

**CURVE LAKE FN HEALTH CENTRE - REROOFING**  
38 WHETUNG ST. E.,  
CURVE LAKE, ON

**ISSUED FOR TENDER/CONSTRUCTION**

2025 02 07  
project no 24120

ARCHITECTS  
**3RDLINE.STUDIO**

## INDEX

3RDLINE.STUDIO INC. HAVE PREPARED THE FOLLOWING SPECIFICATION EXCEPT WHERE NOTED



<b>specification index</b>	<b>page no</b>
DIVISION 00 -PROCUREMENT + CONTRACTING-SS	3
DIVISION 01 - GENERAL REQUIREMENTS	20
DIVISION 02 – EXISTING CONDITIONS	62
DIVISION 06 – WOOD, PLASTICS + COMPOSITES	64
DIVISION 07 – THERMAL + MOISTURE PROTECTION	67
DIVISION 08 – OPENINGS	84
DIVISION 09 – FINISHES	97

### APPENDICES

Not applicable

### DRAWINGS INDEX

*revision no + date*

#### ARCHITECTURAL

A-0.1	Information Sheet	2025 02 07
A-1.0	Foundation Plans	2025 02 07
A-2.0	Roof Plans	2025 02 07
A-3.0	Elevations	2025 02 07
A-4.0	Section Details	2025 02 07

## **DIVISION 00 -PROCUREMENT + CONTRACTING-SS**

### **00 21 00 – INSTRUCTION TO BIDDERS**

#### **1. GENERAL**

1. The Owner is seeking the services of qualified contractors to supply labour, materials and equipment to construct the interior renovations for **CURVE LAKE FN HEALTH CENTRE – REROOFING, 18 Whetung St., E., Curve Lake, Ontario.**
2. The Owner hereby invites you to submit quotations for the construction work as described in the contract documents.

#### **2. 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.

#### **3. 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. LOCAL CONTENT CONDITIONS

1. The Bidders shall be responsible for determining the availability of Band members and must negotiate rates directly with them.
2. It is the expectation for contractors/bidders to post positions with the Band office. Contractor to preferentially hire Band member if available. Should the contractor hire someone outside the Band, they will have to report to the Band the reasons for looking beyond the community.

#### 5. QUESTIONS

1. Matters and inquiries relating to the execution of this Contract to be directed to:  
.1 Ian Boyne, t: 705.674.2300 x416 e: [iboyne@3rdline.studio](mailto:iboyne@3rdline.studio)

#### 6. COPIES OF CONTRACT DOCUMENTS

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

#### 7. 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.

#### 8. 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: **1:00pm (local time), Thursday, February 20, 2025.**  
.1 Pre-tender Site Meeting shall be located at the site of proposed construction.

#### 9. 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. Faxed, oral, telegraphed or telephone proposal, or modifications to submitted proposals will not be accepted or considered.
4. Virtual submissions on Bids & Tenders will be accepted.  
OR  
Emailed hardcopy Tender Forms clearly marked:

#### **CURVE LAKE FN HEALTH CENTRE – REROOFING**

**38 Whetung St., E., Curve Lake, Ontario**

and marked with the Bidder's Company Name,  
email this hardcopy quotation to:

[Bruno.schoenauer@banorthern.ca](mailto: Bruno.schoenauer@banorthern.ca)

Attn: Bruno Schoenauer

Telephone 705-471-6042 if there are any problems with the email.

**No later than 2pm (local time), Tuesday, March 4, 2025.**

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.

## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

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.

### 10. 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.

### 11. 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.

### 12. BONDING

4. Bonding; The Contractor to provide the following bonds;
5. **Bid Bond**; The Contractor to provide a bid bond valued at 10% of the contract value issued by a recognized insurer and to the satisfaction of the Owner. The bid bond to be submitted with the tender form prior to the close of the tender and to be valid for a period of **THIRTY (30) DAYS** from the tender closing date.
6. **Agreement to Bond**; The Contractor to provide an 'agreement to bond' prepared by a recognized insurer and to the satisfaction of the Owner, that confirms the ability of the Contractor to obtain performance and labour / material bonds required for the project. The agreement to bond to be submitted with the tender form prior to the close of the tender and to be valid for a period of **THIRTY (30) DAYS** from the tender closing date.
7. All Bid Bonds submitted, with the exception of the three (3) lowest Bidders, will be returned within ten (10) days of the Tender Closing Date. The Tender Deposits of the three (3) lowest bidders will be retained by the Owner until a formal Contract has been executed with the successful Bidder, and the successful Bidder has furnished any required documents such as Performance and Labour and Material Payment Bonds, and Insurance Certificates, or until the expiry of the time limit for tender validity, whichever is sooner.
8. If a Bidder whose Bid is accepted by the Owner refuses or fails, within ten (10) days after a Contract is offered for acceptance, to enter in a formal Contract with the Owner for the performance of the Work or to furnish such Performance of Labour / Material Bonds or Insurance Certificates as may be required, and a Contract for the Work is entered into with another bidder for a greater amount, the Bidder is liable to the Owner for the difference between the two bids up to the amount of the Bid Bond and the Owner may forthwith take proceedings under the Bid Bond.
9. **Performance Bond**; The Contractor to provide a performance bond valued at 50% of the contract value issued by a recognized insurer and to the satisfaction of the Owner.
10. **Labour / Material Bond**; The Contractor to provide a labour and material valued at 50% of the contract value issued by a recognized insurer and to the satisfaction of the Owner.
11. Performance and Labour / Material Bonds to be made out in favor of the Owner and to be submitted within 10 days of the acceptance of the Tender.
12. Cost of bonds to be included in the Contract Price.

### 13. 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 is 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.

### 14. PERMITS

1. The Building Permit will be obtained and paid for by the Owner.
2. The Contractor to obtain and pay for other permits required to complete the work of this Contract.

### 15. 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. 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 no later than **the number of weeks indicated on the tender form**.
2. The completion date assumes that the Owner to award the contract within 4 weeks of the close of the tender. Should the award of the tender occur after this time frame the completion date will be extended to match the delay in award of the tender.

### 17. CONSTRUCTION SEQUENCING

1. **Owner and Public Occupancy During Construction:**
  - .1 Portions of the existing building will need to remain occupied for the duration of the construction period. Significant areas within the existing building will be temporarily relocated to alternate facilities off site to permit uninterrupted access to large areas of the building for demolition and construction purposes. Do not disrupt business of the remaining occupants except as specifically phased / scheduled or as permitted by the Owner and Consultant. Execute Work to cause minimum interference with activities in existing premises and to maintain maximum safety and security to occupants at all times and in accordance with Owner's instructions and/or requirements.
  - .2 As the building will remain occupied during the work of this Contract, the work is to be sequentially phased to suit the ongoing use of the existing building. Construct the work in phases as indicated to provide for continuous public usage and security of portions of the premises during construction.
  - .3 It is essential that the Contractor co-ordinate and proactively consult with the Owner throughout the duration of the Contract in order to maintain established security and operational protocols as required.
  - .4 Co-operate and consult with the Owner, on a continuous basis, in scheduling operations to minimize conflicts, maintain security and to facilitate Owner usage. Co-ordinate Construction Schedule with Owner to suit public occupancy of portions of the existing building during construction as well as maintain existing and/or ongoing site security. Schedule and substantially complete designated portions of Work for Owner's occupancy prior to Substantial Performance of entire Work. Refer to the schedule of project phases described herein.
  - .5 It is essential that necessary arrangements be made to maintain uninterrupted all services which are necessary for the effective functioning of the existing building program, operations and security levels. This includes delivery of new materials, removal, cutting, reconnecting, reinstalling, rerouting, and reinstatement of material and of services completed. Note that noise and disturbance must be kept to a minimum in areas of the existing building scheduled to remain occupied.
  - .6 Execute all work as quietly as possible in and around existing building during all times that it is occupied. Schedule dusty, noisy or odorous operations to occur outside normal business hours of Monday to Friday, 8am to 5pm in order to achieve the least disturbance to occupants of the existing building.
  - .7 Maintain fire access / control throughout all areas of the building including areas to remain occupied during construction / renovations as well as areas subject to new construction / renovations. Provide safety barricades and lights as indicated or where directed.
  - .8 Provide unrestricted access for designated security personnel to all areas subject to renovations for the duration of the construction work.

## **CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .9 The Contractor shall be responsible for the continued operation of all critical building systems including but not limited to water / plumbing, HVAC, natural gas systems, fire alarm systems, security systems, exiting, public circulation. These system shall remain in operation to support the ongoing operation of the Owner's / tenants operations throughout the phased construction of the work.
2. Access of Personnel and Movement of Equipment
  - .1 Contractor shall limit use of premises for Work, for storage and for access, to allow ongoing partial Owner occupancy, work by other contractors and public usage of the existing and renovated building.
  - .2 Coordinate use of premises under direction of Owner and Consultant.
  - .3 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
  - .4 The Owner and security staff are to be provided with unrestricted access to all areas of the building under construction for the duration of the renovation and expansion project.
3. Security Requirements
  - .1 It is essential that the Contractor co-ordinate and proactively consult with the Owner and throughout the duration of the Contract in order to maintain established security protocols.
  - .2 The Contractor shall always be mindful of the need to maintain ongoing security for the duration of the Contract.
  - .3 These security checks, if required, shall be arranged by the Owner's security personnel. The Contractor will be required to provide to the Owner, names, addresses, social insurance numbers and consents of all of its workers, and that of any Sub-Contractor's workers performing work on Site.
  - .4 Any worker who is unable to obtain security clearance, or who refuses to consent to such security checks, upon notice by the Owner to Contractor, shall not be permitted to work on Site.
  - .5 During course of Work, new workers not included in original submission may likewise be subject to security check. Such new workers shall not be allowed on Site until clearance is given by the Owner.

### **18. 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.

### **19. 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.

### **20. 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.

### **21. 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.

## **22. 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.



**00 41 13 -TENDER FORM**

To: **Curve Lake First Nation, 22 Winookeedaa Road, Curve Lake, Ontario, K0L 1R0**

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 **Curve Lake FN Health Centre – Reroofing, 38 Whetung St., E., Curve Lake, Ontario** and including:

- .1 All Drawings dated: **2025 02 07**
- .2 Specifications dated: **2025 02 07**
- .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 (\$ \_\_\_\_\_).

VALUE ADDED TAXES (HST) OF 13% PAYABLE BY THE OWNER TO THE CONTRACTOR IS:

\_\_\_\_\_ and \_\_\_\_\_ /100 DOLLARS (\$ \_\_\_\_\_).

TOTAL AMOUNT PAYABLE BY THE OWNER TO THE CONTRACTOR FOR THE CONSTRUCTION OF THE WORK IS:

\_\_\_\_\_ 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 in the amount of **\$18,000.00** as indicated in section 01 21 00 Cash Allowances.
- .7 The UNDERSIGNED agrees to complete the work in accordance with the construction schedule in Division 00, item 17, that articulates a phased completion schedule with all work completed in \_\_\_\_\_ weeks.
- .8 The Undersigned submits herewith the Bid Bond and Agreement to Bond for the project.

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .9 The UNDERSIGNED will include the following unit cost. All unit costs include profit and overhead and shall not fluctuate for the duration of this Contract.
- .10 All rates are firm and shall not fluctuate for the duration of this Contract. There shall be no additional charges for overhead and profit.

Item	Standard Rate/Hour	Overtime Rate/Hour
Foreman		
Tradesman		
Labourer		

- .11 **I/WE DECLARE** that this tender is made without collusion, knowledge, comparison of figures or arrangement with any other company, firm or person submitting a tender for the same work and is in all respects fair and without collusion or fraud.

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



## 00 73 00 -SUPPLEMENTAL GENERAL CONDITIONS

### Part 1. 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

### Part 2. Modifications to Agreement Between Owner and Contractor

#### ARTICLE A-5 PAYMENT

1. In paragraph 5.1.1 of Article A-5 add the following words to the end:  
"or, where there is no *Payment Certifier*, jointly by the *Owner and Contractor*"

#### ARTICLE A-6 – RECEIPT AND ADDRESSES FOR NOTICES IN WRITING

1. Delete paragraph 6.5 of Article A-6 in its entirety and replace it with the following:  
6.5 Contact information for a party may be changed by *Notice in Writing* to the other party setting out the new contact information in accordance with this Article.

### Part 3. Modifications to Definitions

1. 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".
2. Add the following definition: Proper Invoice
  - .1 "*Proper Invoice* means a "proper invoice" as defined in the *Payment Legislation*, if any, and as may be modified by written agreement between the parties to the extent permitted by such *Payment Legislation*."
3. Add the following definition:
  - .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*."

## MODIFICATIONS TO GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

### Part 4. General Provisions

#### GC 1.1 CONTRACT DOCUMENTS

1. Delete paragraphs 1.1.3 and 1.1.4 in their entirety and replace them with the following:

## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

- .1 "1.1.3 The *Contractor* shall review the *Contract Documents* for the purpose of facilitating and co-ordination and execution of the *Work* by the *Contractor*. The *Contractor* shall report promptly to the *Consultant* any ambiguities, design issues or other matters requiring clarification made known to the *Contractor* or that the *Contractor* may discover from such a review. Such review by the *Contractor* shall comply with the standard of care described in paragraph 3.9.1 of the *Contract*.
- .2 1.1.4 Except for its obligation to review the *Contract Documents* and report the result pursuant to paragraph 1.1.3, the *Contractor* is not responsible for ambiguities, design issues or other matters requiring clarification in the *Contract Documents* and does not assume any responsibility to the *Owner* or to the *Consultant* for the accuracy of the *Contract Documents*. Without limiting the foregoing, the *Contractor* shall not be liable for any damages or costs resulting from any ambiguities, design issues or other matters requiring clarification in the *Contract Documents* which the *Contractor* could not reasonably have discovered from such a review in accordance with the standard of care. If the *Contractor* does discover any ambiguities, design issues or other matters requiring clarification in the *Contract Documents*, the *Contractor* shall not proceed with the work affected until the *Contractor* has received modified or additional information from the *Consultant*. The impacts of any ambiguities, design issues or other matters requiring clarification in the *Contract Documents*, including to the *Contract Price* and *Contract Time*, shall be addressed by the parties in accordance with Part 6 – CHANGES."
2. Add the following to the end of subparagraph 1.1.6.2:
  - .1 Except to the extent the *Consultant* is indemnified as a third party beneficiary as provided in subparagraphs 9.2.7.4 and 9.5.3.4 and in paragraph 13.1.3.
3. Add paragraph 1.1.12 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.
4. Add paragraph 1.1.13 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.

## Part 5. Administration Of the Contract

### GC 2.2 ROLE OF THE CONSULTANT

1. In paragraph 2.2.3 add the following to the end:
  - .1 "Without limiting the foregoing, the *Consultant* may appoint one or more authorized representatives in writing who may fulfill the obligations of the *Consultant* under this *Contract*."
2. In paragraph 2.2.8 add the words ", written statements" after the word "interpretations" in both the first and second sentences; and  
add the following to the end of paragraph 2.2.8:
  - .1 The *Owner* and the *Contractor* shall waive any claims against the *Consultant* arising out of its making of any interpretations, written statements, or findings in accordance with paragraphs 2.2.6, 2.2.7, 2.2.8, and 7.1.2, but only to the extent that any such interpretations, written statements, and findings are made by the *Consultant* in an unbiased manner, and in accordance with the *Consultant's* professional standard of care at law.
3. In paragraph 2.2.13 add the words "which are provided" before the words "by the *Contractor*".

### GC 2.4 DEFECTIVE WORK

1. In paragraph 2.4.1:
  - .1 Add after the words "shall promptly correct" the phrase "in a manner acceptable to the *Owner* and the *Consultant*"; and
  - .2 Add after the words "*Contract Documents*" the phrase "or work that the *Contractor* discovers to be defective, whether or not the defective work had been identified by the *Consultant*, and".
2. Add new paragraph 2.4.4 as follows:
  - .1 2.4.4 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*.

## Part 6. Execution of the Work

### GC 3.1 CONTROL OF THE WORK

1. Add new paragraph 3.1.3 as follows:
  - .1 3.1.3 Prior to commencing individual procurement, fabrication and construction activities, the 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 Contractor shall immediately notify the Consultant in writing and obtain written instructions from the Consultant before proceeding with any part of the affected work.

### GC 3.2 CONSTRUCTION BY OWNER AND OTHER CONTRACTORS

1. Add new paragraph 3.2.7 as follows:
  - .1 3.2.7 At the commencement of the Work, the Contractor shall prepare for the review and acceptance of the Owner and the Consultant, a schedule indicating the times, within the construction schedule referred to in GC 3.4, that items 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.

### GC 3.4 CONSTRUCTION SCHEDULE

1. Add sentence .4 to paragraph 3.4.1:
  - .1 “.4 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 the following to the end of paragraph 3.7.1:
  - .1 The Contractor represents that it has sufficient skilled employees to replace, subject to the Owner’s approval, acting reasonably, its designated supervisor and project manager in the event of death, incapacity, removal or resignation.
2. Add new paragraphs 3.7.4 and 3.7.5 as follows:
  - .1 3.7.4 The Owner shall provide the Contractor in a timely manner with all relevant information (including storage, protection, and installation requirements) regarding Products to be supplied by the Owner or other contractors and, prior to delivery of any such Products to the Place of the Work, the Owner shall obtain the Contractor’s written approval of the delivery date and proposed storage, protection and installation requirements.
  - .2 3.7.5 Once the Contractor has accepted delivery of Products, the Contractor shall be responsible for the safe storage and protection of Products as required to avoid dangerous conditions or contamination to the Products or other persons or property. Products shall be stored in locations and at the Place of the Work to the satisfaction of the Owner and the Consultant as agreed and approved by the Contractor pursuant to paragraph 3.7.4.

## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

*Notwithstanding the foregoing, the Contractor shall not be responsible for any Products supplied by the Owner or other contractors unless:*

- .1 the *Contract Documents* expressly stipulate that such *Product* is to be the *Contractor's* responsibility and to be installed by the *Contractor* as part of the *Work*;
- .2 the *Contractor* has or has received from the *Owner* proof of insurance coverage sufficient, at a minimum, to cover the replacement cost of such *Product*; and
- .3 the *Owner* obtained the *Contractor's* approval as required by paragraph 3.7.4.

### GC 3.8 SHOP DRAWINGS

1. Add the words "AND OTHER SUBMITTALS" to the title of GC 3.8 after the words "SHOP DRAWINGS".
2. Add the words "and Submittals" after the words "Shop Drawings" in paragraphs 3.8.1, 3.8.2, 3.8.3, 3.8.3.2, 3.8.5, 3.8.6, and 3.8.7.
3. Delete paragraph 3.8.2 in its entirety and replace it with new paragraph 3.8.2 as follows:
  - .1 3.8.2 Prior to the first application for payment, the *Contractor* and the *Consultant* shall jointly prepare a schedule of the dates for submission and return of *Shop Drawings* and *Submittals* in an orderly sequence
4. Delete the words "with reasonable promptness so as to cause no delay in the performance of the *Work*" and replace them with the words "within 10 *Working Days* or such longer period as may be reasonably required" in paragraph 3.8.7.

### GC 3.9 PERFORMANCE BY CONTRACTOR

1. Add new General Condition GC 3.9 as follows
  - .1 GC 3.9 PERFORMANCE BY CONTRACTOR
    - .1 3.9.1 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.

## Part 7. Allowances

### GC 4.1 CASH ALLOWANCE

1. Delete paragraph 4.1.7 in its entirety and replace it with the following:
  - .1 4.1.7 At the commencement of the *Work*, the *Contractor* shall prepare for the review and acceptance of the *Owner* and the *Consultant* a schedule indicating the times within the construction schedule referred to in GC 3.4 that items called for under cash allowances are required to be delivered to the *Place of the Work* to avoid delaying the progress of the *Work*.
2. Add new paragraph 4.1.8 as follows:
  - .1 4.1.8 The *Owner* reserves the right to call, or to have the *Contractor* call, for competitive bids for portions of the *Work* to be paid for from cash allowances.

## Part 8. Payment

### GC 5.2 APPLICATIONS FOR PAYMENT

1. Revise Delete the word "first" in paragraph 5.2.7 and replace it with the word "second."

### 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 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

1. Delete all paragraphs of GC 5.4 in their entirety and replace them with the following paragraphs:
  - .1 5.4.1 When the *Contractor* considers that the *Work* is substantially performed, or if permitted by the lien legislation applicable to the *Place of the Work* a designated portion thereof which the *Owner* agrees to accept separately is substantially performed, the *Contractor* shall, within five (5) *Working Days*, deliver to the *Consultant* and to the *Owner* a comprehensive list of items to be completed or corrected, together with a written application for a review by the *Consultant* to establish *Substantial Performance of the Work* or substantial performance of the designated portion of the *Work*. Failure to include an item on the list does not alter the responsibility of the *Contractor* to complete the *Contract*.
  - .2 5.4.2 *Consultant* will review the *Work* to certify or verify the validity of the application and shall promptly, and in any event, no later than 10 calendar days after receipt of the *Contractor's* application:

- .1 advise the *Contractor* in writing that the *Work* or the designated portion of the *Work* is not substantially performed and give reasons why, or
  - .2 state the date of *Substantial Performance of the Work* or a designated portion of the *Work* in a certificate and issue a copy of that certificate to each of the *Owner* and the *Contractor*.
- 3 5.4.3 Where the holdback amount required by the applicable lien legislation has not been placed in a separate lien holdback account, the *Owner* shall, no later than 10 calendar days prior to the expiry of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*, place the holdback amount in a bank account in the joint names of the *Owner* and the *Contractor*.
- 4 5.4.4 Subject to the requirements of any Payment Legislation, all holdback amounts prescribed by the applicable lien legislation for the Place of the Work shall become due and payable to the Contractor no later than 10 Working Days following the expiration of the holdback period stipulated in the lien legislation applicable to the Place of the Work, as certified or verified by the Consultant when permitted by any Payment Legislation
- 5 5.4.5 The *Contractor* shall submit an application for release of the lien holdback amount in accordance with the lien legislation applicable to the *Place of the Work*. Except to the extent required by any *Payment Legislation*, such application for release of the holdback shall not constitute an application for payment that is subject to *Proper Invoice* requirements.
- 6 5.4.6 Where legislation permits progressive release of the holdback for a portion of the *Work* and the *Consultant* has certified or verified that the part of the *Work* has been performed prior to *Substantial Performance of the Work*, the *Owner* hereby agrees to release, and shall release the holdback for such portion of the *Work* to the *Contractor* in accordance with such legislation.
- 7 5.4.7 Notwithstanding any progressive release of the holdback, the *Contractor* shall ensure that such parts of the *Work* are protected pending the issuance of a final certificate for payment or until the *Owner* takes early occupancy in accordance with GC12.2, whichever comes first, and shall be responsible for the correction of defects or work not performed regardless of whether or not such was apparent when the holdback was released.
- 8 5.4.8 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 \$500.00 per visit per consultant required to attend the visit.

#### GC 5.5 FINAL PAYMENT

1. Add to the end of paragraph 5.5.1 the following sentence:
  - .1 The application for final payment shall meet the requirements of a *Proper Invoice*.
2. Add the following to the end of paragraph 5.5.3:
  - .1 Subject to any *Payment Legislation*, when the *Consultant* finds the *Contractor's* application for final payment to be not valid, the *Contractor* shall revise and resubmit the application when the *Contractor* has addressed the reasons given by the *Consultant*.

#### Part 9. 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.



## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

- .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. 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.'
  6. 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.'
  7. 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 amount;
    - .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 the word "and" from the end of subparagraph 6.3.7.17.
2. Delete the period from the end of subparagraph 6.3.7.18 and replace it with ";and".
3. Add new subparagraph 6.3.7.19 as follows:
  - .1 .19 safety measures and requirements.

### GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

1. Add new paragraph 6.4.5:

- .1 6.4.5 The *Contractor* confirms that, prior to bidding the *Project*, it carefully reviewed the *Place of the Work* and applied to that review the degree of care and skill described in paragraph 3.9.1, given the amount of time provided between the issue of the bid documents and the actual closing of bids, the degree of access provided to the *Contractor* prior to submission of bid, and the sufficiency and completeness of the information provided by the *Owner*. The *Contractor* is not entitled to compensation or to an extension of the *Contract Time* for conditions which could reasonably have been ascertained by the *Contractor* by such review undertaken in accordance with this paragraph 6.4.5.

#### 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. Amend 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. Add the words "as noted in paragraph 6.6.3" after the words "of the claim" in paragraph 6.6.5 and add the words "and the *Consultant*", at the end of paragraph 6.6.5.

### Part 10. Dispute Resolution

#### GC 8.3 ADJUDICATION

1. Delete the word "prescribed" from paragraph 8.2.1 and substitute the words "provided for".

### Part 11. Protection of Persons and Property

#### GC 9.1 PROTECTION OF WORK AND PROPERTY

1. Delete subparagraph 9.1.1.1 in its entirety and replace it with the following:
  - .1 9.1.1.1 errors or omissions in the *Contract Documents* which the *Contractor* could not have discovered applying the standard of care described in paragraph 3.9.1;
2. Delete paragraph 9.1.2 in its entirety and replace it with the following:
  - .1 9.1.2 Before commencing any *Work*, the *Contractor* shall determine the locations of all underground utilities and structures indicated in 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 following words to paragraph 9.2.6 after the word "responsible":
  - .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,
  - .2 Add the words "and the *Consultant*" after the word "*Contractor*" in subparagraph 9.2.7.4.
  - .3 Add the following words to paragraph 9.2.8 after the word "responsible":
    - .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,

#### GC 9.5 MOULD

1. Add the words "and the *Consultant*" after the word "*Contractor*" in subparagraph 9.5.3.4.

## Part 12. 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: "Subject to paragraph 3.9.1, the".

## Part 13. 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.

## Part 14. Owner Takeover

### GC 12.1 READY-FOR-TAKEOVER

1. After the second occurrence of the term "*Ready-for-Takeover*" insert before the term "*Ready-for-Takeover*" in paragraph 12.1.3 the words "determination of".

### GC 12.2 EARLY OCCUPANCY BY THE OWNER

1. Delete the word "achieve" in paragraph 12.2.4 and replace it with the words "have achieved".

### GC 12.3 WARRANTY

1. Delete the word "The" from the first line of paragraph 12.3.2 and replace it with the words "Subject to paragraph 3.9.1, the".

## Part 15. Indemnification, Waiver of Claims and Warranty

### GC 13.1 INDEMNIFICATION

1. Add new paragraph 13.1.0 as follows:
  - .1 13.1.1 The *Contractor* shall indemnify and hold harmless the *Consultant*, its agents and employees from and against all 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:
    - .1 attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, and
    - .2 caused by negligent acts or omissions of the *Contractor* or anyone for whose negligent acts or omissions the *Contractor* is liable, and
    - .3 made by *Notice in Writing* within a period of 6 years from the *Ready-for-Takeover* date or within such shorter such period as may be prescribed by any limitation statute or the Province or Territory of the *Place of Work*.
  - .2 Add the words "13.1.0," after the word "paragraphs" in paragraph 13.1.3.

## DIVISION 01 - GENERAL REQUIREMENTS

### 01 11 00 – SUMMARY OF WORK

#### Part 1. General

##### 1. THE CONTRACT DOCUMENTS

- .1 Division 1 General Requirements, of the Specification generally specify work and coordination of the work that is the direct responsibility of the Contractor but shall not be interpreted to define absolutely the limits of responsibility that must be established between the Contractor and his Subcontractors by their separate agreements.
- .2 Ensure that all Subcontractors understand that the General Conditions of the Contract, and Division 1 General Requirements, apply to Sections of the Specification governing their work.
- .3 Ensure that the work includes all labour, equipment and products required, necessary or normally recognized as necessary for the proper and complete execution of the work of each trade.
- .4 Work in this Specification is divided into descriptive Sections which are not intended to identify absolute contractual limits between Subcontractor, nor between the General Contractor and his Subcontractors. The Contractor shall organize division of labour and supply of materials essential to complete the Project in all its parts and provide a total enclosure and protection from weather of interior spaces, as established in the General Conditions of the Contract.
- .5 As a result, the Consultant shall not be required to decide on questions arising with regard to agreements or contracts between the Contractor and Subcontractors or Suppliers, nor to the extent of the parts of the Work assigned thereto. 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.
- .6 Further, no extra will be allowed as a result of the failure to coordinate and allocate the Work such that the Work is provided in accordance with the Contract Documents.
- .7 Wherever the word "building" occurs in the Contract Documents it shall be taken to mean all the buildings included in the Contract.
- .8 Wherever in the Contract Documents the words "approval", "approved", "direction", "directed", "selection", "selected", "request", "requested", "report", and similar words are used, such approvals, directions, selections, requests and reports shall be given by the Consultant in writing unless specifically stated otherwise.
- .9 Wherever in the Contract Documents the word "supply" is used in any form, it shall mean that the work specified to be supplied includes delivery to site and unloading at location directed.
- .10 Wherever in the Contract Documents the word "installed" issued in any form, it shall mean that the Work specified for installation includes uncrating, unpacking, etc; moving from stored location to place of installation; and installing to meet specified requirements.
- .11 Wherever in this Specification it is specified that work is to proceed or to meet approval, direction, selection or request of authorities having jurisdiction or others, such approval, direction, selection or request shall be in writing.
- .12 Wherever in this Specification or as directed by the Consultant it is specified that work shall be repaired, made good or replaced, it shall be performed without any additional cost to the Owner.
- .13 Whenever in the Specifications the term "and/or" is used, the Consultant shall decide which of the possible meanings, to be derived at from the sentence where this term occurs shall govern.

##### 2. DIVISION 1. GENERAL REQUIREMENTS

- .1 The provisions of all Sections of Division 01 shall apply to each Section of this Specification.

##### 3. STANDARDS AND CODES

- .1 Contract forms, codes, specifications, standards, manuals and installation, application and maintenance instructions referred to in these specifications, unless otherwise specified, amended or date suffixed, shall be latest published editions at Contract date.
- .2 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.

##### 4. 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.

##### 5. LAWS, NOTICES, PERMITS AND FEES

- .1 Comply with codes, by-laws, and regulations of authorities having jurisdiction over the Place of the Work. Codes and regulations form an integral part of the Contract Documents.
- .2 Permits:
  - .1 The Owner shall apply for, obtain and pay for the building permit.

