Halifax
Regional Centre for Education

RFP #4246

Window & Masonry Cladding Replacement
AJ Smeltzer Junior High

RFP Closing Date: Friday - June 21, 2024
RFP Closing Time: 2:00 PM (ATL)
Submission Email: hrcetenders@hrce.ca

Ready-for-Takeover Date: November 30, 2024

HRCE Procurement Contact:
Nancy Rideout, Purchasing Manager
Tel: (902) 464-2000 ext 2222
Email: nrideout@hrce.ca

Operations Contact:
Gary Mannette, Project Manager
Cell: (902) 497-8542
Email: gmannette@hrce.ca

School Location:
AJ Smeltzer Junior High
46 Prince Street,
Lower Sackville, NS B4C 1L1

Mandatory Site Meeting for Bidders:
Monday - June 10 at 3:00 pm
AJ Smeltzer Junior High
Please meet at School Entrance

RFP submissions are to be submitted by email to: hrcetenders@hrce.ca

RFP documents are available for download from the HRCE's Website:
https://www.hrce.ca/about-hrce/financial-services/tenders/tender-listing

In the light of COVID-19 and future pandemics, all vendors are required to follow the guidelines set in place by Nova Scotia Health Authority. Potential risks such as restricted accessibility to schools and buildings of the Halifax Regional Centre for Education (HRCE), inability to complete work on a timely manner due to social distancing, disabled supply chains which will result in delivery delays of raw materials and finished goods, labour shortages and additional storage costs should be clearly communicated with the HRCE Personnel on a timely manner to ensure an amicable solution can be agreed between the HRCE and the vendor/contractor. The HRCE will not be liable for any direct or indirect loss incurred due to a pandemic.

The Terms and Conditions of the RFP Package, including but not limited to the Contract Type and Supplementary Conditions have been modified.

It is the Proponent's Responsibility to review all sections of the RFP prior to submitting a Proposal/Bid.

SECTION 00 00 00 – LIST OF SPECIFICATIONS, DOCUMENTS & DRAWINGS 4
SECTION 00 00 15 - DESCRIPTION OF WORK 6
SECTION 00 05 00 - LIST OF CONSULTANTS 7
SECTION 00 21 13 - INFORMATION FOR PROPONENTS 8
SECTION 00 41 13 - PRICE SUBMISSION FORM 33
SECTION 00 41 73 - PRICE AMENDMENT FORM 41
SECTION 00 52 00 - AGREEMENT BETWEEN OWNER AND CONTRACTOR 42
SECTION 00 52 13 - DEFINITIONS 43
SECTION 00 72 13 - GENERAL CONDITIONS 44
SECTION 00 73 00 - SUPPLEMENTARY GENERAL CONDITIONS CCDC2 – 2020 45
SECTION 01 11 00 - HRCE SUMMARY OF WORK 62
SECTION 01 11 25 - PRICES 68
SECTION 01 11 41 - PROJECT COORDINATION 70
SECTION 01 31 19 - PROJECT MEETINGS 73
SECTION 01 33 00 - SUBMITTAL PROCEDURES 76
SECTION 01 35 13 - APPENDIX A - SPECIAL PROJECT PROCEDURES 85
SECTION 01 35 29 - OCCUPATIONAL HEALTH & SAFETY REQUIREMENTS 94
SECTION 01 37 00 - SCHEDULE OF VALUES 100
SECTION 01 41 00 - REGULATORY AGENCIES 102
SECTION 01 45 00 - QUALITY CONTROL 106
SECTION 01 52 00 - CONSTRUCTION & TEMPORARY FACILITIES 110
SECTION 01 61 00 - MATERIAL & EQUIPMENT 113
SECTION 01 77 00 - CONTRACT CLOSEOUT 116
CONTRACTOR'S CHECKLIST 121

SPECIFICATIONS ..... **180 pages**

02	**EXISTING CONDITIONS**	
02 41 19	Selective Demolition	7
04	**MASONRY**	
04 05 13	Masonry Mortar and Grout	4
04 22 00	Unit Masonry	6
06	**WOODS, PLASTICS, AND COMPOSITES**	
06 10 00	Rough Carpentry	3
06 20 00	Finish Carpentry	4
07	**THERMAL AND MOISTURE PROTECTION**	
07 21 13	Board Insulation	4
07 27 13	Air and Vapour Barriers	7
07 61 13	Metal Roofing	6
07 62 00	Sheet Metal Flashing and Trim	5
07 92 00	Joint Sealing	5
08	**OPENINGS**	
08 11 14	Metal Doors	4
08 44 13	Glazed Aluminum Framing Systems	12
08 71 00	Door Hardware	20
08 80 50	Glazing	5

ASBESTOS MANAGEMENT PROGRAM – HRCE FACILITIES ..... **40 pages**

HAZARDOUS BUILDING MATERIALS ASSESSMENT ..... **163 pages**

DRAWING LIST ..... **13 pages**

A000	COVER SHEET
A-101	FLOOR PLAN – EXISTING – LEVEL 1
A-102	FLOOR PLAN – EXISTING – LEVEL 2
A-201	BUILDING ELEVATIONS - NEW
A-202	BUILDING ELEVATION DETAILS
A-351	WALL SECTIONS
A-352	WALL SECTIONS
A-501	SECTION DETAILS
A-502	SECTION DETAILS
A-503	SECTION DETAILS
A-504	SECTION DETAILS
A-551	PLAN DETAILS
A-601	WINDOWS, SCREENS, AND CURTAINWALL ELEVATIONS

PROJECT EXPERIENCE FORM ..... **3 pages**

SAFETY PLAN ..... **4 pages**

END OF DOCUMENT ..... **1 page**

SECTION 00 00 15 - DESCRIPTION OF WORK

1. General

1.1 The work of this contract includes the provision of all materials, labour and equipment necessary to complete the **Window & Masonry Cladding Replacement** at **AJ Smeltzer Junior High**, to remove and replace the existing windows, doors, masonry cladding, metal roofing, and materials in areas as noted on the drawings and specifications prepared by **FBM Architecture.**

1.2 It is the intent of the Halifax Regional Centre for Education (HRCE) to have all work completed, to the point of Ready-for-Takeover, prior to **November 30, 2024.** It is expected that a timely award of this contract will enable the Contractor to facilitate shop drawing review and ordering of materials to allow commencement of work immediately after contract execution.

1.3 The whole of the work shall agree in all particulars with the levels, measurements and details contained in the drawings accompanying this specification and with such other drawings or information as may from time to time be supplied by the HRCE or may be supplied by the Contractor and reviewed by the HRCE.

1.4 In relation to the hours of work: Work for the HRCE is to be completed during hours when the schools are unoccupied, unless otherwise authorized in writing by the Project Manager (Operations Contact person) or designate. Hours of work shall comply with the local ordinances and bylaws for each site. (Refer Section 00 41 13, Section 3.7)

END OF SECTION

SECTION 00 05 00 - LIST OF CONSULTANTS

Owner:

Halifax Regional Centre for Education
33 Spectacle Lake Drive
Dartmouth, NS B3B 1X7

Nancy Rideout, Purchasing Manager
Office: (902) 464-2000 ext 2222
nrideout@hrce.ca

Consultant:

FBM Architecture
101-5560 Cunard Street
Halifax, NS B3K 1C4

Shawn Doyle
Cell: (902) 429-4100 x113
doyle@fbm.ca

END OF SECTION

SECTION 00 21 13 – INFORMATION FOR PROPONENTS

Invitation:

1. Proposal Call

1.1. The Halifax Regional Centre for Education (HRCE) will receive offers in the form of a two-file proposal from proponents which is signed and electronically received on or before the date and time specified on the cover sheet of this document. The email address to submit submissions and amendments is **hrcetenders@hrce.ca**. Both files should be submitted in Adobe (.pdf) format. If the electronic submission is larger than 20MB, proponents have the option of sharing files from google drive to **hrcetenders@gnspes.ca.** If you encounter difficulties kindly contact the HRCE Procurement team for further clarification.

1.2. Proposals received after the closing time will not be considered. The HRCE deems the submission date and time to be the email received date and time. Please ensure to allow sufficient time for your submission to be received by the HRCE before the 2pm close. Please consider that large files may require more time.

1.3. Proponents are to submit completed Request for Proposal (RFP) documents by email.

The technical submission electronic file should be named:

"**Technical Submission_4246_Proponent Name**".

The second file (Price Submission) should be named:

"**Price Submission_4246_Proponent Name**".

There must be no reference to the bid price within the technical submission.
Proponents can refer to item 11 in this section for more detailed submission instructions.

1.4. Proposals will be opened at the time indicated on the cover sheet of this document. Public openings are no longer held for any Tenders or RFPs relating to goods, services or construction for the HRCE. **The technical submission will be the only file opened during the RFP closing.** All proposal submissions are subject to evaluation after opening and before award of contract. The successful proponent and award amount will be posted on the Procurement Services website (http://novascotia.ca/tenders/tenders/ns-tenders.aspx) after award.

1.5. Amendments to the submitted offer will be permitted if received by email prior to bid closing and if endorsed by the same party or parties who signed and executed the offer.

If the amendment relates to the technical submission, the electronic file should be named
"Technical Submission Amendment_4246_Proponent Name".
If the amendment relates to the price submission, the file should be named:
"Price Submission Amendment_4246_Proponent Name".
The price amendment file submission should be the signed Price Amendment Form (Section 00 41 73) and shall not disclose either the original or revised total price.

1.6. Bid submissions **will not** be accepted by fax, mail, courier or hand delivery.

2. Intent

2.1. The intent of this Request for Proposals (RFP) is to obtain an offer to perform all work associated with ***RFP #4246, Window & Masonry Cladding Replacement*** at ***AJ Smeltzer Junior High*** for a Stipulated Price Contract in accordance with the Contract Documents.

2.2. The HRCE will use the CCDC-2, 2020 for this work. A copy of the Standard Construction Contract CCDC 2 – 2020 is available upon request and will form part of the contract documents.

2.3. The HRCE Supplementary General Conditions for the CCDC-2, 2020, applicable to this work is available for review under Section 0073 00 of the RFP document.

2.4. Ready-for-Takeover (RFT) of the project is to be achieved on or before **November 30, 2024**, provided the contract is awarded within fifteen (15) business days after the RFP closing.

2.4.1. If the contract is not awarded within fifteen (15) business days of closing, the Ready-for-Takeover Date will be extended by one (1) business day, for every business day that passes, until the contract has been awarded.

2.4.2. Receipt of the award letter by the successful contractor does not constitute approval to begin work on site.

2.5. The HRCE does not guarantee the award of all areas, phases or any portion thereof.

2.6. The HRCE reserves the right to award individual areas or phases to one contractor or between multiple contractors.

2.7. The HRCE reserves the right to reduce the scope of work if the stipulated bid amount exceeds the budget for the relevant project.

3. Scope of work

3.1. Refer to Section 00 00 15 – Description of Work and List of Drawings and Section 01 11 00 Summary of Work.

4. Availability

4.1. RFP documents are available for download on the HRCE website: **https://www.hrce.ca/about-hrce/financial-services/tenders/tender-listing**

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

4.3. The HRCE is not responsible for accuracy of documents obtained from any other source.

5. Examination

5.1. RFP documents are provided to the Construction Association of Nova Scotia (CANS).

5.2. Upon receipt of RFP documents, proponents are to verify that documents are complete.

5.3. Bidders are responsible to retrieve all RFP documents from the HRCE website and fully review the RFP requirements prior to the preparation of a bid submission.

6. Clarification and Addenda

6.1. Proponents must notify the Purchasing Manager, by email at nrideout@hrce.ca no less than **five (5)** working days before the RFP Closing regarding any questions, omissions, errors or ambiguities found in the documents. If HRCE considers that correction, explanation or interpretation is necessary, an addendum will be posted on the HRCE website.

6.2. Addenda will be issued no less than three (3) business days before the RFP closing date and will form part of the Contract Documents.

6.3. All RFP information must be confirmed by written addenda. The HRCE and its representatives shall not be bound by or be liable for any representation or information provided verbally. Information obtained by any other source is not official and will not bind the HRCE.

6.4. Proponents are to complete Price Submission Form (section 00 41 13) acknowledging each addendum that was issued.

6.5. Where the HRCE publishes an Addendum modifying the terms of the posting documents, or changing the Project or Contract Documents in any manner, the HRCE shall not be liable for any expense, cost, loss, or any form of damage or damages incurred or suffered; whether directly or indirectly, by any Supplier or any other person in connection with or in any way relating to or resulting from the publication of an Addendum, regardless of whether the publication occurs prior to or after a Supplier has submitted their bid submission.

6.6. All Addenda issued by HRCE shall be become part of the Contract Documents, unless specifically excluded from the Contract Documents in writing. Addenda shall be allowed for in determining the total contract price.

7. Product/System Options

7.1. Alternatives to specified products and systems will only be considered during the bidding period in the manner prescribed below.

7.1.1. Where the RFP documents stipulate a particular product, alternatives may be considered by the Consultant up to five (5) working days before the RFP closing date and time. Bidders must forward their written requests by email to nrideout@hrce.ca. Requests will be forward to the appropriate person(s) for review.

7.2. The submission must provide sufficient information to enable the Consultant to determine acceptability of such products. Request for an alternate product/system must be accompanied with:

7.2.1. information about how the request affects other work in order to accommodate each alternate;

7.2.2. the dollar amount of additions to or reductions from the Price Submission, including revisions to other work.

7.2.3. A later claim by the bidder for an addition to the contract price because of changes in work necessitated by use of alternates shall not be considered.

7.3. When a request to substitute a product is made and pursuant to consultation with the Consultant, HRCE may approve or disapprove the substitution. The bidder making the request will be notified of the HRCE's decision and if the alternate is approved, the HRCE will issue an addendum.

7.4. Alternates must be submitted in the above manner; otherwise, they will not be accepted.

8. Mandatory Bidders' Site Meeting (Site Assessment)

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

8.1.1. A mandatory bidders' site meeting has been scheduled as per the information on the cover sheet of this document. All bidders are required to attend. Representatives of HRCE and the Consultant will be in attendance.

8.1.2. Bidders must register their presence with the HRCE stating the name of the contractor they represent. Failure to attend and register will lead to non-acceptance of the proposal by HRCE. HRCE recommends that interested bidders ensure that their proposed subcontractors attend the mandatory site meeting.

9. Bidders Registration

9.1. The successful contractor and sub-contractors must comply with the Nova Scotia Corporations Registration Act and/or Partnerships and Business Name Registration Act, or equivalent, before a contract is awarded.

10. Qualifications (Subcontractors/Other Tradespersons/Individuals)

10.1. Bidders are fully responsible to the HRCE for the acts/omissions of subcontractors and of persons directly or indirectly employed or retained by them. Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the HRCE. Subcontracting the contract shall not relieve the Bidder from any contractual obligations.

10.2. Bidders must provide subcontractors with a copy of the RFP documents making subcontractors aware that the HRCE is not responsible for any payments to subcontractors, and that all actions, directions or claims are solely between the bidder and the subcontractor.

10.3. The Contract, or any portion thereof, shall not be assigned nor sub-contracted without the prior written approval of HRCE, which approval may be withheld in the HRCE's sole discretion. When sub-contracting, successful bidder(s) must be prepared, if requested, to provide copies of billings from subcontractors.

10.4. Successful bidder(s) shall only use additional subcontractors during the course of the contract with the prior written approval of the HRCE.

10.5. The successful bidder(s) shall not re-assign the role of Project Manager to another individual other than the proposed Project Manager as indicated in the technical submission, without prior written approval from the HRCE.

10.6. The successful bidder(s) shall at all times enforce strict discipline and good order among their employees and subcontractors and shall avoid any unfit person or any person not skilled in the work assigned to the employee.

10.7. HRCE reserves the right to reject a proposed sub-contractor for a reasonable cause.

10.8. Refer to GC 3.6 of CCDC-2020.

11. PROPOSAL SUBMISSION

11.1. RFP Proposal Package - A complete proposal package is comprised of the elements below:

11.2. Technical Submission and Price Submission - General

11.2.1. Each proposal shall include a signed technical submission file and a signed price submission file, clearly labelled as previously instructed in Section 00 21 13, item 1.3.

11.2.2. Both the Technical Submission files, and the separate Price Submission file, shall be submitted simultaneously.

11.2.3. The Technical Submission file contents must not contain any reference to the bid price being offered for this project.

11.2.4. The email subject line or body must identify the name of the proponent/company and the RFP name and number.

11.2.5. Proponents shall be solely responsible for the delivery of their proposals in the manner and time prescribed.

11.3. Technical Submission Contents

11.3.1. Technical submissions shall be submitted in a legible format, not to exceed 20 pages. Submissions will be on the proponent's letterhead and shall contain an authorized signature. Proposals shall be submitted in English, and shall be specifically prepared to meet the requirements of this project.

Total RFP Scoring:

Phase A – Technical Score	30 Points
Phase B – Pricing Score	70 Points
Phase C - Total RFP Score	100 Points

The technical submission response shall be organized into four sections:

Section I.	**Project Experience and References**
Section II.	**Team Composition**
Section III.	**Management of Project Specific Risk**
Section IV.	**Schedule of Work**

I. PROJECT EXPERIENCE AND REFERENCES.

The proponent is required to provide a detailed summary of their company's experience within the past sixty (60) months, by describing three (3) Window Replacement projects for an educational/commercial institution.

These projects should be within a 100 km radius of the Halifax Regional Municipality. These projects should be similar in nature, complexity and value to the requirements specified in this RFP (see Section 00 00 15).

If a proponent has completed projects for the HRCE, they are required to include <u>the two most recent HRCE projects</u> in this section (regardless of the date completed). It is the bidder's responsibility to source HRCE project information requested in this section.

Please note if the proponent fails to include relevant HRCE projects, this will negatively impact their technical score. **If a proponent has not completed prior work (at any time) for the HRCE, then they may select projects of their choosing within the other stipulated parameters.**

> For each of the three projects listed, the proponent is asked to provide:

1) the company name,
2) a brief description of the project,
3) the name of the project manager,
4) the dollar value of the project.
5) A reference contact name and title for this project, and
6) their email and phone number.

For HRCE projects, please provide the HRCE Project Manager's name; prior consent is not required.

Please ensure that non-HRCE references are aware they will be contacted, and that prior consent to be a reference was obtained.

RFP Scoring for this section:

SECTION I. PROJECT EXPERIENCE, BASED ON REFERENCE FEEDBACK		
Project 1	Project met budget and schedule.	**2.00**
	Good quality work and product.	**1.00**
	Well managed project and good communications.	**2.00**
	Total Points Available for this Project	**5.00**

Project 2	Project met budget and schedule.	**2.00**
	Good quality work and product.	**1.00**
	Well managed project and good communications.	**2.00**
	Total Points Available for this Project	**5.00**

Project 3	Project met budget and schedule.	**2.00**
	Good quality work and product.	**1.00**
	Well managed project and good communications.	**2.00**
	Total Points Available for this Project	**5.00**

Total Points Available for Section I.	**15.00**

II. TEAM COMPOSITION.

The proponent is required to identify the key personnel who will be assigned to this project, these key personnel must remain with the project until completion. Please provide each employee's name, title/role, and years of related experience.

Proponents are required to provide a detailed resume for the proposed Project Manager outlining professional qualifications and years of experience.

Please indicate the percentage of their time that will be committed to this project.

An ***example*** of a time commitment for this project could be:

Commitment	Key Personnel
100%	Foreman
50%	Site Supervisor
20%	Project Manager

RFP Scoring for this section is:

SECTION II. TEAM COMPOSITION	Score
Does the Project Manager have a minimum of 3 years of relevant experience?	2.00
Was a listing of key team members provided?	1.00
Was the percentage of commitment indicated and adequate?	2.00
Total Points Available for Section II.	5.00

III. MANAGEMENT OF PROJECT SPECIFIC RISK

Proponents shall identify a minimum of three (3) risks associated with this specific project. Risks that their company could be faced with related to the scope of work for this project. Proponents shall state the risk, risk mitigation strategy, responsible parties, and the impact to schedule or budget.

An example of a Project Specific Risk could be:

Risk Register Example			
Risk	**Mitigation**	**Responsibility**	**Impact**
Specified materials have long lead times.	1. Expedite delivery if available. 2. Source alternative equivalent materials that are readily available.	Contractor. Client and Consultant approval required.	Expedited delivery or alternative materials may increase cost and impact budget. Without mitigation the schedule will be impacted.

Standard safety risks covered by Safe Work Practices are not to be referenced here. The HRCE is looking for assurances that risks identified through the mandatory site meeting are identified and will be mitigated, and that potential delays or other risks are disclosed in the proposal.

RFP Scoring for this section is:

SECTION III. MANAGEMENT OF RISKS ASSOCIATED WITH THIS SPECIFIC PROJECT	Score
Did the proponent detail the 3 Project Specific Risks with mitigation strategies?	**3.00**
Are risk management responsibilities clearly identified and assigned?	**1.00**
Were appropriate risk impacts provided for the 3 stated risks?	**1.00**
Total Points Available for Section III.	**5.00**

IV. SCHEDULE OF WORK

Please provide a Gantt Chart that includes an appropriate amount of detail around the planning and scheduling needs for this project. The Gantt Chart should contain all the key activities and align with the work schedule. A successfully prepared Gantt Chart provides a clear visual representation of how the project and required tasks will be completed.

If the Ready for Takeover Date cannot be met, please communicate this to procurement as an RFI well before RFP close.

The HRCE expects to award this work within 15 days of close. Please ensure that the proposed schedule of work aligns with that timeframe.

