be promptly returned to the manufacturer. Store doors in a dry and clean location. Store in a temperature and humidity controlled area. Stack 6" (150mm) off the floor. Be responsible for any damage to doors and hardware from time of delivery until accepted by Owner after installation. Provide locked room for the storage of hardware at the job and a person responsible for the control and distribution of hardware.
   - **.3** **Quality Assurance:** Installation is to be executed by the Hardware Supplier's installer and by personnel with a minimum of five (5) years' experience in the installation of finishing hardware.
   - **.4** **Protection:** Protect hardware from damage during construction period by removing and reinstalling or where necessary, using temporary hardware to maintain finish in new condition and maintain manufacturer's warranty.
   - **.5** Installation of Finish Hardware:
     - .1 Install hardware at mounting heights as specified in the manufacturers' templates or specific references in approved hardware schedule or approved elevation drawings. Where mounting height is not otherwise specified, install hardware at mounting heights as agreed to by Owner and Consultant.
     - .2 Install hardware using only manufacturer supplied and approved fasteners in strict adherence with manufacturers published installation instructions.
     - .3 Ensure that locksets / latch sets / deadlocks are of the correct hand before installation to ensure that the cylinder is in the correct position. Handing is part of installation procedure.
     - .4 Ensure that exit devices are of the correct hand and adjust device cam for proper outside trim function prior to installation. Handing is part of installation procedure.
     - .5 Follow manufactures installation instructions. Adjustment is inclusive of spring power, closing speed, latching speed and back-check at the time of installation.
     - .6 Delayed action door closers are to be adjusted to forty (40) second delay for handicapped accessibility and movement of materials. Time period to be approved by Owner.
     - .7 Install head seal prior to installation of "PA"-parallel arm mounted door closers and push side mounted door stops/holders.
     - .8 Counter sink through bolt of door pull under push plate during installation.
     - .9 Mount closers, automatic operators and hold-open devices with through bolts, as indicated in the finish hardware schedule.
     - .10 Set, fit and adjust hardware according to manufacturer's directions. Hardware to operate freely. After installation, adjust door closers for closing and latching speed and panic devices for proper latching. Protect installed hardware from damage and paint spotting.
     - .11 Pre-drill kick plates and doors before attachment of plates. Apply with water-resistant adhesive and countersunk stainless steel screws.
     - .12 Locate hardware in accordance with the hardware schedule.
     - .13 Thresholds: Site measure openings before cutting. Set thresholds on two continuous beads of caulking conforming to item entitled Sealant in this specification.
     - .14 Door Closers and Holders: Install door closers in such a manner that door opening is unaffected, and that maximum swing is permitted.
     - .15 Weather stripping of Doors: Install weather stripping effectively to tightly seal entire perimeter of doors. Secure in place with non-ferrous screws, in accurate alignment. Maintain integrity of weather seal at head of doors fitted with closers. Adapt weather stripping as required to achieve specified performance and provide any necessary accessories.
     - .16 Electronic Hardware: Install electronic handicap operator components, security components such as magnetic locks, door status switches, card readers, processors, transformers, and other electric devices. Wiring will be supplied and installed by Electrical Division 16 including conduit, boxes and other electrical appurtenances, including connections and terminations. Be responsible for ensuring that wiring work is done in accordance with the suppliers wiring diagrams and directions. Arrange for testing and commissioning of system by the distributor of the system. Submit a copy of reports to the Consultant.

       Note: *When installing electric strikes, it is imperative that doors are perfectly aligned to enable the bolt to properly close. Also ensure that rubber silencers do not impair the proper strike action required. Adjust or remove silencers as necessary.*

2. **Adjusting and Cleaning of Finish Hardware:**
   - **.1** Check and adjust each operating hardware item to ensure proper operation and function of unit. Check locked doors against approved keying schedule.

.2 Lubricate moving parts as recommended by hardware manufacturer. Use graphite type lubricant if no other is recommended.

.3 Repair or replace defective materials and units which cannot be adjusted and lubricated to operate freely and smoothly. Re-install items found improperly installed.

.4 Prior to date of Substantial Performance, re-adjust and re-lubricate as necessary.

.5 Instruct Owner's designated personnel in the proper adjustment and maintenance of hardware and finishes at time of final hardware adjustment. Provide written verification to Consultant that this instruction has occurred.

.6 Hardware to be left clean and free of disfigurements.

3. **Field Quality Control:**

.1 Perform bi-monthly on-site inspections during hardware installation and provide inspection reports listing progress of work, unacceptable work and corrective measures. Repair or replace as directed by the Consultant.

.2 Upon completion of finish hardware installation, the Consultant, the Hardware Supplier, Installer, and General Contractor to do a thorough “walk-through” of the Project to determine that Finish and Security Products are;

.1 Furnished and installed in compliance with the Specification.

.2 Acceptable to the Owner as to fit their requirements, final installation, adjustment, and correct applications.

.3 In the event the Consultant rejects any product or installation, the Contractor to correct the condition at no expense to the Owner, until the Consultant gives final acceptance. The Installer and the Contractor to record and provide a list of hardware deficiencies. The Hardware Supplier to re-inspect when notified by the Installer as to the clearing of deficiencies. The Installer and the General Contractor to certify in writing that hardware items and their installation are in accord with requirements of Contract Documents. Final inspection must ensure hardware items operate as per Hardware Supplier requirements. Coordinate final inspections with the Hardware Supplier’s representatives as required to establish warranties. Send correspondence directly to the Consultant and copied to the Owner.

DIVISION 09 – FINISHES

09 21 16 - GYPSUM BOARD ASSEMBLIES

Part 1. General:

1. **Scope:**
   - **.1** Provide labour and material required to supply and install gypsum board and metal stud systems. Gypsum board and metal stud materials and accessories to be in accordance with CAN/CSA A82.27.
2. **References:**
   - **.1** Built Green Canada Program & Guide for High Density (HD) Multi Family Residential New Construction.
   - **.2** ASTM C442 – Standard Specification for Gypsum Backing Board, Gypsum Core board and Gypsum Shaft liner Board
   - **.3** ASTM C475 – Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board
   - **.4** ASTM C840 – Standard Specification for Application and Finishing of Gypsum Board
   - **.5** ASTM C1177 – Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
   - **.6** ASTM C1396 – Standard Specification for Gypsum Board
   - **.7** ASTM F1267 – Standard Specification for Metal, Expanded, Steel
   - **.8** CAN/ULC-S102 – Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies
   - **.9** CAN/ULC-S102.2 – Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings and Miscellaneous Materials and Assemblies
   - **.10** Gypsum Association (GA):
     - .1 GA-214 - Recommended Levels of Gypsum Board Finish.
     - .2 GA-216 - Application and Finishing of Gypsum Board.