## **CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .2 The Contractor shall obtain and pay for all other permits, licenses, deposits and certificates of inspection as part of the Work, including permits for road closures.
- .3 The Owner has initiated the permit application process for the following, but responsibility for closing the permit, including all associated costs and responsibilities, rests with the Contractor and is included as part of the Work:
- .4 Obtain permits required to execute work on municipal rights of way. Obtain damage deposits for sidewalks, roads and services, unless otherwise indicated.
- .3 Arrange for inspection, testing and acceptance of the Work required by the authorities having jurisdiction. Be responsible for necessary preparations, provisions and pay costs.
- .4 It is the responsibility of the Contractor to schedule notifications and inspections required by authorities having jurisdiction such that notifications can be properly received and that inspections can be properly undertaken without causing a delay in the Work. The Contractor, at no additional cost to the Owner, shall be solely responsible for any delay in the Work caused by failure to properly schedule required notifications and inspections.
- 6. WORK PERFORMED UNDER SEPARATE CONTRACTS**
- .1 Work not to be included in the Contract, as noted "NIC" on the Drawings.
- 7. WORK BY OWNER**
- .1 Permit the Owner and/or their contractors to inspect the work at any reasonable time, and to perform such work and install such equipment or items as the Owner may require.
- 8. CONSTRUCTION PROGRESS SCHEDULE**
- .1 Meet with Owner and Consultant within five (5) working days of Contract award, to discuss proposed approach for undertaking the Work, inclusive of methodology, sequencing, Construction Equipment, and labour resources to be utilized.
- .2 Submit a preliminary as-planned schedule as indicated in Section 01 32 16 Construction Progress Schedule, within fifteen (15) working days after Contract award.
- .3 Once preliminary as-planned schedule is approved and the final as-planned schedule is created, record "progress to date" on a copy of schedule to be available at the Site. Inspect Work with the Owner and the Consultant at least bi-weekly to establish progress on each current activity.
- .4 The Contractor's schedule is to be updated and resubmitted to the Consultant as a progress schedule at least once per month, on a date to be mutually agreed by the Contractor and the Consultant
- 9. SITE PROGRESS RECORDS**
- .1 Maintain at site a permanent written record of progress of work. Make the record available at all times with copies provided when requested. Include in record each day:
  - .1 Weather conditions with maximum and minimum temperatures.
  - .2 Conditions encountered during excavation. Record quantities pumped for dewatering.
  - .3 Commencement and completion dates of the work of each trade in each area of Project.
  - .4 Erection and removal dates of formwork in each area of Project.
  - .5 Dates, quantities, and particulars of each concrete pour.
  - .6 Dates, quantities, and particulars of waterproofing installation.
  - .7 Dates, quantities, and particulars of roofing installation.
  - .8 Attendance of Contractor's and Subcontractor's work forces at Project and a record of the work they perform.
  - .9 Dates, status and particulars of submissions, i.e. shop drawings, samples, mock-ups and the like.
  - .10 Dates, status and particulars of deliveries, i.e. manufacturing dates, delivery and installation dates.
  - .11 Visits to site by Owner, Consultant, authorities having jurisdiction, testing companies, Contractor, Subcontractors, and suppliers.
- .2 Maintain a progress chart in approved format. Show on chart proposed work schedule and progress of work by Contractor and Subcontractor. The status of delivery items, i.e. shop drawings status, manufacture dates - delivery and installation dates.
- 10. DOCUMENTS AT THE PLACE OF THE WORK**
- .1 Maintain at the Place of the Work, one copy of each of following:
  - .1 Contract Documents including 'Issued for Construction' drawings, specifications, addenda, and other modifications to the Contract, including copies of standards and codes referenced in the Contract Documents.
  - .2 'Reviewed' or 'Reviewed as Modified' shop drawings. Refer to Section 01 33 00 for details of schedules required.
  - .3 Construction, inspection and testing, and submittal schedules.
  - .4 Supplemental Instructions, proposed Change Orders, Change Orders, and Change Directives.
  - .5 Field Test Reports.

- .6 Consultant's field review reports and deficiency reports.
- .7 Reports by authorities having jurisdiction.
- .8 Building and other applicable permits, and related permit documents entailing a complete full sized colour approved stamped Building Permit Documents which are not to have any notation nor are to be used except for reference by the Building Inspector.
- .9 construction progress schedule,
- .10 meeting minutes
- .11 manufacturer's certifications, installation and application instructions.
- .12 material safety data sheets (MSDS) for all controlled products.
- .13 Ontario Building Code and Guide to the Ontario Building Code, 2012 edition.
- .14 Daily log of the Work.
- .15 As-built drawings recording as-built conditions, instructions, changes, and the like, as called for in Section 01 33 00, prior to being concealed.
- .2 Make above material available to Consultant upon request.
- 11. TRADEMARK AND LABELS**
  - .1 Trademarks and labels, including applied labels, shall not be visible in finished work in finished areas, unless otherwise accepted or indicated by Consultant.
- 12. EXAMINATION**
  - .1 Examine site, and ensure that each Section performing work related to site conditions has examined it, so that all are fully informed on all particulars which affect the Project Work (thereon and at the place of the building, and in order that construction proceeds competently and expeditiously).
  - .2 Ensure by examination that all physical features at the work, and working restrictions and limitations which exist are known, so that the Owner is not restricted in his use of the premises for his needs.
  - .3 Previously Completed Work:
    - .1 Where dimensions are required for proper fabrication, verify dimensions of completed work in place before fabrication and installation of work to be incorporated with it.
    - .2 Verify that previously executed work and surfaces are satisfactory for installation or application, or both, and that performance of subsequent work will not be adversely affected.
    - .3 Ensure that work installed in an unsatisfactory manner is rectified by those responsible for its installation before further work proceeds.
    - .4 Commencement of work will constitute acceptance of site conditions and previously executed work as satisfactory.
    - .5 Defective work resulting from application to, or installation on, or incorporation with, unsatisfactory previous work will be considered the responsibility of those performing the later work.
  - .4 Construction Measurements:
    - .1 Take site dimensions of completed work before installation of work to be incorporated commences.
    - .2 Before commencing installation of work, verify that its layout is accurately in accordance with intent of Drawings, and that positions, levels, and clearances to adjacent work are maintained. Provide setting out drawings as part of the submittal process with verification by an Ontario Land Surveyor or field engineer.
    - .3 Before commencing work, verify that all clearances required by authorities having jurisdiction can be maintained.
    - .4 If work is installed in wrong location, rectify it before construction continues.
    - .5 Where dimensions are not available before fabrication commences, the dimensions required shall be agreed upon between the trades concerned.
    - .6 All measurements shall be Metric.
- 13. 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.
- 14. PROTECTION OF WORK, PROPERTY AND PERSONS**
  - .1 Include in work necessary methods, materials, and construction to ensure that no damage or harm to work, materials, property and persons results from the work of this Contract. Temporary facilities relating to protection are specified in Section 01 50 00.
  - .2 Comply with all instructions and/or orders issued by authorities having jurisdiction.

## **CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .3 Ensure that compulsory wearing of hard hats, safety glasses, safety vests, safety boots and other safety clothing is observed by all persons employed on the work. Provide spare hard hats for visitors, refuse admission to the premises to any not complying to safety clothing and equipment requirements.
- .4 Keep excavations, and pits free of rainwater, ground water, backing up of drains and sewers, and all other water. Pump dry as required.
- .5 Protect adjacent private and public property from damage and, if damaged, make good immediately. Make good private property to match in all details its original condition in material and finishes as approved, and public property in accordance with requirements specified and/or instructed by its Owner or as directed by the Consultant.
- .6 Keep surfaces, on which finish materials will be applied, free from grease, oil, and other contamination which would be detrimental in any way to the application of finish materials.
- .7 Do not apply visible markings to surfaces exposed to view in finished state or that receive transparent finishes.
- .8 Protect surfaces of completed work exposed to view from staining, disfigurement and all other damage by restriction of access or by use of physical means suitable to the material and surface location. Establish with each Subcontractor the suitability of such protection in each case.
- .9 Brace and shore masonry walls until their designed lateral support is incorporated at both top and bottom, in accordance with safe construction practices.
- .10 Enforce fire prevention methods at site for new work maintain existing in accordance with local authorities having jurisdiction. Do not permit bonfires, open flame heating devices or accumulation of debris. Use flammable materials only if proper safety precautions are taken, both in use and storage.
- .11 Do not store flammable materials in the building. Take all necessary measures to prevent spontaneous combustion. Place cloths and other disposable materials that are a fire hazard in closed metal containers and remove them from the building every night.
- .12 Where flammable materials are being applied, ensure that adequate ventilation is provided, spark-proof equipment is used, and smoking and open flames are prohibited.
- .13 Ensure that volatile fluid wastes are not disposed of in storm or sanitary sewers or in open drain courses.
- .14 **Public Utilities and Services:**
  - .1 Verify location of and limitations imposed by, existing mechanical, electrical, telephone and similar services, and protect them from damage. If necessary, relocate active services to ensure that they function continuously wherever possible in safety and without risk of damage or down time to the existing buildings.
  - .2 Cap off and remove unused utility services encountered during work after approval is given by the utilities concerned or authorities having jurisdiction, which ever may apply. Relocation, removal, protection, and capping of existing utility services shall be performed only by the applicable utility, and of other services by licensed mechanics.
  - .3 Make arrangements and pay for connection charges for services required for the Work.
  - .4 Keep excavations, and pits free of rainwater, ground water, backing up of drains and sewers, and all other water. Pump dry as required.
- .15 Ensure that precautions are taken to prevent leakage and spillage from plumbing and mechanical work that may damage surfaces and materials finished or unfinished.
- .16 Give constant close supervision to roofing/waterproofing membranes following their installation, during the time they are temporarily protected or exposed, to ensure that no damage occurs to them before completion of building.
- .17 Prevent spread of dust beyond the construction site by wetting, or by other approved means, as required or as directed by the Consultant and/or authorities having jurisdiction.
- .18 Make good roads, soft landscaping, walkways, curbs, sidewalks, possessions and property, soiled or damaged due to the Work, to requirements of authorities having jurisdiction and requirements of and Making Good, as applicable
- 15. WORK ON PUBLIC PROPERTY**
  - .1 Include curb cuts and making good of existing property to provide fully paved and finished approaches to requirements of authorities having jurisdiction.
  - .2 Include making good of existing curbs, walks, paving and soft landscaping on adjacent property.
- 16. 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.
- 17. 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.

**18. INSERTS, ANCHORS AND FASTENINGS**

- .1 Include in the work of each Section necessary fastenings, anchors, inserts, attachment accessories, and adhesives. Where installation of devices is in work of other Sections, deliver devices in ample time for installation, locate devices for other Sections and co-operate with other Sections as they require.
- .2 Do not install wood plugs or blocking for fastenings in masonry, concrete, or metal construction, unless specified or indicated on the drawings.
- .3 Do not use fastenings which cause spalling or cracking of materials in which they are installed. Do not use powder actuated fastening devices unless specified or prior written approval is given by the Consultant for each specific use.
- .4 Use only approved driven fasteners.
- .5 Install metal-to-metal fastenings fabricated of the same metal or of a metal which will not set up electrolytic action causing damage to fastenings or components, or both. Use non-corrosive or galvanized steel fastenings for exterior work, and were attached to, or contained within, exterior walls and slabs. Leave steel anchors bare where cast in concrete.
- .6 Install work with fastenings or adhesives in sufficient quantity to ensure permanent secure anchorage of materials, components, and equipment. Space anchors within limits of load bearing or shear capacity.
- .7 Space exposed fastenings evenly and in an organized pattern. Keep number to a minimum. Provide exposed metal fastenings of same material, texture, colour, and finish as metal on which they occur.
- .8 At fastenings that penetrate metal roof deck, ensure that penetrations are sealed airtight with approved sealant.
- .9 Galvanize steel anchors in masonry and at exterior of building, unless otherwise specified elsewhere. Leave steel anchors bare where cast in concrete.

**19. 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.

**20. 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.

**21. 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 warrants 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**



**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

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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

**22. 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.

**23. 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.

**24. 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 barrier and tapes shall be used incorporated to maintain air-tightness of the building.
- .2 The manner of installation of pipes, ducts, conduits, and electrical outlets to be thoroughly coordinated to prevent the occurrence of air leaks and thermal breaks: 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, or any other penetration.
- .3 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.

**25. CLEANING**

- .1 Ensure that spatters, droppings, soil, labels, and debris are removed from surfaces to receive finishes before they set up. Leave work and adjacent finished work in new condition.
- .2 Use only cleaning materials which are recommended for the intended purpose by both the manufacturer of the surface to be cleaned and by the cleaning material supplier.
- .3 Maintain areas "broom clean" at all times during the work. Vacuum clean interior areas immediately before finish painting commences.
- .4 Do not burn or bury waste material at site. Remove as often as required to avoid accumulation.
- .5 Do not allow waste material and debris to accumulate in an unsightly or hazardous manner. Spray dusty accumulations with water or other approved materials during removal of same.
- .6 Control lowering of materials. Use as few handlings as possible. Do not drop or throw materials from storeys above grade.
- .7 Ensure that cleaning operations are scheduled to avoid deposit of dust or other foreign matter on surfaces during finishing work and until wet or tacky surfaces are cured.
- .8 Each Section shall supply the Contractor with instructions for final cleaning of his work, and for inclusion in Project Data Book as specified in each trade Section and in Section 01 33 00.
- .9 Final cleaning is to be performed one (1) week prior to opening the project to the public and shall include cleaning of all work as required by each trade. Co-ordinate final cleaning with Owner's maintenance staff.

**26. ADJUSTING**

- .1 Ensure that all parts of work fit snugly, accurately and in true planes, and that moving parts operate positively and freely, without binding and scraping.
- .2 Verify that work functions properly and adjust it accordingly to ensure satisfactory operation.
- .3 Lubricate products as recommended by the supplier.

**27. SALVAGE**

- .1 Unless otherwise specified, surplus material resulting from construction, and construction debris shall become the property of Contractor, who shall dispose of it away from site.
- .2 Treasure, such as coins, bills, papers of value, and articles of antiquity, discovered during digging, demolition and cutting at the site shall remain property of Owner, and shall be delivered immediately into his custody.

**28. SIGNAGE**

- .1 All site signage prior to fabrication or installation shall have written approval by the Owner.
  - .1 The Contractor shall submit to the owner a layout of all required signage, show types, sizes and locations.

- .2 Provide 2440mm x 1220mm project sign supported by wood post sufficient in size to make the sign stable and structurally sound.

**Part 2. Products - Not Used**

**Part 3. Execution - Not Used**

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

**01 21 00 – CASH ALLOWANCES**

**SELECTION OF PRODUCTS:**

- .1 Provide the following services and/or information:
    - .1 Determine qualified and/or acceptable suppliers. The consultant will assist the contractor in determining qualified and/or acceptable suppliers.
    - .2 Obtain proposals from suppliers and/or sub-contractors.
    - .3 Make appropriate recommendations for consideration of Consultant.
    - .4 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.
- 29. 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 Contractor's 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 Cash allowances include supply and installation unless otherwise indicated.
  - .9 Supply only allowances include:
    - .1 Net cost of Products.
    - .2 Delivery to the Place of the Work.
    - .3 Applicable taxes and duties (excluding HST).
  - .10 Supply only cash allowances do not include mark-ups and installation costs. Include such costs elsewhere in Contract Price.
  - .11 Supply and install, or provide allowances include:
    - .1 Net cost of Products.
    - .2 Delivery to the Place of the Work.
    - .3 Unloading, storing, handling of Products on the Place of the Work.
    - .4 Installation, finishing, and commissioning of Products.
    - .5 Applicable taxes and duties (excluding HST).
  - .12 Inspection and testing allowances include:
    - .1 Net costs of inspection/testing services.
    - .2 Applicable taxes (excluding HST).
  - .13 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.
  - .14 Progress payments on accounts of work authorized under cash allowances shall be included in Consultant's monthly certificate for payment.
  - .15 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.
  - .16 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.
  - .17 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.
- 30. Cash Allowances:**
- .1 Include in Contract Price a cash allowance of **\$ 18,000.00**.

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .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.

<b>A</b>	<b>B</b>	<b>C</b>
<b>ITEM NO.</b>	<b>DESCRIPTION OF WORK</b>	<b>SCHEDULED VALUE</b>
1	<i>Miscellaneous Repairs</i>	<i>\$15,000.00</i>
2	<i>Door Hardware</i>	<i>\$3,000.00</i>

**01 25 00 – PRODUCT SUBSTITUTION PROCEDURES**

**Part 1. GENERAL**

**1. APPROVED ALTERNATES AND APPROVED EQUALS**

- .1 Named Products alternates or equals, indicated by the phrases "or approved alternate by XYZ Manufacturing" or "or approved equal by XYZ Manufacturing", shall be interpreted to mean that named Product alternate or equal, if selected for use in place of indicated or specified Product, meets or exceeds performance, appearance, general arrangement, dimensions, availability, code and standards compliance, and colour of specified Product.
- .2 Be responsible for costs and modifications associated with the inclusion of named Product alternate or equal at no additional cost to the Owner.
- .3 The process for proposing and approving alternates or equals, including alternate design solutions, shall be the same process as for proposing and approving substitutions (refer to paragraph 1.2 below).
- .4 Confirm delivery of specified items prior to proposing alternates or equals.

**2. SUBSTITUTIONS**

- .1 Submission of substitutions:
  - .1 Proposals for substitutions of Products and materials must be submitted in accordance with procedures specified in this section.
  - .2 Consultant may review submissions, if directed by Owner, but in any case with the understanding that the Contract Time will not be altered due to the time required by the Consultant to review the submission and by the Contractor to implement the substitution in the Work.
  - .3 Alternates will only be considered if in the judgement of the Consultant there is a legitimate 'cause' for the substitution.
    - .1 Substitution(s) for 'Cause' not '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 meet the intent of the contract documents. Substitutions deemed as substitutions for 'convenience' will not be considered or 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.
      3. Should the 'cause' be that the specified item is not available. Proof of lack of availability must be provided in writing including order date validation.
      4. Requests for alternates for 'convenience' will not be considered.
      5. The difference in value will be credited to the Contract Value.
      6. Consultant time to review substitution requests and time required to modify the Contract Documents to accommodate the substitution will be charged against the Contract Value on a per diem basis.
  - .4 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. Refer to form in section 01 25 01
  - .5 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.
  - .6 Submission requirements for 'cause' shall demonstrate rational/reason for substitution and/or Product Option proposed. Submit in writing.
    - .1 Description of proposed substitution, including detailed comparative specification of proposed substitution with the specified Product validating comparability.
    - .2 Respective costs of items originally specified and the proposed substitution.
    - .3 Confirmation of proposed substitution delivery, in writing by Product manufacturer.
    - .4 Compliance with the building codes and requirements of authorities having jurisdiction.
    - .5 Affect concerning compatibility and interface with adjacent building materials and components.
    - .6 Compliance with the intent of the Contract Documents.
    - .7 Effect on Contract Time.
    - .8 Reasons for the request.
  - .7 For Products, submission shall include
    - .1 Product identification, including manufacturer's name and address.
    - .2 Manufacturer's literature / project data sheets:

1. Product description.
2. Performance test data.
3. Reference standards.
- .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.
- .8 For Construction Methods:
  - .1 Detailed description of proposed method.
  - .2 Drawings illustrating methods.
  - .3 Itemized comparison of proposed substitution with product or method specified.
- .9 For Construction Schedule: Support documentation vis a vis any impact on project schedule.
- .10 For Cost Consideration (s): 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.
- .11 Relation to (any) separate contracts.
- .2 In making request for substitution and/or Product Options, the Contractor represents:
  - .1 That the substitution is 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.
- .3 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.
- 4 Proposed substitutions shall include costs associated with modifications necessary to other adjacent and connecting portions of the Work.
- .5 Consultant's decision concerning acceptance or rejection of proposed substitutions is final.
- .6 Should it appear to the Consultant that the value of services required to evaluate the substitution exceeds the potential reduction, the Consultant will advise the Owner that the substitution does not merit consideration before proceeding with a full evaluation. If the substitution will produce a reduction commensurate with or exceeding the value of the Consultant's services to evaluate the substitution, the Consultant will request the Owner's direction to proceed with evaluation.

**Part 2. PRODUCTS**

1. Not Applicable

**Part 3. EXECUTION**

1. Not Applicable

**01 25 01 – PRODUCE SUBSTITUTION PROCEDURES DURING BID PERIOD**

The following information is required before Bid Closing for the approval of a non-specified or alternative material / assembly / method:

Attach product literature, specification, independent testing data, full warranty/guarantee information, detail sheets as well as full range of product samples as required and provide the following information.

Specification Section: \_\_\_\_\_ Page No. \_\_\_\_\_ Item No. \_\_\_\_\_

Specified Material / Product: \_\_\_\_\_

Assembly / Method: \_\_\_\_\_

\_\_\_\_\_

Proposed Material / Assembly / Method: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Where proposed material / method / assembly varies from specification requirements particularly in performance characteristics, testing standards, quality of materials, change in dimensions, weights, etc., list below: (Note that this must be done to ensure pre-approval before Bid Closing)

Specification requirement:	Non-Specified or Alternative product characteristic:
_____	_____
_____	_____
_____	_____
_____	_____

If space above is not adequate please provide separate documentation.

Acceptance of the above non-specified or alternative material / assembly / method is subject to the Consultant's review and recommendations and the Owner's approval before Bid Closing. No material / assembly / method will be approved after Bid Closing unless specifically requested by the Consultant.

We ensure that a comparison has been made between the specified material / assembly / method and the proposed non-specified or alternative material / assembly / method particularly noting specified testing standards and minimum specified performance requirements and also ensure that the non-specified or alternative material / assembly / method does not appreciably alter the intent of the drawings and specifications.

Submitted by (please print): \_\_\_\_\_ Company name: \_\_\_\_\_

Telephone number: \_\_\_\_\_ Email number: \_\_\_\_\_

Date (DD/MM/YYYY): \_\_\_\_\_ Website: \_\_\_\_\_

01 26 13 - REQUESTS FOR INFORMATION

**Part 1. GENERAL**

**1. REQUEST FOR INFORMATION - RFI**

- .1 A request for information (RFI) is a formal process used during the Work to obtain an interpretation of the Contract Documents.
- .2 Submittal procedures:
  - .1 RFI submission:
    - .1 Submit an RFI to the Consultant.
    - .2 Submit with RFI's necessary supporting documentation.
  - .2 RFI log:
    - .1 Maintain log of RFIs of sent to and responses received from the Consultant, complete with corresponding dates.
    - .2 Submit updated log of RFIs at weekly meeting with consultant / owner and with each progress draw submittal.
- .3 Submit RFIs sufficiently in advance of affected parts of the Work so as not to cause delay in the performance of the Work. Costs resulting from failure to do this will not be paid by the Owner.
- .4 RFIs shall be submitted only to the Consultant.
- .5 RFIs shall be submitted only by Contractor. RFIs submitted by Subcontractors or Suppliers shall not be accepted.
- .6 Number RFIs consecutively in one sequence in order submitted.
- .7 Submit one distinct RFI per RFI submission. Aggregate information requests will be rejected.
- .8 Consultant shall review RFIs from the Contractor submitted in accordance with this section, with the following understandings:
  - .1 Consultant's response shall not be considered as a Change Order or Change Directive, nor does it authorize changes in the Contract Price or Contract Time or changes in the Work.
  - .2 Only the Consultant shall respond to RFIs. Responses to RFIs received from entities other than the Consultant shall not be considered.
- .9 Allow ten (10) Working Days for review of each RFI by the Consultant.
  - .1 Consultant's review of RFI commences on date of receipt by the Consultant of RFI submittal and extends to date RFI returned by Consultant.
  - .2 When the RFI submittal is received by Consultant before noon, review period commences that day; when RFI submittal is received by Consultant after noon, review period begins on the next Working Day.
- .10 Contractor shall satisfy itself that an RFI is warranted by undertaking a thorough review of the Contract Documents to determine that the claim, dispute, or other matters in question relating to the performance of the Work or the interpretation of the Contract Documents cannot be resolved by direct reference to the Contract Documents. Contractor shall describe in detail this review on the RFI form as part of the RFI submission. RFI submittals that lack such detailed review description, or where the detail provided is, in the opinion of the Consultant, insufficient, shall not be reviewed by the Consultant and shall be rejected.
  - .1 RFI's which are unclear will be returned for "Resubmission with Adequate Description".
  - .2 RFI's that are obvious on the Contract Documents will be returned with reference to the documents. Continued RFIs of this form will be recorded as Contractor Delay of Project.

**Part 2. PRODUCTS**

1. Not Applicable

**Part 3. EXECUTION**

1. Not Applicable



**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

**01 26 63 – CHANGE ORDER PROCEDURES**

**Part 1. GENERAL**

**1. REFERENCES**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 Forms for Contract Administration:
    - .1 Form 3.3 Proposed Change
    - .2 Form 3.4 Change Order
    - .3 Form 3.6 Change Directive
    - .4 Form CCDC 2 Supplementary Conditions

**2. CHANGES IN THE WORK**

- .1 The following procedures shall govern changes in the work.
- .2 Written instructions, with or without revised Drawings, or drawings additional to the Contract Documents, or both will be issued to the Contractor for proposed changes in the work. The written instructions will indicate whether the changes in the work are to be performed immediately or after the cost of changes is agreed upon. Work which is to proceed immediately shall have a mutual agreed to budget figure where applicable.
- .3 The Contractor shall submit his quotation within ten (10) working days with full documentation for the changes in a detailed breakdown showing all material and labour costs (supervisor costs are not accepted), time expenditure, equipment rentals etc. as will allow the Consultant to ascertain the accuracy of amounts involved.
- .4 The Contractor shall review all cost submissions to ensure their accuracy and/or conformance to unit costs if applicable prior to submission to the Consultant.
- .5 Profit for changes in the work is the remuneration to the Contractor and the Subcontractors and is to apply to the sum of the actual cost and overhead.
- .6 Where provided for, unit prices for additions and deletions to the work shall be those as approved by the Owner. Unit prices include all overhead and profit changes.
- .7 Where the Contractor or any Subcontractor proceeds with any change on a time and material basis, daily time sheets and material slips shall be submitted. The application for a final change order must be accompanied by these time sheets, materials slips, and a breakdown.
- .8 Where the Owner and Contractor cannot mutually agree upon the cost or evaluation of a given change, the Contractor, upon receiving written directions from the Owner, shall proceed with the required change without delaying the work and the evaluation of the change will be submitted for arbitration at the completion of the Project.
- .9 Owner and Consultant shall have twenty-one (21) working days in which to review and approve Contractor's quotations for changes to the work. Signing of change order is Architect first; Contractor / Construction Manager second; Owner last.
- .10 The Consultants at time to time may issue job instructions solely for the purposes of clarifying drawings and specifications. As such Contractor shall not be permitted to apply costs against these job instructions.
- .11 In the event of large scope changes, the Contractor and Subcontractors agree to negotiate the unit prices to a lesser amount than those previously tendered.
- .12 All markups on changes to include insurances and bonds, no additional sub guard or insurance or bonding cost will be accepted by the Owner in addition to the markups.
- .13 No Owner approved changes will be granted for material cost increase or decrease.

**Part 2. PRODUCTS**

- 1. Not Applicable

**Part 3. EXECUTION**

- 1. Not Applicable

01 31 13 – PROJECT COORDINATION

Part 1. GENERAL

1. DESCRIPTION

- .1 Coordination of the work of all Sections of the Specification is the responsibility of the Contractor.
- .2 The Contractor will be deemed to possess the necessary technical skills to carefully evaluate all requirements of the Contract, and to have included in the Price all costs for the proper implementation of these requirements.
- .3 The Contractor's responsibility includes, but is not restricted to, co-ordination specified in this Section, except where otherwise specified.

2. RELATED MECHANICAL AND ELECTRICAL WORK

- .1 Coordinate the installation of systems specified in Divisions 20 through 26, including the interrelating operation and functioning between components of a system and between systems, is the responsibility of those performing the work of Divisions 20 and 26, with final coordination the responsibility of the Contractor.
- .2 Provide interference drawings as herein specified to ensure proper co-ordination of subtrade work. No extras will be considered for work not properly coordinated prior to installation.
- .3 Ensure that service poles, pipes, conduit, wires, fill-pipes, vents, regulators, meters and similar Project service work is located in inconspicuous locations. If not indicated on Drawings, verify location of service work with Consultant before commencing installation.

3. RELATED LANDSCAPE AND CIVIL WORK

- .1 Coordinate the installation of all work and systems specified in Divisions 30 through 34, including coordination of all levels, inverts and connections at municipal services.

4. QUALITY ASSURANCE

- .1 Requirements of Regulatory Agencies:
  - .1 Coordinate requirements of authorities having jurisdiction.
- .2 Quality Control:
  - .1 Ensure that work meets specified requirements.
  - .2 Schedule, supervise and coordinate inspection and testing as specified in Section 01 45 00.
- .3 Job Records:
  - .1 Maintain job records and ensure that such records are maintained by Subcontractors.

5. SUPERINTENDENCE

- .1 Provide superintendent and necessary supporting staff personnel who shall be in attendance at the Place of the Work while Work is being performed, with proven experience in erecting, supervising, testing and adjusting projects of comparable nature and complexity.
- .2 The Contractor shall appoint a superintendent at the Place of the Work who shall have overall authority at the Place of the Work and shall speak for the Contractor and represent the Contractor's interest and responsibilities at meetings at the Place of the Work and in dealings with the Consultant and the Owner.
- .3 Supervise, direct, manage and control the work of all forces carrying out the Work, including subcontractors and suppliers. Carry out daily inspections to ensure compliance with the Contract Documents and the maintenance of quality standards. Ensure that the supervisory staff includes personnel competent in supervising all Sections of Work required.
- .4 Arrange for sufficient number of qualified assistants to the supervisor as required for the proper and efficient execution of the Work.

6. PRODUCT DELIVERY, STORAGE AND HANDLING

- .1 It is the responsibility of the Contractor to ensure that the supplier or distributor of materials specified or accepted alternatives, which have been bid, has materials on the site when required. The Contractor shall obtain confirmed delivery dates from the supplier, and ensure no delay in the progress of the work.
- .2 Provide equipment delivery schedule, coordinated with construction and submittals schedule, showing delivery dates for major and/or critical equipment. Provide delivery access and unloading areas.
- .3 Make available areas for storage of products and construction equipment to meet specified requirements, and to ensure a minimum of interference with progress of the work and relocation.
- .4 Make access available for transference of stored products and construction equipment to work areas.
- .5 The Contractor shall contact the Consultant immediately upon receipt of information indicating that any material or item, will not be available on time, in accordance with the original schedule, and similarly it shall be the responsibility of all subcontractors and suppliers to so inform the Contractor.
- .6 The Consultant reserves the right to receive from the Contractor at any time, upon request, copies of actual purchase or work orders of any material or products to be supplied for the work.
- .7 If materials and products have not been placed on order, the Consultant may instruct such items to be placed on order, if direct communication in writing from the manufacturer or prime suppliers is not available indicating that delivery of said material will be made in sufficient time for the orderly completion of the Work.

## **CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .8 The Consultant's review of purchase orders or other related documentation shall in no way release the Contractor, or his subcontractors and suppliers from their responsibility for ensuring the timely ordering of all materials and items required, including the necessary expediting, to complete the work as scheduled in accordance with the Contract Documents.