RFP Scoring for this section is:

SECTION IV. SCHEDULE OF WORK	Score
Does the Gantt Chart include all required components? Is the schedule reasonable?	**2.00**
Does the schedule indicate project completion *before* the Ready for Takeover date? ***If the Ready for Takeover date cannot be met, please submit a RFI prior to RFP close.***	**3.00**
Total Points Available for Section IV.	**5.00**

11.4. Price Submission Contents

11.4.1 The Price Submission is to be submitted on the forms provided by the HRCE (Section 00 41 13 – Price Submission Form). These forms are to be completed in full, with an authorized signature and corporate seal as applicable. The completed form shall be without interlineations, alterations or erasures.

Proponents are advised that the HRCE may request original documents be sent to the HRCE office for further review. Price submissions sent by fax, mail or hand delivered will not be accepted.

11.4.2 The pricing details are to be clearly indicated. The total contract price in both numbers (dollars and cents) and written words must be entered. Should there be a discrepancy between the two, the written words shall prevail.

11.4.1. The executed pricing offer is to be submitted on the forms **together with a scanned copy of the required bid security** by email.

11.4.2. Improperly completed information, and/or irregularities in the bid security, may be cause to declare the submission non-compliant.

The omission of bid security from the bid submission will result in the submission being deemed as non-compliant (Refer Section 14.1.10).

11.5. Proposal Evaluation

11.5.1. Evaluation Process – Compliant proposals will be evaluated, first during Phase A, and those meeting the minimum qualifying score under Phase A will then be evaluated in Phase B, with a final score determined in Phase C.

Phase A – Technical Score	30 Points
Phase B – Pricing Score	70 Points
Phase C - Total RFP Score	100 Points

11.5.2. Proposals that do not meet the minimum qualifying score for Phase A will not be given further consideration.

11.5.3. Proposals will be evaluated and scored by an evaluation team comprised of a minimum of three (3) representatives of the HRCE. The degree to which a proposal meets the proposal requirements will be determined at the sole discretion of the HRCE evaluation team.

11.5.4. Phase A – Technical Submission – The Technical Submission for compliant proposals will be evaluated using the evaluation criteria set out in the table below. Scores will be recorded for each criterion (rounded to two (2) decimal points) and a total qualifying score will be determined.

Refer 11.3.1	Phase A - Evaluation Criteria Technical Submission	Score
Section I.	Project Experience and References	15.00
Section II.	Team Composition	5.00
Section III.	Management of Project Specific Risks	5.00
Section IV.	Schedule of Work	5.00
Total Phase A - Potential total score - Technical Submission		30.00
	Minimum score needed to pass technical	15.00

A minimum qualifying score of 15.00 points is required in Phase A for the proposal to be given further consideration.

All technical submissions that have met the minimum qualifying score will proceed to Phase B - Price Submission.

Technical submissions that score below the minimum qualifying score will not proceed further in the RFP evaluation process.

11.5.5. Phase B - Price Submission - Price Submission files for proponents whose Technical Submission have received fifteen (15.00) points or greater will be opened.

The Price Submission will have a weight of seventy (70.00) points.

Price submissions will be evaluated, and a Phase B score will be assigned to each proponent by using a proximity to lowest price method. In this method, proponents will be awarded points based on how close their total price submitted compares with the lowest cost of all total submissions.

Price Submissions will be Evaluated based on the Proponent's Lump Sum Price.

For example:
Formula: Price Score = % value of score x (Low bid ÷ Your bid)

Example for calculation: Bid Pricing Received

Company P	Company Q	Company R	Company S	Company T
$115,000	$135,000	$185,000	$165,000	$180,000

<u>Calculation of Pricing Score for Company S</u>:
Phase B Score = 70 points x ($115,000 ÷ $165,000) = 48.79 points

The Total Score (Phase C) will be calculated by adding together Phase A + Phase B scores.

11.5.6. The proponent who has the highest **TOTAL SCORE** (Phase C calculation), will be deemed to be the successful proponent, subject to other provisions herein, including Section 16.5.

Phase A – Technical Score	30 Points
Phase B – Pricing Score	70 Points
Phase C - Total RFP Score	100 Points

12. Conditions of the RFP Process

12.1. Proponents shall take full cognizance of content of all Contract Documents in preparation of their proposal. Section 00 41 13 – Price Submission Form, Subsection 5.0 references a complete list of Contract Documents.

13. Amendment or Withdrawal of Proposals

13.1. Proposal packages may be **withdrawn** from the RFP process in writing by email notification sent to the submission email address, prior to date and time of closing.

13.2. As previously stated in Section 00 21 13, item 1.6 - Amendments to the submitted offer will be permitted if received by email prior to the RFP closing time and if endorsed by the same party or parties who signed and executed the offer. If the amendment relates to the technical submission, it must be labeled "Technical Submission Amendment" along with the RFP number of the project and the company name. If the amendment relates to the price submission, it must be labeled "Price Submission Amendment" along with the RFP number of the project and the company name. The price amendment file must include the signed "Price Amendment Form" (Section 00 41 73).

13.3. A single page Price Amendment Form is provided immediately following the Price Submission Forms (Section 00 41 73).

13.3.1.1. The Price Amendment Form provided is the standard master form for submission of any price amendments for this project.

13.3.1.2. The Price Amendment Form must be copied and completed, as directed, for any price amendments submitted.

13.4. Price amendments shall not disclose either original or revised total price.

14. Proposal Ineligibility (Reason for Rejection)

14.1. HRCE may reject a proposal which has been received prior to the closing time where:

14.1.1. The two file (electronic) system (Technical Submission and Price Submission) is not followed.

14.1.2. The price submission is not submitted on the required forms (Section 00 41 13) included herein.

14.1.3. The proposal is submitted by facsimile or regular mail or hand delivery.

14.1.4. There are omissions of information that the HRCE in its sole discretion deems to be significant.

14.1.5. The technical submission or price submission form is not signed as required.

14.1.6. The proposal has conditions attached which are not authorized by the invitation to bid**.**

14.1.7. The proposal fails to meet one or more standards specified in the invitation to bid.

14.1.8. All addenda have not been acknowledged.

14.1.9. Any other defect which, in the opinion of the HRCE brings the meaning of the proposal into question.

14.1.10. The required bid security is not provided within the Price Submission file.

14.1.11. Proponent failed to attend bidders' mandatory site meeting.

14.1.12. Proponent failed to list relevant HRCE project(s) in their technical submission.

15. Communications Affecting Bids

15.1. Transmissions, including, but not limited to facsimile transmission:

15.1.1. The technical submission or price submission forms submitted by mail, fax or courier will not be accepted.

16. Right to Accept or Reject any Proposal

16.1. The HRCE reserves the right to reject any proposal in its sole and absolute discretion for any reason whatsoever and the HRCE will not necessarily accept the lowest bid.

16.2. The HRCE specifically reserves the right to reject all proposals if none are considered to be satisfactory in the HRCE's sole and absolute discretion and, in that event, at its option, to call for additional proposals.

16.3. Without limiting the generality of any other provision herein, the HRCE reserves the right to accept or reject any proposal in accordance with item #14 above (Proposal Ineligibility).

16.4. Notwithstanding the above, the HRCE shall be entitled, in its sole and absolute discretion, to waive any irregularity, informality or non-conformance with these instructions in any proposal received by the HRCE. The HRCE reserves the right to reject any or all proposals, or to accept any proposal, or portion thereof, deemed in its best interest.

16.5. In the event that more than one proponent achieves an identical final total score within two decimal places in Phase C, the HRCE will flip a coin to determine the successful contractor.

16.6. No term or condition shall be implied, based upon any industry or trade practice or custom or in a practice or policy of the HRCE or otherwise, which is inconsistent or conflicts with the provisions contained in these instructions.

17. Right to Cancel Competition/No Award

17.1. Issuing a RFP/RFT implies no obligation on HRCE to accept any submission, or a portion of any submission. The lowest or any RFP/RFT submission will not necessarily be accepted.

17.2. Without limiting the generality of the foregoing, an RFP/RFT may be cancelled in whole or in part by HRCE in its sole discretion, whether before or after the time for RFP/RFT submissions has closed, when:

17.2.1. The RFP/RFT submission price exceeds the funds allocated for the purchase;

17.2.2. There has been a material change in the procurement requirements after the RFP/RFT has been issued;

17.2.3. Information has been received by HRCE after issuance of the RFP/RFT that HRCE believes has materially altered the procurement or the need of HRCE for the procurement; or

17.2.4. There was insufficient competition in order to provide the level of service, quality of goods or pricing required.

17.3. If no compliant RFP/RFT submission is received in response to an RFP/RFT, the HRCE reserves the right to enter into negotiations with one or more suppliers in order to complete the procurement or to reject all Bids and re-issue the RFP/RFT on new or modified RFP/RFT Documents.

17.4. HRCE will be the sole judge of whether there is sufficient justification to cancel any RFP/RFT.

17.5. No action or liability will lie or reside against HRCE in its exercise of its rights under this section

18. Construction Contract Guidelines

18.1. The printed policies of the Nova Scotia Construction Guidelines dated May 18, 2006 (or latest revisions) are applicable to these RFP documents.

19. Submission and Security Forms – Signatures

19.1. All Price Submission forms, bid security forms and performance assurance forms **must** bear the Bidder's original signature and name HRCE as the insured.

20. Bid Security

20.1. Proponents must submit within the sealed Price Submission file, one of the following: bid security in the form of a certified cheque, Irrevocable Letter of Credit, or Bid Bond on CCDC Form 220, in the amount of ten percent (10%) of the Bid Price made payable to or naming HRCE (as obligee). This bid security **must** accompany the Price Submission as an electronic file. HRCE will request an original hard copy from the successful proponent as required.

20.2. Where bid bond is provided as bid security:

20.2.1. The bond must be provided on the standard CCDC Bid Bond Form (latest version) in the amount of not less than ten percent (10%) of the Bid Price.

20.2.2. The bond must be submitted by the general contractor bidder, signed and sealed by the principal (Contractor) and Surety and shall be with an established Surety Company satisfactory to and approved by the HRCE.

20.2.3. The cost of providing the Bid Bond must be included in the Bid Price.

20.2.4. A legible scanned copy of the bid bond or an electronic bid bond shall be submitted with the bid via email. If requested by the HRCE, the vendor will provide the original bid bond without delay.

20.3. Where a certified cheque or a bank draft is provided as bid security:

20.3.1. The certified cheque or bank draft must be endorsed in the name of HRCE, for a sum not less than ten percent (10%) of the amount of the Bid Price.

20.3.2. The cost of providing the certified cheque or bank draft must be included in the Bid Price.

20.4. Where the Irrevocable Standby Letter of Credit is used as bid security:

20.4.1. The letter must be endorsed in the name of HRCE, for a sum not less than ten percent (10%) of the Bid Price

20.4.2. The Irrevocable Standby Letter of Credit shall be issued by a certified financial institution subject to the Uniform Custom and Practices for Documentary Credit (1993 revision or latest revision), International Chamber of Commerce (Publication No. 500).

20.4.3. The cost of providing the letter must be included in the Bid Price.

20.4.4. **A legible scanned copy of the bid bond or an electronic bid bond can be submitted with the bid via email. If requested by the HRCE, the vendor is required to provide the original bid bond without delay.**

20.5. Return of Bid Security:

20.5.1. The bid security of the unsuccessful proponents will be returned to them after the contract has been signed, or previous to such time, at the discretion of HRCE.

20.5.2. If no contract is awarded, all bid security will be returned.

21. Contract Security (Performance Assurance) – Required for contracts valued over $100,000.

21.1. The performance assurance forms must bear the bidder's original signature and name HRCE as the insured.

21.2. The successful contractor shall maintain performance assurance in force for a period of not less than twelve (12) months after Ready-for-Takeover is achieved.

21.3. Performance Assurance must be endorsed as specified for bid security.

21.4. Should it become apparent that the final cost of the project will exceed the total amount payable by more than 20%, the bidder shall arrange to have their bonds reissued based on the projected final cost.

21.5. Section 00 72 13 – General Conditions GC11.2 and Section 00 73 00 – Supplementary General Conditions for form of Contract Security. Proponents should reference the project documents for the amount of Contract Security and the alternate type of Contract Security if applicable.

21.6. Performance Assurance must be submitted as one of the following:

21.6.1. Where a Bid Bond was used as bid security:

21.6.1.1. Within ten (10) days after notification of award of the Contract, the successful contractor must provide a Performance Bond and a Labour & Material Payment Bond, each in an amount equal to fifty percent (50%) of the amount of the Contract, naming HRCE.

21.6.1.2. Performance Bond and Labour and Material Payment Bonds, submitted by the bidders, shall be provided at the expense of the bidder and shall be with an established Surety Company satisfactory to and approved by the HRCE.

21.6.2. Where a certified cheque or bank draft is used as Contract Security:

21.6.2.1. The certified cheque or bank draft submitted during the bid period will be cashed and the amount retained by the HRCE shall serve as Performance Assurance**,** including the payment of all obligations arising under the Contract.

21.6.2.2. The value of the certified cheque or bank draft will be retained in lieu of the Performance Bond and Labour and Material Bonds, providing that, at Contract award, the successful contractor shall supplement their certified cheque or bank draft to maintain an amount of ten (10%) of the total amount payable (Contract Price plus HST) under the contract.

21.6.2.3. The amount remaining will be returned without interest after a period of not less than twelve (12) months after Ready-for-Takeover is achieved.

21.6.2.4. Where certified cheque or bank draft is used as Performance Assurance, the cost of providing the certified cheque or bank draft in the Contract price.

21.6.3. Where an Irrevocable Standby Letter or Credit is used as Contract Security:

21.6.3.1. The Irrevocable Standby Letter of Credit submitted during the bid period will be retained by the HRCE and shall serve as performance assurance, including the payment of all obligations arising under the contract. The Irrevocable Standby Letter of Credit shall be issued by a certified financial intuition subject to the Uniform Customs and

Practices for Documentary Credit (1993 revision) International Chamber of Commerce (Publication No. 500).

21.6.3.2. Where an Irrevocable Standby Letter of Credit is used as Performance Assurance, the cost of providing this letter should be included in the Contract Price. The contractor shall provide to the HRCE documentation throughout the duration of the contract that the Irrevocable Standby Letter of Credit remains in full effect at all times as specified.

21.6.3.3. Upon expiry of the Irrevocable Standby Letter of Credit, a separate Irrevocable Standby Letter of Credit shall be provided for work requiring extended warranties for such amounts as are required by the contract.

21.6.3.4. The Irrevocable Standby Letter of Credit is to be in effect for a period of not less than twelve (12) months after the Ready-for-Takeover is achieved.

22. Insurance

22.1. Proponents shall refer to project documents for the amount of insurance, the duration of coverage and alternate type of insurance; if applicable.

Section 00 72 13 -General Conditions of Contract,
Section GC 11.1 – Insurance, and
Section 00 73 00 – Supplementary General Conditions for form of Insurance.

22.2. The contractor shall carry such insurance as is required to protect the contractor, any sub-contractor, the HRCE, their agents and employees from all claims which may arise from the operations under this contract. The amounts of such insurance shall not be less than 22.3 below.

22.3. The General Contractor shall secure and maintain, at its expense, during the term of the insurance:

22.3.1. <u>Wrap-Up Liability</u> insurance must insure the general contractor(s) and all sub-contractors on this project:

22.3.1.1. including but not limited to, products liability and completed operations, contractual liability, owners and contractors' liability, attached

machinery extension endorsement, and independent contractor, for a combined single limit of no less than $5,000,000 (five million dollars) per occurrence.

22.3.1.2. Wrap-Up Liability insurance is to include 24 months (2 years) of completed operations.

22.3.2. Commercial Auto Liability insurance covering all owned, non-owned and hired vehicles for a minimum combined single coverage of $2,000,000 (two million dollars) per occurrence.

22.3.3. Builders Risk: All risks in the amount of the contract Stipulated Bid Price. Insurance requirements as stipulated in the CCDC 2-2020.

22.3.4. Workers' Compensation to meet statuary requirements and/or Employers Liability, with limits of not less than $2,000,000 (two million dollars).

22.3.5. Contractors Pollution Liability Insurance limits of not less than $2,000,000 (two million dollars) per occurrence

22.4. Primary Insurance: The Contractor agrees that the insurance as required shall be primary and non-contributory.

22.5. No Limitation: The Contractor is responsible for determining whether the minimum insurance coverage amounts contained in this RFP are adequate to protect its interests. These minimum coverage amounts do not constitute limitations upon Supplier's Liability.

22.6. Endorsements – For the policies in item 22.3 above, there shall contain an endorsement naming the Halifax Regional Centre for Education and its affiliates as Additional Insured, and eliminating and removing any exclusion of liability for:

22.6.1. injury, including bodily injury and death to an employee of the insured or of the Halifax Regional Centre for Education, or

22.6.2. any obligation of the insured to indemnify, hold harmless, defend, or otherwise make contribution to the Halifax Regional Centre for Education because of damage arising out of injury, including bodily injury and death, to an employee of Halifax Regional Centre for Education.

22.7. The Contractor shall provide a certificate of insurance evidencing the above prior to work being performed. The HRCE also requires a complete copy of the Builder's Risk and Wrap-Up Liability policies, in addition to the Certificate of Liability Insurance.

22.8. Furthermore, HRCE must receive, in writing, at least thirty (30) days' notice of cancellation or modification of the above insurances. All insurance policies or certification documents shall specify coverage being applicable to this contract. The Contractor shall not do or omit to do or suffer anything to be done or omitted to be done which will in any way impair or invalidate such policy or policies of insurance.

22.9. Insurance documents (certificate and policies) shall be provided to the Purchasing Department within the timeframe indicated on the award letter. These documents are required before a purchase order will be issued. Work is not authorized and shall not commence until receipt of the purchase order.

23. Proof of Competency of Proponent

23.1. Any bidder may be required to furnish evidence satisfactory to the owner that he and his proposed sub-contractors have sufficient means and experience in the types of work called for to assure completion of the contract in a satisfactory manner.

23.1.1. The successful contractor must be a member in good standing with CRCA, RCANS or NBRCA; and Nova Scotia Construction Safety Association or approved recognized association or program.

23.2. Proposal Signing

23.2.1. The Technical Submission and the Price Submission form must be signed and under seal (as applicable) by a duly authorized signing officer(s) in their normal signatures.

23.3. Contract Time

23.3.1. The bidder, in submitting an offer, agrees to achieve Ready-for-Takeover of the work by the date indicated in the contract documents.

24. Offer Acceptance / Rejection

24.1. Duration of offer

24.1.1. Proposals shall remain open to acceptance and shall be irrevocable for a period of ninety (90) days after the RFP closing date.

24.2. Award/Selection/Acceptance of Offer

24.2.1. In the evaluation of a proposal, HRCE will consider, but not be limited to, the following criteria:

24.2.1.1. Compliance with proposal requirements

24.2.1.2. Proposal Evaluation Criteria as stated in Section 11.5

24.2.2. The Owner's evaluation of any and all proposals will be final

24.3. After acceptance by HRCE, the successful bidder shall be notified in writing of acceptance of the bid by way of an award letter.

25. Agreement

25.1. After acceptance, the HRCE and the successful proponent will enter into a CCDC-2, standard form of contract for the execution of the work.

25.2. A purchase order will be issued to the successful bidder once the contract has been signed and executed.

26. Post Award Submissions

26.1. Upon receipt of the award letter, the successful contractor will provide the following documents within five (05) business days:

26.1.1. A current Certificate of Recognition or Letter of Good Standing - The Contractor will supply a Certificate of Recognition issued jointly by the Workers' Compensation Board of Nova Scotia and an occupational health and safety organization approved by the Workers' Compensation Board of Nova Scotia (such as the Nova Scotia Construction Safety Association). These approved organizations are currently listed on the Workers' Compensation Board of Nova Scotia website (www.wcb.ns.ca). The contractor shall remain in good standing for the duration of the contract.

The Contractor shall supply the following:

26.1.1.1. Worker's Compensation Coverage – The Contractor shall supply a clearance letter from the Worker's Compensation Board of Nova Scotia, indicating the Contractor is assessed and in good standing;

26.1.1.2. Certificates of good standing with CRCA (Canadian Roofing Contractors Association) and RCANS (Roofing Contractors Association of Nova Scotia);

26.1.1.3. All required contract security and insurance documentation;

26.1.1.4. A completed Schedule of Values (see Section 01 37 00);

26.1.1.5. A completed Safety Plan; and,

26.1.1.6. A detailed listing of subcontractors to be used.

26.1.2. In the event that any such certification during the term of the contract expires, the obligation remains with the Contractor to provide the updated required certificates.

26.1.2.1. The Contractor and subcontractors (if applicable) shall remain in good standing for the duration of the contract.

27. Taxes

27.1. The General Conditions of the Contract state that the Contractor is to pay all Harmonized Sales Tax (HST).

27.2. The HRCE is not exempt from HST. As a result, the aggregate amount of the bid for contracts is subject to HST; however, **prices submitted shall not include HST.**

27.3. The HST payable by the HRCE will be added as a separate item during the processing of progress payments and therefore **HST will not appear as a cost in the aggregate amount of the bid amount.**

27.4. Proponents are advised that they may be eligible to claim an Input Tax Credit (ITC) for a portion of the HST paid in relation to the contract requirement of the Government of Canada.

27.5. Proponents are to note that prices indicated on the Price Submission Form and the amendments to the Price Submission Form shall not include Provincial Sales Taxes, the Federal Goods and Services Tax or the Harmonized Sales Tax.

27.6. Refer to CCDC-2 (Section 00 72 13) and Supplementary General Conditions (Section 00 73 00).

28. Proponent Debriefing

28.1. HRCE will, if requested by a proponent within fifteen (15) days of notice of RFP award, arrange a debriefing for the purpose of informing the bidder why their proposal was not selected. At least two (2) HRCE staff shall attend the de-briefing.

The purpose of the de-briefing will be to discuss the proponent's scoring, answer questions and identify any weak areas in the proponent's submission in order for the proponent to improve future bid submissions. HRCE will not divulge details contained in any proponent's proposal with other proponents or overall ranking.