Part 2. Products:

1. **Gypsum Wallboard:** Conforming to ASTM C1396, ivory paper faced, tapered edges, 1219mm (48") wide sheets of maximum practical lengths to minimize end joints.
   - **.1** Acceptable Materials:
     - .1 'Sheetrock Brand Gypsum Panels' by CGC Canada Inc.
     - .2 'ProRoc Regular' by CertainTeed.
     - .3 'ToughRock Gypsum Wallboard' by Georgia-Pacific Canada.
2. **Fire-Rated Gypsum Board 'Type X':** Conforming to ASTM C1396, 1219mm (48") wide sheets of maximum practical lengths to minimize end joints, tapered edges, 5/8" (16mm) thick, as indicated on drawing.
   - **.1** Acceptable Materials:
     - .1 'Sheetrock Brand Gypsum Panels, Firecode Core' by CGC Canada Inc.
     - .2 'ProRoc Type X' by CertainTeed.
     - .3 'ToughRock Fireguard Gypsum Board' by Georgia-Pacific Canada.
3. **Gypsum Ceiling Board:** Sag Resistant Gypsum Board: Meeting requirements of ASTM C1396M, ceiling board manufactured to have more sag resistance than regular type gypsum board with long edges tapered, and as follows:
   - **.1** Location: Ceiling surfaces.
   - **.2** Acceptable Materials:
     - .1 'Sheetrock Interior Ceiling Board' by CGC Canada Inc.
     - .2 'Tough Rock CD Ceiling Board' by Georgia Pacific Canada.
     - .3 'ProRoc Interior Ceiling Board' by CertainTeed.
4. **Water (Moisture) and Mould Resistant Wallboard:** Conforming to ASTM C1396 or ASTM C1278, 1219mm (48") wide panels of maximum practical lengths to minimize end joints, tapered edges, thick, with water (moisture) and mould resistant core. Mould resistant panel score of 10 when tested in accordance with ASTM D3273 and evaluated to ASTM D3274. Less than 5% water absorption by weight after 2-hour immersion, as per ASTM C473.
   - **.1** Acceptable Materials: Paperless, coated fibreglass mat on face, back and long edges, water-resistant treated core gypsum board. Conforming to ASTM C1658:
     - .1 'DensArmour Plus High Performance Interior Panels' by Georgia Pacific Canada.
     - .2 'Sheetrock Glass Mat Mold Tough' by CGC Canada Inc.
     - .3 'ProRoc M2 Tech' by CertainTeed.
5. **Joint Materials:**
   - **.1** Joint Reinforcing Tape: 2" (50mm) wide x 0.3mm thick perforated paper with chamfered edges.
   - **.2** Joint and Skim Compounds: gypsum with latex resin, possessing good adhesion, mixed with fresh, unadulterate.
   - **.3** Skim Coating: "Durabond 90" or equivalent manufactured by Domtar Gypsum. Compounded water, having no detrimental effect on compounds.

.4 Green Glue Noiseproofing Compound: Noiseproofing compound manufactured by Green Glue Company (www.greenglue.com) to be applied between layers of gypsum board at a rate of 2 tubes per 4' x 8' sheet of gypsum board as scheduled – refer to the construction assemblies on the architectural drawings.

6. **Accessories:**

.1 Gypsum Wallboard Accessories:

.1 In general, gypsum wallboard accessories will conform to ASTM C1047.

.2 Corner Beads:

.1 Made from galvanized steel sheet conforming to ASTM A653, minimum 0.0179" (25 gauge). Minimum width of flanges 28mm (1-1/8") for 12mm (1/2") thick wallboard and 32mm (1-1/4") for 16mm (5/8") thick wallboard.

.3 Casing Beads:

.1 Made from galvanized steel sheet conforming to ASTM A653, minimum 30 gauge, U-shaped designed for finishing with joint compound.

.4 Control Joints:

.1 Made from galvanized sheet steel conforming to ASTM A653, minimum 0.0179" (25 gauge), or roll-formed zinc-alloy to resist corrosion, with expansion joint material perforated flanges.

.2 'Zinc Control Joint No. 093' by CGC Inc.

.3 Or approved alternate.

.5 Reveals:

.1 Galvanized sheet steel conforming to ASTM A653, minimum 0.0179" (25-gauge), in profiles as indicated on drawings.

.2 Wallboard Screws:

.1 Corrosion resistant, self-drilling, self-tapping gypsum wallboard screws conforming to ASTM C1002 (Type S) and ASTM C954 (Type S-12), 24mm (1") long No. 6 for single layer application, 41mm (1-5/8") long No. 7 for double layer application.

.2 At fire-rated construction, type and size of wallboard screw will be same as used in fire-rating test.

.3 Joint Compound for Interior Gypsum Board:

.1 Conforming to ASTM C475 and as recommended by gypsum wallboard, fire-rated gypsum wallboard and exterior wallboard manufacturers to suit conditions.

.4 Joint Compound for Exterior Sheathing Boards and Soffit Panels:

.1 Fibreglass mesh tape.

.5 Resilient Sponge Tape:

.1 Closed cell neoprene sponge type tape with self-sticking adhesive on one side. 'Permastik 122X' by Jacobs and Thompson Ltd., or foamed vinyl type tape, 'Arnofoam' by Arno Adhesive Tape Incorporated.

.6 Adhesive:

.1 Conforming to CGSB 71-GP-25M, and as recommended by manufacturer and compatible with contacted surfaces.

.7 Acoustic Sealant:

.1 Green Glue Sealant: Noiseproofing sealant manufactured by Green Glue Company (www.greenglue.com) to be applied at joints between ceiling and wall assemblies' gypsum board and as indicated on the architectural drawings.

.8 Sill Plate Gasket:

.1 Install sill gasket continuously under sill plate on concrete floors to isolate steel and reduce air infiltration.

.2 Size: Thickness: 4.5mm (3/16"); Width: To suit stud width

.3 Approved Products: FoamSealR by Owens Corning or approved alternate.

.9 Access Panels:

.1 Supply 600 x 600 (24" x 24") self-framing metal access panels with integral locks as approved by Consultant, where required for access to concealed controls and equipment, where panels are not provided by Division 22/3 and 26, by Le Hage Metal Ltd., or Acudor Products Limited, or approved alternate.

7. **Steel Studs:** Depth and gauge to suit span. Minimum load is 5 psf. Max deflection is L/240. Provide studs with increased depth where indicated on the drawings. Minimum requirements include; knurled flanges 1-1/4" (32mm) wide with edges doubled back at least 3/16" (4.8mm); #25 gauge (0.59mm) steel galvanized, typical, with girts as required and with service access holes. Where stud length is greater than 13'-0" use minimum 3 5/8", 18gaugemetal studs at 24" o/c.
8. **Retainer Studs:** As manufactured by Bailey Metal Products, or Insulock Systems.
9. **Partition Runners:** As specified for studs with flanges a minimum 5" (125mm) high, and to suit depth of studs as required to serve as backing for carpet base or terrazzo where carpet or terrazzo occurs.
10. **Bracing Channels:** For partitions, 3/4" wide x 1-1/2" high x 16 gauge thick (19mm x 38.1mm x 1.6mm) cold-rolled, galvanized steel.
11. **Furring Channels:** #25 gauge galvanized, nominal size of 7/8" (22mm) deep by 1-1/4" (32mm) face, hat type with knurled face.
12. **Resilient Channels:** CGC RC-1 or equivalent by other reputable manufacturers.
13. **Ceiling Hanger System:**

.1 **Hangers:** Galvanized annealed steel wire, #12 gauge to support a maximum weight of 68 kg. per hanger. #9 gauge to support a maximum weight of 140 kg. per hanger, and galvanized annealed steel rod 3/16" (4.8mm) diameter to support a maximum weight of 250 kg. per hanger.

