



Specifications
for the
Roof Replacement
of the 300 Wing
St. Basil School
for the
Huron-Superior Catholic
District School Board



Date February 2026

Project Number: 25-42

Project Name: **Roof Replacement of the 300 Wing
St. Basil School
for the
Huron-Superior Catholic District School
Board**

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SPECIFICATIONS

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PART 1 - GENERAL

.1 **Tender Call**

.1 Offers signed under seal, executed, and dated will be received on or before **3:00 PM local time, Thursday, 26 February 2026.**

.2 Offers submitted *after* above noted time will be returned to bidder unopened.

.3 Address and deliver Tender submission to:

**Attention: Mr. David Ellis
david ELLIS architect inc.
267 Cathcart Street, Studio 2
Sault Ste. Marie, ON, P6B 1E5
Phone(705) 253-4333**

Clearly mark the Envelope with the following:

**Roof Replacement of the 300 Wing
St. Basil School
for the
Huron-Superior Catholic District School Board
Sault Ste. Marie**

Also include name and address of the Tenderer on the face of the envelope.

.4 Separate Prices of Tender Form **00300B, Appendix B**, will be received with Base Tender Price.

.5 **Tendering Opening**

There will be an in-person Tender Opening at 3:30 p.m. local time, on the date of closing, at the Architect's Office.

.6 Where reference to **Owner** is made in the Contract Documents it shall mean **Huron-Superior Catholic District School Board (HSCDSB) Contact:**

**Dave Coccimiglio, C.E.T.
Manager of Plant Services
Huron-Superior Catholic District School Board
100 Ontario Avenue, Sault Ste. Marie, ON P6B 1E3
T: 705-945-5641
E: Dave.Coccimiglio@hscdsb.on.ca**

7. Where reference to **Consultant** is made in the Contract Documents it shall mean **david ELLIS architect inc.**

1.2 Intent

.1 Intent of this Tender call is to obtain an offer to perform work to complete the project known as:

*Roof Replacement of the 300 Wing
St. Basil School*

*for the
Huron-Superior Catholic District School Board
Sault Ste. Marie*

located at:
250 St Georges Ave E, Sault Ste. Marie, Ontario P6B 1X5
for a Stipulated Price contract, in accordance with Contract Documents.

- .2 Perform Work within time stated in Section 01110 – Summary of Work.
- .3 Initiate work within 5 days of receipt of notice of contract award.

1.3 Contract Documents Identification. .1 Contract Documents are identified as dEa **Project Number 25-42** as prepared by Consultant.

- 1.4 Contract/Bid Documents
- .1 Agreement Form.
 - .2 Definitions
 - .1 Contract Documents: Defined in CCDC 2 – 2020 Edition, Definitions.
 - .2 Tender Documents: Contract Documents supplemented with Instructions to Tenders, Tender Form, and Tender Supplementary Forms identified herein.
 - .3 Tender, Offer, or Bidding: Act of submitting an offer under seal.
 - .4 Tender Price: Monetary sum identified in Tender Form as an offer to perform work.
 - .3 Availability
 - .1 Tender Documents may be obtained electronically from the **Sault Ste. Marie Construction Association**, and on the **HSCDSB** website.
 - .2 Tender Documents are made available only for purpose of obtaining offers for this project. Their use does not confer licence or grant for other purposes.
 - .4 Examination
 - .1 Tender Documents are on display at the following plan rooms / construction associations:
- Sault Ste. Marie
 - .2 Upon receipt of Tender Documents verify that documents are complete.
 - .3 Immediately notify Consultant upon finding discrepancies or omissions in Tender Documents.
 - .4 Contractor shall be held to have carefully examined all drawings, specification, schedules, and site information for all trade-work and to be familiar with all conditions, requirements and limitations pertaining to the work.
 - .5 The drawings and specifications complement each other and neither is to be considered alone. Hence, any item omitted in one, but mentioned or implied in the other, must be provided.

.6 Bidders finding discrepancies or omissions in the drawings or specifications shall at once notify the Consultant who shall send written instructions to all bidders. Bidders may, during the tender period, be advised by addenda of any additions, alterations or deletions to the specifications and drawings. All such changes shall be covered by the tender and become part of the contract documents.

.7 If any person submitting a bid on this project is in doubt as to the true meaning and intent of any part of the specifications or other documents, they must request an interpretation from the Consultant. If such interpretation is not requested, the bids will be presumed to be based on the interpretation or directions that may be subsequently given by the Consultant after award of the Contract, in accordance with the provisions of the Contract.

.5 Queries/Addenda

.1 Questions pertaining to the content of the contract documents, scope of work, etc. shall be directed to the design Consultants. Queries may be directed to the Consultant responsible for the discipline as indicated in the Specification Table of Contents or Drawing sheet Title Block, but a copy must be sent to the Prime Consultant.

Prime Consultant:

david ELLIS architect inc.
267 Cathcart Street
Sault Ste. Marie, ON, P6B 2T3

Email david.ellis@ellisdesign.ca
Phone (705) 253-4333

Email sophie@ellisdesign.ca
Phone (705) 253-4333

.2 Addenda may be issued during tendering period. All addenda become part of Contract Documents. Include costs in Tender Price see section 00900.

.3 Verbal answers are only binding when confirmed by written addenda.

.4 Clarifications requested by bidders must be in writing not less than forty-eight (48) hours before date set for receipt of Tenders. Reply will be in form of an addendum, a copy of which will be forwarded to the SSM Construction Association no later than twenty-four (24) hours before receipt of Tenders.

.6 Product/System Options

.1 Where Tender Documents stipulate particular product substitutions will be considered by Consultant, any substitutions requested must be made at least four (4) days before receipt of Tenders. Contractors are also required to submit the base bid roofing system they propose to use, a minimum of (4) days before Tender Closing. Submissions to

include, the name of the manufacturer, the name of the system, a brief system description, the country of materials manufacture and the country of corporate headquarters.

.2 When a request to substitute a product is made, Consultant may or may not approve substitution and will issue an Addendum if approved to known bidders. These approved systems, will not require subsequent approval by architect, if noted in Addenda.

.3 Submission shall include sufficient information to enable Consultant to compare proposed alternate to specified product and determine acceptability of such products. Incomplete or illegible proposals may be summarily rejected.

.4 The Consultant reserves the right to reject, without detailed or any explanation, any such request for approval.

.5 In submission of substitutions to products specified, Bidders shall include in their Tender, any and all changes required in work to accommodate such substitutions. It shall be the sole responsibility of the Tenderer ensure that the substituted material or equipment is fully compatible with available space, location, method of installation, work of other trades, and the like. A later claim by Bidder for an addition to contract price because of changes in work necessitated by use of substitutions shall not be considered. The Consultant does not undertake any obligation to revise the design, dimensions or structure to accommodate a proposed substitution.

.6 Requests for approvals of alternate or substitute materials or equipment made after Tender Closing Date will not be considered unless made in writing to the Consultant within fifteen (15) days of the Contract Bid Date and then will be considered only for such cause as a saving in cost to Owner, or unavailability of specified material.

1.5 Qualifications

.1 Firms or persons submitting tenders shall be actually engaged in the line of work required by the proposed Contract Documents and shall be able to refer to work of similar nature completed by them.

.2 It is the Bidders responsibility to closely review the qualifications to confirm they meet and can readily demonstrate their ability to meet or exceed the listed qualifications. Any questions or concerns with the qualifications or evaluation process must be identified to the Consultant five (5) days prior to tender close.

.3 The Owner has identified a number of Contractor Qualifications that will be used in the Tender Evaluation process to determine the best value for the Owner's project. Bidders are not required to submit qualifications with their tender submissions but may be requested to submit this information as supplemental to inform the evaluation process. The Owner reserves the right to request additional information as required to evaluate the Contractor against

these qualifications. The owner identified qualifications are as noted below:

.1 **General Intention:** The HSCDSB wishes to obtain a Contractor who is capable and willing to work continuously, including day, evening and weekend shifts as is necessary to complete the work specified within these contract documents, and according to the schedule requirements of section 1.8 Contract Time below.

.2 **Previous Construction Experience:** The Contractor must be able to demonstrate successful completion of at least three (3) previous construction projects of similar size, budget and/or construction type. At least one of the projects must be a renovation or addition to an occupied facility. ***If requested,*** submit to the Consultant the relevant project experience for review. For each project include: Project Title, year completed, project budget, brief project description, Client and Consultant Contact information.

.3 **Superintendent's Experience:** The Contractor must be able to demonstrate successful completion of at least ten (10) years' experience in the Construction industry, has relevant experience as the full time Superintendent on similar Construction projects. ***If requested,*** submit to the Consultant the Superintendents Resume inclusive of education past project experience and at least two (2) references that can speak to the Superintendents previous project experience and character.

.4 **Contractor References:** The Contractor must be able to provide References (a mix of Client and Consultant) that can validate the Contractors previous project experience and provide an opinion on the Contractors quality of work, ability to coordinate with trades, ability to maintain a project schedule, fairness in addressing changes and unforeseen condition that arise during construction. ***If requested,*** submit to the Consultant at least three (3) References complete with Reference Name, Company, Title, Phone Number, Email Address and Project Title for which they are providing a reference.

.5 **Safety:** The Owner would like to ensure that the successful Contractor understands their responsibility for health and safety for this project, has comprehensive internal health and safety policies, and is engaging an experience individual to act as the Health and Safety Coordinator. ***If requested,*** submit to the Consultant the Contractors Health and Safety Manual and the Resume for the proposed Health and Safety Coordinator.

.6 **Commitment to Schedule:** The HSCDSB requires the work to be complete by dates described in Section 01110 – Summary of Work. The successful Contractor must demonstrate that they are committed to scheduling and performing the work to achieve this deliverable. The successful Contractor will be required to submit a workplan and construction schedule that demonstrates the above and that will form part of the contract. ***The Contractor will submit this information within 5 days upon being requested to do so, at the discretion of the Owner.***

.7 **“Product of Canada” Materials Preference:** The use of Canadian made products for this project, is highly recommended. The verification of this on the Tender Form will be weighed for all submissions. Note that if tariffs are levied on imported products, such tariff costs to be borne by the Contractor.

.3 **Subcontractors**

.1 Owner reserves right to reject a proposed subcontractor for reasonable cause, including poor past performance on HSCDSB projects. The Contractor is responsible to determine that a proposed Subcontractor has not been disqualified from performing work on Board projects.

.2 Refer to CCDC 2 Article GC 3.8 of General Conditions.

.3 The Owner may request any proposed subcontractor to provide satisfactory evidence that they have the ability, experience, capital and plant to enable them to execute their portion of the work of the contract.

.4 Nothing contained in the Contract Documents shall be interpreted as the Owner having any contractual obligations or relationships to a sub-contractor.

1.6 Site Assessment

.1 **Site Examination**

.1 Due to Winter conditions, there will be no mandatory site visit. However, if one is requested, please contact the Owner to organise.

1.7 Bid Submission

.1 **Bid Ineligibility**

.1 Tenders that are unsigned, improperly signed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may at discretion of Owner, be declared informal.

.2 Tenders with Tender Forms and enclosures which are improperly prepared may, at discretion of Owner, be declared informal.

.3 Tenders that fail to include security deposit, bonding or insurance requirements shall, at discretion of Owner, be declared informal.

.4 Oral, telegraphed, faxed, emailed, or telephoned proposals, to submitted for this tender call will not be accepted or considered.

.2 **Submissions**

.1 Tenderers shall be solely responsible for delivery of their Tenders in manner and time prescribed.

.2 Submit one copy of executed offer on Tender Forms provided, signed and with corporate seal together with required security in a sealed opaque envelope, clearly identified with Tenderer's name, project name and Owner's name on outside.

.3 Fill in all spaces, monetary items shall be filled in with words and figures.

.4 Include the following items with Tender Submission:

- .1 Tender Form
- .2 Bid Security as described below;
- .3 Consent of Surety or Agreement to Bond as described below.
- .5 Improperly completed information, irregularities in security deposit, bid bond may declare a Tender informal.
- .6 An abstract of submitted Tenders may be made available to Tenderers following Tender opening.

1.8 Bid Enclosures/Requirements

- .1 **Security Deposit**
 - .1 Tenders shall be accompanied by Security Deposit as follows: Bid Bond in the amount of **\$50,000.00**.
 - .2 Endorse Bid Bond in name of Owner, as obligee, signed and sealed by principal Contractor and surety.
 - .3 Use the latest edition CCDC approved bond forms.
 - .4 Security deposit will be returned after delivery to Owner of required Performance, and Labour and Materials Payment Bond(s) by accepted tenderer.
 - .5 If no contract is awarded, all security deposits will be returned.
- .2 **Consent of Surety or Agreement to Bond**
 - .1 Tenders shall be accompanied by, a Consent of Surety or Agreement to Bond, stating that surety providing Bid Bond is willing to supply Performance and Labour as well as Materials Payment Bond in the total amount of (50% + 50%) = 100% as specified in Section 00600 – Bonding Requirements.
 - .2 *Include cost of bonds in Tender Price.*
- .3 **Performance Assurance**
 - .1 Accepted Tenderer must provide Performance and Labour and Materials Payment Bond as described in as specified in Section 00600 – Bonding Requirements.
 - .2 *Include cost of bonds in Tender Price.*
- .4 **Tender Form Requirements**
 - .1 State on Bid Form, time required to complete work. Completion date in Agreement will be stated completion time added to Award date.
 - .2 Tenderer, in submitting an offer, agrees to complete work by date indicated in Contract Documents, but may propose a revision to contract time with an adjustment to Tender price for approval by Owner.
 - .3 Owner requires that work of this contract be completed as quickly as possible and therefore, completion dates stated will bear heavily in evaluating the tenders submitted. At the discretion of the Owner, tender may be awarded to tenderer that presents "best value" in terms of best overall cost in relation to best overall completion time.
 - .4 The Contractor shall include all government sales taxes, customs duties and excise taxes in the Tender except the Harmonised Sales Tax (HST). This shall be shown separately on the tender form.

- .5 **Tender Signing**
- .1 Tender form shall be signed under seal by Tenderer.
- .2 Sole Proprietorship: Signature of sole proprietor in presence of witness who will also sign. Insert words "Sole Proprietor" under signature. Affix seal.
- .3 Partnership: Signature of all partners in presence of witness who will also sign. Insert word 'Partner' under each signature. Affix seal to each signature.
- .4 Limited Company: Signature of duly authorized signing officer(s) in normal signatures. Insert officer's capacity in which signing officer acts, under each signature. Affix corporate seal. If Tender is signed by officials other than President and Secretary of company, or President-Secretary-Treasurer of company, copy of by-law resolution of Board of Directors authorizing them to do so must also be submitted with Tender in Tender envelope.
- .5 Joint Venture: Each party of joint venture must execute Tender under respective seals in manner appropriate to such party as described above, similar to requirements of Partnership.

1.9 Contract Time

.1 The intention for this project is for the successful Contractor to start immediately and work continuously including day and evening shifts including weekends in order to have the **Roof Replacement Substantially completed by 24th of August 2026** and Totally Complete by **31 August 2026**. All new services are to be re-connected to existing to ensure a fully operational school and new Day Care and to obtain Occupancy Permit. If Equipment and/or material delivery delays extend beyond this time, temporary measures are to be implemented by Contractor to ensure operation at Contractor's Cost.

1.10 Offer Acceptance/Rejection

- .1 **Duration of Offer Acceptance/Rejection**
- .1 Tenders shall remain open to acceptance, and irrevocable for a period of **thirty (30)** days after the Tender closing date. If withdrawn, the respective Tenderer shall forfeit their Security Deposit. No telephone calls, facsimiles or telegrams will be considered.
- .2 **Acceptance of Offer**
- .1 Owner reserves right to accept or reject any or all offers.
- .2 After acceptance by Owner, the Consultant will issue to successful Tenderer, written Tender acceptance.
- .3 After Tender has been accepted, unsuccessful Tenders will be notified and may pick up their Tender securities at the office of the Consultant.
- .4 The Owner reserves the right to request any other additional information he/she may require to evaluate the submission. Failure to provide the information requested in a timely manner may result in the tender being disqualified.
- .5 Upon acceptance the successful Tenderer shall

provide, within 5 business days:

- a. Bonding Certificates
- b. Workplace Safety and Insurance Board Certificate
- c. Certificate of Insurance (refer to CCDC 2 and the Supplementary Conditions)
- d. Copies of Applicable permits.
- e. Other(s) as may be reasonably requested.
- f. Contractor's Health and Safety Policy

- 1.11 Local Manpower .1 The Tenderer is encouraged to utilize as much local manpower as possible for the work of the Contract.
- 1.12 Building Codes and Safety Act .1 All work is to be carried out in accordance with the latest edition of the Local, Provincial and Federal Construction and Building Codes, By-laws, including the Occupational Health and Safety Act.
- .2 Comply with requirements of Workplace Hazardous Materials Information System (WHIMS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material and safety data sheets acceptable to Labour Canada and Health and Welfare Canada.
- .1 Deliver copies of WHIMS data sheets to Owner on delivery of materials and provide copies in Maintenance Manuals.
- 1.13 Future State of Emergency and the Tender .1 This Tender may be subject to the provisions of Ontario Regulation 119/20 made under the Emergency Management and Civil Protection Act, R.S.O. 1990, c.E.9 as amended (Order under Sub-section 7.0.2(4) – Closure of Places of Non-Essential Businesses). The within Tender cannot be awarded until the repeal of Ontario Regulation 119/20 made under the Emergency Management and Civil Protection Act, R.S.O. 1990, c.E.9, or any regulation which supersedes or replaces Ontario Regulation 119/20. The HSCDSB, retains in its absolute and unfettered discretion the right to:
- (a) refuse to award the Tender to any Bidder;
 - (b) withdraw the Tender at any time without providing any reason whatsoever;
 - (c) Re-Tender the project;
 - (d) disregard and not accept any Tender;
 - (e) award the Tender on a conditional basis that work may commence upon the repeal of the aforesaid Regulation.
- .2 The Bidder, by submitting a Bid pursuant to this Tender, agrees that HSCDSB maintains the complete and unfettered discretion to deal with any Tender on the above basis and herein releases HSCDSB from any and all claims that it may have as a consequence of or arising from this Tender howsoever arising.
- .3 The Parties agree that having regard to the provisions of Ontario Regulation 199/20 made under the Emergency Management and Civil Protection Act, R.S.O. 1990, c.E.9 as amended (Order

under Sub-section 7.0.2(4)-Closure of Places of Non-Essential Businesses), that the Owner and Bidder have no obligation whatsoever to perform the within Contract until such times as the aforementioned Regulation 119/20 is rescinded and there is no prohibition on Construction of lands and premises owned by the HSCDSB. HSCDSB maintains the absolute and sole discretion to withdraw or terminate this Contract at any time, without any penalty or damages, whatsoever. HSCDSB shall provide written notice to the Contractor in the event that it intends to terminate and re-tender the Contract.

.4 The Contractor herein releases and waives any claim that it has of whatever nature and kind whatsoever, known or unknown, as against the Owner (HSCDSB), its employees, agents and Consultants, howsoever arising as a consequence of this Tender, Tender process, or Contract herein.

End of Section

Project Number

dEa Project 25-42

Project Name:

**Roof Replacement of the 300 Wing
St. Basil School
250 St Georges Ave E, Sault Ste. Marie, ON P6B 1X5
for the
Huron-Superior Catholic District School Board**

Submitted By:

Contractors Name:

Address:

Telephone Number:

Email Address::

Offer:

The undersigned, having become thoroughly familiar with, with local conditions affecting the performance, and costs of the work, including Contingency amounts and having inspected the site, hereby proposes to provide all labour, material and services required to complete the work of all trades and agree to enter into a contract with the Project according to the Contract Documents including Addenda(s) No. ____ through ____ inclusive as prepared by the Consultant, plus the total Allowances as stated in Section 01210, for the Stipulated sum of:

_____ (\$ _____ . ____)

Harmonized Sales Tax:

The HST Tax shall be thirteen percent (13%) in addition to the base tender amount. The amount of the HST is:

_____ (\$ _____ . ____)

Contingency/Cash Allowance:

An amount of **\$280,000.00** as the Total Allowances, including HST of 13%, is INCLUDED in the base tender amount.

Time to Complete Projects:

_____ (weeks)

Signatures:

Authorized Signatures

Name: _____
—

Title: _____

Name: _____
—

Title: _____

Witness: _____

Date: _____
—

Separate Prices

Please attach TENDER FORM APPENDIX B 00300B

End of Section

Submitted By: (Contractors Name) _____

Separate Price #1

To remove the work associated with the re-roofing of the Gymnasium Roof (ROOF # 2)

Increase / Decrease Price by:

\$ _____

+ hst

If the above price, Separate Price #1 is selected by the client to be removed from the project, for reasons of meeting budgetary requirements, etc., the **LOW BID** will be determined based on the **Base Bid minus Separate Price 1**.

END OF SECTION

Submitted By: (Contractors Name) _____

Separate Price #1

??

Increase / Decrease

\$ _____ + hst

Separate Price #2

??

Increase / Decrease

\$ _____ + hst

If either of the above prices, Separate Prices #1 and #2, are selected by the client to be removed from the project, for reasons of meeting budgetary requirements, etc., the **LOW BID** will be determined based on the **Base Bid minus Separate Prices 1 or 2, or both 1 and 2.**

END OF SECTION

NOTE: INSERT THIS SECTION ONLY IF REQUIRED

PART 1 - GENERAL

- .1 The successful Tenderer shall be required to furnish a contract **Performance Bond** payable to the Owner in the amount of 50% of the Stipulated Sum contract price. The value of an Irrevocable Letter of Guarantee, or certified cheque shall be issued by an accredited Bank or Credit Union and shall remain at this amount throughout the duration of the contract, until basic holdback, as required by the Construction Lien Act, has been released. All premiums paid to secure such guarantees to be paid by the contractor. Such bond, or guarantee shall be approved by and acceptable to the Owner and must be furnished within ten (10) days of contract award.
- .2 The successful Tenderer shall be required to furnish a contract **Labour and Materials Payment Bond** in the amount of 50% of the Stipulated Sum contract price. Such bond or certified cheque shall be approved and acceptable to the Owner and as above and must be furnished within five (5) days of contact award.
- .3 Each Tender is to be submitted with a **\$50,000.00 Bid Bond**.

End of Section

PART 1 - GENERAL

1.1 Introduction

- .1 The Contract that will form the basis of the agreement shall be the Canadian Construction Document #2 Latest edition (CCDC #2). See section 00800, Supplementary General Conditions, for additional information and modifications that have been made to this Document.

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.1 Preparation

AGREEMENT

- .1 The Prime Consultant on the Owner's behalf shall prepare the Agreement, complete with all Contract Documents, for signing by the Owner and the Contractor.
The executed Agreement Between Owner and Contractor of the Standard Construction Documents CCDC 2-2020, as amended hereinafter governs the Work of this Contract.

ARTICLE A-5 PAYMENT

5.3 Interest

paragraph .1: change second line to read:

"an award by arbitration or court, interest at 2% per annum"

DEFINITIONS

The Definitions of the Standard Construction Document CCDC 2-2020 apply to all Contract Documents.

GENERAL CONDITIONS

The General Conditions of the Stipulated Price Contract of the Standard Construction Document CCDC 2, 2020, except as amended by Document 00800 - Supplementary Conditions, govern the Work of this Contract.

End of Section

PART 1 – GENERAL.1 Introduction

- .1 The following Supplementary Conditions modify, change, delete from or add to the Articles of Agreement, the Definitions, and the General Conditions of the Stipulated Price Contract, Standard Construction Document CCDC 2, 2008 edition.
- .2 Where any Article, Definition, General Condition, paragraph, subparagraph or clause thereof is modified or deleted by these Supplementary Conditions, the unaltered provisions of that Article, Definition, General Condition paragraph, subparagraph or clause shall remain in effect.
- .3 The following Articles, Definitions, General Conditions, paragraphs subparagraphs or clauses thereof have modified in these Supplementary Conditions:
 GC 1.1: Documents
 GC 11.1.1.1 General Liability Insurance
 GC 11.1.1.4(1) Builder's Risk Coverage
 GC 13: Applications for Payment
 GC 14: Progress Payments
 Part 6: Changes in the Work

.2 Modifications to General Conditions

- .1 **GC 1.1 Documents**
 .1 Add following paragraph to GC 1.1:
1.1.12 *The Owner shall provide the Contractor, without charge, a PDF digital cop of the Contract Documents. The Contractor is responsible for providing sufficient hardcopies of the documents to all trades.*
 .2 Add following subparagraph to Paragraph 1.1.5:
 “.6 in case of conflict other documents shall govern over the Colour Schedule and Colour Schedule Drawings.”
 .2 Add following paragraph to GC 1.1:
 “1.1.13 The Specifications are divided into Divisions and Sections for convenience. They shall be read as a whole. This division places no responsibility upon the Architect to settle disputes between any Subcontractors or between any Subcontractor and the Contractor, relating to the scope of work.”
 3. Add to the end of subparagraph 1.1.2
 Except where the *Consultant* shall be indemnified as a third party beneficiary as provided in subparagraphs 9.2.7.4, 9.2.8.4, 9.5.2.4 and 9.5.3.4 and in 12.1.1.
- .2 **Article GC 2.2 – Role of the Consultant**
 (1) Delete paragraph 2.2.4 in its entirety.
 (2) Add the word “schedules” after the word “techniques” in paragraph 2.2.5.
 (3) Add to the end of the second sentence of paragraph 2.2.5. “or to adhere to the construction schedule.”
 (4) Add at the end of paragraph 2.2.9. “The *Owner* and the

Contractor shall waive any claims against the *Consultant* arising out of the making of such interpretations and findings in accordance with paragraphs 2.2.7., 2.2.8. and 2.2.9.”

(5) Delete the comma after the word “submittals” and add the words “which are provided” before the words “in accordance” in paragraph 2.2.14.

(6) Add new sentence to end of paragraph 2.2.11 “The *Consultant’s* obligation to make findings on a large claim or a number of large claims is subject to the terms and conditions of the *Owner/Consultant* agreement.”

.3 **Article GC 2.4 – Defective Work**

Add new subparagraphs 2.4.2.1 and 2.4.1.2:

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

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

.4 **Article GC 3.1 – Control of the Work**

(1) Add the word “schedules” after the word “techniques” in paragraph 3.1.2.

(2) Add new paragraph 3.1.3.:

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 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.

(3) Add new paragraph:

3.1.4 The *Contractor* shall review the *Contract Documents* and shall report promptly to the *Consultant* any error, inconsistency or omission the *Contractor* may discover. Such review by the *Contractor* shall comply with the standard of care described in 3.9 in the *Contract*. Except for its obligation to make such review and report the result, the *Contractor* does not assume any responsibility to the *Owner* or to the *Consultant* for the accuracy of the *Contract Documents*. The *Contractor* shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the *Contract Documents*, which the *Contractor* could not reasonably have discovered. If the *Contractor* does discover any error, inconsistency or omission in the *Contract*

Documents, the *Contractor* shall not proceed with the work affected until the *Contractor* has received corrected or missing information from the *Consultant*.

.5 **Article GC 3.6 – Subcontractors and Suppliers**

Delete the words “through the Consultant” in paragraph 3.6.6.

.6 **Article GC 3.7 – Labour and Products**

Add new paragraph 3.7.4:

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

.7 **Article GC 3.8 – Shop Drawings**

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

(2) Add “and *Submittals*” after the words “*Shop Drawings*” in paragraphs 3.8.1, 3.8.2, 3.8.3, 3.8.3.2, 3.8.5, 3.8.6 and 3.8.7.

(3) Delete sentence 3.8.2 in its entirety and replace with:
3.8.2 The *Contractor* shall provide *Shop Drawings* and *Other Submittals* to the *Consultant* to review. The *Contractor* shall prepare a schedule of the dates for their provision, review and the return of *Shop Drawings* and *Submittals* and submit it to the *Consultant* for review. If revisions are required to the *Shop Drawings*, the review schedule shall be extended appropriately, allowing time for revisions to the shop drawing and for the review by the consultants, with no delay claimed to the *Construction Schedule*.

8. **Article GC 3.9 – Performance by Contractor**

Add new General Condition 3.9.1

3.9.1 In performing its services and obligations under the *Contract*, the *Contractor* shall exercise a standard of care, skill and diligence they 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*.

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

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

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

.9 **Article GC 4.1 – Cash Allowances**

(1) Add new paragraph 4.1.8:

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.

.10 **GC 5.4 SUBSTANTIAL PERFORMANCE of the WORK and PAYMENT of HOLDBACK**

Delete paragraph 5.4.3. in its entirety and substitute new paragraph 5.4.3:

The statutory holdback amount authorized by the certificate for payment referred to in paragraph 5.5.2 is due and payable on the day following the expiry of the holdback period specified in the Construction Act for the retention of holdback funds following Substantial Performance of the Work, unless (i) a claim for lien has been registered against title to the Place of the Work; (ii) the Owner has received a valid written notice of lien in respect of the Work; or (iii) the Owner has published a notice of non-payment in the form prescribed by the Construction Act prior to the 40th calendar day following the publication of the certificate of Substantial Performance of the Work.

Note: Substantial Completion will not be granted unless all Operations and Maintenance Manuals are submitted and reviewed beforehand.

.11 **GC 5.5 FINAL PAYMENT**

.1 Delete sentence 5.5.1 in its entirety and substitute new paragraph 5.5.1:

When the contractor considers that the Work is completed, the Contractor shall submit an application for final payment. The Contractor's Invoice for final payment shall be accompanied by any documents or materials not yet delivered pursuant to paragraph 5.4 Substantial Performance. The Work shall be deemed not to be performed until all of the aforementioned documents have been delivered.

.12 **GC 6.2. Change Order**

.1 Add new paragraphs 6.2.3, 6.2.4, 6.2.4 and 6.2.5 as follows:

6.2.3 The *Contractor* may apply mark-ups for overhead and profit to approved changes to the *Contract Price* to a maximum of the following:

.1 10% for work carried out by the *Contractor's* own forces;

And

.2 5% for work carried out by *Subcontractors*.

Similarly, Subcontractors shall be entitled to apply mark-

- ups for overhead and profit as follows:
- .3 10% for work carried out by their own forces;
- And
- .4 5% for work carried out by their subcontractors.

See ITEM 6.2.6 for scaled amounts corresponding to extra costs.

6.2.4 Where the cost of a proposed change is a credit to the *Contract Price*, such credit shall be exclusive of the *Contractors* overhead and profit.

6.2.5 The *Contractors* overhead includes without limitation all site and head office costs including head office personnel, insurance and bonding (except where additional bonding is at the *Owner's* expense pursuant to subparagraph 11.2.3), traveling costs, financing costs including those related to hold back; the salaries, premiums for overtime or shift time unless otherwise approved by the *Owner* in writing prior to the *Work* being performed, and other miscellaneous employee benefits of superintendents and sub-trade superintendents, engineers, timekeepers, accountants, clerks, watch persons and security, office administration; processing correspondence, changes, shop drawings, engineering, *As-Built Drawings*, maintenance manuals and all other documents required to be provided prior to certification if *Substantial Performance* of the *Work*, costing and accounting, payroll, technical staff, and all other site supervision staff above foreperson employed directly on the *Work*; coordination with other trades affected, use of temporary offices, plant, tools and equipment, including operators, sheds, storage compounds and other general temporary site support facilities and all utilities used therein; first aid, safety and protection measures, including training; licenses and permits; scheduling; temporary protection; daily clean up; disposal; garbage chute; scaffolding; hoisting and unloading, commissioning; cutting and patching, health and safety, clean up and shall be applied to both extras and credits equally.

.13 GC 6.2.6 Valuation and Certification of Changes in the Work

.1 Add the following paragraphs:

6.2.6 For changes in the *Work*, the combined percent (%) mark-up for profit and specified overhead costs is applicable to the additional net value of the work and shall be based on the following scale:

Net Value of Work = (Additions minus Deletions)	Plus	(%) Mark-up Combined = % overhead plus Profit)	
		Performance Trade or Contractor	Supervising Contractor(s)

0 - \$10,000.00	'+'	10	5
\$10,001.00 - \$50,000.00	'+'	8	5
\$50,001.00 >	'+'	5	5

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

“Overhead” shall include any additional charges and/or premiums for Permits, Bonds, Insurance 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 Markup.”

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

.14 **Article GC 6.4- Concealed or Unknown Conditions**

Add new subparagraph 6.4.5:

6.4.5 The *Contractor* confirms that, prior to bidding the *Project*, it carefully investigated the *Place of the Work* and applied to that investigation the degree of care and skill described in paragraph 3.14.1, given the amount of time provided between the issue of the bid documents and the actual closing of bids, the degree of access provided to the *Contractor* prior to submission of bid, and the sufficiency and completeness of the information provided by the *Owner*. The *Contractor* is not entitled to compensation or to an extension of the *Contract Time* for conditions which could reasonably have been ascertained by the *Contractor* by such careful investigation undertaken prior to the submission of the bid, or through the preparation of the construction schedule.

.15 **Article GC 6.5 – Delays**

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

“, but excluding any consequential, indirect or special damages.”

(2) Delete the period at the end of paragraph 6.5.2, and substitute the following words:

“, but excluding any consequential, indirect or special damages.”