29. Purchase Orders

29.1. The purchase order will be issued by the HRCE Purchasing Department once the CCDC-2 Contract Documents have been fully executed by all parties.

30. Invoices

30.1. The purchase order number and HST number shall be noted on any/all invoices related to all work performed under this contract.

30.2. Applications for progress payments should be submitted to HRCE's consultant and cc'd to operations-invoices@hrce.ca as well as HRCE's Project Manager (Operations Contact) identified on the RFP cover page.

END OF SECTION 00 21 13

SECTION 00 41 13 – PRICE SUBMISSION FORM

1. Salutation:

To: **HALIFAX REGIONAL CENTRE FOR EDUCATION**
33 SPECTACLE LAKE DRIVE, DARTMOUTH, NS B3B 1X7
ATTN: NANCY RIDEOUT, PURCHASING MANAGER

For: **#4246 Window & Masonry Cladding Replacement – AJ Smeltzer Junior High**

Organization Name:	
Street Address:	
Email Address:	
Telephone:	
Authorized Signing Authority:	
Position Title:	

2. Proponent Declares:

2.1. That this submission was made without collusion or fraud.
2.2. That the proposed work was carefully examined.
2.3. That the Proponent is familiar with local conditions.
2.4. That Contract Documents and Addenda were carefully examined.
2.5. That all the above were taken into consideration in preparation of this RFP.

3. Proponent Agrees:

3.1. To provide all necessary equipment, tools, labour, incidentals and other means of construction to do all the work and furnish all the materials of the specified requirements which are necessary to complete the work in accordance with the Contract and agrees to accept, therefore, as payment in full the Lump Sum Price stated in Subsection 6 hereunder.

3.2. The have carefully examined the site of the work described herein; have become familiar with local conditions and the character and the extent of the work; have carefully examined every part of the proposed Contract and thoroughly understand its stipulations, requirements and provisions.

3.3. The have determined the quality and quantity of materials required; have investigated the location and determined the source of supply of the materials required; have investigated labour conditions; and have arranged for the continuous prosecution of the work herein described.

3.4. To be bound by the award of the Contract and if awarded the Contract on this bid price, to execute the required contract within ten (10) days after notice of award.

3.5. They have noted that the Harmonized Sales Tax is excluded from the "Contract Price".

3.6. The Contractor's employees shall always report to the main office of a school, indicate who they are, and state their purpose on site prior to starting any work in the school.

3.7. To the hours of work, defined as: Work for the HRCE is to be completed during hours when schools are unoccupied, unless otherwise authorized in writing by the Project Manager (Operations Contact person) or designate. Hours of work shall comply with local ordinances and bylaws for each site.

3.7.1. No work shall be conducted on weekends or statutory holidays without specific written approval from the Operations Manager or designate.

3.7.2. In the event that work is requested by HRCE during hours when schools are occupied, the work will be limited to work that is not disruptive to the school. There shall be no mechanical removals, no drilling, screwing or torch work during occupied hours without prior written approval from HRCE.

4. Owner Agrees

4.1. To examine this proposal and in consideration, therefore, the proponent hereby agrees not to revoke this bid:

4.1.1. until some other proponent has entered into the Contract with the HRCE for the performance of the work and the supply of the materials specified in the notice inviting proposals; or in the Information to Proponents, or

4.1.2. until ninety (90) days after the time fixed in the Information to Proponents for receiving bids has expired, or

4.1.3. Whichever first occurs; provided, however, that the Proponent may revoke this proposal at any time before the time fixed as indicated in the section 00 21 13, item 13.1.

5. Contract Documents include:

The HRCE will use the CCDC-2, 2020 for this work. A copy of the Standard Construction Contract CCDC 2 – 2020 is available upon request and will form part of the Contract Documents.

The HRCE Supplementary General Conditions for the CCDC-2, 2020 application to this Work is available for review under Section 0073 00 of the RFP document.

5.1.1. Cover Page
5.1.2. Table of Contents – Section 00 00 10
5.1.3. Description of Work & List of Drawings – Section 00 00 15
5.1.4. List of Consultants – Section 00 05 00
5.1.5. Information for Proponents – Section 00 21 13
5.1.6. Price Submission Form – Section 00 41 13
5.1.7. Price Amendment Form (if applicable) – Section 00 41 73
5.1.8. Agreement Between Owner and Contractor (CCDC 2) – Section 00 52 00
5.1.9. Definitions (CCDC 2) – Section 00 52 13
5.1.10. General Conditions of the Stipulated Contract Price (CCDC 2) – Section 00 72 13
5.1.11. Supplementary General Conditions – Section 00 73 00
5.1.12. Specifications of Work (all applicable sections)
5.1.13. Drawing(s) – as applicable
5.1.14. Addenda issued by HRCE
5.1.15. Post Bid Addenda issued by the HRCE, where applicable.
5.1.16. Executed Contract

6. Price Submission - Contract Price:

6.1. The undersigned Proponent, having carefully read and examined the aforementioned Contract Documents prepared by the Consultant, for the Halifax Regional Centre for Education, hereby accepts the same as part and parcel of the Contract herein referred to, and having carefully examined the locality and site of works and having full knowledge of the work required and of the materials to be furnished and used, does hereby propose and offer to enter into a contract to perform and complete, the whole of the said works and provide all necessary labour, plant, tools, materials and equipment and pay all applicable taxes, as set forth and in strict accordance with the Specifications, Drawings and other Contract Documents and to do all therein called for on the terms and conditions and under the provisions therein set forth for the following:

6.2 LUMP SUM PRICE

#4246 Window & Masonry Cladding Replacement – AJ Smeltzer Junior High

_____ /100 Dollars ($_____)
(HST Excluded)

Contract Price to be completed in written form on the lines provided above, with cents expressed as numerical fraction of a dollar. Contract price to be completed in numerical form on the line bounded by parenthesis above, with cents expressed as a decimal of a dollar.

Price Submissions will be Evaluated based on the Proponent's Lump Sum Price.
WHERE THERE IS A CONFLICT, WRITTEN WORD WILL GOVERN.
Award will be subject to Budget Availability.

The HRCE reserves the Right to:

Award to one or more contractors who bid.
Accept bids on any or all sections of this work.
Reduce the Scope of Work if the Bid amount Exceeds the Available Budget.

6.3 INDIVIDUAL PRICE – PER BUILDING SECTION

The lump sum price provided in Section 6.2 represents the total price to complete this window project in its entirety. The HRCE acknowledges that there are inherent costs savings and economies of scale achieved when awarding all elevations to a single bidder.

In the event that partial award is required, please provide pricing per each individual section as listed below. Each price is to include all management costs (administration, mobilization, etc.) as required to perform the entirety of the work for that specific elevation. The HRCE acknowledges that management costs are higher on a per section basis, compared to management costs associated with all sections priced as one lump sum.

The expectation is that the pricing provided below represents the entire price to complete that specific section/elevation, should it be the only section awarded.

The pricing provided here will not be used in the calculation of the RFP scoring, see Section 6.2 Lump Sum Price.

- **WORK SECTIONS: PHASE '3A' AND '4', AS NOTED ON DRAWINGS**

_____ /100 Dollars ($_____)
(HST Excluded)

- **WORK SECTION: PHASE '5', AS NOTED ON DRAWINGS**

_____ /100 Dollars ($_____)
(HST Excluded)

- **WORK SECTION: PHASE '6', AS NOTED ON DRAWINGS**

_____ /100 Dollars ($_____)
(HST Excluded)

7. Completion Date:

7.1. The proponent agrees to achieve Ready-for-Takeover on or before the following date:

7.1.1.1. **November 30, 2024**

7.1.1.2. The undersigned Proponent agrees, if awarded the Contract, to achieve the Ready-for-Takeover Date providing the contract is awarded within fifteen (15) business days of RFP closing time.

8. Addenda Acknowledgement

We have received and noted the following addenda:

Addendum #	Dated	# of Pages
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Signature * The undersigned Proponent declares that this bid is made without connection to any other person(s) submitting pricing for the same work and is in all respects fair and without collusion or fraud.

RFP #4246 Window & Masonry Cladding Replacement – AJ Smeltzer Junior High

SIGNATURE:

SIGNED AND DELIVERED
in the presence of:

_____
Witness

CONTRACTOR

_____
Company name

_____
Signature of Signing Officer

_____
Name and Title (printed)

_____
Date

9. Acknowledgement of Student Safety

The Halifax Regional Centre for Education (HRCE) is directly responsible for the safety of its students and staff. Should contractors be required to work in or on school property while children are present, it is a **mandatory HRCE requirement** that contractors assign the work to employees and/or sub-contractors who do not have a criminal record and who are not listed on the Child Abuse Registry. Failure to comply with this requirement may result in immediate contract termination.

The HRCE reserves the right to demand, at any time, during the full term of the project a Criminal Record Check and/or a Child Abuse Registry Check, on any personnel authorized by the Contractor to be on HRCE work/school sites.

By signing below, you are confirming that you understand and will abide by this mandatory HRCE requirement.

_____
Company name

_____
Witness

_____
Signature of Signing Officer

_____
Name and Title (printed)

_____
Date

END OF SECTION 00 41 13

SECTION 00 41 73 - PRICE AMENDMENT FORM

#4246 Window & Masonry Cladding Replacement AJ Smeltzer Junior High

Note: to be completed and forwarded for each Price amendment prior to RFP closing time and date as detailed on the cover sheet of the RFP document and any applicable addenda.

Lump Sum Price Amendment – Section 00 41 13 Price Submission form, Article 6.1. Contract Price

Increase Price by		Decrease Price By	
Amount (excluding HST)	**$**	**Amount** (excluding HST)	**$**

It is the Proponent's responsibility to ensure the table above is legible.

Submitted by:

_____

Company Name (please print as it appears on original RFP file)

_____

Authorized Proponent's Name (please print as it appears on Price Submission Form)

_____

Authorized Proponent's Signature

_____

Date

_____

END OF SECTION 00 41 73

SECTION 00 52 00 - AGREEMENT BETWEEN OWNER AND CONTRACTOR

CCDC 2 – 2020

(A copy of Section 00 52 00, Standard Construction Contract CCDC 2 – 2020 (5 pages) is available upon request, otherwise, will form part of the contract sets to the successful bidder)

END OF SECTION 00 52 00

SECTION 00 52 13 - DEFINITIONS

CCDC 2 - 2020

(A copy of section 00 52 13, Standard Construction Contract CCDC 2 – 2020 (2 pages) is available upon request, otherwise, will form part of the contract sets to the successful bidder)

END OF SECTION 00 52 13

SECTION 00 72 13 - GENERAL CONDITIONS

OF THE STIPULATED PRICE CONTRACT

CCDC 2 - 2020

(A copy of section 00 72 13, Standard Construction Contract CCDC 2 – 2020 (22 pages) is available upon request, otherwise, will form part of the contract sets to the successful bidder)

END OF SECTION 00 72 13

SECTION 00 73 00 - SUPPLEMENTARY GENERAL CONDITIONS CCDC2 – 2020

The Canadian Standard Construction Document for Stipulated Price Contract (CCDC 2, 2020 version), Definitions and General Conditions governing same, shall be used by the project. The following Supplementary General Conditions (the "**Supplementary Conditions**") are intended to Supplement or Amend the General Conditions, and where conflicts occur, the Supplementary Conditions shall take precedence.

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

2 ARTICLE A-5 PAYMENT

Change 5.2.1 to delete the letter "s" from the word "rates".

Change 5.2.1(1) to read: "1% per annum above the prime rate."

Delete 5.2.1(2) in its entirety.

Delete 5.2.2. in its entirety.

DEFINITIONS

Add the following defined term to the Definitions:

Submittals

Submittals are documents or items required by the Contract Documents to be provided by the Contractor, such as:

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

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

3 GC 1.1 CONTRACT DOCUMENTS

Add to the end of subparagraph 1.1.6.2:

1.1.6.2 Except where the Consultant shall be indemnified as a third party beneficiary as provided in subparagraphs 9.2.7.4, 9.5.3.4 and in 13.1.1.3.

Add subparagraph 1.1.4.1:

1.1.4.1 Notwithstanding GC 1.1.4, should one or more conflict exist between Contract Documents and any work is done without consulting the Consultant for correction, Additional information, or a finding, the Contractor shall assume full and sole responsibility for any Additional costs incurred related to the conflict(s).

4 GC 2.4 DEFECTIVE WORK

Add new subparagraphs 2.4.1.1 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.

5 PART 3 EXECUTION OF THE WORK

6 GC 3.1 CONTROL OF THE WORK

Add new paragraphs 3.1.3 and 3.1.4:

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

3.1.4 The Contractor shall make all reasonable efforts to ensure that the Work is carried out in a continuous manner. The Contractor shall not knowingly permit Construction Equipment and/or Products to be stored at the Place of Work when they are not being used in connection with or implemented into the Work, except in accordance with paragraph 3.7.7.1.

7 GC 3.6 SUBCONTRACTORS AND SUPPLIERS

Add the following paragraph 3.6.7:

3.6.7 A copy of the agreement between Contractor and any subcontractor(s) shall be provided to the Owner and the Consultant, if so requested.

8 GC 3.7 LABOUR AND PRODUCTS

Add the following 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 the Work to the satisfaction of the Owner and the Consultant. The Owner shall provide all relevant information on the Products to be supplied by the Owner.

Add the following paragraph 3.7.5:

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

Add the following paragraph 3.7.6:

3.7.6 The Contractor shall maintain the Work in a safe and tidy condition and free from accumulation of waste products and debris.

Add the following paragraphs 3.7.7.1 and 3.7.7.2:

3.7.7 .1 The Contractor shall not permit Products or Construction Equipment to be stored at the Place of Work unless:

(i) the Products and/or Construction Equipment are used within fourteen (14) days of their arrival at the Place of Work; or

(ii) the Owner provides written permission for Products and/or Construction Equipment to be stored at the Place of Work, in which case the Contractor shall comply with the written instructions provided by the Owner in that regard, and said permission may be withdrawn by the Owner upon five (5) business days' notice, in which case the Contractor will be solely responsible for any costs, losses, or damages the Contractor incurs in connection the withdrawal of said permission;

.2 Notwithstanding any other provision of the Contract Documents, and subject only to the provisions of any Payment Legislation, the Owner shall not be liable to pay any amount greater than 25% of the actual cost of any Products and/or costs associated with Construction Equipment that is/are stored at the Place of Work and not used within 14 days of their arrival at the Place of Work. The Owner shall only become liable to pay for the remainder of said Products and/or costs of said Construction Equipment after those Products and/or Construction Equipment are actually used at the Place of Work and is/are invoiced in accordance with the terms of the Contract Documents.

Add the following paragraphs 3.7.8.1., 3.7.8.2, 3.7.8.3, and 3.7.8.4:

3.7.8 The Contactor shall:

.1 furnish competent and adequate labour and staff, who shall be in attendance at the Place of Work at all times, as necessary, for the proper administration, co-ordination, supervision, and superintendence of the Work;

.2 organize the procurement of all Products and Construction Equipment so that labour and staff will be available at the requisite times to complete the Work in accordance with GC 3.4 Construction Schedule;

.3 keep an adequate force of skilled workers at the Place of Work, as necessary, to complete the Work in accordance with all requirements of the Contract Documents and in accordance with GC 3.4 Construction Schedule; and

.4 provide the Owner, Project Manager, and Consultant, with the names, work addresses, and telephone numbers of the appointed representative of the Contract and other responsible field persons who may be contacted during non-working hours.

9 GC 3.8 SHOP DRAWINGS AND OTHER SUBMITTALS

Add the words "AND OTHER SUBMITTALS" to the Title after SHOP DRAWINGS in GC 3.8.

Add "and Submittals" after each instance of 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.

Add the following paragraph 3.8.1.1:

3.8.1.1 Prior to the first application for payment, the Contractor and the Consultant shall jointly prepare a schedule of the dates for submission and return of Shop Drawings and any Submittals.

Add the following subparagraph 3.8.4.1:

3.8.4.1 The following paragraph shall apply to each Shop Drawing and Submittal reviewed in connection with the project. The Consultant's review conducted pursuant to GC 3.8.3 shall not imply that the Consultant has approved the detailed design inherent in the Shop Drawings or Submittals, responsibility for which shall remain with the Contractor submitting same. The Contractor is responsible for information that pertains solely to fabrication processes or to techniques of construction and installation, and for coordination of the work of all sub trades.

Delete the following words in paragraph 3.8.7:

3.8.7 "with reasonable promptness so as to cause no delay in the performance of the Work" and replace those words with: "within ten (10) working days or such longer period as may be reasonably required".

Add new GC 3.9 as follows:

10 GC 3.9 CONTRACTOR RESPONSIBILITY FOR WATER TIGHTNESS

GC 3.9 The Drawings and Specifications are not intended to depict each and every condition or detail of construction. As the knowledgeable party in the field, the contractor is in the best position to verify that all construction is completed in a manner which will provide a watertight structure.

The contractor has the sole responsibility for ensuring the watertight integrity of the structure.

Add new GC 3.10 as follows:

11 GC 3.10 PERFORMANCE BY CONTRACTOR

GC 3.10 In performing the Work and all its services and obligations under the Contract, the Contractor shall exercise a standard of care, skill and diligence that would normally be provided by an experienced and prudent contractor supplying similar services for similar projects. The Contractor acknowledges and agrees that throughout the Contract, the Contractor's obligations, duties and responsibilities shall be interpreted in accordance with this standard. The Contractor shall exercise the same standard of due care and diligence in respect of any products, personnel, or procedures which it may recommend to the Owner.

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 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.

12 GC 4.1 CASH ALLOWANCES

Delete paragraph 4.1.7 in its entirety and substitute:

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

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.

13 GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

Delete section GC 5.1 in its entirety.

14 GC 5.2 APPLICATION FOR PROGRESS PAYMENT

Add to paragraph 5.2.1, ", the Project Manager, " after the word "Owner".

Add the following at the end of paragraph 5.2.2:

5.2.2 Such applications shall be accompanied by one or more of the following documents: a Statutory Declaration, Waiver of Lien, or receipt, stating that the holdback monies claimed have been paid to the particular party or parties so named or referred to therein. The form of the Statutory Declaration, Waiver of Lien, or receipt shall meet the approval of the Consultant.

Add the following paragraph 5.2.9:

5.2.9 The reference to payment for Products delivered to the Place of the Work in Article 5.2.8 shall not be construed as covering day-to-day financing of the Project. Products delivered to the Place of the Work shall be construed to mean major items of equipment or quantities of items that are essential for the expedient conduct of the Work.

Add the following paragraph 5.2.10:

5.2.10 The Contractor shall submit all applications for payment and invoices (with supporting documents as required by the Contract Documents) to the Owner via the following email address:

operations-invoices@hrce.ca

15 GC 5.3 PAYMENT

Supplement paragraph 5.3.1 by adding the following:

5.3.1 A holdback percentage of ten (10) percent (%) shall apply to progress payments. The sworn statement by the Contractor for release of holdback monies shall be in the form of a Statutory Declaration meeting the approval of the Consultant. Amounts as certified by the Consultant to rectify deficiency items, or incomplete portions of individual work items, may be retained by the Owner after Substantial Performance has been obtained, pending Total Performance of the work or other authorization for release by the Consultant.

Amend subparagraph 5.3.1.2 as follows:

5.3.1.2 Delete "28" and replace with "30."

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

Add the following paragraph 5.4.7:

5.4.7. Before the Contractor submits his application for Substantial Performance of the Work, all Operations and Maintenance Manual materials shall be submitted in accordance with the Contract Documents. The Certificate of Substantial Performance will not be issued until this requirement is met.

Add the following subparagraph 5.4.8:

5.4.8 After the issuance of a certificate of Substantial Performance of the Work by the Consultant, the Contractor shall promptly submit to the Consultant and the Owner (i) a Certificate from a barrister stating that there are no Builders' Liens filed relating to the Work and (ii) a Clearance Letter from the Workers' Compensation Board.

17 GC 5.5 FINAL PAYMENT

Add the following subparagraphs 5.5.1.1, 5.5.1.2, 5.5.1.3, and 5.5.1.4:

5.5.1.1 The Contractor's application for final payment is considered to be valid only when all of the following have been performed:

1. Work has been completed and inspected for compliance with Contract Documents, and the Consultant is satisfied that all the requirements of the Contract have been fulfilled by the Contractor.

2. Defects have been corrected, deficiencies have been completed, and the Place of Work is (i) free of waste products and debris, and (ii) clean and suitable for use or occupancy by the Owner.

3. Equipment and systems have been tested, adjusted and balanced and are fully operational, and written reports as outlined in the Contract Documents have been provided to the Consultant.

4. Certificates required by Utility companies, manufacturer's representative and inspectors have been submitted.

5. Spare parts, maintenance materials, warranties and bonds have been provided.

5.5.1.2 If Work is deemed incomplete by the Consultant, the Contractor shall complete outstanding items and request re-inspection.

5.5.1.3 If, within sixty (60) days after the issuance by the Consultant of the Certificate of Substantial Performance, the Contractor has not corrected all the deficiencies, the Owner will retain sufficient money to cover the cost of completing said deficiencies, as determined by the Consultant, in

addition to holding monies retained in accordance with the Contract Documents and subject to the provisions of the Builders' Lien legislation of Nova Scotia.

5.5.1.4 Neither the final certificate nor the payment thereunder, nor any provision in the Contract Documents shall relieve the Contractor from responsibility for faulty material or workmanship which shall appear within a period of one (1) year from the date when Ready-For-Takeover has been attained and the Contractor shall promptly remedy any defects due thereto and pay for any damage to other Work resulting therefrom which shall appear within such period of one year. The Owner shall give notice of observed defects reasonably promptly. This article shall not be deemed to restrict any liability of the Contractor arising out of any law in force in the Province of Nova Scotia.