.2 **Inserts and Hanger Connection:** Steel, galvanized after forming, suitable for structure and ceiling conditions and loading.

.3 **Runner Channels:** Galvanized steel channels, #16 gauge (1.6mm) overall thickness, 1-1/2" high (38.1mm) with 3/4" (19mm) wide flanges, for primary furring member in suspended gypsum board ceilings.

.4 **Acoustical Caulking:** "Noiseproofing Compound / Sealant" by Green Glue or "Acoustical Sealant" by Tremco (Canada) Limited.

.5 **Gaskets:** "Noiseproofing Tape" by Green Glue or FoamSealR Sill Gasket by Owens Corning. Sill gaskets to be 6mm thick x width of metal stud framing as indicated on the drawings.

Part 3. Execution:

1. Install gypsum boards and metal studs to conform with CAN CSA A82.31-M1980 – Gypsum Board Application and with the following;

.1 Examination:

.1 Before application of gypsum board commences, ensure that services have been installed, tested and approved by relevant Jurisdictional Authorities and Consultant; that conduits, pipes, cables and outlets are plugged, capped or covered; and that fastenings and supports installed by others are in place.

.2 Ensure that environmental conditions and work preceding that of this Section are satisfactory.

.3 Verify that work performed under other Sections as a part of a ULC specification for a fire-rated assembly has been done in accordance with that specification.

.2 General:

.1 Install furring, studs, gypsum board, accessories, and other related products in strict accordance with CSA Standard A82.31, including Appendix B "Control Joints". Where the standard does not incorporate specific products and methods, follow the manufacturer's directions. Use 5/8" (16mm) thick gypsum board for interior work unless detailed otherwise.

.2 Install work within 1/8" (3mm) of dimensioned location unless approved otherwise by Consultant, and flat to tolerance of 1/8" (3mm) maximum in 10'-0" (3m) and 1/16" (1.6mm) maximum in any running 12' (300mm).

.3 Co-ordinate the work of this Section with that of other Sections. Ensure that adequate preparation is made for the attachment of hangers, fasteners, stiffeners, and reinforcing. Provide for carrying and integration of flush-mounted and recessed components only after consultation and verification of methods with those performing the work of Divisions 15 and 16. Do not use through-the-roof hangers.

.4 Do not install metal framing, trim, casings, or accessories which have been bent, dented, or otherwise deformed.

.5 Securely attach trim, casings, framing and accessories. Attachment by means of tape is unacceptable.

.6 Framing and furring shown on Drawings is indicative, but do not regard it as exact or complete. Construct work to provide adequate strength to withstand stresses imposed by use without distortion and to maintain dimensions indicated on drawings.

.7 Erect supporting and finish materials to dimensions indicated on drawings, plumb, level, straight, and square to adjoining elements.

.8 Provide for movement at intersections with structural members to avoid transference of loads to this work. Construct vertically sliding deflection space at top of partitions by means of double channels. Secure top channel to structure and bottom channel to stud work. Secure board only to bottom track making allowance for up to 3/4" (19mm) deflection of structure. Cut board short at top and caulk this joint.

.9 Make allowance for thermal movements in gypsum board systems.

.10 Provide control joints in gypsum board work in locations as indicated on Drawings and at no greater spacing than 20'-0" (6000mm) in each direction, at perimeters of ceilings where they abut walls and other vertical surfaces, at abutting structural elements, at dissimilar walls and ceilings, at structural expansion and control joints, and at other locations where stresses are likely to develop as recommended by board manufacturer. Line up control joints with joints in other construction or with centrelines of mullions, columns, piers, or similar building elements.

.11 Form control joints using continuous furring channels along each side of joint locations, and filling control joint space with specified joint strip, secured in place, making straight joints.

.12 Install casings and thermal breaks at junctions of gypsum board with exterior door, window, or screen joints.

.13 Do not support the work of this Section from, nor make attachment to ducts, pipes, conduit or the support framing of the work of other Sections. Place supplementary steel supports as required to maintain hanger spacing and to keep mechanical ducts free from hangers being secured to.

.14 Do not apply gypsum board in close proximity to hot pipes or heating ducts.

.15 Install materials with the minimum of joints. Tightly butt joints without force and neatly align them.

.16 Frame openings on each side with suitable sections. Provide clearances required at mechanical and electrical services such as grilles, diffusers, access panels and lighting fixtures only after verification of requirements in each case.

.17 Co-operate with those installing the work of other Sections. Where the work of others penetrates gypsum board construction, fit openings snugly, and to ensure cover by escutcheons or plates utilized.

.3 Fixture, Cabinet, Toilet Partition and Urinal Screen Supports:

.1 Verify location of supports within gypsum board assemblies to support wall mounted lights, fitments, cabinets, plumbing fixtures, wall plates required for grab bars and any other item attached to drywall. Co-operate and co-ordinate with trades and provide information in ample time to ensure supports are provided in the correct locations, and are adequate to support the loads.

.4 **Partition Stability**: Where partitions do not extend to structure, provide suitable internal reinforcement to prevent lateral movement of the partitions. Secure head runners to acoustic tees by means of "twist clips".

.5 **Concrete Anchors:** Locate anchorage points in reinforced concrete floor slab underside in accordance with gypsum board manufacturer's suspension requirements. Drill holes with carbide-tipped drill bits conforming to ANSI B94.12. Install anchors; minimum installation depth and method of expansion to be as recommended by the anchor manufacturer.

.6 Installation of Suspended Ceiling Framing and Furring:

.1 **I**nclude in the work of this Section the supply of hangers and supervision of their proper location, or inserts for hanger attachment, when either or both are embedded in concrete.

.2 Space hangers for runner channels to suit structure, to support ceiling load, at a maximum distance of 4'-0" (1220mm) o.c. and at no greater distance than 6" (150mm) from ends of runner channels.

.3 Install runner channels at 3'-0" (915mm) o.c. generally, and at no greater distance than 6" (150mm) from terminations of supported cross-furring members. Bend rod hangers sharply under bottom flange of runners, and wire securely in place with saddle ties.

.4 Splice runner channels by lapping at least 12" (300mm), with interlocking flanges and wires at each end with two loops. Splice only where unavoidable. Do not bunch or line up splices.

.5 Install cross-furring at 24" (600mm) generally, and at no greater distance than 6" (150mm) from walls, openings, breaks in continuity of ceilings, and changes of direction. Space furring in cases to suit incorporated services, and so as to avoid contact with perimeter walls. Span hat-type furring no greater than 4'-0" (1220mm). Use metal studs for greater spans: 1-5/8" (40mm) deep spanning to 5'-0" (1525mm), 2-1/2" (65mm) deep to 6'-0" (1830mm) and 3-5/8: (92mm) deep to 8'-0" (2440mm).