(3) Delete the paragraph 6.5.3 and replaced with the following: *“If the Contractor is delayed in the performance of the Work by:*

- .1 labour disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized contractors’ association, of which the Contractor is a member or to which the Contractor is otherwise bound),*
- .2 fire, unusual delay by common carriers or unavoidable casualties;*
- .3 abnormally adverse weather conditions,*
- .4 any cause beyond the Contractor’s control other than one resulting from a default or breach of Contract by the Contractor,*
- .5 the requirement to stop the performance of the Work by Order, Directive or Decree under any Government law, ordinance or regulation, including but not limited to an Order pursuant to the Emergency Management and Civil Protection Act, R.S.O. 1990. c.E.9 mandating the closure of the construction site where the work is being performed,*
- .6 an Act of war, terrorism, pandemic or epidemic, public health emergency, Act of God, natural disaster, any other casualty beyond the reasonable control of the Contractor, hereinafter each a force majeure event, then the Contractor shall cease working and ensure that the work site is protected and secured in accordance with best construction practices having regard to the directions provided by the Owner and its Consultant. The Contractor, upon being mandated to stop the performance of the work, shall forthwith prepare a budget of additional costs that the Contractor will incur on a weekly basis as a consequence of the inability to perform the work and the resultant delay in the performance of the Contract and shall provide it to the Owner together with documentary proof as may be requested. The Contractor’s claim for costs during this period is subject to an audit. The Owner shall review the budget of costs for the anticipated delay and shall, in writing, and in its absolute discretion either accept the costs as set forth in the budget and agree to pay those costs to the Contractor or terminate the Contract with the Contractor. A Notice of Termination shall be provided in writing to the Contractor if the Owner chooses to terminate the Contract. In the event of termination, the Contractor*

shall be paid all actual costs incurred to the date of termination. The Contractor shall waive and release the Owner from any and all claims of whatever kind and nature as a consequence of the termination of the Contract. This release shall not affect any claim which is unrelated to the termination set forth herein. Further, in the event that the Owner accepts the budgeted costs for the delay period, the Owner agrees to grant an extension of the Contract for such reasonable time as the Owner deems appropriate after consulting with the Contractor and the Consultant. Provided that where the work is being performed on premises which are a school or learning facility where students are typically present, then the Owner, in its absolute discretion, may require that the Contractor perform the work and complete the contract at time or times where students are not present at the school or learning facility.

(3) Add new subparagraph 6.5.6.

6.5.6 If the *Contractor* is delayed in the performance of the *Work* by an act or omission of the *Contractor* or anyone employed or engaged by the *Contractor* directly or indirectly, or by any cause within the *Contractor's* control, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may decide in consultation with the *Contractor*. The *Owner* shall be reimbursed by the *Contractor* for all reasonable costs incurred by the *Owner* as the result of such delay, including all services required by the *Owner* from the *Consultant* as a result of such delay by the *Contractor* and, in particular, the cost of the *Consultant's* services during the period between the date of *Substantial Performance of the Work* stated in Article A-1 herein as the same may be extended through the provisions of these General Conditions and any later, actual date of *Substantial Performance of the Work* achieved by the *Contractor*. The schedule of this project is to be **Substantially Complete by the 24th of August 2026** and **Totally Complete by 31st of August 2026**.

.16

Article GC 6.6 –Claims for a change in Contract Price

(1) Delete paragraph 6.6.5. in its entirety and substitute new paragraph 6.6.5.

6.6.5. The *Consultant's* findings, with respect to a claim made by either party will be given by *Notice in Writing* by the *Consultant* to both parties within reasonable time after receipt of the claim information noted in paragraph 6.6.3.

(2) Add new paragraph 6.6.7

6.6.7. The *Owner* may make claims arising out of the costs incurred for additional services provided by the *Consultant* resulting from the *Contractor's* failure to reasonably perform the *Work* in accordance with the terms and conditions of the Contract, including the *Contractor's*

issuance of unnecessary Requests for Information. The *Consultant* will notify the *Owner* and *Contractor* where it has been determined that additional services will be required or have been provided in order not to cause a delay. The *Owner* shall make claims based on the *Consultant's* invoices.

- .17 **Article GC 8.3 – Negotiation, Mediation and Arbitration**
(1) Revise the heading, “**GC 8.3 NEGOTIATION, MEDIATION AND ARBITRATION**” to read, “**GC 8.3 NEGOTIATION AND MEDIATION**”.
(2) Delete paragraphs 8.3.6, 8.4.7, and 8.5.8 in their entirety.
- .18 **Article GC 9.1 – Protection of Work and Property**
(1) Delete subparagraph 9.1.1.1 in its entirety and substitute new subparagraph 9.1.1.1:
9.1.1.1 errors in the *Contract Documents* which the *Contractor* could not have discovered applying the standard of care described in paragraph 3.9.1;
(2) Delete paragraph 9.1.2 in its entirety and substitute the following new paragraph 9.1.2:
9.1.2 Before commencing any *Work*, the *Contractor* shall determine the locations of all underground utilities and structures indicated in or reasonably determinable from the *Contract Documents*, or that are reasonably determinable from an inspection of the *Place of the Work* exercising the degree of care and skill described in paragraph 3.9.1.
- .19 **Article GC 9.2 – Toxic and Hazardous Substances**
(1) Add to paragraph 9.2.6 after the word “responsible”, the following new words:
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 “and the *Consultant*” after the word “*Contractor*” in subparagraph 9.2.7.4.
(3) Add to paragraph 9.2.8 after the word “responsible”, the following new words:
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,
(4) Add “and the *Consultant*” after the word “*Owner*” in

subparagraph 9.2.8.4.

.20 **Article GC 9.5 – Mould**

(1) Add “and the *Consultant*” after “*Owner*” in subparagraph 9.5.2.4.

(2) Add “and the *Consultant*” after “*Contractor*” in subparagraph 9.5.3.4.

.21 **Article GC 10.2 – Laws, Notices, Permits, and Fees**

(1) Paragraph 10.2.2, delete the words “building permit”.

(2) Paragraph 10.2.3, first sentence, add the words “building permit” before the word “permit”.

(3) Delete from the first line of paragraph 10.2.5 the word, “The” and substitute the words: “Subject to paragraph 3.14.1, the”.

.22 **GC 11.1.1.1 General Liability Insurance**

.1 Delete reference to CCDC forms. Substitute IBC Form 2100 or its equivalent in sentence 11.1.1, 11.1.6, 11.1.7 and 11. 1.8

.2 Add at the end of paragraph 11.1.1.1: Provide Thirty (30) days notice of cancellation by registered mail, to Owner or Consultant. Liability coverage to be provided at a minimum of \$5,000,000 (Five million dollars).

3. Replace sentence 11.1.3 with: Deductible to be a maximum of of \$2,500.00. Owner is not responsible for payment of any deductibles.

.3 Add after sentence 11.1.5. Provide Thirty (30) days notice of cancellation of Insurance by registered mail, to the Owner.

.23 **Article GC 12.3 – Warranty**

Delete from the first line of paragraph 12.3.2 the word, “The” and substitute the words:

“Subject to paragraph 3.9.1, the...”.

PART 2 - PRODUCTS

PART 3 - EXECUTION

End of Section

PART 1 - GENERAL

1.1 Responsibility:

- .1 The Consultant may issue Addenda prior to tender closing to provide revisions to, alterations to, additions to or deletions from the scope of work. Such revisions shall become part of the Contract Documents. Include all costs in Tender Price.
- .2 Addenda will be issued to known all Tenderers. Tenderers shall be held responsible to ensure that the Work of all issued Addenda is included in their Tender.
- .3 Indicate, in the space provided, on the Tender Form the number of Addenda included in the Tender.
- .4 Attach addenda following this section.

PART 2 - PRODUCTS

PART 3 - EXECUTION

End of Section

PART 1 - GENERAL1.1 Responsibility

- .1 Every person or firm who intends to submit prices for the Owner's consideration on this project shall:
 - .1 Read the specifications and referenced documents and;
 - .2 Review the drawings and;
 - .3 Read the modifications issued by the Prime Consultant and;
 - .4 Generally become familiar with all requirements of the proposed Contract Documents for each portion of the work affecting his price.
- .2 When conforming to item 1.1.1, every person or firm shall:
 - .1 Inform the Prime Consultant of discrepancies in the proposed Contract Documents which may affect his work and;
 - .2 Ensure that modifications issued by the Consultant accurately state the necessary revisions.
- .3 Prices submitted will imply that specified standards of the proposed Contract Documents are completely understood.
- .4 The Contractor has ultimate responsibility for ensuring that all prices submitted to him necessary to formulate the tender price include the total requirements of the Contract Documents.

1.2 Subdivision of Work

- .1 These Specifications have been divided into Divisions and Sections of work according to the accepted standards of Construction Specifications Canada (CSC) for the Construction Specifications Institute (CSI) three-part format.
- .2 The Contractor shall have sole responsibility for determination of subdivision of the material, labour and services necessary to complete the project to the specified standards of the proposed Contract Documents.
- .3 The Contractor shall be responsible for distributing all sections and divisions of the work to the Subtrades bidding the work during tender phase and to the Subtrades which are retained to perform the work during construction.
- .4 The Contractor will ensure that all of his/her Subtrades are completely familiar with all the requirements of the Contract Documents which may affect their price.

1.3 Co-ordination and Co-operation

- .1 The Contractor shall:
 - .1 ensure that all trades examine the site and all the drawings and specifications as they relate to this project;
 - .2 expedite all Sections to cooperate with each other to complete the work quickly and correctly;
 - .3 examine the work of all trades during construction progress and ensure that all the total intended performance is satisfied;
 - .4 co-ordinate the layouts of all trades and determine and direct the arrangements and use of work in the available space;

.5 co-operate with authorities having jurisdiction for inspection of project work.

.6 Be responsible for taking and recording such field dimensions as are necessary to ensure proper incorporation of work with that of other trades. Fabricate and erect work to suit field dimensions and field conditions

.7 Be responsible for all forms, centring, templates, anchors, sleeves, inserts, chases, openings and accessories required to be fixed or inserted in the work of others to accommodate your work, and either set in place or give complete instructions as to location, size, and the like, to the related trade for installation on your behalf and at your expense. Pay the cost of additional work and make up lost time resulting from failure to provide in the necessary time, information and co-operation, in adequate time for the same to be incorporated in the work of other trades

.2 Trades which damage the work of other trades shall pay for replacement of damaged work which, in the Prime Consultant's opinion, cannot be repaired. The replacement shall be made by the trade that performed the original work.

.3 The General Contractor shall be responsible to co-ordinate all work by all subtrades including scheduling, distribution of shop drawings, CO's, RFI's, etc, so that all trades are aware of and co-ordinated with each other. The General Contractor is responsible for the overall co-ordination and schedule with the Owner, Authorities having Jurisdiction, etc.

1.4 Superintendent

.1 Refer to the General Conditions.

.2 The Contractor shall provide a full-time Superintendent for the project.

.3 The Contractor must be experienced in projects of similar size and nature as this proposed project. The Consultant may request references for the proposed Superintendent. Should the proposed Superintendent be deemed unsuitable, the Contractor shall provide an alternate acceptable Superintendent with no adjustment in the Contract Price.

.4 The Superintendent shall represent the Contractor on site, directions given to him by the Consultant or Owner shall be as given to the Contractor.

.5 The Superintendent shall not be changed except for good reason and only then after consultation with and agreement by the Consultant.

.6 The Superintendent shall remain on site until "Total Performance" of the Contract has been achieved.

.7 The Contractor shall request and ensure that the trades employ satisfactory supervisors for their Sections of work.

1.5 Cleaning

.1 During construction, the trades shall remove from the project

- site debris caused by their work daily.
- .2 The Contractor shall enforce the requirements of this Specification, regulatory authorities and specific requests which the Consultant may issue.
- .3 Bulk containers which the Contractor may provide for assembly of debris shall:
- .1 be placed in a convenient area not obstructing the Owner's operations;
 - .2 be covered or otherwise protected;
 - .3 be emptied when full but at a time not obstructing the Owner's use of the grounds. Co-ordinate efforts to remove debris with the Owner.
- .4 Cutting and Patching (If and As required)
- .1 Where new work connects to existing work not scheduled to be altered, leave the entire finished work to the specified standards.
 - .2 Where the proposed Contract Documents indicate making good, the use of material and methods of installation shall match the form, construction and finish of the existing work.
 - .3 Cutting and drilling of existing work shall be neat and clean and kept to a minimum.
 - .4 Wherever the requirements of the Contract Documents will result in temporary loss of existing services, work shall be scheduled and performed at a time agreed upon by the Owner, the Prime Consultant, and the Contractor.
 - .5 Where "restore finishes" is called for on the drawings or elsewhere in this Specification, the patching shall match the full width and depth of the area involved. When patching occurs in the fire separations, the end result of patching shall be completely consistent with the original work and to meet fire performance required, or the Prime Consultant shall require complete removal and re-patching.
 - .6 Where 'restore finishes' is not directly noted on drawings, it shall be assumed where ever any existing materials, surfaces or assemblies are altered in the course of work, finishes will be restored.
 - .7 The General Contractor shall be responsible for the entire work (i.e. cost) to cut and patch for installation of the work of all trade sections.
- .5 Penetrations of Obstructions
- .1 Sleeves shall be provided for service lines or other built-in materials passing through floors, ceilings and walls of:
 - .1 masonry and;
 - .2 concrete.
 - .2 Sleeves shall be supplied and coordinated by the trade whose material penetrates, but installed by the Contractor of the obstructing assembly.

.3 Lintels necessary to support loading above sleeves in concrete or masonry obstructions shall be supplied by the trade where material penetrates, but installed by the Contractor for the obstructing assembly.

.4 Patch the space between the sleeve and the hole provided to meet the same standards of material or assembly penetrated. Fill to full depth.

.5 Where penetrations occur in areas without lower ceilings, install escutcheon plates to cover the resultant patching.

.6 Fill remaining space between sleeve and penetrating material with:

.1 fire resistive material in obstructions which are fire separations;

.2 materials to generally match construction in all other places with allowances for movement.

.7 Fire resistive material used as fill shall not reduce the degree of fire separations required.

.8 Refer to specific trade sections where more stringent requirements may be specified.

1.6 Schedule of Work

- .1 Prepare schedule in form of a horizontal bar chart. Project date shall start at receipt of Building Permit and Contract.
- .2 Provide a separate bar for each major item of work or operation. Split horizontally for projected and actual performance.
- .4 Provide horizontal time scale identifying first work day of each week.
- .5 Format for listings: chronological order of start of each item of work.
- .6 Identification of listings: By specification Section numbers or Systems description.
- .7 Submit initial format of schedules (Construction Schedule, Shop Drawing Review Schedule, etc) within 10 days after award of Contract.
- .8 Submit schedules in electronic format on disc in file format as required by Consultant and hard copies.
- .9 Submit two hard copies to Consultant and Owner.
- .10 Submit revised progress schedule with each application for payment.
- .11 Distribute copies of revised schedule to:
 - .1 Job site office.
 - .2 Subcontractors.
 - .3 Other concerned parties.
- .12 Instruct recipients to report to Contractor within 10 days, any problems anticipated by timetable shown in schedule.

- .13 Work may be carried out during regular working hours or for scheduling purposes after hours, as long as there is no interruption to other operations in the building. If there are noise complaints, or work affecting operations, work will have to be completed after hours. See Section 01110 for more detail. All demolition and heavy construction must be done after hours/weekends, unless building is unoccupied.
- .14 Regulatory Requirements
 - .1 Permits:
 - .1 Provide authorities having jurisdiction with information requested.
 - .2 Pay for and obtain all certificates and permits required including for the building permit.
 - .3 Contractor to provide information as necessary to obtain permits.
 - .4 Date of Construction Schedule to start on the date of receipt of Building Permit.
 - .2 Building Codes:
 - .1 The project work has been documented to comply with the requirements of the Ontario Building Code (1990) and all amendments to date.
 - .2 Modifications to the project must not reduce the requirements of the Ontario Building Code.
 - .3 Conform to local by-laws which amend or expand upon the requirements of the Ontario Building Code, where known.
 - .4 Conform to Ontario Fire Code, latest amendment.
 - .3 Safety Codes:
 - .1 Comply with the requirements of the Ontario Ministry of Labour specifically, and municipal and/or federal authorities as applicable for construction safety on this project.
 - .2 Contractor to include all costs for temporary facilities necessary to comply with safety standards.
 - .3 Conform to local by-laws which amend or expand upon the requirements of the Ontario Building Code, where known.
 - .4 Maintain access to exits at ALL times.

1.7 Employment Standards

- .1 Comply with the provisions of the Workers' Compensation Act and provide the Prime Consultant with Certificate of Clearance at:
 - .1 commencement of the Contract;
 - .2 at each monthly progress claim;
 - .3 prior to release of holdback;
 - .4 prior to payment for total performance;
 - .5 at such other times as requested.
- .2 Comply with the provisions of the Vacation with Pay Act.
- .3 Comply with the regulations of the Unemployment Insurance Commission of Canada.

- .4 The Contractor and Subcontractors shall include and pay the full scale of wages as may be recognized in the locality for all trades involved and shall observe all recognized conditions of employment.
- .5 WHIMS
 .1 Comply with requirements of Workplace Hazardous Materials Information System (WHIMS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of material and safety data sheets acceptable to Labour Canada and Health and Welfare Canada.
 .2 Deliver copies of WHIMS data sheets to Owner on delivery of materials.
- 1.8 Owner Inspections .1 In addition to field review by the Consultant, the Owner shall have access to the work to view progress.
- 1.9 Hazardous Material Discovery .1 Should material resembling spray or trowel-applied asbestos, hazardous liquids, etc. be encountered in course of demolition or site clearing work, immediately stop work and notify Consultant.
- 1.10 Site Access .1 Upon award of the Contract review the project site and provide a proposed Construction Area Map at the Pre-Construction meeting which indicates the following:
 .1 Contractor equipment access to site
 .2 Construction parking
 .3 Material storage areas
 .4 Construction Trailer locations
 .5 Sanitary Facilities
 .6 Limit of construction (and location of construction barricade)
 .7 Safety and First Aid Stations
 .8 Security Station
 In preparing map do not restrict the Owners use of the Property.
- .2 Revise map as required and circulate to all construction forces. Direct all subtrades and suppliers to provide deliveries to approved areas.
- .3 During any contract operations involving equipment stationed at ground level, or presenting a hazard to people or traffic at ground level, provide temporary barricades, walks, hoarding, covered walks, and the like to permit safe passage of persons to and from all building entrances and exits.
- .4 Do not, at any time, restrict fire fighting access to the building or site.
- .5 Keep designated parking areas clean at all times and, on job completion, provide ongoing repair to temporary surfaces to eliminate ruts, bumps and other deterioration due to use by the Contractor and their trades.

- .6 Obtain and pay for additional storage or work areas off site as needed for operations.
- .7 Provide dust and safety barriers between occupied and construction space and allow access through to other areas in the building.

1.11 Existing Services

- .1 Where work involves breaking into or connection to existing services, carry out work at times directed by governing authority and Owner, with minimum disturbance to pedestrian and vehicular traffic.
- .2 Carry out work to protect such utilities and services until completion of the Work and be responsible for costs of making good any damage caused by work under the Contract.
- .3 Do not disturb or remove any utilities unless and until they have been disconnected and abandoned.
- .4 Submit schedule to and obtain approval from Consultant for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- .5 Where unknown services are encountered, immediately advise the Consultant and confirm findings in writing
- .6 If found, remove abandoned services to within 6'-0" (2m) of structures. Cap or otherwise seal lines at cut-off points as directed by Consultant.

1.12 Smoking

- .1 As required by the Owners smoking policy, smoking will not be permitted within the building as it is erected or anywhere or anytime, on the Owner's property.

1.13 Additional Drawing Sets

- .1 The Consultant may issue additional sets of drawings and specifications to the Contractor, for their or their subcontractors/supplier's use.
- .2 The Contractor shall review the drawings provided to ensure that the information included in these additional sets matches the Contract Documents and immediately notify the consultant if discrepancies occur.
- .3 All Contract Documents shall remain the property of the Consultant and shall be returned at the completion of the Project.

1.14 Pre-construction Meeting

- .1 Within seven (7) days of after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Senior representatives of the Owner, Consultant(s), Contractor's Project Supervisor, Job Superintendent and

representatives from major Subcontractors should be in attendance. Representatives attending the meeting shall have the authority to speak for and make commitments for the Company/Firm being represented. Review with Consultant to determine list of persons to be invited. Coordinate date, time and location of meeting with all parties.

.3 The agenda for this initial meeting will be provided by the Consultant, and shall be circulated to all parties by the Contractor five (5) days prior to the meeting.

.4 The Consultant shall chair this initial Meeting. The Contractor shall record minutes to this meeting and distribute copies to all parties.

1.15 Construction Meeting

.1 Project meetings will be held regularly, at weekly or bi-weekly intervals or as determined at the Pre-construction meeting, throughout the course of the project.

.2 Such meetings shall be attended by representatives of the Owner, Consultant(s), Contractor's Project Supervisor and the Job Superintendent, Mechanical subcontractor, Electrical sub-contractor and any other subtrades currently working on site, or are imminent to commence working on site, or as requested by the Consultant. Representatives attending the meeting shall have the authority to speak for and make commitments for the Company/Firm being represented.

.3 The Contractor shall chair the meetings and take and distribute minutes of each subsequent meeting, issue all notices in regard to forthcoming meetings, and arrange for attendance of all trade representatives, and shall provide suitable premises for such meetings.

.4 Format minutes with section headings as noted below. Append each item with an Action By comment indicating company/firm responsible for follow up (include due date where applicable).

.1 **Old Business:** review and approval of minutes of previous meeting. Maintain outstanding/unresolved issues in the minutes of the meeting.

.2 **New Business:**

.1 Completed Construction: review of work in progress since previous meeting.

.2 Field observations: problems, conflicts and resolutions.

.3 Construction Schedule: problems that may impede construction schedule and actions taken to correct.

.4 Delivery: review of off-site fabrication and delivery schedules.

.5 Impending Construction: work to be completed prior to next meeting and information /coordination required to complete.

.6 Safety issues: concerns and accident

reports.

.7 Changes: proposed changes to contract, status of pricing/approval.

.3 **Other Business:** Include any additional items deemed necessary by the contractor.

PART 3 – EXECUTION

End of Section

PART 1 - GENERAL1.1 Section Includes

- .1 Title and description of Work.
- .2 Contract Method.
- .3 Work by others.
- .4 Future work.
- .5 Work sequence.
- .6 Contractor use of premises.
- .7 Owner occupancy.
- .8 Partial Owner occupancy.
- .9 Pre-ordered products Pre- Tendered work.
- .10 Owner furnished items.

1.2 Work Covered by Contract Documents

- .1 **Work in this Contract generally comprises of the roof replacement for the designated areas of St. Basil School. Work includes the careful removal of the existing roofing, including top coats, membranes, flashings, mechanical sleeves, insulation, roof drains, flashing, etc. and replaced with a complete new insulated built-up roofing system.**

The drawings and specifications outline the general extent of work, but cannot capture every detail. All roofing materials, flashings, tapered and flat insulation, expansion joints, roof drains, etc to be included whether detailed or not to be supplied and installed. The finished roof to be a "Complete System" comprising of all materials required for a complete roofing, trim, flashings, etc project and warranted and/or approved by a single manufacturer. The drawings comprise of the intent of the work.

There are also three Cash Allowances for electrical / security work within the school. Work for these to be performed by the sub-trades as listed within Section 01210 Allowances.

Work must be totally complete by the end of August, 2026, BEFORE students are to return to School.

1.3 Contract Method

- .1 Construct the Work under a single Stipulated Sum Contract.

1.4 Work by Others

- .1 Work of this Project must include provisions for co-ordinating related work, if identified in Contract Documents.

1.5 Work Sequence

- .1 Construct Work to accommodate climatic conditions and material availability. Project must be **Substantially completed by 24th of August 2026 and Totally Complete**

by **31 August 2026.**

- .2 Co-ordinate Progress Schedule and coordinate with Owner Occupancy during construction.
- .3 Maintain fire access/control at all times during Contract.
- .4 Maintain security barriers/protocols throughout entire construction period.
- .5 The school is currently at capacity and must remain fully operational during the school year. The construction period, as such cannot commence until the day AFTER the formal last day of school for the Summer break and MUST be completed by the 31st of August, 2026.

1.6 Contractor Use of Premises

- .1 Contractor may work through the night, or after hours, for limited periods, for interior work only. Co-ordinate working hours with building owner.
- .2 Contractor shall limit use of existing site for storage.
- .3 Co-ordinate use of premises under direction of Owner and Consultant.
- .4 Assume full responsibility for protection and safekeeping of products under this Contract.

1.7 Owner Occupancy

- .1 Co-operate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.
- .2 Work to all areas to be substantially complete for **24 August 2026 and Total Completion by 31st August 2026.** If schedule and/or material delivery delays extend beyond this time, temporary measures are to be implemented by Contractor to ensure the SAFE operation of the School at Contractor's Cost. These methods must be discussed and approved three weeks before Substantial Completion with the Owner.

These dates to be clearly adhered to, and the contractor to bring in adequate forces and scheduling will be enforced to achieve this date.

End of Section

PART 1 - GENERAL1.1 Section Includes

- .1 Cash allowances
- .2 Contingency allowance

1.2 References

- .1 Contract documents
- .2 Canadian Construction Documents Committee (CCDC). .1
CCDC 2- 2020, Stipulated Price Contract.
- .3 Project Supplementary Conditions.

1.3 Contingency Allowances

- .1 Refer to GC 4.1, Cash Allowances.
- .2 Cash Allowances, unless otherwise specified, cover net cost to Contractor of services, products, construction machinery and equipment, freight, handling, unloading, storage, installation and other authorized expenses incurred in performing the Work.
- .3 The Contract Base Price, and not Cash Allowance, includes Contractor's overhead and profit in connection with such cash allowance.
- .4 Allowances are inclusive of the Harmonized Sales Tax (HST).
- .5 A: Include the following Contingency and Cash Allowance amounts in the Base Bid Contract Price.

Contingency Allowance: \$ 100,000.00

B: Include the following Cash Allowance amounts in the Base Bid Contract Price. **(Note: These are sole source items)**

Cash Allowance #1:**Door Access Control: \$ 30,000.00**

Cash Allowance to be for the services of **ATS**, 270 Bruce St.
Sault Ste Marie, ON P6B 1P6 Contact: Dawn Piche
P 705-759-8999 E dawn.piche@atstechnology.ca

Cash Allowance #2**Power Mapping and Smart App: \$ 82,000.00**

Cash Allowance to be for the services of **Circuit IQ**, 260 Alder Street, Sudbury, ON P3C 5P4 Contact: Lloyd Miller
Senior Account Executive E lloyd@circuitiq.com P 647-952-9522

Cash Allowance #3**PA System Upgrade: \$ 68,000.00**

Cash Allowance to be for the services of **Spectrum Telecom Group Ltd**, 505 Froad Rd., Sudbury, ON P3C 5A2
E pmcquire@spectrumtelecom.ca P 705 673 6661 Ext 5703

C: **TOTAL ALLOWANCES: \$ 280,000.00**

- .6 Expenditures under cash allowance will be authorized by issuance of a Change Order only.
- .7 O/H and Profit **will not** be paid to the contractor for work performed under any or all Allowances. Where costs **exceed the total of all** Cash and Contingency Allowances, the Contractor will be compensated for the excess costs plus overhead and profit as per the terms of the Contract Documents.
- .8 Allowances shall be expended by a written order signed by the Owner or Owners Representative.
- .9 Should it be required, the Contract Price will be adjusted, by written order, to provide for a deficit to any allowance.
- .10 Include with each progress draw a summary of all allowances. Include the total amount, amount expended to date, amount applied for with new application (include supporting documentation).
- .11 If entire allowance is not required to be expended against at the of the project, the entire residual value will be retained by the owner, or at any time during the project at the owner's discretion.
- .12 Expenditures and inspections shall be carried out only as authorized by the Consultant.
- .13 Any and all remaining Allowance monies will revert back to the Owner at the completion of the project.

END OF SECTION

PART 1 - GENERAL1.1 Section Includes

- .1 Shop drawings and product data.
- .2 Samples.
- .3 Certificates and transcripts.

1.2 Related Sections

- .1 Section 01000 – General Requirements.
- .2 Section 01450 - Quality Control.
- .3 Section 01780- Closeout Submittals
- .4 Section 01800 – Systems Demonstrations.

1.3 References

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2- 2020, Stipulated Price Contract.

1.4 Administrative

- .1 Submit to Consultant submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time will not constitute sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Work affected by submittal shall not proceed until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units or Imperial Units depending on units provided used in the contract documents. Shop drawings provided in units contrary to project units may be returned to contractor unreviewed for conversion to the appropriate units.
All shop drawings (except samples) to be submitted in digital (PDF) format. All Shop Drawings within the hard copy of the physical Operations and Maintenance Manuals to be paper versions.
- .4 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.
- .5 Notify Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .6 Verify field measurements and affected adjacent Work are

coordinated. Contractor is responsible for dimensional coordination of materials and field placement.

- .7 Allow 10 working days for Consultant's review of each submission and 20 working days for large submittals. Receipt of submissions after 12 noon will be considered to be received on the next business day. **When scheduling is tight, it is suggested that the Contractor submit shop drawing well in advance of construction start,**
- .8 Adjustments made on shop drawings by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.
- .9 Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals.
- .10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.
- .11 Keep one reviewed copy of each submission on site.
- .12 Provide Shop Drawing Schedule within two weeks of contract signing, to ensure shop drawing submissions and review meet the construction schedule.
- .13 Preference is given to "Product of Canada" materials. The contractor to research and confirm this before Tender close. As such, before submissions are made, investigate and confirm materials are sourced from a Canadian manufacturer. If not, state within initial submittal.

1.5 Shop Drawings and Product Data .1 Refer to CCDC 2 GC 3.8 Shop Drawings.

- .2 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .3 Within 30 days after Contract Award, the Contractor shall submit to the Consultant a complete schedule of Shop Drawings Submittals listing dates for submissions, the beginning of manufacture, and noting those submittals which are critical to the progress schedule.
- .3 Shop Drawings shall indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated,

- regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Make changes in shop drawings as Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of any revisions other than those requested.
 - .5 Accompany submissions with transmittal letter, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
 - .6 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
 - .7 Upon completion of Consultant's review, distribute copies.
 - .8 Submit PDF copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Consultant where shop drawings will not be prepared due to standardized manufacture of product.
 - .9 Delete information not applicable to project.
 - .10 Supplement standard information to provide details applicable to project.
 - .11 If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, copies will

be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure and timetable indicated above, must be performed before fabrication and installation of Work may proceed. The Consultant reserves the right to be able to properly review submittals. Generally, shop drawing review to require 7 working days, or 15 working days for large or complicated submittals. If a submission is to be 'resubmitted', the same process and schedule will be required for each re-submittal.

Contractor to print and provide 2 hardcopies of reviewed shop drawings and data sheets for inclusion in Operations and Maintenance Manuals.

1.6 Samples

- .1 Submit for review samples as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Consultant's business address.
- .3 Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is a criterion, submit full range of samples. Any materials applied before approval must be replaced at Contractor's own cost. Materials will not be considered accepted until signed by Owner and returned to Contractor.
- .5 Adjustments made on samples by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.
- .6 Make changes in samples which Consultant may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.
- .8 Submit samples of all materials requiring colour and/or texture selection, if required for this project, within 3 weeks of contract award so that the consultant can prepare a complete building colour schedule in a timely fashion.

1.7 Operating and Maintenance Manuals

- .1 ***Two (2) weeks prior to Substantial Performance of the Work, submit to the Consultant, 2 copies of operating and maintenance manuals.***
- .2 Manuals to contain operational information on equipment,

cleaning and lubrication schedules, filters, overhaul and adjustment schedules and similar maintenance information. Instructions in this manual shall be in simple language so as to guide the Owner in the proper operation and maintenance of building components. In all cases where a manufacturer's data sheets, instruction and/or maintenance manuals are available in bilingual form they shall be so included in the submission.

- .3 Bind contents of the physical copies, in a three-ring, hard covered, plastic jacketed binder. Organise contents into applicable categories of work, parallel to specifications Sections. Electronic (PDF) version to follow the same sequence, order and labelling of contents.
- .4 In addition to information specified, include the following:
 - .1 Title sheet, labelled "Operating and Maintenance Instructions", containing project name and date.
 - .2 List of names, addresses and phone numbers of subcontractors and suppliers who can effect repair or maintenance on equipment.
 - .3 List of contents.
 - .4 Maintenance instructions for roofing, finished surfaces and materials.
 - .5 Copy of hardware and paint schedules.
 - .6 Description, operation and maintenance instructions for equipment and systems, including complete lists of equipment and parts list. Indicate nameplate information such as make, size, capacity, serial numbers.
 - .7 Names, addresses and phone number of subcontractors and suppliers.
 - .8 Guarantees, warranties and bonds.
 - .9 Additional material used in project listed under various Sections showing name of manufacturer and source of supply.

(Due to project differences, some specific trades and materials listed may not be required. Request clarification from Consultant before submission of manuals)
- .5 Include one complete set of final reviewed shop drawings, bound separately, indicating any changes made during fabrication and installation.

1.8 Maintenance Materials

- .1 Where supply of maintenance materials is specified, deliver to Owner as follows:
 - .1 Materials in unbroken cartons, or if not supplied in cartons, they shall be strongly packaged.
 - .2 Clearly mark as to content.
 - .3 If applicable give colour, room number or area where materials used.

1.9 Record Drawings

- .1 The Contractor is to prepare and maintain full size 'as-built' construction contract drawings. Accurately and neatly record all deviations from Contract Documents caused by site conditions and Change Orders issued by the Consultant.

Deliver 2 hard copies and 1 digital copy to Consultant at the end of the Project as part of the operations and maintenance submission.

- .2 Mechanical and electrical trades shall prepare, as their work progresses, neat, accurately drawn as-built drawings, showing actual installed locations of all piping, ductwork, valves, dampers, controls, conduit runs, junction boxes, cleanouts and equipment of all kinds. Locations shall be dimensioned to permanent points.
- .3 The Contractor shall ensure that these drawings are kept up to date by his Subcontractors. As-built drawings shall be kept available for review by the Consultants on request at job meetings or during supervision of the project.
- .4 Prepared as-built drawings, satisfactory to the Consultant, shall be included with maintenance manual and delivered to Consultant upon completion of the work.
- .5 The Consultant assumes no responsibility for the completeness nor accuracy of any information, changes or deletions recorded on As-Built drawings by the Contractor or Subcontractors.
- .6 As-Built drawings shall be signed by the Contractor and responsible Subcontractors prior to being submitted to the Consultant on completion of the Work and prior to final inspection.
- .7 Identify drawings as "Project Record Copy". Maintain in new condition and make available for inspection on site by Consultant.

1.10 Certificates and Transcripts

- .1 Immediately after award of Contract, submit the following:
 - .1 Worker's Compensation Board Status.
 - .2 Bonds.
 - .3 Copies of Insurance Policies.