18 GC 6.2 CHANGE ORDER

Add the following paragraphs 6.2.3, 6.2.4, 6.2.5, 6.2.5, 6.2.6, 6.2.7, and 6.2.8:

6.2.3 All contemplated changes in the work shall be issued by the Consultant on a "Contemplated Change Order" form.

6.2.4 For lump sum pricing, the Contractor shall, upon receipt of the Contemplated Change Order, submit to the Consultant for approval within seven (7) days, a quotation for changes in the work. The Contractor acknowledges that failure to do so will result in foreseeable delay to the approval and payment of changes in the Work and foreseeable Additional costs to the Owner.

6.2.5 Quotation for changes shall be priced in sufficient detail (GC 6.6 applies).

6.2.6 Consultant shall, within five (5) working days, notify the Contractor whether estimates are accepted by Owner or further information is required. Acceptance of the Owner shall be indicated in writing, and a signed copy of the Contemplated Change Order form shall be returned to the Contractor.

6.2.7 The Contractor shall take reasonable measures to stop Work or minimize the Work in areas affected by or related to the contemplated change(s).

6.2.8 For each change in the Work, the Contract Price shall be increased by the net cost of that change in the Work, plus the following mark-ups for all overhead and profits:

a. a 10% mark-up on the direct cost of the net change in the Work for change work performed by the Contractor's own forces; and

b. a 5% mark-up on the change work performed by Subcontractors.

Credits for reduced or Deleted portions of the Work shall be the actual cost of that Work, without Addition or subtraction of any amount by the Contractor for overhead and profit, and shall be included in the actual cost of the net change.

19 GC 6.3 CHANGE DIRECTIVE

Delete paragraph 6.3.6.3 of GC 6.3 and replace with:

6.3.6.3. The Contractor's percentage fee referred to in paragraphs 6.3.6.1 and 6.3.6.2 shall be calculated and determined applying the following percentage mark-ups for overhead and profit:

a. a 10% mark-up on the direct cost of the net change in the Work for change work performed by the Contractor's own forces; and

b. a 5% mark-up on the change work performed by Subcontractors.

Add to GC 6.3 the following paragraphs 6.3.14 and 6.3.15:

6.3.14 If unit prices are set out in the Contract or subsequently agreed upon, then the unit process alone shall govern in relation to determining the cost of any item for a Change Directive.

6.3.15 Payment of the cost of performing work attributable to a Change Directive shall be made only if and to the extent that the Contractor has taken all reasonable steps to mitigate and minimize the impact of the change and the resulting cost.

20 GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

Add new paragraph 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 3.10, 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 anything which could reasonably have been ascertained by the Contractor by such careful investigation undertaken prior to the submission of the bid.

21 GC 6.5 DELAYS

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

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

Add new paragraph 6.5.6:

6.5.6 If the Contractor is delayed in the performance of the Work by any 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 Ready-for-Takeover date stated in Article A-1 herein (subject to any adjustment in accordance with the Contract Documents) and any later, actual date Ready-for-Takeover is attained by the Contractor.

Add new paragraph 6.5.7:

6.5.7 The Consultant shall not, except by written notice to the Contractor, stop or delay any part of the Work pending decisions or proposed changes.

22 GC6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

Add the following to the end of paragraph 6.6.1, deleting the "." after the word "Consultant":

"in no case more than 10 Working Days from the event or series of events giving rise to the claim".

Amend paragraph 6.6.5 as follows:

6.6.5 Add the words "as noted in paragraph 6.6.3" after the words "of the claim" and add the words "and the consultant", at the end.

Add the following paragraph 6.6.7:

6.6.7 If the Contractor claims for an increase in the Contract Price pursuant to this GC 6.6, the amount of any such claim shall be limited to the amount determined in accordance with the methods of quantification set out in paragraphs 6.3.6, 6.3.7, and 6.3.14 of GC 6.3, and the Contractor shall promptly submit a detailed breakdown of all labour, materials, overhead, and profits claimed, including those of Subcontractors. Contemporaneous records are required to support a claim for an increase in the Contract Price, and the Owner retains the right to verify all submitted records through an independent audit. The Owner is not liable for costs not so substantiated. Any mark-up for overhead and profit on the claimed amount under this GC 6.6 shall be limited to the amounts provided for under GC 6.3.6.3, as Amended by these Supplementary Conditions.

23 GC 8.3 NEGOTIATION, MEDIATION, AND ARBITRATION

Add the following paragraphs 8.3.9, 8.3.10, 8.3.11, 8.3.12, 8.3.13, 8.3.14, and 8.3.15:

8.3.9 Within five (5) days of receiving a Notice in Writing requesting arbitration, the party receiving the notice shall give the Consultant a written notice containing:

a. a copy of the Notice in Writing requesting arbitration;

b. a copy of supplementary conditions 8.2.9 to 8.2.14 of this contract, and;

c. a concise description of any claims or issues which the Contractor or the Owner, as the case may be, wishes to raise in relation to the Consultant arising out of the issues in dispute in the arbitration.

8.3.10 The Owner and the Contractor agree that the Consultant may elect, within ten (10) days of receipt of the notice under paragraph 8.3.9, to become a full party to the arbitration under paragraph 8.3.6 if the Consultant:

a. has a vested or contingent financial interest in the outcome of the arbitration;

b. gives the notice of its election to the Owner and the Contractor before the arbitrator is appointed;

c. agrees to be a party to the arbitration within the meaning of the rules referred to in paragraph 8.3.6, and;

d. agrees to be bound by the arbitral award made in the arbitration.

8.3.11 If an election is made under paragraph 8.3.10, the Consultant may participate in the appointment of the arbitrator and, notwithstanding the rules referred to in paragraph 8.3.6, the time period for reaching agreement on the appointment of the arbitrator shall begin to run from the date the respondent receives a copy of the notice of arbitration.

8.3.12 The arbitrator in the arbitration in which the Consultant has elected under paragraph 8.3.10 to become a full party may:

a. on application of the Owner or the Contractor, determine whether the Consultant has satisfied the requirements of paragraph 8.3.10, and;

b. make any procedural order considered necessary to facilitate the Addition of the Consultant as a party to the arbitration.

8.3.13 The provisions of paragraph 8.3.9 shall apply mutatis mutandis to written notice to be given by the Consultant to any sub-consultant.

8.3.14 In the event of notice of arbitration given by the Consultant to a sub-consultant, the sub-consultant is not entitled to any election with respect to the proceeding as outlined in 8.3.10, and is deemed to be bound by the arbitration proceeding.

8.3.15 An application for arbitration shall be accompanied by security in the amount of $1,000 to apply to the cost of arbitration. Any claims of excess costs must be submitted in writing to the Consultant within two weeks of completion or alleged completion of the work. No claims shall be accepted after this date and, also, no claims shall be accepted for disputed work unless the Consultant has been notified as specified.

24 GC 9.1 PROTECTION OF WORK AND PROPERTY

Delete subparagraph 9.1.1.1 in its entirety and substitute the following new paragraph 9.1.1.1:

9.1.1.1 errors or omissions in the Contract Documents which the Contractor could not have discovered applying the standard of care described in paragraph 3.10.

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

9.12 Before commencing any Work, the Contractor shall determine the locations of all underground utilities and structures indicated in the Contract Documents, or that are discoverable by applying to an Inspection of the Place of the Work exercising the degree of care and skill described in paragraph 3.10.

25 GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

Add in paragraph 9.2.6 after the word "responsible", the following new words:

9.2.6 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 and others,

Add in subparagraph 9.2.7.4:

9.2.7.4 "and the Consultant" after "Contractor":

Add in paragraph 9.2.8 after the word "responsible", the following new words:

9.2.8 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 requirement, or which threatens, human health and safety or the environment, or material damage to the property of the Owner or others,

26 GC 9.4 Construction Safety

Add to the end of paragraph 9.4.1:

The Contractor shall be responsible for and ensure the safety of not only the workers, Subcontractors, tradespeople, and Suppliers, and their equipment, but also of all other persons who enter the Place of Work whether during working hours or not, and for that purpose shall erect

such hoardings and signs and shall employ such safety measures as may be necessary to ensure the safety of such persons.

Delete paragraph 9.4.5 and replace with:

The Contractor shall be responsible for the cost to comply with any public health order(s) affecting the performance of the Work issued pursuant to the Health Protection act (Nova Scotia) or pursuant to any similar legislation, whether Federal or Provincial.

27 GC 9.5 MOULD

Add in subparagraph 9.5.3.4:

9.5.3.4 “and the Consultant” after “Contractor”

28 GC 10.1 TAXES AND DUTIES

Add the following paragraph 10.1.3:

10.1.3 The Contractor shall indicate on each application for payment as a separate amount, the appropriate Harmonized Sales Tax the Owner is legally obliged to pay. This amount will be paid to the Contractor in Addition to the amount certified for payment under the Contract. The Contractor’s HST registration number must appear on all invoices.

29 GC 10.2 LAWS, NOTICES, PERMITS AND FEES

Delete from the first line of paragraph 10.2.5 the word, “The” and substitute the words:

10.2.5 “Subject to paragraph 3.10, the”

30 GC 10.4 WORKERS' COMPENSATION

Add the following paragraphs 10.4.2, 10.4.3, 10.4.4, and 10.4.5:

10.4.2 The contractor is referred to regulations, as applicable, under the Worker's Compensation Act of Nova Scotia.

10.4.3 The Contractor’s registration with the Worker’s Compensation Board shall be continuous during the contract. Should registrations be scheduled to expire during the contract period, the Contractor shall submit a copy of its registration renewal one month prior to the expiration of the current certificate.

10.4.4 The Contractor shall furnish evidence of coverage under the Worker’s Compensation Act of Nova Scotia and a clearance Certificate providing proof of registration with the Worker’s Compensation Board prior to commencement of the Work. (A photocopy of the Contractors registration

certificate is acceptable proof). On-going proof of good standing with the Worker's Compensation Board during the term of the contract is required.

10.4.5 The Contractor shall also maintain a Certificate of Recognition (COR) from a safety audit company recognized by the Workers' Compensation Board, such as the Nova Scotia Construction Safety Association, for the duration of the Contract. The Contractor shall provide a copy of its COR to the Owner and Consultant prior to commencement of the Work and shall provide a copy of its COR to the Owner or Consultant upon request.

GC 11.1 INSURANCE

Delete sentences and replace with the following in subparagraph 11.1.1.1:

11.1.1.1 **Delete**: "General liability insurance shall be maintained from the commencement of the Work until one year from the date of Ready-for-Takeover. Liability coverage shall be provided for completed operations hazards from the date of Ready-for-Takeover on an ongoing basis for a period of 6 years following Ready-for-Takeover" **and replace with**: " General Liability Insurance or Wrap- Up Liability Insurance, (as detailed in the Information to Tenders section under "Insurance Requirements"), shall be maintained from the commencement of the Work until final completion and acceptance of the Work including the making good of faulty work or materials, except that coverage of completed operations liability shall in any event be maintained for twelve (12) months from date of Ready-for-Takeover".

Add the following subparagraphs 11.1.1.1.1, 11.1.1.1.2, and 11.1.1.2.1:

11.1.1.1.1 The general liability insurance to be maintained by the Contractor shall include Commercial General Liability Insurance covering Premises and Operations Liability, elevators, broad form property damage, broad form automobile, owners and contractors protective, blanket contractual, personal injury, completed operations liability contingent employers liability, cross liability clause, non-owned automobile liability, and a 30 day notice of cancellation clause.

11.1.1.1.2 All liability insurance policies shall be written in such terms as will fully protect the Contractor and The Halifax Regional Centre for Education as an Additional named insured.

11.1.1.2.1 Liability coverage of not less than ten million dollars ($10,000,000) is required with regard to operations of owned and non-owned automobiles.

Delete subparagraph 11.1.1.4 in its entirety and insert the following subparagraphs:

11.1.1.4 Broad Form (All Risks) Builders Risk Coverage - Prior to the commencement of any Work the Contractor shall maintain and pay for Broad Form (All Risks) Builders Risk Coverage in the joint names of The HRCE and the Contractor totaling not less than one hundred percent (100%) of the total value of the Work to be done and materials delivered on the site

(contract value), so that any loss under such policies of insurance will be payable to The HRCE and the Contractor as their respective interests appear. The Builders Risk Insurance shall include all materials related to the Work while in transit or at other locations.

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

11.1.1.4.2 Upon Ready-for-Takeover being attained, the Contractor's obligation to maintain Builder Risk Insurance shall cease and The HRCE shall assume full responsibility for insuring the whole of the Work against loss or damage.

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

11.1.4.3.1 Ten (10) Calendar days after Ready-for-Takeover;

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

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

Paragraph 11.1.2 is supplemented as follows:

11.1.2 In addition, within seven (7) working days after notification of award or in any event prior to payment of the first progress claim, the Contractor shall submit certified true copies of each insurance policy to the Owner's Contract Authority. Such copies shall be exclusive of information pertaining to premium or premium bases used by the insurer to determine the cost of the insurance. Prior to the commencement of any work, the Contractor shall file with the Owner a certified copy of each insurance policy and certificate required.

Delete 11.1.5 in its entirety and replace with the following:

11.1.5 Insurance contracts shall be procured from and the premiums paid to a resident agent of an insurance Company licensed to underwrite insurance in the Province of Nova Scotia.

Add the following paragraph 11.1.9:

11.1.9 All of the insurance policies shall contain a clause stating that no change in terms and conditions or cancellation may at any time be made without the full knowledge and consent of the Owner.

31 GC 11.2 CONTRACT SECURITY

Add the following paragraphs 11.2.1, 11.2.2, and subparagraph 11.2.2.1:

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

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

11.2.2.1 "Bonds shall be procured from a Nova Scotia resident agent of an insurance company licensed to do business in Nova Scotia and shall be maintained in good standing and held by the Owner until one (1) year after Ready-for-Takeover.

Add the following paragraph 11.2.3:

11.2.3 If a Certified Cheque is held as contract security it shall be in an amount equal to ten (10) percent (%) of the Contract Price. The Contract shall supplement the Certified Cheque as necessary to maintain the amount equal to ten (10) percent (%) of the total amount payable (Contract Price plus HST).

.1 The Certified Cheque will be deposited at the chartered bank holding The HRCE deposits.

.2 The HRCE will return the cheque amount to the Contractor upon satisfactory completion of the contract and duration as specified in the Tender documents.

.3 Should Contractor default, total amount payable under the Certified Cheque will be the face value of the cheque plus all accrued interest.

.4 Payment for completion of work, due to failure of performance of the Contractor, shall include all reasonable obligations under the Contract, including architectural and engineering costs arising because of the default of the Contractor.

.5 Payment for labour and materials shall be limited to those who have a direct contract with the Contractor for the provision of labour and/or material (which includes equipment rental).

32 GC 12.3 WARRANTY

In paragraph 12.3.2, delete from the first line the word, "The" and substitute the words:

12.3.2 "Subject to paragraph 3.10, the..."

Add the following paragraph 12.3.7:

12.3.7 Warranty repairs or replacements which arise during warranty period which affect the operation of the system shall be attended to immediately upon notification from the Consultant.

33 GC 13.3 INDEMNIFICATION

Add the following paragraph 13.1.1.3:

13.1.1.3 The Contractor shall indemnify and hold harmless the Consultant, its agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceeding by third parties that arise out of, or are attributable to, the Contractor's performance of the Contract, provided such claims are attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, and caused by negligent acts or omissions of the Contractor or anyone for whose acts the Contractor may be liable, and made in writing within a period of six (6) years from t Ready-for-Takeover, or within such shorter such period as may be prescribed by any limitation statute or the province or territory of the Place of the Work.

END OF SECTION 00 73 00

SECTION 01 11 00 - HRCE SUMMARY OF WORK

1. Project Location & General Scope

1.1. AJ Smeltzer Junior High, 46 Prince Street, Lower Sackville, NS B4C 1L1

1.2. Scope: Refer to Section 00 00 15 for scope and schedule information.

2. Contract Documents

2.1. Work will be performed under CCDC-2 contract.

3. General Conditions

3.1. Halifax Regional Centre for Education and CCDC-2 form an integral part of this Project Manual, a copy of which is bound herein.

4. Project Manual

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

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

4.3. Wherever the project location building name occurs in the Contract Documents it shall be taken to mean all work included in the Contract.

4.4. Wherever in the Contract Documents the words "approval", "approved", "direction", "directed", "selection", "selected", "request", "requested", "report", and similar words are used, such approvals, directions, selections, requests and reports shall be given by the HRCE unless specifically stated otherwise.

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

4.6. Wherever in this Project Manual it is specified that Work is to proceed or to meet approval, direction, selection or request of jurisdictional authorities or others, such approval, direction, selection or request shall be in writing.

5. Errors & Omissions

5.1. If errors or omissions are observed in the Contract Documents, immediately notify the HRCE Procurement Contact in writing of all such errors or omissions. In the event no such notice is given, the Contractor will be held responsible for the results of any such error or omission and the cost of rectifying the same.

6. Division 1

6.1. The provisions of all Sections of **Division 1** shall apply to each Section of this Specification**.**

7. Wage Rates

7.1. Pay all employees engaged on the Work a wage not less than the minimum wage per hour as set out by the Province of Nova Scotia. For overtime work beyond 48 hours in any one week, pay no employee at a rate of less than one and one-half times the minimum wage per hour noted above. Provide for these wage rates in tendered contract amount.

8. Work Performed Under Separate Contracts

8.1. Work not to be included in the Contract, as noted "NIC" on the Drawings, shall be governed by Article 37, Separate Contracts, of General Conditions of Contract.

8.2. Furniture installation will be carried out by others.

8.3. Computer installation will be carried out by others.

9. Project Schedule

9.1. Refer to Section 00 00 15 Description of Work.

9.2. Existing services (mechanical & electrical) will need to be maintained through the renovations.

9.3. During construction, all life safety systems as well as mechanical and electrical systems must be in active, usable condition to permit the school to operate or alternate methods used to ensure the safe operation of the school as directed by HRCE project representative.

9.4. As construction progresses revise the schedule to compensate for any delays or unforeseen activities so as to maintain the contract completion date. Each schedule submission is to be complete with a statement indicating the changes made, the reason they were changed and confirmation that the project completion date will not change. The above schedule information is to be submitted monthly or more often if necessary.

10. Site Progress Records

10.1. Maintain at site a permanent written record of progress of Work. Make the record available at all times with copies provided when requested. Include in record each day:

10.1.1. Commencement and completion dates of the Work of each trade in each area of Project.

10.1.2. Attendance of Contractor's and Subcontractor's Work forces at Project and a record of the work they perform.

10.1.3. Visits to site by representatives of the Owner, Engineer, jurisdictional authorities, Contractor, Subcontractors, and suppliers.

10.2. Maintain a progress chart in approved format. Show on chart proposed Work schedule and progress of Work by Contractor and Subcontractor.

11. Examination

11.1. Site:

11.1.1. Examine site, and ensure that site conditions have been examined, that all are fully informed on all particulars which affect Work thereon and at the place of construction, and in order that construction proceeds competently and expeditiously.

11.1.2. Ensure by examination that all physical features, and working restrictions and limitations which exist are known.

11.2. Previously Completed Work:

11.2.1. Verify dimensions of existing Work in place before construction of Work to be incorporated with it.

11.2.2. Verify that previously executed Work and surfaces are satisfactory for construction, and that performance of subsequent Work will not be adversely affected.

11.2.3. Commencement of Work will constitute acceptance of site conditions and previously executed Work as satisfactory.

11.2.4. Report to Engineer defects in prior Work which will affect quality of subsequent Work, or construction schedule.

11.3. Construction Measurements:

11.3.1. Before commencing installation of Work, verify that its layout is accurate in accordance with intent of Drawings, and that locations, elevations, and clearances to adjacent infrastructure are maintained.

11.3.2. If Work is installed in wrong location, rectify it before other Work concerned proceeds.

12. PROTECTION OF WORK, PROPERTY & PERSONS

12.1. Include in Work necessary methods, materials, and construction to ensure that no damage or harm to Work, materials, property and persons results from the Work of this Contract. Temporary facilities relating to protection are specified in Section 01 52 00.

12.2. Protect, and if damaged make good, adjacent private and public property.

12.3. Keep surfaces, on which finish materials will be applied, free from grease, oil, and other contamination which would be detrimental in any way to the application of finish materials.

12.4. Protect finished surfaces of completed Work from damage by restriction of access or by use of physical means suitable to the material and surface location. Establish with each Subcontractor the suitability of such protection in each case.

12.5. Protect existing underground infrastructure, mechanical, electrical, telephone and similar services from damage. If necessary, relocate active services to ensure that they function continuously in safety and without risk of damage.

12.6. Cap off and remove unused utility services encountered during Work after approval is given by the utilities concerned or jurisdictional authorities, whichever may apply. Relocation, removal, protection and capping of existing utility services shall be performed only by the applicable utility and of other services by licensed mechanics.

12.7. To prevent soiling or damage to finish flooring where pedestrian traffic occurs after the flooring has been installed, install and maintain 6 mil. polyethylene membrane or reinforced kraft paper temporary protection, secured in place and with joints sealed by reinforced pressure sensitive tape.

12.8. Install plywood panels of minimum ¼" thickness over completed finish flooring materials, on which further construction Work is performed by other trades or delivery of products is made, or both. Seal joints between panels with reinforced pressure sensitive tape.