.6 Secure cross-furring to supports with double wire ties or approved equivalent attachment. Splice by nesting and tying together with8" (200mm) overlap.

.7 Erect entire hanger and suspension system to adequately support the ceiling assembly, including services incorporated with a maximum deflection of 1/360 of span of each component member, and free from horizontal movement.

.8 Enclose ducts, pipes or beams that occur below the general finished ceiling level with metal furring and gypsum board, in rooms where gypsum board is specified.

.9 Enclose ducts, pipes, or beams that occur below the general finished ceiling level with metal furring and gypsum board, in rooms where acoustic treatment for ceilings is specified.

.10 Form recesses for light coves where indicated on drawings. Enclose light coves with gypsum board.

.7 Installation of Gypsum Board:

.1 Extend boards into door, window, and other opening reveals.

.2 Back joints with a framing member.

.3 Install boards in maximum lengths and widths to minimize joints, and never in lengths of under 6'-0" (1800mm). Stagger end joints where they are unavoidable. Locate joints in ceilings and soffits where least prominently discernible.

.4 Form neat joints at mill ends and at field-cut edges of wallboard panels. Cut paper on face with a knife. Smooth by sanding and rubbing edges together.

.5 Fasten boards to metal support members by sheet metal gypsum board screws at 12" (300mm) o.c. no closer than 3/8" (10mm) to and no farther than 1/2" (12.7mm) from centre of joints. Do not force adjacent boards into place. Allow moderate contact. Provide extension slips where required. Drive screws to form a slight depression, but no so paper cover is broken.

.6 Where curved gypsum board is indicated, wet boards and bend to required radius, and block in position until dry. Finished curved surface to be smooth and even.

.8 Treatment of Gypsum Board Joints:

.1 Fill joints, screw holes, and depressions on board surfaces exposed to view to provide smooth, seamless surfaces, and square, neat corners. Use jointing compounds and reinforcing tapes in conformance with manufacturer's specifications. Ensure that board is tight against framing members, fasteners are properly depressed, and adhesives have sufficiently cured.

.2 Fill joints, edges and corners by Gypsum Association Level 5 three coat tape and joint filler method.

.3 At external corners, install corner beads secured to framing at 6" (150mm) o.c. on alternate flanges. Fill to nose of corner bead with joint filler and topping cement, as specified for bevelled joints.

.4 At casing beads installed at edges of board exposed to view, where board butts against other materials, with no trim to conceal junction at control joints, at perimeter of ceiling surfaces, at top of partitions where they stop against continuous ceiling surfaces, and where otherwise shown on drawings, secure casing beads to framing at 12" (300mm) o.c.

.5 At screwheads, fill holes and depressions with a two-coat application of joint filler.

.9 Installation of Accessories:

.1 Install accessories such as access panels, and grilles when supplied by other sections. Obtain prior Consultant's approval of locations of accessories prior to installation.

.2 Gypsum board infill at access panels to have taped edges. Apply gypsum board with adhesive. Fill and sand smooth perimeter edges as specified for joint finishing.

.10 Cleaning and Patching:

.1 Remove droppings and excess joint compound from work of others and from work of this Section, before it sets.

.2 Make good to cut-outs for services and other work, fill in defective joints, holes, and other depressions with joint compounds.

.3 Make good defective work, and ensure that surfaces are smooth, evenly textured, and within specified tolerances to receive finish treatments.

.4 Clean off beads, casings, and other metal trim, and leave surfaces ready for specified finishes.

09 65 00 – RESILIENT FLOORING

Part 1. **General:**

1. **Scope:**
   - **.1** Provide linoleum sheet flooring, tactile warning strips, and vinyl composite tiles in accordance with interior finishes list.
   - **.2** Provide rubber base for other flooring.
2. **References:**
   - **.1** American Society for Testing Materials (ASTM):
     - .1 E648-06 - Critical Radiant Flux of Floor-Covering Systems Using a Radiant Energy Source.
     - .2 E662-06 - Specific Optical Density of Smoke Generated by Solid Materials.
     - .3 E1907-06 - Evaluating Moisture Conditions of Concrete Floors to Receive Resilient Floor Coverings
     - .4 F710-05 - Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring.
     - .5 F1303-04 - Sheet Vinyl Floor Covering with Backing.
     - .6 F1913-04 - Sheet Vinyl Flooring without Backing.
   - **.2** Resilient Floor Covering Institute (RFCI):
     - .1 Recommended Work Practices for Removal of Resilient Floor Coverings.
3. **Submittals:**
   - **.1** Provide submittals in accordance with Section 01 33 00.
   - **.2** Product Data:
     - .1 Description of resilient material and accessories to be provided.
     - .2 Resilient material manufacturer's recommendations for adhesives, weld rods, sealants, and underlayment.
     - .3 Application and installation instructions.
   - **.3** Shop Drawings: Submit shop drawings indicating:
     - .1 Location of seams and edges.
     - .2 Location of columns, doorways, enclosing partitions, built in furniture, cabinets, and cut out locations.
     - .3 Type and style of resilient transition strip used between adjacent flooring types.
   - **.4** Site Quality Control Test Results:
     - .1 Submit results of testing moisture in concrete subfloors prior to installation of flooring. Results to include comparison of manufacturer’s recommended moisture content to actual moisture vapour emission rate.
   - **.5** Maintenance Data and Operating Instructions:
     - .1 Operation and Maintenance Data: Submit manufacturer’s written instructions for maintenance and cleaning procedures, include list of manufacturer recommended cleaning and maintenance products, and name of original installer and contact information in accordance with Section 01 33 00 – Submittals: Operation and Maintenance Data.
   - **.6** Safety Data Sheet:
     - .1 Submit WHMIS safety data s for incorporation into the Operation and Maintenance Manual. Keep one copy of WHMIS safety data s on site for reference by workers.
4. **Quality Assurance:**
   - **.1** Manufacturer’s Qualifications: Manufacturer to have been installing poured in place surfacing for minimum of five (5) years.
   - **.2** Contractor executing work of this section to have a minimum five (5) years continuous Canadian experience in successful installation of work of type and quality shown and specified. Submit proof of experience upon Consultant's request.
   - **.3** Resilient Flooring Installer: Use an installer who is approved by flooring system manufacturer.
   - **.4** Pre Installation Conference: Conduct conference at Project site in accordance with requirements of Section 01 31 19 to verify project requirements, substrate conditions, patterns and layouts, coordination with other sections affected by work of this section, manufacturer’s installation instructions and manufacturer’s warranty requirements.
   - **.5** Sheet vinyl floor coverings to meet fire performance characteristics as determined by testing products, per ASTM test method, indicated below by Underwriters Laboratories, Inc. (UL) or another recognized testing and inspecting agency acceptable to authorities having jurisdiction.
     - .1 Critical Radiant Flux: 0.45 watts per sq. cm or more, Class I, per ASTM E648.
     - .2 Smoke Density: Less than 450 per ASTM E662.
5. **Delivery, Storage, Handling and Protection:**
   - **.1** Coordinate deliveries to comply with Construction Schedule and arrange ahead for off-the-ground, under cover storage location. Do not load any area beyond the design limits.
   - **.2** Materials to be carefully checked, unloaded, stored and handled to prevent damage. Protect materials with suitable non-staining waterproof coverings.
   - **.3** Store material in original, undamaged containers or wrappings with manufacturer's seals and labels intact.
   - **.4** Restrict traffic by other trades during installation.
   - **.5** Provide adequate protection of completed tiled surfaces to prevent damage by other trades until completion of this project. Minimum protection to consist of kraft paper.