1.11 Warranties

- .1 To be included in the operating maintenance manuals and shall include warranties, guarantees and bonds showing:
 - .1 Name and address of project.
 - .2 Guarantee commencement date, from date of Final Certificate of Completion.
 - .3 Duration of guarantee.
 - .4 Clear indication of what is being guaranteed and what remedial action will be taken under guarantee.
 - .5 Signature and seal of the Contractor.

1.14 Estimate of Monthly Progress Claims

- .1 Submit, as soon as possible after the schedule of values is established, the anticipated disbursement of the Contract monies on a monthly basis for the duration of the Contract.

1.15 Claim for Payment Specimen

- .1 Submit, as soon as possible after the schedule of values is

established, the contractor's specimen of claim for payment plus the schedule of values for this project to be submitted for review.

- .2 The Prime Consultant will provide the Contractor with a preferred format if requested by the Contractor.
- .3 The Schedule of Values to be updated and submitted with every Progress Claim

PART 2 - PRODUCTS

PART 3 - EXECUTION

End of Section

PART 1 - GENERAL1.1 Associations

- .1 AA - Aluminum Association, 900 19th Street N.W., Washington, D.C., U.S.A. 20006 <http://www.aluminum.org>
- .2 AASHTO - American Association of State Highway and Transportation Officials, 444 N Capitol Street N.W., Suite 249, Washington, D.C., U.S.A. 20001 <http://www.aashto.org>
- .3 ACI - American Concrete Institute, P.O. Box 9094, Farmington Hills, Michigan U.S.A. 48333 <http://www.aci-int.org>
- .4 AHA - American Hardboard Association, 887-B Wilmette Road, Palatine, Illinois, U.S.A. 60067
- .5 AITC - American Institute of Timber Construction, 7012 S. Revere Parkway, Suite 140, Englewood, Colorado, U.S.A. 80112 <http://www.aitc-glulam.org>
- .6 AMCA - Air Movement and Control Association Inc., 30 West University Drive, Arlington Heights, Illinois, U.S.A. 60004-1893 <http://www.amca.org>
- .7 ANSI - American National Standards Institute, 11 West 42nd Street, New York, New York, U.S.A. 10036 <http://www.ansi.org>
- .8 API - American Petroleum Institute, 1220 L St. Northwest, Washington, D.C., U.S.A. 20005-4070 <http://www.api.org>
- .9 ARI - Air Conditioning and Refrigeration Institute, 1815 North Fort Myer Drive, Arlington, Virginia, U.S.A. 22209 <http://www.ari.org>
- .10 ASHRAE - American Society of Heating, Refrigeration and Air-Conditioning Engineers, 1791 Tullie Circle NE, Atlanta, Georgia, U.S.A. 30329 <http://www.ashrae.org>
- .11 ASME - American Society of Mechanical Engineers, United Engineering Centre, 345 East 47th Street, New York, New York, U.S.A. 10017-2392 <http://www.asme.org>
- .12 ASTM - American Society for Testing and Materials, 100 Barr Harbor Drive West, Conshohocken, Pennsylvania 19428-2959 <http://www.astm.org>
- .13 AWCI - Association of the Wall and Ceiling Industries, 1711 Connecticut Avenue N.W., Washington, D.C. U.S.A. 20009 <http://www.awci.org>
- .14 AWMAC - Architectural Woodwork Manufacturers Association of Canada, 516 4 Street West, High River, Alberta T1V 1B6 <http://www.awmac.com>
- .15 AWS - American Welding Society, 550 N.W. LeJeune Road, Miami, Florida U.S.A. 33126 <http://www.amweld.org>
- .16 AWWA - American Water Works Association, 6666 W. Quincy Avenue, Denver, Colorado, U.S.A. 80235 <http://www.awwa.org>
- .17 CFFM - Canadian Forces Fire Marshal, 101 Colonel By Drive, 8NT MGen George R. Parkes Bldg., Ottawa, Ontario K1A 0K2
- .18 CGA - Canadian Gas Association, 243 Consumers Road, Suite 1200, North York, Ontario M2J 5E3 <http://www.cga.ca>
- .19 CGSB - Canadian General Standards Board, Place du Portage, Phase III, 6B1, 11 Laurier Street, Hull, Quebec K1A 1G6 <http://w3.pwgsc.gc.ca/cgsb>
- .20 CISC - Canadian Institute of Steel Construction, 201 Consumers Road, Suite 300, Willowdale, Ontario M2J 4G8

- .21 CITC - Canadian Institute of Timber Construction, 200 Cooper Street, Ottawa, Ontario K2P 0G1
- .22 CMB - Construction Materials Board, 101 Colonel By Drive, 8NT MGen George R. Pearkes Bldg., Ottawa, Ontario K1A 0K2
- .23 COFI - Council of Forest Industries, 555 Burrard, Suite 1200, Vancouver, B.C. V7X 1S7 <http://www.cofi.org>
- .24 CRCA - Canadian Roofing Contractors Association, 151 Slater Street, Suite 606, Ottawa, Ontario K1P 5H3
- .25 CSA - Canadian Standards Association, 178 Rexdale Blvd., Etobicoke, Ontario M9W 1R3 <http://www.csa.ca>
- .26 CSC - Construction Specifications Canada, 100 Lombard Street, Suite 200, Toronto, Ontario M5C 1M3 <http://www.csc-dcc.ca>
- .27 CSDFMA - Canadian Steel Door and Frame Manufacturing Association One Yonge Street, Suite 1400, Toronto, Ontario M5E 1J9
- .28 CSPI - Corrugated Steel Pipe Institute, 201 Consumers Road, Suite 306, Willowdale, Ontario M2J 4G8
- .29 CSSBI - Canadian Sheet Steel Building Institute, 201 Consumers Road, Suite 305, Willowdale, Ontario M2J 4G8 <http://www.cssbi.ca>
- .30 CWC - Canadian Wood Council, 1400 Blair Place, Suite 210, Ottawa, Ontario K1J 9B8 <http://www.cwc.ca>
- .31 EEMAC - Electrical and Electronic Manufacturers' Association of Canada, 1 Yonge Street, Suite 1608, Toronto, Ontario M5E 1R1 <http://www.electro.ca>
- .32 FCC - Fire Commissioner of Canada, Place du Portage, Phase II, 165 rue Hotel de Ville, Hull Quebec K1A 0J2
- .33 ICPI - Interlocking Concrete Pavement Institute, P.O. Box 23053, Milton, Ontario L9T 2M0 <http://www.icpi.org/icpi>
- .34 IEEE - Institute of Electrical and Electronics Engineers, 345 East 47th Street, New York, New York U.S.A. 10017 <http://www.ieee.org>
- .35 MSS - Manufacturers Standardization Society of the Valve and Fittings Industry, 127 Park Street, N.E., Vienna, Virginia U.S.A.22180
- .36 NAAMM - National Association of Architectural Metal Manufacturers, 8 South Michigan Avenue, Suite 1000, Chicago, Illinois U.S.A. 60603 <http://www.naamm.org>
- .37 NEMA - National Electrical Manufacturers Association, 1300 N. 17th Street, Suite 1847, Rosslyn, Virginia 22209 <http://www.nema.org>
- .38 NFPA - National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts, U.S.A. 02269-9101 <http://www.nfpa.org>
- .39 NFSA - National Fire Sprinkler Association, P.O. Box 1000, Patterson, New York, U.S.A. 12563 <http://www.nfsa.org>
- .40 NHLA - National Hardwood Lumber Association, P.O. Box 34518, Memphis, Tennessee, U.S.A 38184-0518 <http://www.natlhardwood.org>
- .41 NLGA - National Lumber Grades Authority, 260-1055 West Hastings, Vancouver, B.C. V6E 2E9
- .42 NRC - National Research Council, Montreal Road, Ottawa, Ontario K1A 0S2
- .43 PCI - Prestressed Concrete Institute, 175 W. Jackson Blvd.,

- Suite 1859, Chicago, Illinois, U.S.A. 60604
<http://www.pci.org>
- .44 QPL - Qualification Program List, c/o Canadian General Standards Board, Place du Portage, Phase III, 6B1, 11 Laurier Street, Hull, Quebec K1A 1G6
<http://w3.pwgsc.gc.ca/cgsb>
- .45 SAE - Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, Pennsylvania 15096-0001
<http://www.sae.org>
- .46 SCC - Standards Council of Canada, 1200-45 O'Connor Street, Ottawa, Ontario K1P 6N7 <http://www.scc.ca>
- .47 SMACNA - Sheet Metal and Air Conditioning Contractors' National Association, 4201 Lafayette Center Drive, Chantilly, Virginia 20151-1209 <http://www.smacna.org>
- .48 SSPC - Steel Structures Painting Council, 40 24th Street, Pittsburgh, Pennsylvania 15222-4656 <http://www.sspc.org>
- .49 TTMAC - Terrazzo, Tile and Marble Association of Canada, 30 Capston Gate, Unit 5 Concord, Ontario L4K 3E8
<http://www.ttmac.com>
- .50 UL - Underwriters' Laboratories, 333 Pfingsten Road, Northbrook, Illinois, U.S.A. 60062 <http://www.ul.com>
- .51 ULC - Underwriters' Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario M1R 3A9 <http://www.ulc.ca>
- .52 CSA, Canadian Standards Association
- .53 OBC, Ontario Building Code
- .54 NBC, National Building Code of Canada

1.2 Other Reference Standards

- .1 General abbreviations for building materials and terms are utilised within drawings and specifications, and are to be interpreted as per local standard construction terminology.

PART 2 - PRODUCTSPART 3 - EXECUTIONEnd of Section

PART 1 - GENERAL

- 1.1 Section Includes
- .1 Inspection and testing, administrative and enforcement requirements.
 - .2 Tests and mix designs.
 - .3 Mock-ups.
 - .4 Mill tests.
 - .5 Equipment and system adjust and balance.
- 1.2 Related Sections
- .1 Section 01210 - Allowances.
 - .2 Section 01330 - Submittal Procedures.
 - .3 Section 01420 - References.
 - .4 Section 01780 - Closeout Submittals.
- 1.3 References
- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2- 2020 , Stipulated Price Contract.
- 1.4 Inspection
- .1 Refer to CCDC 2, GC 2.3.
- 1.5 Independent Inspection Agencies
- .1 If required, Independent Inspection /Testing Agencies is to be engaged for the purpose of inspecting and/or testing portions of the Work. In addition to inspection and testing results specified to be provided as part of the work of various trade sections of the Specifications, inspections and testing and testing companies for various trades may be appointed separately by the Consultant where specifically stated or required. In such cases, the following will apply:
 - .2 The cost of such additional inspection and testing shall be paid from Section 01210 – Allowances except for Compaction and Roofing as noted below and that where test or inspections reveal work not in accordance with the Contract, the Contractor shall bear the cost of such tests as the Consultant requires to verify the acceptability of corrected work.
 - .3 Provide equipment required for executing inspection and testing by appointed agencies.
 - .4 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
 - .5 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Consultant at no cost to Consultant, nor Owner. Pay costs for retesting and re-inspection.
 - .6 The Contractor shall supply Drawings and Specifications as required for the use of the respective inspection and testing companies and advise the Contractor of the Companies appointed for the respective work.

- .7 Promptly provide Consultant and Inspector with safe access to any part of the work requiring inspection.
- .8 The Consultant will notify the General Contractor of types of work to be tested and the names of the respective testing companies. Testing shall include, but not necessarily be limited to the following:
 - .1 Compaction testing of backfill.
 - .2 Field inspection of structural.
 - .3 Concrete Masonry Units and Mortar.
 - .4 Roofing.

NOTE: There may not be need for testing in this project. References are for procedure only if not used.

- .9 In the case of compaction testing of backfill, carry out as a part of the Stipulated Sum Contract all excavation backfill, and re-compaction of test holes required by testing procedures. Submit to the Testing Company representative samples of backfill materials being used.
- .10 In the case of roofing inspection make good, as a part of the Stipulated Sum Contract, all areas of roofing affected by cut-tests taken by Testing Company.
- .11 Concrete testing shall be performed by testing agency conforming to the requirements of CSA A283 'Qualification Code for Concrete Testing Laboratories'.

1.6 Standards

- .1 Where initials of an organization are used, following by number or combination of numerals and letters, this designates a standard produced by the organization. Conform to issue of standard so designated, as amended and reviewed to date of contract. When designation does not indicate particular edition of standard edition current at date of Contract shall apply.
 - .1 Contractor shall provide a copy of all standards indicated or required for the project in the Construction office and will provide copies to the Consultant upon requires.
- .2 Wherever a standard confers upon a person, a body politic or a body corporate the right to approve, to select, to exercise authority or to interpret the standard, and refers to that person, body politic or body corporate as the Authority having jurisdiction, the Authority, the Engineer, the Department, the Purchaser, the Contracting Officer or by some other such designation, the Architect shall have the right exercise the powers of any such person, body politic, or body corporate.
- .3 Where standards and amnufacturer's instructions reduce the requirements of the Contract Documents, the Contract Documents shall govern.
- 4. Where standards and manufacturer's instructions are in

excess of the requirements of the Contract Documents, the Standards and manufacturer's instructions shall govern.

1.7 Access to Work

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.8 Procedures

- .1 Notify appropriate agency in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.9 Rejected Work

- .1 Refer to CCDC, GC 2.4.

1.10 Reports

- .1 Submit four (4) hard copies and one digital copy of inspection and test reports to Consultant.
- .2 Provide copies to subcontractor of work being inspected or tested or manufacturer or fabricator of material being inspected or tested.

1.11 Tests and Mix Designs

- .1 Furnish test results and mix designs as may be requested.
- .2 The cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work shall be appraised by Consultant and may be authorized as recoverable.

1.12 Mock-ups

- .1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of all Sections required to provide mock-ups.
- .2 Construct in all locations acceptable to Consultant, not as part of the building.
- .3 Prepare mock-ups for Consultant's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.
- .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .5 If requested, Consultant will assist in preparing a schedule fixing dates for preparation.

- 1.13 Mill Tests .1 Submit mill test certificates as requested.
- 1.14 Environmental Conditions .1 Take all necessary precautions to prevent damage to work affected by temperature, water, weather and other environmental conditions as required.
- .2 Provide all necessary repair to Work and existing building as required due to damage by Contractors forces and/or improperly protected Work at no additional cost to the Owner.
- 1.15 Equipment and Systems .1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.
- .2 Refer to individual sections for definitive requirements.
- 1.16 Concealment of Pipes, Ducts, Tubing and Wiring .1 Conceal pipes, ducts, tubing and wiring in the floor, wall and ceiling construction of finished areas wherever possible. If any doubt arise as to the means of concealment, or the intention of the Contract Documents in this connection, request clarification from the Consultant before proceeding with the portion of the work in question.
- .2 Arrange to have mechanical and electrical work laid out well in advance of concrete placement or furring installation so that provisions may be made for proper concealment. All such work shall be tested, inspected and pipe covering applied where applicable before being concealed.
- .3 Co-ordinate the work of all trades, hold coordination meetings where required and provide interference drawings for services to ensure adequate space is provided for the installation, maintenance and servicing of all materials.

PART 3 - EXECUTION
End of Section

PART 1 - GENERAL

- 1.1 Section Includes .1 Temporary utilities.
- 1.2 Related Sections .1 Section 01000 – General Instructions.
.2 Section 01330 - Submittal Procedures.
.3 Section 01420 - References.
.4 Section 01700 – Contract Closeout.
- 1.3 Installation and Removal .1 Provide temporary utilities and controls in order to execute work expeditiously.
.2 Remove from site all such work after use.
- 1.4 Water Supply .1 Contractor to provide continuous supply of potable water for construction use.
.2 Arrange for connection with Utility suppliers.
.3 Contractor to pay for utility charges at prevailing rates.
- 1.5 Temporary Heating and Ventilation (If and As Required) .1 Provide temporary ventilation or heating required during construction period, including attendance, maintenance and fuel.
.1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
.2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
.3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
.4 Ventilate storage spaces containing hazardous or volatile materials.
.5 Ventilate temporary sanitary facilities.
.6 Continue operation of ventilation and exhaust system for a time after cessation of work process to assure removal of harmful contaminants.
.2 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
.1 Conform with applicable codes and standards.
.2 Enforce safe practices.
.3 Prevent abuse of services.
.4 Prevent damage to finishes.
.5 Vent direct-fired combustion units to outside.
.3 *Be responsible for damage to Work due to failure in providing, or damage caused by construction, for adequate heat and protection during construction.*
.4 Ventilate heated areas and keep building free of exhaust or combustion gases.

- .5 Use of new or existing systems for temporary heating, ventilating or air conditioning will not be permitted.
- 1.6 Temporary Power and Light
- .1 Contractor to provide and maintain temporary power during construction for temporary lighting and operating of power tools inside of the building using existing supply.
- .3 Provide and maintain temporary lighting throughout project.
- .4 Connect to power supply in accordance with Canadian Electrical Code and provide meters and switching
- .5 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of Consultant provided that guarantees are not affected. Make good damage to electrical system caused by use under this Contract. Replace lamps which have been used for more than 3 months.
- 1.7 Temporary Sanitary Facilities
- .1 The building owner **MAY** designate sanitary facilities for work force on site. Co-ordinate with the Owner. During Summer work, Contractor to provide temporary sanitary facilities for the duration of work, or throughout the normal school year if work must extend past the scheduled completion date.. Co-ordinate with owner locations and conditions and keep facilities clean and neat.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.
- .3 If part of this contract, when permanent water and drain connections are completed, provide temporary water closets and urinals complete with temporary enclosures, inside building. Permanent facilities may be used on approval of Owner AND Consultant.
- 1.8 Temporary Offices
- .1 Provide and maintain in clean condition during progress of Work, adequately lighted, heated, ventilated and weatherproof temporary office. Office shall be of sufficient size to accommodate site meetings and be furnished with a drawing layout table and telephone.
- .2 Install in approved location for use by Contractor and Consultant.
- .3 Provide adequate required First Aid facilities and supplies immediately accessible on site.
- 1.9 Temporary Communication Facilities
- .1 Provide and pay for temporary telephone and internet access, lines and equipment necessary for own use and use of Consultant.
- 1.10 Fire Protection
- .1 Provide and maintain temporary fire protection equipment

during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.

- .2 Burning rubbish and construction waste materials is not permitted on site.

1.11 Barriers

- .1 Provide barriers for protection of the public, and against contamination of occupied portions of the floor and tenant separations, including, but not limited to:

- .1 protection from falling/flying debris;
- .2 protection from dust, debris;
- .3 barriers for contamination control.
- .4 Material spills, such as roofing, paint finishes, etc.

- .2 Types of barriers:

.1 Generally, barriers indicated or otherwise required are classified as visual, semi-solid or solid. Erect the type specifically suited to the job conditions and/or as regulatory authorities or as specifically stated on the Drawings.

- .2 Weather Enclosures:

.1 Provide weathertight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.

.2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work area for temporary heat.

- .3 Dust Tight Screens for contamination control:

.1 Provide dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.

.2 Maintain and relocate protection until such work is complete.

.3 Assembly of these barriers to meet contamination control standards.

- .4 Visual barriers shall:

.1 present horizontal obstruction;

.2 be solid but easily movable;

.3 be continuous for length of protection required.

- .5 Semi-solid barriers shall:

.1 present physical obstruction;

.2 resist general day-to-day abuse;

.3 be of 'snow fence' characteristic or similar.

- .6 Solid barriers (shall be provided at all affected areas to separate construction areas and the occupied building) :

.1 resist heavy impact;

.2 be constructed of framing lumber and plywood to withstand expected forces;

.3 be provided with hinges access where necessary complete with locking devices;

.4 not allow transmission of dust.

- .3 Markings on barriers shall be provided by way of signs,

reflectors or flashing devices to indicate degree of hazard.

.4 Contamination Control:

The proposed renovation project occurs in locations which require adherence to contamination control standards. In all cases, the Contractor will be responsible for maintaining the highest level of control against the various forms of contamination which can potentially adversely affect the adjacent floor areas, the site, or the environment.

.1 The Contractor will protect against various forms of contamination. This list includes but is not limited to:

- .1 air born contaminants such as dust - other;
- .2 noise;
- .3 vibration.

.2 The Contractor will:

- .1 Erect dust barriers which meet specific standards for contamination control. These will be removed at end of the project.
- .2 Where possible, will adjust or manipulate the building's ventilation system in order to create negative pressures within the renovation zones. This may also be achieved by cross-ventilation - opening of existing operable windows, etc.
- .3 Daily cleanup of dust and potential contaminants.

1.12 Construction Aids

.1 Scaffolding

.1 When not provided as part of normal practice by sub trades, provide, erect, move and dismantle scaffolding necessary to complete the work.

.2 Scaffold must be rigid, secure and provided with necessary planking and barriers required by regulatory authorities.

.3 Protect non-finished and finished work equally from damage by the use of scaffolding and replace immediately and damaged work.

.2 Hoists and Cranes

.1 Employ hoists and cranes or other powered lifting equipment in strict accordance with safety requirements or regulatory authorities.

.2 Hoisting operations shall not create hazards or damage to existing conditions.

.3 Scheduling of major hoisting shall be performed to create the least on-site use of machinery as possible.

.4 Special consideration shall be given to use of large equipment which might impede operations and functions of existing building.

1.13 Signs

.1 Erection of signs is not permitted, other than for safety use.

.2 Construction safety signs may be posted to the requirements of regulatory authorities.

PART 3 - EXECUTION

End of Section

PART 1 - GENERAL1.1 Section Includes

- .1 Product quality, availability, storage, handling, protection, and transportation.
- .2 Manufacturer's instructions.
- .3 Quality of Work, coordination and fastenings.
- .4 Existing facilities.

1.2 Related Sections

- .1 Section 01420 - References.
- .2 Section 01450 - Quality Control.

1.3 Reference Standards

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2- 94, Stipulated Price Contract.
- .2 Within text of specifications, reference may be made to reference standards contained in Section 01420 - References.
- .3 Conform to these standards, in whole or in part as specifically requested in specifications.
- .4 If there is question as to whether any product or system is in conformance with applicable standards, Consultant reserves right to have such products or systems tested to prove or disprove conformance.
- .5 The cost for such testing will be born by Owner in event of conformance with Contract Documents or by Contractor in event of non-conformance.
- .6 Conform to latest date of issue of referenced standards in effect on date of submission of Tenders, except where specific date or issue is specifically noted.

1.4 Quality

- .1 Refer to CCDC 2 latest edition, GC 3.9

1.5 Availability

- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work. Similarly review for Canadian made status of all materials used in this project.
- .2 In event of failure to notify Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Consultant reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

- .3 Provide Shop Drawing Schedule within two weeks of contract signing, to ensure shop drawing submissions and review meet the construction schedule.
- 1.6 Storage, Handling and Protection .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials, lumber and the like on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged products at own expense and to satisfaction of Consultant.
- .9 Touch-up damaged factory finished surfaces to Consultant's satisfaction. Use touch-up materials to match original. Do not paint over name plates.
- .10 See specific requirements if noted in individual trade sections.
- 1.7 Transportation .1 Pay costs of transportation of products required in performance of Work.
- .2 Transportation cost of products supplied by Owner will be paid for by Owner. Unload, handle and store such products.
- 1.8 Manufacturer's Instructions .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant may establish course of action.

- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.
- 1.9 Quality of Work
- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Consultant reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Consultant, whose decision is final.
- 1.10 Coordination
- .1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.
- 1.11 Concealment
- .1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
- .2 Before installation, inform Consultant if there is interference. Install as directed by Consultant.
- 1.12 Remedial Work
- .1 Refer to CCDC 2, GC 3.13.
- 1.13 Location of Fixtures
- .1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
- .2 Inform Consultant of conflicting installation. Install as directed.
- 1.14 Fastenings
- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not

acceptable.

- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.15 Protection of Work in Progress

- .1 Adequately protect Work completed or in progress. Work damaged or defaced due to failure in providing such protection is to be removed and replaced, or repaired, as directed by Consultant , at no increase in Contract Price or Contract Time.
- .2 Prevent overloading of any part of building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated without written approval of Consultant.

1.17 Existing Utilities

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and/or building occupants, pedestrian and vehicular traffic.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

PART 2 - PRODUCTS

PART 3 - EXECUTION

End of Section

PART 1 - GENERAL

- 1.1 Section Includes
- .1 Progressive cleaning.
 - .2 Final cleaning.
 - .3 Closeout Procedures
 - .4 Closeout Submittals
 - .5 Commissioning
 - .6 Demonstration and Training
- 1.2 Related Sections
- .1 Section 01000 – General Instructions.
 - .2 Section 01780 – Closeout Submittals.
 - .3 Section 01800 – Systems Demonstration.
- 1.3 Reference Standards
- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2- latest edition, Stipulated Price Contract.
 - .2 OAA/OGCA Take-Over Procedures.
- 1.4 Project Cleanliness
- .1 Maintain Work in a clean and tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or their forces.
 - .2 Remove waste materials from site at regularly scheduled times. Do not burn waste materials on site.
 - .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
 - .4 Remove waste material and debris from site and deposit in waste container at the end of each work day..
 - .5 Clean interior areas prior to start of finish work, and maintain areas free of dust and other contaminants during finishing operations.
 - .6 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
 - .7 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.
 - .8 Clean all areas prior to Substantial Inspection.
- 1.5 Final Cleaning
- .1 As and if required by type of project.
 - .2 Remove waste products and debris other than that caused

by Owner or their workforce, and leave Work clean and suitable for occupancy.

- .3 Prior to final review, remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste products and debris other than that caused by Owner or other Contractors.
- .5 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .6 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors and ceilings.
- .7 Clean lighting reflectors, lenses, and other lighting surfaces.
- .8 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
- .9 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.
- .10 Clean equipment and fixtures to a sanitary condition; clean or replace filters of mechanical equipment.
- .11 Remove debris and surplus materials from grounds, roof, crawl areas and other accessible or concealed spaces.

1.6 Final Inspection and Declaration Procedures

- .1 Contract Closeout will be governed by the procedures as set out in the document titled "OAA/OGCA Take-Over Procedures".
- .2 Contractor's Inspection: The Contractor and all Subcontractors shall conduct an inspection of the Work, identify deficiencies and defects; repair as required. When complete, notify the Consultant in writing of satisfactory completion of the Contractor's Inspection and that corrections have been made. Request a Consultant's Inspection.
- .3 Consultant's Inspection: Consultants, Owner and the Contractor will perform an inspection of the Work to identify obvious defects or deficiencies. The Consultant will prepare the Deficiency List. The contractor shall correct Work accordingly.
- .4 Final Inspection: When the items noted above are complete, notify the Consultant in writing of satisfactory completion of the Deficiency List, then request a final inspection of the Work. The Consultant will review the project and if Work is still outstanding, the Contractor shall bear the cost of re-inspection.

- .5 Declaration of Substantial Performance: when Owner and Consultant consider deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for certificate of Substantial Performance. Refer to CCDC 2, General Conditions Article GC 5.4, Substantial Performance of Work. Note that Substantial Completion will not be granted if there are any outstanding fire safety or Code issues, nor if the Maintenance Manuals are not complete and handed over to the consultant.
- .6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance shall be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work. Warranty is extended one year after the discovery and rectification for any deficiencies, found after Completion and during the established warranty period.
- .7 Payment of Holdback at Substantial Completion: After issuance of certificate of Substantial Performance of Work, submit an application for payment of holdback amount in accordance with CCDC 2, General Conditions Article 5.4.
- .8 Final Payment: When Owner and Consultant consider final deficiencies and defects have been corrected and it appears requirements of Contract have been totally performed, make application for final payment. Refer to CCDC 2, General Conditions Article GC 5.5 for specifics to application. If Work is deemed incomplete by Consultant, complete outstanding items and request re-inspection. A holdback will be applied to all progress statements following Substantial Performance.
- .9 Payment of Holdback on Final Payment: After issuance of final payment certificate, submit an application for payment of holdback amount in accordance with OAA/OGCA Take-Over Procedures.

End of Section

PART 1 - GENERAL1.1 Section Includes

- .1 As-built, samples, and specifications.
- .2 Equipment and systems.
- .3 Product data, materials and finishes, and related information.
- .4 Operation and maintenance data.
- .5 Spare parts, special tools and maintenance materials.
- .6 Warranties and bonds.
- .7 Commission Reports-Balancing Reports, Cabling/Network Reports, Fire Alarm Reports.
- .8 As built documentation.

1.2 Related Sections

- .1 Section 01330 - Submittal Procedures.
- .2 Section 01450 - Quality Control.
- .3 Section 01700 - Contract Closeout.
- .4 Section 01800 - Systems Demonstration.
- .5 Division 15000 - Mechanical.
- .6 Division 16000 - Electrical.

1.3 Submission

- .1 Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- .2 Copy will be returned with Consultant's comments.
- .3 Revise content of documents as required prior to final submittal.
- .4 Two weeks prior to Substantial Performance of the Work, submit to the Consultant, copies of operating and maintenance manuals in English.
- .5 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
- .6 If requested, furnish evidence as to type, source and quality of products provided.
- .7 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .8 Pay all costs of transportation.

1.4 Format

- .1 Organize data in the form of an instructional manual. **Provide in this format for both hard copy and digital formats.**
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets. Electronic Format: Organize in folders similar to hard copy version.
- .3 When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.
- .4 Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content by systems, process flow, under Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: Manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.5 Contents – Each Volume

- .1 Table of Contents: provide title of project;
 - .1 date of submission; names,
 - .2 addresses, and telephone numbers of Consultant and Contractor with name of responsible parties;
 - .3 schedule of products and systems, indexed to content of volume.
- .2 For each product or system:
 - .1 list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01450 - Quality Control .

- .6 Training: Refer to Section 01820 - Demonstration and Training.
- 1.7 Recording Actual Site Conditions
- .1 As-Built Record information on set of opaque drawings, provided by Contractor.
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
- .1 Measured depths of elements of foundation in relation to finish first floor datum.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on original Contract Drawings.
 - .7 References to related shop drawings and modifications.
- .5 Specifications: legibly mark each item to record actual construction, including:
- .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
- .6 Other Documents: maintain inspection certifications, field test records, required by individual specifications sections.
- 1.8 Equipment and Systems
- .1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
- .3 Include installed colour coded wiring diagrams.
- .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency

instructions. Include summer, winter, and any special operating instructions.

- .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .6 Provide servicing and lubrication schedule, and list of lubricants required.
- .7 Include manufacturer's printed operation and maintenance instructions.
- .8 Include sequence of operation by controls manufacturer.
- .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .10 Provide installed control diagrams by controls manufacturer.
- .11 Provide Contractor's coordination drawings, with installed colour coded piping diagrams.
- .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- .13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .14 Include test and balancing reports as specified in Section 01450 - Quality Control.
- .15 Additional requirements: As specified in individual specification sections.

1.9 Materials and Finishes

- .1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional Requirements: as specified in individual specifications sections.

1.10 Spare Parts

- .1 Provide spare parts, in quantities specified in individual specification sections.

- .2 Provide items of same manufacture and quality as items in Work.
- .3 Deliver to site ; place and store.
- .4 Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.

1.11 Maintenance Materials

- .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
- .2 Provide items of same manufacture and quality as items in Work.
- .3 Deliver to site; place and store.
- .4 Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.

1.12 Special Tools

- .1 Provide special tools, in quantities specified in individual specification section.
- .2 Provide items with tags identifying their associated function and equipment.
- .3 Deliver to site; place and store.
- .4 Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.

1.13 Storage, Handling and Protection

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.
- .5 Remove and replace damaged products at own expense

and to satisfaction of Consultant.

.6 See Division Sections for other specific trade requirements.

1.14 Warranties and Bonds

.1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.

.2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

.3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work.

.4 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.

.5 Verify that documents are in proper form, contain full information, and are notarized.

.6 Co-execute submittals when required.

.7 Retain warranties and bonds until time specified for submittal.

PART 2 - PRODUCTS

PART 3 - EXECUTION

End of Section

PART 1 - GENERAL

- 1.1 Section Includes** .1 Includes general requirements for commissioning facilities and facility systems.
- 1.2 Related Sections** .1 Section 01700 – Project Closeout
.2 Section 01450 – Quality Control
- 1.3 Quality Assurance** .1 When specified in individual Sections, provide manufacturers authorised representative to demonstrate operation of equipment and systems, provide inspections, etc. Instruct Owner's designated personnel, and provide written instructions on operation of unit. Provide report, countersigned by Owner, that demonstration and instructions have been complete.
- 1.4 Submittals** .1 Submit schedule of time and date for demonstration of each item of equipment and each system two (2) weeks prior to designated dates, for Owner's approval.
.2 Submit reports within one week after completion of demonstration, and prior to application for final payment. Note the time and date of demonstration and personnel present.
.3 Submit reports of testing, adjusting, and balancing postponed due to seasonal, climatic, occupancy, or other reasons beyond Contractor's control, promptly after execution of those services.
- 1.5 Conditions for Demonstrations** .1 Equipment has been inspected and put into operation in accordance with requirements of individual sections.
.2 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.
- 1.6 Preparation** .1 Verify that demonstration and instructions comply with requirements and that designated personnel are present.
- 1.7 Demonstration and Instructions** .1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment at agreed upon times, at the equipment location.
.2 Instruct personnel in all phases of operation and maintenance using operation and maintenance manuals as the basis of instruction.
.3 Review contents of manual in detail to explain all aspects of operation and maintenance.
.4 Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instructions.

End of Section

PART 1 - GENERAL1.1 Related Work

- .1 Restrictions on noise, dust interference, obstructions, access, hours of work: Section 01005 – General Instructions.

1.2 Description

- .1 Execute all demolition, removals and alterations to existing building and structure as required, to construct new work as shown. Temporarily disconnect, cap off and relocate and reconnect existing services as indicated on drawings and/or specified, or required.
2. Make good existing site and services affected by demolitions, removals and alterations.
3. Consult all Drawings to determine extent of work required. The Contractor shall satisfy themselves with regards to all conditions affecting the work. **The Consultants do not guarantee accuracy, or requirements of existing services and locations. Contractor to confirm accuracy from their own on-site examination.**
4. Provide all temporary shoring and bracing required to protect existing structure during demolition removals and alterations.