12.9. Prevent spread of dust beyond the construction zone by wetting, or by other approved means, as it accumulates.

12.10. The outside work area shall be appropriately demarked and/or surrounded by rigid chain link panels or fencing (at the cost of the contractor) to prevent unauthorized entry to the work area. Any area of roof having work completed is to be covered below with this fencing approximately 10' from the edge of the building. It is to be maintained at all times throughout the project. All waste disposal bins are to be fenced in using the same type of fencing as indicated above during working hours. After working hours, all waste disposal bins shall be located a minimum of 25 feet from any structure. Any windows where the debris chute is located are to be covered. All entrances below the roof area are to have covered scaffolding erected to ensure a safe travel path to a distance of ten feet from edge of building. All workers shall contain their activity to the work site area. Access to the school shall only be allowed as

planned in coordination with HRCE Operations and the school administration.

12.11. All security on site shall be coordinated through HRCE using an HRCE preferred vendor.

12.12. The contractor is responsible for the cost of security for all project materials.

12.13. If access to the project site is required inside the building, HRCE will provide security personnel at its own cost.

12.14. The contractor shall keep the work site free from accumulated debris caused by the employees or work and shall remove all debris at the end of each work shift. Debris shall not be deposited in HRCE controlled garbage and/or recycling containers.

12.15. All waste materials and debris created during demolition and/or construction shall be disposed of in a dumpster provided by the contractor, to be removed at the end of the construction project, using a methodology that is in compliance with the applicable HRM solid waste by laws. Otherwise, the material must be removed and disposed of off-site at the end of each working day. The waste materials may not be stored on site unless they are held in an approved project dumpster no closer than twenty five (25) feet from any structure.

12.16. All temporary structures such as portable washroom facilities, materials storage trailer, work trailer, debris dumpster, vehicles, etc., shall be located a minimum of (25) twenty-five feet from the school building.

12.17. Where applicable, a hot work permit will be required to be completed and approved by HRCE prior to commencement of work and all conditions of the permit must be maintained until completion of hot work. A copy of the hot work permit signed by the contractor representative shall be provided to HRCE upon completion of each hot work session. Contractor must assign a designated fire watch as noted on the permit document who shall remain on site for three hours after completion of each hot work session.

12.18. A school washroom will be designated for use where appropriate. However, protection of the surfaces as indicated above must be maintained. It should also be noted that access to the building during summer months will be limited for security reasons. Contractor is responsible to provide temporary portable washroom facilities for general use of contractor staff.

12.19. Access to Interior of School - All interior access is to be scheduled with the PM. This will allow for notice to the school admin., custodial and possible scheduling of a security guard for after hour access.

12.20. Adhesives / Torch Work - All adhesive use and torch work must be completed after school hours. Contractor must assign a designated fire watch as indicated above in 12.17.

13. Cleaning

13.1. Ensure that during and after construction the public streets and existing asphalt parking lot are cleaned as required.

14. Salvage

14.1. Unless otherwise specified, salvaged material resulting from construction, and surplus materials and construction debris shall become property of Contractor, who must dispose of it away from Site.

15. Site Limitations

15.1. Since the existing building will be occupied during the Work (in accordance with the Phasing Schedule) the Architect will designate the precise areas on the site which may be utilized for work and storage, and where personnel will be permitted to be present. Refer also to Drawings. Allow for hoarding to secure construction areas from occupied portions of the Building and Site.

15.2. All access to the construction site is to be coordinated with the Project Manager for HRCE and communicated at the pre-construction meeting.

15.3. Any Work carried out in the building is to be carried out during hours approved by the School Administration.

15.4. Any disruption to services within the building must occur during hours approved by School Administration.

15.5. Any Work which may have an adverse effect on the occupancy functions, must have prior approval of the School Administration and **may** require scheduling during off-hours.

16. Security Regulations

16.1. Perform Work in conformance to the security regulations of the building as directed by the Project Manager for HRCE.

17. Project Identification

17.1. No project sign is required on this Project.

18. Owner's Occupancy

18.1. The Owner reserves the right to occupy and use portions of the Project, whether partially or entirely completed, or whether completed on schedule or not, provided such occupancy does not interfere with the Contractor's continuing Work.

18.2. Partial occupancy or installation by the Owner of his equipment shall not imply acceptance of the Project in whole, or in part, nor shall it imply acknowledgement that terms of the Agreement are fulfilled.

END OF SECTION 01 11 00

SECTION 01 11 25 - PRICES

1. General

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

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

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

1.1.3. Expenditures for preparation, inspection, delivery, installation and removal of materials, equipment, tools and supplies.

1.1.4. Temporary facilities as required for the applicable Work.

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

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

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

1.1.8. Assessments under the Workmen's Compensation Act, the Unemployment Insurance Act, Canada Pension Act, statutes providing for government hospitalization, vacations

with pay or any similar statutes; or payments on account of usual vacations made by the Contractor to his employees engaged on the applicable Work at the site, to the extent to which such assessments or payments for vacations with pay relate to the Work covered by the specified price; and all sales taxes or other taxes where applicable.

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

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

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

1.1.12. Fees for licenses and permits in connection with the applicable Work. No Building Permit is required for the project.

1.1.13. Duties and taxes imposed on the applicable Work.

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

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

END OF SECTION 01 11 25

SECTION 01 11 41 - PROJECT COORDINATION

1. Requirements Included

1.1. Each Trade Contractor's responsibilities include the coordination of Work within his own Contract and with the Work of other Contracts.

2. Related Requirements

2.1. Project Meetings: Section 01 31 19

2.2. Submittals: Section 01 33 00

3. Description

3.1. Coordinate Work on which subsequent Work depends to facilitate mutual progress, and to prevent conflict between parts of the work.

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

3.3. Ensure that each Section, commencing Work, and that each Section is assisted in the execution of its preparatory Work by Sections depending upon its preparation.

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

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

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

3.7. Remove work installed in error which is unsatisfactory for subsequent Work.

4. Cutting And Patching

4.1. Include under Work of this Section all cutting and patching of asphalt required by the Work.

4.2. Finish new surfaces flush with existing surfaces.

4.3. Cut and patch as required making work fit.

4.4. Make cuts with clean, true, smooth edges.

4.5. Patching of existing or new asphalt shall be performed only by workmen with expertise in that particular trade and who normally perform that Trade.

4.6. Replace, and otherwise make good, damaged or defective Work. If required by the Construction Manager.

4.7. Do not endanger Work or property by cutting, digging, or similar activities. No Section shall cut or alter the Work of another Section unless approved by the Section which has installed it.

4.8. Cut and drill with true smooth edges and to minimum suitable tolerances.

4.9. If required, before cutting, drilling, or sleeving structural load bearing elements, obtain approval of location and methods.

4.10. Cutting, drilling and sleeving of Work shall be done only by the Section which has installed it. The Section requiring drilling and sleeving shall inform the Section performing the Work of the location and other requirements for drilling and sleeving. The Contractor shall directly supervise performance of cutting and patching.

4.11. Cutting and Patching for Holes Required by Mechanical & Electrical Work:

4.11.1. Include under Work of Mechanical Divisions cutting or provision of holes up to 8” in diameter and related patching.

4.11.2. Include under Work of this Section holes and other openings required by the work of Mechanical Divisions which are larger than 8” in diameter or least dimension, and chases, bulkheads, furring and required patching. This Section shall be responsible for determination of Work required for holes in excess of 8” diameter or least dimension.

4.11.3. Include under the Work of Electrical Divisions all cutting or provision of holes and related patching for the Work of that Division.

4.12. Include under Work of this Section all other cutting and patching required by the Work except as described in Clause .11 above.

4.13. Patching or replacement of damaged Work shall be done by the Subcontractor under whose Work it was originally executed, and at the expense of the Subcontractor who caused the damage.

4.14. Make patches invisible in final assembly.

5. Quality Assurance

5.1. Requirements of Regulatory Agencies:

5.1.1. Make known and coordinate the requirements of jurisdictional authorities, as made explicit by the Contract Documents, and by representatives of such authorities

5.2. Source Quality Control:

5.2.1. Ensure that Work meets specified requirements

5.2.2. Schedule, supervise and administer inspection and testing as specified in Section 01 45 00.

5.3. Job Records:

5.3.1. Maintain job records and ensure that such records are maintained by subcontractors.

Submittals

5.4. Prepare a Project schedule in accordance with Section 01 33 00, and ensure that all subcontractors and suppliers are aware of the details of this schedule, and progressively of their general compliance with the schedule.

5.5. Become aware of the required submittals specified in each Section, and expedite submission of such submittals so as not to hinder the Project Schedule.

5.6. Review submittals and make comments as specified in Section 01 33 00.

6. Job Conditions

6.1. Ensure that Work proceeds under conditions meeting specified environment and job safety requirements

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

7. Product Delivery, Storage And Handling

7.1. Site has limited spaces for storage, only delivery of materials agreed upon by the Construction Manager will be allowed. Comply with Construction Manager's allocations. Any requirement for modifications to the building in order to allow delivery and storage of the materials to complete this work is the responsibility of the contractor.

7.2. Schedule delivery of products & removal of material with Construction Manager.

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

7.4. Trade Contractor to provide flag persons, traffic signals, barricades and Flares/lights/lanterns as required to perform the Work and to protect the public.

7.5. Material and Waste - Deliveries and Removals - Must be coordinated to be completed 30 minutes after school dismissal where applicable.

END OF SECTION 01 11 41

SECTION 01 31 19 – PROJECT MEETINGS

1. Pre-Award Meeting

1.1. A Pre-award meeting will be held at which time the following will be addressed:

1.1.1. Owner and HRCE's functions.
1.1.2. The Consultant and the Consultant's functions.
1.1.3. The General Contractor and the General Contractor's functions.
1.1.4. Documentation requirements from the General Contractor.
1.1.5. Obligee for Performance and Payment Bonds from Sub-contractors.
1.1.6. Progress Claims.
1.1.7. CO's & CCO's.
1.1.8. Construction Schedule.
1.1.9. Project Start-up.
1.1.10. Job Meetings.
1.1.11. Superintendent – General Contractor's Representative.
1.1.12. Design / Administration authority.
1.1.13. Owner's Representative.
1.1.14. Special Consultants.
1.1.15. Quality of Workmanship.
1.1.16. Accountability.
1.1.17. Harmonized Sales Tax.
1.1.18. Contract Close-out Documentation.

2. Preconstruction Meeting

2.1. Within fifteen (15) days after award of Contract, arrange a meeting between the Consultant, Subcontractors, Project Superintendents, Inspection and Testing Company Representatives, and representatives of others whose coordination is required during construction.

2.2. Discuss at the meeting the means by which full cooperation and coordination of the participants during construction can be achieved.

2.3. Document the responsibilities and necessary activities of the participants during construction as discussed and distribute to each participant.

2.4. Establish procedures for maintenance and completion of Project record drawings specified in Section 01 77 00.

2.5. Review and establish methods of maintaining life safety and egress for the school occupants. Communicate these methods thoroughly with the School Principal.

3. Progress Meeting

3.1. Invite representatives of HRCE, to attend twice monthly site meetings called by the Contractor during the progress of the Work.

3.2. Inform HRCE of each meeting and of proposed agenda a minimum of five (5) days before meeting.
3.3. Submit proposed schedule of site meetings to Engineer and Owner.
3.4. Record, prepare and distribute minutes of each meeting to HRCE and to each other participant within 72 hours of meeting.
3.5. Ensure that all representatives who attend meetings have the authority to conduct business on behalf of firms they represent.
3.6. Details of Progress Meetings to be discussed at the project start-up meeting.

4. Suggested Agendum (Preconstruction Meeting)

4.1. Distribution and discussion of:
- **4.1.1.** List of major subcontractors and suppliers.
- **4.1.2.** Projected Construction Schedules.

4.2. Critical work sequencing.
4.3. Major equipment deliveries and priorities.
4.4. Project Coordination:
- **4.4.1.** Designation of responsible personnel.

4.5. Procedures and Processing of:
- **4.5.1.** Field decisions
- **4.5.2.** Proposal requests
- **4.5.3.** Submittals
- **4.5.4.** Change orders
- **4.5.5.** Applications for Payment.

4.6. Adequacy of distribution of Contract Documents.
4.7. Procedures for maintaining Record Documents.
4.8. Use of premises:
- **4.8.1.** Office, work and storage areas.
- **4.8.2.** Owner’s requirements.

4.9. Construction facilities, controls and construction aids.
4.10. Safety/Tool Box Meetings.
4.11. Security procedures.
4.12. Housekeeping procedures.
4.13. Egress/life safety procedures

5. Suggested Agendum (Progress Meetings)

5.1. Review and approval of minutes of previous meeting.
5.2. Safety meeting minutes.
5.3. Review of work progress since previous meeting.
5.4. Field observations, problems, conflicts.
5.5. Problems which impede Construction Schedule.
5.6. Review of off-site fabrication, delivery Schedules.

5.7. Corrective measures and procedures to regain projected schedules.
5.8. Revisions to Construction Schedules.
5.9. Maintenance of quality standards.
5.10. Pending changes and substitutions and effect on Construction Schedule.
5.11. Other Business.

6. Attend, with representatives of HRCE weekly meetings with the School Administration to review construction activities and concerns of Building Occupants.
7. Quarterly meetings with Contractor and the HRCE / User during Warranty Period including major sub-trade contractors.
8. Dates for meetings will be set at time of completion.

END OF SECTION 01 31 19

SECTION 01 33 00 – SUBMITTAL PROCEDURES

1. General Requirements

1.1. Make submittals specified in this Section to Consultant unless otherwise specified, with additional submissions made, in manner that they direct, to other parties involved with construction of the Project as their interests are concerned. These parties are, but shall not be restricted to, consultants, jurisdictional authorities, and Subcontractors whose Work must be coordinated with Work related to Submittals.

1.2. Ensure that submissions are made to allow sufficient time for review without the construction schedule being delayed.

2. Document Submissions Required

2.1. At Commencement of Contract:

2.1.1. Performance and Payment Bonds.

2.1.2. Public Liability and Property Damage Insurance Certificates.

2.1.3. List of Subcontractors by firm name.

2.1.4. Construction Schedule and other required schedules and estimates.

2.1.5. Site Specific Safety Plan/Safety Policy.

2.1.6. Workers' Compensation Board status.

2.2. During Construction:

2.2.1. Weekly progress reports.

2.2.2. Job meeting reports and minutes.

2.2.3. Updated construction schedules.

2.2.4. Shop drawings as required.

2.2.5. Inspection and test reports.

2.2.6. Daily communication of Hot Work Permits as needed.

2.3. Submissions at completion of Work are specified in Section 01 77 00, Contract Closeout.

3. Administrative

3.1. Submit to Consultant submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time no claim for extension by reason of such default will be allowed.

3.2. Do not proceed with Work affected by submittal until review is complete.

3.3. Present shop drawings, product data, samples and in Imperial units.

3.4. 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 considered rejected.

3.5. Notify Consultant in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

3.6. Verify field measurements and affirm that affected adjacent work is coordinated.

3.7. Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals.

3.8. Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant's review.

3.9. Keep one review copy of each submission on site.

4. Construction Schedules

4.1. Submit proposed construction schedule at beginning of Project, as specified in Project Documents.

4.2. As construction progresses, submit up-dated construction schedules as specified in Project documents.

5. Shop Drawings And Product Data

5.1. 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.

5.2. Submit drawings stamped and signed by professional consultant registered or licensed in Province of Nova Scotia of Canada.

5.3. 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.

5.4. Allow seven (7) days for Consultant's review of each submission. Do not proceed with work involving relevant products until completion of shop drawing review.

5.5. 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.

5.6. Make changes in shop drawings as Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of revisions other than those requested.

Accompany submission with transmittal letter, in duplicate, containing:

5.6.1. Date

5.6.2. Project title and number

5.6.3. Contractor's name and address

5.6.4. Identification and quantity of each shop drawing, product data and sample.

5.6.5. Other pertinent data.

5.7. Submission to include:

5.7.1. Date and revision dates.

5.7.2. Project title and number.

5.7.3. Name and address of:

5.7.3.1. Subcontractor.

5.7.3.2. Supplier.

5.7.3.3. Manufacturer.

5.7.4. Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.

5.7.5. Details of appropriate portions of Work as applicable:

5.7.5.1. Fabrication.

5.7.5.2. Layout, showing dimensions, including identified field dimensions, and clearances.

5.7.5.3. Setting or erection details.

5.7.5.4. Capacities.

5.7.5.5. Performance characteristics.

5.7.5.6. Standards.

5.7.5.7. Relationship to adjacent work.

5.8. After Consultant's review, distribute copies.

5.9. Submit for review one electronic copy in PDF file format of shop drawings for each requirement requested in specification Sections and as Consultant may reasonably request.

5.10. Submit electronic copies of product data sheets for 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.

5.11. Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Consultant.

5.11.1. Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.

5.11.2. Testing must have been within three (3) years of date of contract award for project.

5.12. Documentation of testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

5.13. Delete information not applicable to project.

5.14. Supplement standard information to provide details applicable to project.

5.14.1. If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, copies will be returned, and fabrication and installation of work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of work may proceed.

5.14.2. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for coordination of work of sub-trades.

5.15. Shop Drawings are specified for submission under the following:

Section 03 20 00 Concrete Reinforcement
Section 05 12 23 Structural Steel
Section 05 31 00 Steel Deck
Section 05 50 00 Metal Fabrications
Section 06 10 11 Rough Carpentry
Section 06 40 00 Architectural Woodwork
Section 07 41 43 Aluminum Composite Panels
Section 07 46 13 Preformed Metal Siding
Section 07 55 00 Modified Bitumen Roofing System & Flashing
Section 07 84 00 Fire Stopping and Smoke Seals
Section 08 11 14 Steel Doors & Frames
Section 08 11 16 Aluminum Doors & Frames
Section 08 14 10 Wood Doors
Section 08 44 13 Glazed Aluminum Framing Systems
Section 08 50 50 Aluminum Windows
Section 08 62 11 Vinyl Windows
Section 08 71 10 Door Hardware
Section 09 22 16 Non-Load Bearing Wall Framing
Section 09 30 13 Ceramic Tile
Section 10 11 13 Communication Boards
Section 10 11 23 Tackboards
Section 10 14 53 Traffic Signs
Section 10 28 10 Toilet & Bath Accessories
Section 10 50 00 Miscellaneous Specialties
Section 11 40 11 Food Services Catalogued & Custom Equipment

Section 12 21 13 Horizontal Blinds
Section 12 21 16 Roller Shades
Section 14 42 13 Wheelchair Platform Lift

All pre-manufactured Mechanical & Electrical items as noted in Mechanical & Electrical Divisions.

6. SAMPLES

6.1. Submit for review samples in duplicate as requested in respective specification Sections, as requested by the Consultant. Label samples with origin and intended use.

6.2. Deliver samples prepaid to Consultant's business address.

6.3. Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.

6.4. Adjustments made on samples by Consultant are not intended to change.

6.5. Make changes in samples which Consultant may require, consistent with Contract Documents.

6.6. Reviewed and accepted samples will become standard of workmanship and material against which installed work will be verified.

6.7. Samples are specified for submission under the following Sections:

Section 07 41 43 Aluminum Composite Panels
Section 07 46 13 Preformed Metal Siding
Section 08 14 10 Wood Doors
Section 08 50 50 Aluminum Windows
Section 09 30 13 Ceramic Tile
Section 09 51 13 Acoustical Ceiling Units
Section 09 65 19 Resilient Tile Flooring
Section 12 21 13 Horizontal Blinds
Section 12 21 16 Roller Shades
Refer to Mechanical & Electrical Divisions for sample requirements in those Trades.

7. Record Drawings

7.1. Record, as the Work progresses, changes and deviations in the location of Work concealed by the finished Work, and such other approved changes that occur during progress of Work, to ensure that an accurate record is provided for future maintenance and alterations.

7.2. White prints will be provided by the HRCE for use in preparing record drawings. Record changes in the Work on these prints in red ink.

7.3. Dimension location of concealed Work in reference to building walls, and elevation in reference to floor elevation. Indicate at which point dimension is taken to conceal Work. Dimension all terminations and offsets of runs of concealed work.

7.4. Record work constructed differently than shown on Contract Documents, changes in the work caused by site conditions, by Owner, Consultant, Contractor and Subcontractor originated

changes, and by site instructions, supplementary instructions, field orders, change orders, addenda, correspondence and directions of jurisdictional authorities.

7.5. Record location of mechanical and electrical services, piping, valves, conduits, pull boxes, junction boxes and similar work not clearly in view, and position of which is required for maintenance, alteration work and future additions. Do not conceal critical work until its location has been recorded.

7.6. Identify record drawings as a "Project Record Copy". Maintain in good condition, do not use for construction purposes and make available to Consultant at all times.

7.7. Submit record drawings at completion of Work. Final acceptance of the Work will be predicated on receipt and approval of record drawings.

8. Extra Stock

8.1. Supply extra stock at completion of Project as specified in other Sections of the Project Manual.

8.2. Deliver extra stock as directed by the Architect to location he designates.

8.3. Extra stock is specified to be supplied in the following Sections:

Section 09 30 13 Ceramic Tile
Section 09 51 13 Acoustical Ceiling Units
Section 09 65 19 Resilient Tile Flooring
Section 09 91 23 Painting
Refer to Mechanical & Electrical Divisions for Extra Stock requirements in those Trades.

9. Maintenance Manual & Operating Instructions

9.1. Submit three (3) copies of Maintenance Manual with application for completion certificate.

9.2. Include in Maintenance Manual one (1) copy of each final approved shop drawing issued for Project on which have been recorded changes made during fabrication and installation caused by unforeseen conditions.

9.3. Submit extended guarantees together in one (1) report binder.

9.4. The Manuals shall:

9.4.1. Consist of a hard-cover, black, vinyl-covered, loose-leaf, letter-size binder.

9.4.2. Have a title sheet, or sheets preceding data on which shall be recorded Project name, Project number, date, list of contents, and Contractor's and Subcontractors' names.

9.4.3. Be organized into applicable Sections of Work with each Section separated by hard paper dividers with plastic covered tabs marked by Section.