6. **Environmental Conditions:**
   - **.1** Temperature of room, floor surface and materials to not be less than 21 degC for 48 hours before, during and for 48 hours after installation. Concrete floors to be aged for a minimum of 28 days and will be dry before application of the resilient flooring.
   - **.2** Moisture content of floor not to exceed a maximum of 3 lbs. of water per 1,000 sq.ft. of concrete slab area over a 24-hour period as measured methods approved by Consultant. Moisture content to not exceed 5% as measured by normal Thermometer Hygrometers.
   - **.3** Avoid exposure to high humidity, cold drafts and abrupt temperature changes. Keep materials under cover and free from dampness.
   - **.4** Coordination: Close spaces to traffic during flooring installation and until time after installation recommended in writing by manufacturer; install flooring and accessories after other finishing operations, including painting and ceiling construction have been completed.
7. **Maintenance Materials:**
   - **.1** Provide 5% of each colour of floor type and 30'-0" lineal feet coil stock of each colour of resilient base specified, boxed and labelled.
   - **.2** Store maintenance materials on the premises as directed by the Owner.
8. **Warranty:**
   - **.1** Warrant the work of this section against defects in materials and workmanship in accordance with the General Conditions but for an extended period of five (5) years and agree to repair or replace faulty materials or work which become evident during warranty period without cost to the Owner. Defects to include, but not limited to, bond failure, and extensive colour fading.

Part 2. Products:

1. **Manufacturers:**
   - **.1** Subject to compliance with requirements specified in this section, the following manufacturers are approved to be installed specified products on this project:
     - .1 LSI Floors.
     - .2 Forbo Floors.
     - .3 Armstrong Flooring, Inc.
   - **.2** Manufacturers offering similar solid surfacing systems may be incorporated into the work provided they meet the performance and aesthetic requirements established by the named products.
2. **Vinyl Composite Tiles:**
   - **.1** Vinyl Composition Floor Tile (VCT): 305mm x 305mm (12” x 12”) asbestos free uniform in thickness with uniform colour and pattern through the full thickness, with straight, sharp and square edges and corners, accurately cut to size, conforming to ASTM F1066:
     - .1 Approved product: ‘Solids’ by LSI Floors.
3. **Accessories:**
   - **.1** Resilient Wall Base (RB): Smooth, buffed exposed face, toe or toeless, and ribbed or grooved bonding surface supplied in maximum practical length, with pre moulded end stops and external corners to match base, conforming to ASTM F1861.
     - .1 Approved product by Johnsonite Inc. or approved alternate.
   - **.2** Fillers and Primers:
     - .1 Types and brands approved, acceptable to flooring material and resilient base manufacturers for the applicable conditions. Use non-shrinking latex compound.
   - **.3** Sealer and Wax: Coordinated with Owners preferred long term maintenance program, sealer or wax as appropriate to flooring materials specified.
   - **.4** Leveling Compound: Provide cementitious products with latex or polyvinyl acetate resins in mix.
   - **.5** Sealant: refer to Section 07 72 00.

Part 3. Execution:

1. **Examination:**
   - **.1** Examine substrates, areas, and conditions affecting work are in accordance with manufacturer's requirements, and as follows:
     - .1 Test moisture emission rate of concrete subfloor prior to installing flooring, using the calcium chloride test method in accordance with ASTM F1869.
     - .2 Verify that floor surfaces are smooth and flat to plus or minus 1/8” over 10’; notify Consultant in writing where floor tolerances are not within acceptable values.
     - .3 Verify that concrete slabs exhibit normal alkalinity of between 5 and 9 and that they are free of carbonization or dusting deleterious to flooring installation or adhesive bond.
   - **.2** Prior to beginning any installation of flooring, it is recommended that entire room be vacuumed thoroughly to remove dust, loose dirt and debris. Do not use sweeping compounds.
   - **.3** Store rubber tiles on clean, dry, flat surface, carefully protecting corners and edges from possible damage, including from exposure to harmful weather conditions.

2. **Preparation:**
   - **.1** Subfloors must be properly prepared to provide satisfactory bonding surface for adhesive being used to install resilient flooring. Refer to manufacturers' Subfloor Preparation Guide for requirements.
   - **.2** Provide finished concrete subfloor ready to receive resilient rubber flooring. Subfloors must be smooth and level within tolerance of 1/8" (3mm) in 10' (3.05m) radius. Minor surface cracks or grooves must be filled with good quality Portland cement based patching or leveling compound. High spots, bumps and peaks must be repaired prior to installation. Once subfloor preparation is complete, subfloor to have CSP (Concrete Surface Profile) of 1.
   - **.3** Maintain stable room and subfloor temperature prior to installation, before performing moisture tests, during the installation and min. 48 hours after installation. Recommended temperature range of 18 degrees Celsius to 30 degrees Celsius. Humidity control level is between 35 to 55%.
   - **.4** Concrete substrates must be fully cured and free of any hydrostatic and moisture discrepancies. Moisture and alkalinity tests must be performed on concrete substrates, under in-service conditions (see sentence 3 above). pH level to be in range of 7 to 10. Readings below 7 and more than 10 known to affect adhesives. Moisture vapor emission content of concrete slab must not exceed tolerance of adhesive specified when tested per ASTM F1869 'Anhydrous Calcium Chloride for Moisture Vapors from Concrete', and relative humidity of concrete slab must not exceed the tolerance of the adhesive specified when tested per ASTM F2170 'In-Situ Probes for Relative Humidity in Concrete Slab'.
   - **.5** Do not attempt moisture test until HVAC unit has been operational for at least 7 days and the site conditions (temperature and humidity) are constant in building and reflective of in-service conditions.