1.3 Co-ordination

- .1 **Mechanical**
- .1 **ALL WORK TO BE DONE BY TRADE SPECIFIC PERSONNEL. All work to be in conformance to all applicable governing agencies.**
- .2 Disconnect, remove, cap off and/or relocate existing lines interfering with work. Reinstall all equipment affected and as required.
- .3 Ensure the reinstallation interconnects with existing systems.
- .4 Do all cutting, patching and making good of existing required around and adjacent mechanical work.
- .2 **Electrical**
- .1 **ALL WORK TO BE DONE BY TRADE SPECIFIC PERSONNEL. All work to be in conformance to all applicable governing agencies.**
- .2 Disconnect, remove, cap off and/or relocate existing lines interfering with work. Disconnect, remove and/or relocate existing wiring, fixtures, devices interfering with work. Reinstall all equipment affected and as required.
- .2 Ensure the reinstallation interconnects with existing systems
- .3 Do all cutting, patching, and making good of existing as required to adjacent electrical work.

1.4 Asbestos Abatement

- .1 If any asbestos is found, the Contractor will verify with the Owner to determine asbestos content, location and type and

comply with all Occupational Health and safety Act and Regulation 654/54 "Regulation respecting asbestos on construction projects and on buildings and repair operations".

- .3 Any removals, installations, etc., to be in conformance to all applicable governing agencies.
- .4 The Consultants do not have personnel certified in the supervision of safe asbestos removal and are, therefore, unable to provide advice and/or additional assistance in this matter.
- .5 If found, the demolition of spray or trowel-applied asbestos can be hazardous to health. Provide the services of a qualified subcontractor to direct all work involving material containing asbestos. Should material resembling spray or trowel-applied asbestos be encountered in the course of demolition work, stop work and notify the Consultant immediately.
- .6 Comply with Ontario Ministry of Labour Regulation 654/85, Section 7, if friable materials are discovered during the course of the work.
- .7 Carry out all work and dispose of all asbestos waste in accordance with the requirements of authorities having jurisdiction.

PART 2 - PRODUCTS

- .1 Not applicable.

PART 3 - EXECUTION

3.1 Work

- .1 All demolition, removal and alteration work shall be carried out in a manner resulting in a minimum amount of disruption and nuisance to the public and ongoing school activities. Also note there are security measures in place. No line of security can be breeched. Co-ordinate all work with owners and phase work as required.
- .2 During demolition, removals, alterations:
 - .1 Keep dust nuisance to a minimum by use of dust palliatives, temporary dust partitions, tarpaulins, and the like. Promptly remove dirt, dust, and debris.
 - .2 Protect existing out buildings and site against damage from the elements and against unauthorized entry. Erect all necessary hoarding, closures, temporary partitions, and the like required to protect the building and the public.
- .3 Work shall be carried out in such a manner as to prevent interruption of vital services to the surrounding area, including:
 - .1 light and power

- .2 water and sewer services
- .3 fire fighting facilities
- .4 communication systems
- .5 security

When temporary disruption is unavoidable, such interruption shall be kept to a minimum duration and carefully scheduled IN ADVANCE and in consultation with Owner.

- .4 Dispose of demolished materials, except where noted otherwise, and in accordance with authorities having jurisdiction.
- .5 Carry out demolition and removal to prevent undue damage to existing adjacent structure and finishes which are to remain. Remove masonry walls carefully in small sections.
- .6 Install all shoring and temporary bracing required to protect existing structure during removals and alterations, until permanent supports, lintels, and the like are in place.
- .7 Immediately remove debris, surplus materials, and the like resulting from this work. Remove and clean regularly from building and site. Do not dispose of debris on Owner's or adjacent properties.
- .8 Carry out all operations so as to prevent dust entering existing air intakes, using dampening abatement measures and protection.
- .9 Location of chutes, rubbish containers, hoisting equipment and the like shall be subject to approval by Owner and such that they not unduly impede pedestrian or vehicular traffic and will not obstruct entrances and exits. Refer also to Section 01005, General Instructions.

3.2 Safety Code

- .1 Unless otherwise specified, carry out demolition work in accordance with Section 01545, Safety Requirements and Section 01546, Fire Safety Requirements.

3.3 Preparation

- .1 Disconnect electrical and telephone service lines entering portion of existing building to be demolished in accordance with rules and regulations of authorities having jurisdiction. Post warning signs on electrical lines and equipment which must remain energized to serve other properties during period of demolition.
- .2 Disconnect and cap designated mechanical services in accordance with requirements of local authority having jurisdiction. This could contain and is not limited to the following;
 - .1 Gas supply lines to be removed by gas company or

by qualified tradesman in accordance with gas company instructions.

.2 Remove waste and water lines as indicated and cap to prevent leakage.

.3 Remove and cap or dispose of other services as indicated.

.3 Do not disrupt active or energized utilities traversing premises or designated to remain undisturbed.

3.4 Demolition

.1 Demolish partial structures as indicated.

.2 Demolish parts of building to permit construction of new roofing and remedial work as indicated, or required.

.3 Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as work progresses.

.4 At end of each day's work, leave work in safe condition so that no part is in danger of toppling or falling. Protect interiors of parts not to be demolished from exterior elements at all times.

.5 If specified, demolish masonry and concrete walls in small sections. Carefully remove and lower structural framing and other heavy or large objects.

.6 Do not sell or burn materials on site.

.7 Remove contaminated or dangerous materials from site and dispose of in safe manner to minimize danger at site or during disposal.

End of Section

PART 1 - GENERAL

1.1 SECTION INCLUDES

- .1 Blocking in wall and window openings.
- .2 Preservative treatment of wood.

1.2 RELATED SECTIONS

- .1 Section 03300: Concrete openings to receive wood blocking.
- .2 Section 04050: Masonry openings to receive wood blocking.

1.3 REFERENCES

- .1 ALSC (American Lumber Standards Committee) - Softwood Lumber Standards.
- .2 ANSI A208.1 - Mat-Formed Wood Particleboard.
- .3 APA (American Plywood Association) Product Guide - Grades and Specifications.
- .4 AWPA (American Wood Preservers Association) C1 - All Timber Products Pressure Treatment.
- .5 AWPA (American Wood Preservers Association) C20 - Structural Lumber Fire Retardant Pressure Treatment.
- .6 NFPA (National Forest Products Association) - Grading Rules.
- .7 RIS (Redwood Inspection Service): Standard Specifications for Grades of California Redwood Lumber.
- .8 SPIB (Southern Pine Inspection Bureau) - Grading Rules.
- .9 WCLIB (West Coast Lumber Inspection Bureau) - Grading Rules.
- .10 WWPA (Western Wood Products Association) - Grading Rules.

1.4 SUBMITTALS FOR REVIEW

- .1 Section 01330: Submission procedures.
- .2 Product Data: Provide technical data on wood preservative materials.

1.5 SUBMITTALS FOR INFORMATION

- .1 Section 01330: Submission procedures.

- .2 Product Data: Provide application instructions.

1.6 QUALITY ASSURANCE

- .1 Perform Work in accordance with the following agencies:
 - .1 Lumber Grading Agency: Certified by ALSC.
 - .2 Plywood Grading Agency: Certified by APA.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Lumber Grading Rules: NLGA.
- .2 Miscellaneous Framing: Stress Group D 545, SPF species, 19 percent maximum moisture content, pressure preservative treat where noted.
- .3 Plywood: APA Structural I, Grade C-D; Exposure Durability unsanded.
- .4 Particleboard: Oriented Strand Board; wood chip set with waterproof resin binder; unsanded faces.

2.2 ACCESSORIES

- .1 Fasteners and Anchors:
 - .1 Fasteners: Hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
 - .2 Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorages to steel.

2.3 FACTORY WOOD TREATMENT

- .1 Wood Preservative (Pressure Treatment): AWWA Treatment C1 using waterborne preservative with 0.25 percent retainage.
- .2 Wood Preservative (Surface Application):

PART 3 - EXECUTION

3.1 FRAMING

- .1 Set members level and plumb, in correct position.
- .2 Place horizontal members, crown side up.
- .3 Construct curb members of single pieces.

- .4 Space framing and furring 16 inches on centre.

3.2 SHEATHING

- .1 Secure sheathing to framing members with ends over firm bearing and staggered.
- .2 Install telephone, data and electrical panel back boards with plywood sheathing material where required. Size the back board by 12 inches beyond size of electrical panel.

3.3 SITE APPLIED WOOD TREATMENT

- .1 Apply preservative treatment in accordance with manufacturer's instructions.
- .2 Brush apply one coat of preservative treatment on wood in contact with cementitious materials. Treat site-sawn cuts.
- .3 Allow preservative to dry prior to erecting members.

3.4 SCHEDULES

- .1 Telephone and Electrical Panel Boards: 3/4 inch thick, square edges, site brush applied preservative treated.

END OF SECTION

PART 1 – GENERAL

- 1.1 Related Work .1 Insulation - Section 07200
- 1.2 Quality Assurance .1 Foam-in-place insulation shall be installed by a firm having experience in the application of the specified material.
- 1.3 Regulatory Requirements .1 Conform to the Ontario Building Code and Ontario Occupational Health & Safety Act.
- 1.4 Protection .1 Protect during installation existing surfaces and equipment from contamination and damage due to work under this Section.
- 1.5 Project/Site Conditions .1 Maintain substrate and ambient temperature of 15 deg. C. during application of the foam-in-place insulation.
- .2 If necessary for job progress, provide heated enclosures to maintain temperatures.
- .3 Provide adequate ventilation during application.
- 1.6 Compatibility .1 Ensure materials used are compatible with air-vapour barriers, sheet vapour barriers and adjacent materials.

PART 2 – PRODUCTS

- 2.1 Materials .1 Product: 2 components foam-in-place polyurethane. Closed cell two (2) component liquid system dispensed from pressurized cylinders; minimum density of (1.75 lb. cu. ft.) and RSI or thickness value as indicated on Drawings. Material shall conform to CGSB 51-GP-23M.
- .2 Acceptable Distributors:
- .1 Can-Am Air Leakage Control Systems Corp., Toronto, ON
- .2 Ener-Gard, Oakville, ON;
- .3 Chem-Thane Engineering Limited, Concord, ON;
- .4 Alternate approved by Architect.

PART 3 – EXECUTION

- 3.1 Installation .1 Inject foam-in-place insulation in accordance with manufacturer's printed instructions and as specified and detailed.
- .2 Inject foamed-in-place insulation at locations requiring insulation packing where used of other insulation material is impractical.
- .3 Inject foam insulation from pressurized cylinders following the manufacturer's instructions and using pressure hoses and nozzles supplied by manufacturer.
- .4 Carry out spray applications only when ambient air temperature is within range of 15 deg. C to 25 deg. C or as required by manufacturer.

- .5 If used, **ALL spray foam applications to be covered by a minimum of 1/2" gypsum board, or other fire retardant over spray, to suit conditions, application and fire resistance. To meet OFC, OBC and NBC requirements.**

3.2 Clean-Up

- .1 Upon completion of work of this Section clean-up surplus materials and debris attributable to this Section to satisfaction of Architect.
- .2 Make good materials damaged by spray and cleaning procedures.

End of Section

PART 1 - GENERAL

1.1 Related Work

- .1 Selective Demolition: Section 024119
- .2 Metal flashing: Section 0762 Metal Flashing and Trim .
- .3 Prefabricated roof expansion joints: Section 07712
- .4 Caulking: Section 07900 Joint Sealers
- .5 Roof drains: Section 15401 Plumbing Specialties and Accessories

1.2 References

- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM C 36- [95b] , Specification for Gypsum Wallboard.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-37.5- [M89] , Cutback Asphalt Plastic Cement.
 - .2 CGSB 37-GP-9Ma- [83] , Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing.
 - .3 CGSB 37-GP-15M- [76] , Application of Asphalt Primer for Asphalt Roofing, Dampproofing and Waterproofing.
 - .4 CGSB 37-GP-19M- [76] , Cement, Plastic, Cutback Tar.
 - .5 CAN/CGSB-37.29- [M89] , Rubber-Asphalt Sealing Compound.
 - .6 CGSB 37-GP-56M- [80] , Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing.
 - .7 CAN/CGSB-51.20- [M87] , Thermal Insulation, Polystyrene, Boards and Pipe Covering.
 - .8 CAN/CGSB-51.26- [M86] , Thermal Insulation, Urethane and Isocyanurate, Boards, Faced.
 - .9 CAN/CGSB-51.31- [M84] , Thermal Insulation, Mineral Fibre Board for Above Roof Decks.

.10 CAN/CGSB-51.33- [M89] , Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction.

.11 CAN/CGSB-51.34- [M86] , Vapour Barrier, Polyethylene Sheet for Use in Building Construction.

.12 CAN/CGSB 51.38- [92] , Cellular Glass Thermal Insulation.

.3 Canadian Standards Association (CSA)

.1 CSA A123.3- [M19 92] , Asphalt or Tar Saturated Roofing Felt.

.2 CSA A123.4- [M19 92] , Bitumen for Use in Construction of Built-Up Roof Coverings and Dampproofing and Waterproofing Systems.

.3 CSA A231.1- [1972] , Precast Concrete Paving Slabs.

.4 CAN/CSA-A247- [M86] , Insulating Fibreboard.

.5 CSA A284- [1976] Mineral Aggregate Thermal Roof Insulation.

.6 CSA O121- [M1978] , Douglas Fir Plywood.

.7 CSA O151- [M1978] , Canadian Softwood Plywood.

1.3 Shop Drawings

.1 Submit shop drawings in accordance with Section 01330.

.2 Indicate flashings, control joints, tapered insulation details.

.3 Provide layout for tapered insulation.

.4 Submit data sheets/shop drawings identifying wind uplift ratings for field of roof, perimeter of roof and corners at location where roofing materials will be installed. Identify fastening patterns for roof insulation, including required perimeter and corner enhancements and types and sizes of fasteners.

1.4 Storage and Handling

.1 Deliver, store and handle materials in accordance with manufacturers' instructions

.2 Deliver materials in sufficient quantity to allow continuity of work. Coordinate deliveries with Owner.

- .3 Provide and maintain dry, off-ground weatherproof storage
- .4 Store rolls of felt and membrane in upright position. Store membrane rolls with selvage edge up.
- .5 Remove only in quantities required for same day use.
- .6 Place plywood runways over work to enable movement of material and other traffic.
- .7 Store sealants at +5C minimum. Store all other materials in areas where temperatures will remain above +5C.
- .8 Store insulation protected from daylight and weather and deleterious materials. Protect roofing materials from inclement weather and traffic. Keep roof board, vapour retarder, roof insulation, tapered insulation/crickets, protection board and roofing plies absolutely dry and remove only as much from storage as can be applied and flood coated on same day. Reject damaged materials including those showing signs of having been damp or exposed to moisture.
- .9 Confine stored material to areas directed by Owner.
- .10 Store roofing plies for at least 24 hours in a well ventilated area kept at 20C and remove for application with as little exposure to cold as possible.
- .11 Do not stockpile gravel on roof structure. Bring to roof only as required for spreading as work proceeds.
- .12 Handle materials to avoid bending, tearing or other damage during deliver, storage and installation.
- .13 Material handling equipment shall be selected and operated so as not to damage Site, building or applied roofing. Do not operate or situate material handling equipment in locations that will hinder smooth flow of vehicular or pedestrian traffic
- .14 Contractor shall assume full responsibility for the protection and safekeeping of products stored on Site.

1.5 Testing_____

- .1 During course of work, the Consultant may secure samples according to ASTM D140- 01 of materials being used from containers at job site and submit them to an independent laboratory for comparison to specified material.
- .2 During course of work and/or before covering up membrane the Consultant may secure samples of roof membrane according to ASTM D3617 for testing by independent laboratory. Repair test cut areas immediately matching existing materials. Repair of these areas shall be at no additional cost to Owner.
- .3 Should test results prove that a material is not equal to specified material:
 - .a Contractor shall pay for all testing.
 - .b Roofing installed and found not to comply with the Specifications shall be removed and replaced at no cost to Owner.

1.6 Site Conditions

- .1 Contractor shall be responsible for accuracy of all measurements, estimates of material quantities and sizes, and Site conditions that will affect Work. Finished work to suit conditions, layout and intent of drawings and existing conditions.

1.7 Environmental Requirements

- .1 Do not install roofing when temperature remains below -18C for torch application, or [-10C] [to manufacturers' recommendations] for mop application.
- .2 Minimum temperature for solvent-based adhesive is -5C.
- .3 Install roofing on dry deck, free of snow and ice, use only dry materials and apply only during weather that will not introduce moisture into roofing system.
- .4 Remove any unfinished Work exposed to freezing

1.6 Protection

Refer to WHMIS requirements specified in Section 01545 - Safety

Requirements and specify additional requirements here.

- .1 Maintain a safety person as a floor area guard whenever roof decking is being repaired or replaced.
- .2 Fire Extinguishers: maintain one [cartridge operated type] [or] [stored pressure rechargeable type] with [hose and] shut-off nozzle, ULC labeled for A, B and C class protection. Size: 4.5 kg [or as indicated] on roof per torch applicator, within 10 m of torch applicator, plus one at the roof level of any access ladder.
- .3 Maintain fire watch for 1 hour after each day's roofing operations cease.
- .4 Advise Owner when volatile materials are to be used near air intakes so that they can be shut down or blocked as Owner requires.
- .5 Locate kettles so that smoke will not discolour building finishes or enter air intakes.
- .6 Protect surrounding surfaces against damage from roofing work. Keep finished surfaces clean and free from bitumen.
- .7 Apply tarpaulins to the building where material hoisting occurs and where kettle pipes run to roof.
- .8 Lay wood planks or minimum 3/8" (9 mm) thick plywood sheathing on existing or just-applied roofing membranes where Work must continue over finished areas.
- .9 Protect existing and completed portions of roof membrane from damage
- .10 Uncompleted roofing at day's end shall be protected with temporary water stops.

1.7 Design

- .1 Roof assemblies shall comply with the following requirements:
- .2 Ontario Building Code, Clause 3.1.15.2, Sentence (1), roof

covering having a Class A, B or C classification as determined in accordance CAN/ULC-S107.

.3 Ontario Building Code, Clause 5.2.2.2., wind uplift as determined in accordance with Sentences (4) or (5).

.4 Modify roofing details to suit found conditions on site. All work to be acceptable and warranted by the roofing materials manufacturer.
For major discrepancies contact Architect for clarification.

1.7 Warranty and Quality Assurance

.1 Perform built up roofing in accordance with CAN/CGSB-37.51-M and the latest edition of the Canadian Roofing Contractors' Association (CRCA) Specification Manual.

.2 Roofing Contractor shall be approved by roofing materials manufacturer.

.3 Work of this Section shall be performed by a qualified company, having a minimum ten (10) years proven Canadian experience in the successful installation of Work of type and quality shown on Drawings and specified herein.

.4 Work shall be performed by skilled personnel with proper equipment in a expeditious, efficient and workmanlike manner.

.5 Upon request, submit proof of experience.

.6 Roofing to be a 'system' utilizing approved materials by a single BUR manufacturer. Manufacturer's technical services representative shall be present at Site on day membrane installation commences and periodically thereafter if required, to ensure Work is properly performed. The Contractor shall be responsible for providing the membrane manufacturer's technical services representative with sufficient notice as to when the roofing membrane installation will commence and periodically thereafter as work progresses.

.7 Upon completion of Work of this Section, manufacturer's technical services representative shall inspect roof and verify Work is weather-tight and confirm manufacturer's guarantee

will be issued. The membrane manufacturer's technical services representative shall inform the Consultant and Contractor promptly in writing when the inspection is complete and provide a detailed report, describing any problems or deficiencies which require correction.

- .8 The presence and activity of the manufacturer's representative shall in no way relieve the Contractor of their contractual responsibilities or duties.
- .9 Provide roof membrane manufacturer's warranty naming Owner as beneficiary covering defects and deficiencies and weather tightness of membrane and flashings for period of ten (10) years from date Work is certified as substantially performed. Guarantee shall cover labour and materials and include repair or replacement at manufacturer's expense, to extent required, of all Work of this Section in event of leaks or other failure if such failure results from defects and deficiencies of membrane and/or flashings.
- .10 Provide Contractor's warranty in the Owner's name covering defects and deficiencies in workmanship and that roof will provide moisture-proof service for a period of two (2) years from date Work is certified as substantially performed. In the event that Work related to the installation of the roofing system is found to be defective or in non-conformance with the Contract Documents, the roofing sub-contractor shall remove and replace the defective or non-complying components at no cost to the Owner.

1.8 Systems and Alternates

- .1 Roofing system specified herein is generic and as detailed on drawings. Built-up Roofing System to be provided as a full system, complete with the Manufacturer's proprietary materials and details. The system should be a "Product of Canada", free of any potential tariffs or other controls. The materials and installation procedures set forth shall establish a standard quality by performance requirements and general description of product. The Consultant will consider that all proposed systems meet or exceed the requirements and standards set forth in this Section, and from manufacturers without potential tariffs or other restrictions. Contractor to provide evidence that proposed system is compatible with the existing roof types adjacent, or removed. The

Consultant reserves the right to reject any material which in their opinion, will not produce the quality of Work specified herein.

2.0 Products

.2 Submit alternates in accordance with the procedures set forth in the Instructions to Bidders.

.1 Wood Framing and Blocking

.a All materials shall be straight, new, dry and clean in longest lengths possible and shall be properly sized and shaped to the correct dimensions from nominal sizes to suit actual conditions.

.b Lumber: CSA O141, softwood S4S, No. 2 grade and better Spruce-Pine-Fir unless noted otherwise, S-dry, kiln-dried, with moisture content not greater than 19% at time of installation and conforming to NLGA Standard Grading Rules for Canadian Lumber. All lumber used to be pressure treated or similar, for wet condition use.

.c Wood Blocking and Nailers: No. 2 grade and better Spruce-Pine-Fir.

.d Wood Blocking and Nailers: No. 2 grade and better Spruce-Pine-Fir veneer.

e. Fasteners for Wood-framed Parapets and Wood Blocking/Nailers forming Part of Roof Assemblies: FM 1-49, corrosion resistant, of first class quality; length, strength, type, size, quantity and spacing based on member size and substrate to be fastened to.

f. For Securement to Concrete Masonry Units: 1/2" (12.7 mm) diameter anchor bolts, minimum embedment: 5" (127 mm), maximum Zone 2 spacing: 4'-0" (1220 mm), maximum Zone 3 spacing: 2'-0" (610 mm).

g. For Securement to Steel Deck: any FM approved fasteners, provide two (2) staggered rows with maximum spacing of 2'-0" (610 mm), of sufficient length for fasteners to protrude 3/4" (19 mm) below deck.

h. For securement of Upper Wood Nailers to Lower Wood

Nailers: minimum 10d common nails or #8 screws in two (2) staggered rows, maximum Zone 2 spacing: 2'-0" (610 mm), maximum Zone 3 spacing: 1'-0" (305 mm), of sufficient length to penetrate 1-1/2" (38 mm) into lower wood nailer.

.i For securement of Upper Wood Nailers to Lower Wood Nailers: minimum 10d common nails or #8 screws in two (2) staggered rows, maximum Zone 2 spacing: 2'-0" (610 mm), maximum Zone 3 spacing: 1'-0" (305 mm), of sufficient length to penetrate 1-1/2" (38 mm) into lower wood nailer.

.j Rigid Insulation: CAN/ULC-S701, Type 4, rigid, closed cell POLYISOCYANURATE, compressive strength MINIMUM 30 psi (207 kPa), water absorption: 0.3% by volume, MINIMUM R value: 5.0 per 1" (25mm), thicknesses as shown/noted on Drawings., or equivalent. Preference to Canadian sourced manufacturers. As equal, can only be reviewed if presented a minimum of 48 hours before final Addenda issued.

Tapered Insulation/Crickets: CAN/ULC-S704, Type 2, closed cell polyisocyanurate foam integrally bonded to glass fibre reinforced organic facers, compressive strength: 20 psi (140 kPa), 4'-0" x 4'-0" (1220 x 1220 mm), minimum long-term thermal resistance (LTTR): 5.7 (RSI 1.00) per 1" (25 mm) thickness, factory controlled taper cut to provide uniform minimum slopes noted on Drawings; factory mitred valley corners. Soprema Inc., Sopra-Iso Tapered, or equivalent, as sourced from Canadian headquarters.

Protection Board: ASTM C1278, fibre-reinforced, uniform composition, water-resistant, moisture and mould resistant, in longest lengths possible to minimize end joints, thickness 5/8" minimum, or as noted on Drawings.

Fibre Cants: CAN/CSA A247-M, 3" x 3" (76 x 76 mm) cut to 45 angle or to suit site conditions. Posi-Slope Enterprises Inc., Cant Stripping, or equivalent.

k. Mineral Fibre Insulation: (Not to be used for roofing, only where shown on dwgs or within roof penetration cavities) CAN/ULC-S702, Type 1, lightweight, thermal, semi-rigid mineral wool, noncombustible, fire-resistant, flame spread index: 0, smoke developed index: 0, density: >2 lbs/ft3 (>32 kg/m3), thickness(es) as shown/noted on Drawings. Rockwool (Milton Ontario), ComfortBatt Thermal Batt Insulation, or equivalent.

.l Roof Drains: 15" (381 mm) diameter, Coated cast iron body with cast iron dome; flanges, clamps, plates, extensions, etc. to suit site conditions.

.m Roof Board: ASTM C1177/C1177M, fibreglass mat facing mechanically bonded to high density gypsum fire resistant core, moisture-resistant, 48" (1220 mm) wide sheets of maximum practical lengths to minimize end joints, thickness as noted on Drawings.

.n Low Rise Foam Insulation Adhesive: fast-setting, solvent free, elastomeric urethane.

.m Mechanical Plates and Fasteners: Factory Mutual approved, galvalume coated steel plates; heat treated carbon steel fasteners with corrosion-resistant coating.

.n Vapour Retarder Primer: as recommended by vapour retarder manufacturer. Vapour Retarder: ASTM D1970, self-adhering, SBS rubberized asphalt laminated to cross laminated polyethylene film 40 mils (1.0 mm) thick.

.o Asphalt: CSA A123.4-M, oxidized bitumen, Type III.

.p Base Ply: ASTM D4601, Type II, tri-laminate reinforced polyester/glass scrim/glass mat sheet coated with SBS modified waterproofing asphalt, 60 mils (1.50 mm) thick.

Top Plies: ASTM D2178 Type IV, heavy-duty, non-rotting, glass ply sheet.

.q Elastomeric Flashing: CGSB 37-GP-52M, membrane compounded from a blend of EPDM and SBR thermoset elastomers reinforced with a woven polyester scrim; .045" (1.1 mm) thick. Ensure compatible with roofing felts, plys, cants, etc.

.r Hot Melt Adhesive: CAN/CGSB-37.50-M, mopping grade, elastomeric modified bitumen incorporating high quality unblown asphalt and select (SEBS) polymers.

.s Flood Coat: CAN/CGSB-37.50-M, mopping grade, elastomeric modified bitumen incorporating high quality unblown asphalt and select (SEBS) polymers.

.t PEA Gravel: ASTM D1863, hard, durable, opaque, 1/4" (6mm) minimum, 3/8" (9mm) maximum, containing no fines or slag; rounded stone only no crushed stone allowed, washed free of clay, loam sand or other foreign substances. Due to existing structural loading, pea gravel to be spread at no more than 5 lbs/square foot.

u. Fire protection roof covering to be 5/8" Fire Code gypsum board sheathing in sizes no less than 4'-0" x 8'-0" sheets, unless cut to suit smaller end points.

.v Accessories:

Butyl Tape: flexible, butyl-based sealant tape.

Termination Bars: 1/8" (3 mm) thick aluminum, 1" (25 mm) wide, pre-drilled for mechanical attachment.

Reinforcing Membrane: non-shrinking, non-rotting, vinyl-coated, woven glass mesh.

Mastic: single-component roof elastomer formulated from polymers, plasticizers and additives.

Primers/Sealants: as recommended by material manufacturer.

Vent Stack Covers: U-shaped PVC.

Gas Line Supports/Roof Blocks: interlocking, one-piece, UV-resistant, thermoplastic polypropylene impact copolymer shell with integral type 3, 20 psi extruded polystyrene base complete with extension kits, where required. Pipe Ease Inc. (London Ontario), or equivalent.

Other Materials: materials not specifically described but required to properly complete the installation of the Work of this Section; selected by roofing sub-contractor subject to approval of Consultant

.1 EXISTING MATERIALS

Removal and disposal of existing roofing materials, wood blocking, plywood, etc. by Section 02 41 19, Selective Demolition.

At end of each working day, removal areas shall be sealed to

prevent water entry.

3.0 Execution

.2 EXAMINATION

Inspect substrates to receive new roofing materials. Immediately report to the Consultant unsatisfactory conditions detrimental to roofing installation. The Consultant shall immediately review the areas in question and provide further instruction.

Check that deck is structurally sound and securely in place and that all items on or penetrating the deck are firmly attached.

Check for foreign material, moisture, or unevenness that would prevent quality installation of new roofing system. The deck shall be smooth, clean, dry, firm, properly attached to the structure and free of projections, depressions, dust, dirt, grease, oil or other foreign matter.

Wood Decks: Unsatisfactory conditions include holes, loose decking and decking that is warped, rotted or deteriorated beyond repair or is otherwise unsuitable as a substrate.

Steel Decks: Unsatisfactory conditions include surface corrosion, holes and severely corroded areas larger than 16 sq. in. (0.1 sq.m), loose decking and decking that is corroded beyond repair or is otherwise unsuitable as a substrate.

Do not begin roofing until all unsatisfactory conditions are corrected. Commencement of Work constitutes acceptance of existing conditions.

.3 WORKMANSHIP

Maintain roofing equipment in good working order and provide:

- (a) heating kettle(s) equipped with thermometers which continually show temperature of bitumen.
- (b) half-full kettle(s) minimum during work period;
- (c) portable stem thermometer to check surface temperatures;
- (d) provide separate kettles, free of contaminants, for each type of bitumen.

Add cold bitumen to kettles in small quantities.

Stir kettles frequently to prevent localized overheating.

Ensure substrates are free of foreign debris prior to and during the installation of all roofing materials.

Keep traffic and equipment off completed plies until bitumen/adhesive has set.

Wood blocking, plywood, roof board, vapour retarder, roof insulation, tapered insulation, protection board, membrane and flashings shall be installed and sealed in a watertight manner on same day of installation or before arrival of inclement weather.

Take precautions to prevent tracking of aggregate/foreign materials from existing membrane into new work area where aggregate/foreign material can be trapped within new roofing membrane. Presence of entrapped aggregate/foreign materials within new membrane, shall be cause for rejection and shall be removed and membrane restored to the satisfaction of the Consultant.

.4 PREPARATION

Contractor shall be responsible for protection of Owner's property during course of Work. Lawns, shrubbery, paved areas, and building or other potentially damaged materials or surfaces shall be protected from damage. Repair any damage at no cost to Owner.

Contractor shall notify the Owner regarding any potential damage to vehicles in the immediate vicinity prior to commencement of roofing work.

At start of each work day drains within daily work area shall be plugged. Plugs shall be removed at end of each work day or before arrival of inclement weather.

Arrange work sequence to avoid using newly constructed roofing for storage, walking surface and equipment movement.

Before commencing roofing, dry and sweep roof surfaces clean, remove debris, water, dew, frost, snow, ice and foreign materials which could impair work.

.5 INSTALLATION

.a Carpentry

Supply and install wood-framed parapets, wood blocking, wood cants, wood nailers and exterior grade plywood at locations shown on Drawings and where not shown, to suit Site conditions.

On roof decks with slopes between 1:12 and 2:12 (8% and 17%), supply and install wood nailers (insulation stops) perpendicular to the slope at 16'-0" o.c. Wood nailer height shall match the total thickness of the insulation/fibreboard specified.

On roof decks with slopes between 2:12 and 3:12 (17% and 25%), supply and install wood nailers (insulation stops) perpendicular to the slope at 8'-0" o.c. Wood nailer height shall match the total thickness of the insulation/fibreboard specified.

On roof decks with slopes greater than 3:12 (25%), supply and install wood nailers (insulation stops) perpendicular to the slope at 4'-0" o.c. Wood nailer height shall match the total thickness of the insulation/fibreboard specified.

Offset layers of blocking 12" (300 mm) minimum; weave corners. Leave 1/8" (3 mm) gap between each length and at each change in direction.

Secure wood-framed parapets and wood blocking/nailers that will form part of roof assemblies in accordance with requirements outlined FM 1-49 for minimum wind uplift rating for Zone 1 of 60 psf. (Confirm values with current Climatic Data)

Install mineral fibre insulation at locations shown/noted on Drawings and where not shown, to suit Site conditions.

Install rigid insulation at locations shown/noted on Drawings to maintain continuity of thermal barrier. Use boards of largest possible size to minimize joints. Do not use damaged boards. Secure firmly into place. Butt joints tightly avoiding gaps. Cut to fit tightly around and behind obstructions and building elements.

Install neoprene fillers in existing expansion joints where shown/noted on Drawings and where not shown to suit Site conditions.

.b Roof Drains

Install roof drains at locations shown on Drawings in accordance with manufacturer's installation instructions and procedures. Connect to rain water leaders. Make all joints watertight.

.c Fire Rated Roof Board

Mechanically fasten roof board to steel deck using specified fasteners installed in quantities and patterns shown/noted on Drawings as applicable in each zone. Fasteners shall penetrate steel deck a minimum 3/4" (19 mm). Penetration shall be measured from top surface of deck and includes the tapping point of the fastener.

If found, adhere roof board to wood deck with low rise foam insulation adhesive applied in 3/4" (19 mm) ribbons at spacings where applicable.

Install fasteners vertically to ensure proper thread engagement into deck. Do not over-drive to the point where the fastening plates cup and the insulation dimples. Do not under-drive so that the fastener head is exposed above the fastening plate. Do not drive into service lines located under the deck.

Place roof board with long axis of each sheet transverse to long axis of deck panels, with end joints staggered minimum 24" (600mm) in adjacent rows.