### **7. JOB CONDITIONS**

- .1 Ensure that conditions within the building are maintained and that work proceeds under conditions meeting specified environmental requirements.
- .2 Ensure that protection of adjacent property and the work is adequately provided and maintained to meet specified requirements.

### **8. WARRANTIES**

- .1 Ensure that warranties are provided, as indicated in Section 01 78 00 Warranties.
- .2 Coordinate warranty conditions of interconnected work to ensure that full coverage is obtained.

### **9. BUILDING DIMENSIONS**

- .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.

### **10. CO-ORDINATION**

- .1 Review Contract Documents and advise the Consultant of possible conflicts between parts of the work before preparation of shop drawings, ordering of products or commencement of affected work.
- .2 Provide survey support and setting out locates for all work.
- .3 Coordinate and be responsible for layout of all work in each area and work on which subsequent work depends to facilitate mutual progress, and to prevent conflict between parts of the work.
- .4 No addition to the Total Price will be allowed because of interference between the parts of the work of a trade or between the work of different trades unless such interference was brought to the attention of the consulting team in writing prior to the start of construction.
- .5 Ensure that each Section makes known, for the information of the Contractor and other Sections, the environmental and surface conditions required for the execution of its work; and that each Section makes known the sequences of others' work required for installation of its work.
- .6 Ensure that each Section, before commencing work, knows requirements for subsequent work and that each Section is assisted in the execution of its preparatory work by Sections whose work depends upon it.
- .7 Ensure that work to be enclosed within ceiling and/or wall spaces can be so accommodated without interference and with other parts of the work.
- .8 Ensure that setting drawings, templates, and all other information necessary for the location and installation of materials, holes, sleeves, inserts, anchors, accessories, fastenings, connections, and access panels are provided by each Section

whose work requires cooperative location and installation by other Sections, and that such information is communicated to the applicable installer.

- .9 Deliver materials supplied by one Section to be installed by another well before the installation begins, as per Construction Progress Schedule.
- .10 Sections giving installation information in error, or too late to incorporate in the work, shall be responsible for having additional work done which is thereby made necessary.
- .11 Remove and replace work installed in error which is unsatisfactory for subsequent work.
- .12 Prepare interference and equipment placing drawings to ensure that all components will be properly accommodated within the spaces provided.
- .13 Prepare drawings to indicate coordination and methods of installation of a system with other systems where their relationship is critical. Ensure that all details of equipment apparatus, and connections are coordinated.
- .14 Ensure that clearance required by authorities having jurisdiction and for proper maintenance are indicated on Drawings.
- .15 Distribute coordination drawings well in advance of fabrication and installation of work affected. Place no orders for affected equipment without submission of coordination drawings to the supplier.

**11. COOPERATION**

- .1 Provide forms, templates, anchors, sleeves, inserts and accessories required to be fixed to or inserted in the Work and set in place or instruct separate Subcontractors as to their location.
- .2 Supply items to be built in, as and when required together with templates, measurements, shop drawings and other related information and assistance.
- .3 Pay the cost of extra work and make up time lost as a result of failure to provide necessary information and items to be built in.
- .4 Facilitate and ensure cooperation between subtrades regarding scheduling and shared Work.

**12. PROJECT RECORD DRAWINGS**

- .1 Record, as the work progresses, work constructed differently than shown on Contract Documents. Record all changes in the work caused by site conditions; by Owner, Consultant, sub-consultants, Contractor, and Subcontractor originated changes; and by site instructions, supplementary instructions, field orders, change orders, addendums, correspondence, and directions of authorities having jurisdiction. Accurately record location of concealed structure, and mechanical and electrical services, piping, valves, conduits, pull boxes, junction boxes and similar work not clearly in view, the position of which is required for maintenance, alteration work, and future additions. Do not conceal critical work until its location has been recorded.
- .2 Dimension location of concealed work in reference to building walls, and elevation in reference to floor elevation. Indicate at which point dimension is taken to concealed work. Dimension all terminations and offsets of runs of concealed work.
- .3 Make records in a neat and legibly printed manner with a non-smudging medium.
- .4 Identify each record drawing as "Project Record Copy". Maintain drawings in good condition and do not use them for construction purposes.
- .5 After completion of the work, purchase a complete set of white prints from the Consultant and transfer the information recorded on the white prints accurately, neatly in red ink with dimensions, as applicable. Return these marked-up as-built white prints plus two additional sets of white prints to the Consultant for his review. Any subsequent changes found by the Consultant shall remain the responsibility of the contractor and new white prints will be issued for these changes and re-submitted back to the Consultant at no charge to the Owner.
- .6 Maintain Project record drawings in a state current to Project. Such state will be considered a condition precedent for validation of applications for payment. The Consultant's visual inspection will constitute proof that record drawings are current.
- .7 Provide Consultant with accurate red-marked record drawings for review. Provide for their transfer to latest version of AutoCAD IFC drawings with application for Certificate of Substantial Performance. Final acceptance of the Work will be predicated on receipt and approval of record drawings.

**13. CUTTING AND PATCHING**

- .1 Before cutting, drilling, or sleeving structural load-bearing elements, obtain approval of location and methods from the Structural Engineer and the General Contractor.
- .2 Do not endanger work or property by cutting, digging, or similar activities. No Section shall cut or alter the work of another Section unless such cutting or alteration is approved by the latter Section and the General Contractor.
- .3 X-ray floor assemblies, walls and structures, locate all services prior to cutting, drilling or digging.
- .4 Cut and drill with true smooth edges and to minimum suitable tolerances.
- .5 Fit construction tightly to ducts, pipes and conduits to stop air movement completely. The Section performing work that penetrates a fire, air, vapour, moisture, thermal or acoustic separation of the building shall pack voids tightly with rock wool, fibreglass or fire stop material as may be required; seal air, vapour and moisture barriers; and caulk joints as may be required to ensure that no air movement through the penetration is possible.

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .6 Cutting, drilling and sleeving of work shall be done only by the Section who has installed it. The Section requiring drilling and sleeving shall inform the Section performing the work of the location and other requirements for drilling and sleeving.
- .7 Replace, and otherwise make good, all damaged work, as identified by the Consultant or Contractor.
- .8 Cutting and Patching for Holes Required by Mechanical and Electrical work:
  - .1 Include under work of Divisions 20 and 26 cutting or provision of holes up to and including 400 square cm and related patching, except as otherwise indicated.
  - .2 Include under work of this Division holes and other openings larger than 400 square cm, and chases, bulkheads, furring and required patching. This Section shall be responsible for determination of work required for holes in excess of 400 square cm.
- .9 This Section shall be responsible for all cutting and patching in addition to that specified for mechanical and electrical work, and shall directly supervise performance of cutting and patching by other Sections.
- .10 Patching or replacement of damaged work shall be done by the Subcontractor under whose work it was originally executed, and at the expense of the Subcontractor who caused the damage.
- .11 Make patches as invisible as possible in final assembly to the approval of the Consultant/Owner. Unacceptable work will be replaced at no charge to the Owner.

**Part 2. PRODUCTS**

- 1. Not Applicable

**Part 3. EXECUTION**

- 1. Not Applicable

01 31 19 - PROJECT MEETINGS

1. **Construction Start up Meeting:**

- .1 After contract award, the Contractor shall coordinate, attend, chair, record and distributes minutes of a construction start up meeting to review administrative procedures and responsibilities of the project
- .2 The agenda shall include the following items;
  - .1 Introduction of official representatives of the Owner, Contractor, Subcontractors, consultant and subconsultants.
  - .2 Project communications,
  - .3 Contract documents,
  - .4 Documents at site
  - .5 Contractor's use of promises,
  - .6 Owner supplied products
  - .7 Work restrictions
  - .8 Cash allowances
  - .9 Payment procedures
  - .10 Construction progress meetings
  - .11 Construction schedule
  - .12 Submittals schedules and procedures
  - .13 Inspection and testing requirements
  - .14 Contractor mobilizations plans
  - .15 Temporary utilities
  - .16 Existing utilities
  - .17 Construction facilities
  - .18 Temporary barriers and enclosures
  - .19 Temporary controls
  - .20 Layout of work,
  - .21 Site safety
  - .22 Site security
- .3 Construction Progress Meetings
  - .1 Schedule and provide space for regular biweekly construction progress meetings for the duration of the work. The Contractor will chair the meeting, prepare agendas, record and distribute minutes.
  - .2 Contractor shall record significant decisions, actions items, action dates by attendees or the parties they represent.
    - .1 Contractor shall distribute minutes within three (3) working days of the meeting date.
    - .2 Contractor shall ensure attendance of relevant subcontractors when appropriate.
  - .3 Agenda for each meeting shall include the following at a minimum;
    - .1 Approval of minutes of previous meeting
    - .2 Work progress since previous meeting
    - .3 Field observations, including any problems, difficulties, or concerns,
    - .4 Construction progress schedule,
    - .5 Submittals schedule,
    - .6 Proposed changes in the work,
    - .7 Requests for information,
    - .8 Site safety issues,
    - .9 Other business

**01 32 16 – PROJECT SCHEDULE**

**Part 1. General**

**1. PLANNING, SCHEDULING AND MONITORING - GENERAL**

- .1 This section includes requirements for the preparation, monitoring and revision of construction schedules.
- .2 The purpose of the schedules and reports mandated in this section is to:
  - .1 Ensure adequate planning and execution of the Work by the Contractor;
  - .2 Establish the standard against which satisfactory completion of the project will be judged;
  - .3 Assist the Owner and the Consultant in monitoring progress;
  - .4 Assess the impact of changes to the Work.
- .3 The Contractor has the obligation and responsibility at all times to plan and monitor all of its activities, anticipating and scheduling its staff, materials, plant and work methods in a manner that is likely to ensure completion of the Work in accordance with the terms and conditions of the Contract and at a rate that will allow the Work to be completed on time.
- .4 All schedules shall be prepared using the latest version of one of the following software; Microsoft Project or Primavera.

**2. CRITICAL PATH METHOD SCHEDULING REQUIREMENTS**

- .1 The schedules required by this section shall take the form of time-scaled diagrams prepared using a computerized scheduling system, capable of producing resource-and/or cost-loaded Critical Path Method (CPM) schedules.
- .2 General requirements applicable to all schedules include the ability to:
  - .1 Easily summarize, group, sort and filter activities by area, phase or other categorization as applicable, or any combination thereof;
  - .2 Electronically compare any given schedule with any previous or subsequent update;
  - .3 Generate monthly progress claims and cash flow projections through resource and cost loading activities;
  - .4 Show schedules in bar chart, network diagram and time scaled logic diagram formats;
  - .5 Apply different calendars to applicable activities; and
  - .6 Transmit schedules electronically via e-mail attachments.
- .3 Provide level of detail for project activities such that sequence and interdependency of Contract tasks are demonstrated and allow coordination and control of project activities. Show continuous flow from left to right.
- .4 Float is defined as the amount of time between the earliest start date and the latest start date of an activity or chain of activities on the CPM schedule. Ensure activities with no float are calculated and clearly indicated on logical CPM construction network system as being, whenever possible, continuous series of activities throughout Contract Time to form "Critical Path".
- .5 Use of float suppression techniques such as software constraints, preferential sequencing, special lead/lag logic restraints, extended activity times, or imposed dates, other than as required by the Contract, shall be cause for the rejection of any schedule submitted by the Contractor.

**3. SUBMITTALS**

- .1 Make submittals in accordance with Section 01 33 00 - Submittals.
- .2 Schedules shall be submitted to the Consultant in both hard copy and electronic forms.
- .3 Electronic schedule submissions shall be in an original scheduling software data file type that permits modification of the layouts and data. In case of a discrepancy between an electronic copy of the schedule and the corresponding hard-copy schedule, the hard copy of the schedule that has been formally submitted and reviewed in accordance with the requirements of Section 01 33 00 shall govern.
- .4 Include costs for execution, preparation and reproduction of schedule submittals in tendered price.
- .5 Submission of the schedules referred to in this Section shall constitute the Contractor's representation that:
  - .1 Contractor and its Sub-Contractors intend to execute the Work in the sequence indicated on such schedule;
  - .2 Contractor has distributed the proposed schedule to its Sub-Contractors for their review and comment, and has obtained their concurrence;
  - .3 All elements of the Work required for the performance of the Contract are included. Failure to include any such element shall not excuse the Contractor from completing the Work within the Contract Time and within any other constraints specified in the Contract;
  - .4 Seasonal weather conditions have been considered and included in the planning and scheduling of the Work influenced by high and low ambient temperatures and/or precipitation;
  - .5 Contractor has thoroughly inspected the Site and has incorporated any other special conditions in planning the Work such as specified or required non-work periods, etc.

**4. QUALITY ASSURANCE**

- .1 Use experienced personnel, fully qualified in planning and scheduling to provide services from the commencement of the Work through to the issuance of the Completion Payment Certificate.

**5. PRELIMINARY AS-PLANNED SCHEDULE**

- .1 Meet with Owner and Consultant within five (5) working days of Contract award, to discuss proposed approach for undertaking the Work, inclusive of methodology, sequencing, Construction Equipment, and labour resources to be utilized.
- .2 Prepare a detailed CPM schedule (the preliminary as-planned schedule), illustrating the Contractor's plan for executing the Work, indicating the times for starting and completing the various stages of the Work and any applicable constraints. The preliminary as planned schedule should refine and amplify the Contractor's tender schedule and must provide sufficient detail of the critical events and their interrelationship to demonstrate that the Work will be performed within the Contract Time.
- .3 The preliminary as-planned schedule shall cover all phases of the Work, and shall represent a practical plan to complete the Work, considering restrictions of access and availability of Work areas, and availability and use of manpower, materials and equipment. The preliminary as-planned schedule shall show the activity duration, sequencing and interdependencies for the following:
  - .1 Preparation of Shop Drawings and material samples;
  - .2 Review and approval of Shop Drawings and material samples;
  - .3 Permitting;
  - .4 Material procurement;
  - .5 Fabrication;
  - .6 Temporary works;
  - .7 Installation;
  - .8 Inspection/testing; and
  - .9 Handover.
- .4 Each activity shall be coded by the performing entity such as a particular Sub-Contractor, supplier, the Consultant, etc.
- .5 The activities defined in the preliminary as-planned schedule shall represent the planned durations in anticipation of normal manpower and equipment utilization in durations of whole working days. Except for non-construction activities, such as procurement, delivery or submittals, no activity durations shall exceed fifteen (15) working days unless approved by the Consultant. The durations shall be determined based upon resource planning under contractually-defined on-site work conditions. In calculating activity durations, normal inclement weather shall be considered. The Contractor shall schedule the Work to minimize the effect of adverse weather, and to allow for protection of the Site from such effects.
- .6 The total number of activities and the distribution of activities shall reflect the complexity of the Work and shall be finite, measurable, identify a specific function and identify a trade responsible for its completion.
- .7 Prepare a narrative to accompany the preliminary as-planned schedule that provides a detailed description of the labour, materials, plant, means and methods that the Contractor intends to utilize in carrying out the Work to achieve the planned rates of production required to support the activity durations shown in the schedule. The narrative shall also provide explanations supporting the use of lead-lag relationships and, where permitted, constrained dates.

**6. PRELIMINARY AS-PLANNED SCHEDULE SUBMISSION AND REVIEW**

- .1 Within fifteen (15) working days after Contract award, submit to the Consultant:
  - .1 One (1) electronic copy of the preliminary as-planned schedule, clearly labelled with data date, specific update, and person responsible for update.
  - .2 Two (2) hard copies of bar chart identifying coding, activity durations, early/late and start/finish dates, total float, completion as percentile, current status and budget amounts.
  - .3 Two (2) hard copies of network diagram showing coding, activity sequencing (logic), total float, early/late dates, current status and durations.
  - .4 Two (2) hard copies of written narrative as described in paragraph 1.5.7 above.
- .2 The Owner and the Consultant will review and return the preliminary as-planned schedule within five (5) working days after receipt.
- .3 The preliminary as-planned schedule must be acceptable in principle to the Owner and the Consultant, prior to the release of the first progress payment.

**7. FINAL AS-PLANNED SCHEDULE**

- .1 The Contractor shall submit all revisions and/or additional information requested by the Owner or the Consultant pursuant to their review of the preliminary as-planned schedule if the Consultant considers that these additions are necessary for the preliminary as planned schedule to comply with the requirements of this section. The required revisions must be made, and the as-planned schedule finalized to the satisfaction of the Owner and the Consultant (whereupon it will become the final as-planned schedule, against which progress will be measured) within thirty (30) working days after Contract Award.

**8. FINAL AS-PLANNED SCHEDULE SUBMISSION, REVIEW AND APPROVAL**

- .1 The Consultant will accept the final as-planned schedule if it demonstrates that the Work will be performed in an orderly manner and in conformity with the Contract Time, subject to the constraints set out in the Contract, but such acceptance will neither impose on the Owner or the Consultant responsibility for the sequencing, scheduling or progress of the Work



nor interfere with or relieve the Contractor from the Contractor's full responsibility therefore. Acceptance of the final as-planned schedule or any subsequent update by the Owner shall not be construed as a confirmation that the schedule is a reasonable plan for performing the Work.

- .2 Acceptance of final as-planned schedule showing scheduled Contract duration shorter than specified Contract duration does not constitute change to Contract Time.
- .3 Consider final as-planned schedule showing Work completed in less than specified Contract duration, to have float.

**9. COMPLIANCE WITH CONTRACT SCHEDULE**

- .1 The Contractor shall adhere to latest schedule approved by the Consultant.
- .2 The express or implied acceptance by the Owner or the Consultant of the final as-planned schedule and any progress schedules shall not constitute an approval or acceptance of the Contractor's construction means, methods, or sequencing or its ability to complete the work in a timely manner and shall not place any obligation or responsibility on Owner towards the Contractor nor in any way limit the Contractor's obligations and responsibilities.

**10. PROGRESS MONITORING**

- .1 Monitor progress of Work in detail to ensure integrity of critical path, by comparing actual completions of individual activities with their scheduled completions and reviewing progress of activities that have started but are not yet completed. Monitoring should be undertaken sufficiently often so that causes of delays are immediately identified and removed if possible.
- .2 On an ongoing basis, record "progress to date" on copy of schedule to be available at the Site. Inspect Work with the Owner and the Consultant at least bi-weekly to establish progress on each current activity.

**11. UPDATES AND REVISIONS TO SCHEDULE**

- .1 The Contractor's schedule is to be updated and resubmitted to the Consultant as a progress schedule at least once per month, on a date to be mutually agreed by the Contractor and the Consultant, together with the related data and reports required by this Section. Updated schedule is to include a 2-week look-ahead schedule in the form of a bar chart.
- .2 Each progress schedule shall record and report actual completion and/or start dates for each completed or in-progress activity, activity percent complete for in-progress activities and forecast completion dates for all activities that are not yet complete. Do not automatically update actual start and finish dates by using default mechanisms found in scheduling software. The progress schedule will show the projected completion date of the Work based on the progress information inserted into it, without changes to the schedule logic or the original duration of any activity. The Contractor shall use the retained logic option when executing schedule calculations. The final as-planned schedule (or an approved revision thereto) will be shown as a target schedule to indicate whether the current progress schedule remains on target, has slipped or is ahead of schedule.
- .3 The Contractor may then, in a second and subsequent update to the progress schedule, incorporate any logic and duration changes that represent its revised planning, provided all such changes are identified and documented in the schedule narrative required to accompany the progress schedule, and are agreed to by the Consultant.
- .4 If it appears that the progress schedule submitted by the Contractor no longer represents the actual sequencing and progress of the Work, the Consultant may instruct the Contractor to revise the progress schedule.
- .5 In order to improve the schedule, eliminate unforeseen problems or reduce the time required for an activity, modifications to the schedule may be suggested by the Contractor, Sub-Contractors, Owner or Consultant during the execution of the Contract, and such modifications may be implemented by mutual agreement. The Contractor shall submit to the Consultant for acceptance proposed adjustments to the final as-planned schedule or any subsequent updates that will not change the Contract Time.
- .6 If, at any time, the work is behind schedule with respect to the progress schedule currently in force, and if the Consultant believes there is a risk of the Work not being completed within the Contract Time as a result of such delay, the Contractor shall take all necessary measures to make up for such delay either by increasing staff, plant or facilities, or by amending its work methods, whichever is applicable.
- .7 In all cases of delay or potential delay, the Contractor shall keep the Owner and the Consultant informed of its intentions with regard to mitigation of such delay and the Owner's Consultant may, if it is deemed necessary, require the Contractor to revise all or part of its current progress schedule.
- .8 The current Contract Schedule can only be revised as agreed with the Owner and the Consultant by Change Order or an accepted revision to the logical sequence of described construction operations.
- .9 Once accepted, the revised schedule will become the current Contract Schedule against which progress is reported and to which subsequent updates will be compared. The new Contract Schedule will be clearly identified to show it as the current Contract Schedule.
- .10 Where the progress schedule shows completion of the Contract, or of any interim milestone, later than the Contract or milestone completion dates, acceptance of such progress schedules and of the monthly progress report will not constitute acceptance of the delay by the Consultant or the Owner.

**12. EXTENSIONS OF TIME**

- .1 Float shall not be for the exclusive use of either the Contractor or the Owner. Extensions to the Contract Time will be granted only to the extent that appropriate adjustments to the duration of the affected activity exceed the total float time along the affected paths of the progress schedule in force at the time a Change Order or Change Directive is issued.
- .2 Submit to the Consultant, justification, project schedule data and supporting evidence for approval of extension to the Contract Time or interim milestone date when required. Include as part of supporting evidence:
  - .1 Written submission of proof of delay based on revised activity logic, duration and costs, showing time impact analysis illustrating influence of each change or delay relative to approved Contract Schedule.
  - .2 Prepared schedule indicating how change will be incorporated into the overall logic diagram. Demonstrate perceived impact based on date of occurrence of change and include status of construction at that time.
  - .3 Other supporting evidence requested by the Consultant.

**13. PROGRESS REPORTS**

- .1 Monthly progress reports shall be prepared by the Contractor and submitted to the Consultant in the form of two (2) hard copies, plus one (1) electronic copy of the relevant schedule files, to demonstrate how the Work is progressing and the planned and detailed sequencing of the Work at the time of the report. The cut-off date for the monthly progress report shall be as instructed by the Consultant and the report shall be submitted no later than ten (10) Working Days after the cut-off date and accompanying the monthly progress draw.
- .2 Each monthly progress report shall be in a format acceptable to the Owner, and shall be arranged according to the following headings and sub-headings:
  - .1 Executive Summary.
    - .1 Activity to (date).
    - .2 Forecast activity to (date).
  - .2 Project Cost Information:
    - .1 Budget Summary.
    - .2 Cash Allowance Log.
    - .3 Change Order Log.
  - .3 Project Data:
    - .1 Project Schedule.
    - .2 Shop Drawing Log.
    - .3 Site Inspection Log.
    - .4 Site Testing Log.
  - .4 Critical Issues Log.
  - .5 Site Photos.
- .3 Each monthly progress report shall include:
  - .1 An updated progress schedule, comparing actual and target progress for all milestones and activities. Sort activities by activity identification number and accompany with descriptions. List early and late start and finish dates together with durations, codes and float.
  - .2 Criticality report listing activities and milestones with up to five (5) days of total float used as first sort for ready identification of near critical paths through entire project. List early and late starts and finishes dates, together with durations, codes and float for critical activities.
  - .3 Progress report in early start sequence, listing for each trade, activities due to start, to be underway, or finished within two months from monthly update date. List activity identification number, description and duration. Provide columns for entry of actual start and finish dates, duration remaining and remarks concerning action required.
  - .4 A schedule narrative, including:
    - .1 Detailed descriptions of progress, including each stage of procurement, fabrication, delivery to site, construction, installation, and testing;
    - .2 Discussion of the basis for any work sequencing, logic, interdependencies or original activity duration revisions incorporated into an updated progress schedule; and
    - .3 Comparisons of actual and planned progress, with a brief commentary on any actual or forecast delays or problems that might have an impact on the completion. date of the Work, and a discussion of the measures being (or to be) adopted to overcome these.
    - .4 Charts showing the status of submittals, permits and approvals, utility relocations, purchase orders, manufacturing/fabrication and construction.
    - .5 For each fabricated item, the name and location of the fabricator, percentage progress, and the actual or expected dates of commencement of fabrication, Contractor's inspections, tests and delivery.
    - .6 Progress photographs taken, prepared, and submitted in formats specified, all in accordance with Section 01 33 00.
    - .7 RFI log.

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .8 Timely submission of updates is of significant and crucial importance to the management of this project. Lack of or late receipt of updates diminishes their value to the Owner and the Consultant. Therefore, if the Contractor fails to submit any progress schedule or required revision to a progress schedule within the prescribed time period, the Owner, in its sole discretion, may hold back subsequent progress payments until the updated schedule is submitted or the revision is accepted.

**14. REVIEW OF MONTHLY PROGRESS REPORTS**

- .1 The monthly progress reports and progress schedules will be used by the Owner and the Consultant to monitor the Contractor's performance against the current Contract Schedule.

**Part 2. PRODUCTS**

- 1. Not Applicable

**Part 3. EXECUTION**

- 1. Not Applicable

**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;
  - The name of the project.
  - Kinds of material and finishes.
  - Sections, arrangements and details which indicate complete construction, as well as interconnections with other work.
  - Fabrication and erection dimensions, together with quantities and/or locations.
  - Assumed design loadings, dimensions of elements and material specifications for load-bearing members.
  - Data verifying that superimposed loads will not affect function, appearance and safety of work shown on shop drawings, as well as other work interconnected.
  - Proposed chases, sleeves, cuts, and holes in structural members.

<b>SUBMITTAL SCHEDULE</b>							
<i>product / system description</i>	<i>samples</i>	<i>product literature / data sheets</i>	<i>maintenance instructions</i>	<i>shop drawings</i>	<i>field review report</i>	<i>report / modelling analysis</i>	<i>additional requirements (refer to notes to submittal schedule)</i>
Asphalt Shingle Roofing Systems	x	x					Provide sample of shingles indicating colour and pattern
Firestopping				x			Engineered judgements, where required, to be stamped and sealed by a professional engineer licensed to practice in the province of Ontario.
Aluminium Doors and Windows / Insulated Glass Units	x	x	x				Shop drawings to be stamped and sealed by a professional engineer licensed to practice in the province of Ontario. Provide shop drawings that show location and type of connection details between the aluminium framing and the existing structure and demonstrate that the framing system can withstand wind loads as defined by part 4 of the OBC 2012. Verify that insulated unit meets minimum thermal performance described in this specification.
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				
Inspection Reports From The Building Services Department						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.

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

3. Submittals When Project is Substantially Performed

Manufacturer's Data Book and Shop Drawings:

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:
  - 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.
  - Maintenance instructions for all exterior, and interior floors, walls and ceiling surfaces.
  - Operating and maintenance instructions for all mechanical and electrical equipment.
  - Original brochures on all equipment.
  - Parts lists on all equipment including a list of suppliers.
  - All additional material used in the project beyond that indicated by brochures listed under the various sections, showing manufacturers and sources of supply.
  - Names, addresses and telephone numbers of the designer(s) and major contractor(s) who worked on the building.
  - 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 or City 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 cooperate with the Owner and Public Health Sudbury + District and actively review, modify and refine health and safety procedures as required throughout the project to create and maintain safe conditions for all persons.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.

**01 35 26 – LIFE AND FIRE SAFETY**

**1. General:**

Enforce requirements established by Jurisdictional Authorities and Underwriters for life safety, fire prevention, and fire protection.

Be **proactive** by means of communication with Building Controls and Local Fire Department regarding ongoing Life and Fire Safety.

**2. Fire Safety Plan:**

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:**

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:**

Know the location of nearest fire alarm box and telephone, including the emergency phone number.

Report immediately all fire incidents to the Fire Department as follows:

- .1 Activate nearest fire alarm box, or
- .2 Telephone.

Person activating fire alarm box shall remain at the box to direct Fire Department to scene of fire.

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:**

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.

Fire hydrants, standpipes and hose systems shall not be used for other than firefighting purposes unless authorized by the Fire Chief.

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:**

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:**

Although smoking is not permitted in hazardous areas, care must still be exercised in the use of smoking materials in non-restricted areas.

Smoking is not permitted within the building.

**8. Rubbish and Waste Materials:**

Rubbish and waste materials are to be kept to a minimum.

The burning of rubbish is prohibited.

All rubbish shall be removed from the work site at the end of the work day or shift or as directed.

Extreme care is required where it is necessary to store oily waste in work areas to ensure maximum possible cleanliness and safety.

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:**

The handling, storage and use of flammable liquids are to be governed by the current National Fire Code of Canada.

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.

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

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

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

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:**

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.

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.

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.

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:**

Any questions or clarification on Fire Safety in addition to the above requirements shall be directed to and cleared through the Fire Chief



## **CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

### **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:  
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, all temporary provisions and controls for the project including but not limited to the following;

Identification and enclosure of materials / spaces required to develop an appropriate 'field of operations / staging / storage areas' to permit the execution of the project. **The extent of the site available to the Contractor for the 'field of operations' will be reviewed with the successful bidder.**

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.

The provision of hoisting, scaffolding, roads, walkways and other construction aids as required.

The provision of field offices / sheds to be located in the Contractor's 'field of operations' identified on the drawings.

The provision of temporary heat. Salamanders to not be permitted.

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.

Temporary washroom facilities for use by the Contractor and Subcontractors the duration of the project.

The provision of protection of completed construction where ongoing work or exposure to weather may cause damage.

**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.

**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.

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.

**The provision of safeguards;** In addition to the requirements of the Occupational Health and Safety Act provide temporary safeguards and protection adequate to maintain standard safety practices and to protect against:

- .1 Accident or injury to any workman and other persons on the site, adjacent work and property, roads and walks.
- .2 Damage to any part of the work and to any adjoining or adjacent structure, property, pavement, walks, services and other similar items by frost, weather, overloading, and any other cause resulting from the execution of the work.
- .3 Particular attention to be paid to the prevention of fire and elimination of fire hazards which would endanger the work or adjacent buildings and premises.
- .4 Particular attention to be paid to the prevention of spills or releases of asbestos, PCB's or mercury which would endanger the work at the site and at adjacent buildings and premises.
- .5 Should any part of the work or any buildings, pavements, trees, poles, hydrants, cultivated or grassed areas, etc., on or surrounding the site and adjacent to any road leading thereto, become damaged or disfigured due to lack of failure of such protection, make good with material identical with existing and adjoining surfaces, or compensate the Owner for value of same.