3. **Installation:**
   - **.1** Examine areas which are to receive the work of this section. Correct unsatisfactory conditions prior to start of work. Commencement of work implies acceptance of conditions as they exist and no extra will be allowed for failure to ensure satisfactory substrate condition.
   - **.2** Install work in strict compliance with manufacturer's instructions and approved layout drawings.
   - **.3** Arrange for a minimum number of seams and place them in inconspicuous and low traffic areas, but in no case, less than 150mm (6 inches) away from parallel joints in flooring substrates.
   - **.4** Match edges of resilient floor coverings for color shading and pattern at seams.
   - **.5** Inform Resident Engineer of conflicts between this section and manufacturer's instructions or recommendations for auxiliary materials, or installation methods, before proceeding.
   - **.6** Keep joints to a minimum; avoid small filler pieces or strips.
   - **.7** Follow manufacturer's recommendations for seams at butt joints. Do not leave any open joints that would be readily visible from a standing position.
   - **.8** Follow manufacturer's recommendations regarding pattern match, if applicable.
   - **.9** Integral Cove Base Installation:
     - .1 Set preformed cove to receive base. Install base material with adhesive and terminate exposed edge with cap strip. Integral base to be // 100mm (4 inches) // 150mm (6 inches) // high.
     - .2 Install base with adhesive, terminate expose edge with cap strip.
     - .3 Internal and external corners formed to geometric shape generated by cove at either square or radius corners.
     - .4 Solvent weld joints as specified for flooring. Seal cap strip to wall with an adhesive type sealant.
     - .5 Unless otherwise specified or shown where flooring is scheduled, provide integral base at intersection of floor and vertical surfaces. Provide flooring and base scheduled for room on floors and walls under and behind areas where casework, laboratory and pharmacy furniture and other equipment occurs, except where mounted in wall recesses.

4. **Rubber Base Application**
   - **.1** Lay out base for resilient flooring. Keep number of joints at a minimum. Use full roll lengths to minimize joints.
   - **.2** Set base in adhesive tightly by using a 7lb. hand roller, against the wall and floor surfaces.
   - **.3** Install straight and level to variations of 1:1000.
   - **.4** Scribe and fit to door frames and other obstructions.
   - **.5** Cope internal corners. Use formed straight base material for corners of other angles.

5. **Cleaning, Sealing And Finishing**
   - **.1** Cleaning, sealing and finishing of resilient tile flooring to be performed using the cleaning, sealing and finishing materials specified of one manufacturer in accordance with the manufacturer's instructions and recommendations. Allow a minimum of four (4) days to elapse after completion of each resilient flooring installation before commencing cleaning, sealing, and finishing operations.
   - **.2** Work to be handed over to the Owner free of blemishes and in perfect condition.

09 90 00 – PAINTING AND COATING

Part 1. General:

1. **Scope:** Provide paint finishes using the highest grade, first line quality product of the manufacturer and comply with or exceed CAN2-85-100 for premium grade work.

Part 2. Products:

1. The following paint manufacturers are acceptable:
   - **.1** International PC.
   - **.2** Para Paints Canada Inc.
   - **.3** Benjamin Moore Paints.
   - **.4** ICI Paints Canada.
   - **.5** Sherwin-Williams Company of Canada Limited.

Part 3. Execution:

1. Prepare, prime and paint surfaces as noted in the room finish schedule and this specification and surfaces that are left unfinished by other sections / trades.
2. Paint colours to be selected by the Owner at a later date. Allow for multiple colours.
3. Hardware: Remove finish hardware, switch plates and accessories, removable trim, grilles, etc.; mask any that are not removable. Re-install these when paint is thoroughly dry and clean them. Do not clean hardware with solvent. Prime-painted hardware items to be painted to match the surface on which they are installed.
4. Provide drop cloths or adequate plastic sheets to protect floors in areas assigned for storage and mixing of paints. Mask and cover surrounding surfaces to provide neat, clean, true juncture lines, and to keep paint from adjacent surfaces. Upon completion, remove masking and clean adjacent surfaces free of overspray spatters, drips, smears and overspray.
5. Apply work using skilled tradesmen working under direction of a capable foreman, and according to manufacturer's specifications; in a workmanlike manner; with suitable clean equipment in good condition; in dust-free and under adequate illumination and suitable conditions for production of best results; evenly, uniform in sheen, colour and texture, free from brush marks, sags, crawls, runs, or other defects detrimental to appearance or performance; and in a manner to prevent spattering or spilling over finished surfaces. Sand lightly between coats with No. 00 sandpaper.
6. Prepare surfaces and provide paint finishes in accordance with the following formulas. The formula is intended to provide completely opaque surface. If surfaces are not completely opaque provide additional finish coats at no cost to the Owner.
   - **.1** On exposed ferrous metal surfaces (shop primed);
     - .1 Prepare ferrous metal surfaces as follows: sandblast / spongeblast / grind metal surface to SSPC-SP6 (to remove existing paint, rust and to expose metal surfaces) specifications before application of the primer coat.
     - .2 Touch-up only with same paint as that applied in the shop.
     - .3 Two (2) coats of acrylic latex, semi-gloss finish. Use exterior grade for exterior work and interior grade for interior work.
     - .4 Prime caulking compound as required.
   - **.2** On wood studs / plywood surfaces as scheduled;
     - .1 Prepare wood surface as follows; ensure surface is clean, free of dirt, grease or other construction debris.
     - .2 Two (2) coats of solid stain, flat finish (Aborcoat by Benjamin Moore).
   - **.3** On exposed ferrous metal surfaces (shop primed);
     - .1 Prepare Galvanized and Pre-Primed Surfaces as follows;
       - .1 New Metal With Wipe Coated Galvanizing: Thoroughly clean to remove grease, oil, dirt and other contaminants which may be present on the surface. Mineral Spirits or Xylol are acceptable solvents to use for this purpose - that is, to remove grease, oil, dirt and similar contaminants. Remove scale by wire brushing.
       - .2 Weathered Metal With Wipe Coated Galvanizing: For old and weathered galvanized and pre-primed metal, thorough surface preparation is essential - to ensure that contaminants have been removed from the surface and pre-treat as for New Metal.
       - .3 Spangled Type Galvanizing: Treat with vinyl wash primer to provide proper bond for paint finish.
     - .2 Touch-up only with same paint as that applied in the shop.
     - .3 Two (2) coats of acrylic latex, semi-gloss finish. Use exterior grade for exterior work and interior grade for interior work.
     - .4 Prime caulking compound as required.
   - **.4** On gypsum board bulkheads and walls:
     - .1 Ensure gypsum board surfaces are prepared and ready to receive paint finishes. Ensure joints are completely filled and sanded smooth and surfaces are free from ‘nail / screw popping’. Fill small nicks and or holes with patching compound and sand smooth.
     - .2 One (1) coat of primer – sealer.

.3 Two (2) coats of interior acrylic latex enamel, low lustre.

DIVISION 10 – SPECIALTIES

10 28 00 – WASHROOM ACCESSORIES

Part 1. General:

1. **Scope:**

.1 Provide washroom accessories as noted on the drawings and as per the following schedule;

.1 Typical Shower Stall:

.1	soap dispenser (SD)	1
.2	mirror (M-1)	1
.3	waste receptacle (PTD/WR)	1
.4	Shower Curtain and Rod (SCR)	1
.5	utility hook (UH)	2
.6	shelf (SH)	1

.2 Include materials and fitments required for the operation of any unit furnished, in the manner, direction and performance shown on the shop drawings and specified herein.