Ensure roof board is set tight to deck.

.d Vapour Retarder

Do not install vapour retarder when temperature is below -10C

Remove dirt, dust and other loose debris from surfaces over which vapour retarder will be applied. Surfaces shall be sound, clean, dry and free of contamination (including grease and oil) and free of sharp protrusions, fins and voids.

Apply vapour retarder primer to surfaces to which vapour retarder will be applied at a rate recommended by manufacturer. Allow primer to dry prior to installing vapour retarder.

Chalk a line on roof board for alignment of vapour retarder.

Starting at the low point of the roof, install vapour retarder over roof board and at other locations shown/noted on Drawings. Install in accordance with manufacturer's installation instructions.

Apply successive plies in shingle fashion. Overlap sides minimum 3" (75 mm). Stagger adjacent end laps 6" (150 mm)

Vapour retarder shall be continuous. Seal to all penetrations, at lap joints not oriented to shed water and T-joints with sealant approved by membrane manufacturer. Overlap and seal to adjacent air/vapour barrier at parapets and walls where possible to ensure continuity.

.e Bitumen

Heat asphalt in accordance with manufacturer's directions, but in any case do not heat to over 500oF (260oC)

Apply asphalt at EVT (Equiviscous Temperature) plus or minus 25oF (13oC). Under no circumstances shall the asphalt temperature be less than 425oF (218oC) at the point of application.

Use low burner flames during initial melt-down of hot melt adhesive (Thermastic). Circulate hot melt adhesive after initial melt-down.

Do not heat hot melt adhesive (Thermastic) over 550oF (288oC). Apply at temperatures between 450o - 500oF (232o - 260oC).

Do not mix different types of bitumen

Check thermometers on kettles periodically to ensure proper heating temperatures are maintained.

.f Insulation/Protection Board/Fibre Cants

Keep insulation/protection board/fibre cants dry at all times

Before laying roof insulation, inspect vapour retarder and repair damage, if any. Install roof insulation as soon as possible to avoid damage to vapour retarder.

Over vapour retarder, apply full mopping of hot asphalt at rate of 25 lbs./sq. (1.2 kg/m²) and embed first layer of roof insulation at locations shown on Drawings. Lay in parallel courses and stagger

end joints 24" (600 mm) in adjacent rows. Stagger joints from vapour retarder below. Lay with mopping surface up.

Over first layer of roof insulation, apply full mopping of hot asphalt at rate of 25 lbs./sq.(1.2 kg/m²) and embed second layer of roof insulation. Lay in parallel courses and stagger end joints 24" (600 mm) in adjacent rows. Stagger joints from joints in layer below a minimum 12" (300 mm) in both directions in order to lap all joints.

Except where noted otherwise on Drawings, reduce thickness of roof insulation by 1" (25mm) for 8'-0" (2440mm) square centred on each roof drain to ensure free flow to drain.

Over second layer of roof insulation apply full mopping of hot asphalt at rate of 25 lbs./sq. (1.2 kg/m²) and embed tapered insulation/crickets at locations shown on Drawings. Lay in parallel courses and stagger end joints 24" (600 mm) in adjacent rows. Stagger joints from roof insulation below and in adjacent layers a minimum of 12" (300 mm) in both directions in order to lap all joints

Over second layer of roof insulation/tapered insulation/crickets apply full mopping of hot asphalt at rate of 25 lbs./sq. (1.2 kg/m²) and embed protection board. Lay in parallel courses and stagger end joints 24" (600mm) in adjacent rows. Stagger from joints in adjacent insulation layer a minimum of 12" (300 mm) in both directions.

Except where wood blocking/cants are shown, install fibre cants at all intersections of roofing and vertical surfaces. Lay in continuous bed of hot asphalt. Lay true to line, level and with flush butt joints and accurate corner mitres.

When laying insulation/protection board, bring each board into moderate contact with adjacent boards and do not force into place. Avoid open joints larger than 1/4" (6 mm) and uneven surfaces greater than 1/8" (3 mm). Do not kick into place.

Where insulation/protection board abuts an irregular surface, scribe to profile thereof, elsewhere cut insulation/protection board square and neatly to provide plain butt joints at perimeter of insulation/protection board, at parapets, walls, nailers, curbs and other vertical objects and surfaces.

Where insulation and/or /protection board abuts a vertical surface,

cut board 1/4" (6 mm) from vertical surface.

Lay no more insulation/protection board than can be covered on same day with roofing membrane. Do not install wet, damaged, warped or defective insulation/protection board. At conclusion of day's work, seal exposed edges. Upon resumption of Work, cut and remove sealed edges, square, neat and straight.

.g Membrane

Over protection board, starting at low point of roof, lay base ply in full mopping of hot asphalt at rate of 25 lbs./sq. (1.2 kg/m²). Lay to ensure water will flow over or parallel to, but never against exposed edges. Lap sides 4" (100 mm) and ends 6" (150 mm). Stagger ends a minimum of 3'-0" (900 mm). Extend to top edges of cants and cut off evenly. On roof surfaces with slopes exceeding 1/2:12 (4%), mechanically fasten top edge with approved fasteners. Type, size and spacing of fasteners as recommended by base ply manufacturer.

Over base ply, starting at low point of roof, lay three (3) plies of top plies in shingle fashion, in full mopping of asphalt at rate of 25 lbs./sq. (1.2 kg/m²). Lay three starter strip plies, one at 13-1/8" (333 mm), one at 26- 1/4" (667 mm) and one at 39-3/8" (1000 mm). Install a second 39-3/8" (1000 mm) wide ply that laps the first 39-3/8" (1000 mm) ply by 26-15/16" (684 mm). Lap successive plies 26-15/16" (684 mm). Lay plies to ensure water will flow over or parallel to, but never against exposed edges. Terminate felts 1/4" (6 mm) below top edge of cants.

On roof surfaces with slopes exceeding 1/2:12 (4%), lay base ply and top plies in direction recommended by ply manufacturer.

Apply asphalt no more than 10 feet (3 m) ahead of each roll being embedded.

Broom each ply before asphalt cools from un-mopped side. Ensure complete and continuous seal and contact between asphalt and plies, including ends, edges, and laps without wrinkles, fishmouths, air pockets, buckles or blisters. Avoid walking on plies until asphalt has set.

Apply uniform and continuous pressure to exposed edges and end laps to ensure complete adhesion. Lap ends minimum 6" (150 mm).

Stagger end laps minimum 3 feet (900 mm).

Overlap previous day's work minimum 24" (600 mm).

Ply shall never touch adjacent ply even at roof edges, laps, tapered edge strips and cants.

Cut out fishmouths and side laps which are not completely sealed; patch. Replace all plies that are not fully and continuously bonded.

.h Temporary Waterstops/Tie-ins

Strip embedded gravel, debris and dirt back a minimum 18" (450 mm) from top ply along termination.

Extend roofing system minimum 12" (300 mm) onto prepared area complete with insulation fillers as required.

Seal edge with 6" (150 mm) wide strip of reinforcing membrane embedded between alternate courses of hot melt adhesive applied at rate of 25 lbs./sq. (1.2 kg/m²).

At beginning of next day's work, remove temporary connection by cutting felts evenly along edge of existing roof system. Remove insulation fillers.

.i Flashings

Prior to installing elastomeric flashing material, dry fit pieces to be certain they are of proper size.

Embed elastomeric flashing material in uniform and continuous mopping of hot melt adhesive at rate of 25 lbs./sq. (1.2 kg/m²) where roofing terminates at parapets, vertical surfaces, curbs, expansion joints, around all roof penetrations and at locations shown on Drawings. Press in firmly for proper adhesion. Take precautions not to stretch.

Secure top edge of elastomeric flashing material to vertical surfaces using termination bars mechanically fastened at 6" o.c.

Where shown or required to accommodate large movement adhere elastomeric flashing material to substrates allowing sufficient slack for horizontal and vertical movement.

Install elastomeric flashing material in longest possible lengths with minimum number of joints. Lap ends a minimum of 4" (102 mm) and seal securely. Completely fill all joints with hot melt adhesive. Overlap and join to air barrier in walls where possible. Stagger joints in adjacent layers.

Run elastomeric flashing material at least 6" (150 mm) on to roof from base of cants and at least 8" to 12" (200 mm to 305 mm) above top of roof membrane at vertical surfaces or as detailed. At parapets run elastomeric flashing material up, over top, and down outside face of wood blocking.

Over roof membrane at each roof drain embed 9'-0" (2740mm) square of elastomeric flashing material in uniform and continuous mopping of hot melt adhesive at rate of 25 lbs./sq. (1.2 kg/m²) centred on drain. Ensure elastomeric flashing material is free of wrinkles and voids. Clamp with drain clamping ring. Cut/remove excess elastomeric flashing material within drain.

Apply consistent pressure to elastomeric flashing material to ensure full adhesion to substrate. Except where shown otherwise, elastomeric flashing material shall fully conform to all angle changes with no bridging or voids.

Strip in base of elastomeric flashing material to roof membrane using a three course application of hot melt adhesive applied at a rate of 25 lbs./sq. and 6" (150 mm) strip of Type IV glass ply. Strip in vertical laps using a strip of reinforcing membrane (Burmesh) sandwiched between two layers of mastic (Polyroof LV).

.j Surfacing Application

Prior to application of surface treatment, Contractor shall inspect roof with Consultant and manufacturer's representative and repair any deficiencies found in membrane.

Over entire roof surface apply uniform and continuous flood coat at a rate of 60 lbs./sq. (2.9 kg/m²)

Immediately broadcast at 5 lbs./sq. ft. of pea gravel. Cover flood coat material completely.

Keep gravel clear of cants to enable installation of metal flashings.

.k Gas Line, Gas Line Supports and Vent Stack Covers

Re-install gas line at same pre-construction locations.

Install gas line supports and vent stack covers at locations shown/noted on Drawings, plus as required, damaged or missing.

.l TIE-INS TO EXISTING ROOFING

Remove existing roofing materials to extent required to accommodate installation of new roofing materials. Trim edges of existing roofing system to even, straight lines. Remove debris and waste material. Clean remaining substrates.

Strip back existing gravel minimum 2'-0" (600 mm) from face of existing parapets and prepare remaining substrates to receive new roofing materials.

New roofing materials shall be compatible with existing roofing materials.

When recommended by roofing materials manufacturer, prime existing roofing system with asphalt primer.

Over existing roof membrane, embed elastomeric flashing material in uniform and continuous mopping of hot melt adhesive at rate of 25 lbs./sq. (1.2 kg/m²). Extend from top of fibre cant to minimum 12" (300 mm) on to roof from base of cants. Press in firmly for proper adhesion. Take precautions not to stretch.

Over first layer of elastomeric flashing material embed a second layer of elastomeric flashing material in uniform and continuous mopping of hot melt adhesive at rate of 25 lbs./sq. (1.2 kg/m²). Completely conceal parapet and extend minimum 6" (150 mm) onto existing/new roof surfaces from base of cants.

Strip in leading edges of elastomeric flashing material to roof membrane using a three course application of hot melt adhesive applied at a rate of 25 lbs./sq. (1.2 kg/m²) and 6" (150 mm) strip of Type IV glass ply. Strip in vertical laps using a strip of reinforcing membrane sandwiched between two layers of mastic.

Over entire area apply uniform and continuous flood coat at a rate

of 60 lbs./sq. (2.9 kg/m²).

Immediately broadcast minimum 400 lbs./sq. (19.5 kg/m²) of gravel. Cover flood coat material completely.

Keep gravel clear of cants to enable installation of metal flashings.

.m CLOSE-OUT

At completion of roofing, remove:

- (a) excess materials;
- (b) wrappings/labels;
- (c) bitumen spills.

Check roof.

Flood test Roof.

Clean off and ensure removal of non-roofing components which may puncture the roof membrane.

Ensure roof drains are free of debris and are free flowing.

End of Section

PART 1 - GENERAL

1.1 Related Work

- .1 Selective Demolition: Section 024119
- .2 Metal flashing: Section 0762 Metal Flashing and Trim .
- .3 Prefabricated roof expansion joints: Section 07712
- .4 Caulking: Section 07900 Joint Sealers
- .5 Roof drains: Section 15401 Plumbing Specialties and Accessories

1.2 References

- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM C 36- [95b] , Specification for Gypsum Wallboard.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-37.5- [M89] , Cutback Asphalt Plastic Cement.
 - .2 CGSB 37-GP-9Ma- [83] , Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing.
 - .3 CGSB 37-GP-15M- [76] , Application of Asphalt Primer for Asphalt Roofing, Dampproofing and Waterproofing.
 - .4 CGSB 37-GP-19M- [76] , Cement, Plastic, Cutback Tar.
 - .5 CAN/CGSB-37.29- [M89] , Rubber-Asphalt Sealing Compound.
 - .6 CGSB 37-GP-56M- [80] , Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing.
 - .7 CAN/CGSB-51.20- [M87] , Thermal Insulation, Polystyrene, Boards and Pipe Covering.
 - .8 CAN/CGSB-51.26- [M86] , Thermal Insulation, Urethane and Isocyanurate, Boards, Faced.
 - .9 CAN/CGSB-51.31- [M84] , Thermal Insulation, Mineral Fibre Board for Above Roof Decks.

.10 CAN/CGSB-51.33- [M89] , Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction.

.11 CAN/CGSB-51.34- [M86] , Vapour Barrier, Polyethylene Sheet for Use in Building Construction.

.12 CAN/CGSB 51.38- [92] , Cellular Glass Thermal Insulation.

.3 Canadian Standards Association (CSA)

.1 CSA A123.3- [M19 92] , Asphalt or Tar Saturated Roofing Felt.

.2 CSA A123.4- [M19 92] , Bitumen for Use in Construction of Built-Up Roof Coverings and Dampproofing and Waterproofing Systems.

.3 CSA A231.1- [1972] , Precast Concrete Paving Slabs.

.4 CAN/CSA-A247- [M86] , Insulating Fibreboard.

.5 CSA A284- [1976] Mineral Aggregate Thermal Roof Insulation.

.6 CSA O121- [M1978] , Douglas Fir Plywood.

.7 CSA O151- [M1978] , Canadian Softwood Plywood.

1.3 Shop Drawings

.1 Submit shop drawings in accordance with Section 01330.

.2 Indicate flashings, control joints, tapered insulation details.

.3 Provide layout for tapered insulation.

.4 Submit data sheets/shop drawings identifying wind uplift ratings for field of roof, perimeter of roof and corners at location where roofing materials will be installed. Identify fastening patterns for roof insulation, including required perimeter and corner enhancements and types and sizes of fasteners.

1.4 Storage and Handling

.1 Deliver, store and handle materials in accordance with manufacturers' instructions

.2 Deliver materials in sufficient quantity to allow continuity of work. Coordinate deliveries with Owner.

- .3 Provide and maintain dry, off-ground weatherproof storage
- .4 Store rolls of felt and membrane in upright position. Store membrane rolls with selvage edge up.
- .5 Remove only in quantities required for same day use.
- .6 Place plywood runways over work to enable movement of material and other traffic.
- .7 Store sealants at +5C minimum. Store all other materials in areas where temperatures will remain above +5C.
- .8 Store insulation protected from daylight and weather and deleterious materials. Protect roofing materials from inclement weather and traffic. Keep roof board, vapour retarder, roof insulation, tapered insulation/crickets, protection board and roofing plies absolutely dry and remove only as much from storage as can be applied and flood coated on same day. Reject damaged materials including those showing signs of having been damp or exposed to moisture.
- .9 Confine stored material to areas directed by Owner.
- .10 Store roofing plies for at least 24 hours in a well ventilated area kept at 20C and remove for application with as little exposure to cold as possible.
- .11 Do not stockpile gravel on roof structure. Bring to roof only as required for spreading as work proceeds.
- .12 Handle materials to avoid bending, tearing or other damage during deliver, storage and installation.
- .13 Material handling equipment shall be selected and operated so as not to damage Site, building or applied roofing. Do not operate or situate material handling equipment in locations that will hinder smooth flow of vehicular or pedestrian traffic
- .14 Contractor shall assume full responsibility for the protection and safekeeping of products stored on Site.

1.5 Testing_____

- .1 During course of work, the Consultant may secure samples according to ASTM D140- 01 of materials being used from containers at job site and submit them to an independent laboratory for comparison to specified material.
- .2 During course of work and/or before covering up membrane the Consultant may secure samples of roof membrane according to ASTM D3617 for testing by independent laboratory. Repair test cut areas immediately matching existing materials. Repair of these areas shall be at no additional cost to Owner.
- .3 Should test results prove that a material is not equal to specified material:
 - .a Contractor shall pay for all testing.
 - .b Roofing installed and found not to comply with the Specifications shall be removed and replaced at no cost to Owner.

1.6 Site Conditions

- .1 Contractor shall be responsible for accuracy of all measurements, estimates of material quantities and sizes, and Site conditions that will affect Work. Finished work to suit conditions, layout and intent of drawings and existing conditions.

1.7 Environmental Requirements

- .1 Do not install roofing when temperature remains below -18C for torch application, or [-10C] [to manufacturers' recommendations] for mop application.
- .2 Minimum temperature for solvent-based adhesive is -5C.
- .3 Install roofing on dry deck, free of snow and ice, use only dry materials and apply only during weather that will not introduce moisture into roofing system.
- .4 Remove any unfinished Work exposed to freezing

1.6 Protection

Refer to WHMIS requirements specified in Section 01545 - Safety

Requirements and specify additional requirements here.

- .1 Maintain a safety person as a floor area guard whenever roof decking is being repaired or replaced.
- .2 Fire Extinguishers: maintain one [cartridge operated type] [or] [stored pressure rechargeable type] with [hose and] shut-off nozzle, ULC labeled for A, B and C class protection. Size: 4.5 kg [or as indicated] on roof per torch applicator, within 10 m of torch applicator, plus one at the roof level of any access ladder.
- .3 Maintain fire watch for 1 hour after each day's roofing operations cease.
- .4 Advise Owner when volatile materials are to be used near air intakes so that they can be shut down or blocked as Owner requires.
- .5 Locate kettles so that smoke will not discolour building finishes or enter air intakes.
- .6 Protect surrounding surfaces against damage from roofing work. Keep finished surfaces clean and free from bitumen.
- .7 Apply tarpaulins to the building where material hoisting occurs and where kettle pipes run to roof.
- .8 Lay wood planks or minimum 3/8" (9 mm) thick plywood sheathing on existing or just-applied roofing membranes where Work must continue over finished areas.
- .9 Protect existing and completed portions of roof membrane from damage
- .10 Uncompleted roofing at day's end shall be protected with temporary water stops.

1.7 Design

- .1 Roof assemblies shall comply with the following requirements:
- .2 Ontario Building Code, Clause 3.1.15.2, Sentence (1), roof

covering having a Class A, B or C classification as determined in accordance CAN/ULC-S107.

- .3 Ontario Building Code, Clause 5.2.2.2., wind uplift as determined in accordance with Sentences (4) or (5).
- .4 Modify roofing details to suit found conditions on site. All work to be acceptable and warranted by the roofing materials manufacturer.
For major discrepancies contact Architect for clarification.
- .5 General Design Parameters:

Low Roofs:

Pea gravel surfacing in rubberized asphalt
flood coat (5 psf max)
2-ply built-up asphalt roofing
4" polyiso insulation
kraft vapour barrier
5/8" gypsum deckboard
R-Value = R25
Weight = 10.5 psf

Gymnasium Roof:

Pea gravel surfacing in rubberized asphalt
flood coat (5 psf max)
2-ply built-up asphalt roofing
2" polyiso insulation
kraft vapour barrier
5/8" gypsum deckboard
R-Value = R15
Weight = 10.5 psf

1.7 Warranty and Quality Assurance

- .1 Perform built up roofing in accordance with CAN/CGSB-37.51-M and the latest edition of the Canadian Roofing Contractors' Association (CRCA) Specification Manual.
- .2 Roofing Contractor shall be approved by roofing materials manufacturer.
- .3 Work of this Section shall be performed by a qualified company, having a minimum ten (10) years proven Canadian experience in the successful installation of Work of

type and quality shown on Drawings and specified herein.

- .4 Work shall be performed by skilled personnel with proper equipment in a expeditious, efficient and workmanlike manner.
- .5 Upon request, submit proof of experience.
- .6 Roofing to be a 'system' utilizing approved materials by a single BUR manufacturer. Manufacturer's technical services representative shall be present at Site on day membrane installation commences and periodically thereafter if required, to ensure Work is properly performed. The Contractor shall be responsible for providing the membrane manufacturer's technical services representative with sufficient notice as to when the roofing membrane installation will commence and periodically thereafter as work progresses.
- .7 Upon completion of Work of this Section, manufacturer's technical services representative shall inspect roof and verify Work is weather-tight and confirm manufacturer's guarantee will be issued. The membrane manufacturer's technical services representative shall inform the Consultant and Contractor promptly in writing when the inspection is complete and provide a detailed report, describing any problems or deficiencies which require correction.
- .8 The presence and activity of the manufacturer's representative shall in no way relieve the Contractor of their contractual responsibilities or duties.
- .9 Provide roof membrane manufacturer's warranty naming Owner as beneficiary covering defects and deficiencies and weather tightness of membrane and flashings for period of ten (10) years from date Work is certified as substantially performed. Guarantee shall cover labour and materials and include repair or replacement at manufacturer's expense, to extent required, of all Work of this Section in event of leaks or other failure if such failure results from defects and deficiencies of membrane and/or flashings.
- .10 Provide Contractor's warranty in the Owner's name covering defects and deficiencies in workmanship and that roof will

provide moisture-proof service for a period of two (2) years from date Work is certified as substantially performed. In the event that Work related to the installation of the roofing system is found to be defective or in non-conformance with the Contract Documents, the roofing sub-contractor shall remove and replace the defective or non-complying components at no cost to the Owner.

1.8 Systems and Alternates

.1 Roofing system specified herein is generic and as detailed on drawings. Built-up Roofing System to be provided as a full system, complete with the Manufacturer's proprietary materials and details and any other materials used are acceptable to the manufacturer of the roofing system and do not negate or diminish any warranties. The system should be a "Product of Canada", free of any potential tariffs or other controls. The materials and installation procedures set forth shall establish a standard quality by performance requirements and general description of product. The Consultant will consider that all proposed systems meet or exceed the requirements and standards set forth in this Section, and from manufacturers without potential tariffs or other restrictions. Contractor to provide evidence that proposed system is compatible with the existing roof types adjacent, or removed. The Consultant reserves the right to reject any material which in their opinion, will not produce the quality of Work specified herein.

.2 Submit alternates in accordance with the procedures set forth in the Instructions to Bidders.

2.0 Products

.1 Wood Framing and Blocking

.a All materials shall be straight, new, dry and clean in longest lengths possible and shall be properly sized and shaped to the correct dimensions from nominal sizes to suit actual conditions.

.b Lumber: CSA O141, softwood S4S, No. 2 grade and better Spruce-Pine-Fir unless noted otherwise, S-dry, kiln-dried, with moisture content not greater than 19% at time of installation and conforming to NLGA Standard Grading Rules for Canadian Lumber. All lumber used to be pressure treated or similar, for wet condition use.

.c Wood Blocking and Nailers: No. 2 grade and better

Spruce-Pine-Fir.

.d Wood Blocking and Nailers: No. 2 grade and better Spruce-Pine-Fir veneer.

e. Fasteners for Wood-framed Parapets and Wood Blocking/Nailers forming Part of Roof Assemblies: FM 1-49, corrosion resistant, of first class quality; length, strength, type, size, quantity and spacing based on member size and substrate to be fastened to.

f. For Securement to Concrete Masonry Units: 1/2" (12.7 mm) diameter anchor bolts, minimum embedment: 5" (127 mm), maximum Zone 2 spacing: 4'-0" (1220 mm), maximum Zone 3 spacing: 2'-0" (610 mm).

g. For Securement to Steel Deck: any FM approved fasteners, provide two (2) staggered rows with maximum spacing of 2'-0" (610 mm), of sufficient length for fasteners to protrude 3/4" (19 mm) below deck.

h. For securement of Upper Wood Nailers to Lower Wood Nailers: minimum 10d common nails or #8 screws in two (2) staggered rows, maximum Zone 2 spacing: 2'-0" (610 mm), maximum Zone 3 spacing: 1'-0" (305 mm), of sufficient length to penetrate 1-1/2" (38 mm) into lower wood nailer.

.i For securement of Upper Wood Nailers to Lower Wood Nailers: minimum 10d common nails or #8 screws in two (2) staggered rows, maximum Zone 2 spacing: 2'-0" (610 mm), maximum Zone 3 spacing: 1'-0" (305 mm), of sufficient length to penetrate 1-1/2" (38 mm) into lower wood nailer.

.j Rigid Insulation: CAN/ULC-S701, Type 4, rigid, closed cell POLYISOCYANURATE, compressive strength MINIMUM 30 psi (207 kPa), water absorption: 0.3% by volume, MINIMUM R value: 5.0 per 1" (25mm), thicknesses as shown/noted on Drawings., or equivalent. Preference to Canadian sourced manufacturers. As equal, can only be reviewed if presented a minimum of 48 hours before final Addenda issued.

Tapered Insulation/Crickets: CAN/ULC-S704, Type 2, closed cell polyisocyanurate foam integrally bonded to glass fibre reinforced organic facers, compressive strength: 20 psi (140 kPa), 4'-0" x 4'-0"

(1220 x 1220 mm), minimum long-term thermal resistance (LTTR): 5.7 (RSI 1.00) per 1" (25 mm) thickness, factory controlled taper cut to provide uniform minimum slopes noted on Drawings; factory mitred valley corners. Soprema Inc., Sopra-Iso Tapered, or equivalent, as sourced from Canadian headquarters.

Protection Board: ASTM C1278, fibre-reinforced, uniform composition, water-resistant, moisture and mould resistant, in longest lengths possible to minimize end joints, thickness 5/8" minimum, or as noted on Drawings.

Fibre Cants: CAN/CSA A247-M, 3" x 3" (76 x 76 mm) cut to 45 angle or to suit site conditions. Posi-Slope Enterprises Inc., Cant Stripping, or equivalent.

k. Mineral Fibre Insulation: (Not to be used for roofing, only where shown on dwgs or within roof penetration cavities) CAN/ULC-S702, Type 1, lightweight, thermal, semi-rigid mineral wool, noncombustible, fire-resistant, flame spread index: 0, smoke developed index: 0, density: >2 lbs/ft³ (>32 kg/m³), thickness(es) as shown/noted on Drawings. Rockwool (Milton Ontario), ComfortBatt Thermal Batt Insulation, or equivalent.

.l Roof Drains: 15" (381 mm) diameter, Coated cast iron body with cast iron dome; flanges, clamps, plates, extensions, etc. to suit site conditions.

.m Roof Board: ASTM C1177/C1177M, fibreglass mat facing mechanically bonded to high density gypsum fire resistant core, moisture-resistant, 48" (1220 mm) wide sheets of maximum practical lengths to minimize end joints, thickness as noted on Drawings.

.n Low Rise Foam Insulation Adhesive: fast-setting, solvent free, elastomeric urethane.

.m Mechanical Plates and Fasteners: Factory Mutual approved, galvalume coated steel plates; heat treated carbon steel fasteners with corrosion-resistant coating.

.n Vapour Retarder Primer: as recommended by vapour retarder manufacturer. Vapour Retarder: ASTM D1970, self-adhering, SBS rubberized asphalt laminated to cross laminated polyethylene film 40 mils (1.0 mm) thick.

.o Asphalt: CSA A123.4-M, oxidized bitumen, Type III.

.p Base Ply: ASTM D4601, Type II, tri-laminate reinforced polyester/glass scrim/glass mat sheet coated with SBS modified waterproofing asphalt, 60 mils (1.50 mm) thick.

Top Plies: ASTM D2178 Type IV, heavy-duty, non-rotting, glass ply sheet.

.q Elastomeric Flashing: CGSB 37-GP-52M, membrane compounded from a blend of EPDM and SBR thermoset elastomers reinforced with a woven polyester scrim; .045" (1.1 mm) thick. Ensure compatible with roofing felts, plies, cants, etc.

.r Hot Melt Adhesive: CAN/CGSB-37.50-M, mopping grade, elastomeric modified bitumen incorporating high quality unblown asphalt and select (SEBS) polymers.

.s Flood Coat: CAN/CGSB-37.50-M, mopping grade, elastomeric modified bitumen incorporating high quality unblown asphalt and select (SEBS) polymers.

.t PEA Gravel: ASTM D1863, hard, durable, opaque, 1/4" (6mm) minimum, 3/8" (9mm) maximum, containing no fines or slag; rounded stone only no crushed stone allowed, washed free of clay, loam sand or other foreign substances. Due to existing structural loading, pea gravel to be spread at no more than 5 lbs/square foot.

u. Fire protection roof covering to be 5/8" Fire Code gypsum board sheathing in sizes no less than 4'-0" x 8'-0" sheets, unless cut to suit smaller end points.

.v Accessories:

Butyl Tape: flexible, butyl-based sealant tape.

Termination Bars: 1/8" (3 mm) thick aluminum, 1" (25 mm) wide, pre-drilled for mechanical attachment.

Reinforcing Membrane: non-shrinking, non-rotting, vinyl-coated, woven glass mesh.

Mastic: single-component roof elastomer formulated from polymers,

plasticizers and additives.

Primers/Sealants: as recommended by material manufacturer.
Vent Stack Covers: U-shaped PVC.

Gas Line Supports/Roof Blocks: interlocking, one-piece, UV-resistant, thermoplastic polypropylene impact copolymer shell with integral type 3, 20 psi extruded polystyrene base complete with extension kits, where required. Pipe Ease Inc. (London Ontario), or equivalent.

Other Materials: materials not specifically described but required to properly complete the installation of the Work of this Section; selected by roofing sub-contractor subject to approval of Consultant

.1 EXISTING MATERIALS

Removal and disposal of existing roofing materials, wood blocking, plywood, etc. by Section 02 41 19, Selective Demolition.

At end of each working day, removal areas shall be sealed to prevent water entry.

.2 EXAMINATION

Inspect substrates to receive new roofing materials. Immediately report to the Consultant unsatisfactory conditions detrimental to roofing installation. The Consultant shall immediately review the areas in question and provide further instruction.

3.0 Execution

Check that deck is structurally sound and securely in place and that all items on or penetrating the deck are firmly attached.

Check for foreign material, moisture, or unevenness that would prevent quality installation of new roofing system. The deck shall be smooth, clean, dry, firm, properly attached to the structure and free of projections, depressions, dust, dirt, grease, oil or other foreign matter.

Wood Decks: Unsatisfactory conditions include holes, loose decking and decking that is warped, rotted or deteriorated beyond repair or is otherwise unsuitable as a substrate.

Steel Decks: Unsatisfactory conditions include surface corrosion,

holes and severely corroded areas larger than 16 sq. in. (0.1 sq.m), loose decking and decking that is corroded beyond repair or is otherwise unsuitable as a substrate.

Do not begin roofing until all unsatisfactory conditions are corrected. Commencement of Work constitutes acceptance of existing conditions.

.3 WORKMANSHIP

Maintain roofing equipment in good working order and provide:

- (a) heating kettle(s) equipped with thermometers which continually show temperature of bitumen.
- (b) half-full kettle(s) minimum during work period;
- (c) portable stem thermometer to check surface temperatures;
- (d) provide separate kettles, free of contaminants, for each type of bitumen.

Add cold bitumen to kettles in small quantities.

Stir kettles frequently to prevent localized overheating.

Ensure substrates are free of foreign debris prior to and during the installation of all roofing materials.

Keep traffic and equipment off completed plies until bitumen/adhesive has set.

Wood blocking, plywood, roof board, vapour retarder, roof insulation, tapered insulation, protection board, membrane and flashings shall be installed and sealed in a watertight manner on same day of installation or before arrival of inclement weather.

Take precautions to prevent tracking of aggregate/foreign materials from existing membrane into new work area where aggregate/foreign material can be trapped within new roofing membrane. Presence of entrapped aggregate/foreign materials within new membrane, shall be cause for rejection and shall be removed and membrane restored to the satisfaction of the Consultant.

.4 PREPARATION

Contractor shall be responsible for protection of Owner's property

during course of Work. Lawns, shrubbery, paved areas, and building or other potentially damaged materials or surfaces shall be protected from damage. Repair any damage at no cost to Owner.

Contractor shall notify the Owner regarding any potential damage to vehicles in the immediate vicinity prior to commencement of roofing work.

At start of each work day drains within daily work area shall be plugged. Plugs shall be removed at end of each work day or before arrival of inclement weather.

Arrange work sequence to avoid using newly constructed roofing for storage, walking surface and equipment movement.

Before commencing roofing, dry and sweep roof surfaces clean, remove debris, water, dew, frost, snow, ice and foreign materials which could impair work.

.5 INSTALLATION

.a Carpentry

Supply and install wood-framed parapets, wood blocking, wood cants, wood nailers and exterior grade plywood at locations shown on Drawings and where not shown, to suit Site conditions.

On roof decks with slopes between 1:12 and 2:12 (8% and 17%), supply and install wood nailers (insulation stops) perpendicular to the slope at 16'-0" o.c. Wood nailer height shall match the total thickness of the insulation/fibreboard specified.

On roof decks with slopes between 2:12 and 3:12 (17% and 25%), supply and install wood nailers (insulation stops) perpendicular to the slope at 8'-0" o.c. Wood nailer height shall match the total thickness of the insulation/fibreboard specified.

On roof decks with slopes greater than 3:12 (25%), supply and install wood nailers (insulation stops) perpendicular to the slope at 4'-0" o.c. Wood nailer height shall match the total thickness of the insulation/fibreboard specified.

Offset layers of blocking 12" (300 mm) minimum; weave corners. Leave 1/8" (3 mm) gap between each length and at each change in

direction.

Secure wood-framed parapets and wood blocking/nailers that will form part of roof assemblies in accordance with requirements outlined FM 1-49 for minimum wind uplift rating for Zone 1 of 60 psf. (Confirm values with current Climatic Data)

Install mineral fibre insulation at locations shown/noted on Drawings and where not shown, to suit Site conditions.