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .6 Provide necessary temporary enclosures, hoardings, fences, gates, guardrails, hoists, stairs, ladders, scaffolding, staging, runways, night-lights, and barriers as necessary for the work. Conform to such requirements of the Labour Laws and other Provincial or local labour safety laws, applicable thereto. Be responsible for scaffolding, formwork, or other temporary supports used during the work. Where such structures are of a complicated nature, employ the services of a Registered Professional Engineer to design such scaffolding, framework, or other temporary supports. Support scaffolding independently of the building's finished surfaces. Arrange to avoid when not in use to permit work to proceed unimpeded, and promptly remove when no longer required.
- .7 Use temporary fire standpipes and hose, or other approved fire extinguishing equipment in the building(s) until the permanent fire protection system in the building(s) is available.
- .8 Should work be stopped for any cause, provide protection for the work and necessary temporary cold weather heating during such periods of work stoppages.
- .9 Keep portions of the work properly and efficiently drained during construction and until completion, and the Contractor will be held responsible for damage which may be caused or result from water backing up or flowing over, through, from, or along any part of the works, whether such damage is to the works, to the existing building, or to neighbouring properties.
- .10 Underground Electrical Services: provide safeguards to existing underground electrical services.  
Water, reasonably used, to be provided by the Owner at no cost.  
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 73 00 - EXECUTION REQUIREMENTS

### Part 1. General

#### 1. Examination

- .1 Examine the site, existing premises and surrounding areas and be fully informed as to the conditions and limitations under which the work has to be executed. Claims for additional costs will not be entertained with respect to conditions which could reasonably have been ascertained by an inspection prior to bid closing.
- .2 Prior to commencement of work, make careful examination of previously executed work, existing conditions, levels, dimensions and clearances. Promptly advise Consultant of unsatisfactory preparatory work and substrate conditions; commencement of work implies acceptance of conditions.
- .3 No claims for extra payment will be paid for extra work made necessary or for difficulties encountered due to conditions of the site which were visible or reasonably inferable from an examination of the site at the time prior to tender closing date and furthermore, failure of the Contractor to visit and examine the site shall be deemed a waiver of all claims for extra payment due to any condition of the site existing prior to tender closing date.
- .4 As-found damage: Record by photography and submit evidence to Owner's representative before commencing work, any found damaged surfaces or materials adjacent to new work, and not included under scope of this new work. Remedial work to any damage, not so recorded, shall be the responsibility of the Contractor

#### 2. PROTECTION

- .1 Ensure that no damage is caused to existing structures, buildings, foundations, pavement, fences, curbs, grounds, plants, property, utilities, services and finishes during the progress of Work. Repair and make good any damage caused at no extra cost to Owner to the complete satisfaction of the respective property owners and authorities having jurisdiction. Do not proceed with repairs or remedial work without written permission of the Consultant. Only trades specifically capable of performing the work will be allowed to make remedial or repair work.
- .2 Keep surfaces to receive finished flooring dry and free from oil and grease. Stockpiling of damp or wet building materials and use of mixing boxes or water buckets without protecting floors from moisture gain by approved means, is prohibited.
- .3 Keep municipal roads clean of mud and debris resulting from construction traffic
- .4 Prevent soiling of pavement due to spillage, mixing of material or any other cause. Make good any damage caused.
- .5 Protect new work from damage with suitable protective coverings.
- .6 Protect work during periods of suspension, regardless of reason for suspension.

#### 3. SERVICES AND UTILITY SYSTEMS

- .1 Consult with utility companies and other authorities having jurisdiction to ascertain the locations of existing services on or adjacent to site.
- .2 Information as to the location of existing services, if shown on the Drawings, does not relieve the Contractor of his responsibility to determine the exact number and location of existing services.
- .3 Give proper notices for new services as may be required. Make arrangements with authorities and utilities for service connections required.
- .4 Pay any charges levied by utilities or authorities for work carried out by them in connection with this Contract, unless specified otherwise.
- .5 Operate and maintain all utility systems affected by work of this Contract, until the building or specific portions thereof have been accepted by the Owner.
- .6 Report existing unknown services encountered during excavation to Consultant for instructions; cut back and cap or plug unused services. Be responsible for the protection of all active services encountered and for repair of such services if damaged.
- .7 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.
- .8 At public utilities and services complete the following:
  - .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
  - .2 Verify limitations imposed on project work by presence of utilities and services, and ensure no damage occurs to them.
  - .3 Notify service authorities concerned so that they protect, remove, relocate or discontinue them, as they may require.
  - .4 Make arrangements for services required for project work.
  - .5 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.

#### 4. SLEEVES, SUPPORTS, AND FASTENERS

- .1 Unless specified in other Sections, furnish, set and secure inserts, hangers, sleeves, fasteners, adhesives, anchors and other supports and fittings required for proper installation of work.

## **CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .2 Use exposed metal fastenings and accessories of same texture, colour and finish as base metal on which they occur.
- .3 Select appropriate type of anchoring and fastening devices and in sufficient quantity and in such manner as to provide positive permanent anchorage of unit to be anchored in position. Keep exposed fasteners to a minimum, evenly spaced and neatly laid out.
- .4 Fasteners shall be of permanent type. Do not use wood plugs.
- .5 Fasteners which cause spalling or cracking of material to which anchorage is being made shall not be used.
- .6 Fasteners in contact with preservative pressure treated wood shall be stainless steel unless otherwise approved by Consultant.

### **5. CONCEALMENT**

- .1 Conceal ductwork, piping, conduit and wiring located in finished areas, in ceiling spaces and furred construction unless specifically noted to be exposed.
- .2 If any doubt arises as to means of concealment, or intent of Contract Documents in this connection, request clarification from Consultant before proceeding with portion of work in question.

### **6. CUTTING AND PATCHING**

- .1 Regardless of which Section of work is responsible for any portion of cutting and patching, in each case tradesmen qualified in work being cut and patched shall be employed to ensure that it is correctly done.
- .2 Any cost caused by omission or ill-timed work shall be borne by party responsible therefore.
- .3 Do not endanger any work by cutting, digging or otherwise altering, and do not cut nor alter any loadbearing element without written authorization by Consultant. Provide bracing, shoring and temporary supports as required to keep construction safely supported at all times.
- .4 Cut holes carefully and not larger than required after they are located by Sections requiring them, using suitable equipment and tools.
- .5 Patching and making good work shall be undetectable in finished work.

### **7. WORKMANSHIP**

- .1 All work shall be carried out in accordance with the best trade practice, by mechanics skilled in the type of work concerned.
- .2 Products, materials, systems and equipment shall be applied, installed, connected, erected, used cleaned and conditioned in accordance with the applicable manufacturer's printed directions.
- .3 Where specified requirements are in conflict with manufacturer's written directions, follow manufacturer's directions, but inform Consultant in writing prior to proceeding with affected work. Where specified requirements are more stringent than manufacturer's directions, comply with specified requirements.

### **8. LINES AND LEVELS**

- .1 Verify all elevations, lines, levels and dimensions as indicated and report errors, any conflicts, or inconsistencies to the Consultant before commencing work or as soon as discovered.
- .2 Arrange to have building base lines laid out by an Ontario Land Surveyor.
- .3 **Accurately** lay out work and establish lines and levels in accord with requirements of Contract Documents.
- .4 Set up, maintain and protect permanent reference points and provide general dimensions and elevations for all Sections of Work.

### **9. DIMENSIONS**

- .1 Check and verify dimensions wherever referring to work. Dimensions, when pertaining to work of another Section, shall be verified with Section concerned. Details and measurements of work which is to fit or conform to the work installed shall be taken at site.
- .2 Do not scale Drawings. If there is ambiguity, lack of information or inconsistency, immediately consult Consultant for directions. Be responsible for extra costs involved through the disregarding of this notice.
- .3 Walls, partitions and screens shall be considered as extending from floor to underside of structural deck unless specifically indicated otherwise on Drawings.

### **10. LOCATION OF FIXTURES**

- .1 Location of fixtures, apparatus, equipment, fittings, outlets, conduits, pipes and ducts shown or specified, but not dimensioned, shall be considered approximate.
- .2 Request direction from Consultant to establish exact location. Any relocation caused by Contractor's failure to request direction from Consultant shall be done by Contractor at no extra cost. Where job conditions require reasonable changes in indicated locations and arrangements, make changes at no additional cost.
- .3 Conserve space and coordinate with work of other Sections to ensure that ducts, pipes, conduits and other items will fit into allocated wall and ceiling spaces, while ensuring adequate space for access and maintenance.
- .4 Where ducts, piping and conduits are permitted to be exposed they shall be neatly and uniformly laid out parallel to adjacent building lines and parallel to each other where they run in the same direction. Review exposed installations with

Consultant prior to start of work. At no cost to Owner make changes to exposed work as directed by the Consultant where such work is not installed in accordance with Consultant's prior review.

- .5 Except where locations are specifically noted on Drawings, install exposed mechanical and electrical fixtures including outlets, switches, thermostats, panels and other items, located on walls, in orderly and neatly laid out manner, lining up with each other and grouped together where possible. Review installation with Consultant prior to start of rough-in work. Relocate at no cost to Owner any work which does not meet this requirement.

**11. 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.
- .4

**Part 2. Products (not applicable)**

**Part 3. Execution (not applicable)**

## **CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

### **01 74 00 – CLEAN UP REQUIREMENTS**

#### **Part 1. General:**

##### **1. General Requirements**

- .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 Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- .3 Use cleaning material only on surfaces recommended by cleaning material manufacturer.

##### **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 Upon completion of work, or, where work is phased, upon completion of each phase, thoroughly clean all surfaces and components. Provide professional cleaning by a recognized, established cleaning company, to allow Owner to occupy without further cleaning except where specifically indicated otherwise.
  - .2 All excess construction materials and construction debris to be removed from the site.
  - .3 All interior surfaces and fixtures to be vacuum clean, mopped and wiped. Clean and polish glass and mirrors.
  - .4 All manufacturer's labels, stickers, markings to be removed.
  - .5 Remove stains, dirt and smudges from finished surfaces. Remove all essential labels completely from finished surfaces.
  - .6 Clean exposed finished surfaces in accordance with respective material manufacturer's recommendations.
  - .7 Clean mechanical and electrical fixtures and other fittings of labels, wrappings, paper and other foreign material.
  - .8 Replace heating, ventilation and air conditioning filters if units were operated during construction. Clean inside of ducts, blowers and coils.
  - .9 Remove from work areas all waste and surplus materials from all areas, including roofs and ceiling spaces.
  - .10 Remove snow and ice from driveways, parking areas and walks.
  - .11 Power wash paved surfaces.
  - .12 Exterior building surfaces to be cleaned, washed and wiped. Dust, efflorescence or other markings, debris to be removed. Clean and polish glass.
  - .13 Exterior hard surfaces to be broom clean, soft landscaping to be rake clean.

##### **4. Disposal of Waste Materials**

- .1 All waste materials resulting from construction activities belong to the Contractor and shall be removed and legally disposed unless clearly stated otherwise.
- .2 Separate recyclable/reusable materials to maximum extent possible from general waste stream and transport to recycling/reuse facilities.
- .3 Fires and burning of waste materials is not permitted on site.
- .4 Do not bury waste or materials on site.
- .5 Do not dispose of liquid waste or volatile materials into watercourses, storm or sanitary.
- .6 Do not use the Owner's garbage disposal containers.

**Part 2. Materials – not applicable**

**Part 3. Execution – not applicable**



**01 77 19 - CLOSEOUT REQUIREMENTS**

**Part 1. GENERAL**

**1. GENERAL INSTRUCTIONS**

- .1 The procedures for completing Contract and acceptance by the Owner shall be in accordance with the methods prescribed by Owner.
- .2 Stages will be reviewed at the Contract start-up meeting to ensure that parties understand their responsibilities. Refer to Section 01 31 19 for procedures and requirements for Contract start-up meeting.
- .3 Within four (4) weeks of commencement of the Work, submit to the Consultant a list of closeout submittals required by the Contract Documents.
- .4 Note that entities other than the Owner may be involved in the closeout procedures described herein, including attendance at any operation and/or maintenance training sessions required. The Owner will coordinate such attendance as required.

**2. FINAL CLEANING**

- .1 Co-ordinate final clean-up with the Owner's representatives and opening requirements.
- .2 In addition to requirements for cleaning-up specified in the General Conditions of the Contract, and in Section 01 11 00, include in work final cleaning by skilled cleaning specialists on completion of construction.
- .3 Remove temporary protections and make good defects before commencement of final cleaning.
  - .1 mirrors;
  - .2 porcelain, enamel, and finish metals;
  - .3 washroom accessories.
- .4 Vacuum cleaning of ceilings, walls and floors.
- .5 Cleaning of glazed wall surfaces.
- .6 Cleaning of hardware, mechanical fixtures, lighting fixtures, cover plates, and equipment, including polishing of their finish metal, porcelain, vitreous, and glass components.
- .7 Removing of visible labels left on materials, components, and equipment.
- .8 Maintain cleaning until Owner has taken possession of building or portions thereof.

**3. CLOSE-OUT SUBMITTALS**

- .1 Collect reviewed submittals, and assemble required closeout submittals executed by Subcontractors, Suppliers, and manufacturers. Prior to submitting closeout submittals to the Consultant, undertake the following:
  - .1 Review maintenance manual contents (operating, maintenance instructions, asbuilt drawings, materials) for completeness.
  - .2 Review in relation to Contract Price, Change Orders, Change Directives, holdbacks and other adjustments to the Contract Price.
  - .3 Review inspection and testing reports to verify conformance to intent of Contract Documents and that changes, repairs or replacements have been completed.
  - .4 Execute transition of performance bond and labour and materials payment bond to warranty period requirements.
  - .5 Submit a final statement of accounting giving total adjusted Contract Price, previous payments, and monies remaining at time of application for completion of the Contract. Consultant will issue a final change order reflecting approved adjustments to Contract Price not previously made, if any.

No later than then (10) working days prior to submitting request for Consultant's review to determine if Substantial Performance of the Work has been achieved, submit to the Consultant the closeout submittals specified in this section, including, but not limited to, reviewed shop drawings, Product data sheets, samples, operating instructions, as-built records, and fully executed warranties and guarantees.

For items of the Work delayed materially beyond date of Substantial Performance of the Work, provide updated closeout submittals within ten (10) working days after acceptance, listing date of acceptance as start of warranty period.

Neither the Consultant's review to determine if Substantial Performance of the Work has been achieved, nor acceptance of the Work, will take place until receipt, by the Consultant, of acceptable copies of the closeout submittals required herein and by the Contract Documents.

As-built records and operation and maintenance manuals, as indicated in Section 01 33 00.

Maintenance materials:

- .1 Refer to schedule of itemized prices for overage, extra stock, and maintenance materials required. Deliver to a location and at a time specified by the Owner, organize items in Owner's storage area as directed by the Owner, and as follows:

Use unbroken cartons, or if not supplied in cartons, material shall be strongly packaged.

Clearly mark cartons or packaging as to contents, project name, and Supplier.

If applicable give colour and finish, room number or area where material is used.

- .2 Replace incorrect or damaged maintenance materials delivered to Owner, including damage through shipment.
- .3 Provide a typed inventory list of maintenance materials prior to Substantial Performance of the Work application. List all items, complete with quantities, and storage locations.
- .4 Establish a master list identifying maintenance materials and maintain a log of when materials are turned over to Owner and signing authority for acceptance of materials on behalf of Owner. Master list and log shall be in a format acceptable to the Owner.

Owner communication material:

- .1 Deliver Owner communication material that was applied to hoarding and/or temporary barriers and enclosures during the Work. Salvage such material in accordance with Section 01 11 00.

## **5. SUBSTANTIAL PERFORMANCE OF THE WORK**

Deficiency review:

- .1 Neither Owner nor Consultant will be responsible for preparation or issuance of extensive lists of deficiencies. Contractor assumes prime responsibility for ensuring that items shown and described in the Contract Documents are complete. Any reviews to approve the certificate of Substantial Performance of the Work will be immediately cancelled if it becomes obvious to the Consultant that extensive deficiencies are outstanding.
- .2 The Contractor shall conduct an inspection of the Work to identify deficiencies and defects, which shall be repaired. When the Contractor considers that the Work is substantially performed, the Contractor shall prepare and submit to the Consultant a comprehensive list of items to be completed or corrected and apply for a review of the Work by the Consultant to determine if Substantial Performance of the Work has been achieved.
- .3 The Contractor's request described above shall include a statement by Contractor that the Work to be reviewed by Consultant for deficiencies is, to the best of the Contractor's knowledge, in compliance with Contract Documents, reviewed shop drawings, and samples, and that deficiencies and defects previously noted by Consultant have been repaired.
- .4 No later than fifteen (15) working days after the receipt of the Contractor's request described above, but contingent upon the prior receipt, by the Consultant, of the closeout submittals in the manner and form specified in this section, the Consultant and the Contractor will review the Work to identify any defects or deficiencies. If necessary, the Contractor shall tabulate a list of deficiencies to be corrected prior to Substantial Performance of the Work being certified by the Consultant.
- .5 During review, the Consultant and the Contractor will decide which deficiencies or defects must be rectified before Substantial Performance of the Work can be certified, and which defects are to be treated as warranty items.
- .6 Provide a schedule of planned deficiency review having regard to the foregoing.

Certification of Substantial Performance of the Work:

- .1 When the Consultant considers that the deficiencies and defects have been completed and that it appears that the requirements of the Contract Documents have been substantially performed, the Consultant shall issue a certificate of Substantial Performance of the Work to the Contractor, stating the date of Substantial Performance of the Work.
- .2 The certificate of Substantial Performance of the Work shall be prepared in form required by Construction Lien Act.
- .3 The Contractor shall publish the notification of Substantial Performance and provide the Consultant a certification of publication. The date of certification of publication is the start date of the 60 day lien period.

Final Inspection for completion of the Contract:

- .1 Deficiencies and defects shall be made good before the Contractor submits a written request for final review of the Work and before the Contract is considered complete.
- .2 When Contractor is satisfied that the Work is complete, and after the Contractor has reviewed the Work to verify its completion in accordance with the requirements of the Contract Documents, the Contractor shall submit a written request for a final review by the Consultant, who in turn will notify the Owner.
- .3 If there are any deficiencies identified as a result of this review, they shall be listed by the Consultant and submitted to the Contractor. This list shall be recognized as the final deficiency list for purposes of acceptance of the Work under the Contract.
- .4 Such deficiencies shall be corrected by a date mutually agreed upon between Consultant and the Contractor, unless a specific date is required by Contract, and a further review by the Consultant shall be called for by the Contractor following his own review to take place within seven (7) days from date of request.
- .5 Contractor shall thereafter submit invoice for final payment.

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .6 Money shall be withheld for deficiency work and will be released only when all deficiencies have been completed. No partial payment to be recognized until all work is completed.

If the Contractor needs to return to the Place of the Work to complete deficiencies after the Owner has taken possession, the Contractor shall provide the Owner with a minimum of one (1) week's prior notice of such requirement.

**6. WARRANTY PERIOD**

Provide on-going review and attendance to call-back, maintenance and repair problems during the warranty periods. At the beginning of the 12th month after Substantial Performance of the Work, the Owner, Contractor and Consultant, along with key Subcontractors as designated, shall carry out a complete review of the built project to determine which deficiencies are to be rectified under the warranty.

- .1 Extended warranty items shall have a complete review to determine which deficiencies are to be rectified under the warranty, one month prior to the end of the warranty.

Contractor shall be responsible for timely written notification of Owner, and Consultant a minimum of three (3) months prior to such end of warranty period inspection and any delay in such notification shall extend such warranty period until proper notification is received by Owner, and Consultant.

**Part 2. PRODUCTS**

- 1. Not Applicable

**Part 3. EXECUTION**

- 1. Not Applicable

**01 78 00 – WARRANTIES**

**Part 1. General**

**1. WARRANTIES**

- .1 Warranties shall be in accordance with the General Conditions, as amended, and as follows:
  - .1 Warranties shall commence at date of Substantial Performance of the Work.
  - .2 Submit warranties for applicable items, signed by the applicable company responsible for each warranty.
  - .3 Submit warranties on form approved by Owner including, but not limited to, the following information:
    - .1 Name and address of Project.
    - .2 Warranty commencement date (date of Substantial Performance of the Work).
    - .3 Duration of warranty.
    - .4 Clear indication of what is being warranted and what remedial action will be taken under warranty.
    - .5 Authorized signature and seal of company providing each warranty.
- .2 Owner shall be named in manufacturer's Product warranties. Submit on relevant Product manufacturer's standard warranty or guarantee form.

**Part 2. PRODUCTS**

- 1. Not Applicable

**Part 3. EXECUTION**

- 1. Not Applicable

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

**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 building. The Contractor shall coordinate the work around the continuous and uninterrupted operation of the Owner and the Owner's Tenant.
1. 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.
2. The Contractor shall not disrupt electrical, communications, water, sanitary, natural gas services or other equipment that provides essential lighting, heating, cooling, ventilation or communications in those parts of the building that support the occupancy of the Owner or the Owner's Tenant. These essential services shall remain available to the Owner and the Owner's Tenant in the areas they are scheduled to occupy through the course of the phased project.
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.
5. **The Contractor shall complete noisy, dusty, odorous, or disruptive work, as judged by the Owner, Consultant or Tenant, outside normal working hours of Monday to Friday, 8am to 5pm.**

## **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 site finishes, 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 up 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

## **CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

### **02 41 00 – DEMOLITION**

1. Demolition activities to conform to CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures. Refer to drawings for extent of demolition activities. Demolish portions of the existing building and related services as required to permit construction of new work. Demolish and dispose of components of existing building as described on demolition drawings.
  - .1 Provide a comprehensive demolition plan that confirms with CSA S350-M1980 (R2003) and illustrates / describes the methodology for safely demolishing portions of the existing building to provide access to the new addition. Indicate temporary shoring where required. Demolition plan to be stamped by a professional engineer licenced to practice in the Province of Ontario.
2. Separate waste materials for reuse and recycling where possible and deliver to recycling depots.
3. Fires and burning of waste or materials is not permitted on site. Do not bury rubbish waste materials. Do not dispose of waste or volatile materials including but not limited to: mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.
4. Cover or wet down dry materials and waste to prevent blowing dust and debris.
5. Prevent movement, settlement or damage of adjacent structures, services, walks, paving, trees, and landscaping, adjacent grades to remain. Repair damage caused by demolition as directed by Consultant.
6. Support affected structures and, if safety of structure being demolished or adjacent structures, services or vehicles appears to be endangered, take preventative measures, stop Work. Notify Consultant immediately if existing building, services or vehicles on the site are affected.
7. Disconnect gas, water, sanitary, electrical and telephone service lines entering area of buildings to be demolished.
8. Do not disrupt active or energized utilities designated to remain undisturbed. Coordinate with building owner
9. Where applicable, supply separate, clearly marked disposal bins for categories of waste material. Dispose of demolished materials not designated for alternate disposal, in accordance with applicable regulations. Transport material designated for alternate disposal using approved haulers/ facilities/receiving organizations in accordance with applicable regulation

## DIVISION 06 – WOOD, PLASTICS + COMPOSITES

Refer to structural drawings prepared by \_\_\_\_\_ for additional Division 06 requirements.

### 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.

#### Part 2. 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.
  - .7 Floor / Wall Intersection Gasket: 'Perminator', 15 mil polyethylene vapour barrier as manufactured by WR Meadows Inc. ([www.wrmeadows.com](http://www.wrmeadows.com)), Stego Wrap as manufactured by Stego Industries Ltd. ([www.stego.com](http://www.stego.com)) or approved equal complete with Joint Tape: minimum 4" (100mm) wide, pressure sensitive, self-adhesive, "Perminator Tape" as manufactured by W.R. Meadows, or Stego Tape and / or Stego Claw as manufactured by Stego Industries Ltd. or approved equal and for use in sealing joints.
  - .8 Slip-Type Head Joints - Deflection Track: steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and width to accommodate depth of studs; equal to Bailey Multi-Slot Track – MST 250, 2.5" deep a width as required to suit all assemblies x 18 mils (minimum).



## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

### OR

Slip-Type Head Joints - Deflection Screw: structural deflector screw manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in lengths as recommended by the manufacturer to suit depth of studs; equal to Strong-Drive SDPW Deflector Screw, as manufactured by Simpson Strong-Tie.

#### 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.

### Part 3. 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.
4. Wood Framed Walls (non load bearing)
  - .1 Construct wood framed walls with dimensional lumber and at spacings as scheduled on the drawings. All vertical studs shall be continuous and without splices.
  - .2 Use single base plate and double top plate at all walls unless noted otherwise

**CURVE LAKE FN HEALTH CENTRE- REROOFING**  
**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .3 At all walls on concrete, install vapor gasket, using material specified, at bases of wall to separate wood from concrete. Provide a continuous sheet equal to the width + 3" wide. Overlap joints and seals joints with tape using material specified. Wrap edges up wall and staple to continuous baseplate prior to install of sheathing materials.
- .4 At head of non load bearing walls that terminates at underside of structure, provide a slip type deflection track or the deflection screw, as specified to ensure load from bearing elements of the structure is not transferred to the non load bearing wall assembly.
- .5 At 4'-0" o/c intervals vertically provide solid wood bridging between studs. Use the same material as that is being used on the wood stud wall.
- .6 Prior to install scheduled sheathing, install wood blocking within the depth of the wall – using dimensional lumber cut to suit and 3/4" plywood. Minimum width of wood blocking shall be 10". Install in all location required to suit schedules millwork, washroom accessories or other built in items.
- .7 Use connecting nails as scheduled in the Ontario Building Code.
- .8 Secure bottom plates to concrete floor slab using 12.5mm (1/2") dia. wedge anchors or quick shot pneumatic nails at a minimum of 2'-0" o/c

## **DIVISION 07 – THERMAL + MOISTURE PROTECTION**

### **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 reports 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.

#### **Part 2. Products:**

1. 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.
2. Mineral Fibre Exterior Wall Cladding Insulation:

1. **For use as cladding on the exterior wall of the building** shall be mineral fibre cavity wall / rain screen installation board and installation to be 'Comfortboard 110' as manufactured by Rockwool, or approved equal having the following characteristics;
  - .1 Compliance with CAN /ULC –S702 – Mineral Fibre Thermal Insulation for Buildings, Type 1, flame spread index – 0, smoke developed index – 0.
  - .2 Compliance with CAN4 S114 – Test for Non-combustibility of Building Materials ; noncombustible.
  - .3 Density to ASTM C303 – 11 lbs/ ft3
  - .4 CAN ULC S102 Surface Burning Characteristics: Flame Spread – 0, Smoke Developed – 0.
  - .5 Thermal Resistance (astm C518 (C177) – R4 / inch, RSI value 0.70 / inch
  - .6 Dimensions –24" x 48" x thickness between 1" -5" thicknesses and 48" x 72" x thickness between 1" and 3". Provide thickness / layers as required by assemblies as noted on the drawings.
  - .7 Reaction to Moisture: Moisture Sorption 0.28% - ASTM C1104,
  - .8 Water Vapour Transmission 35 Perm, 2160 ng/Pa.s.m2 - ASTM E96.
  - .9 Water Absorption astm C209 1.2%
  - .10 Determination of Fungi Resistance 0- astm C1338: passed
  - .11 Compressive Strength 584psf (28 Kpa) @ 10% compression to astm C165
  - .12 Corrosion Resistance: astm c795, astm c665 – Stress Corrosion Cracking tendency of Austenitic Stainless Steel – passed, Corrosion of Steel – passed, Corrosion to Aluminum – passed.
  - .13 Fasteners: stainless steel screw and washers, with minimum 1.5" screw embedment in wood stud, 6.5" long, #12, installed at 12" o/c in 2" x4" vertical strapping.-Angle fasteners slightly upward through the insulation.

1. Mineral Fibre Batt Insulation:

- .1 Mineral fibre batt insulation shall be 'Comfortbatt' as manufactured by Rockwool, 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 R15.05 3.5" inch (3.5" batt).
  - .5 Density to ASTM C612-00- Actual - 2.0 lbs./ft3 (32 kg/m3).
  - .6 Dimensions – 16.25" x 28" x 6" (413mm x 1219mm x 152mm) or 16.25" x 28" x 3.5" (413mm x 1219mm x 194mm). Size the batt to suit the thickness of the wall construction as scheduled.

**Part 3. Execution:**

2. Installation (Low Expansion Spray Foam Joint Insulation):
  - .1 Install in locations as noted on drawings and details.
  - .2 Follow manufacturer's instructions.
  - .3 At windows and doors installed in an exterior wall;
    - .1 Coordinate timing of installation with work of other sections. Ensure installation of air and vapour and weather barriers are fully installed prior to
    - .2 Install fill shims spaces around door and window are completely filled with insulation. Apply multiple applications as required to ensure voids are filled.
    - .3 Shave off excess insulation to permit installation of covering finishes as required.
3. Installation (Exterior Wall Cladding):
  - .1 Ensure substrate and air barrier are installed are ready for application of continuous insulation board. Surface shall be flat and free of imperfections. Air barrier shall be installed and sealed to prevent air flow from entering the building. Identify deficiencies in these items and have deficiencies corrected prior to the start of the installation of the insulation.
  - .2 Install continuous board insulation in thicknesses as noted on the drawings.
  - .3 Install boards with tight joints between panels. Where required cut boards with an exacto knife to suit size required.
  - .4 Fit boards neatly around beams, pipes, ducts, openings and corners, reinforcing and bonding ties, and other obstructions.
  - .5 Use the largest module of insulation possible where cutting is necessary, to reduce the number of joints. Patch holes with the same material.
  - .6 Secure insulation boards with wood strapping as scheduled at spacing as scheduled using stainless steel screws as specified.
  - .7 Insulation installations to be reviewed and approved by the Consultant prior to the installation materials that cover the insulation.
4. 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.

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .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.