2. **Submittals:**

.1 Provide submittals in accordance with Section 01 33 00.

.2 Shop Drawings: Show and describe in detail, materials, finishes, dimensions, details of connections and fastenings, elevations, plans, sections, metal gauges, hardware and any other pertinent information.

.3 Coordinate the work of this section with the placement of internal wall reinforcement.

.4 Submit manufacturer's catalogue cut of each component required.

.5 Submit a washroom accessories schedule indicating accessories required, showing model number, finish and mounting height on a room by room basis.

3. **Delivery, Storage and Handling:**

.1 Coordinate deliveries to comply with construction schedule and arrange ahead for off the ground, under cover storage location.

.2 Materials will be carefully checked, unloaded, stored and handled to prevent damage. Protect materials with suitable non-staining waterproof coverings. Unsatisfactory materials to be removed from the site.

.3 Store materials in original, undamaged containers or wrappings with manufacturer's seals and labels intact.

.4 Adequately protect the structure and work of other sections during delivery, storage, handling and execution of the work of the section.

.5 Provide tools, plant and other equipment required for the proper execution of the work of this section.

4. **Warranty:**

.1 At no cost to Owner, replace mirrors should defects in silvering occur within from date of Substantial Performance a period of five (5) years.

Part 2. Products:

1. **Manufacturers:**

.1 Basis-of-Design Products: Products named in this section were used as the basis-of-design for the project; additional manufacturers offering similar products may be incorporated into the work of this section provided they meet the performance requirements established by the named products and provided they submit requests for substitution in accordance with Section 01 33 00 Submittal Procedures.

.2 Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include; but are not limited to, the following:

.1 Bobrick.
.2 ASI (American Specialties Inc.)
.3 Bradley Corp.
.4 Frost Products Ltd.

.3 Install specified product as indicated on drawings.

2. **Washroom Accessories:**

.1 **Soap Dispenser (SD):** B-26607 Trim Line Series, Surface-Mounted Multi-Roll Toilet Tissue Dispenser, as manufactured by Bobrick.

.2 **Waste Receptacle (WR):** Surface mounted paper towel disposal to be satin finish, type 304 stainless steel, 12.75 gal (48.3 l) capacity, 15 1/8” w x 23” h x 8 1/2” d, with linermate, model no B-277 ConturaSeries by Bobrick.

.3 **Shelf (SH):** Surface mounted shelf to be constructed of Type 304 stainless steel with satin finish. Mounting brackets to be 16-gauge (1.6mm) and to be welded to shelf. Shelf to be 18-gauge (1.2mm) and have 3/4” (19mm) return edges with hemmed front edge. Unit size to be approximately 6” (150mm) wide x 18” (610mm) in length. Acceptable Product: Bobrick Model No. B-296x18

.4 **Utility Hook (UH):** Bobrick B-670, Install at heights shown on drawings. Surface mounted utility hook to be constructed of Type 304 stainless steel with satin finish and to project max. 2" (50mm) from finished wall. Flange and support arm to be 22-gauge (0.8mm) and equipped with a concealed 16-gauge (1.6mm) mounting bracket, secured to a 16-gauge (1.6mm) wall plate, fastened with stainless steel setscrew. Cap to be 10-gauge (3.6mm) welded to support arm.

3. **Fabrication:**
   - **.1** Fabricate work true to dimensions, square and plumb.
   - **.2** Thickness of metal to be adequate for the various conditions, and intended uses.
   - **.3** Finished work to be free from warping, open seams, weld marks, rattles and other defects. Drilling to be reamed and exposed edges finished smooth.
   - **.4** Fastenings to be concealed or theft proof type where possible. Exposed fastenings to be neatly executed and to be of the same material and finish as the base metal on which they occur.

Part 3. Execution:

1. **Examination:**
   - **.1** Take site measurements to ensure that work is fabricated to fit surrounding construction around obstructions and projects in place, or as shown on drawings, and to suit service locations.
2. **Installation:**
   - **.1** Securely fasten accessories plumb, true, square, straight, level, and accurately and tightly fitted together and to surrounding work. Install in locations shown and specified herein. Mounting heights as shown or in accordance with the OBC in the case of barrier-free accessories.
   - **.2** Work to include anchor bolts, bolts, washers and nuts, lag screws, expansion shields, toggles, straps, sleeve brackets, clips, and other items necessary for secure installation, as required by loading and by Jurisdictional Authorities.
   - **.3** Attach work at wood by screws through countersunk holes in metal.
   - **.4** Attach work to masonry with lead plugs and non-corrosive fastenings, to support load with a safety factor of 3. Perform drilling necessary to install the work.
   - **.5** Insulate between dissimilar metals or between metals and masonry or concrete with bituminous paint, to prevent electrolysis.
   - **.6** Co-ordinate installation with the work of other trades adjacent to accessories to achieve the reveals or other edge conditions shown, where their front faces are flush with the finished wall surfaces.
   - **.7** Install accessories in rooms as scheduled herein. Exact locations to be confirmed by Architect at later date.
3. **Cleaning and Adjustment:**
   - **.1** Upon completion of work or when directed, remove traces of protective coatings or paper.
   - **.2** Test mechanisms, hinges, locks and latches and where necessary, adjust, lubricate and ensure that accessories are in perfect working order.