Install rigid insulation at locations shown/noted on Drawings to maintain continuity of thermal barrier. Use boards of largest possible size to minimize joints. Do not use damaged boards. Secure firmly into place. Butt joints tightly avoiding gaps. Cut to fit tightly around and behind obstructions and building elements.

Install neoprene fillers in existing expansion joints where shown/noted on Drawings and where not shown to suit Site conditions.

.b Roof Drains

Install roof drains at locations shown on Drawings in accordance with manufacturer's installation instructions and procedures. Connect to rain water leaders. Make all joints watertight.

.c Fire Rated Roof Board

Mechanically fasten roof board to steel deck using specified fasteners installed in quantities and patterns shown/noted on Drawings as applicable in each zone. Fasteners shall penetrate steel deck a minimum 3/4" (19 mm). Penetration shall be measured from top surface of deck and includes the tapping point of the fastener.

If found, adhere roof board to wood deck with low rise foam insulation adhesive applied in 3/4" (19 mm) ribbons at spacings where applicable.

Install fasteners vertically to ensure proper thread engagement into deck. Do not over-drive to the point where the fastening plates cup and the insulation dimples. Do not under-drive so that the fastener head is exposed above the fastening plate. Do not drive into service lines located under the deck.

Place roof board with long axis of each sheet transverse to long axis of deck panels, with end joints staggered minimum 24" (600mm) in adjacent rows.

Ensure roof board is set tight to deck.

.d Vapour Retarder

Do not install vapour retarder when temperature is below -10C

Remove dirt, dust and other loose debris from surfaces over which vapour retarder will be applied. Surfaces shall be sound, clean, dry and free of contamination (including grease and oil) and free of sharp protrusions, fins and voids.

Apply vapour retarder primer to surfaces to which vapour retarder will be applied at a rate recommended by manufacturer. Allow primer to dry prior to installing vapour retarder.

Chalk a line on roof board for alignment of vapour retarder.

Starting at the low point of the roof, install vapour retarder over roof board and at other locations shown/noted on Drawings. Install in accordance with manufacturer's installation instructions.

Apply successive plies in shingle fashion. Overlap sides minimum 3" (75 mm). Stagger adjacent end laps 6" (150 mm)

Vapour retarder shall be continuous. Seal to all penetrations, at lap joints not oriented to shed water and T-joints with sealant approved by membrane manufacturer. Overlap and seal to adjacent air/vapour barrier at parapets and walls where possible to ensure continuity.

.e Bitumen

Heat asphalt in accordance with manufacturer's directions, but in any case do not heat to over 500oF (260oC)

Apply asphalt at EVT (Equiviscous Temperature) plus or minus 25oF (13oC). Under no circumstances shall the asphalt temperature be less than 425oF (218oC) at the point of application.

Use low burner flames during initial melt-down of hot melt adhesive (Thermastic). Circulate hot melt adhesive after initial melt-down.

Do not heat hot melt adhesive (Thermastic) over 550oF (288oC). Apply at temperatures between 450o - 500oF (232o - 260oC).

Do not mix different types of bitumen

Check thermometers on kettles periodically to ensure proper heating temperatures are maintained.

.f Insulation/Protection Board/Fibre Cants

Keep insulation/protection board/fibre cants dry at all times

Before laying roof insulation, inspect vapour retarder and repair damage, if any. Install roof insulation as soon as possible to avoid damage to vapour retarder.

Over vapour retarder, apply full mopping of hot asphalt at rate of 25 lbs./sq. (1.2 kg/m²) and embed first layer of roof insulation at locations shown on Drawings. Lay in parallel courses and stagger end joints 24" (600 mm) in adjacent rows. Stagger joints from vapour retarder below. Lay with mopping surface up.

Over first layer of roof insulation, apply full mopping of hot asphalt at rate of 25 lbs./sq.(1.2 kg/m²) and embed second layer of roof insulation. Lay in parallel courses and stagger end joints 24" (600 mm) in adjacent rows. Stagger joints from joints in layer below a minimum 12" (300 mm) in both directions in order to lap all joints.

Except where noted otherwise on Drawings, reduce thickness of roof insulation by 1" (25mm) for 8'-0" (2440mm) square centred on each roof drain to ensure free flow to drain.

Over second layer of roof insulation apply full mopping of hot asphalt at rate of 25 lbs./sq. (1.2 kg/m²) and embed tapered insulation/crickets at locations shown on Drawings. Lay in parallel courses and stagger end joints 24" (600 mm) in adjacent rows. Stagger joints from roof insulation below and in adjacent layers a minimum of 12" (300 mm) in both directions in order to lap all joints

Over second layer of roof insulation/tapered insulation/crickets apply full mopping of hot asphalt at rate of 25 lbs./sq. (1.2 kg/m²)

and embed protection board. Lay in parallel courses and stagger end joints 24" (600mm) in adjacent rows. Stagger from joints in adjacent insulation layer a minimum of 12" (300 mm) in both directions.

Except where wood blocking/cants are shown, install fibre cants at all intersections of roofing and vertical surfaces. Lay in continuous bed of hot asphalt. Lay true to line, level and with flush butt joints and accurate corner mitres.

When laying insulation/protection board, bring each board into moderate contact with adjacent boards and do not force into place. Avoid open joints larger than 1/4" (6 mm) and uneven surfaces greater than 1/8" (3 mm). Do not kick into place.

Where insulation/protection board abuts an irregular surface, scribe to profile thereof, elsewhere cut insulation/protection board square and neatly to provide plain butt joints at perimeter of insulation/protection board, at parapets, walls, nailers, curbs and other vertical objects and surfaces.

Where insulation and/or /protection board abuts a vertical surface, cut board 1/4" (6 mm) from vertical surface.

Lay no more insulation/protection board than can be covered on same day with roofing membrane. Do not install wet, damaged, warped or defective insulation/protection board. At conclusion of day's work, seal exposed edges. Upon resumption of Work, cut and remove sealed edges, square, neat and straight.

.g Membrane

Over protection board, starting at low point of roof, lay base ply in full mopping of hot asphalt at rate of 25 lbs./sq. (1.2 kg/m²). Lay to ensure water will flow over or parallel to, but never against exposed edges. Lap sides 4" (100 mm) and ends 6" (150 mm). Stagger ends a minimum of 3'-0" (900 mm). Extend to top edges of cants and cut off evenly. On roof surfaces with slopes exceeding 1/2:12 (4%), mechanically fasten top edge with approved fasteners. Type, size and spacing of fasteners as recommended by base ply manufacturer.

Over base ply, starting at low point of roof, lay three (3) plies of top plies in shingle fashion, in full mopping of asphalt at rate of 25

lbs./sq. (1.2 kg/m²). Lay three starter strip plies, one at 13-1/8" (333 mm), one at 26- 1/4" (667 mm) and one at 39-3/8" (1000 mm). Install a second 39-3/8" (1000 mm) wide ply that laps the first 39-3/8" (1000 mm) ply by 26-15/16" (684 mm). Lap successive plies 26-15/16" (684 mm). Lay plies to ensure water will flow over or parallel to, but never against exposed edges. Terminate felts 1/4" (6 mm) below top edge of cants.

On roof surfaces with slopes exceeding 1/2:12 (4%), lay base ply and top plies in direction recommended by ply manufacturer.

Apply asphalt no more than 10 feet (3 m) ahead of each roll being embedded.

Broom each ply before asphalt cools from un-mopped side. Ensure complete and continuous seal and contact between asphalt and plies, including ends, edges, and laps without wrinkles, fishmouths, air pockets, buckles or blisters. Avoid walking on plies until asphalt has set.

Apply uniform and continuous pressure to exposed edges and end laps to ensure complete adhesion. Lap ends minimum 6" (150 mm). Stagger end laps minimum 3 feet (900 mm).

Overlap previous day's work minimum 24" (600 mm).

Ply shall never touch adjacent ply even at roof edges, laps, tapered edge strips and cants.

Cut out fishmouths and side laps which are not completely sealed; patch. Replace all plies that are not fully and continuously bonded.

.h Temporary Waterstops/Tie-ins

Strip embedded gravel, debris and dirt back a minimum 18" (450 mm) from top ply along termination.

Extend roofing system minimum 12" (300 mm) onto prepared area complete with insulation fillers as required.

Seal edge with 6" (150 mm) wide strip of reinforcing membrane embedded between alternate courses of hot melt adhesive applied at rate of 25 lbs./sq. (1.2 kg/m²).

At beginning of next day's work, remove temporary connection by cutting felts evenly along edge of existing roof system. Remove insulation fillers.

.i Flashings

Prior to installing elastomeric flashing material, dry fit pieces to be certain they are of proper size.

Embed elastomeric flashing material in uniform and continuous mopping of hot melt adhesive at rate of 25 lbs./sq. (1.2 kg/m²) where roofing terminates at parapets, vertical surfaces, curbs, expansion joints, around all roof penetrations and at locations shown on Drawings. Press in firmly for proper adhesion. Take precautions not to stretch.

Secure top edge of elastomeric flashing material to vertical surfaces using termination bars mechanically fastened at 6" o.c.

Where shown or required to accommodate large movement adhere elastomeric flashing material to substrates allowing sufficient slack for horizontal and vertical movement.

Install elastomeric flashing material in longest possible lengths with minimum number of joints. Lap ends a minimum of 4" (102 mm) and seal securely. Completely fill all joints with hot melt adhesive. Overlap and join to air barrier in walls where possible. Stagger joints in adjacent layers.

Run elastomeric flashing material at least 6" (150 mm) on to roof from base of cants and at least 8" to 12" (200 mm to 305 mm) above top of roof membrane at vertical surfaces or as detailed. At parapets run elastomeric flashing material up, over top, and down outside face of wood blocking.

Over roof membrane at each roof drain embed 9'-0" (2740mm) square of elastomeric flashing material in uniform and continuous mopping of hot melt adhesive at rate of 25 lbs./sq. (1.2 kg/m²) centred on drain. Ensure elastomeric flashing material is free of wrinkles and voids. Clamp with drain clamping ring. Cut/remove excess elastomeric flashing material within drain.

Apply consistent pressure to elastomeric flashing material to ensure full adhesion to substrate. Except where shown otherwise,

elastomeric flashing material shall fully conform to all angle changes with no bridging or voids.

Strip in base of elastomeric flashing material to roof membrane using a three course application of hot melt adhesive applied at a rate of 25 lbs./sq. and 6" (150 mm) strip of Type IV glass ply. Strip in vertical laps using a strip of reinforcing membrane (Burmesh) sandwiched between two layers of mastic (Polyroof LV).

.j Surfacing Application

Prior to application of surface treatment, Contractor shall inspect roof with Consultant and manufacturer's representative and repair any deficiencies found in membrane.

Over entire roof surface apply uniform and continuous flood coat at a rate of 60 lbs./sq. (2.9 kg/m²)

Immediately broadcast at 5 lbs./sq. ft. of pea gravel. Cover flood coat material completely.

Keep gravel clear of cants to enable installation of metal flashings.

.k Gas Line, Gas Line Supports and Vent Stack Covers

Re-install gas line at same pre-construction locations.

Install gas line supports and vent stack covers at locations shown/noted on Drawings, plus as required, damaged or missing.

.l TIE-INS TO EXISTING ROOFING

Remove existing roofing materials to extent required to accommodate installation of new roofing materials. Trim edges of existing roofing system to even, straight lines. Remove debris and waste material. Clean remaining substrates.

Strip back existing gravel minimum 2'-0" (600 mm) from face of existing parapets and prepare remaining substrates to receive new roofing materials.

New roofing materials shall be compatible with existing roofing materials.

When recommended by roofing materials manufacturer, prime existing roofing system with asphalt primer.

Over existing roof membrane, embed elastomeric flashing material in uniform and continuous mopping of hot melt adhesive at rate of 25 lbs./sq. (1.2 kg/m²). Extend from top of fibre cant to minimum 12" (300 mm) on to roof from base of cants. Press in firmly for proper adhesion. Take precautions not to stretch.

Over first layer of elastomeric flashing material embed a second layer of elastomeric flashing material in uniform and continuous mopping of hot melt adhesive at rate of 25 lbs./sq. (1.2 kg/m²). Completely conceal parapet and extend minimum 6" (150 mm) onto existing/new roof surfaces from base of cants.

Strip in leading edges of elastomeric flashing material to roof membrane using a three course application of hot melt adhesive applied at a rate of 25 lbs./sq. (1.2 kg/m²) and 6" (150 mm) strip of Type IV glass ply. Strip in vertical laps using a strip of reinforcing membrane sandwiched between two layers of mastic.

Over entire area apply uniform and continuous flood coat at a rate of 60 lbs./sq. (2.9 kg/m²).

Immediately broadcast minimum 400 lbs./sq. (19.5 kg/m²) of gravel. Cover flood coat material completely.

Keep gravel clear of cants to enable installation of metal flashings.

.m CLOSE-OUT

At completion of roofing, remove:

- (a) excess materials;
- (b) wrappings/labels;
- (c) bitumen spills.

Check roof.

Flood test Roof.

Clean off and ensure removal of non-roofing components which may puncture the roof membrane.

Ensure roof drains are free of debris and are free flowing.

End of Section

PART 1 – GENERAL

- | | | | |
|---|-----------------------------|----|---|
| 1 | <u>References</u> | .1 | ASTM D523-85 Test Method for Specular Gloss. |
| | | .2 | CSA B111-1974 Wire Nails, Spikes and Staples. |
| 2 | <u>General Instructions</u> | .1 | Provide new replacement flashings for ALL work disturbed, or required, including, cap, edge, wall, expansion joint, upstand, through roof, through wall, etc. regardless if detailed, or noted. |

PART 2 – PRODUCTS

- | | | |
|------------------------------------|----|--|
| <u>2.1 Sheet Metal Materials</u> | .1 | Base Metal (before painting): Hot dipped galvanized steel sheet to ASTM A525M, commercial quality grade A, coating designation Z275, comprised of 275 g/m2 zinc of total sheet both sides. Alternately as required by project. EG Lead, zinc, or malleable sheet metal for roof drains, etc. |
| <u>2.2 Prefinished Steel Sheet</u> | .1 | Prefinished steel with factory applied silicone modified polyester. <ul style="list-style-type: none"> .1 Class F1S. .2 Colour: to match existing removed, adjacent metal or composite siding. If in doubt contact architect. .3 Specular gloss: 30 units +/- 5 in accordance with ASTM D523-80 measured on Gardner 60 deg. glossmeter. .4 Coating thickness: dry film thickness not less than 51 mm (2.0 mils). .5 Resistance to accelerated weathering: <ul style="list-style-type: none"> .1 Outdoor exposure: no objectionable colour change after 8 years. .2 No objectionable caulking after 5000 hours exposure. .3 Humidity resistance exposure period 2000 hours to ASTM D714. |
| <u>2.3 Accessories</u> | .1 | Isolation coating: alkali resistant bituminous paint. |
| | .2 | Plastic cement: to CGSB 37-GP-5Ma. |
| | .3 | Sealants: refer to Section 07900. |
| | .4 | Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness same as sheet metal being secured. |
| | .5 | Fasteners: stainless steel, hex head, self drilling - self tapping complete with cup washer and rubber seal same as or equal to ITW Bildex, Scotts log life fasteners. Fastener length shall be suitable for metal flashing applications. |
| | .6 | Washers: Integral with 1 mm thick rubber packings. |
| | .7 | Touch-up paint: as recommended by prefinished material manufacturer. |
| <u>2.4 Fabrication</u> | .1 | Fabricate metal flashings, and other sheet metal work as indicated. |

- .2 Form pieces in longest length possible. Make allowance for expansion at joints.
- .3 Hem exposed edges on underside 12 mm. Miter and seal corners with sealant.
- .4 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- .5 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

2.5 Metal Flashings

- .1 Form flashings, copings and fascias to profiles indicated of 0.61mm (24 ga.) thick galvanized prefinished steel. Colour to match existing, or balance of existing adjacent.

2.6 Reglets and Cap Flashings

- .1 Form metal cap flashings of 0.61 mm (24 ga.) thick sheet metal to be built-in masonry work as detailed. Provide slotted fixing holes and steel/plastic washer fasteners.

PART 3 – EXECUTION

3.1 Installation

- .1 Install sheet metal work where indicated and as detailed.
- .2 Use concealed fastenings except where approved before installation.
- .3 Lock end joints and caulk with sealant.
- .4 Insert metal flashing under cap flashing to form weathertight junction.
- .5 Seal weather tight in accordance to Section 07900.

End of Section

PART 1 - GENERAL

- 1.1 General Requirements .1 Conform to, General Requirements.
- 1.2 Description .1 Work Included:
 .1 Provide sealants in the following locations:
 .1 Expansion and control joints in flashings, masonry and junctions between masonry and other materials.
 .2 Expansion and control joints.
 .3 Joints in vapour/air seal materials.
 .4 Joints as indicated in all details to be caulked or sealed.
- 1.3 Definitions .1 Non-staining: bleeding not more than 3 mm beyond edge of sealant.
- 1.4 Quality Assurance .1 Qualifications of Products: All products shall be packaged in conformance with the specified standards with every package bearing a label stating the standard to which the product conforms.
 .2 Qualifications of Subcontractor: Possess a copy of and be familiar with all standards specified. Have a minimum of 5 years experience in the work specified.
 .3 Qualifications of Applier: Have a minimum of one year experience in installing sealants in exposed joints.
- 1.5 Submittals .1 List of Proposed Products: Submit list of proposed products within 10 working days of signing of Contract for review.
 .2 Samples: Submit samples of materials if and when requested for review.
 .3 Submit samples of full colour range of all exposed products for colour choice by Consultant.
 .4 Maintenance and Reference Data: Submit to Section 01300 as specified therein.
- 1.6 Product Delivery, Storage and Handling .1 Deliver and store products in original containers and packaging.
 .2 Protect products from freezing or overheating.
 .3 Bring products to temperature range recommended by manufacturer before use.
- 1.7 Job Conditions .1 The sections providing joints between elements to be sealed by or in conformance with this section shall conform to the limits of movement of the specified sealant by the careful determination of acceptable lengths of element to be joined (spacing of joints) and establishment of sufficiently wide joints to accommodate anticipated movement in the finished Work.
 .2 Install sealants at mean ambient annual temperatures.

- .3 Inspection: Inspect work of other Sections upon which work of this Section depends and verify that conditions are suitable for this work to proceed.

1.8 Warranty

- .1 Warrant sealant work for a total of Two Years.
- .2 Warrant that surfaces shall not be stained by sealants.

PART 2 - PRODUCTS

2.1 Materials

- .1 Primer: As recommended by sealant manufacturer for type of surface being primed and conditions of service.
- .2 Joint Filler and Back-up: Circular cross section unless shown as slab or sheet, min. 25% wider than joint, semi-rigid: closed cell polyethylene or polyurethane product, Ethafoam by Dow Chemical of Canada Ltd., or approved equal, rubber tubing or non-migrating plasticized vinyl having a shore 'A' hardness of 20 and tensile strength of 130 – 200 kPA, compatible with sealant and as recommended by sealant manufacturer.
- .3 Pre-formed expansion joint sealer: EMSEAL, by Emseal Corporation (416) 678-2090.
- .4 Bond Breaker: As recommended for use by sealant manufacturer.
- .5 Vent Tubes: Rigid clear extruded plastic, min. 6 mm ID and 9 mm OD.
- .6 Sealant Colours: Colours of exposed sealants as chosen by the Consultant. In general, colour to match materials to which sealing is applied. Refer to caulking colour guide appended to this section, this guide is not an exhaustive list.
- .7 Sealant Types:
- Type 1: Sealing Compound, One Component, Acrylic Base, Solvent Curing conforming to CGSB 19-GP-5M.
- Type 2: Air barrier and sealant quality conforming to Thermal Insulation Urethane, Spray in Place, CGSB 51-GP-23M.
- Type 3: Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing conforming to CSGB 19-GP-14M.
- Type 4: Sealing Compound, One Component, Acrylic Emulsion Base conforming to CGSB 19-GP-17M.
- Type 5: Sealing Compound, One Component, Silicone Base, Solvent Curing conforming to CGSB-19.18-M87.
- Type 6: Non-curing, non-skinning, non-oxidizing, non-bleeding Sealing and Bedding Compound for Acoustical Purposes and concealed joints conforming to CGSB 19-GP-21M.
- Type 7: Sealing Compound, Mildew Resistant, for Tubs and tile conforming to CGSB 19-GP-22M.
- Type 8: Sealing Compound, Multi-component, Chemical Curing conforming to CAN2-19.24-M80.

- Type 9: Tacky preformed tape of 100% solids butyl polyisobutylene base, cross-sectional size as required or as specified.
- Type 10: Tacky preformed tape of 100% solids vulcanized-rubber base or macro-polyisobutylene base with solid rubber bead centred in tape, cross-sectional size as required or as specified.
- Type 11: Preformed wedge or gasket in shape designed for specific installation condition of appropriate shore 'A' hardness of dense neoprene, EPDM or Santoprene PVC by Monsanto Canada Inc.
- Type 12: Pre-formed expansion joint sealer, sized and installed as per manufactures specifications, Sealing Compound, Multi-component, Chemical Curing conforming to CAN2-19.24-M80.
- Type 13: Sealing compound, One Component, Moisture Curing Modified Polyurethane conforming to CAN/CGSB-19.13-M87.
- Type 14: DC 790 or DC 795 by Dow Corning Inc.
- Type 15: RC-1 by PRC Canada.
- Type 16: Acrylic latex, one part, to CAN/CGSB-19.17.
- Type 17: Urethane, two part, self leveling to CAN/CGSB-19.24 Type 1 Class B.

PART 3 - EXECUTION

3.1 Inspection

- .1 Check compatibility of proposed sealants with materials to be in contact with sealant including roofing and waterproofing materials and sealants.
- .2 Where sealant beads terminate against another material, check compatibility of sealant with materials encountered and ensure durable seal is provided there.

3.2 Preparation

- .1 Clean joints and spaces which are to be caulked and ensure that they are dry and free of dust, loose mortar, oil, grease, and other foreign matter. Clean ferrous metals of rust, mill scale and foreign materials by wire brushing grinding or sanding.
- .2 Wipe metal surfaces to be caulked, except pre-coated metals, with cellulose sponges or clean rags soaked with ethyl alcohol, a ketone solvent, xylol or toluol and wipe dry with a clean cloth. Clean pre-coated metals with solutions of compounds which will not injure finish and which are compatible with the primer and sealant.
- .3 Provide bond breaker between sealant and other materials spanning joint where backup rod cannot be proved because of depth.
- .4 Where joint depth/width ratio is 3:2 or greater, install joint filler to proper, uniform depth to give sealant bead of optimum size and shape for joint condition and expected movement condition.

- .5 Where surfaces adjacent to joints are likely to become coated with sealant during applications, mask them prior to priming and caulking.
- .6 Seal joints in surfaces to be painted before surfaces are painted. Where surfaces to be caulked are prime painted in shop before caulking, check to make sure prime paint is compatible with primer and sealant. If they are incompatible, inform Consultant and change primer and sealant to compatible types approved by Consultant.
- .7 Prime sides of joints, if priming is recommended by sealant manufacturer for type of surface being caulked, for service conditions or performance requirement of joint.

3.3 Priming

- .1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

3.4 Backup Material

- .1 Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.5 Application

- .1 Sealant.
 - .1 Apply sealant in accordance with manufacturer's written instructions.
 - .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
 - .3 Apply sealant in continuous beads.
 - .4 Apply sealant using gun with proper size nozzle.
 - .5 Use sufficient pressure to fill voids and joints solid.
 - .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
 - .7 Tool exposed surfaces before skinning begins to give slightly concave shape.
 - .8 Remove excess compound promptly as work progresses and upon completion.
- .2 Curing.
 - .1 Cure sealants in accordance with sealant manufacturer's instructions.
 - .2 Do not cover up sealants until proper curing has taken place.
- .3 Cleanup.
 - .1 Clean adjacent surfaces immediately and leave work neat and clean.
 - .2 Remove excess and droppings, using recommended cleaners as work progresses.
 - .3 Remove masking tape after initial set of sealant.

3.6 List of Types and Uses of Sealant. Use as required for project

- .1 General: Use sealant types (non-sag, self-levelling, glazing, non-glazing, etc.) for uses for which they are recommended.
- .2 Use sealants as recommended by the respective CGSB standards.
- .3 Building Envelope Joints
 - .1 Lap Joints in Plastic Sheet Vapour Barrier: Sealant Type 3.
 - .2 Securement Joints in Plastic Sheet Air/Vapour Barrier: Sealant Type 3.
 - .3 Joints Between Air/Vapour Barrier or Insulation Wythe and Frames of Windows, Doors or Equipment: Sealant Type 2.
 - .4 Control Joints in Masonry: Type 12 inside or outside.
 - .5 Inside or Outside of Exterior Window, Door and Screen Frames: Sealant type 8.
 - .6 Thresholds in Exterior and Vestibule Doors: Type 8.
 - .7 Joints Within 2.1 m of Grade: Provide sealant with toughness when cured which resists damage due to mischief.
 - .8 Expansion Joints in masonry: use Type 12 combined with finished sealant Type 8.
 - .9 Joints in rigid insulation protection board: Type 8.
- .4 Glazing
 - .1 Use gun-grade, or Type 9, 10 or 11 sealant as specified in Section 08800.
 - .2 Size Type 9 or 10 sealant 6 mm x 6 mm unless otherwise required.
 - .3 Exterior Glazing: Sealant Type 1, 3, 8, 9, 10 and 11 as appropriate.
 - .4 Use non-solvent base sealants only for glazing insulating glass units.
- .5 Gypsum board joints and joints to be painted: Type 16.
- .6 Around hollow metal frames (interior): Type 16.
- .7 Control joints in concrete floors: Type 17.
- .8 Ceramic tile, water closets, countertops: Type 7.

End of Section



Appendix #1
Aerial Photographs
of the
Existing St. Basil School

**Huron-Superior Catholic
District School Board**





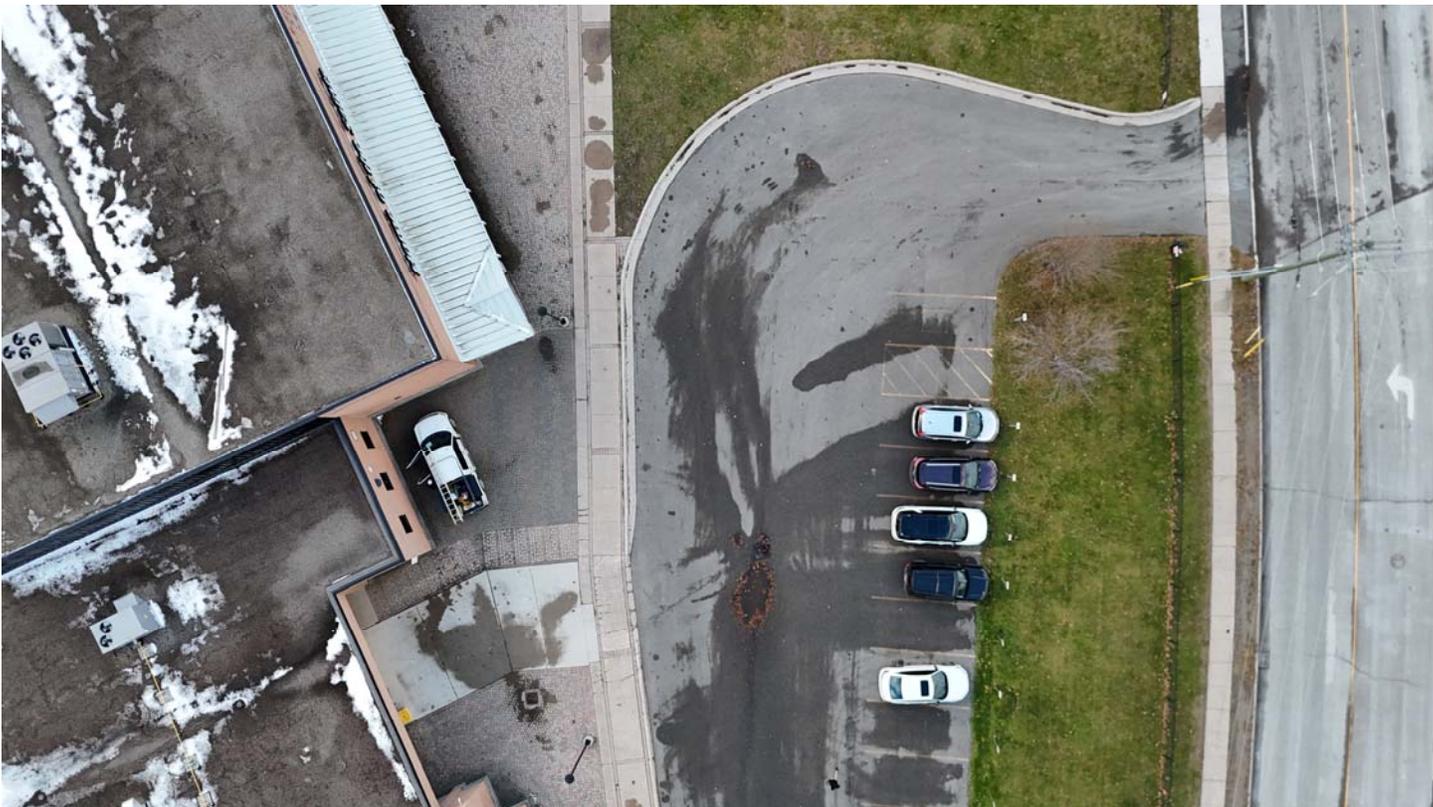
All photos courtesy of SRP drone footage.



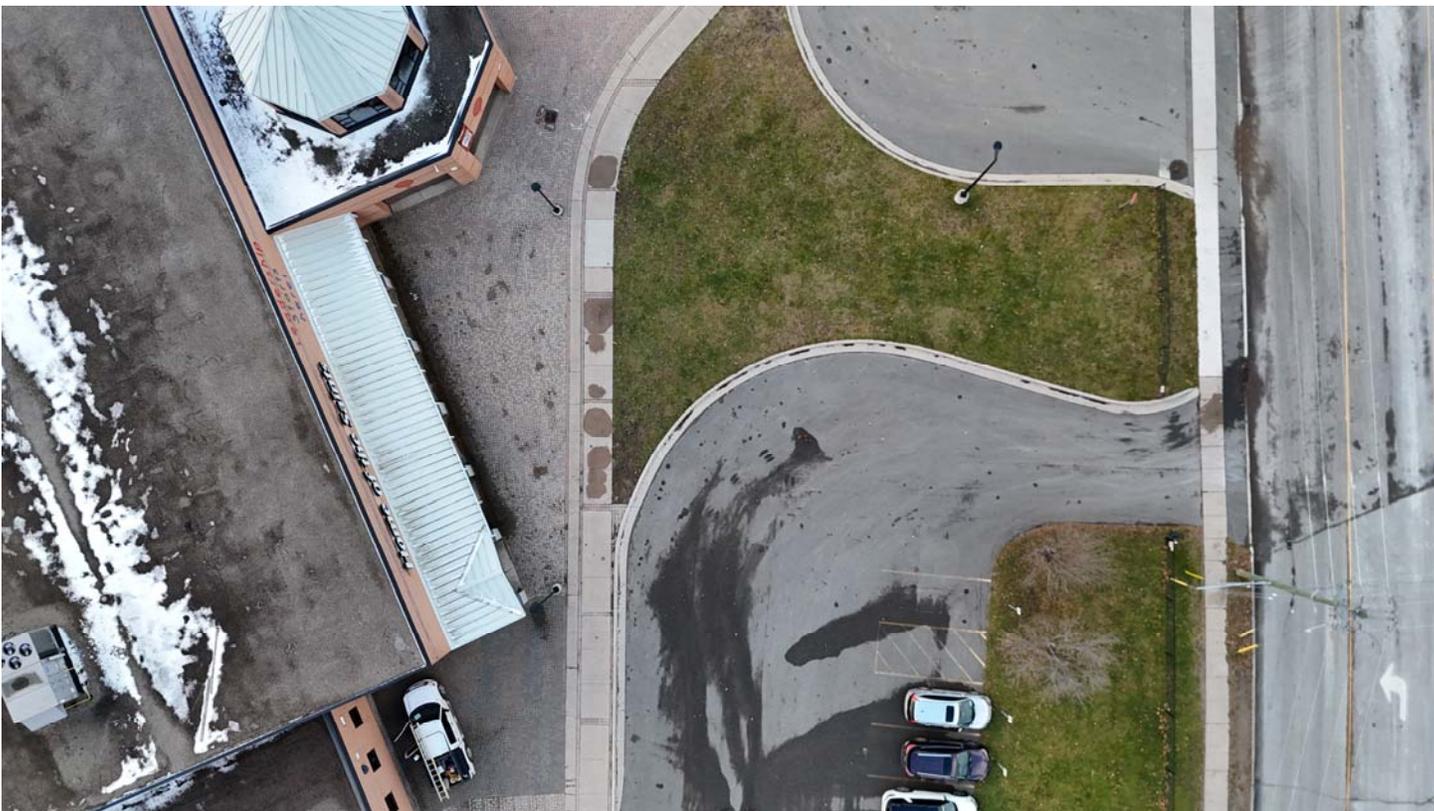
All photos courtesy of SRP drone footage.