07 21 29 – SPRAYED INSULATION

Part 4. General:

5. **Scope:** Spray application of polyurethane foam to provide insulation, air barrier and vapour barrier at exterior walls, including surface preparation.
6. **References:**
  - .1 CAN/ULC-S705.1-15 Standard for Thermal Insulation Spray Applied Rigid Polyurethane Foam, Medium Density, Material Specification.
  - .2 CAN/ULC-S705.2 Standard for Thermal Insulation Spray Applied Rigid Polyurethane Foam, Medium Density, - Application.
  - .3 ALIPER or Canadian Urethane Foam Contractors Association, (CUFCA)"Manual for Installers of Spray Polyurethane Foam Thermal Insulation".
  - .4 CUFCA Quality Assurance Program or CALIPER QAP
  - .5 CCMC 14078-L Spray Polyurethane Foam Insulation HEATLOK SOYA HFO/POLARFOAM SOYA HFO
  - .6 CCMC 1400 for Walltite CM01
  - .7 CAN/ULC-S770-09 Standard Test Method For Determination Of Long-Term Thermal Resistance of Closed- Cell Thermal Insulating Foams.
7. **Submittals:**
  - .1 Before starting the work, submit in accordance with Section 01 33 00, result of independent laboratory test reports, data sheets, physical properties, meeting or exceeding requirements of the standard in reference to this specification.
  - .2 Submit a laboratory report of the adhesion compatibility with: flashing membranes, coatings and substrates.
  - .3 License under the third party QAP provider such as CALIBER QAP or CUFCA and certification of applicators under CUFCA to be submitted to the consultant upon request and prior to the beginning of the work.
  - .4 Submit by the manufacturer a conformity certification to OBC of the polyurethane foam system.
  - .5 Submit independent laboratory results on vapour permeance properties for each composition wall assembly. The report should be done by an independent SSC certified laboratory in accordance with ASTM E96.
  - .6 Submit test results by independent laboratory on LTTR values according to CAN/ULC-S770-09 for all SPF system used on the project. Other test methods will not be accepted.
8. **Quality Assurance:**
  - .1 Contractor performing work under this section must be certified by CALIPER or CUFCA for a minimum of 5 years.
  - .2 Upon request of consultant, submit a copy of the contractor quality control report as requested in CAN/ULC-S705.2.
  - .3 Conduct site tests of sprayed work as required by the CAN/ULC S705.2 standard.
  - .4 Upon request, submit manufacturer/supplier field applied product quality control report.
9. **Mock Up**
  - .1 Provide mock-up of insulation and air barrier in accordance with section 01 43 39.
  - .2 Construct typical exterior sample wall in conjunction with section 01 43 39, incorporating window frame head jamb and sill and building corner condition with foundation wall junction.
  - .3 Acceptance of mock-up sample may be part of the completed work.
  - .4 Do not commence work until sample installation has been accepted.
  - .5 Acceptance of sample preparation will be a reference for minimum acceptance of the work. Any need for deviation of the mock-up acceptance shall be reported in writing.
  - .6 Upon consultant request, provide in writing manufacturer acceptance of the mock-up quality.
10. **Delivery, Storage and Handling:**
  - .1 Materials shall be delivered in manufacturers original sealed containers clearly labelled with manufacturer's name, product identification, safety information, net weight of contents, and expiring date.
  - .2 Material is to be stored in a safe manner and where the temperatures are in the limits specified by the material manufacturer.
  - .3 Empty containers have to be removed from site on a daily basis in accordance with CAN/ULC-S705.2.
11. **Application Conditions:**
  - .1 At the beginning and during the work, allow access to the job site by the Manufacturer's representatives.
  - .2 Execute the work of this section when the temperature of the air and substrate are within the limits of the data sheet supplied by the manufacturer.
  - .3 Apply the spray foam only when the relative humidity is below 80%.
  - .4 Prepare all surfaces in accordance with the manufacturer's recommendations and CAN/ULC-S705.2 Standard.
12. **Protection:**
  - .1 Ventilate area receiving insulation to maintain safe working conditions.
  - .2 Ensure the safety of the workers in conformity with local regulations, standards and manufacturers recommendations.
  - .3 For spraying inside of occupied buildings:
    - .1 Delimit the working space (with a polyethylene if required).

## **CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .2 All the ventilation ducts must be sealed before the spraying.
  - .3 Install a fan extracting air outside the building.
  - .4 The workspace, in retrofit construction (occupied buildings), must be under negative pressure at a minimum exfiltration rate of 0.3 air changes per hour.
  - .5 The workspace, in retrofit construction, must be under negative pressure for a minimum of 24 hrs.
  - .6 Confirm everyone in the workspace has respiratory protective equipment and personal protective equipment in conformity with provincial regulations and the CAN/ULC-S705.2 standard.
  - .7 Protect adjacent surfaces, windows, equipment, and site areas from damage of over spray.
13. Warranty:
- .1 Warrant work of this section against defects and deficiencies for a period of two years from date work completion.
  - .2 Provide manufacturer's warranty for the field-applied product.

### **Part 5. Products:**

14. Spray Applied Polyurethane Foam Insulation:
- .1 Heatlok Soya HFO as manufactured by Demilec,
  - .2 Walltite CM01 as manufactured by BASF,
  - .3 Insulthane Extreme, as manufactured by Elastochem,
  - .4 or approved equal.
15. Performance Requirements:
- .1 Blowing Agent: HFO with GWO of <1
  - .2 Open Cell Content: 10% max, sprayed insulation shall conform to CAN/ULC S705.1-15 – 'Standard for Thermal Insulation – Sprayed Applied Rigid Polyurethane Foam, Medium Density – Material Specification'
  - .3 Density: 28 Kg/m<sup>3</sup> min. in accordance with ASTM D1622-14.
  - .4 Thermal Resistance: R5.25 per inch in accordance with CAN/ULC S770-09,
  - .5 Compressive strength: 171 kPa min. in accordance with ASTM D1621.
  - .6 Tensile Strength: 200 kPa min. in accordance with ASTM D1623-09
  - .7 Water Absorption: 4.0% in accordance with ASTM D2842.
  - .8 Water Vapour Permeance: 1.0 perms (60 ng/Pa.s.m<sup>2</sup>) / 50mm max. in accordance with ASTM E 96
  - .9 Flame Spread Index: <500 in accordance with CAN/ULC S102-10 including CAN/ULC S127.
16. Primers:
- .1 Install primers in accordance with the manufacturer recommendations for project conditions and the CAN/ULC-S705.2 standard.
17. Equipment:
- .1 Equipment shall be as recommended in CAN/ULC-S705.2 and approved by the foam manufacturer for type of application.

### **Part 6. Execution:**

18. Examination:
- .1 Verify that surfaces and conditions are suitable to accept work as outlined in this section.
  - .2 According to the prescriptions of the standard CAN/ULC-S705.2, verify the conditions of surfaces.
    - .1 Surfaces to be covered with spray foam shall be free of an excess of moisture, frost, oil, rust, and any other foreign material able to have a negative effect on the adhesion of the product. In doubt, apply a primer.
    - .2 Verify the adhesion of membranes and coatings to different substrates are good, taking in account the climatic conditions for the application of membranes, coatings and spray foam.
    - .3 Install in accordance with manufacturers typical details, according to thickness and locations of spray applied insulation, verify all conditions prior to application.
    - .4 All metal surface shall be primed as referenced in CAN / ULC S705.2 art: A 1.7.
    - .5 Identify the moisture content of all different building materials.
    - .6 Report in writing any defects in surface or conditions that may adversely affect the performance of products installed and follow manufacturer's recommendations.
  - .3 Ensure that all the work that needs to be performed prior to the application of the spray foam insulation is completed. Including these elements, but without limitation:
    - .1 Masonry anchor;
    - .2 Furring, wood blocking, sub-frames, flashing, mechanical fastening;
    - .3 Coatings, membranes, flashings, mechanical fastening

- .4 Mechanical and electrical works;
- .5 Primer.
- .4 Application:
  - .1 Spray application of polyurethane foam shall be performed in accordance with CAN/ULC-S705.2.
  - .2 Apply spray foam on dry, solid and clean surfaces when the climatic conditions are in accordance with the CAN/ULC S705.2 standard and with Demilec recommendations.
  - .3 Apply only when surfaces and environmental conditions are above -10oC (-4oF). Refer to technical data sheets.
  - .4 Apply in consecutive passes (min. 15 mm (5/8"), max. 50 mm (2"))
  - .5 Apply to obtain the thickness as indicated on drawings.
- .5 Do not spray closer than 3" (75 mm) to chimneys, recess spotlight or other source of heat.
  - .1 Quality Control:
    - .1 Provide a quality control report after a site inspection by the manufacturer.
  - .2 Fire Protection:
    - .1 Any open flame or welding is not permitted to be in contact with the Spray Polyurethane Foam in place. Use protection as required in CAN / ULC S705.2.
    - .2 All plastic insulation must be protected from interior occupancy space by an approved thermal barrier to meet the requirements of the Ontario Building Code.



## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

### 07 27 13 - WEATHER BARRIER MEMBRANES

#### Part 1. General:

1. Scope: Provide labour and materials required to provide weather membranes as indicated on the drawings.
2. Reference Standards:
  - .1 CAN/ULC S102 – Standard Method for Surface Burning Characteristics
  - .2 CAN/ULC S741-08 (R2016) – Standard for Air Barrier Materials - Specification
  - .3 CAN/ULC S742-11(R2016) – Standard for Air Barrier Assemblies - Specification
  - .4 ASTM D412 - [2006ae2], Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension
  - .5 ASTM D3330/D3330M - [2004(2010)], Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape.
  - .6 ASTM D3652/D3652M - [2001(2006)], Standard Test Method for Thickness of Pressure-Sensitive Tapes.
  - .7 ASTM E84 - [2012], Standard Test Method for Surface Burning Characteristics of Building Materials.
  - .8 ASTM E96/96M-[2010], Standard Test Methods for Water Vapor Transmission of Materials.
  - .9 ASTM E2178 - [2011], Standard Test Method for Air Permeance of Building Materials.
  - .10 ASTM E2357 - [2011], Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
3. Product **Handling**: Handle, store and protect materials as recommended by the manufacturer.

#### Part 2. Products:

1. **Air Barrier Membrane (house wrap):**
  - .1 Air Barrier Membrane: shall be a 'Tyvek HomeWrap' as manufactured by Dupont, having the following characteristics;
    - .1 Air Penetration Resistance: to ASTM E2178, cfm/ft<sup>2</sup> @ 1.57psf is < 0.004
    - .2 Water Vapor Transmission: to ASTM E90-05, method A = 56 perms
    - .3 Water Penetration Resistance: to ATTCC 127 =250cm
    - .4 Basis Weight: to TAPPI T-410 = 1.8 oz/yd<sup>2</sup>
    - .5 Breaking Strength: to ASTM D882 = 30/30 lbs/in
    - .6 Tear Resistance: to ASTM D1117 = 8/6 lbs
    - .7 Surface Burning Characteristics: to ASTM E84, flame spread rating-15, smoke develop index - 15
    - .8 Ultra Violet Light Exposure (UV): 120 days
  - .2 Air Barrier– Joint Tape: Minimum 4" (100mm) wide, pressure sensitive, self-adhesive, "Perminator Tape" as manufactured by W.R. Meadows, or Stego Tape and / or Stego Claw as manufactured by Stego Industries Ltd. or approved equal and for use in sealing vapour retarder seams and attachment to footings, foundation walls, protrusions, etc.
  - .3 Air Barrier Fasteners: Shall be cap staples or cap screws as recommended by the manufacturer installed at 16" o/c vertically and horizontally throughout the installation. If capless staples are used, each staple must be sealed with air barrier joint tape.
2. Air Barrier Membrane (peel+stick):
  - .1 Air Barrier Membrane: shall be a self-adhered vapour permeable, water resistive air barrier membrane consisting of an engineered film and a permeable adhesive with split back poly release film. 'Blueskin VP160' as manufactured by Henry Company or approved equivalent. System to have the following characteristics;
    - .1 Thickness: 23 mils (0.58mm)
    - .2 Application Temp (min): +20 degF (-7 degC)
    - .3 Water Vapour Permeance: 29 perms; ASTM E96, Method A
    - .4 Air Leakage Rate: Classification A1; CAN/ULC-S742-11
  - .2 Primer: Install primer as recommended by the manufacturer, do not use spray prep primer. Lap, tape to make air-tight. Adhere to window and door frames / flanges. 'Blueskin Aquatic Primer' as manufactured by Henry Company or manufacturer approved equivalent.

#### Part 3. Execution:

1. **Air Barrier (house wrap)**
  - .1 Inspect existing conditions and ensure substrate is smooth, flat, dry, free of sharp edges or holes. Do not install air barrier until these conditions are achieved.
  - .2 Begin installation at base of wall, roll out air barrier horizontally along wall and secure at 16" o/c with cap screws or cap staples as recommended by the manufacturer. Ensure surface of air barrier is smooth and without excessive wrinkles.
  - .3 At vertical joints lap air barrier a minimum of 6".

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .4 Lap upper row of air barrier over lower row in a single style installation to prevent water / wind driven rain from entering the building. Secure upper row with secure at 16" o/c with cap screws or cap staples as recommended by the manufacturer. Ensure surface of air barrier is smooth and without excessive wrinkles.
- .5 Install a continuous layer of air barrier joint tape at vertical and horizontal joints to create a seal between all sheets of air barrier installed.
- .6 Neatly cut air barrier at wall penetrations and openings. Seal openings with joint tape. Refer also to details for location and extent of air barrier at openings. Seal air barrier to windows, doors and all exterior wall penetrations as detailed.

## **CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

### **07 31 13 – ASPHALT SHINGLE ROOFING**

#### **Part 1. General:**

1. **Scope: Provide all labour and materials required for the supply and installation of the asphalt shingles and eavestrough systems**
2. Referenced Standards
  - .1 CAN/CGSB-37.5-M89 Cutback Asphalt Plastic Cement
  - .2 CGSB Canadian General Standards Board
  - .3 CCRA Canadian Roofing Contractors' Association
  - .4 CSA A123.1-M1979 (R1992) Asphalt Shingles Surfaced with Mineral Granules.
  - .5 CSA A123.3-05 (R2020) Asphalt Saturated Organic Roofing Felt.
  - .6 CSA A123.51-14 (R2018) Asphalt Shingle Application on Roof Slopes 1:6 and Steeper.
  - .7 CAN3 A123.52-M85 (R2011) Asphalt Shingle Application on Roof Slopes 1:6 to less than 1:3
  - .8 CSA-B111 (R2003) Wire Nails, Spikes and Staples
3. Description of Work / Quality Assurance:
  - .1 Roofing work to be carried out by competent, fully experienced tradesmen. The roofing subcontractor to be prepared to submit evidence of successful specialization in asphalt shingle roofing installations.
  - .2 Work of this Section to include, but not necessarily be limited to, the following:
    - .1 Installation of eave, protection membrane and roofing felt underlayment on wood roof sheathing over entire pitched roof assembly.
    - .2 Installation of asphalt shingles.
    - .3 Co-ordination and installation of roof accessories including ridge vents, roof vents, vent stack flashings, exhaust vents.
    - .4 Co-ordination of eavestrough installation.
4. Extra Materials:
  - .1 Provide two (2) bundles of shingles for use as maintenance materials.
  - .2 Store in location as directed by the Owner.
5. Delivery, Storage And Handling
  - .1 Deliver, handle, store and protect materials in accordance with manufacturer's printed instructions.
  - .2 Provide and maintain dry, off-ground weatherproof storage.
  - .3 Remove only in quantities required for same day use.
6. Waste Management and Disposal:
  - .1 Collect, package and store cutoffs and waste material from work and dispose in accordance with the requirements of authorities having jurisdiction.
7. Environmental Conditions:
  - .1 Roofing work to not be applied during wet conditions such as rain, fog, or snow or over damp, frozen, or unsuitable surface.
  - .2 Generally roofing to be applied at ambient temperatures satisfactory to the manufacturer and under dry conditions only.
  - .3 Review with manufacturer regarding cold weather insulation requirements and procedures.
8. Guarantees and Warranties:
  - .1 Manufacturer's Guarantee:
    - .1 Provide a written guarantee stating that asphalt shingle manufacture will guarantee to replace at its own expense, any portion of the asphalt shingle roofing work which experiences actual leaks resulting from defects in the manufacture of the roofing shingles for a lifetime period from the date the work is completed.
  - .2 Roofing Contractor's Warranty:
    - .1 Provide a written guarantee stating that the roofing contractor will guarantee to repair at its own expense any actual leaks in the asphalt shingle roofing flashing membrane and related sheet metal work resulting from faulty workmanship for a period of two (2) years from the date the work is completed.

#### **Part 2. Products:**

1. **Materials – Accessories:**
  - .1 Cement: Plastic Cement: to CAN/CGSB 37.5 and as recommended by manufacturer
  - .2 Lap Cement: to CAN/CGSB 37.4 and as recommended by manufacturer.
  - .3 Nails: To CSA B111, 11 or 12 gauge with 3/8" dia. heads, of galvanized steel sufficient length to penetrate 3/4" (19mm) into deck.

- .4 Sealant: To be one-component, elastomeric, chemical curing complying with CAN/CGSB-19.13-M87, colour to match shingles.
2. **Eave Protection Membrane**
  - .1 Composite sheet comprised of rubberized asphalt integrally bonded to a film of high density cross laminated polyethylene. Minimum thickness of membrane to be 1.8mm thick.
  - .2 Acceptable Materials:
    - .1 **'WeatherWatch'** as manufactured by GAF
3. **Roofing Underlayment: 'FeltBuster High Traction Synthetic Roofing Felt'** as manufactured by GAF
4. **Asphalt Shingles:** Contractor to provide commencement date for roofing installation in order to facilitate testing and inspection.
  - .1 Asphalt shingles to be in accordance with the requirements of CSA A123.5-16 and as follows:
    - .1 **Match existing shingle colour as closely as possible. New shingles shall match the quality of the following; 'Timberline HD'** as manufactured by GAF
5. **Ridge + Hip Shingles:** shall be **'Seal A Ridge Protective Cap Shingles'**, preformed high form shingles to match type and colour as noted above.
6. **Metal Starter Strip:** shall be prefinished, galvanized metal, 3" wide" x 2 3/4" vertical leg with drip edge. Colour shall match prefinished metal flashing.
7. **Leading Edge:** shall be **'Prostart Eave / Rake Starter Strip'** as manufactured by GAF.
8. **Prefinished Metal Flashing:** shall be fabricated from minimum 26 gauge (0.6 mm) base metal thickness, pre-finished, zinc coated steel sheet, commercial quality. Zinc coating shall conform to ASTM A525, latest edition, with Z275 zinc coating designation. Cleats and Starter Strips shall be a minimum 16 gauge (0.06") (1.6 mm) thick zinc coated steel, minimum 2" (50 mm) wide; starter strips continuous. Form in profiles as detailed on the drawings. Provide alkali resistant bituminous paint. Colour shall be selected by the Architect at a later date.
9. **Purpose Made Flashings:**
  - .1 **At vent stacks:** Purpose made thermoplastic base flashing, to suit roof penetrations equivalent to SJ-24 or SJ-25 as manufactured by Thaler.
  - .2 **At hot water tank exhaust stacks:** Provide a new purpose made flashing system to suit the hot water tank exhaust stack equal to MEF-4A – 'B' Vent flashing as manufactured by Thaler. Size to suit existing vent diameter, ensure flashing has sloped base to suit existing roof slope.
  - .3 **At natural gas pressure relief vent:** Thaler, MEF-9 or SPJ-2 type premanufactured flashing system. Size to suit existing vent diameter, ensure flashing has sloped base to suit existing roof slope.
10. **Roof Vents:**
  - .1 Roof vent systems shall include the following types;
    - .1 **RV-1** shall be VMAX-301-14 complete with sloped base flashing to suit roof slope and 12" extension. All extensions and slope base flashings shall be new.
    - .2 **RV-2** shall be a low profile roof vent – GAF Mater Flow (4" galvanized goose neck roof vent), colour to be selected at a later date from full range of colours.
    - .3 **RV-3** shall be VMAX-SOFF-AR-W-1 Anti-Gust Wall Soffit, Colour to be selected at a later date from full range of colours.
  - .2 As manufactured by Ventilation Maximum ([www.ventilation-maximum.com](http://www.ventilation-maximum.com)), GAF or equivalent approved by the Architect.
11. **Eavestroughing Systems:**
  - .1 Eavestroughing systems as manufactured by Seamless Eavestrough Limited ([www.seamless-eavestrough.com](http://www.seamless-eavestrough.com)) or equal as approved by the Architect to have the following characteristics;
    - .1 Eavestrough material; prefinished aluminum, 0.032" thick, preformed, continuous (i.e. without joints except at corners) into a 5" eavestrough and complete with premanufactured box mitre corners mechanically fastened and sealed to eavestrough with gutter seal caulking by Tremco and 'fixatech' perforated eavestrough protection system.
    - .2 Colour; to be selected by the Architect from the manufacturer's standard colour range.
    - .3 brackets; purpose made galvanized brackets with screw fasteners at 18" o/c typical that attach Eavestrough to the wood fascia
    - .4 Downspouts; prefinished aluminum, 0.032" thick, preformed into a 3" x 4" (100mm x 127mm) downspouts complete with elbows, pipe straps, plug and stainless steel screws as required to complete installation. Downspouts are to be located, at a minimum every 30'-0" (9m) typical.
    - .5 Provide perforated pipe sections typical; non-perforated "snap tee" pipe section and down spout adapter at connection to down spout system (refer to details and civil drawings). Provide adapters, fittings, couplings as required.

## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

### Part 3. Execution:

#### 1. General

- .1 Remove existing shingles, underlay and eave protection. Clean existing deck.
- .2 Inspect existing deck and ensure wood deck is smooth, dry, firm and in good condition.
- .3 Report wood deck deficiencies to Architect prior to proceeding with the work.
- .4 Do asphalt shingle work in accordance with CSA A123.51-14 (R2018) - Asphalt shingle application on roof slopes 1:6 and steeper, except where specified otherwise.

#### 2. Starter Strip

- .1 Install metal drip edges to the deck along the eaves and rake, in a bed of roofing cement and fasten to deck with roofing nails at 12" o/c max.

#### 3. Eave Protection Membrane Application:

- .1 Install eave protection membrane over the entire roof areas scheduled to receive asphalt shingles in accordance with the manufacturer's printed instructions.
- .2 Eave protection to extend from the edge of the roof beginning at the low point. Overhang eaves by  $\frac{1}{4}$  -  $\frac{3}{4}$ ". Lap successive courses a minimum of 75mm (3") with 150mm (6") end laps.
- .3 Provide a layer of eave protection membrane using 36" (900mm) widths centered on hips and valleys and roof / wall intersections. Extend up walls as detailed on the drawings. Refer also to drawings for extent at parapet walls.
- .4 Install vent stack flashings and roof vents to suit roof penetrations.
- .5 Provide eave protection membrane to seal vent stack flashings and roof ventilators to a minimum of 600mm (2'-0") around their respective perimeters, in locations indicated and make watertight.

#### 4. Roofing Underlayment Installation:

- .1 Ensure roof deck is swept clean, dry and free of debris.
- .2 Unroll underlayment and lay flat on roof deck, horizontally starting at bottom of roof. Overlay eave protection by at least 4". Printed side shall face up.
- .3 Provide 4" side laps and 6" end laps.
- .4 Secure underlayment with roofing nails at locations as required to hold in place until shingles are installed.
- .5 Space fasteners at 8" o/c on both sides of end laps.
- .6 Fasten at 24" down middle of the roll in the field of the roof.

#### 5. Valley Application:

- .1 At an open valley installation complete the work as follows;
  - .1 Install 24" wide, open metal valleys at centre line of all valleys using galvanized, prefinished metal valley liner. Use roofing nails to hold in place until shingles are installed.
  - .2 Snap chalk lines in place defining the valley, 6" wide at the top and increasing in width by  $\frac{1}{8}$ " for every 1' in length.
  - .3 Install shingle so they lap over valley flashing and trim the ends of the shingles at the chalk line.
  - .4 Cut a 2" triangle off the corner to direct water to the valley.
  - .5 Embed the valley end of each shingle into a 3" band of asphalt plastic cement.
  - .6 Do not place a nail in the shingle closer than 2" from the chalk line.
- .2 At a closed cut valley application complete the work as follows;
  - .1 Run the first course of shingles from the higher roof slope across the valley at least 12"(305mm).
  - .2 Run the succeeding courses of shingles from the lower roof slope across the valley at least 12"(305mm) and nail not closer than 6"(152mm) to the centre of the valley
  - .3 Ruin shingles from the upper slope into the valley and trim 2": (51mm) from the centre line of the valley.

#### 6. Leading Edge Application:

- .1 Install leading edge as per manufacturers written instructions.
- .2 At lower left edge apply the cut leading edge shingle flush to the rake and eave edges of the leading edge with the matching colour portion on the bottom.
- .3 Continue with a full length leading edge to the roof deck with four nails located 3" from the eave edge, approximately 1" from each end and midway between these points.
- .4 Install continuous leading edge course at eave and rake.

**7. Asphalt Shingle Application:**

- .1 First Course: Start with a full shingle. Apply the shingle flush with the starter course at rakes and eaves. Fasten the shingle with 4 nails. Continue with full length shingles to complete the first course, trimming the last shingles so that it matches the overhang of the starter course below.
- .2 Snap chalk lines to aid installation: Coordinate exposure dimension with shingle type.
- .3 Laterally offset each row of shingles from existing keyways to avoid waves or depressions caused by excessive dips in the roofing materials. Shingle offset varies Coordinate with manufacturer as required.
- .4 Secure with nails as required to provide maximum resistance to wind.
- .5 Drive nail to be flush with shingle surface.
- .6 Manually apply roofing cement to seal shingles. Seal down each shingle at time of application with 3 – 1” diameter spots of roofing cement placed under each shingle, 2” above the bottom edge and equally spaced along the shingle. Use roofing cement sparingly.

**8. Hips and Ridge Shingle Application:**

- .1 At hips and ridges install precut hip and ridge products as specified. Bend over hip or ridge and nail as per manufacturer’s printed instruction. All nails shall be hidden.
- .2 Final shingle shall be set in roofing cement, exposed heads of nails shall be covered with roofing cement.

**9. Eavestrough Application:**

- .1 Install eavestrough in accordance with manufacturer’s instructions and recommendations.
- .2 Caulk abandoned holes in existing building envelop with Type A caulking as identified in Section 07 72 00 – Sealants.
- .3 Fabricate lengths of eavestrough and downspouts to suit eaves and building dimensions. Field verify conditions on site prior to fabrication.
- .4 Install premanufactured galv brackets at 18” o/c to hold eavestrough at fascia.
- .5 Install premanufactured box mitre corners at corner conditions. Set in bead of gutter seal caulking and mechanically fasten corner to eavestrough. Caulk exposed joints within eavestrough using gutter seal caulking by Tremco.
- .6 Install downspouts, elbows as required using stainless steel mechanical fasteners and gutter seal caulking at joints.

**10. Completion:**

- .1 Upon completion, remove from site tools, plant, surplus material and debris resulting from work of this Section.

## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

### 07 42 00 - METAL CLADDING AND TRIM

#### Part 1. General:

1. Scope: Provide design, labour and materials as required to provide metal cladding and trim. These systems to comply with the following requirements;
  - .1 Compliance with the following reference standards;
    - .1 CSA-S136 for the design of Cold Formed Steel Structural Members.
    - .2 ASTM A653/A 653M-001; Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. **Design Requirements:** The design of the metal roofing system to comply with the following;
  - .1 Building systems to comply with environmental loads as defined by the Ontario Building Code 2012 and the proposed building location, for a building with an importance category of 'normal'.
  - .2 Design metal cladding a trim to withstand wind loads and uplift.
  - .3 Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, overstressing of components, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime sky heat loss. Temperature Change (Range): 20 degC, ambient; 40 degC, material surfaces.
  - .4 Siding to be installed vertically ensuring that lapping of material prevents penetration of water. (i.e., start installation from bottom and work to the top).
3. Submittals:
  - .1 Submit shop drawings. Clearly indicate type of metal cladding being supplied, wall elevations, materials, gauges, profiles, trim and closure pieces, flashings, dimensions, layouts, types and locations of fastenings and installation details. Indicate provisions for structural and thermal movement between metal cladding, structural systems, and other adjacent materials. Drawings to be signed and sealed by a Professional Engineer, attesting to the ability of the metal panel's assembly to withstand the specified loads.
  - .2 Samples: Provide a 300mm x 300mm sample of the metal cladding and fasteners mounted on a 12.5mm plywood backing.
  - .3 Maintenance Data: Provide maintenance data for cleaning and maintenance of panel finishes for incorporation into project manual. Submit instructions for repair and removal of panels.

#### Part 2. Products:

1. Materials:
  - .1 Metal Cladding: preformed metal cladding shall be hidden fastener Bellara Plank Series – Plank 135 as manufactured by VicWest or approved equal;
    - .1 To be designed to CAN/CSA S136 or ANSI/AISI S100.
    - .2 Metal sheet: zinc coated galvanized sheet steel to ASTM A653/A653M with a minimum metallic coating designated Z275 (G90).
    - .3 Profile to be 5.34" nominal width x 0.59" thick, 24 gauge,
    - .4 Colour to be selected from the full range of colours by Consultants at a later date.
  - .2 Sealants: Colour to match exterior face sheets where exposed.
  - .3 Exposed Trim, Closures, Corner Flashings and Cap Pieces: Of same material and colour as metal cladding. Provide accessory trim sections, etc. at vertical reveals and/or as required or recommended by manufacturer to complete installation.
  - .4 Miscellaneous Clip Angles, Z-Girts and Notched Z-Girts: to be roll formed from minimum 16 gauge (1/16") (1.6mm) thick steel except where design of wall and/or soffit system requires heavier members, galvanized to Z275 (G90). Members to be appropriately slotted to minimize through metal conductivity. Z Girts to be 100mm deep galvanized metal z-girts, isolated from concrete block with bituminous coating. Gauge, location, spacing and fastening requirements of the Z-girts and other miscellaneous clip angles as per manufacturer's recommendations.
  - .5 Accessories: Miscellaneous clips, splicers, carriers, connectors, screws, nails, and other standard accessories to be zinc-coated, be of strength and design compatible with the system specified. Provide special accessories to complete the work.
  - .6 Fasteners: Type and physical characteristic of fasteners to be as recommended by the manufacturer. As a minimum provide concealed fasteners to be stainless steel with flat head.
  - .7 Metal Flashing at Parapet + Miscellaneous Metal Flashings: to be 24 gauge material of same colour as the metal cladding. Provide Isolation coating: alkali resistant bituminous paint, Cleats and Starter Strips: minimum 16 gauge (0.06")

(1.6mm) thick zinc coated steel, minimum 50mm (2") wide; starter strips continuous. Locations of flashings are identified on the drawings.