DIVISION 22 – PLUMBING

*Refer to Mechanical Drawings prepared by **North Eng.***

DIVISION 23 – HEATING, VENTILATION AND AIR CONDITIONING

*Refer to Mechanical Drawings prepared by **North Eng..***

DIVISION 26 – ELECTRICAL

*Refer to Electrical Drawings prepared by **North Eng.***

DIVISION 31 – EARTHWORK

31 23 00 – EXCAVATION AND FILL

1. **Protection:** Provide necessary barriers and other protection to open excavations and maintain lighting for safe pedestrian and vehicular traffic. Support abutting property and structure to maintain work safe to life, limb and property. Comply strictly with the Occupational Health and Safety Act and Regulations for Construction Projects and other applicable safety regulations in force. Protect existing buildings and surface features which may be affected by work from damage while work is in progress and repair damage resulting from work
2. **Existing Utilities and Structures:** Size, depth and location of existing utilities and structures as indicated on drawings are for guidance only. Prior to commencing work of this Section, notify applicable Owner or authorities, establish the location and extent of underground utility lines occurring in the work area to prevent damage or disturbance during execution of the Work.
3. **Excavation:** Excavation to include strata except rock excavation including frozen materials to provide sufficient space to permit application of damp proofing and/or waterproofing and installation of subsurface drainage systems. Remove and dispose of unsuitable / unusable excavated materials, concrete, masonry, paving walks and rubble and other obstructions encountered during excavation off site.
4. The Contractor to make certain that sides of excavated area are cut on a stable slope; otherwise sides must be shored and braced to maintain stability and safety. The design and installation of shoring and bracing to be the sole responsibility of the Contractor. Any findings by the Contractor of unstable soil at indicated building elevations must be reported to the Consultant immediately. Failure to report such findings to make the Contractor fully responsible for damage caused by undue settlement.
5. Keep bottoms of excavations clean and clear of loose materials, leveled and stepped at changes of levels with exception of excavations made for drainage purposes and those to slope as required.
6. ***Excavations must not interfere with normal splay of bearing from bottom of any footing.***
7. **Excavation at Bedrock:** At footings, piers and or foundation systems that are required to bear on clean, approved, sound bedrock, excavate and remove materials to expose bedrock. Clean bedrock using compressed air equipment to removal fines, gravel and loose rock. Scale bedrock to ensure that there is no loose rock supporting the foundations systems. Coordinate review of exposed bedrock by the geotechnical consultant. Where additional loose rock or scaling is required complete this work as directed by the Geotechnical Engineer. Complete scaling and cleaning of the rock to the satisfaction of the Geotechnical Engineer.
8. After completion of excavation and prior to placing any concrete on bearing strata or placing of fill, notify Consultant to inspect exposed bearing surfaces. Do not proceed without authorization.
9. Backfill material to comply with OPSS 101-13 – Material Specifications for Aggregate – Base, Subbase, Select Subgrade and Backfill Material. Material to general consist of the following types;
   - **.1** Granular 'A' Fill: screened crushed aggregate
   - **.2** Pea Gravel / Clear Stone: to be 5/8" (16mm) screened, washed 'pea gravel' or 3/4" (19mm) diameter screened, washed crushed stone graded uniformly between maximum size of use 3/4" (19mm) and minimum size of 1/4" (6mm) with not more than 5% undersize particles
   - **.3** Granular 'B' Fill: free of clay, shale and composed of clean, hard durable, uncoated particles from deposits of gravel or sand, talus rock or quarried rock, 4" (100mm) minus.
   - **.4** Granular 'B' Type II fill; to be free of clay, shale and composed of clean, hard, durable uncoated particles from quarried rock, 6" (150mm) minus.
   - **.5** Bedding Fill For Trenches:
     - .1 Earth Trenches to 600mm (2') Above Mechanical Pipe Work: Clean, natural, unwashed gravel or sand, ranging in size from medium gravel to medium sand, 100% passing 25mm (1") sieve and 95% to 100% retained on 250 um (No. 60 sieve).
     - .2 Earth Trenches - 100mm (4") Envelope Surrounding Electrical Raceways and Wiring: Fine aggregate (sand) for concrete, graded, CSA-A23.1/A23.2.
   - **.6** Earth Fill: Earth fill for use for rough grading to be clean excavated earth or clay fill materials free of, waste materials, debris of any nature, frozen material, organic matter, muskeg, topsoil, or cohesive matter and rocks larger than 100mm (4") in diameter. If sufficient quantity of material is not available from excavation, use imported fill having same, or better, characteristics. Provide minimum 12" (300mm) depth under sodded and landscaped areas
   - **.7** Lean Concrete Fill:15 MPa concrete
10. **Rock Removal:** Complete rock removal required to permit construction of proposed work. Complete rock removal in accordance with the following items. Remove and dispose of rock from the site.
    - **.1** The Contractor to comply with statutes, regulations, by-laws and orders relating to the supply, hauling, handling, use of, and storing of explosives.
    - **.2** The Contractor to retain a Blasting Consultant to advice on methods and procedures, inspect and record existing condition on the blast site and at adjacent properties, and witness / monitor blasts and rock removal.

.3 Before any blasting operations are carried out, the Contractor to give reasonable notice to any department or agency of Government and to any person, partnership or corporation, including a municipal corporation, and board or commission thereof affected thereby.

.4 Before blasting, the Contractor must give adequate warning to parts of the project by siren or other suitable means.

.5 In addition to any other precaution that may be necessary, the Contractor to, immediately prior to a blast, clear the blasting area of residents, vehicular and pedestrian traffic, and to post flagmen on each road entering the blasting area who to stop traffic and to prevent such traffic from entering the area until the blast has taken place.

.6 The Contractor to take precautions necessary in regard to explosives, drilling, or methods of blasting used to ensure that persons are not injured and that adjoining property and structures, including public utilities, are not damaged. Without limiting the General Conditions, the Contractor to be responsible for claims whatsoever arising from the hauling, handling, use of, or storing of explosives and effects direct or indirect of the drilling and blasting operations, whether on or off the limits of the contract.

.7 For purposes of defending himself and the Owner against claims for damages to buildings in the vicinity of the work, the Contractor to, both prior to and following construction and at his own expense, carry out complete inspections of buildings likely to be affected or damaged by detonations under this contract. Such inspection to be by an independent qualified agency, at the Contractor's expense. Copies of the inspection reports to be provided to the Owner.

.8 No payment to be made for protection measures or for injury to persons or for damages or repairs to property, structures including public utilities or for any claim whatsoever arising from blasting operations.

11. **Compaction Testing:** backfill to be compacted to 100% standard Proctor Dry Densities in accordance with ASTM D698. Backfill to be placed in layers not greater than 8" (200mm) thick and be compacted using mechanical equipment to suit the backfill locations. Extent and frequency of testing to be specified by the testing company. Coordinate testing as required.

12. **Backfilling:** For backfilling, use granular material herein specified, free from waste, organic matter and other objectionable foreign matter. Do not use any kind of frozen material. Clay is not to be used under any circumstances as backfilling material. Fill materials to be approved by the Consultant prior to the commencement of any backfilling operations.

.1 Concrete Footings: In areas to receive new concrete footings remove existing fill to achieve required depth as scheduled. Provide a minimum of 150mm Granular A on top native soils.

.2 Drainage Pipe / Weeping Tile: Drainage Pipe / Weeping Tile: Pea Gravel / Clear stone as defined above. Provide a minimum of 6" around the drainage pipe / weeping tile.

.3 Foundations: Insulation, damp proofing, waterproofing and drain tile, where scheduled or indicated on the drawings, to be installed and approved by the Consultant prior to backfilling excavations. Backfill to indicated levels on interior and to within 12" (300mm) of finished grade, or as required to suit site grading on exteriors with Granular 'B' Type II fill. Place backfill carefully to prevent damage to foundations, damp proofing, waterproofing and insulation. In areas with finished surface, exterior stairs and concrete pads, place fill in maximum 8" (200mm) lifts, compacting each lift to 100% SPD prior to placing subsequent layers.

.4 Earth Fill: Provide minimum 12" (300mm) earth fill under sodded and landscaped areas. Provide 6" clay stop below earth fill when placed on free draining granular fill.

.5 Slabs-on-Grade: In areas to receive slabs-on-grade, check previously places granular fill and recompact any disturbed areas. Over accepted native soils / rock / engineered fill approved by geotechnical engineer, build up to a point 8" (200mm) as scheduled under finished floor with compacted Granular 'B' Type II and granular A as scheduled on the drawings. Granular to be fully compacted and ready to receive insulation and concrete slab.

.6 Driveways, Parking Areas, Walks and Curbs: Beneath concrete sidewalks and asphalt paving, provide a minimum compacted 8" of Granular A over existing fill / native soils.