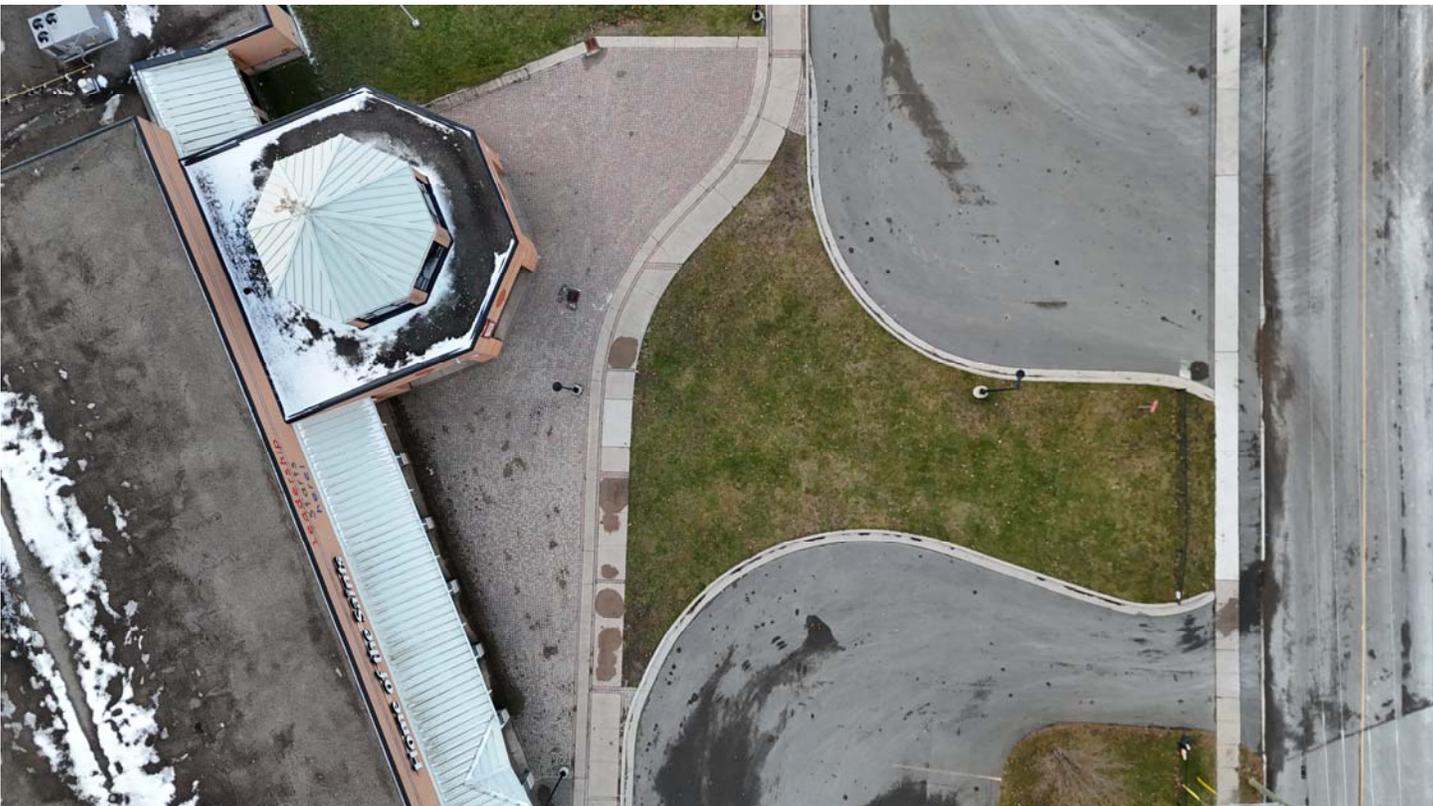
All photos courtesy of SRP drone footage.



All photos courtesy of SRP drone footage.



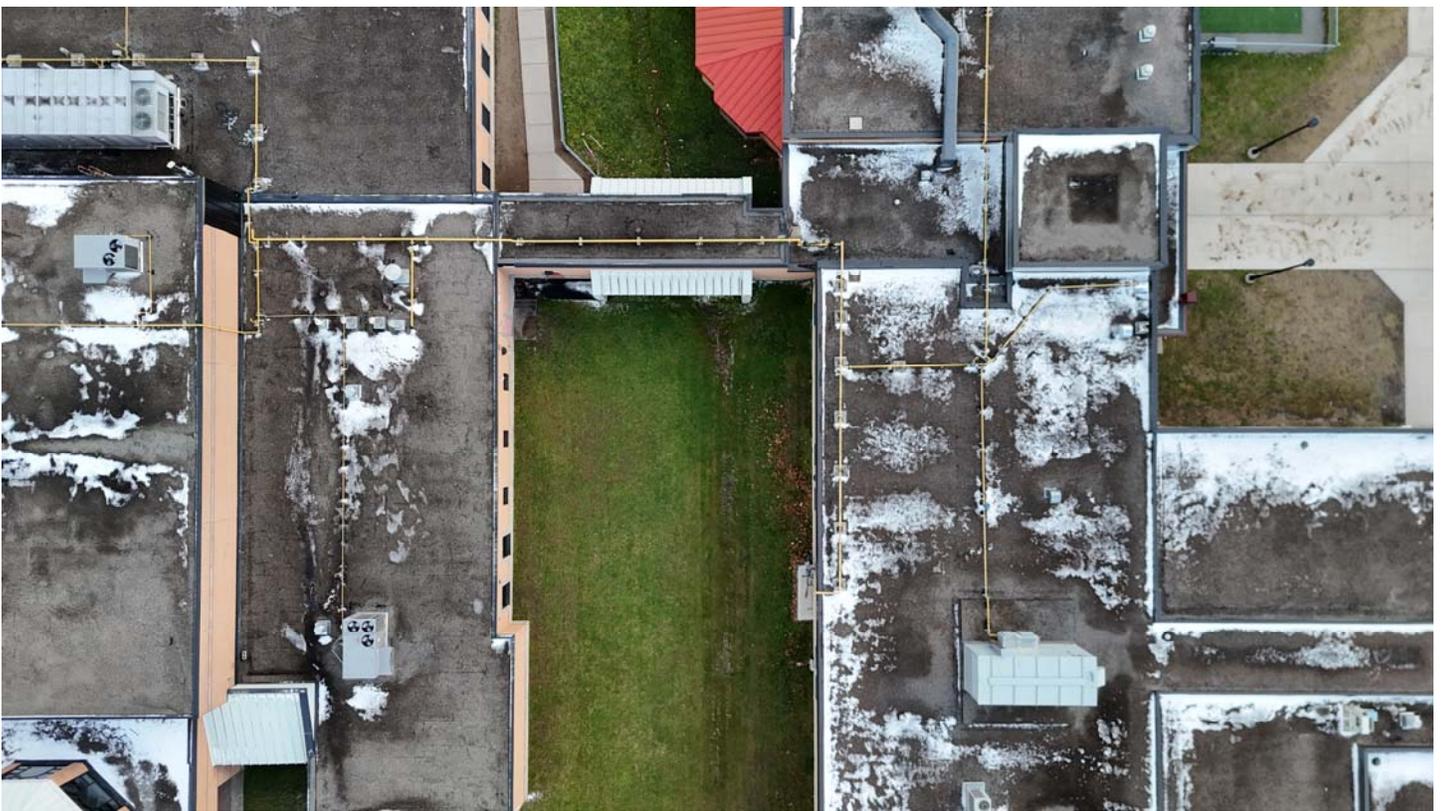
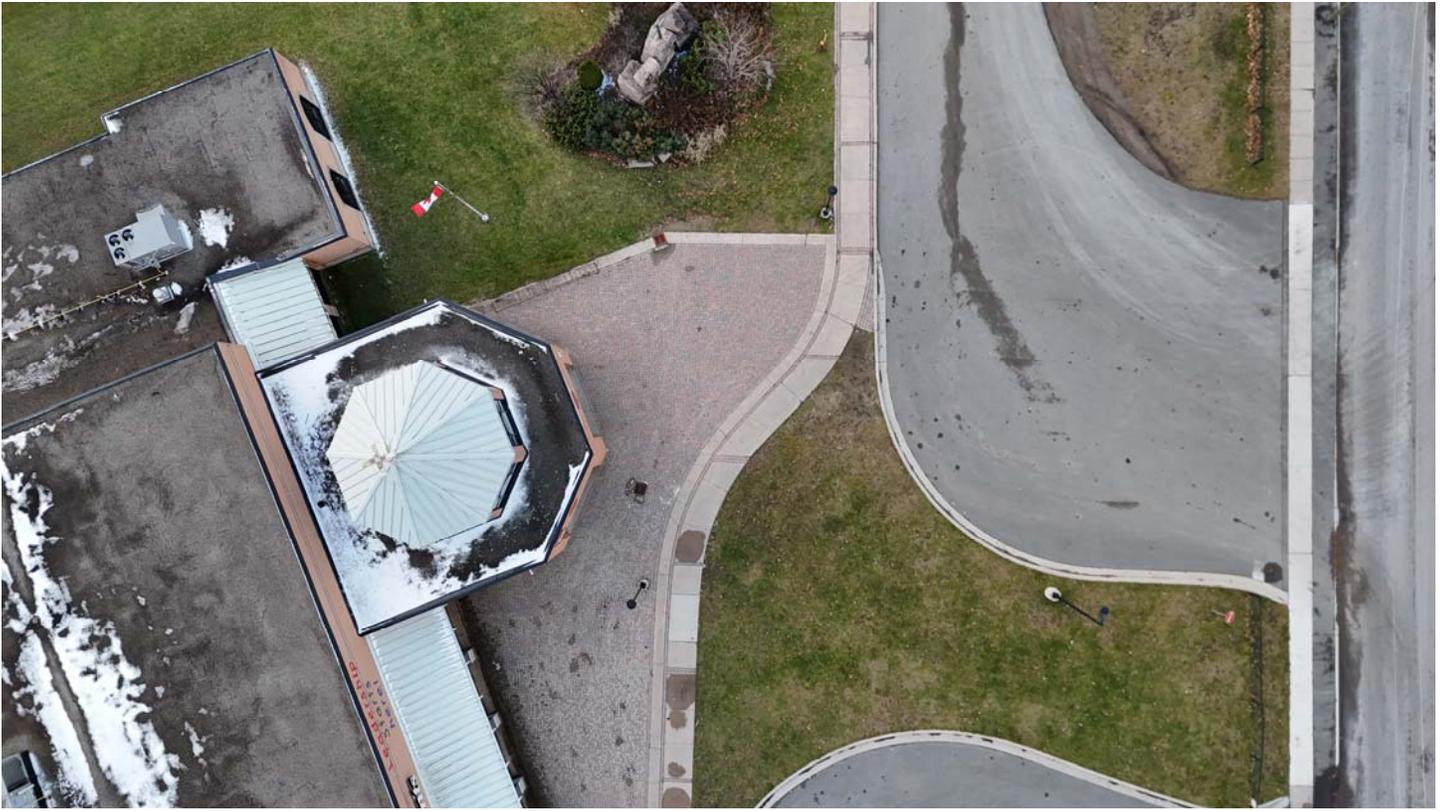
All photos courtesy of SRP drone footage.



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All photos courtesy of SRP drone footage.



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All photos courtesy of **SRP** drone footage.



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ADDENDUM

This Addendum constitutes additional work, or clarification of Tender. All costs and work associated to be included in the Tender Price

ONE

Date

13 Feb 202

Project

25-42 – Re-Roofing 300 Wing,
St. Basil Catholic School
Sault Ste. Marie, Ontario

Project Number

25-42



david ELLIS architect inc.

267 Cathcart Street

Sault Ste. Marie

Ontario, P6A 1E5

Tel 705 253 4333

david.ellis@ellisdesign.ca

The following items are required changes to the contract documents for this project. Refer Paragraph 2.2.9 of GC 2.2, CCDC 2 authorizing the issuance by Architect of Supplemental Instructions. Note that in accepting this instruction, the Contractor acknowledges there will be no additional charge for this work and if the Contractor believes this instruction affects either price or schedule, they are to notify the Architect immediately. All workmanship and materials shall be as described in the Contract Documents unless otherwise noted.

1.0 GENERAL Clarification

1.1 Insert this Addendum in Section 00900 of the Specifications.

1.2 This Addendum is issued prior to tender closing to provide revisions to the Contract Documents and shall become part of the Contract Documents and shall change the original contract documents only in the manner and extent stated.

2.0 SPECIFICATIONS

2.1 Section 00200 – Instructions to Bidders

1.1 CHANGE the date of the Tender Receipt:

Revise to read:

“ Offers signed under seal, executed, and dated will be received on, or before, **3:00 PM local time, Tuesday, March 3rd, 2026.**

3.0 DRAWINGS

3.1 Drawing 1.0 – Typical Roof Details

Drawing Scale to read : “1/16” = 1’-0”

END OF ADDENDUM

LEGEND

- EXISTING MECHANICAL UNIT
- SLOPED INSULATION
- INTEGRATED TRAFFIC PADS SEE DETAIL
- EXISTING METAL ROOF TO REMAIN, TIE INTO NEW ROOFING & FLASHING
- GAS LINE
- EXTENT OF TAPERED INSULATION
- ALL EXISTING ROOF DRAINS TO BE LOCATED, CLEANED & TIE INTO NEW ROOFING. SEE DETAIL
- DIRECTION OF ROOF SLOPE HIGH → LOW
- EXTENT OF BASE BID RE-ROOFING
- EXTENT OF ALTERNATE PRICE #1

TYPICAL ROOF CONSTRUCTION

CAREFULLY REMOVE EXISTING BUR ROOFING, INCLUDING THE JUNCTIONS AT EXISTING ROOF AREAS AND ANY OTHER ADJACENT ROOFING AS REQUIRED. REMOVE ROOFING MEMBRANE, INSULATION, FLASHINGS, CANTS, CRICKETS ETC. DOWN TO EXISTING WOOD, CONCRETE, METAL DECK, ETC.
 NOTIFY ARCHITECT AFTER INSPECTION OF ROOF DECK. IF DAMAGED OR NOT EVIDENT, IF TO BE REPAIRED OR REPLACED AND AFTER APPROVAL OF ARCHITECT, REPLACE THOSE PORTIONS OF DECK WITH NEW TO MATCH EXISTING.
 FOR NEW TYPE "A" ROOFING WORK, TEMPORARILY SUPPORT ALL GAS LINES UNTIL NEW SUPPORTS AND ROOFING IS INSTALLED.
 REMOVE, PROVIDE NEW RAISED SUPPORT TO A MINIMUM OF 8", OR 12" IF EXISTING CAN BE MOVED ABOVE NEW ROOF LEVEL FOR ALL ROOF MOUNTED EQUIPMENT AND FLASHINGS.
 ADJUST EXISTING OR SUPPLY NEW SUPPORTS AS REQ'D.

INSTALL NEW 5/8" TYPE "X" GYPSUM PROTECTION BOARD, VAPOUR BARRIER 2-1/2" (ON GYMNASIUM ROOF) AND 4" (EVERY OTHER ROOF) INSULATION (THICKER AT PERIMETER EDGE OR TOP OF SLOPES), BITUMAS MODIFIED BUILT-UP ROOFING ROOFING SYSTEM AND ALL REQUIRED FLASHINGS, PRESSURE TREATED BLOCKING, PLYWOOD, AND FIBRE BOARD CANTS AND CRICKETS NOMINAL 1/4" PEAGRAVEL TOP COAT, NOT TO EXCEED 5 LBS/SF OVERALL WEIGHT
 REMOVE DEBRIS FROM ALL ROOF VENTS AND DRAINS
 MAKE GOOD ANY AND ALL DAMAGED MATERIALS OR SURFACES RESULTING FROM CONSTRUCTION ON ROOF, WALLS, SITE, ETC., NOT LIMITED TO SOD, ASPHALT, TREES, SHRUBS, ETC.
 ROOFING TO BE A COMPLETE SYSTEM, USING A SINGLE PROPRIETARY MANUFACTURER TO ENSURE WARRANTY COMPLIANCE.
 EXISTING CURBS, VENTS, DRAINS, ETC TO BE DISASSEMBLED AND CLEANED AFTER EXISTING ROOFING REMOVED. PROVIDE NEW FLASHINGS TO MATCH DETAILS SHOWN OR IF NOT DETAILED, TO EXISTING CONDITIONS. TIE INTO NEW ROOFING AND ENSURE WATER TIGHT CONDITIONS.

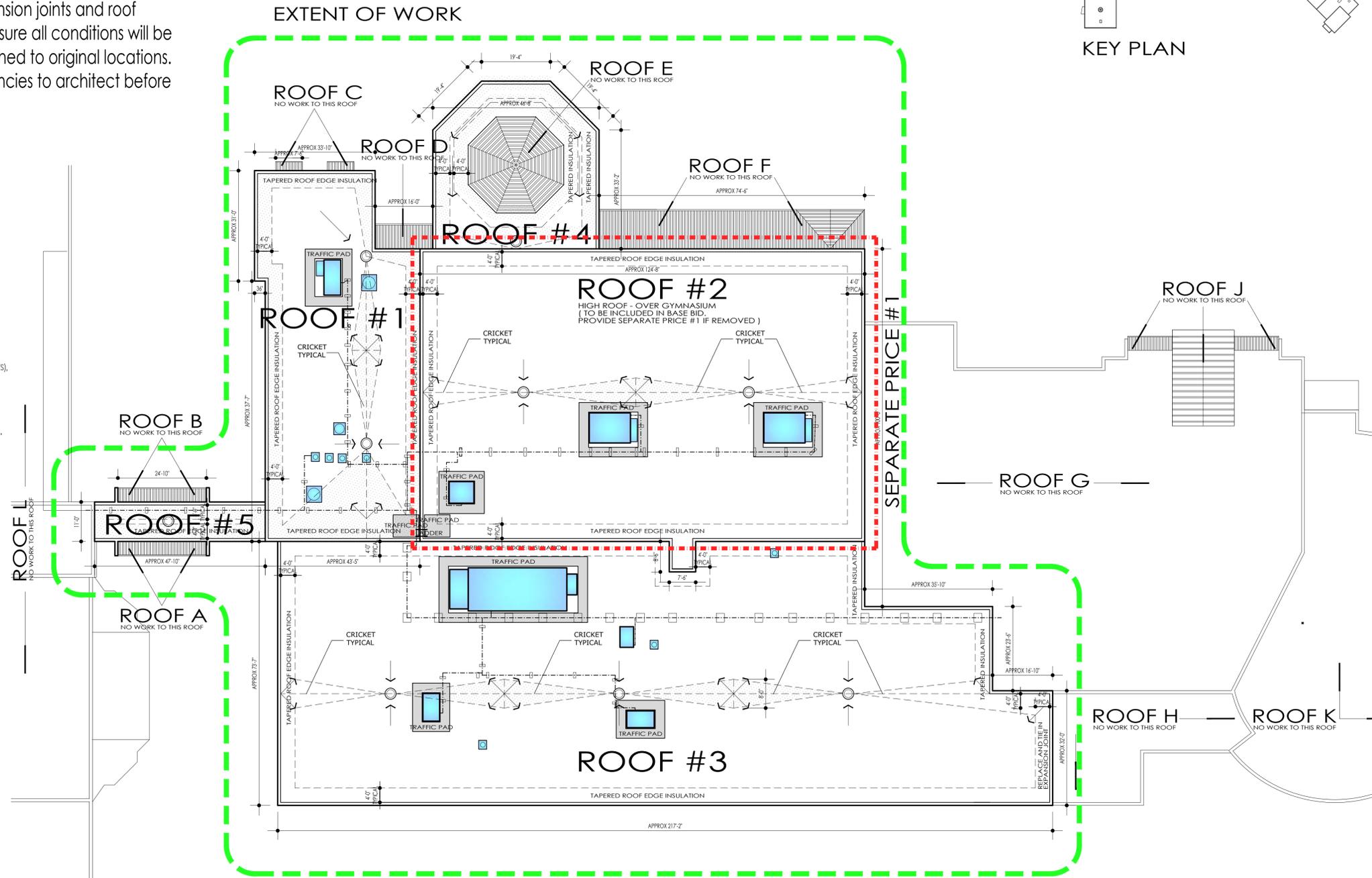
INSULATION:
 GENERALLY: POLYISOCYANURATE ROOF INSULATION THICKNESS: 4" + 2 1/2" MAX. FOR SLOPING SECTIONS TO ROOF OVER GYMNASIUM (ROOF#2); ROOF INSULATION THICKNESS: 2" + 2 1/2" MAX. FOR SLOPING SECTIONS
 SEE DETAILS AND SPECIFICATIONS FOR MORE DETAILED INFORMATION.
 PREFERENCE WILL BE GIVEN TO MATERIALS WHICH ARE A "PRODUCT OF CANADA"

NOTES

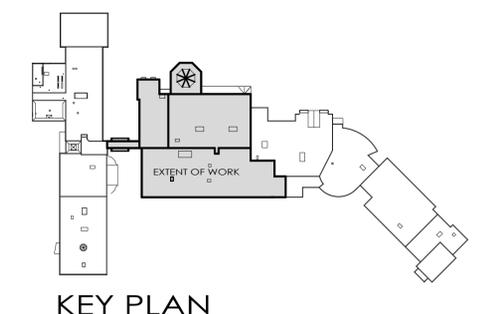
- THE INTENT OF THIS PROJECT IS TO CAREFULLY REMOVE EXISTING BITUMAS ROOFING, FLASHINGS, INSULATION, ETC FROM THE ENTIRETY OF WING "C" OF THE EXISTING SCHOOL. CONTRACTOR TO REPLACE ALL BUILT-UP ROOFING, FLASHINGS, INSULATION, COMPLETE WITH TAPERED SLOPES AROUND ALL ROOF DRAINS, PLUS TO THE PERIMETER OF ALL ROOF SECTIONS (#1 THROUGH #5)
- ALL WORK TO COMPLY WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, FIRE UNDERWRITER'S REQUIREMENTS, SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION (SMACNA), THE ONTARIO ELECTRICAL SAFETY CODE, GAS CODE, MOST CURRENT EDITIONS, PLUS ALL OTHER CODES HAVING JURISDICTION
- THE MAKE AND QUALITY OF ALL MATERIALS USED SHALL MEET THE ONTARIO BUILDING CODE REQUIREMENTS, BE NEW AND FREE FROM DEFECTS AND SHALL BE SUBJECT TO THE APPROVAL OF THE CONSULTANTS, LOCAL AUTHORITIES HAVE JURISDICTION, PLUS THE MANUFACTURER.
- ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER BY FIRST CLASS LICENCED TRADESMEN
- EXACT LOCATIONS AND NUMBERS OF ROOF MOUNTED HVAC UNITS, MECHANICAL LINES AND SERVICES, ROOF DRAINS, CRICKETS, ROOF PENETRATIONS, ROOF DRAINS, ETC., ARE APPROXIMATE ONLY AND SOME MAY NOT BE SHOWN, BUT ARE TO BE REFLASHED, OR MODIFIED REGARDLESS. TO THIS END, CONTRACTOR TO REVIEW SITE BEFORE BIDDING AND NOTE ALL ITEMS TO REMAIN, BE NEEDED TO ADDRESS, RE-FLASH, MODIFY AND/OR REPAIR, TO THEIR OWN SATISFACTION.
- CONTRACTOR TO VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT IMMEDIATELY BEFORE PROCEEDING WITH CONSTRUCTION
- PROTECT ALL EQUIPMENT, HVAC UNITS, ETC WITHIN THE WORK AREA WITH 4mil POLYETHYLENE FILM
- TAKE REASONABLE MEASURES TO MINIMIZE AND CONTROL NOISE, DIRT AND DUST DURING WORK
- PROVIDE TAPERED INSULATION DOWN TO ALL ROOF DRAINS. TYPICAL
- CRICKETS TO BE FORMED BY BUILT-UP PRE-MANUFACTURED RIGID INSULATION
- EXISTING ROOF DRAIN ASSEMBLIES, TO BE REPLACED AND CONNECTED INTO EXISTING DRAIN LINES. NEW DRAINS TO BE INSTALLED BY THIS DIVISION TO ENSURE COMPATIBILITY WITH ROOFING SYSTEM
- REMOVE DEBRIS FROM ALL ROOF VENTS AND DRAINS BEFORE HANDOVER.
- BLOCKING TO BE SECURED AT A MAXIMUM SPACING OF 36" TO RESIST A FORCE OF 175 LBS./ LINEAR FOOT IN ANY DIRECTION.
- PROVIDE TRAFFIC PADS AROUND ALL HVAC UNITS. TRAFFIC PADS TO BE COMPLETE WITH PAVERS UNLESS NOTED OTHERWISE.
- ALL DIRT, RUBBLE AND OLD MATERIALS SHALL BE REMOVED FROM THE SITE DAILY AND DISPOSED OF AT THE CONTRACTORS EXPENSE
- USE SHOP VACS TO COLLECT DUST AS IT IS BEING GENERATED WHILE DOING THE NECESSARY CUTTING AND ASSOCIATED DEMOLITION. USE HAND HELD MIST SPRAYERS TO WET DEBRIS TO MINIMIZE THE MIGRATION OF DUST AND PARTICULATE MATTER
- AT THE END OF EACH DAY'S WORK, LEAVE WORK AND AREAS INVOLVED IN A CLEAN, SAFE AND WATERPROOF CONDITION
- CO-ORDINATE ANY AND ALL INTERRUPTION OF MECHANICAL AND ELECTRICAL SERVICES WITH OWNER
- SEE DETAILS AND SPECIFICATIONS FOR MORE DETAILED INFORMATION.
- SEE DRAWING A3.0 FOR DOOR ACCESS CONTROLS LOCATION AND DESCRIPTION.
- STRUCTURAL ENGINEER TO INSPECT CERTAIN AREAS UPON EXISTING ROOFING MATERIAL REMOVAL. CO-OPERATE AND CO-ORDINATE WITH ENGINEER AS REQUIRED.

GENERAL CO-ORDINATION

Contractor to inspect existing 300 wing roof before starting any work and identify and note all existing roof penetrations, gas lines and support locations, roof drain locations, HVAC and other service locations, abutting walls, expansion joints and roof parapets, etc., to ensure all conditions will be addressed and returned to original locations. Report any discrepancies to architect before starting any work.



EXTENT OF BASE BID WORK: ROOF 1,2,3,4,5
SEPARATE PRICE # 1: ROOF 2
NO WORK TO ROOF A,B,C,D,E,F,G,H,K,L



not to be used for construction unless sealed and signed by the architect

seal

477 queen street east suite 210 sault ste. marie p6a 125 ph: 705 253 4333 fax: 253 4332 email: ellis@ellisdesign.ca

project
St. Basil School - 300 Wing Re-roofing
 sault ste. marie, ontario

revisions
 10 FEB 2026 ISSUED FOR TENDER

scale
 1/8" = 1'-0"

date
 December 2025

checked by
 d ellis

drawn by
 d ellis

drawing
Typical Roof Details

project number
 25-42

All measurements to be confirmed in field by Contractor. Errors and omissions to be corrected by Contractor. This work is copyright © David Ellis Architect Inc. and is to be reproduced without written permission.

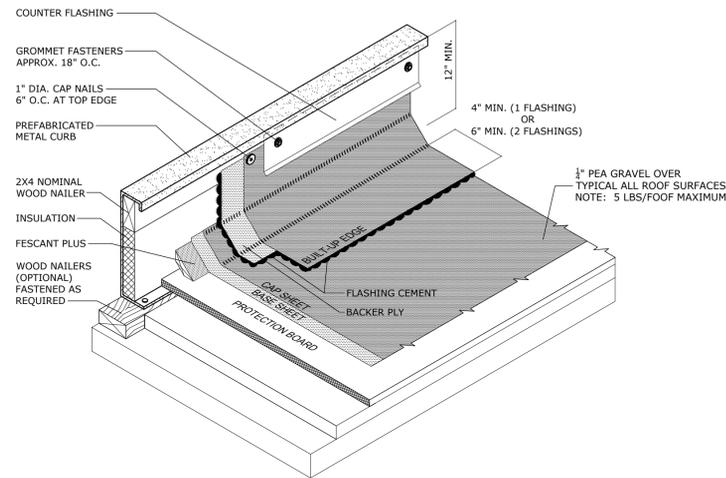
david ELLIS architect inc.

300 Wing - Roof Replacement Plan



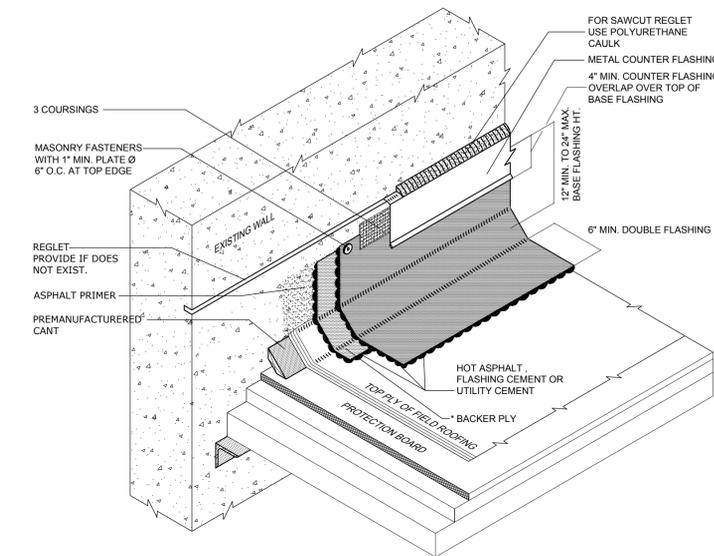
a-1.0

GENERAL NOTE:
SEE DRAWING a-1.0 FOR INSULATION THICKNESS.



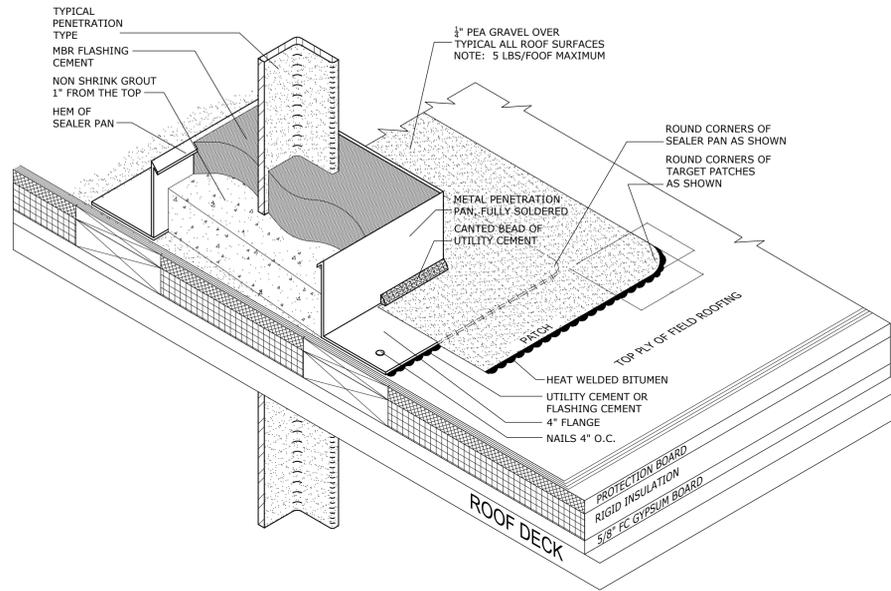
1. REFER TO MANUFACTURER'S INSTRUCTIONS FOR ADDITIONAL INFORMATION.
2. BACKER PLY EXTENDING 2" MIN. FROM TOE OF CANT
3. HEIGHT OF CURB TO BE ADJUSTED WITH NAILERS TO EXTEND FLASHING HEIGHT.
4. VERTICAL WOOD CURB TO BE FASTENED TO THE DECK ONLY.
5. CURB INSULATION TO BE MECHANICALLY ATTACHED OR ADHERED SOLIDLY TO METAL CURB.
6. CURB TO BE SET SO TO PROVIDE 12" MIN FLASHING HEIGHT, UNLESS EXISTING UNIT CAN NOT BE MOVED.
7. METAL COUNTERFLASHING IS REQUIRED FOR ALL INSTALLATIONS.
8. ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH OBC REQUIREMENTS AND/OR PROJECT SPECIFICATIONS.
9. VERTICAL JOINTS TO BE OVERLAPPED 4" MINIMUM FOR ALL APPLICATIONS. 3 COURSING WITH UTILITY CEMENT AND FABRIC OR FLASHING CEMENT ON ALL VERTICAL FLASHING LAPS AND INSIDE/OUTSIDE CORNERS EXTENDING PAST LEADING EDGE OF CANT STRIP.

A
2.0
DETAIL AT PRE-FAB CURB



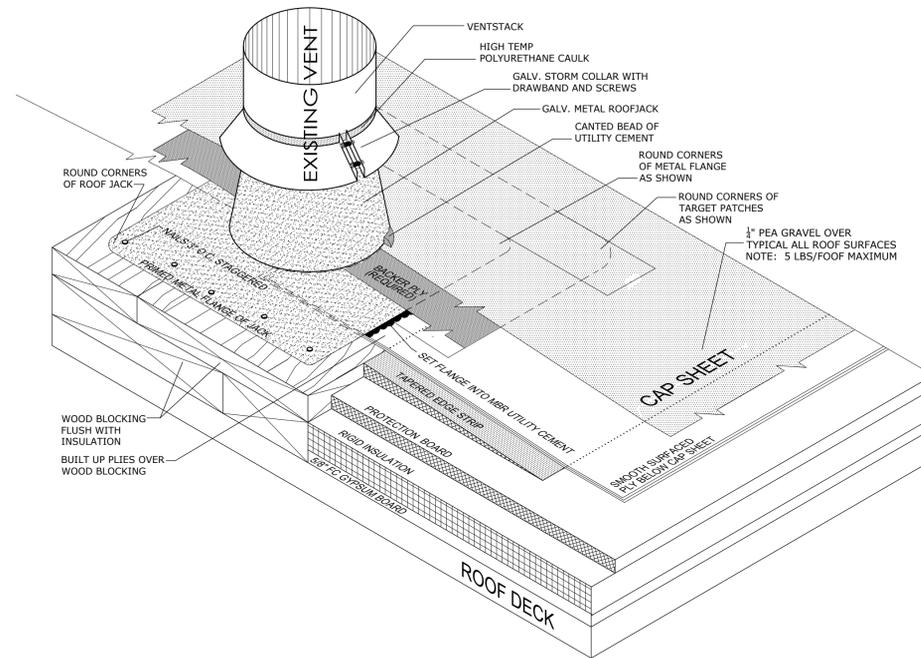
1. REFER TO MANUFACTURER'S INSTRUCTIONS FOR ADDITIONAL INFORMATION.
2. BACKER PLY EXTENDING 2" MIN. FROM TOE OF CANT.
- NOTE: A TERMINATION BAR FASTENED 6" O.C. IS AN ACCEPTABLE SECUREMENT ALTERNATIVE ALONG THE TOP EDGE OF FLASHING.
4. METAL COUNTER FLASHING IS REQUIRED.
5. VERTICAL JOINTS ARE TO BE OVERLAPPED 4" MINIMUM FOR ALL APPLICATIONS. 3 COURSING WITH UTILITY CEMENT AND FABRIC OR FLASHING CEMENT IS RECOMMENDED ON ALL VERTICAL FLASHING LAPS AND INSIDE/OUTSIDE CORNERS EXTENDING PAST LEADING EDGE OF CANT STRIP.
6. ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH OBC REQUIREMENTS AND/OR PROJECT SPECIFICATIONS.