**Part 3. Execution:**

1. Installation:
  - .1 Fabricate preformed steel cladding to provide a continuous, protected, waterproof, dustproof, sealed side joint. Roll form panel sheets. Press braking is not acceptable. Fabricate sheet metal material for flashings, closures and accessories for panels to the same material, gauge and finish as the exterior panels unless otherwise specified or called for on the drawings. Closures are to be placed at the top and bottom of panel runs or as indicated.
  - .2 Insulation Systems: Install metal building cladding systems to manufacturer's recommendations. Coordinate installation of metal cladding as required over secondary layer of metal building insulation system and air barrier.
  - .3 Co-operate with trades to ensure rapid installation of metal panels and flashings as soon as preceding work is ready to receive same. Give timely instructions and information in writing of the requirements necessary for surfaces, materials or bases prepared and/or supplied by other trades which will affect the work of this section. This Contractor to bear the cost of any cutting, patching or making good required as a result of failure to carry out the provisions of this Clause.
  - .4 Roll form profiled panels and other Work unless impossible because of special design. Use other forming methods only with Consultant's approval. Form bends sharp and true. Fabricate to conform to reviewed shop drawings, and to allow for structural movement within system. Fabricate cladding system to prevent entry of water into building and from collecting within wall assembly, and to prevent infiltration or exfiltration of air through cladding system.
  - .5 Cladding Installation:
    - .1 Installation to be by skilled mechanics, and in strict accordance with system manufacturer's printed directions, to produce a first-class flush-finished surface, in true planes.
    - .2 Install preformed metal cladding horizontally, and liner panels vertically, plumb, straight and true to adjacent work by the manufacturer's erection forces. Subcontracting or assigning of the erection of these materials will not be allowed unless express written consent is received from the Consultant.
    - .3 Erect metal components and accessories in strict accordance with reviewed shop and erection drawings and manufacturer's written instructions. System to be installed plumb, straight and true to adjacent work. Co-operate with other trades to ensure proper installation and anchorage of this Work.
    - .4 Where face sheets cover solid masonry or concrete, fasten notched "Z" girts to masonry or concrete walls with masonry type anchors sized and spaced to suit engineered design.
    - .5 Maximize lengths of cladding sheets.
  - .6 Trim and Closures: Supply and install trim and closures of metal gauge and finish to match adjacent surfaces.
  - .7 Sheet Metal Flashings:
    - .1 Fabricate metal flashings and sheet metal work to profiles as indicated or detailed. Sheet metal work to be watertight under conditions.
    - .2 Install sheet metal work with concealed fastenings. Exposed fastenings will be permitted only with approval of Consultant, when concealed fastenings are impossible. If used, install to a weathertight condition, and evenly and neatly locked. Do not use pop rivets.
    - .3 Provide continuous starter strips to present true leading edge. Anchor to backup to provide rigid, secure installation. Conceal fastening.
    - .4 In general, join sheet metal by "S" seams, to permit thermal movement. Fill joints with sealant as flashing is being installed. Subsequent to installation clean off excess visible material. Space joints evenly where exposed, or as otherwise shown on drawings or approved by the Consultant. Lock seam and seal. Make corners by means of raised lock seams. Locate joints at 2440mm (8'-0") maximum spacing. Make allowance for expansion at joints.
    - .5 Make surfaces free from distortions, buckling, warp, wave, dents, oil canning or other defects detrimental to appearance or performance. Make corners square and surfaces straight and in true planes.
    - .6 Double back exposed edges on underside at least 12.7mm (1/2") for appearance and stiffness. Dovetail, mitre, lock joint and seal corners. Apply sealant to open sheet metal joints and at juncture with other materials.
    - .7 Provide underlay or isolation coating to sheet metal surfaces that come into contact with masonry, concrete or another kind of metal.
    - .8 Prepare and touch up scratches on pre-painted finish with air drying formulation of the coil coating paint. Replace material at no cost to the Owner, if touching up is not acceptable to the Consultant.
    - .9 Coordinate and provide supply of flat stock to roofing trade for fabrication of metal flashing for the project.
2. **Cleaning of Preformed Metal Cladding:** Upon completion of the installation, clean down preformed metal cladding and soffit and leave work installed under this section clean. Use only cleaning agents recommended by the cladding manufacturers.



## **CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

### **07 72 00 – JOINT SEALANTS**

#### **Part 1. General**

1. Scope:
  - .1 Provide sealants of the following types and at the specified locations.
  - .2 Provide sealant backing as conditions require.
  - .3 Provide cleaning materials as required to remove excess sealant from adjacent material without damage.
  - .4 Protect the work from damage.
2. Submittals: Prior to commencing the work submit the following items;
  - .1 Submit preparation instructions and recommendations.
  - .2 Submit samples for colour selection.
  - .3 Submit a sample of each product.
3. Warranty
  - .1 Special Manufacturer's Warranty: Manufacturer's standard form in which joint sealant manufacturer agrees to furnish joint sealants to repair or replace those that demonstrate deterioration or adhesive or cohesive failure under normal use within warranty period specified.
  - .2 Warranty Period for Silicone Sealants: Five years date of Substantial Completion.
  - .3 Special Installer's Warranty: Original statement on Installer's letterhead in which Installer agrees to repair or replace joint sealants that demonstrate deterioration or failure within warranty period specified.
  - .4 Warranty Period: Two years from date of Substantial Completion.
  - .5 Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
    - .1 Movement of the structure caused by structural settlement or stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
    - .2 Disintegration of joint substrates exceeding design specifications.
    - .3 Mechanical damage caused by outside agents.
    - .4 Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

#### **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 Backing: Provide polyurethane backer rods as recommended by the caulking manufacture. Ensure backer rods and caulking materials are compatible.
  - .4 Masking Material: Removable painting / masking tape.
  - .5 Cleaning Materials: Commercial grade solvent as recommended by the caulking manufacturer.

#### **Part 3. Execution**

1. Installation of New Sealant Systems
  - .1 Review project and identify areas where caulking is required. Refer to schedule noted in Part 2 of this section.
  - .2 Select colour of caulking to match adjacent finished surfaces.
2. Examination
  - .1 Examination of Existing Joint Sealants: Examine existing joint sealants indicated to be replaced. Examine joints for compliance with requirements for joint configuration, installation tolerances, condition of joint substrate, and other conditions affecting joint-sealant performance.
  - .2 Submit report indicating conditions that cannot be corrected to comply with joint sealant manufacturer's recommendations; as part of the specified joint replacement or rehabilitation. Proceed with work once non-complying conditions are corrected.
3. Joint Preparation
  - .1 Removal of Failed Joint Sealant Materials: Cut out and remove joint materials and associated backing materials as indicated on drawings.

- .2 Surface Cleaning of Joint Substrates: Clean joints thoroughly immediately before installing joint sealants. Remove foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - .1 Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods in addition to solvent cleaning to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Remove laitance and form-release agents from concrete.
  - .2 Clean porous and nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- .3 Masking: Mask adjacent surfaces to prevent staining or damage by contact with sealant or primer. 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. Maintain protection securely in place until project completion.
- .4 Joint Backing: Select joint backing materials recommended by sealant manufacturer as compatible with sealant and adjacent materials. Install backing material at depth required to produce profile of joint sealant allowing optimal sealant movement.
- .5 Install joint backing to maintain the following joint ratios:
  - .1 Joints up to 1/2 inch (13 mm) wide: 1:1 width to depth ratio.
  - .2 Joints greater than 1/2 inch (13 mm) wide: 2:1 width to depth ratio; maximum 1/2 inch (13 mm) joint depth.
  - .3 Install bond breaker tape over substrates when sealant backings are not used.
4. Installation of Joint Sealants
  - .1 Sealant and Primer Installation Standard: Comply with ASTM C 1193 and manufacturer's written instructions.
  - .2 Joint Priming: Prime joint substrates when recommended by sealant manufacturer or when indicated by preconstruction testing or experience. Apply recommended primer using sealant manufacturer's recommended application techniques.
  - .3 Joint Sealant Application: Install sealants using methods recommended by sealant manufacturer, in depths recommended for application. Apply in continuous operation from bottom to top of joint vertically and horizontally in a single direction. Apply using adequate pressure to fill and seal joint width.
    - .1 Tool sealants immediately with appropriately shaped tool to force sealants against joint backing and joint substrates, eliminating voids and ensuring full contact.
    - .2 Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
    - .3 Tool exposed joint surface concave using tooling agents approved by sealant manufacturer for application.
  - .4 Cleaning: Remove excess sealant using materials and methods approved by sealant manufacturer that will not damage joint substrate materials.
    - .1 Remove masking tape immediately after tooling joint without disturbing seal.
    - .2 Remove excess sealant from surfaces while still uncured.
    - .3 Clean caulking if required.
    - .4 Replaced damaged caulking where required.

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

**07 84 00 – FIRESTOPPING AND SMOKE SEALS**

**Part 1. General:**

1. **Scope:** Provide tested firestop systems conforming to 'CAN/ULC-S115 – Fire Test of Fire Stop Systems' at penetrations / joints at fire separations in the project.
  - .1 Firestop systems to have 'F' type rating not less than value required of a closure located in the fire separation. For fire separation with a fire resistance rating of 45min, a closure or 'F' rating of 30 minutes (minimum) is required.
  - .2 Refer to drawings for the location of fire separations.
2. **Submittals:** Provide cUL or ULC shop drawings for tested firestop solutions that match existing conditions of penetrations and articulate required materials and components required to achieve required F rating. Where no cUL or ULC tested assembly is available provide and 'engineered judgement' prepared by the systems manufacturer and signed and sealed by an engineer licensed in the province of Ontario. Refer to Submittal Schedule.

**Part 2. Products:**

1. Materials to include Intumescent Firestopping Systems and related components and manufactured by Hilti. Hilti (Canada) Corporation, Mississauga, Ontario, 1-800-363-4458/www.ca.hilti.com or equals by Tremco or AD Fireproofing.

**Part 3. Execution:**

1. Complete a thorough review of the existing conditions, location of existing / new fire separations as indicated on the drawings.
2. Complete a thorough review of existing and new construction assemblies and penetrations at the assemblies at fire separations.
3. Install the firestopping materials and methods in accordance with the manufacturers printed instructions.
4. Coordinate review of firestopping with the Architect prior to covering up completed work of this section.

## 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/m<sup>3</sup> 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: door panels shall be D Series Doors by Fleming Door Products with insulating material: 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.(Maximum opening size, 4' x 10' single, Maximum opening size 8' x 10' pair)
  - .7 Large Interior Doors: door panels shall be H Series Doors by Fleming Door Products or equivalent. (Maximum opening size 5' x 12' single, Maximum opening size, 10' x 12' pair)
  - .8 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. Anchors:
  - .1 Frames in Masonry: adjustable "T" strap anchors.
  - .2 Labelled Frames: to conform to ULC requirements.

## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

- .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.
6. Galvanizing:
  - .1 Typical interior units: steel sheet wipe coated with zinc-iron alloy to a total mass coating both sides of 75 g/m<sup>2</sup> 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/m<sup>2</sup> to conform to ASTM A525M, Z275 coating designation. Mill phosphatize to provide for good paint adhesion.
7. 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).
8. 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.
9. 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.
10. 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.

## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

### 08 51 13 – ALUMINUM WINDOWS AND DOORS

#### Part 1. GENERAL

1. Scope: This Section specifies thermally broken, stick-built, glazed aluminum curtain wall and accessories.
2. Reference Standards
  - .1 Aluminum Association (AA)
    - .1 DAF 45 [2003], Designation System For Aluminium Finishes.
  - .2 American Architectural Manufacturers Association (AAMA).
    - .1 AAMA-501-[2015], Methods of Test for Exterior Walls.
    - .2 CSA A440-[00], Window Standard
    - .3 AAMA/WDMA/CSA 101/I.S.2/A440:22 NAFS North American Fenestration Standard/Specification for Windows, Doors and Skylights; and A440S1-19 Canadian Supplement.
    - .4 AAMA-2603-[2002], Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
    - .5 AAMA-2604-[2005], Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
    - .6 AAMA-2605-[2005], Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
    - .7 AAMA CWM-19, Curtain Wall Manual.
    - .8 AAMA CW-10-[2004], Care and Handling of Architectural Aluminum From Shop to Site.
    - .9 AAMA CW-11-[1985], Design Windloads for Buildings and Boundary Layer Wind Tunnel Testing.
    - .10 AAMA-TIR A1-[2004], Sound Control for Fenestration Products.
    - .11 AAMA TIR-A8-[04], Structural Performance of Composite Thermal Barrier Framings Systems
    - .12 AAMA 1304, Voluntary Specification for Forced Entry Resistance of Side-Hinged Door Systems.
  - .3 ASTM International (ASTM).
    - .1 ASTM A653 / A653M – [09a], Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
    - .2 ASTM B209-[07], Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
    - .3 ASTM B221-[08], Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
    - .4 ASTM C612-[09], Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
    - .5 ASTM E283-[04], Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
    - .6 ASTM E547-[00], Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls, by Cyclic Static Air Pressure Difference.
    - .7 ASTM E1105 – [00(2008)], Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference.
    - .8 ASTM D2240 – [05], Standard Test Method for Rubber Property—Durometer Hardness.
  - .4 CSA International (CSA)
    - .1 CAN/CSA-S157-[2005], Strength Design in Aluminum.
    - .2 CAN/CSA-S136-[2007], North American Specification for the Design of Cold-Formed Steel Structural Members.
    - .3 CAN/CSA W59.2-[M1991(R2003)], Welded Aluminum Construction.
  - .5 Underwriter's Laboratories of Canada (ULC)
    - .1 CAN/ULC-S710.1 [2005], Standard for Thermal Insulation – Bead-Applied One Component Polyurethane Air Sealant Foam, Part 1: Materials Standard for Thermal Insulation - Bead - Applied One Component Polyurethane Air Sealant Foam, Part 1: Materials.
3. Submittals
  - .1 Make submittals in accordance with Contract Conditions and Section 01 33 00 -Submittal Procedures.
  - .2 Product Data: Submit product data including manufacturer's literature for glazed aluminium curtain wall extruded members, panels, components and accessories, indicating compliance with specified requirements and material characteristics.
    - .1 Submit Product Confirmation on curtain wall manufacturer's letterhead of materials, components and accessories to be incorporated into Work.
    - .2 Include product names, types and series numbers.
    - .3 Include contact information for manufacturer and their representative for this Project.

- .3 Shop Drawings: Submit drawings stamped and signed by Professional Engineer registered or licensed in Province of Ontario, Canada. Include on shop drawings:
  - .1 Curtain wall panel and component dimensions, framed opening requirements and tolerances, adjacent construction, anchor details anticipated deflection under load, affected related Work, weep drainage network, expansion and contraction joint location and details, and field welding required. Indicate location of manufacturer's nameplates.
  - .2 Show size and location of seismic restraints. Include seismic design calculations
  - .3 Include details of fasteners between interior and exterior extrusions ensuring no penetration of thermal break or other thermal bridging.
- 4 Samples:
  - .1 Submit duplicate 300 x 300 mm (12 x 12 inches) sample sections showing prefinished aluminum surface, finish, colour and texture, and including section of infill panel.
  - .2 Submit duplicate 300 x 300 mm (12 x 12 inches) sample sections of insulating glass unit showing glazing materials and edge and corner details.
- .5 Thermal Performance: Submit verification that Insulating Glass Units used in curtain wall system meet USI (U) values specified.
- .6 Test Reports:
  - .1 Submit test reports showing compliance with specified performance characteristics and physical properties including air infiltration, water infiltration and structural performance.
- .7 Field Reports: Submit manufacturer's field reports within 3 days of manufacturer representative's site visit and inspection.
- .8 Installer Qualifications:
  - .1 Submit letter verifying installer's is certified by the manufacturer.
4. Closeout Submittals
  - .1 Operation and Maintenance Data: Supply maintenance data for curtain wall for incorporation into manual specified in Section 01 77 19 - Closeout Requirements.
  - .2 Record Documentation: In accordance with Section 01 77 19 - Closeout Requirements.
    - .1 List materials used in curtainwall work.
    - .2 Warranty: Submit warranty documents specified.
5. Delivery and Handling
  - .1 **Delivery and Acceptance Requirements:** Deliver glazed aluminum curtain wall materials and components in manufacturers original packaging with identification labels intact and in sizes to suit project.
  - .2 Storage and Handling Requirements: Store materials off ground and protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer. Material storage: To AAMA CW-10
6. Warranty
  - .1 Project Warranty: Refer to Contract Conditions for project warranty provisions.
  - .2 Manufacturer's warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and not intended to limit other rights Owner may have under Contract Conditions.
  - .3 Warranty period: 10 years commencing on Date of Substantial Performance of Work.

## Part 2. Products

1. Manufacturer: Alumicor Limited, 290 Humberline Drive, Toronto, Ontario, Canada M9W 5S2, Phone: (416) 745-4222 or (877) ALUMICOR, e-mail: [info@Alumicor.com](mailto:info@Alumicor.com), URL: [www.Alumicor.com](http://www.Alumicor.com), or equal approved by the Consultant.
2. Acceptable Material – Aluminum Windows: Alumicor Ltd., **Rainblade 2970 Shadowline Series windows, noted as W-1 on the drawings** and having the following characteristics;
  - .1 19 mm (3/4 inch) wide profile thermally broken, vertical stick-built glazed aluminum window system of extruded aluminum sections with self supported framing, shop fabricated, factory prefinished, vision glass, insulated metal panel spandrel infill, column covers, related flashings, anchorage and attachment devices.
  - .2 Overall Typical Frame Size: 19mm (3/4") wide x 134mm (5.25") deep.
  - .3 Minimum Thermal Performance of Window Assembly: minimum R value to be R2.9 (U=0.34) for fixed components, and U-0.36 for operable components.
  - .4 Minimum SHGC of 0.45, minimum visible light transmission / solar heat gain coefficient to be not less than 1.10.
  - .5 Thermal Break: sized to coordinate with insulated unit.
  - .6 Insulated unit to suit a **double glazed** with an overall thickness of 25.4mm (1") – refer to section 08 81 00 – Glass and Glazing
  - .7 Provide door adapters as required to accommodate new alum doors and scheduled.
3. Ensure assembled system design permits re-glazing of individual glass and infill panels from exterior without requiring removal of structural mullions.
4. Accessories



## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

- .1 Gasketing: To EPDM gaskets.
- .2 Setting Blocks: To ASTM D2240, EPDM, 80 – 90 Shore A Durometer hardness.
- .3 Spacers: To ASTM D2240, EPDM 50 – 60 Shore A Durometer hardness.
- .4 Sealant: To CAN/CGSB-19.13, Class 40, one-component, cold-applied, non-sagging silicone. Acceptable material: Dow Corning 795.
- .5 Sealant Bond Breaker: Open cell foam backer rod sized to suit project requirements.
5. Finishes
  - .1 Exterior exposed aluminum surfaces: To AA DAF-45-M12C22A31, Architectural Class II, clear anodized [10 µm (0.0004 inches)] minimum thickness. Acceptable material: Alumicor Ltd., Class II Anodic Finish.
  - .2 Interior exposed aluminum surfaces: To AA DAF-45-M12C22A31, Architectural Class II, clear anodized [10 µm (0.0004 inches)] minimum thickness. Acceptable material: Alumicor Ltd., Class II Anodic Finish.
6. Accessories
  - .1 Gasketing: To EPDM gaskets.
  - .2 Setting Blocks: To [EPDM, 80 - 90 Shore A Durometer hardness.
  - .3 Spacers: To EPDM , 50 - 60 Shore A Durometer hardness.
  - .4 Sealant: To CAN/CGSB-19.13, Class 40, one-component, cold-applied, non-sagging silicone. Acceptable material: Dow Corning 795.
  - .5 Sealant Bond Breaker: Open cell foam backer rod sized to suit project requirements.
  - .6 Flashings: 3 mm (0.125 inches) thick aluminum flashing to profiles indicated and in accordance with Section 07 62 00 - Sheet Metal Flashing and Trim.
  - .7 Liquid Foam Insulation: Single component, moisture cure, low expansion rate spray-in-place polyurethane liquid foam insulation to ULC-S710.1 and in accordance with manufacturer's written recommendations.
  - .8 Miscellaneous Components: Covers, copings, special flashings, filler pieces, termination pieces, cap closures, expansion joint covers, and metal bellows to match curtain wall system as indicated.

### Part 3. Execution

1. Installers: Use only Alumicor authorized installers for work of this Section.
2. Examination
  - .1 Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for curtain wall installation in accordance with manufacturer's written instructions.
    - .1 Visually inspect substrate in presence of Consultant.
    - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
    - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.
3. Installation
  - .1 Install curtain wall in accordance with manufacturer's written instructions.
  - .2 Do aluminum welding to CAN/CSA W59.2.
  - .3 Attach curtain wall assemblies to structure plumb and level, free from warp, and allow for sufficient adjustment to accommodate construction tolerances and other irregularities.
    - .1 Maintain dimensional tolerances and align with adjacent work.
    - .2 Use alignment attachments and shims to permanently fasten elements to building structure.
    - .3 Clean welded surfaces and apply protective primer to field welds and adjacent surfaces.
  - .4 Install thermal isolation where components penetrate or disrupt building insulation.
  - .5 Install sill flashings.
  - .6 Co-ordinate installation of fire stop insulation, in accordance with Section [07 84 00 - Firestopping], at each floor slab edge [and intersection with vertical construction where indicated].
  - .7 Install smoke sealing in accordance with Section [07 80 00 – Fire and Smoke Protection] where indicated.
  - .8 Co-ordinate attachment and seal of perimeter air barrier in accordance with Section [07 27 00 – Air Barriers].
  - .9 Co-ordinate attachment and seal of perimeter vapour retarder in accordance with Section [07 26 00 – Vapour Retarders].
  - .10 Install liquid foam insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
  - .11 Install insulating glass units and infill panels in accordance with Section 08 81 00 – Glazing and to manufacturer's written instructions.
  - .12 Install perimeter sealant to method required to achieve performance criteria, backing materials, and installation criteria in accordance with Section 07 72 00 - Joint Sealing.
4. Field Quality Control
  - .1 Field Inspection: Coordinate field inspection in accordance with Section 01 45 00 -Quality Control.

- .2 Site Installation Tolerances:
  - .1 Variation from plumb: 12 mm per 30 m (0.5 inches per 100 feet) maximum.
  - .2 Misalignment of two adjacent panels or members: 0.8 mm (0.03 inches) maximum.
  - .3 Sealant space between curtain wall and adjacent construction: 13 mm (0.5 inches) maximum.
- .3 Manufacturer's Services:
  - .1 Coordinate manufacturer's services with Section 01 45 00 - Quality Control.
  - .2 Submit to Consultant a written agreement from the manufacturer to perform the manufacturer's services.
  - .3 Schedule manufacturer's review of work procedures at stages listed:
    - .1 Product Application: 1 off site review[s].
    - .2 Fabrication and Handling: 1 review[s] at authorized installers fabrication facilities.
    - .3 Installation: 1 site reviews at 50% completion of Work.
  - .4 Submit manufacturer's written reports to Consultant describing:
    - .1 The scope of work requested.
    - .2 Date, time and location.
    - .3 Procedures performed.
    - .4 Observed or detected non-compliances or inconsistencies with manufacturers' recommended instructions.
    - .5 Limitations or disclaimers regarding the procedures performed.
    - .6 Obtain reports within seven days of review and submit immediately to Consultant.
- 5. Cleaning
  - .1 Progress Cleaning: Perform cleanup as work progresses in accordance with Section 01 74 00- Cleaning. Leave work area clean end of each day.
  - .2 Final cleaning: Upon completion, remove surplus materials, rubbish, tools, and equipment in accordance with Section 01 74 00 – Cleaning.
- 6. Protection
  - .1 Protect installed products and components from damage during construction.
  - .2 Repair damage to adjacent materials caused by glazed aluminum curtain wall installation.

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

**08 71 00 - DOOR HARDWARE – SUPPLY**

**Part 1. General**

1. Scope: Provide door hardware in accordance with Owner's requirements, in compliance with the Ontario Building Code 2012 and this specification.
2. 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.
3. 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.

**Part 2. Products**

1. Hardware Supplier: Canadian Hardware Consultants, 1150 Kelly Lake Road, Sudbury, ON, T 705 673 5300  
www.chc-sudbury.com or approved equal
2. Door Hardware shall be from the following manufacturers / suppliers, or equal:
  - .1 Hinges McKinney
  - .2 Lockets, cylinders Sargeant
  - .3 Hold Opens Closers LCN
  - .4 Transformers LCN
  - .5 Kickplates CBH
  - .6 Floor Stops CBH
  - .7 Smoke Seals KN Crowder
  - .8 Smoke Sweeps KN Crowder
3. Schedule:
  - .1 Interior HM or Wood Doors:
    - .1 Latchset
    - .2 Hinges
    - .3 Deadlock
    - .4 Kickplate
    - .5 Overhead Closure
    - .6 Wall Stop
    - .7 Smoke Sweep
    - .8 Set Smoke Seal

**Part 3. Execution**

1. Review contract documents; drawings and specifications, related schedules and existing keying systems and existing hardware on site.
2. Identify any other Owner requirements that may impact the project. Coordinate these requirements with the hardware list and Architect.
3. Develop hardware schedule that follows contract documents and coordinates with existing conditions and submit to the Architect for review.
4. Once an approved hardware schedule is received, order and provide hardware to the site, labelled and organized by door opening, ready for installation.

## 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:

**CURVE LAKE FN HEALTH CENTRE- REROOFING**

**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .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.

08 81 00 – GLASS + GLAZING

Part 1. General:

1. Scope: Provide labour and materials required to supply and install glass and glass product on the project.
2. References:
  - .1 ASTM C1048 - 12e1 Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.
  - .2 ASTM C920 Standard Specification for Elastomeric Joint Sealants.
  - .3 ASTM C1172, Standard Specification for Laminated Architectural Flat Glass.
  - .4 CAN/CGSB 12.1, Safety Glazing.
  - .5 CAN/CGSB 12.3, Flat, Clear Float Glass.
  - .6 CAN/CGSB 12.5, Mirrors, Silvered
  - .7 CAN/CGSB 12.8, Insulating Glass Units
  - .8 CAN/CGSB 12.9, Spandrel Glass.
  - .9 CAN/CGSB 12.11 Transparent (One Way) Mirrors
  - .10 CAN/CGSB 12.20, Structural Design of Glass for Buildings.
  - .11 ULC CAN-S104, Standard Method For Fire Tests of Door Assemblies
  - .12 ULC CAN-S106, Standard Method For Fire Tests of Window and Glass Block Assemblies
  - .13 NFPA 80, National Fire Protection Association, Fire Door and Windows
  - .14 NFPA 257: Standard on Fire Test for Window and Glass Block Assemblies.
3. Submittals:
  - .1 Submit information requested and specified in accordance with Section 01 33 00.
  - .2 Product Data:
    - .1 Submit manufacturer's product data for each type of product specified. Data to indicate compliance with specification and installation recommendations of manufacturer of products being used.
    - .2 Submit copy of manufacturer's warranty, in Owner's name for review by consultant.
  - .3 Samples:
    - .1 Submit samples of materials if required by Consultant before commencing work of this section. Samples to be clearly labeled with manufacturer's name and type.
    - .2 Submit samples of spandrel glass coatings for review and acceptance by Consultant prior to ordering.
    - .3 Samples for Verification: Upon consultant's request furnish a 12" x 12" samples of glass types, gaskets, tapes and sealants.
  - .4 Shop Drawings:
    - .1 Submit shop drawings, to the Consultant for review prior to fabrication.
    - .2 Maintenance Data:
    - .3 Upon completion of installation, supply instructions covering re-glazing, adjustments and other relevant maintenance data.
4. Quality Assurance:
  - .1 Comply with published recommendations of glass product manufacturers and organizations below, except where more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this section or referenced standards.
    - .1 GANA: "Glazing Manual," "Laminated Glazing Manual," and "Sealant Manual."
    - .2 IGMA: "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
  - .2 Single-source fabrication responsibility: glass fabricated for each type to be processed and supplied by a single fabricator.
5. Delivery, Storage and Handling:
  - .1 Delivery and Acceptance Requirements: Deliver packaged materials in their original containers with manufacturer's labels and seals intact.
  - .2 Storage and Handling Requirements: Store vertically, blocked off the floor in a weatherproof enclosure in original containers with manufacturers labels and seals intact until read for installation, and as follows:
    - .1 Install glass as soon as possible after delivery to site.
    - .2 Handle glass carefully to its place of installation.
    - .3 Prevent damage to glass, adjacent materials and surfaces.
6. Environmental Conditions:
  - .1 Ambient Conditions: Maintain temperature, humidity and solar exposure conditions of Glass Glazing materials during shipping, storage and site installation as required by manufacturer to maintain warranty and performance of installed products.
7. Warranty: Provide a warranty for insulated units that complies with the following;
  - .1 Warranty to cover the repair or replacement of defective work, starting at substantial completion of the project.

## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

- .2 Structural failure, leaking, loosening, condensation within units, deforming and failure of glazing units to be judged as defective work.
- .3 Provide a Total Workmanship Warranty for a period of ten (10) years for components of the insulated units.
- .4 Record noted deficiencies and arrange for their proper repair under warranty.

### Part 2. Products:

1. Subject to compliance with requirements specified in this section, the following manufacturers are approved to be installed specified products on this project:
  - .1 Oldcastle Glass
  - .2 Guardian Industries
  - .3 Vitro Architectural Glass
  - .4 AGC
  - .5 Vitricon
  - .6 SCHOTT
  - .7 TGP / Nippon
2. **Tempered Glass (noted as TG on the drawings):** Type 2, tempered; Class B, float or plate glass, clear; conforming to CAN/CGSB 12.1, 6mm thickness minimum.
3. **Glazing Tape:** Preformed butyl with continuous spacer, Shore "A" 10-15 durometer hardness paper release, black colour, 1/8" (3mm) x 3/8" (10mm). **Use PVC glazing tape with fire rated glass.**
4. **Warm Edged Spacers:** Provide warm edged spacer in the construction of insulated units equal to Edgetech Super 'U' Spacer.
5. Insulated Units:
  - .1 All insulating units shall confirm to CAN /CGSB 12.8.
  - .2 All insulated unit configurations are basis of design, equals to be approved by Consultant.
  - .3 Configuration for double glazed insulated glazing type noted as **GL-1** on the drawings;
    - .1 Outboard Lite: 6mm (1/4") clear tempered glass with Solarban 70 reflective coating on surface 2 by Vitro Architectural Glass.
    - .2 Space 1: 13mm (1/2") thick, filled with Argon – minimum Argon Concentration = 95% with non-metallic spacer.
    - .3 Inboard Lite: 6mm (1/4") clear tempered glass by Vitro Architectural Glass
    - .4 Insulated unit data
      - .1 Overall unit thickness: 25mm (1")
      - .2 Winter night time U-value of: 1.35 W/m2K or lower (0.24 BTU/hr/ft2/F)
      - .3 Solar Heat Gain Coefficient of: 0.21 or lower
      - .4 Daylight transmittance of: 52% or higher
6. Fabrication and Manufacture:
  - .1 Label each light of glass with the registered name of the product and the weight and quality of the glass.
  - .2 Check dimensions on site before cutting materials.
  - .3 Minimum bite or lap of glass on stops and rabbets as recommended by glass manufacturer. Finish surfaces to be free of tong marks.
  - .4 Cut glass true to dimensions, square, plumb and level. Verify dimensions prior to fabrication.
  - .5 Distortion, pock marking or defects detrimental to appearance and/or performance, as determined by the Consultant, will be rejected.

### Part 3. Execution:

1. Installation:
  - .1 Take critical site dimensions to ensure that adjustments in fabrication or installation are provided for, and that clearances to other constructions have been maintained.
  - .2 Ensure that anchors and inserts installed by others are adequate to meet specified requirements, and make adaptations before installation.
  - .3 Accurately measure openings and calculate light size based on manufacturer's installation tables, allowing for proper minimum edge engagement, rabbet width, rabbet depth, and expansion.
  - .4 Free rabbets, stops and glass edges of dust, dirt, moisture, oil and other foreign matter detrimental to or obstructing the glazing material.
  - .5 Follow manufacturer's recommendations for preparation.
  - .6 Unless otherwise specified, dry glaze interior glass.
  - .7 Remove and replace glazing stops in original locations using original fasteners, securely set and undamaged.