9.4.4. Contain only typed or printed information and notes, and neatly drafted drawings.

9.4.5. Contain maintenance and operating instructions on all building, and mechanical and electrical equipment.

9.4.6. Contain maintenance instructions as specified in various Sections.

9.4.7. Contain brochures and parts lists on all equipment.

9.4.8. Contain sources of supply for all proprietary products used in the Work.

9.4.9. Contain lists of supply sources for maintenance of all equipment in Project of which more detailed information is not included above.

9.4.10. Contain finished hardware schedule.

9.4.11. Contain charts, diagrams and reports specified in Mechanical & Electrical Divisions.

10. Extended Warranties

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

10.2. Extended warranties shall commence on termination of the standard one-year warranty granted in this Contract.

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

10.4. Secure each extended Warranty by a Maintenance Bond in an amount indicated.

10.5. Submit extended warranties for:

Section 06 40 00 Architectural Woodwork – extended 4 years
Section 07 41 43 Aluminum Composite Panels – extended 10 years (panel finish)
Section 07 55 00 Modified Bitumen Roofing System & Flashing:

- 2 year CRCA materials and workmanship against leaks and blow off
- 10 year material warranty the membrane will perform as a roofing material
- 1 year CRCA warranty against defects of materials and workmanship for the sheet metal work.

Section 07 92 10 Joint Sealants – extended 5 years
Section 08 11 16 Aluminum Doors & Frames – extended 4 years
Section 08 14 10 Wood Doors – extended 4 years
Section 08 50 50 Aluminum Windows – extended 4 years
Section 08 62 11 Vinyl Windows – extended 5 years
Section 08 71 10 Door Hardware – various, refer to that Section
Section 09 30 13 Ceramic Tile – extended 4 years
Section 09 51 13 Acoustical Ceiling Units – extended 4 years
Section 09 65 19 Resilient Tile Flooring – extended 4 years
Section 10 11 13 Communication Boards – extended 24 years
Section 10 11 23 Tackboards – extended 9 years
Section 12 21 13 Horizontal Blinds – extended 5 years
Section 12 21 16 Rollers Shades – extended 5 years
Section 14 42 13 Platform Lift – extended 5 years
Refer to Mechanical & Electrical Divisions for extended Warranty requirements in those trades.

11. Inspection Laboratory Reports

11.1. Submit copies of inspection and test reports obtained by the Contractor and Subcontractors for their Work or for Jurisdictional Authorities, if requested by Consultant.

11.2. Submit reports in accordance with requirements specified in Section 01 41 00.

12. Documentation On Suppliers & Manufacturers

12.1. Provide information under headings identifying the following: Associated Technical Section, Manufacturer, Supplier, Contact Name, and Phone Numbers.

SAMPLE FORM OF WARRANTY FOLLOWS THIS PAGE

Sample Form for Warranty

Date .....

Client .....

Project .....

.....

Warranty .....
(title of work)

We hereby undertake to warrant all materials supplied and installed under our Contracts and include the providing of necessary materials and labour to cover the result of faulty materials or workmanship. Upon written notification from Client or the Architect that the above work is defective any repair or replacement work required shall be to the Architect's satisfaction at no cost to the Client. This Warranty shall not apply to defects caused by the work of others, maltreatment of materials, negligence or Acts of God. This Warranty shall remain in effect for the total period from the acceptance of the Work to (....date....), irrespective of the date of completion or the beneficial use by the Owner.

Signature .....

Authorized Signing Officer .....

Name of Firm .....

Address .....

END OF SECTION 01 33 00

SECTION 01 35 13 – APPENDIX A - SPECIAL PROJECT PROCEDURES

1. Introduction

1.1. School construction, renovation and maintenance projects are scheduled every year as a normal and necessary course of business by operations departments in each Nova Scotia Centre for Education. Building modifications, repairs and additions/demolitions to buildings may impact the school environment without appropriate controls. With increased controls based primarily on the CSA standards implementation, proper scheduling and clear communication on adequate controls can be put into place to eliminate/minimize the impact to all occupants.

1.2. Projects of this nature may generate varying levels of dusts, noises and odors. It is possible, unknown/unforeseeable environmental contaminants, such as spills, mold, fumes, lead or asbestos exposure maybe identified.

1.3. To successfully complete work within the school environment, it is necessary to plan and implement appropriate containment and control strategies. This document is developed to provide a minimum standard for contaminant controls for various types of projects in schools. These standards are in addition to and should complement all legislated protocols for working with regulated materials such as asbestos, lead paints, PCB's etc.

1.4. Executing a successful project will depend primarily on clear, concise communication. This may involve a number of parties (Project Manager, Operations staff, School Administration and Health & Safety staff and Joint Occupational Health & Safety Committee).

2. Communication Plan

2.1. The most critical element of any project management plan is effective communication between all stakeholders. Communication between the Operations project manager/supervisor, the contractor and school administrators before the start of a project is very important. This meeting is meant to explain the scope, schedule and risk assessment for the project. The meeting will also help establish clear expectations when managing planned and unplanned exposure risks associated with contaminant controls.

2.2. The communication plan shall include:

2.2.1. A description of potential contaminants, which may include but is not limited to:

2.2.1.1. Particulates (dirt, concrete/silica, steel, fiberglass, wood dust, ash, cellulose, etc.)

2.2.1.2. Moisture: external water infiltration, internal system leaks (domestic water, sanitary, storm, sprinkler)

2.2.1.3. Noise from equipment/tool operation,

2.2.1.4. Fumes/odors from equipment exhaust, boiler exhaust, septic waste, chemical/adhesives, etc.

2.2.1.5. Hazardous materials including, asbestos, PCB, mercury, lead, fuel oil, fungi/mould, etc.

2.2.1.6. Excessive heat/cold

2.2.2. A description of the control measure which may include but not be limited to:

2.2.2.1. Isolation within an enclosure (water, noise, hazardous materials)

2.2.2.2. Ventilation and filtration

2.2.2.3. Dehumidifiers/blowers (moisture)

2.2.2.4. Personal protective equipment

2.2.2.5. Schedule outside or inside school hours

2.2.2.6. Sound dampeners

2.2.2.7. Monitoring

2.2.2.8. Security

2.2.3. Other Hazards created by the work, including but not limited to fire safety and the need to alter fire safety plans.

2.3. For small routine work orders the communication plan may only involve one tradesperson and the school principal or designate. This communication is equally as important for management of contaminant controls.

3. Contaminant Control Management

3.1. Regardless of the contaminant or control measure used, the following procedures shall apply for every project:

3.1.1. Every project, including all routine work requests, shall be assessed, as per this document, by appropriate personnel for potential contaminant risk.

3.1.2. Clear lines of communication must be established between project personnel, site supervisor or project manager and the school administration.

3.1.3. Control strategies as per this document, shall be, communicated to workers as well as the site JOHSC and implemented prior to starting the work.

3.1.4. Where isolation is used as a control, all entry points must be clearly posted to describe the purpose of the enclosure and limitations of access.

3.1.5. During the execution of the project, the control measures must be regularly inspected and maintained before the start of each work shift, and throughout the shift as required.

3.1.6. A process for stop work and remediation orders must be established to ensure the project manager; site supervisor and school administrator have a means to cease project operations when a contaminant control breach may impact the school environment. Breached control measures must be reported immediately to HRCE project manager upon discovery. He/she will be responsible to communicate to the school principal or designate. Work shall be stopped immediately until the control measures are re-established.

3.1.7. Access to the controlled work site is only permitted by authorized personnel. The project supervisor or designate shall determine appropriate personal protective equipment (PPE) and necessary worker orientation.

4. Particulate Control

4.1. Exposure to minimal levels of dust is a normal condition in most outdoor and indoor environments and is typically controlled inside a building through building ventilation, filtration and routine housekeeping measures. However, as noted, construction projects generally create elevated dust levels in work areas, whether inside or outside of a building.

4.2. Operational Services Managers must ensure maintenance staff and contracted service providers implement dust control measures appropriate for the type and scope of work being performed. This will include assessing the type and amount of dust being created as well as the location of the work being conducted.

4.2.1. Interior Construction Projects:

4.2.2. Construction projects may be described as projects that may include window replacement, wall creation/demolition, etc.

4.3. As a minimum for these types of construction projects, all interior entry points into a construction zone must be effectively sealed. The barrier must prevent contaminants from the work area to be distributed to other areas of the school. Appropriate signage must be posted to indicate only authorized persons are permitted access.

4.4. Entrance design could range from a two flap plastic tarp door to a fully constructed sealed entry door with negative hepa-filtered ventilation on the construction side of the barrier.

4.5. Exterior Construction Projects:

4.5.1. Exterior work shall be performed so as not to affect the safety of building occupants. It will also provide controls to avoid impact to adjacent properties. Depending up on the results identified in the risk assessment, at a minimum consideration must be given to prevent dust from entering into the school environment. This may be controlled through isolation, dampening application, closing building AHU and window/door openings.

5. Noise Control

5.1. Hearing plays an essential role in communication, speech and language development and learning within a school environment. During construction the contractor is responsible for ensuring acceptable noise levels will be adhered to for the HRCE staff and students within the building. Noise related to a project may prove to be very distracting for staff and students. To minimize distractions and interruptions in student learning the following are important to consider:

5.1.1. Contractors are responsible to ensure appropriate noise control measures are taken

5.1.2. "No work" periods may need to be incorporated into construction schedules

5.1.3. Work causing a noise disruption may need to take place during unoccupied times and/or during pre-determined acceptable times of the day (i.e. before and after class times)

5.1.4. It may be necessary for the School Administrator to make a request to the HRCE Project Manager or the Contractor to exclude undertaking certain noisy activities during particular periods and/or activities.

6. Moisture Control

6.1. Moisture levels are to be controlled during construction and maintenance activities. Moisture levels above normal may impact the air in the room and/or building and may also penetrate building materials giving the potential to lead to mould growth.

6.2. Certain activities (i.e. tape and mud of drywall, painting, pressure washing, concrete cutting with water or other water-based dust-suppression) introduce high amounts of moisture into the room environment and ventilation and or drying is required to control local moisture.

6.3. An enclosure properly set-up to contain other contaminants will similarly contain/control high levels of airborne moisture. A wet-vac should be available on-site for activities which have a risk of water spillage of more than 5 gallons at any instance.

6.4. Standing and or stagnate water must be avoided on construction sites, for a number of reasons, including, but not limited to; insects breed in these bodies of water, the water may give off odours, it is a nuisance to walk through, and it may be an ice hazard in cold weather.

6.5. It is important that all water leaks and flooding are reported immediately to the HRCE's project manager and building supervisor. Where works to existing "plumbing" is to occur the water lines (potable, heating, fire suppression) must be isolated and drained (de- energized/de-pressurized) following Lock Out - Tag Out procedure. Adequate supplies such as buckets and absorbents should be present when drains are not available to drain a line.

6.6. When an interruption to the water supply, potable or service, is to occur then the "owner's representative" and building supervisor should be notified 24 hours in advance. Bottled water provision may be required.

6.7. Materials used in the construction and or maintenance activities are to be stored in dry areas. The introduction of materials to the activities with moisture levels above the acceptable (XXX%)CNBC states for wood, on dry weight basis, a max of 19%, I can't find info on drywall but assume it is much lower range is prohibited as these materials are highly susceptible to colonization by mould spores.

7. Fumes

7.1. Fumes may be produced on a project site for a variety of reasons such as use of motorized equipment, off gassing of sealants, adhesives and finish products, cutting/torching processes, exposure of sanitary systems, process ignition gases such as propane and acetylene, proximity of project temporary washrooms, radon, etc.

7.2. The impact of fumes on occupants may range from discomfort to health risk, to life safety risk.

7.3. The project manager or supervisor must ensure that all potential fume sources are identified and remedial or control measures included in the scope of work by the contractor.

7.4. Monitoring equipment may be required to determine for example radon exposure or safety of confined space access.

8. Activity Assessment

8.1. Activities that may produce contaminants which require control may be considered as low, medium and high impact.

8.2. Low impact activities include routine maintenance and repairs that may create localized dust or odors or brief periods of noise which are not considered harmful to occupants but may be a nuisance which requires minimal control. These may include activities such as opening ceiling tiles or gyproc walls, replacing a plumbing fixture, paint touch ups, drilling through a wall, etc.

8.3. Medium impact activities include larger repair jobs or longer duration projects that will create more wide spread levels of contaminant which must be controlled to prevent exposure to building occupants. Boiler cleaning, ceiling replacement, long periods of hammer drilling, etc.

8.4. High impact activities include large demolition and construction projects, or jobs with exposure to contaminants that are a risk to health or life safety such as asbestos remediation, mould abatement, lead paint clean up, etc.

9. Hazard Assessment

9.1. A hazardous assessment is required to be completed for each job to ensure hazards are identified and corresponding controls are implemented. Depending upon the circumstances at the site it may be necessary to upgrade and/or add other precautions.

9.2. Determine the most appropriate hazard classification and apply the corresponding protocols. The attached hazard assessment identifies the minimum controls that must be in place during the corresponding activities. Depending on the specific circumstances at a site further controls may be required. When the hazards are deemed to be in the C or F category the form including specific controls must be submitted to the HRCE for review, prior to commencing work. The contractor may still be required to complete their own hazard assessment of the job/work.

10. Contaminant Controls Procedure for initiating work for all Contaminant Controls:

10.1. Contaminant Control I

10.1.1. The tradesperson or project manager for the HRCE will discuss the details, including the scope and any impacts of the job/project with the principal.

10.1.2. Ensure fire exiting requirements and life safety systems are addressed or adequate mitigating plans are implemented for the building, construction staff and building occupants.

10.1.3. Presence of lead paint or ACM's (Asbestos Containing Materials) must be determined prior to the start of any job. Specific protocols or Codes of Practice may apply.

10.1.4. Consideration will be given for work that is anticipated to generate significant noise, odours or VOC's (Volatile Organic Compounds) and this will be scheduled outside of school hours or during times when the noise will not disrupt occupant activities. This will require coordination with the Principal.

10.1.5. The work area shall be isolated where possible. This may be achieved at varying levels, by closing doors and opening outside windows for ventilation or by installing appropriate hoarding and negative pressure units to ensure contaminants are not circulated throughout the school causing further health and safety concerns.

10.1.6. Dust shall be minimized during the activity. When drilling, sanding or cutting is taking place, wetting the area may be necessary to reduce dust.

10.1.7. Good housekeeping practices shall be maintained at all times on the work site. Bag and remove dust and debris from the building as soon as possible.

10.1.8. Possible environmental impacts shall be managed and minimized. If work uncovers environmental contaminants or suspected contaminants such as oil spills (current or historic) or potentially friable asbestos materials (check the school asbestos audit) that may be disturbed, this information shall be brought to the attention of the HRCE's employee responsible for the project so that appropriate actions can be taken.

10.1.9. When the activity is completed the work area shall be inspected and cleaned. Dust and debris shall be removed from the area and all efforts will be made to return items to their pre-maintenance activity location.

10.1.10. The Principal shall be notified that the work is completed.

10.2. Contaminant Control II - All Contaminant Control I measures shall apply, as well as;

10.2.1. Cover furniture, bookshelves and teaching materials with plastic sheets.

10.2.2. Water misting while performing dust generating activities may be required.

10.2.3. Seal un-used doors. Seal wall penetrations, electrical outlets, or any other source of air leaks in the construction area.

10.2.4. Seal exhaust air vents in construction area and open the windows. If possible shut down air handling system in the area for duration of project.

10.2.5. A walk out mat at exterior of exit door to trap dust may be required.

10.3. Contaminant Control III - All Contaminant Control I and II measures shall apply, as well as;

10.3.1. Install an impermeable dust barrier from the true ceiling to the floor consisting of two layers of 6 mil fire retardant polyethylene or solid wall and sealed door. The wall shall remain in place until the job is finished and the clean-up is completed.

10.3.2. Seal all wall penetrations.

10.3.3. Seal off all return and supply air handling ducts and close all windows.

10.3.4. Turn off the air handling system in the area of construction.

10.3.5. Maintain negative air pressure in the construction area using HEPA filter equipped exhaust ventilation. The pressure differential between the project area of contamination and the building's occupied areas shall be demonstrable by a means approved by the HRCE employee responsible for the project.

10.3.6. Ensure that the air is exhausted directly outside and away from intake vents.
10.3.7. Vacuum all horizontal surfaces including drop cloths with a hepa vacuum.
10.3.8. Remove drop cloths.
10.3.9. Vacuum again all horizontal surfaces with HEPA Vacuum.
10.3.10. Restore ventilation.
10.3.11. Remove enclosure and equipment.

10.4. Control IV: (External Work)

10.4.1. External work may impact building interior or occupants.
10.4.2. To reduce the impact to building interior or occupants, it may be necessary to contain the work area from impacting building interior. This may include closing or opening windows, tarping ceilings to capture debris or water, temporary relocation of occupants or ventilation controls.
10.4.3. The job supervisor shall consider weather conditions and forecast to reduce the effect of any weather impacts to the building materials or building occupants.
10.4.4. It may be necessary to use protective tarps and ground cover sheets below equipment and work areas to contain building debris such as paint chips, materials, dust or oil from equipment.
10.4.5. When the job is completed and the tarps have been lifted, inspect the ground around the job for debris and clean as necessary.

Fire Protection

10.5. Type V: General Fire Protection

10.5.1. Ensure fire exiting requirements and life safety systems are addressed or adequate mitigating plans are implemented for the building, construction staff and building occupants. Staff must be aware of temporary modifications to fire safety plans.
10.5.2. MSDSs for all materials to be used must be reviewed and available on site.
10.5.3. Construction materials stored outside must be a minimum distance of ten feet from the building and be in a secured area.
10.5.4. Flammable or Combustible liquids must be stored as per Fire Code requirements. All flammable and combustible liquids or materials must be kept in a secure area at all times.

10.6. Control VI: Fire Protection (minor hot work) - All Contaminant Control V shall apply as well as;

10.6.1. Notify the Principal that a risk of fire has increased and the area in which the hot work will occur.
10.6.2. Refer and implement the HRCE's hot work permit process. At a minimum the following should be considered;

10.6.2.1. Sweep the work area and remove all unnecessary materials in the vicinity; particularly all combustible and flammable materials and liquids shall be removed from the area (35 feet).
10.6.2.2. Have an appropriate size fire extinguisher available.

10.6.2.3. Inspect the work location for areas (such as a hole in the wall) where hot material or sparks could fall and smolder and close them off so that any hot debris can only fall within your field of view.

10.6.2.4. If it is possible that the flame will go past the object being welded or soldered and excessively heat a flammable or combustible material, then either protect that material with a non-flammable material or wet the material and keep it wetted during the use of heat or grinding.

10.6.2.5. Remain in the area while the joint and/or heated materials cool to room temperature (ambient) while checking for the smell or appearance of smoke in the area.

10.6.2.6. Stay in the area for at least 2 hours and then re-inspect for any smell or appearance of smoke.

10.6.2.7. Ask another staff person to inspect the area for the smell or appearance of smoke. Record who you asked to do the final inspection.

10.6.3. Type VII: Fire Protection (hot work w fire watch) - All Contaminant Control V and VI shall apply as well as;

10.6.4. Notify the Principal that a risk of fire has increased and the area in which the hot work will occur. If any life safety system components (sprinkler, detectors, fire alarms) are not function, hot work should not proceed until these systems are functioning unless fire watch procedures for life systems are followed. See Activation of Fire Watch for Life Safety Systems checklist. Appendix…XX

10.6.5. Refer and implement the HRCE's hot work permit process. At a minimum the following should be considered;

10.6.5.1. Cover all floor openings with fire stop material. Seal duct work openings with metal covers or blankets and close all doors.

10.6.5.2. Ensure that there are no potentially explosive atmospheres in the area.

10.6.5.3. Hot work on vessels, pressure tanks or boilers, use only contractors who are qualified by nationally or internationally recognized boiler and pressure vessel code.

10.6.5.4. Notify the local fire department of the type of work and the work schedule.

10.6.5.5. Before hot work is started, designate one employee responsible to complete the fire watch: while work is in progress, during lunch breaks and other breaks and for one hour after all flames are extinguished for the day and monitor the area for an additional two hours. After three hours after the last flame has been extinguished, have a second employee do a final survey of the area for smells or evidence of smoldering or fire and record the inspection.

APPENDIX
Fire Watch Activation Checklist

1. Documentation (identify locations to be checked on an hourly basis, provide contact information for relevant HRCE staff and outside agencies} HRCE provided template to be used for documentation.
2. Procedure reviewed with Custodian or individual responsible for fire watch. Any high-risk areas shall be identified to be highlighted on the documentation page and checked during the rounds.
3. Staff working in the building have been notified of the Fire Watch and that they are responsible to monitor areas for signs of fire or smoke and have been reminded of required actions to take according to the school fire safety plan.
4. Staff responsible for fire watch have been trained in how to use a fire extinguisher. (PASS)
5. Staff responsible for the fire watch have a means of communication (cell phone or walkie-talkies)
6. Staff responsible for the fire watch are aware of the procedure for initiating fire alarm and what systems are functioning. i.e. systems (sprinklers, alarm panel or if school has monitoring company or if calling 911 is required)
7. The School Insurance Program (SIP) Emergency Information Line has been notified 1-902-448-2840
8. All relevant information has been documented in the school's fire books. Including date, time and reason for fire watch.

Fire Watch De-Activation Checklist

1. Document the date, time and actions taken to remedy the deficiency requiring the fire watch.
2. School Insurance Program (SIP) has been notified.
3. Copy of the Fire Watch documentation is kept in the fire book and the original is sent to the HRCE Project Representative.