D
2.0
DETAIL AT MASONRY WALL INTERSECTION



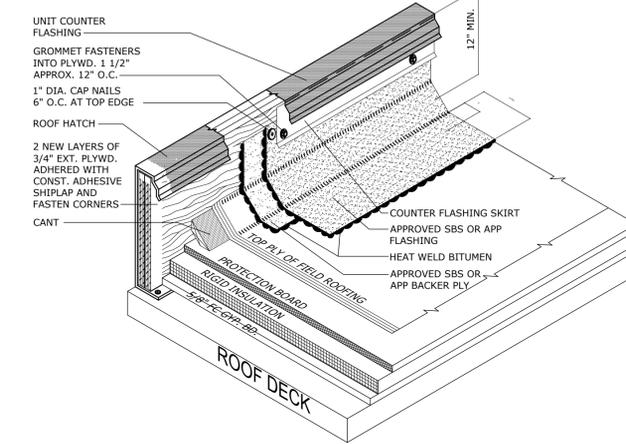
1. USE HEAT WELDED FLASHINGS UNLESS NOT RECOMMENDED BY MANUFACTURER.
2. MAINTAIN 2" MIN. CLEARANCE FROM PENETRATION TO EDGE OF METAL PAN.
3. ROUND FLANGE CORNERS ON METAL PAN.
4. PRIME INSIDE OF METAL PAN WITH PRIMER WHERE FLASHING CEMENT WILL BE PLACED.
5. USE ASPHALT PRIMER ON FLANGES WHEN USING MBR UTILITY CEMENT. USE PERMAFLASH PRIMER ON FLANGES WHEN USING MBR FLASHING CEMENT.
6. ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH OBC CODE REQUIREMENTS AND/OR PROJECT SPECIFICATIONS.

B
2.0
DETAIL AT ROOF PENETRATION



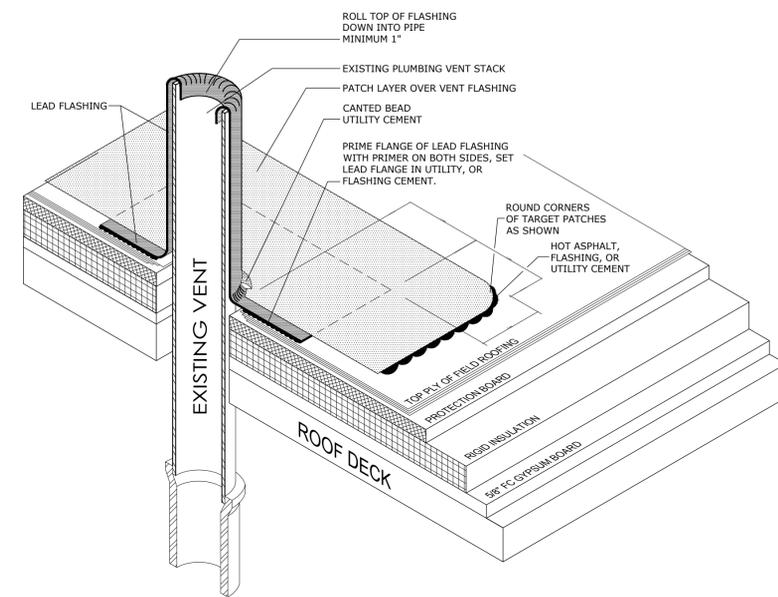
1. REFER TO MANUFACTURER'S INSTRUCTIONS FOR ADDITIONAL INFORMATION.
2. FOLLOW SPECIFICATIONS AND MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
3. ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION SHOULD BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH OBC REQUIREMENTS AND/OR PROJECT SPECIFICATIONS.
4. SEAL SEAMS OF ROOF JACK.
5. DISTANCE BETWEEN TOP OF ROOF JACK AND VENT STACK SHOULD BE A MINIMUM OF 1".
6. THE TAPERED EDGE STRIP IS REQUIRED.

E
2.0
DETAIL AT VENT (WARM)



1. USE HEAT WELDED FLASHINGS UNLESS NOT RECOMMENDED BY MANUFACTURER.
2. MAINTAIN 2" MIN. CLEARANCE FROM PENETRATION TO EDGE OF METAL PAN.
3. CURB INSULATION TO BE MECHANICALLY ATTACHED OR ADHERED SOLIDLY TO METAL CURB.
4. CURB MUST BE SET TO PROVIDE 12" MIN FLASHING HEIGHT, UNLESS EXISTING HATCH CAN NOT BE MOVED.
5. METAL COUNTER FLASHING IS REQUIRED FOR ALL INSTALLATIONS.
6. VERTICAL JOINTS ARE TO BE OVERLAPPED 4" MINIMUM FOR ALL APPLICATIONS. 3 COURSING WITH UTILITY CEMENT AND FABRIC OR FLASHING CEMENT IS RECOMMENDED ON ALL VERTICAL FLASHING LAPS AND INSIDE/OUTSIDE CORNERS EXTENDING PAST LEADING EDGE OF CANT STRIP.
7. ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH OBC CODE REQUIREMENTS AND/OR PROJECT SPECIFICATIONS.

C
2.0
DETAIL AT ROOF HATCH



1. REFER TO MANUFACTURER'S INSTRUCTIONS FOR ADDITIONAL INFORMATION.
2. LEAD FLASHING SHALL BE 2.5 LBS. PER SQUARE FOOT MINIMUM.
3. IF PIPE IS TOO TALL, SEE MANUFACTURER'S INSTRUCTIONS FOR A SUITABLE ALTERNATIVE.
4. USE ASPHALT PRIMER ON METAL FLANGES WHEN USING UTILITY CEMENT.
5. USE FLASHING PRIMER ON FLANGES WHEN USING FLASHING CEMENT.
6. ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH OBC REQUIREMENTS AND/OR PROJECT SPECIFICATIONS.

F
2.0
DETAIL AT PLUMBING VENT

St. Basil School - 300 Wing Re-roofing
sault ste. marie, ontario

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477 queen street east suite 210 sault ste. marie p6a 1z5 ph: 705 253 4333 fax: 253 4332 email: ellis@elldesign.ca

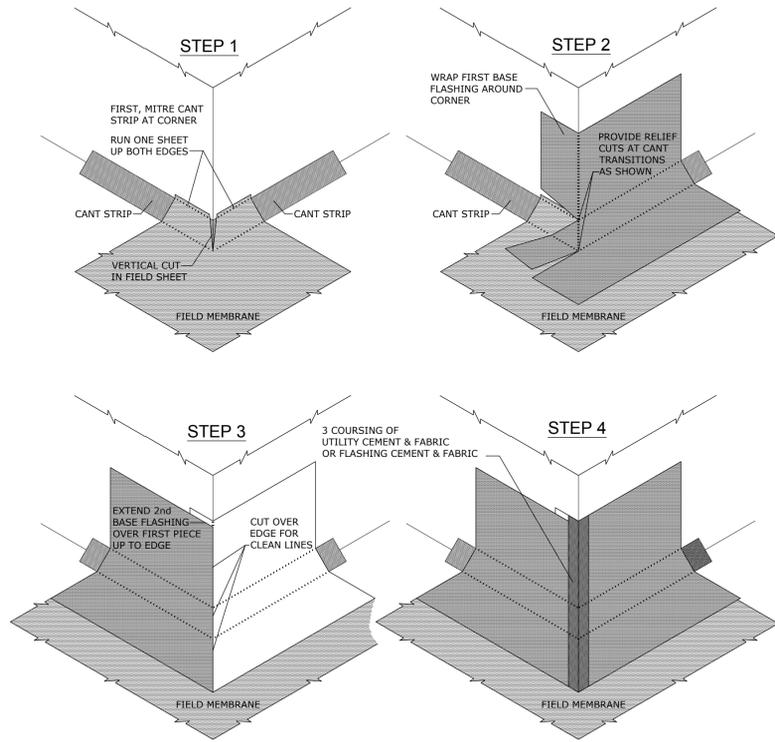
ISSUED FOR TENDER
10 FEB 2026

scale 1/8" = 1'-0"
date December 2025
checked by d ellis
drawn by d ellis

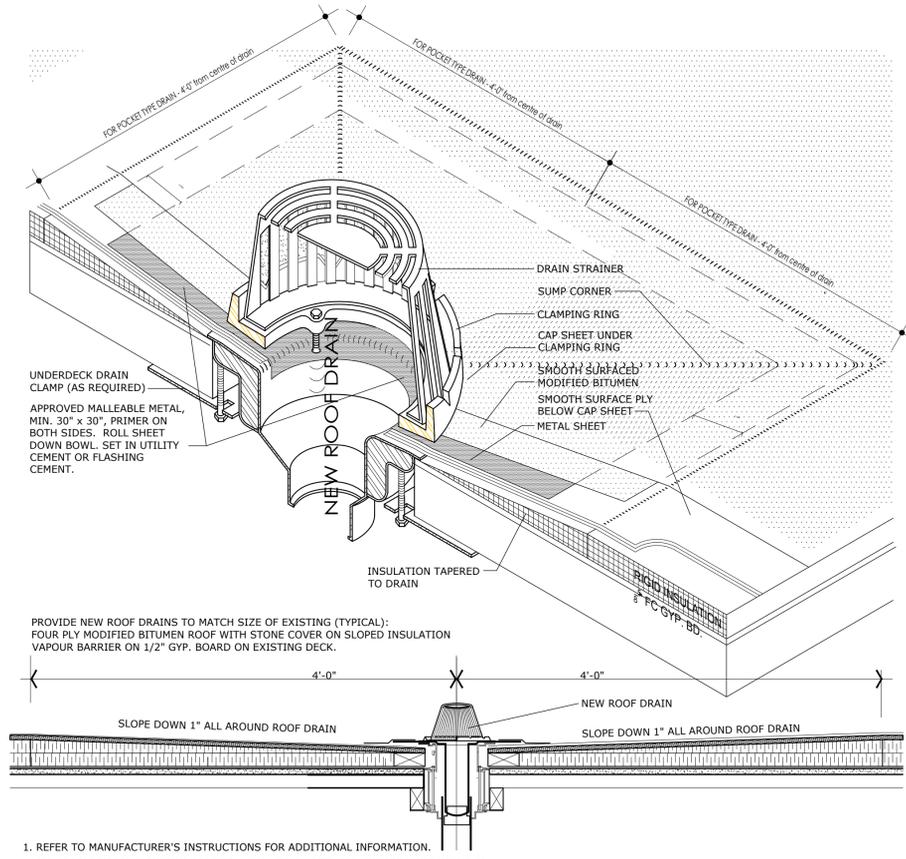
drawing Typical Roof Details
project number 25-42

a-2.0

GENERAL NOTE:
SEE DRAWING a-1.0 FOR INSULATION THICKNESS.

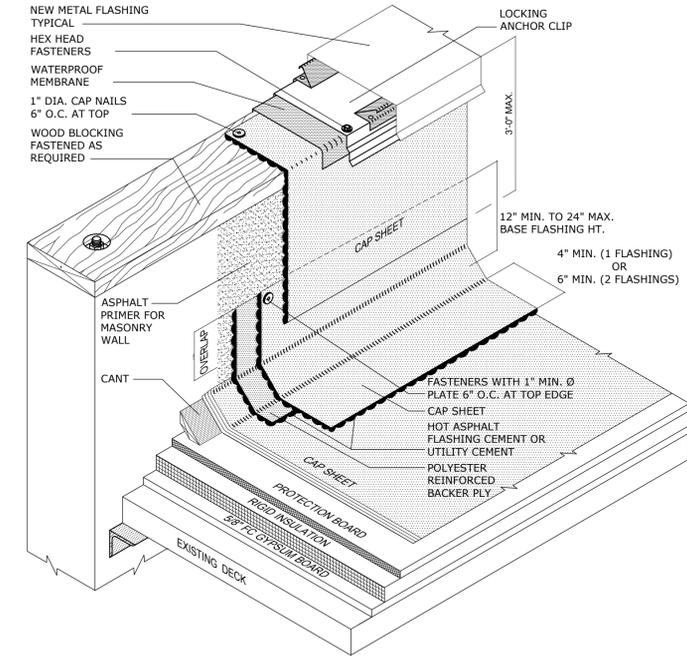


A
2.1 OUTSIDE CORNER OF BASE FLASHING



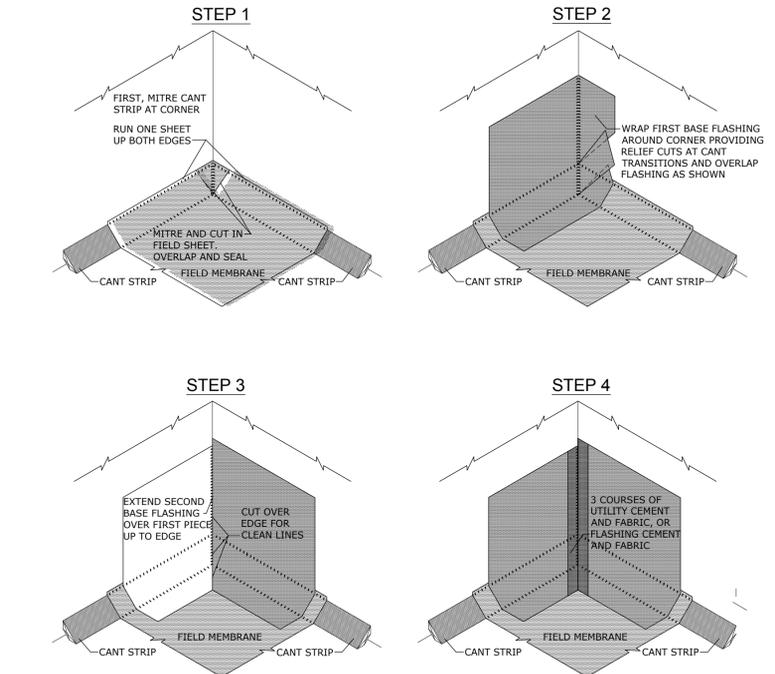
- REFER TO MANUFACTURER'S INSTRUCTIONS FOR ADDITIONAL INFORMATION.
- MALLEABLE METAL FLASHING, IF USED, SHALL BE 2.5 LBS. PER SQUARE FOOT MINIMUM.
- IT IS ACCEPTABLE TO RUN FIELD MEMBRANE PLY THROUGH DRAIN CENTRE AND OMIT TARGET SHEET IF DRAIN SUMP IS SHALLOW ENOUGH TO ALLOW INSTALLATION WITHOUT WRINKLES OR FISHMOUTHS. STEEP SUMPS WILL REQUIRE THE INSTALLATION OF A TARGET PATCH WITHIN DRAIN SUMP.
- USE ASPHALT PRIMER ON METAL FLANGES WHEN USING UTILITY CEMENT. USE FLASHING PRIMER ON METAL FLANGES WHEN USING FLASHING CEMENT.
- EXTEND ALL PLIES TO EDGE OF DRAIN BOWL.

B
2.1 DETAIL AT ROOF DRAIN



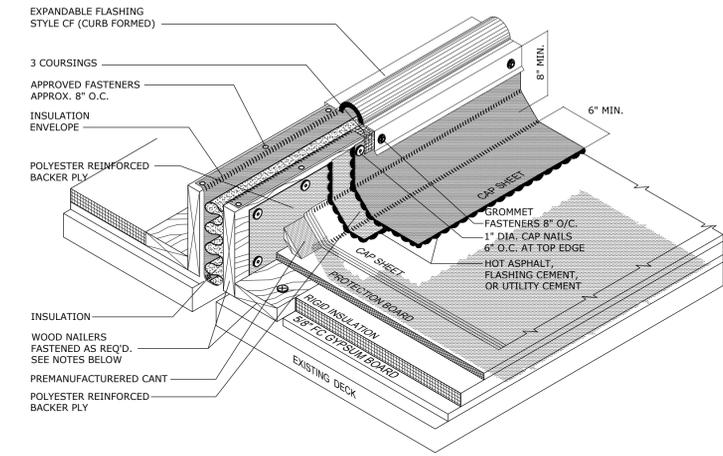
- REFER TO MANUFACTURER'S INSTRUCTIONS FOR ADDITIONAL INFORMATION.
- SHOP FABRICATED METAL EXPANSION JOINT SHOULD BE INSTALLED IN ACCORDANCE WITH CRCA RECOMMENDATIONS. LAPS SHALL UTILISE EITHER APPROVED SPLICE PLATES OR 4\"/>
- ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH OBC REQUIREMENTS AND/OR PROJECT SPECIFICATIONS.
- VERTICAL JOINTS ARE TO BE OVERLAPPED 4\"/>
- INSTALL LOCK COPINGS IN ACCORDANCE WITH INSTALLATION INSTRUCTIONS INCLUDED WITH THE PRODUCT. PREFABRICATED INSIDE/OUTSIDE CORNERS AND END CAPS ARE TO BE USED IF AVAILABLE. SHOP FABRICATED COPINGS TO BE INSTALLED IN ACCORDANCE WITH CRCA GUIDELINES.
- MASONRY SUBSTRATES REQUIRE PRIMING WITH ASPHALT PRIMER PRIOR TO BACKER PLY INSTALLATION. WOOD SUBSTRATES REQUIRE A MECHANICALLY FASTENED BACKER PLY FASTENED 9\"/>

C
2.1 BASE FLASHING W/COPING - WALL OVER 24"



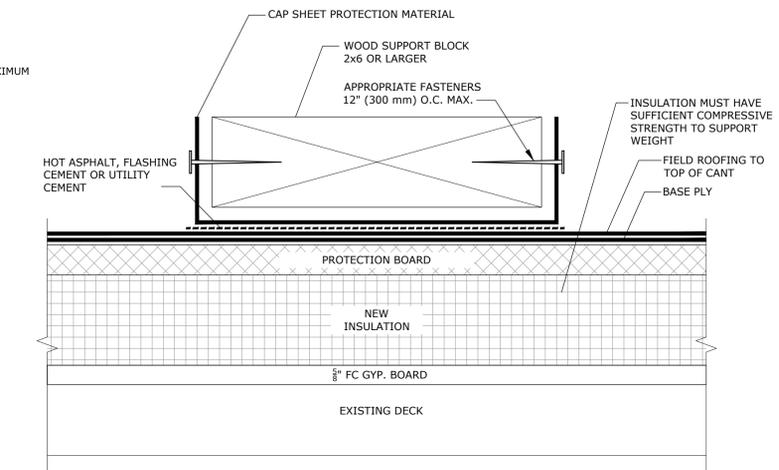
- NOTES:
- REFER TO MANUFACTURER'S INSTRUCTIONS FOR ADDITIONAL INFORMATION.
 - VERTICAL JOINTS TO BE OVERLAPPED 4\"/>

D
2.1 INSIDE CORNER OF BASE FLASHING



- NOTES:
- REFER TO MANUFACTURER'S INSTRUCTIONS FOR ADDITIONAL INFORMATION.
 - JM POLYESTER REINFORCED BACKER PLY INCLUDES DYNABASE PR OR DYNALASTIC 180 S.
 - ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION SHOULD BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH OBC REQUIREMENTS AND/OR PROJECT SPECIFICATIONS.
 - VERTICAL JOINTS ARE TO BE OVERLAPPED 4\"/>
 - SEE SPECIFICATIONS FOR A FULL DESCRIPTION OF INSTALLATION INSTRUCTIONS AND REQUIREMENTS WHICH ARE CONSIDERED A PART OF THIS DETAIL.
 - INSTALL EXPAND-O-FLASH IN ACCORDANCE WITH APPLICATION INSTRUCTIONS INCLUDED WITH THE PRODUCT. PREFABRICATED TRANSITIONS, INSIDE/OUTSIDE CORNERS, ETC. ARE AVAILABLE TO COMPLETE THE INSTALLATION.
 - THE VERTICAL WOOD CURB SHOULD BE FASTENED TO THE DECK ONLY.

E
2.1 DETAIL AT EXPANSION JOINT IN ROOF



- REFER TO BUR MANUFACTURER'S INSTRUCTIONS FOR ADDITIONAL INFORMATION.
- ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH OBC REQUIREMENTS AND/OR PROJECT SPECIFICATIONS.

F
2.1 SUPPORT DETAIL OVER BUR (LIGHT LOADS)

not to be used for construction unless sealed and signed by the architect

project
St. Basil School - 300 Wing Re-roofing
sault ste. marie, ontario
david ELLIS architect inc.
477 queen street east suite 210 sault ste. marie p6a 1z5 ph: 705 253 4333 fax: 253 4332 email: ellis@ellisdesign.ca

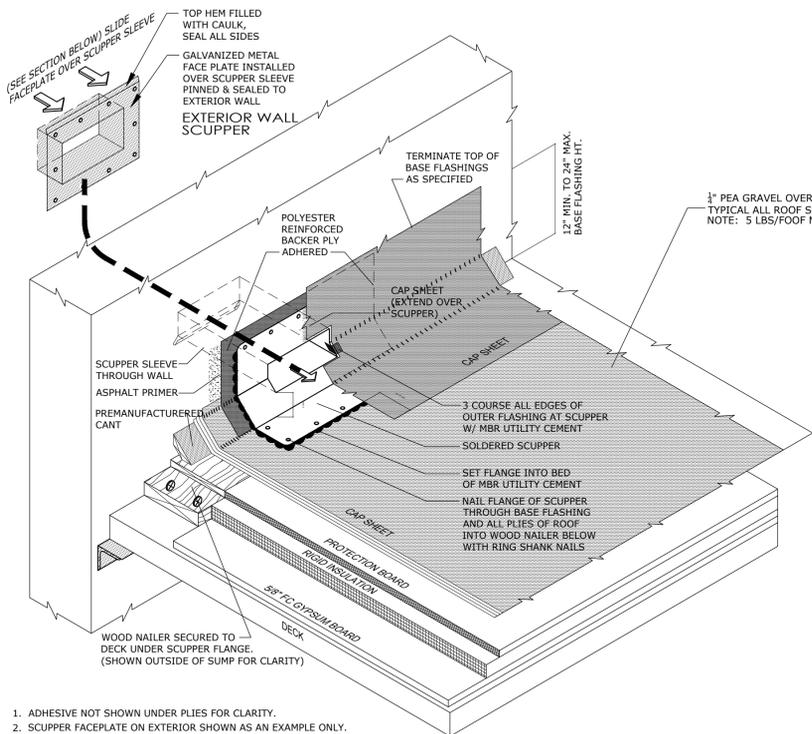
ISSUED FOR TENDER
10 FEB 2026

scale 1/8" = 1'-0"
date December 2025
checked by d ellis
drawn by d ellis

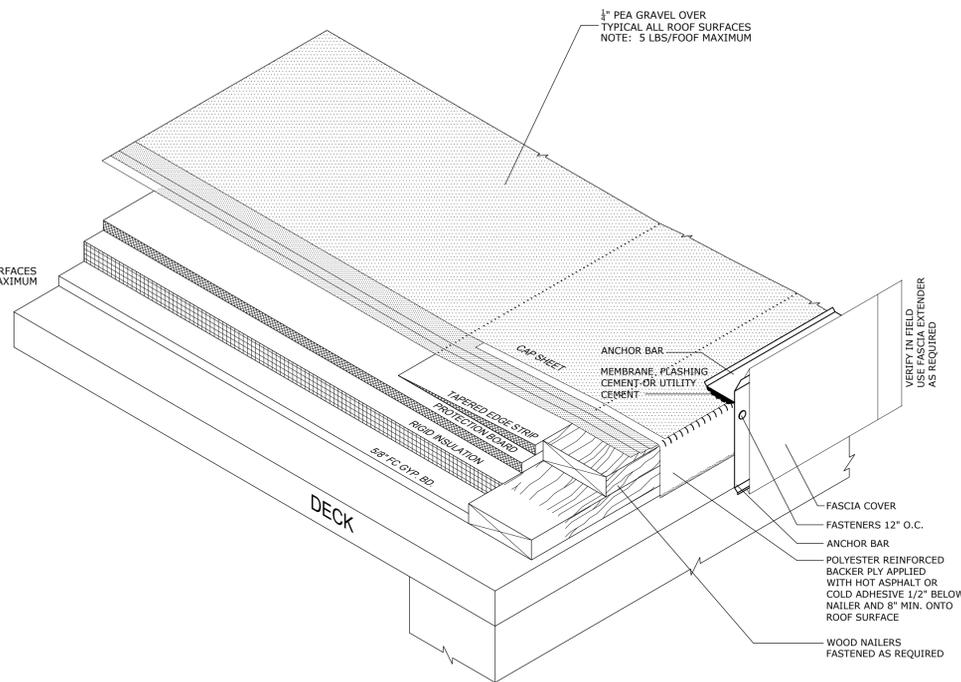
Typical Roof Details
project number 25-42

a-2.1

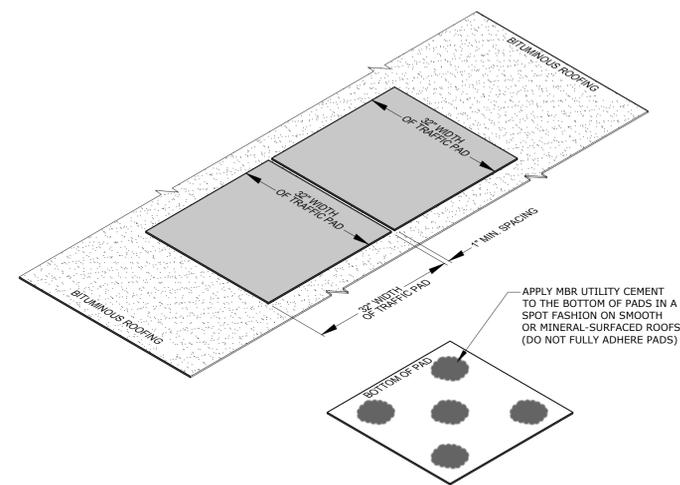
GENERAL NOTE:
SEE DRAWING a-1.0 FOR INSULATION THICKNESS.



- ADHESIVE NOT SHOWN UNDER PLYS FOR CLARITY.
- SCUPPER FACEPLATE ON EXTERIOR SHOWN AS AN EXAMPLE ONLY.
- PRIME ALL SCUPPER FLANGES ON BOTH SIDES WITH ASPHALT PRIMER.
- ALL SCUPPER FLANGES TO BE 4" WIDE MINIMUM. PLEASE REFER TO LOCAL CODES AND CRCA FOR METAL SCUPPER AND CONDUCTOR HEAD FABRICATION REQUIREMENTS.
- ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH OBC REQUIREMENTS AND/OR PROJECT SPECIFICATIONS.
- MASONRY SUBSTRATES REQUIRE PRIMING WITH ASPHALT PRIMER PRIOR TO BACKER PLY INSTALLATION.
- WOOD SUBSTRATES REQUIRE A MECHANICALLY FASTENED BACKER PLY FASTENED 9" O.C. IN BOTH DIRECTIONS.



- REFER TO BUR MANUFACTURER'S INSTRUCTIONS
- TAPERED EDGE STRIP TO BE USED FOR NON-DRAINING EDGES TO KEEP PONDING WATER OFF THE FLASHING LAPS, OR TO TRANSITION SUBSTRATE FLUSH WITH PERIMETER NAILER HEIGHT.
- ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH OBC REQUIREMENTS AND/OR PROJECT SPECIFICATIONS.
- GRAVEL STOPS TO BE INSTALLED IN ACCORDANCE WITH BUR MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- JM POLYESTER REINFORCED BACKER PLY INCLUDES DYNABASE PR OR DYNALASTIC 180 S.

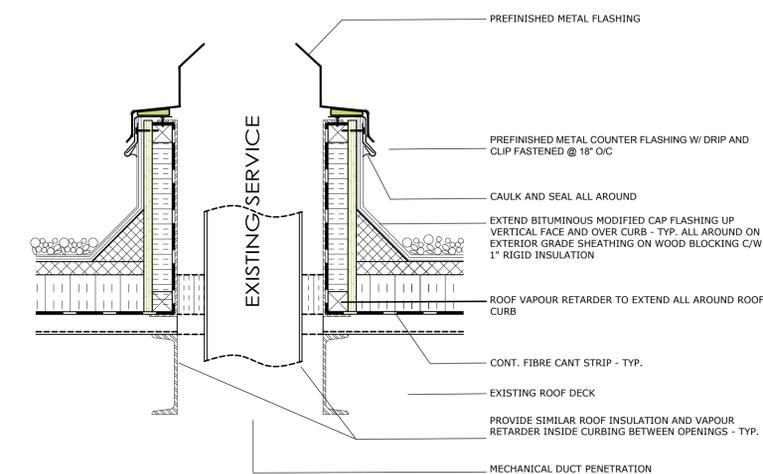


- PRE-MANUFACTURED LIGHT WEIGHT PVC TRAFFIC PADS. REFER TO BUR MANUFACTURER'S INSTRUCTIONS.
- ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH LOCAL AND OBC REQUIREMENTS AND/OR PROJECT SPECIFICATIONS.
- PLEASE SEE MANUFACTURER'S BITUMINOUS APPLICATION GUIDES FOR INSTALLATION INSTRUCTIONS AND REQUIREMENTS WHICH ARE CONSIDERED A PART OF THIS DETAIL.
- USE OVER SMOOTH OR MINERAL-SURFACED ROOFS, OR PRIOR TO GRAVELLING.
- ALL FOUR CORNERS OF THE PAD TO BE FULLY AND FIRMLY SET PRIOR TO WALKING USE.

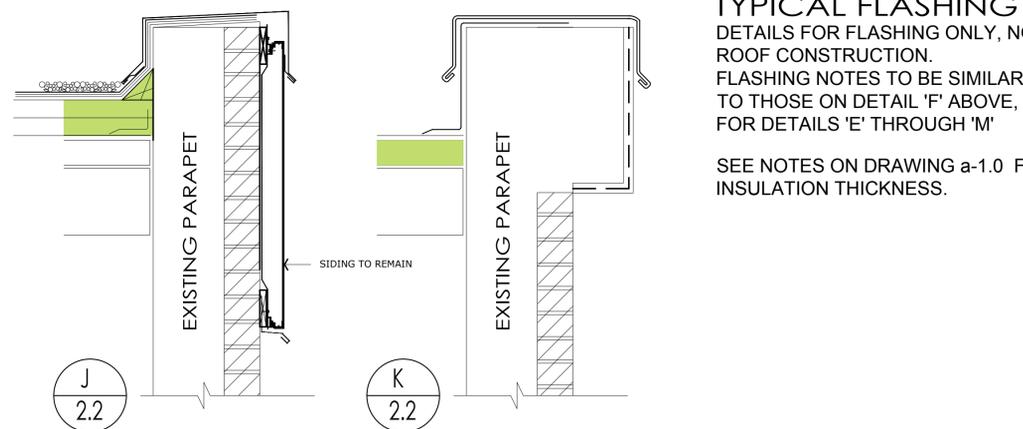
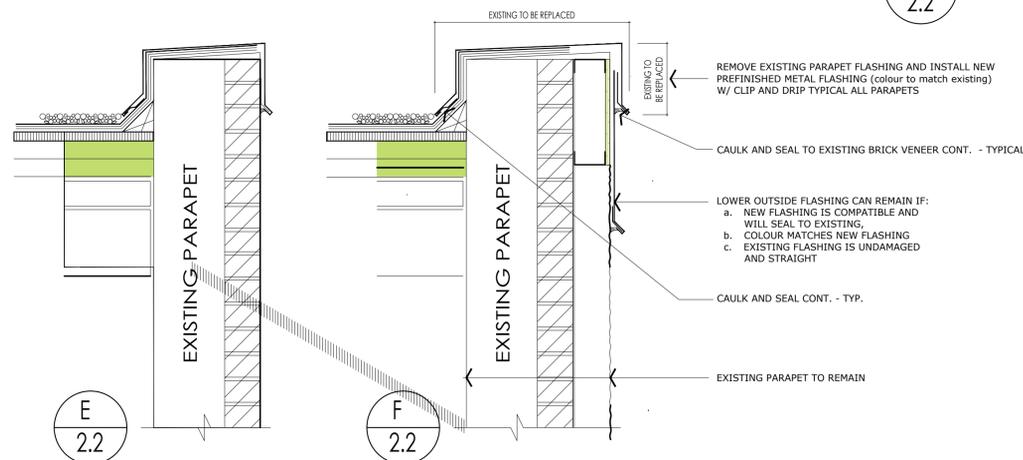
A
2.2 THROUGH WALL SCUPPER

B
2.2 ROOF EDGE W/O PARAPET

C
2.2 TRAFFIC PADS



D
2.2 DETAIL AT MECHANICAL UNIT



TYPICAL ROOF EDGE AND PARAPET FLASHING TYPES (8 thus) - MATCH AS ENCOUNTERED

TYPICAL FLASHING NOTES:
DETAILS FOR FLASHING ONLY, NOT ROOF CONSTRUCTION.
FLASHING NOTES TO BE SIMILAR TO THOSE ON DETAIL 'F' ABOVE, FOR DETAILS 'E' THROUGH 'M'

SEE NOTES ON DRAWING a-1.0 FOR INSULATION THICKNESS.

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revisions
10 FEB 2026 ISSUED FOR TENDER
All drawings to be used in the field must be approved by the designer. The designer shall be responsible for coordination of all work items with the General Contractor. No work shall be undertaken without written permission. No contract and master drawings are to be used for construction unless sealed and signed by the architect.

scale 1/8" = 1'-0"
date December 2025
checked by d ellis
drawn by d ellis

drawing Typical Roofing & Flashing Details 25-42

a-2.2