- .8 Use setting blocks and spacers as required to properly support the glass, centred in place in glazing space independent of the materials and to uniformly distribute its load.
  - .9 Use a minimum of 2 setting blocks, locate at 1/8 points. Locate spacers at jamb edges of glass, uniformly spaced at 24" (600mm) o.c. maximum, and 12" (300mm) maximum from top and bottom.
  - .10 Ensure rattle-free cushioning.
2. Cleaning:
- .1 Repair defects caused by work of this section.
  - .2 Remove excess or foreign materials or droppings that would set or become difficult to remove from surfaces at time of final cleaning.
  - .3 Immediately prior to acceptance of work of this section by Consultant, remove temporary protection, clean and polish exposed surfaces of work of this section. Use proper cleaning materials and methods to prevent damage to surfaces, finishes, sealer, or work of other trades. Make good such damage to Consultant's satisfaction.
  - .4 Do not use steel wool, wire brushes or steel scrapers on any finished surfaces.
  - .5 Replace or make good to Consultant's satisfaction, upon completion of work of this section, defective, scratched, or damaged work, at no extra cost to the Owner.



## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

## 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. 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](http://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.
4. Accessories:
  - .1 Concrete Anchors:
    - .1 Self-drilling tie wire anchors, Phillips "Red-Head No. T-32" by ITW Construction Products, or approved alternate. Do not use power activated anchors for seismic connections, and only with the approval of Structural Consultant.
  - .2 Concrete Inserts:
    - .1 Hot-dip galvanized "turtle back" type concrete inserts to suit conditions as approved by Consultant, by Acrow-Richmond National Concrete Accessories, Division of Premetalco Inc., or approved alternate.
  - .3 Gypsum Wallboard Accessories:
    - .1 In general, gypsum wallboard accessories will conform to ASTM C1047.
    - .2 Corner Beads:

**CURVE LAKE FN HEALTH CENTRE- REROOFING**  
**38 Whetung St., E., Curve Lake, Ont.**

project No. 24120

- .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 Where required provide fire rated control joints to suit FRR required.
  - .3 'Zinc Control Joint No. 093' by ClarkDietrich
  - .4 Or approved alternate.
- .5 Reveals:
  - .1 Galvanized sheet steel conforming to ASTM A653, minimum 0.0179" (25-gauge), in profiles as indicated on drawings.
- 4 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.
- 5 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.
- 6 Joint Compound for Exterior Sheathing Boards and Soffit Panels:
  - .1 Fibreglass mesh tape.
- 7 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.
- 8 Adhesive:
  - .1 Conforming to CGSB 71-GP-25M, and as recommended by manufacturer and compatible with contacted surfaces.
- 9 Acoustic Sealant:
  - .1 Green Glue Sealant: Noiseproofing sealant manufactured by Green Glue Company ([www.greenglue.com](http://www.greenglue.com)) to be applied at joints between ceiling and wall assemblies' gypsum board and as indicated on the architectural drawings.
- 10 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.
- 11 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.
- 5. 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", 18gauge metal studs at 24" o/c.
- 6. Slip-Type Head Joints: Where indicated, provide one of the following:
  - .1 Deflection Track: steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and width to accommodate depth of studs; equal to Bailey Multi-Slot Track – MST 250, 2.5" deep a width as required to suit all assembly x 18 mils (minimum).
- 7. Retainer Studs: As manufactured by Bailey Metal Products, or Insulock Systems.
- 8. 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.
- 9. 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.
- 10. Furring Channels: #25 gauge galvanized, nominal size of 7/8" (22mm) deep by 1-1/4" (32mm) face, hat type with knurled face.
- 11. Resilient Channels: CGC RC-1 or equivalent by other reputable manufacturers.

## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

12. Shaft Wall Framing: C-H steel studs, size, gauge and spacing to suit shaft wall and horizontal shaft assemblies as described by ULC for use in ULC 452 shaft wall construction.
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.
14. Acoustical Caulking: "Noiseproofing Compound / Sealant" by Green Glue or "Acoustical Sealant" by Tremco (Canada) Limited.
15. 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 Metal Stud Partition Framing:
  - .1 Lay down gasket at location of bottom track. Secure runner channels at floor and tops of partitions for their full lengths, at 24" (610mm) o.c. with concrete fasteners or as suitable for the substrate material. Install runner channels also at heads and sills of openings. Secure runners at openings by cutting flanges, turning up webs, and screwing to studs.
  - .2 Butt, not mitre, runners at wall intersections and corners. At ceilings, lap and screw channels together.
  - .3 Space studs at 16" (400mm) o.c. generally, and at no greater distance than 2" (50mm) from abutting walls, partitions and corners.
  - .4 Secure studs to runners by screws, crimping, or welding as required by stud type to conform to manufacturer's design specification.
  - .5 Utilize only proper stud sizes to meet the requirements of this specification. Span studs of 1-5/8" (40mm) depth no greater than 8'-10" (2700mm) between supports, 2-1/2" (65mm) depth, 11'-9" (3600mm) and 3-5/8" (92mm) depth, 15'-9" (4800mm).
  - .6 Double studs at door jambs. At each jamb of doors exceeding either 36" (915mm) width or 2-1/2" (63mm) in thickness or both, install a structural channel reinforcing extending from floor structure to structure above, and adequately anchored at each end.
  - .7 Brace studs with stiffeners over doors in partitions of greater height than 10'-0" (3000mm) spaced as preceding, and above and below window type openings spaced not more than 6" (150mm) from the top and bottom of openings. Stiffeners to be 3/4" (19mm) bracing channels, wire tied or welded to each stud, and extending horizontally across entire length of each braced partition and across two full stud spaces at each side of door and window openings.
  - .8 Splice studs only when unavoidable by nesting with 8" (200mm) minimum lap, and fastened with one screw in each flange.
  - .9 Co-ordinate work with others installing horizontal runs of service lines so that work of is done simultaneously. Where standard holes are too small for installed services, notch studs and splice notched flange with a splice piece 12" (300mm) longer than notch, fastened with two screws.
  - .10 Unless shown otherwise on drawings, partitions, together with wallboard facing, to extend above ceilings to underside of structure above.
  - .11 Ensure that electrical and telephone boxes are not installed back to back.
  - .12 Screw frame anchor clips of frames supplied and installed under the work of another Section, to jamb studs and head and sill runners. Provide adequate fastening to prevent movement of frames within partitions.
- .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.

## CURVE LAKE FN HEALTH CENTRE- REROOFING

38 Whetung St., E., Curve Lake, Ont.

project No. 24120

- .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 Fire Separations:
  - .1 Construct gypsum board assemblies where located at fire separations of metal framing covered on both sides by fire-rated gypsum wallboard.
  - .2 Fit assemblies tightly to enclosing constructions to maintain integrity of the separations. Install casing beads at perimeter edges. Ensure that caulking work under Section 07 72 00 relative to non-sound rated assemblies, i.e. perimeter joints in concealed locations is done, before continuing with the work of this Section.
  - .3 For two layers of gypsum board, attach one layer of gypsum board to each side of studs with long edges on studs by screws at 16" (400mm) o.c. as well as at intermediate studs and runners. Attach second layer of gypsum wallboard by screws at 16" (400mm) o.c. at studs and 12" (300mm) o.c. at runners. Stagger joints at first and second layers 12" (300mm) tape joints only where exposed to view. Fill screw holes. For tested assemblies secure in accordance with test data.
  - .4 Assemblies constructed other than those indicated may be approved by the Consultant on presentation of affidavits which validate fire resistance ratings by acceptance of the Jurisdictional Authorities.
  - .5 For walls containing fire dampers provide gypsum board end covers over studs between duct and stud.
- .11 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 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.
2. **Submittals:**
  - .1 Manufacturer's Literature: Submit manufacturer's product literature for each paint formula listed and used on the project.
3. **Warranty:**
  - .1 Submit manufacturers' standard warranty covering the maintenance, repair or replacement of defective work for a period of one (5) years from the expiration of the standard one (1) year warranty included in the Contract under the General Conditions.

### Part 2. Products:

1. The following specifications are based on Benjamin Moore Paints, the following paint manufacturers are acceptable:
  - .1 International PC.
  - .2 Para Paints Canada Inc.
  - .3 ICI Paints Canada.
  - .4 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 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.
  - .2 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.

# CURVE LAKE FN HEALTH CENTRE - REROOFING

38 Whetung St E, Curve Lake, ON K0L 1R0

2025 02 07

PROJECT ISSUED FOR TENDER

## 3RDLINE.STUDIO

O:\1 PROJECTS\2024\24120 - Curve Lake FN - Health Centre BCAY.0 Drawings\7.3 Working\Current\24120 - Curve Lake FN Health Centre.rvt

### LIST OF DRAWINGS

#### ARCHITECTURAL

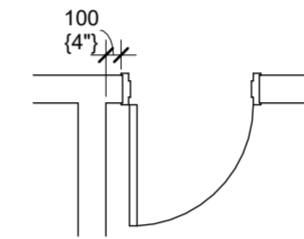
Sheet Number	Sheet Name
A-0.1	INFORMATION SHEET
A-1.0	FOUNDATION PLANS
A-2.0	ROOF PLANS
A-3.0	ELEVATIONS
A-4.0	SECTION DETAILS

A-0.1	INFORMATION SHEET
A-1.0	FOUNDATION PLANS
A-2.0	ROOF PLANS
A-3.0	ELEVATIONS
A-4.0	SECTION DETAILS

### CONSTRUCTION ASSEMBLIES

#### PARTITION ASSEMBLIES NOTES:

- ALL INTERIOR PARTITIONS ARE TO BE P1 UNLESS NOTED OTHERWISE
- USE WATER RESISTANT GYPSUM WALL BOARD ON ALL WET SIDES OF PARTITIONS & CEMENT BOARD BEHIND ALL WALL MOUNTED TILE WORK.
- PROVIDE WOOD BLOCKING TO ACCOMMODATE WALL MOUNTED IN ACCESSORIES. COORDINATE LOCATIONS AS REQUIRED.
- ALL PARTITIONS TO EXTEND TO UIS OF STRUCTURE (DECK) UNLESS OTHERWISE NOTED. BRACE AS REQUIRED.
- ALL FLOOR ELEVATIONS ARE REFERENCED TO AND FROM GROUND FLOOR DATUM ELEVATION OF 0.0.
- ALL EXPOSED VERTICAL CORNERS IN GYPSUM BOARD PARTITIONS SHALL BE FINISHED WITH CORNERS GUARDS AS DESCRIBED IN SPECIFICATION.
- ALL DOORS SHALL BE LOCATED 100mm FROM WALL FACE TO DOOR FRAME EDGE TYPICAL UNLESS NOTED OTHERWISE. SEE DETAIL BELOW.
- THE LETTER 'X' NEXT TO PARTITION TAGS INDICATE PARTITIONS THAT ONLY EXTEND TO UIS OF CEILING.
- ALL NON-LOAD BEARING WALLS TO HAVE A DEFLECTION GAP AT UNDERSITE OF STRUCTURE. REFER TO SPECIFICATIONS AND DETAILS.



ASSEMBLY TYPE	GRAPHIC	DESCRIPTION
<b>EXTERIOR WALL ASSEMBLIES:</b>		
W1 NEW SIDING ON EXISTING EXTERIOR WALL.		<ul style="list-style-type: none"> <li>- VERTICAL METAL PANEL CLADDING</li> <li>- 1" X 3" HORIZONTAL FURRING @ 16" O.C.</li> <li>- 1" X 3" VERTICAL FURRING @ 16" O.C.</li> <li>- AIR BARRIER</li> <li>- 2" MINERAL FIBRE INSULATION (R12) W/ Z GIRTS @ 16" O.C.</li> <li>- EXISTING 5/8" TYPE 'X' EXTERIOR GRADE SHEATHING</li> <li>- EXISTING 2" X 6" WOOD STUDS @ 16" O.C.</li> <li>- EXISTING 5 1/2" MINERAL WOOL INSULATION</li> <li>- EXISTING VAPOUR BARRIER</li> <li>- EXISTING 5/8" GYPSUM BOARD</li> </ul>
<b>ROOF ASSEMBLIES:</b>		
R1 TYPICAL EXISTING ROOF W/ NEW SHINGLES		<ul style="list-style-type: none"> <li>- ASPHALT SHINGLES - REFER TO SPECS.</li> <li>- ICE &amp; WATER SHIELD AS SCHEDULED - REFER TO ROOF PLAN &amp; SPECS.</li> <li>- ROOFING FELT UNDERLAYMENT- REFER TO SPECS.</li> <li>- EXISTING 5/8" PLYWOOD</li> <li>- EXISTING 1x2" WOOD STRAPPING (HORIZONTAL)</li> <li>- EXISTING 1x2" WOOD STRAPPING (VERTICAL)</li> <li>- EXISTING BUILDING PAPER</li> <li>- EXISTING WOOD DECKING</li> </ul>
P1 TYPICAL 1HR FIRE RATED PARTITION 2x4 WOOD STUDS U.L.C. DES. NO. W301 - 1HR U.L.C.		<ul style="list-style-type: none"> <li>- 5/8" TYPE 'X' GYPSUM BOARD</li> <li>- 2" X 4" WOOD STUDS @ 16" O.C.</li> <li>- 3 1/2" MINERAL WOOL INSULATION</li> <li>- 5/8" TYPE 'X' GYPSUM BOARD</li> </ul>

### REFERENCE CONVENTION

SYMBOL	BLOCK NAME
	VIEW NAME 1:100 A-2.0
	VIEW NAME 1:100
	ROOM NAME 101
	FLOOR 0.0
	R1
	W1
	F1
	P1
	W
	2400
	DOOR AND FRAME REFERENCE
	1 A-5.0
	1 A-5.0

### GENERAL NOTES

- IT IS THE CONTRACTORS RESPONSIBILITY AT TIME OF TENDER TO REPORT ANY DISCREPANCIES BETWEEN ARCHITECTS AND CONSULTANTS DRAWINGS. FAILURE TO DO SO MAY VOID, AT OWNERS DISCRETION ANY CLAIM FOR COMPENSATION.
- ANY DISCREPANCIES, OMISSIONS, OR CONFLICTS SHALL BE REPORTED TO ARCHITECT PRIOR TO WORK PROCEEDING.
- PRIOR TO PARTITION LAYOUT, SITE VERIFY ALL FORESEEABLE INTERFERENCES AND REPORT TO ARCHITECT.
- FIRE SEPARATIONS. CO-ORDINATE AND VERIFY INTERFERENCES AT ALL HORIZONTAL AND VERTICAL SEPARATIONS FROM ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL.
- +/- NEXT TO ANY DIMENSION INDICATES THAT MEASUREMENT SHOULD BE FIELD VERIFIED AND MAY HAVE TO BE ADJUSTED TO ACCOMMODATE SITE CONDITIONS. REPORT TO ARCHITECT AS REQUIRED IF DESIGN INTENT CANNOT BE IMPLEMENTED.

### MODULAR CO-ORDINATION NOTES

ALL WORKING DRAWING ARE DIMENSIONED BY THE MODULAR COORDINATION METHOD IN CONFORMANCE WITH THE SERIES OF STANDARDS FOR METRIC DIMENSIONAL COORDINATION IN BUILDING CAN3-A31, M-75.

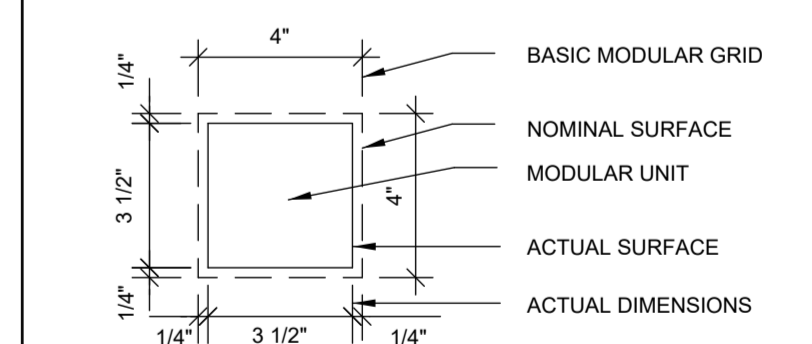
THE POSITION AND SIZE OF BUILDING COMPONENTS IN THIS DRAWING ARE CONTROLLED BY THE BASIC MODULAR GRID OF 100 mm. ( 4" ).

GRID LINES OR POINTS ON GRID LINES ARE LOCATED ON THE DIMENSION LINE BY AN ARROWHEAD.

ELEVATION, OR SECTION SHOW DEMOLITION TO GRID LINES OR TO NOMINAL SURFACE OF AN OFF-GRID COMPONENT OR TO CENTER LINE OF CONSTRUCTION ASSEMBLY.

LARGE SCALE DETAIL DRAWING SHOW DIMENSIONS FROM GRID LINES TO ACTUAL SURFACE OF A COMPONENT.

### IMPERIAL



### LIST OF CONSULTANTS

ARCHITECT: **3RDLINE.STUDIO**  
 289 Cedar Street, Suite 300, Sudbury, ON P3B 1M8  
 Tel: 705-674-2300 ext.451 Fax: 705-674-2185  
 Email: admytruk@3rdline.studio  
 HYPERLINK "http://www.3rdLine.Studio"

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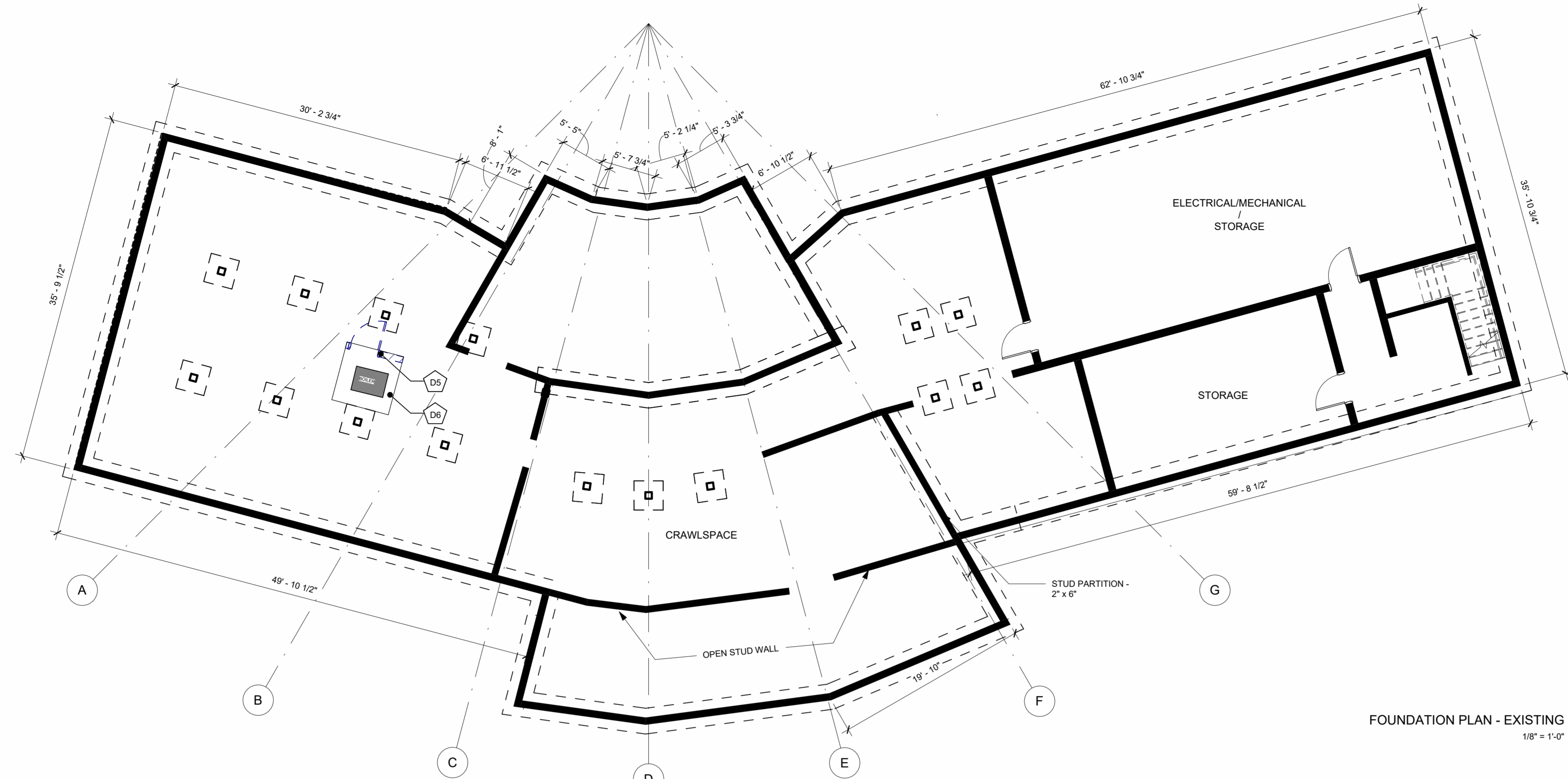
**3RDLINE.STUDIO**  
 289 CEDAR STREET  
 SUDBURY, ON P3B 1M8  
 T.705.674.2300

**CURVE LAKE FN HEALTH CENTRE - REROOFING**  
 38 Whetung St E, Curve Lake, ON K0L 1R0

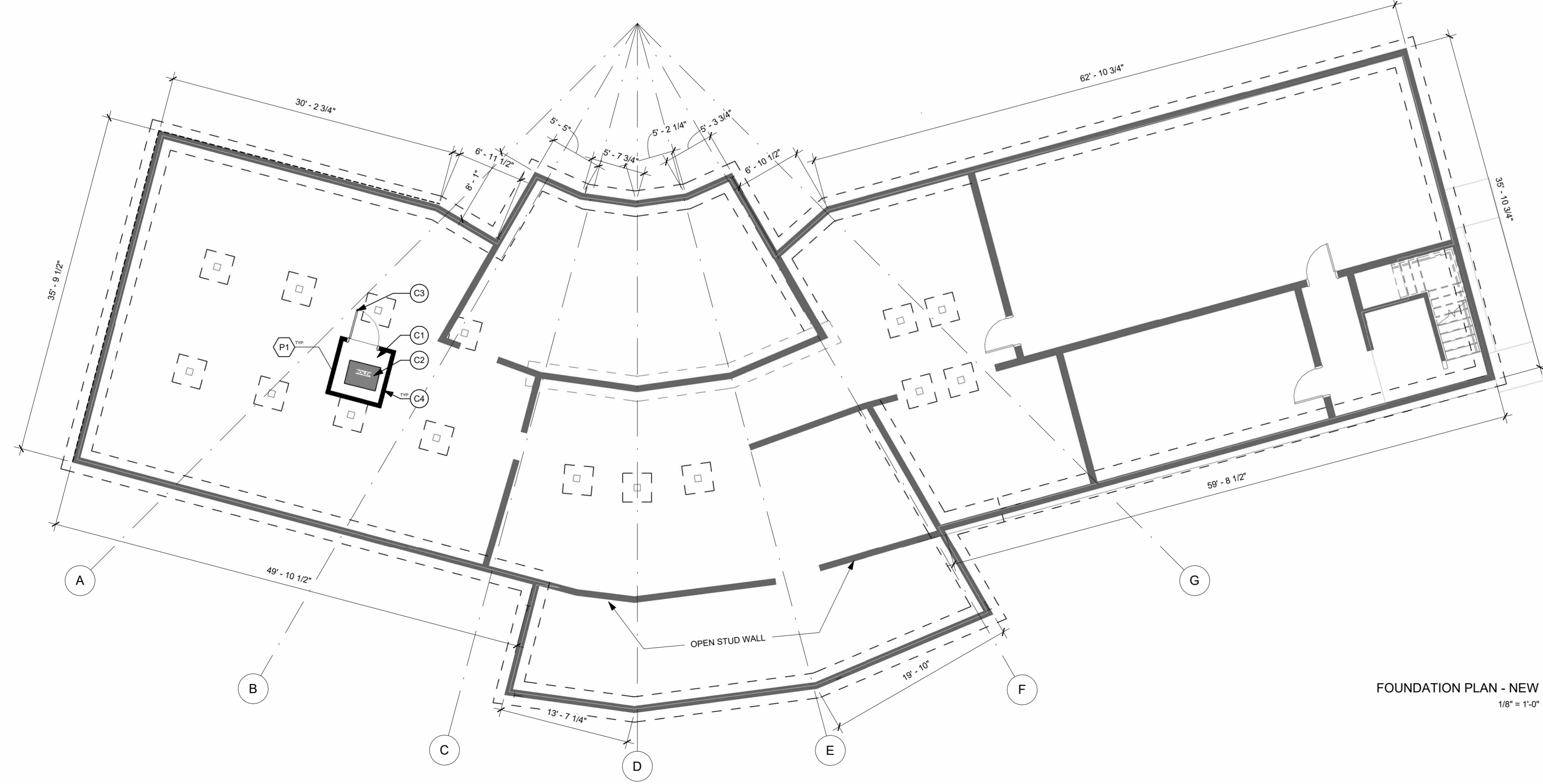
INFORMATION SHEET

Date: 2025 02 07  
 Scale: As indicated  
 Drawn By: MM Checked By: IB  
 Project No: 24120  
 Drawing No: Rev: 1

# A-0.1



FOUNDATION PLAN - EXISTING  
1/8" = 1'-0"



FOUNDATION PLAN - NEW  
1/8" = 1'-0"

- FOUNDATION LEGEND**
- DEMOLITION NOTES (GENERAL):**
1. DETAILED CONSTRUCTION DRAWINGS FOR THE EXISTING BUILDING ARE AVAILABLE AT THE OFFICE OF THE ARCHITECT. CONTRACTOR / TRADE CONTRACTORS SHALL BE RESPONSIBLE FOR VISITING THE SITE / REVIEWING ALL RELEVANT DOCUMENTATION IN ORDER TO ASCERTAIN THE SCOPE OF THE DEMOLITION REQUIRED FOR THE PROJECT.
  2. REFER ALSO TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
  3. ALL ELECTRICAL DEVICES SUBJECT TO DUST AND DEBRIS ARE TO BE REMOVED PRIOR TO DEMOLITION PHASE AND REINSTALLED DURING CONSTRUCTION PHASE. MAKE SAFE ALL ELECTRICAL.
  4. MECHANICAL DUCTS ARE TO BE CAPPED DURING DEMOLITION PHASE TO PREVENT THE SPREAD OF DUST TO THE REST OF THE BUILDING STILL IN OPERATION.
  5. ALL REMOVED ITEMS NOT RE-USED IN NEW CONSTRUCTION OR TURN OVER TO OWNER, SHALL BE REMOVED OFF SITE.
  6. REFER TO OTHER DRAWINGS IN THIS PACKAGE IN ORDER TO OBTAIN A FULL UNDERSTANDING OF DEMOLITION WORK REQUIRED TO MAKEWAY FOR CONSTRUCTION ACTIVITIES. NOT ALL ITEMS TO BE REMOVED HAVE BEEN NOTED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WORK WITH SUBTRADES FOR EXTENT OF REMOVALS AND REINSTALLATION REQUIRED TO COMPLETE THE WORK. MAKE GOOD ALL FINISHES.
  7. PROTECT EXISTING FLOORS, WALLS, EQUIPMENT, MILLWORK AND OTHER PERMANENT FIXTURES FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION OF THE WORK. AS A MINIMUM USE POLYETHYLENE AND PLYWOOD HOARDING.
  8. PROTECT EXISTING MECHANICAL AND ELECTRICAL SYSTEMS TO REMAIN, PROVIDE WATERTIGHT ENCLOSURE AT THESE SYSTEMS WHEN EXPOSED TO THE ELEMENTS.

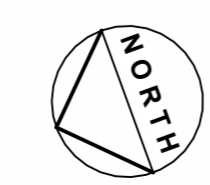
- DEMOLITION NOTES:**
- DS REMOVE EXISTING STUD WALL, HM DOOR AND ALL RELATED HARDWARE IN ITS ENTIRETY IN PREPARATION FOR INSTALLATION OF NEW STUD WALLS.
  - DB CONCRETE PAD TO REMAIN. GRIND SMOOTH TO ALLOW FOR INSTALLATION OF NEW WALLS. MAKE GOOD ALL TRADES.

- CONSTRUCTION NOTES:**
- C1 PATCH EXISTING CONCRETE SLAB IF REQUIRED TO LEVEL SURFACE IN PREPARATION FOR NEW WALLS
  - C2 TAKE ALL MEASURES TO PROTECT EXISTING EQUIPMENT AND SYSTEMS IN THIS AREA FROM DAMAGE THROUGHOUT CONSTRUCTION DURATION.
  - C3 SUPPLY AND INSTALL 3'-2" X 5'-2" NEW HOLLOW METAL DOOR AND FRAME. CW 1HR ULC RATING INTALL HARDWARE AS REQUIRED.
  - C4 INSTALL NEW RATED PARTITION AROUND EXISTING FURNACE FULL HEIGHT FROM EXISTING GLASS TO UIS OF FLOOR DECK. SITE VERIFY DIMENSIONS. REMOVE & RE-INSTALL ELECTRIC AS REQUIRED TO ALLOW INSTALLATION OF NEW WALLS.