END OF SECTION 01 35 13

SECTION 01 35 29 - OCCUPATIONAL HEALTH & SAFETY REQUIREMENTS

1. References

1.1. CSA S269.1-1975 Falsework for Construction Purposes.

2. CONSTRUCTION SAFETY MEASURES

2.1. Observe construction safety measures of:

2.1.1. National Building Code 2010, Part 8

2.1.2. National Fire Code of Canada

2.1.3. Provincial Government, including but not limited to the:

2.1.3.1. Occupational Health & Safety Act revised Statutes of Nova Scotia 1996, Chapter 7 and regulations.

2.1.3.2. Workers' Compensation Act

2.1.3.3. Fire Protection Act

2.1.3.4. Dangerous Goods Transportation Act

2.2. In case of conflict or discrepancy the more stringent requirement shall apply.

2.3. Ensure that employees working on this specific project have met training requirements as legislated by the Nova Scotia Occupational Health & Safety Act and its regulations.

2.4. Where reference is made to jurisdictional authorities, it shall mean all authorities who have within their constituted powers the right to enforce the laws of the place of the building.

3. Equipment & Tools

3.1. Each user of equipment or tools shall be responsible to examine for sufficiency before use. Make equipment and tools safe if necessary.

4. WHMIS

4.1. Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets.

4.2. Have a copy of WHMIS data sheets available at the workplace on delivery of materials.

5. Hazardous Material

5.1. Should material resembling hazardous materials other than those identified with the Contract Documents, including but not limited to spray or trowel applied asbestos, be encountered in course of work; stop work immediately. Do not proceed until written instructions have been received from Consultant.

5.2. Where work entails use, storage, or disposal of toxic or hazardous materials, chemicals and or explosives, or otherwise creates a hazard to life, safety, health, or the environment; work shall be in accordance with the Jurisdictional Authority.

6. Site Cleaning

6.1. Except where special permission is obtained, maintain clear access on public sidewalks and roads.

6.2. Maintain walks and roads clear of construction materials and debris, including excavated material. Clean walks and roads as frequently as required to ensure that they are cleared of materials, debris and excavated material.

7. Fire Safety Requirements

7.1. Enforce fire protection methods, good housekeeping and adherence to local and Underwriter's fire regulations including, but not limited to, Fire Protection Act and the Provincial Building Code Act. Provide UL approved fire extinguishers, and other fire- fighting services and equipment, except where more explicit requirements are specified as the responsibility of individual Sections.

7.2. Smoking is not permitted on school property.

7.3. Advise Fire Chief in the area of Work of any work that would impede fire apparatus response, including but not limited to violation of minimum overhead clearance prescribed by the fire chief, erecting of barricades and digging of trenches and in areas where work is being done.

7.4. Ensure nothing subverts the integrity of fire protection provided for the building structure.

8. Reporting Fires

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

8.2. Report immediately all fire incidents to the fire department as follows:

8.2.1. Activate nearest fire alarm box, or

8.2.2. Telephone local fire department

8.2.3. Where fire alarm box is exterior to building, the person activating the fire alarm box shall remain at the box to direct Fire Department to scene of the fire.

8.2.4. When reporting a fire by telephone, give location of fire, name or number of building and be prepared to verify the location.

9. Safety Document Submission

9.1. Ensure Safety Document Submission applies to Work of this specific project and site.

9.2. Submit two (2) copies of Project Safety Document at the Pre-Construction Meeting. Do not commence Work nor deliver material on-site prior to submission.

9.3. Include in Safety Document submission specific information detailing the methods and procedures to be implemented ensuring adherence to the acts, regulations, codes and policies specified in this section and to:

9.3.1. Ensure the Health & Safety of persons at or near the Work; including, but not limited to, the Public.

9.3.2. Ensure the measures and procedures of the regulatory agencies specified are carried out.

9.3.3. Ensure every employee, self-employed person and employer performing Work under this contract complies with the regulatory agencies specified.

9.3.4. Where changes to the methods and procedures in the execution of work change submitted safety methods and procedures, modify submitted Safety Documentation and submit modifications, in writing to the Consultant and Owner prior to implementation.

10. Safety Document Organization

10.1. Organize information in the form of an instructional manual as follows:

10.1.1. Place in binders of commercial quality, accommodating 8½" x 11" paper size.

10.1.2. Cover: Identify binder with typed or printed title ‘Project Safety Document’ and list the title of project.

10.1.3. Provide tabbed fly leaf for each separate heading, with typed heading on tab.

10.1.4. Where drawings are within the safety document, provide with reinforced punched binder tab. Bind in with text; fold in larger drawings to size of text pages.

10.1.5. Arrange content under Safety Document headings specified herein.

11. Safety Document Headings

11.1. Employee Safety Training

11.1.1. Place, under this heading, a statement indicating employees working on this specific project have met specified training requirements, if required.

11.2. Company Safety Policy

11.2.1. Place, under this heading, information pertaining to the company's policy and commitment to Occupational Health & Safety, including the responsibilities of management, supervisors and workers.

11.3. Company Safety Rules in General Terms

11.3.1. Place, under this heading, information of a general, global nature, applying to every work environment where the company has staff and pertaining to rules directing compliance to policy. For example state company safety rules with respect to use of hard hats, safety glasses, safety foot ware, CSA approval on such items, and use of alcohol or non-prescription drugs.

11.4. Hazard Assessment

11.4.1. Place, under this heading, information identifying possible hazards specific to this project and identify safe methods and procedures for the execution of work to ensure safety in the workplace.

11.4.2. Arrange contents of this heading by technical section number of the project manual.

11.5. Emergency Action Plan

11.5.1. Place, under this heading, information detailing action to be taken in the event of various emergencies.

11.5.2. Arrange content under the following sub-headings:

11.5.2.1. First Aid

11.5.2.1.1. Include information concerning establishment of a First Aid Station, related supplies, staff awareness of location and staff training in First Aid Care of Casualties.

11.5.2.2. Contact of Emergency Support Groups:

11.5.2.2.1. Include relative information including phone location for emergency use, the emergency telephone numbers and their location for the various organizations which must be contacted in case of an emergency, and staff training in procedures.

Cessation of Work:

11.5.2.2.2. Include relative information how work cessation during emergencies is handled and communicated to persons present on site.

11.6. Joint Occupational Health & Safety Committee/Representative:

11.6.1. Place under this heading information detailing membership and terms of reference.

OCCUPATIONAL HEALTH & SAFETY SUMMARY FOLLOWS THIS PAGE

Occupational Health & Safety Summary (to be submitted with each monthly Progress estimate)

The following information summarizes Occupational Health & Safety activities on the project conducted by the Contractor during the month and includes activities of Subcontractors. Activities include all matters prescribed by the Occupational Health & Safety Act and Regulations and the submitted Occupational Health & Safety Document for the Project.

Indicate the applicable # number below:

#_____new contractors on site,
#_____orientations
#_____toolbox talks
#_____safety meetings
#_____Joint Occupational Health and Safety Committee meetings
#_____hazard assessments
#_____formal written inspections
#_____warnings issued to employees or subcontractors
#_____other, explain_____

List new Contractors on Site below:

_____
_____
_____
_____
_____
_____

The Contractor certifies that the above noted activity list is accurate and that during the month:

Check

☐ All activities on the Project were found to be in compliance with the Occupational Health & Safety Act and Regulations

☐ Some activities on the Project were not found to be in compliance with the Occupational Health & Safety Act and Regulations but were adequately corrected in an appropriate time frame. Explain _____

Prepared by

_____
(Contractor Project Manager)

Certified by

_____
(Contractor Senior Management)

END OF SECTION 01 35 29

SECTION 01 37 00 - SCHEDULE OF VALUES

1. Related Documents

1.1. General Conditions of Contract.

2. General

2.1. Submit to the Architect, and Owner, Schedule of Values, within twenty (20) days after signing Agreement.

2.2. Use Schedule of Values as basis for Contractor's Progress Claim.

3. Form Of Submittal

3.1. Form included at end of this Section.

4. Preparing Schedule Of Values

4.1. Itemize separate line item cost for work required.

4.2. Round off figures to nearest ten (10) dollars.

4.3. The sum of all values listed in the schedule shall equal the total contract sum.

5. Review And Submittal

5.1. After review by Architect and Owner, revise and resubmit Schedule as directed.

5.2. The form shall be completed and supported by such evidence as to its correctness as the Architect may reasonably direct.

SCHEDULE OF VALUES

Project Name ***#4246 - Window & Masonry Cladding Replacement – AJ Smeltzer Junior High***

Architect .....

Contractor .....

Date .....

Halifax Regional Centre for Education – Schedule of Values		
Contract Item	**Percentage**	**Dollar Value**
Mobilization, bonding / insurance, safety, set up safety fencing and window access	10	
Materials - approved materials delivered to site . Approved area by HRCE	25	
Removal of existing windows and prepare window opening	15	
Install new windows	20	
Cladding, mill work, trim and finishes	20	
Close out documentation including copy of warranty	10	
Total	**100 %**	

END OF SECTION 01 37 00

SECTION 01 41 00 - REGULATORY AGENCIES

1. Jurisdictional Authorities

1.1. Where reference is made to jurisdictional authorities, it shall mean all authorities who have within their constituted powers the right to enforce the laws of the place of building.

2. Definitions

2.1. The "Constructor" named in the Construction Safety Act, Chapter 52, Revised Statutes of Nova Scotia, as amended by 1972, Chapter 25; and Construction Safety Regulations, pursuant to Chapter 52 R.S.N.S., including any amendments, shall mean the "Contractor" for the Work performed under this Specification.

3. Fire Prevention, Safety & Protection

3.1. General Construction Safety Measures:

3.1.1. Observe safety measures of the

3.1.1.1. National Building Code 2010, Part 8.

3.1.1.2. National Fire Code of Canada.

3.1.1.3. Provincial Government, including but not limited to the Occupational Health & Safety Act Revised Statutes of Nova Scotia 1996, Chapter 320, and the Construction Safety & Industrial Safety Regulations made pursuant to the Occupational Health and Safety Act, 1996.

3.1.1.4. Workers'/Workmen's Compensation Board.

3.1.2. In case of conflict or discrepancy the more stringent requirement shall apply.

3.1.3. Maintain clear emergency exit paths for personnel.

3.2. Except where special permission is obtained, maintain clear access on public sidewalks and roads.

3.3. Maintain walks and roads clear of construction materials and debris, including excavated materials. Clean walks and roads as frequently as required to ensure that they are cleared of materials, debris and excavated materials.

3.4. WHMIS:

3.4.1. Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Labour Canada and Health & Welfare Canada.

3.4.2. Have a copy of WHMIS data sheets available at the workplace on delivery of materials.

Blockage of Roadways

3.5. Advise Fire Chief of any work that would impede fire apparatus response. This includes violation of minimum overhead clearance, as prescribed by fire chief, erecting of barricades and the digging of trenches.

4. Smoking Precautions

4.1. Observe, at all times, smoking regulations.

5. Rubbish And Waste Materials

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

5.2. The burning of rubbish is prohibited.

6. Flammable And Combustible Liquids

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

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

6.3. Transfer of flammable and combustible liquids is prohibited within buildings or jetties.

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

6.5. Flammable liquids having a flash point below 38°C such as naphtha or gasoline will not be used as solvents or cleaning agents.

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

7. Hazardous Substances

7.1. Work entailing the use of toxic or hazardous materials, chemicals and/or explosives, otherwise creates a hazard to life, safety or health, will be in accordance with the National Fire Code of Canada.

7.2. Where flammable liquids, such as lacquers or urethanes are to be used, proper ventilation will be assured and all sources of ignition are to be eliminated. The Fire Chief is to be informed prior to and at the cessation of such work.

8. Questions and/or Clarification

8.1. Direct any questions or clarification on Fire Safety in addition to above requirements to Fire Chief.

9. Fire Inspection

9.1. Site inspections by Fire Chief will be coordinated through HRCE Project Manager.

9.2. Allow Fire Chief unrestricted access to the work site.

9.3. Co-operate with the Fire Chief during routine fire safety inspection of the Work site.

9.4. Immediately remedy all unsafe fire situations observed by the Fire Chief.

10. Reference Standards

10.1. Where edition date is not specified, consider that references to manufacturer's and, published codes, standards and specifications are made to the latest edition, (revision) approved by the issuing organization, current at the date of this Specification.

10.2. Reference standards and specifications are quoted in this Specification to establish minimum standards. Work which in quality exceeds these minimum standards shall be considered to conform.

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

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

10.5. Have a copy of each code, standard and specification, and manufacturer's directions, instructions and specifications, to which reference is made in this Specification, always available at construction site.

10.6. Standards, specifications, associations, and regulatory bodies are generally referred to throughout the specifications by their abbreviated designations:

AA	The Aluminum Association
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
ARI	Air Conditioning & Refrigeration Institute
ASTM	American Society for Testing & Materials
CCA	Canadian Construction Association
CGSB	Canadian General Standards Board
CSA	Canadian Standards Association
NSDTIR	Department of Transportation & Infrastructure Renewal, Province of Nova Scotia
IAO	Insurers Advisory Organization
NBC	National Building Code
NFPA	National Fire Protection Association
CANS	Construction Association of Nova Scotia
ULC	Underwriters Laboratories of Canada
WHMIS	Workplace Hazardous Materials Information System

END OF SECTION 01 41 00

SECTION 01 45 00 - QUALITY CONTROL

1. Section Includes

1.1. Inspection and testing, administrative and enforcement requirements

1.2. Tests and mix designs.

1.3. Mock-ups.

1.4. Mill tests.

1.5. Equipment and system adjust and balance.

1.6. Verification by affidavits and certificates that specified products meet requirements of reference standards: In applicable Sections of the Specification.

1.7. Testing, balancing and adjusting of equipment: In applicable Mechanical and Electrical Sections of the Specification.

1.8. Cutting & Patching: Section 01 11 41.

2. Related Sections

2.1. Section 01 33 00 Submittal Procedures: Submission of samples to confirm product quality.

2.2. Section 01 61 00 Material & Equipment: Material and workmanship quality – reference standards.

2.3. Section 01 77 00 Contract Closeout.

3. REVIEW OF WORK

3.1. The Owner shall have access to the Work. If part of the Work is in preparation at locations other than the Place of the Work, access shall be given to such work whenever it is in progress.

3.2. Give timely notice to the Owner's Representative, requesting review of the Work as indicated in the Contract Documents.

3.3. If the Contractor covers or permits to be covered Work that has been designated for review by the Owner before such is made, uncover such Work, have the review satisfactorily completed and make good such Work at no extra cost to Owner.

4. Inspection, Special Tests, Approvals

4.1. Engage the services of appropriate inspection testing agencies ensuring the Work meets codes, acts and regulations, and lows in force at the place of Work. Include such costs in the Contract Price.

4.2. Give timely notice requesting inspection to those required to provide inspections, special tests, or approvals, where Work is designated, by the Owner's instructions or the law of the place of Work, for special tests.

4.3. If the Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have the inspections or tests satisfactorily completed and make good such Work at no extra cost to the Owner.

4.4. The Owner may order any part of the Work to be examined if the Work is suspected to be not in accordance with the Contract Documents. If, upon examination such Work is found not in accordance with the Contract Documents, correct such Work and pay the cost of examination and correction. If such Work is found in accordance with the Contractor Documents, the Owner shall pay the cost of examination and replacement.

5. Independent Inspection Agencies

5.1. Independent Inspection/Testing Agencies may be engaged by the Owner for the purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by the Owner.

5.2. Provide access to the Work, and equipment required for executing inspection and testing by the appointed agencies.

5.3. Employment of inspection/testing agencies does not relax the Contractor's responsibility to perform Work, or carry out his own inspections and testing in accordance with the Contract Documents.

5.4. If defects are revealed during inspection and/or testing, the appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Owner at no cost to the Owner. Pay costs for retesting and reinspection.

6. Access To Work

6.1. Allow inspection/testing agencies access to the Work, off site manufacturing and fabrication plants.

6.2. Co-operate to provide reasonable facilities for such access.

7. Procedures

7.1. Notify the appropriate agency and Owner in advance of the requirement for tests, in order that attendance arrangements can be made.

7.2. Submit samples and/or materials required for testing, at specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in the Work.

7.3. Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

8. Rejected Work

8.1. Remove defective Work, whether the result of poor workmanship, use of defective products or damage and whether incorporated in the Work or not, which has been rejected, including (but not limited to) defective Work rejected by the Owner as failing to conform to the Contract Documents. Replace or re-execute in accordance with the Contract Documents.

8.2. Make good other Contractor's work damaged by such removals or replacements promptly.

8.3. If in the opinion of the Owner, it is not expedient to correct defective Work or Work not performed in accordance with the Contract Documents, the Owner may deduct from the Contract Price the difference in value between the Work performed and that called for by the Contract Documents, the amount of which shall be determined by the Owner.

9. Reports

9.1. Submit four (4) copies of inspection and test reports to the Owner.

9.2. Provide copies to Contractor's Consultant and Subcontractor of Work being inspected or tested.

10. Tests and Mix Designs

10.1. Furnish test results and mix designs as may be requested.

10.2. The cost of tests and mix designs beyond those called for in the Contract Documents or beyond those required by law of the Place of Work shall be appraised by the Owner and may be authorized as recoverable.

11. Mock-Up

11.1. Prepare mock-up for Work for each finish in the Work and other work specifically requested in the specifications. Include for Work of all Sections required to provide mock-ups.

11.2. Construct in all locations as specified in specific Section.

11.3. Prepare mock-up for Owner's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in the Work.

11.4. Failure to prepare mock-up 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.

11.5. If requested the Owner will assist in preparing a schedule fixing the dates for preparation.

11.6. Mock-ups may remain as part of the Work, unless specified otherwise in the Contract Documents.

12. Mill Tests

12.1. Submit mill test certificates as may be requested.

13. Equipment And Systems

13.1. Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.

13.2. Refer to Contract Documents for definitive requirements.

END OF SECTION 01 45 00

SECTION 01 52 00 – CONSTRUCTION & TEMPORARY FACILITIES

1. General

1.1. Include in the Work construction and temporary facilities required as construction aids or by jurisdictional authorities or as otherwise specified. Install to meet needs of construction as Work progresses. Maintain construction and temporary facilities during use, relocate them as required by the Work, remove them at completion of need and make good adjacent Work and property affected by their installation.

1.2. Include in the Work construction and temporary facilities to provide for construction safety such as: fences, barricades, bracing, supports, storage, sanitation and first aid facilities, fire protection, stand pipes, electrical supply, construction equipment with its supports and guards, stairs, ramps, platforms, runways, ladders, scaffolds, guardrails, temporary flooring, rubbish chutes, and walkway, morality and guard lights, and as otherwise required of the Constructor by the Construction Safety Act, of the Province of Nova Scotia, as well as all other applicable regulations or jurisdictional authorities.

1.3. Construct temporary Work of new materials unless use of second-hand materials is approved.

1.4. Ensure that structural, mechanical, and electrical characteristics of temporary facilities are suitable and adequate for use intended. Be responsible that no harm is caused to persons and property by failure of temporary facilities because of placing, location, stability, protection, structural sufficiency, removal, or any other cause.

1.5. Locate temporary facilities as directed and coordinated with School Administration and HRCE.

1.6. Relocate construction and temporary facilities as required by the Progress of the Work, and remove at completion of Work.

1.7. Do not permit construction personnel to use new washroom and toilet facilities.

1.8. Interior work zones to be complete with temporary negative air ventilation units to be functioning at all times to control dust migration to occupied areas.

1.9. Refer also to HRCE Policies & Guidelines contained in Appendix A of Section 01 35 13.

2. Services

2.1. Temporary Electric Power:

2.1.1. The Contractor will provide a source of electric power for all construction purposes.

2.1.2. Coordinate with the Building Operator locations of power sources and arrange to connect under his direction.

2.1.3. Install electric service distribution conductors and necessary components. Determine anticipated demand which will be placed on service during normal peak periods and obtain approval on this basis before making installation. Supply power of characteristics required by the Work. Install a power centre for miscellaneous tools

and equipment for each major building floor area with distribution box, a minimum of four 20 amp grounded outlets, and circuit breaker protection for each outlet. Make connections available to any part of the Work within distance of a 100'-0" extension.

2.2. Temporary Lighting:

2.2.1. Install lighting for

2.2.1.1. emergency evacuation, safety and security throughout the Project at intensity levels required by jurisdictional authorities.

2.2.1.2. performance of Work throughout Work areas as required, evenly distributed, and at intensities to ensure that proper installations and applications are achieved.

2.2.1.3. performance of finishing Work in areas as required, evenly distributed and of an intensity of at least 15 foot candles.

2.2.2. Permanent fluorescent lighting may be used during construction, provided that fixtures, lamps and lenses are completely cleaned. Incandescent sources may be used during construction to the extent of 20% of the total. Electrical Division Contractor to provide 20% spare lamps to the Owner for replacement purposes.

2.3. Temporary Sanitary Facilities:

2.3.1. Provide sanitary facilities for persons on the Work site. Facilities in areas of the building are only to be used under extraordinary circumstances and with prior approval.

2.4. Maintain fire protection as required by jurisdictional authorities. The Contractor is responsible for de-activating and re-activating Fire Alarm zones as required by the Work of the Contract and to maintain protection in the existing building.

3. Construction Aids

3.1. Hoists & Cranes:

3.1.1. Select, operate and maintain hoisting equipment and cranes as may be required. Operate such equipment only by qualified hoist or crane operators. Make hoist available for Work of each Section.

3.2. Building Enclosure:

3.2.1. Include in Work temporary enclosure for building as required to protect it, in its entirety or in its parts, against the elements, to maintain environmental conditions

required for Work. Design enclosures to withstand wind pressures required for the building by jurisdictional authorities. Erect enclosures to allow complete accessibility for installation of materials during the time enclosures remain in place.

3.3. Scaffolding:

3.3.1. Each user of scaffolding shall be responsible for its examination and testing for sufficiency before using it. He shall make it secure if necessary, or shall notify the Contractor in writing that he will not commence work until it is made secure; otherwise he will be held responsible for accidents due to its insufficiency.