O:\1 PROJECTS\2024\24120 - Curve Lake FN - Health Centre BCAY 7.0 Drawings\7.3 Working\Current\24120 - Curve Lake FN Health Centre.rvt

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**3RDLINE.STUDIO**  
289 CEDAR STREET  
SUDBURY, ON P3B 1M8  
T.705.674.2300

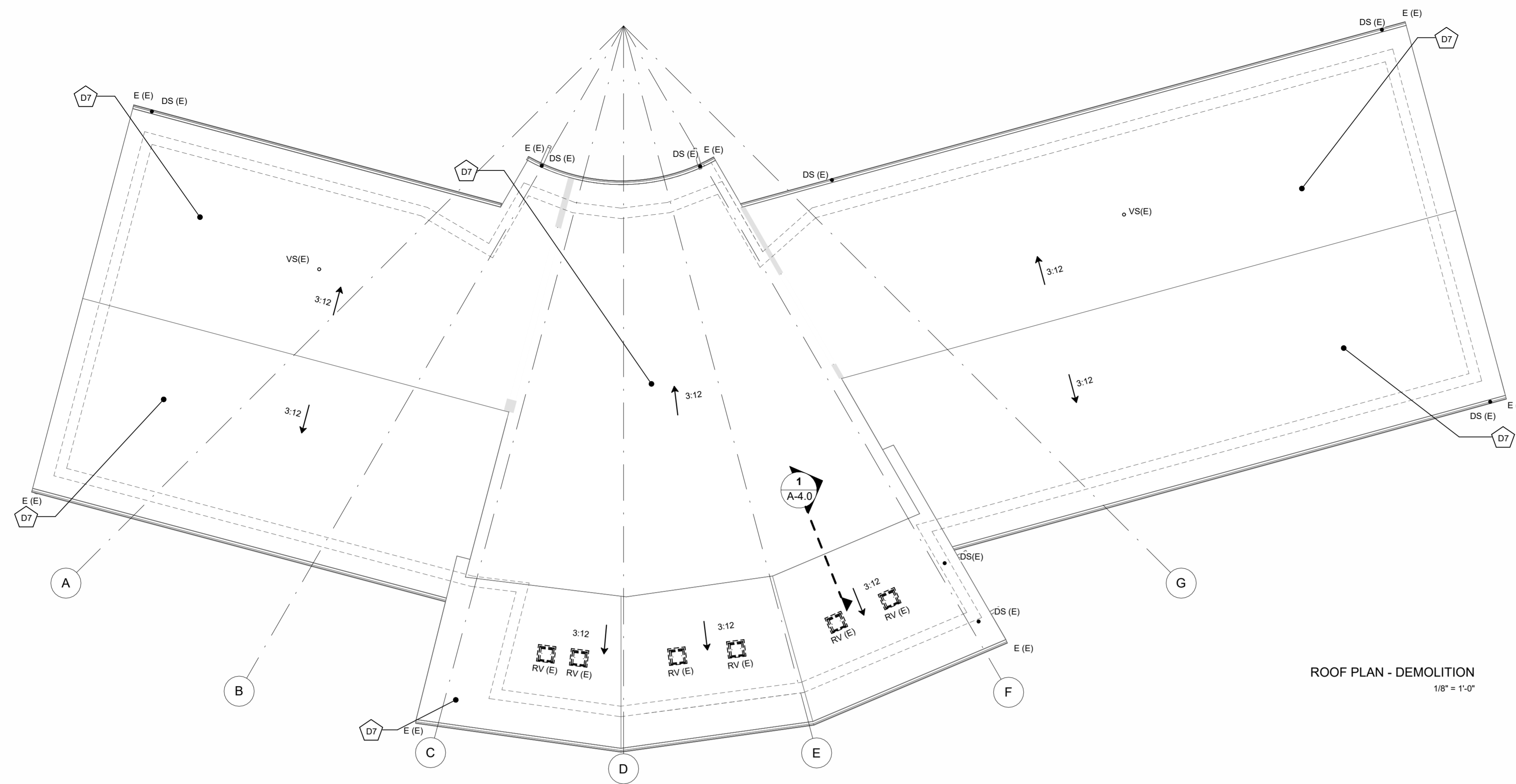
**CURVE LAKE FN HEALTH CENTRE - REROOFING**  
38 Whetung St E, Curve Lake, ON K0L 1R0

FOUNDATION PLANS

Date: 2025 02 07  
Scale: As indicated  
Drawn By: MM Checked By: IB  
Project No: 24120  
Drawing No: Rev: 1

**A-1.0**





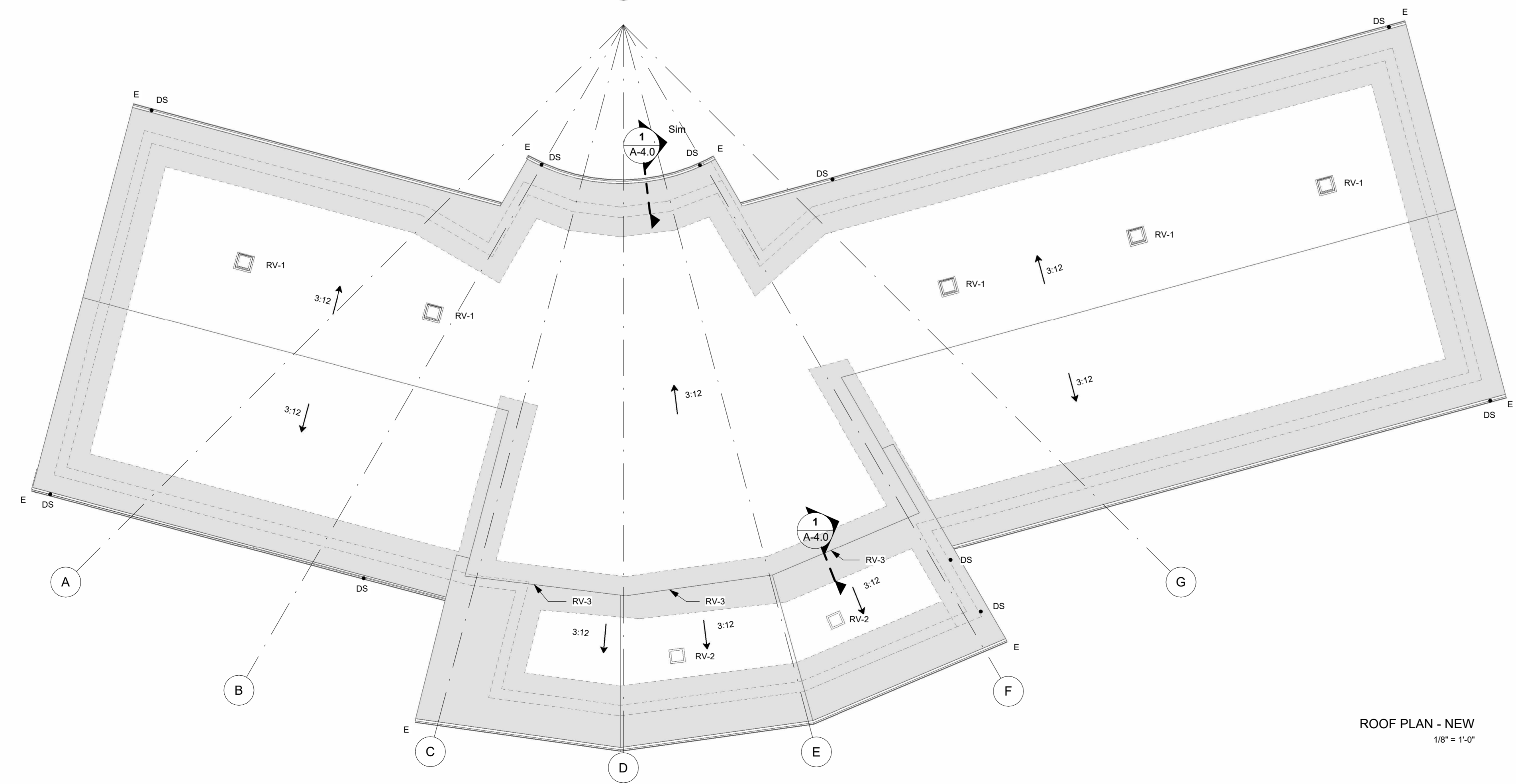
ROOF PLAN - DEMOLITION  
1/8" = 1'-0"

**RCP LEGEND**

E (E) EXISTING EAVESTROUGH  
 DS (E) EXISTING DOWNSPOUT  
 RV (E) EXISTING ROOF VENT  
 VS(E) EXISTING VENT STACK

**DEMOLITION NOTE**

D7 REMOVE EXISTING ASPHALT SHINGLES DOWN TO PLYWOOD



ROOF PLAN - NEW  
1/8" = 1'-0"

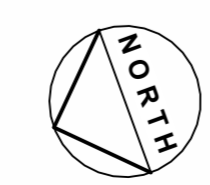
**RCP LEGEND**

E NEW EAVESTROUGH  
 DS NEW DOWNSPOUT C/W SPAD  
 RV-1 NEW VMAX 301 ROOF VENT (REFER TO SPECIFICATIONS)  
 RV-2 NEW LOW PROFILE ROOF VENT (REFER TO SPECIFICATIONS)  
 RV-3 VMAX ANTI-GUST WALL SOFFIT

O:\1 PROJECTS\2024\24120 - Curve Lake FN - Health Centre BCAY\7.0 Drawings\7.3 Working\Current\24120 - Curve Lake FN Health Centre.rvt

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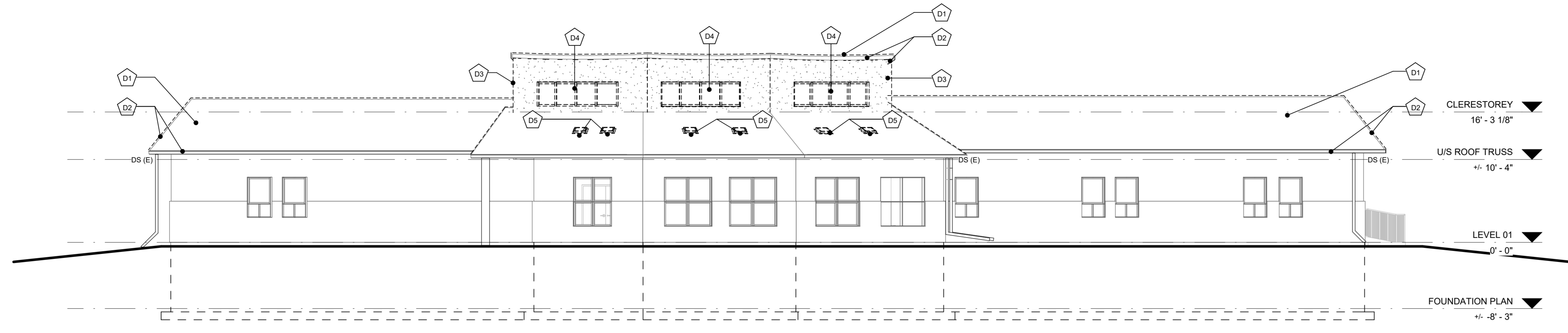


**CURVE LAKE FN HEALTH CENTRE - REROOFING**  
 38 Whetung St E, Curve Lake, ON K0L 1R0

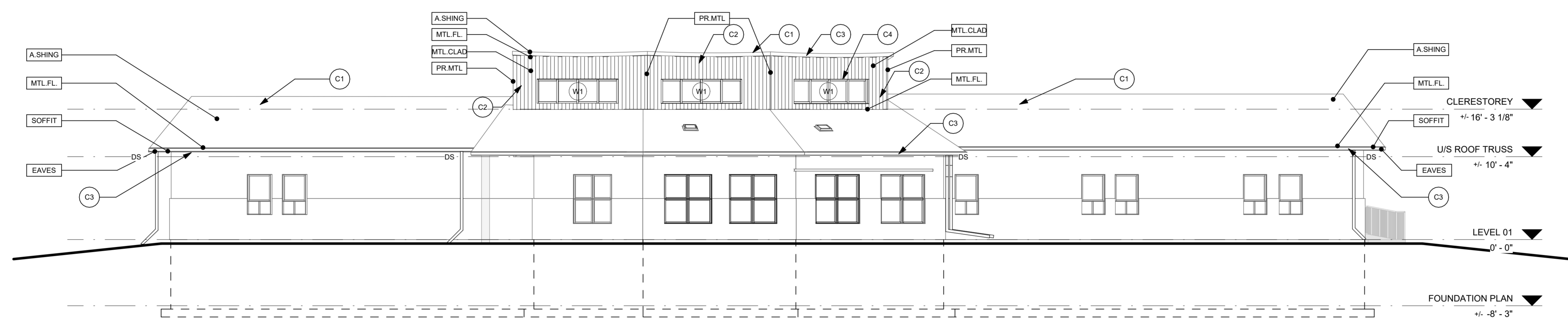
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Scale:	As indicated
Drawn By:	MM Checked By: IB
Project No:	24120
Drawing No:	Rev: 1

**A-2.0**

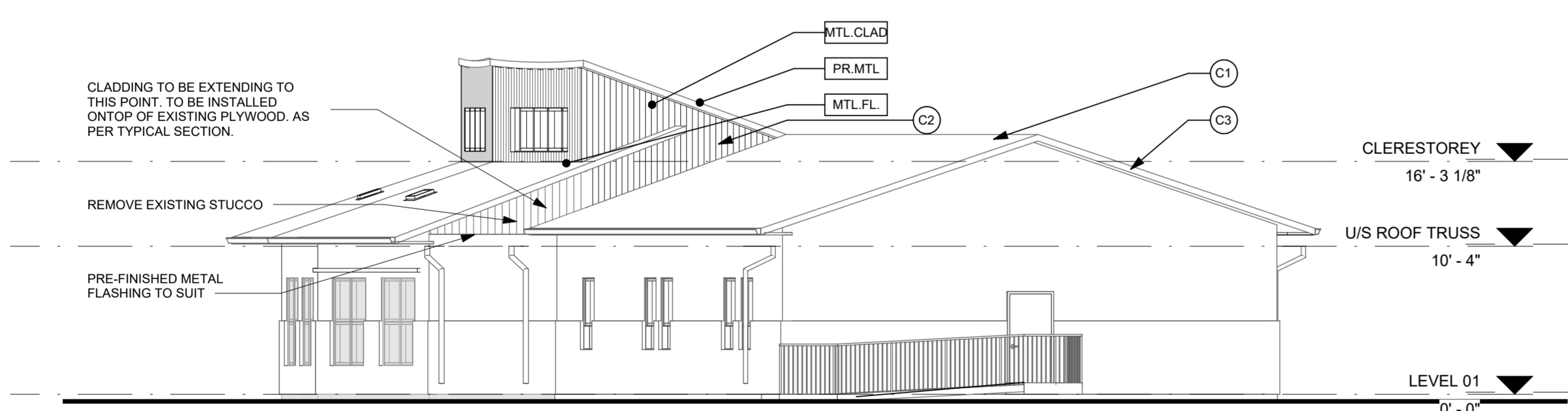
**ROOF PLANS**



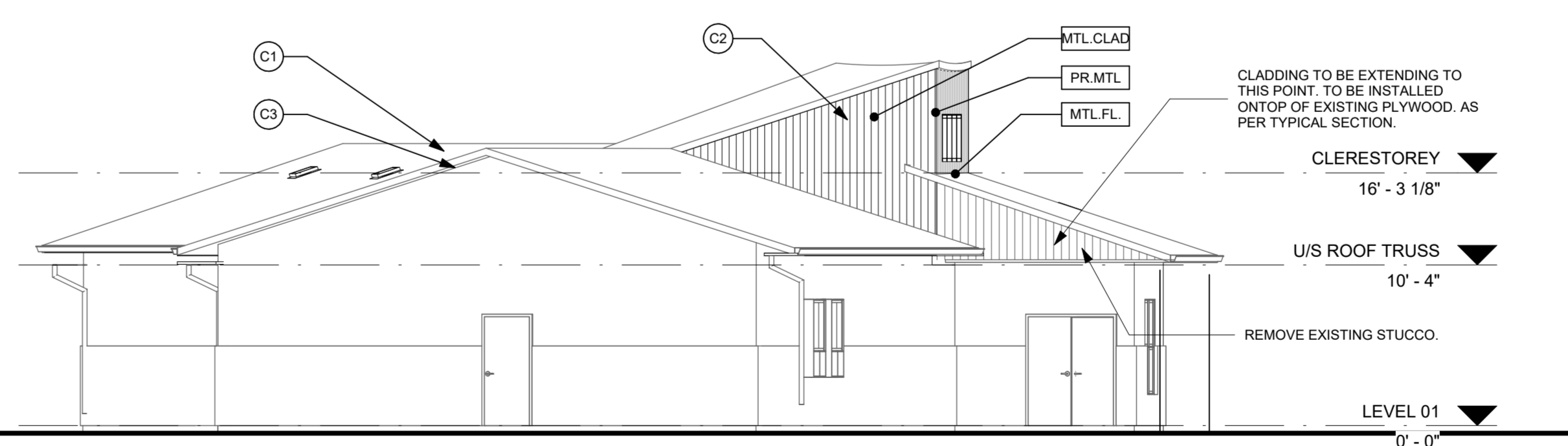
NORTH ELEVATION - DEMO  
1/8" = 1'-0"



NORTH ELEVATION - NEW  
1/8" = 1'-0"



WEST ELEVATION - NEW  
1/8" = 1'-0"



EAST ELEVATION - NEW  
1/8" = 1'-0"

**ELEVATION LEGEND**

A.SHING	DENOTES ASPHALT SHINGLES REFER TO SPEC.
MTL.CLAD	DENOTES NEW VERTICAL METAL CLADDING
EAVES	DENOTES EAVESTROUGH CW DOWNSPOUTS AND SPLASHPAD. REFER TO SPECS.
SOFFIT	DENOTES PREFINISHED METAL SOFFIT. REFER TO SPEC.
MTL.FL.	DENOTES METAL FLASHING REFER TO SPEC.
PR.MTL.	DENOTES PRE-FINISHED CORNERS

- DEMOLITION NOTES (GENERAL):**
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  2. REFER ALSO TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
  3. ALL ELECTRICAL DEVICES SUBJECT TO DUST AND DEBRIS ARE TO BE REMOVED PRIOR TO DEMOLITION PHASE AND REINSTALLED DURING CONSTRUCTION PHASE. MAKE SAFE ALL ELECTRICAL.
  4. MECHANICAL DUCTS ARE TO BE CAPPED DURING DEMOLITION PHASE TO PREVENT THE SPREAD OF DUST TO THE REST OF THE BUILDING STILL IN OPERATION.
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  7. PROTECT EXISTING FLOORS, WALLS, EQUIPMENT, MILLWORK AND OTHER PERMANENT FIXTURES FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION OF THE WORK. AS A MINIMUM USE POLYETHYLENE AND PLYWOOD HOARDING.
  8. PROTECT EXISTING MECHANICAL AND ELECTRICAL SYSTEMS TO REMAIN. PROVIDE WATERTIGHT ENCLOSURE AT THESE SYSTEMS WHEN EXPOSED TO THE ELEMENTS.

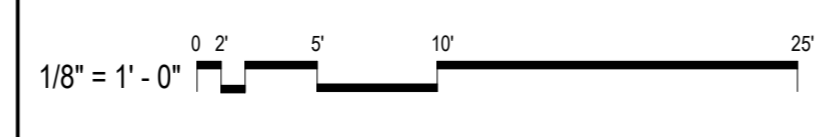
- DEMOLITION NOTES:**
- D1 ROOF SHINGLES TO BE REMOVED. MAKE GOOD SURFACES BENEATH IN PREPARATION FOR NEW SHINGLES. VERIFY STATE OF CONSTRUCTION BELOW BEFORE INSTALLING NEW.
  - D2 REMOVE EXISTING GUTTERS, DOWNSPOUTS, FASCIA. PERFORATED SOFFIT TO BE CLEANED & SURFACES. MAKE GOOD IN PREPARATION FOR RE-INSTALLATION AFTER THE INSTALLATION OF NEW SHINGLES. GENERAL CONTRACTOR TO VERIFY STATE OF SOFFIT.
  - D3 EXISTING STUCCO CLADDING, RIGID INSULATION TO BE REMOVED. MAKE GOOD ALL SURFACES IN PREPARATION FOR NEW EXTERIOR CLADDING SYSTEM. GENERAL CONTRACTOR TO VERIFY STATE OF STRUCTURE BENEATH.
  - D4 REMOVE EXISTING ALUMINUM WINDOW AND ALL RELATED HARDWARE IN ITS ENTIRETY IN PREPARATION FOR INSTALLATION OF NEW WINDOW INCLUDING BUT NOT LIMITED TO:
    - ALUMINUM JAMBS, WOOD SILLS, HEAD
    - GYPSUM BOARD
    - ALUMINUM SILL
 REFER TO SPECIFICATIONS FOR MORE INFORMATION.
  - D5 REMOVE EXISTING ROOF VENTS. PATCH & REPAIR AREA AS REQUIRED TO MATCH ADJACENT SURFACES IN PREPARATION FOR NEW VENTS.

- CONSTRUCTION NOTES:**
- C1 NEW ROOF CLADDING SYSTEM TO BE INSTALLED ONTOP OF EXISTING PLYWOOD BACKING. SEE DETAILS FOR MORE INFORMATION.
  - C2 NEW EXTERIOR WALL SYSTEM TO BE INSTALLED. WHICH INCLUDES NEW RIGID INSULATION. SEE SPEC FOR MORE INFORMATION.
  - C3 CAREFULLY RE-INSTALL PERFORATED SOFFIT AND INSTALL NEW GUTTERS, DOWNSPOUTS & FASCIA.
  - C4 PATCH & REPAIR AREAS OF REMOVED GYPSUM BOARD WITH NEW AS REQUIRED. PAINT ENTIRE WALL ADJACENT TO WINDOW (REFER TO DETAILS). MATCH PAINT COLOUR AND FINISH TO EXISTING. MAKE GOOD ALL SURFACES.

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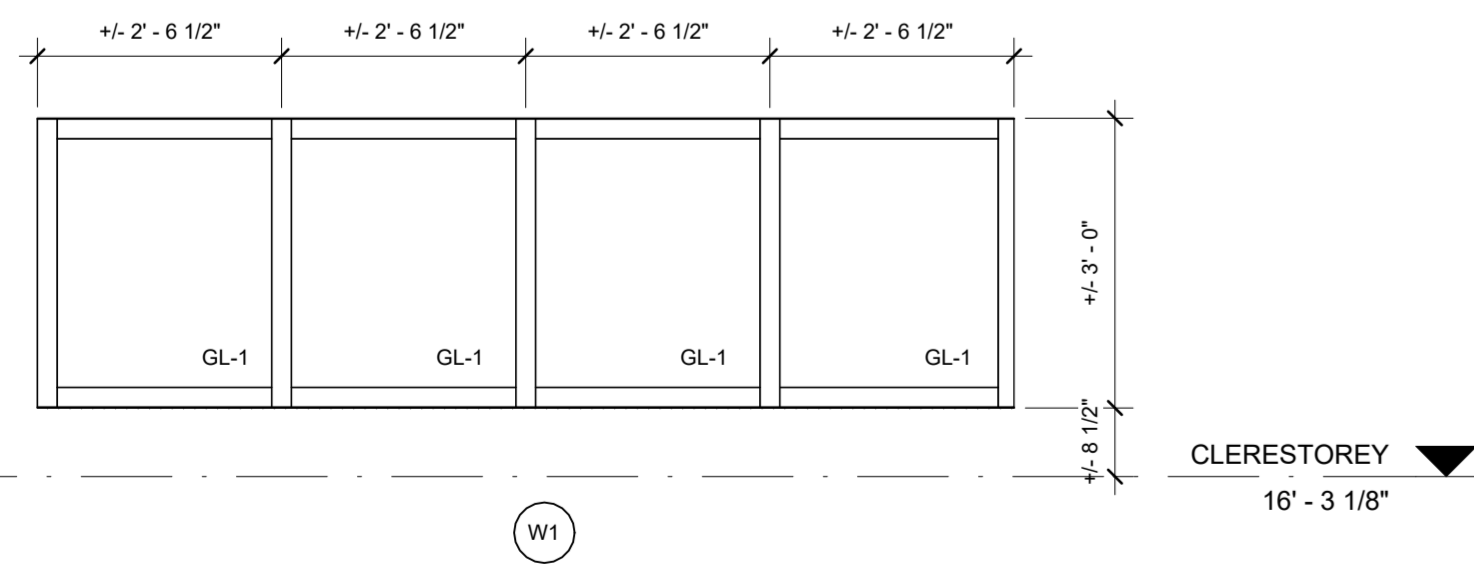
**CURVE LAKE FN HEALTH CENTRE - REROOFING**  
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**ELEVATIONS**

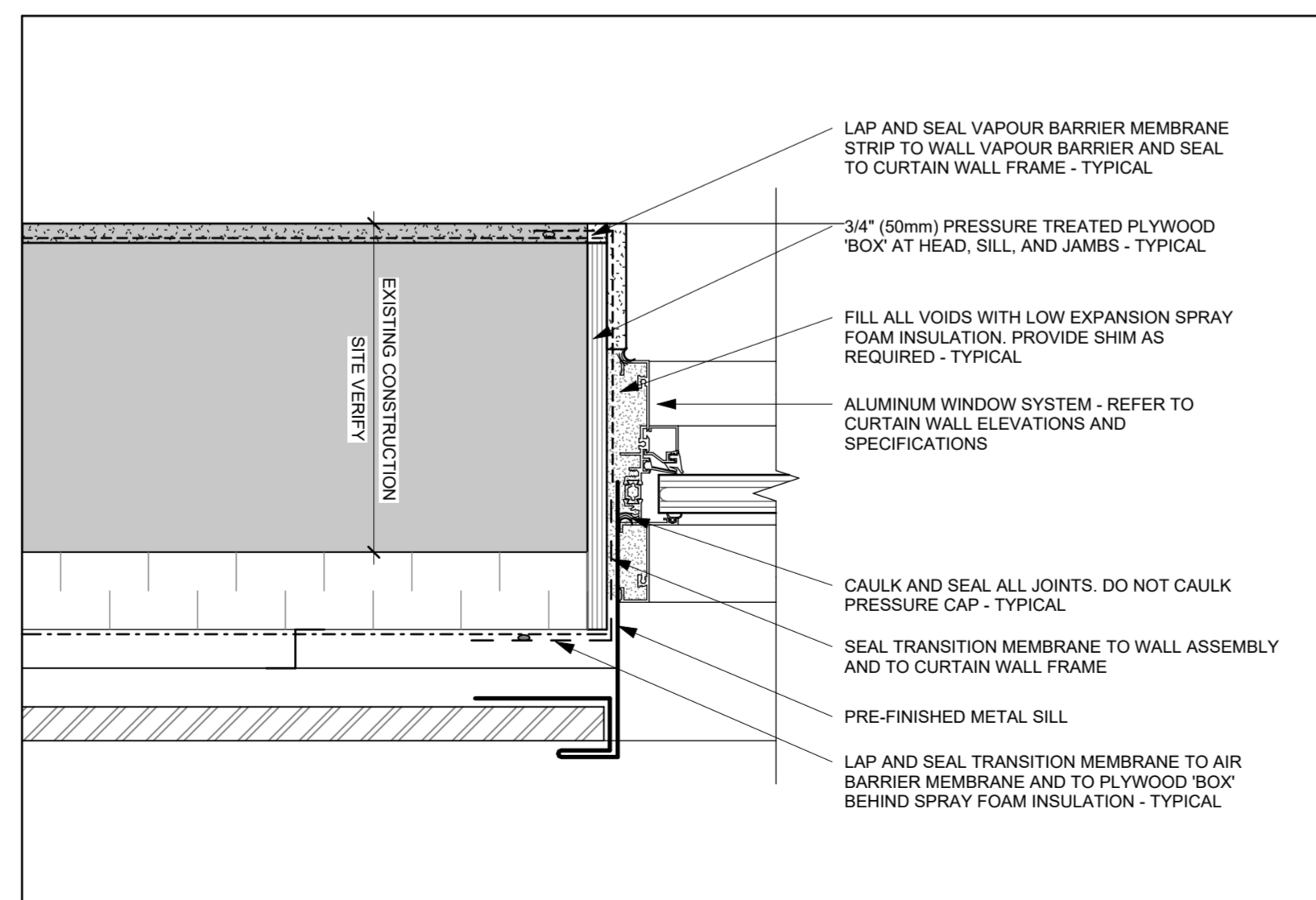
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**A-3.0**

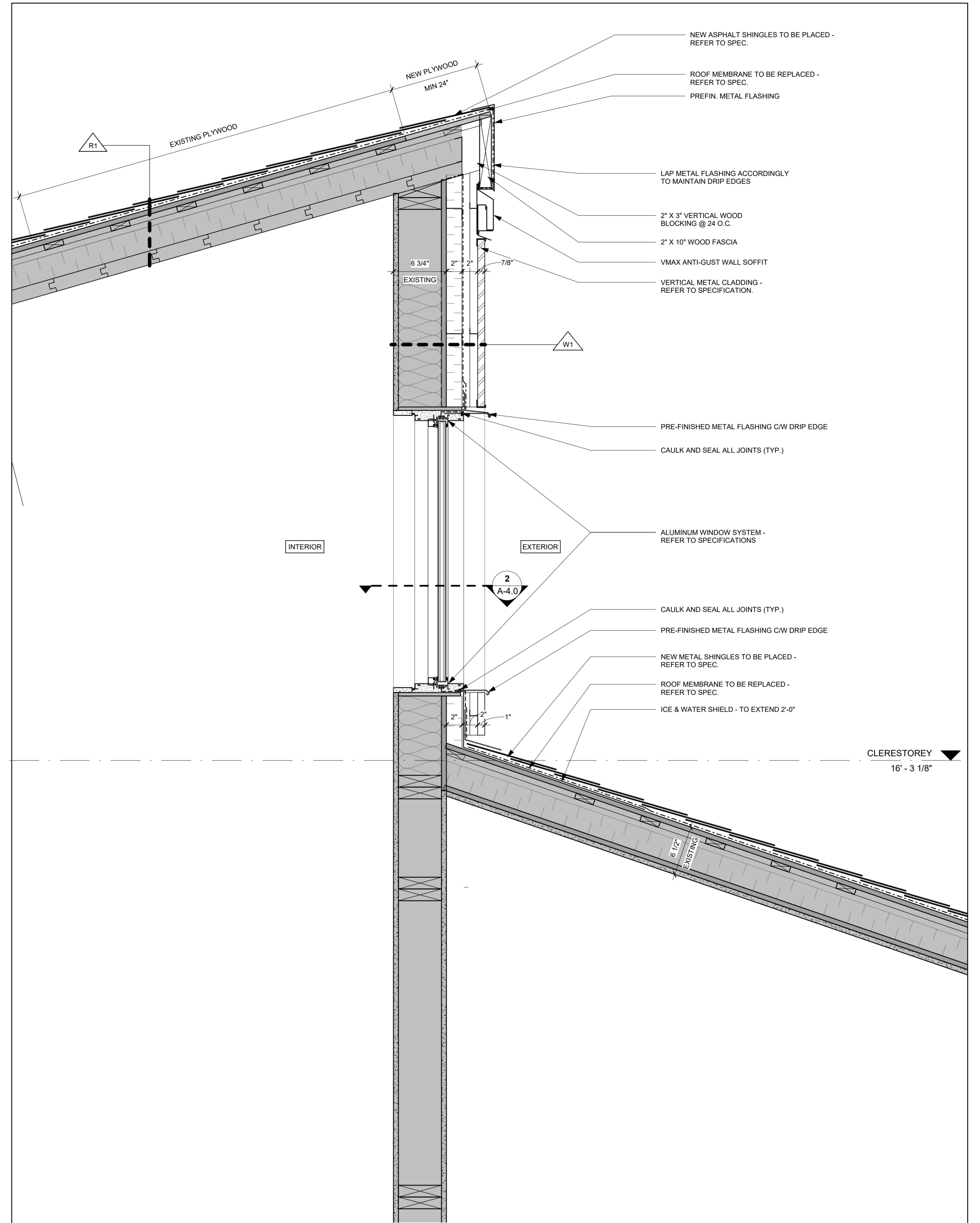
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W1 - WINDOW ELEVATION  
1/2" = 1'-0"



ALUM. WINDOW - TYP. MEMBRANE DETAIL - JAMB  
3" = 1'-0" 2 A-4.0



TYP. CLERESTOREY DETAIL  
1 1/2" = 1'-0" 1 A-2.0

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289 CEDAR STREET  
SUDBURY, ON P3B 1M8  
T.705.674.2300

**CURVE LAKE FN HEALTH CENTRE - REROOFING**  
38 Whetung St E, Curve Lake, ON K0L 1R0

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