4. Barriers

4.1. Install barricades for traffic control, and to prevent damaging traffic over exterior and interior finished areas, as well as safety barricades and otherwise, as may be required.

4.2. Construct hoardings and walkways as required by HRCE or jurisdictional authorities.

5. Protection

5.1. Protect roofs and podiums by substantial temporary construction to ensure that no damage occurs. Provide protection by materials of sufficient thickness to prevent all damage to structure and finish, and to waterproofing qualities of membranes, whenever each of these individual components are exposed. Damage shall include harm resulting from all construction work, such as falling objects, wheel and foot traffic, failure to remove debris, operation of machinery and equipment, and scaffolding and hoisting operations. Positively secure protection to prevent displacement from any cause.

5.2. Box with wood or otherwise protect from damage, by continuing construction, finished sills, jambs, corners, and the like.

END OF SECTION 01 52 00

SECTION 01 61 00 - MATERIAL & EQUIPMENT

1. General

1.1. Products refer to materials, manufactured components and assemblies, fixtures and equipment incorporated in the Work.

1.2. Use only products of Canadian manufacture unless such products are not manufactured in Canada, are specified otherwise, or are not competitive.

1.3. Products for use in the Project and on which the Tender was based shall be in production at that time, with a precise model and shop drawings available for viewing.

1.4. Where equivalent products are specified, or where alternatives are proposed under "substitution of products", these products claimed by the Contractor as equivalent shall be comparable in construction, type, function, quality, performance, and, where applicable, in appearance, as approved. Where specified equivalents are used in the tendered bulk sum price for the Work, they shall be subject to final approval.

1.5. Incorporate products in the Work in strict accordance with manufacturers' directions unless specified otherwise.

1.6. Products delivered to the Project site for incorporation in the Work shall be considered the property of the Owner. Maintain protection and security of products stored on the site after payment has been made for them.

1.7. Do not install permanently incorporated labels, trademarks and nameplates, in visible locations unless required for operating instructions or by jurisdictional authorities.

2. Specified Products

2.1. Products specified by manufacturer's name, brand name or catalogue reference shall be the basis of the bid and shall be supplied for the Work without exception in any detail, subject to allowable substitutions as specified.

2.2. Where several proprietary products are specified, any one of the several will be acceptable.

2.3. For products specified by reference standards, the onus shall be on the supplier to establish that such products meet reference standard requirements. The Architect may require affidavits from the supplier, as specified in Section 01 33 00, or inspection and testing at the expense of the supplier, or both, to prove compliance. Products exceeding minimum requirements established by reference standards will be accepted for the Work if such products are compatible with and harmless to Work with which they are incorporated.

3. Substitution Of Products During Progress Of Work

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

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

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

3.4. Ensure that substituted products can be both physically and dimensionally incorporated in the Work with no loss of intended function, performance, space or construction time, and that spare parts and service are readily available. The Contractor shall be responsible for additional installation costs, including architectural and engineering fees, required by incorporation of substituted products, and for adaptations made otherwise necessary to ensure that above requirements are satisfied.

4. Product Handling

4.1. Manufacture, pack, ship, deliver and store products so that no damage occurs to structural qualities and finish appearance, nor in any other way detrimental to their function or appearance, or both.

4.2. Ensure that products, while transported, stored or installed, are not exposed to an environment which would increase their moisture content beyond the maximum specified.

4.3. Schedule early delivery of products to enable Work to be executed without delay. Before delivery, arrange for receiving at site.

4.4. Deliver package products, and store until use, in original unopened wrapping or containers, with manufacturer's seals and labels intact.

4.5. Label packaged products to describe contents, quantity and other information as specified.

4.6. Product handling requirements may be repeated and additional requirements specified, in other Sections.

5. Storage & Protection

5.1. Coordinate material delivery to ensure that areas within or on building are available to receive them.

5.2. Store manufactured products in accordance with manufacturer's instructions, when such instructions are attached to products or submitted by him.

5.3. Store finished products and woodwork under cover at all times.

5.4. Store and handle flammable liquids and other hazardous materials in approved safety containers and as otherwise prescribed by safety authorities. Store no flammable liquids or other hazardous materials in bulk within the Project.

5.5. Storage and special protection requirements may be repeated, and additional requirements specified, in other Sections.

6. Defective Products & Work

6.1. Products and Work found defective; not in accordance with the Specifications; or defaced or injured through negligence of the Contractor, his employees or subcontractors, or by fire, weather or any other cause will be rejected for incorporation in the Work.

6.2. Remove rejected products and Work from the premises immediately.

6.3. Replace rejected products and Work with no delay after rejection. Provide replacement products and execute replacement Work precisely as required by the Specification for the defective Work replaced. Previous inspection and payment shall not relieve the Contractor from the obligation of providing sound and satisfactory Work in compliance with this Project Manual.

7. Workers, Suppliers & Subcontractors

7.1. Assign Work only to workers, suppliers, and Subcontractors who have complete knowledge, not only of the conditions of this Project Manual, but of jurisdictional requirements, and reference standards and specifications.

7.2. Give preference to use of local workers, suppliers, and Subcontractors wherever possible.

8. Workmanship

8.1. Unless otherwise specified in a more detailed manner, workmanship shall be of the highest quality recognized by trade executing the Work in accordance with standard practices, by the best methods recommended by the manufacturer of the Product, and as approved by the Architect.

END OF SECTION 01 61 00

SECTION 01 77 00 – CONTRACT CLOSEOUT

1. Section Includes

1.1. Final cleaning.

1.2. Spare parts and maintenance materials.

1.3. Take over procedures.

2. Related Sections

2.1. Individual Specifications Sections: Specific requirements for operation and maintenance data.

3. Final Cleaning

3.1. Refer to the General Conditions of Contract.

3.2. Before final inspection, replace glass and mirrors broken, damaged and etched during construction, or which are otherwise defective.

3.3. In addition to requirements for cleaning-up specified in General Conditions of the Contract, include in Work final cleaning by skilled cleaning specialists on completion of construction.

3.4. Remove temporary protections and make good defects before commencement of final cleaning.

3.5. Remove waste products and debris other than that caused by the Owner, other contractors or their employees, and leave the Work clean and suitable for occupancy by Owner.

3.6. Remove surplus products, tools, construction machinery and equipment. Remove waste products and debris other than that caused by the Owner or other Contractors.

3.7. Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.

3.8. Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors and ceilings.

3.9. Vacuum clean and dust building interiors, behind grilles, louvres and screens as affected by Work.

3.10. Wax, seal, shampoo, buff or prepare floor finishes, as recommended by the manufacturer. Use products compatible with products used by building maintenance staff.

3.11. Broom clean and wash all horizontal and vertical surfaces as affected by Work.

3.12. Clean up and make good exterior grades, lawns, planting and surfaces after removal of temporary access and facilities.

3.13. Removing of visible labels left on materials, components, and equipment.

3.14. Maintain cleaning until Owner has taken possession of building or portions thereof.

4. Spare Parts And Maintenance Materials

4.1. Spare parts and maintenance materials provided shall be new, not damaged or defective, and of the same quality and manufacture as Products provided in the Work. If requested, furnish evidence as to type, source and quality of Products provided.

4.2. Defective Products will be rejected, regardless of previous inspections. Replace products at own expense.

4.3. Store spare parts and maintenance materials in a manner to prevent damage, or deterioration.

4.4. Provide spare parts, special tools, maintenance and extra materials in quantities specified in individual specification Sections.

4.5. Provide items of same manufacture and quality as items in the Work.

5. Demonstration Of Systems & Equipment

5.1. Give a complete demonstration of all systems and equipment in the presence of the Consultant at the following times:

5.2. When each is 100% completed at the request of the Contractor.

5.3. At time of inspection to validate final completion.

5.4. At final completion for the benefit of the maintenance staff for the Project.

5.5. Responsible personnel representing the Subcontractor responsible for the Work being demonstrated shall be present at each demonstration.

6. Submittals

6.1. Submit with application for substantial performance certificate.

6.1.1. Certificate of Substantial Performance inspection report from electrical utility or inspection.

6.1.2. Certificate of verification of fire alarm system.

6.1.3. Certificate from the Fire Marshal's Office and I.A.O. of final inspection of sprinkler system.

6.1.4. Air balance reports.

6.1.5. Other reports required or specified.

6.1.6. Maintenance Manuals and Operating Instructions.

6.2. Submit with application for release of final payment:

6.2.1. Final project record drawings.

6.2.2. Extra stock.

6.2.3. Performance bonds which shall remain in effect for one (1) year after take-over date.

6.2.4. Completed Liability Insurance Policy extended for one (1) year from take-over date.

6.2.5. Written guarantee covering all workmanship and materials used in the Work.

6.2.6. Maintenance bonds as specified.

6.2.7. Extended Warranties as specified

6.2.8. Certificate from Workers' Compensation Board.

6.2.9. Certificate from Health Services Tax Division.

7. Final Inspection Procedures

7.1. Schedule, make arrangements for and administer final inspections and close out in the following stages.

7.2. Contractor's Inspection:

7.2.1. Determination that Project meets requirements for substantial performance and inspection is the responsibility of the Contractor.

7.2.2. The Contractor and all Subcontractors shall conduct an inspection of the work, identify deficiencies and defects; repair as required. Notify the Consultant in writing of satisfactory completion of the contractor's Inspection and that corrections have been made. Request a Consultant's Substantial Performance Inspection.

7.3. Consultant's Inspection: Consultants and the Contractor will perform an inspection of the Work to identify obvious defects or deficiencies. The contractor shall correct Work accordingly.

7.4. Substantial Performance Inspection:

7.4.1. When the items noted above are complete, request a substantial performance inspection of the Work by the Consultant, and the Contractor. If Work is deemed incomplete by the Consultant, complete the outstanding items and request a re-inspection.

7.4.2. Substantial performance inspections shall be scheduled to begin within eight working days of the Contractor's request.

7.4.3. Present at the substantial performance inspection will be:

7.4.3.1. The Consultant and his Sub-consultants that he requires and notifies.

7.4.3.2. The Owner's representatives, upon notification by the Consultant.

7.4.3.3. The Contractor and such Subcontractors that he considers are required.

7.4.3.4. The Contractor will compile a substantial performance deficiency list at this inspection and issue it to the Consultant and Owner.

7.4.3.5. The Contractor shall correct substantial performance deficiencies before a date agreed upon by the Contractor and Consultant.

7.4.3.6. Upon the Consultant's approval of substantial performance, the Contractor shall submit an application for a substantial performance certificate.

7.4.3.7. When the Contractor has satisfied himself that these corrections have been completed in a satisfactory manner by his inspection he shall schedule a final Contractor's inspection by the Consultant, and the Owner's representatives if required, within five working days of the Contractor's request.

7.4.3.8. Upon the Consultant's approval of completion, the Contractor shall submit an application for a completion certificate.

8. Substantial Performance

8.1. The Consultant will issue a Certificate of Substantial Performance when satisfied outstanding deficiencies noted during inspections prior to the Substantial Performance inspection have been corrected, the Work is substantially complete and is so certified by the Owner.

8.2. A list of remaining deficiencies to be rectified before final acceptance will be attached to the Certificate of Substantial Performance.

8.3. Make submissions specified in Subparagraph 1.06 of this Section.

9. Certificate For Release Of Amount Due At Substantial performance

9.1. The Consultant will issue to the Owner a certificate for release of money in an amount equal to the amount due the Contractor under the Contract Documents provided the Consultant is satisfied the Work has been substantially completed.

9.2. The certificate shall indicate the date of substantial performance.

9.3. Payment shall be due in accordance with GC 5.4 and the Contract Documents.

10. Completion Certificate

10.1. The Consultant will issue a Certificate of Completion (DSS Document DC670-92) when he is satisfied that outstanding deficiencies noted during inspections have been corrected and the Work is completed and is so certified by the Owner.

10.2. The date of the completion certificate will commence the required sixty (60) day period before release of final payment.

11. Certificate For Release Of Final Payment

11.1. Subject to the provisions of the Contract Documents, the Consultant will issue to the Owner a certificate for release of final payment sixty (60) days after date of completion certificate providing he is satisfied the Work has been completed.

11.2. The certificate will be in an amount equal to the remaining money due the Contractor under the Contract, and shall indicate the date of final completion.

11.3. Payment shall be due upon date of final completion.

12. Warranties

12.1. Establishment of Warranties:

12.1.1. Warranties shall commence on the Ready-for-Takeover date.

12.2. Warranty Period:

12.2.1. The Owner will advise the Consultant of defects observed during warranty periods.

12.2.2. The Consultant will notify the Contractor of defects observed during warranty period and request him to remedy the defects in accordance with the Contractor documents.

12.2.3. Thirty (30) days before expiration of warranties the Owner's representatives, the Consultant and the Contractor will inspect the Work as arranged by the Contractor noting defects of products and workmanship.

12.2.4. The Contractor shall immediately remedy such noted defects.

END OF SECTION 01 77 00

CONTRACTOR'S CHECKLIST

Pre-Closing Reminder to Proponents:

- This Request for Proposals (RFP) is a **two-file process.**
  Please ensure that the submission instructions are followed carefully as noted in Section 00 21 13 – Information to Proponents to ensure your submission is compliant.

- Required Bid Security – (10% of the Contract price before HST)
- Please include a copy of your bid security in with your Price Submission file.

- Please submit your proposal to the submission email address: hrcetenders@hrce.ca

- The HRCE will use the CCDC-2, 2020 for this work. A copy of the Standard Construction Contract CCDC 2 – 2020 is available upon request and will form part of the contract documents.

- The HRCE Supplementary General Conditions for the CCDC-2, 2020 applicable for this work is available for review under Section 0073 00 of the RFP document.

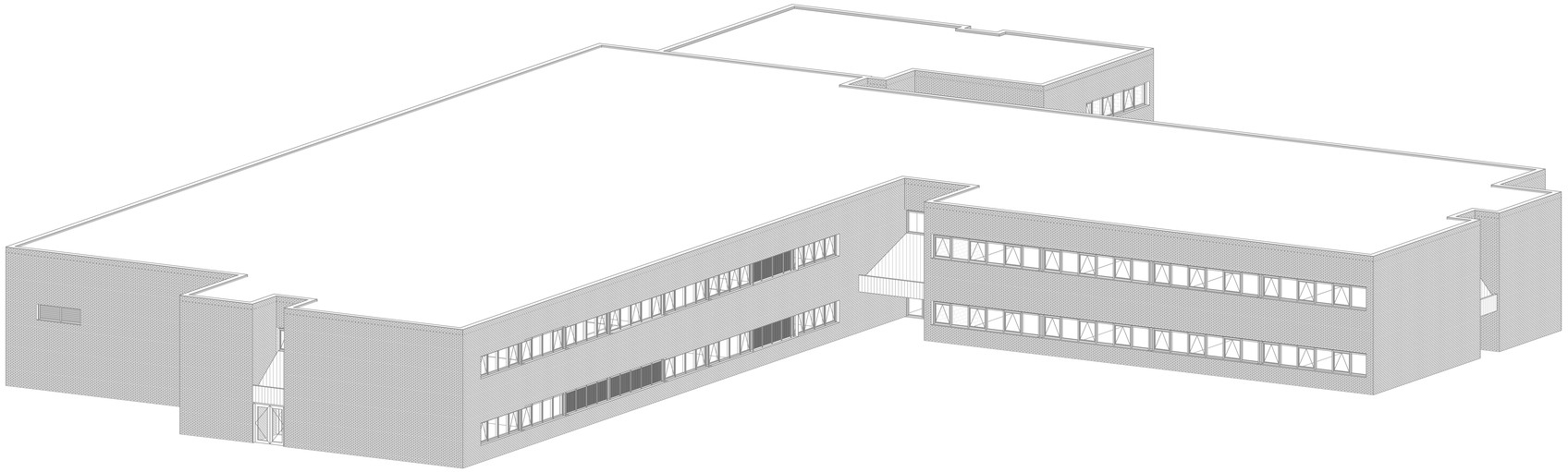
Post Award Document Requirements:

- Certificate of Recognition from a safety audit organization, jointly signed with the WCB.
- Workers' Compensation Board Letter of Good Standing.
- Certificate of Good Standing from the Canadian Roofing Contractors Association and Roofing Contractors Association of Nova Scotia.
- Contract Security documentation – if required
- Insurance Certificate – As identified in the RFP.
- Schedule of Values
- Site Specific Safety Plan
- Hazard Assessment
- Listing of subcontractors
- Warranty information

The award letter will list the specific documents required and provide a submission timeframe.

A purchase order will be issued only after receipt of all required items.

Work is not authorized until purchase order is issued.



DRAWING LIST

ARCHITECTURAL

A-101	FLOOR PLANS - EXISTING - LEVEL 1
A-102	FLOOR PLANS - EXISTING - LEVEL 2
A-201	BUILDING ELEVATIONS - NEW
A-202	BUILDING ELEVATION DETAILS
A-351	WALL SECTIONS
A-352	WALL SECTIONS
A-501	SECTION DETAILS
A-502	SECTION DETAILS
A-503	SECTION DETAILS
A-504	SECTION DETAILS
A-551	PLAN DETAILS
A-601	WINDOWS, SCREENS & CURTAIN WALL ELEVATIONS

FBM
architecture
interior design
planning

HS1-1660 Hollis Street
Halifax, Nova Scotia, B3J 1V7
Canada

T: (902) 429.4100
architects@fbm.ca
fbm.ca

BMR™
Structural Engineering

C:\Users\admin\Documents\Revitzer School_ARCH_v23_dcarp@fbm.ca.rvt
5/24/2024 2:06:32 PM

PROJECT NAME:

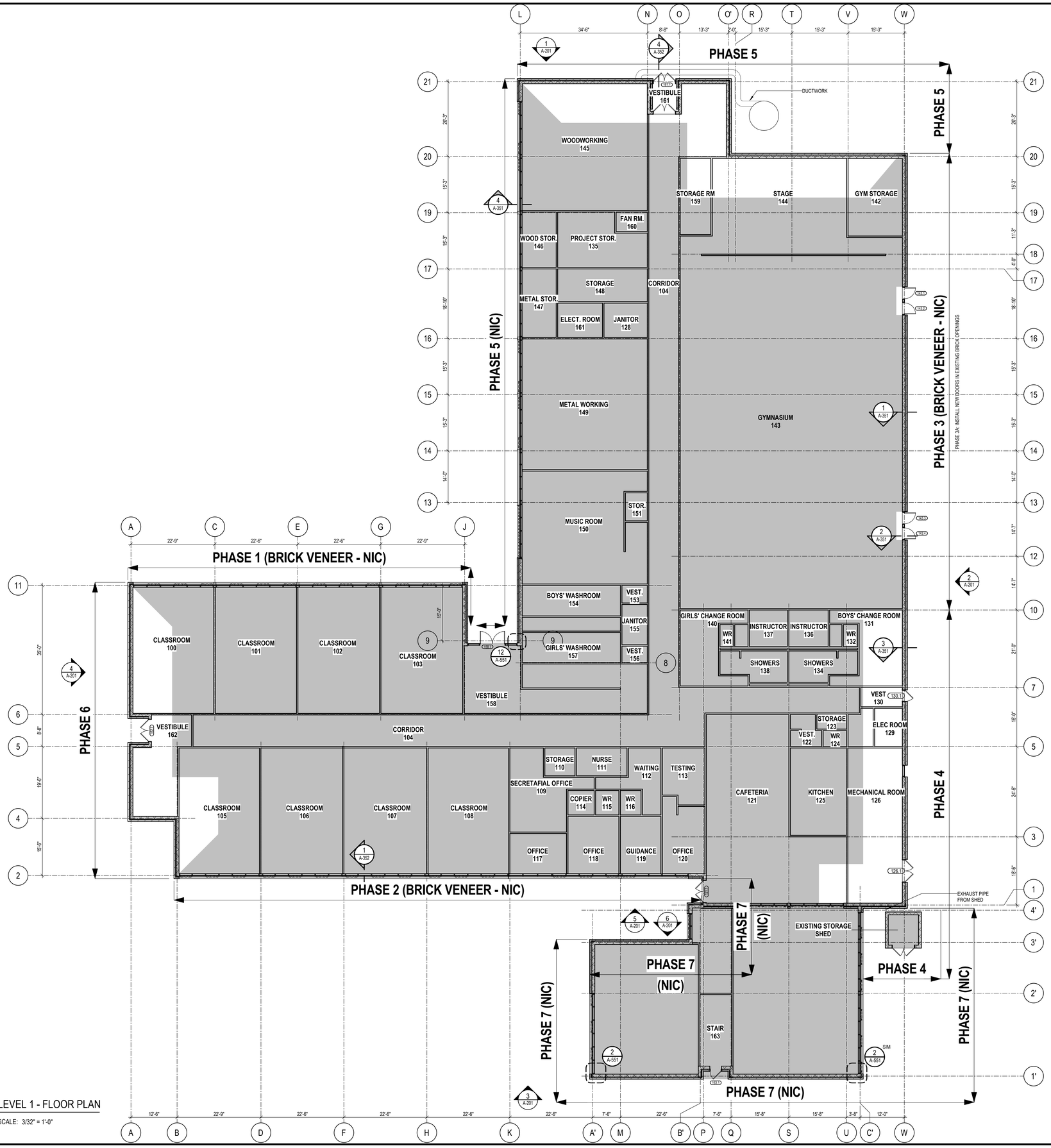
A.J. SMELTZER SCHOOL
EXTERIOR WALL RENOVATION

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1
ISSUED FOR TENDER

CLIENT:

Halifax
Regional Centre for Education

FBM PROJECT NO.: 2023-157 | DATE: 24 MAY 2024



1 A-101 LEVEL 1 - FLOOR PLAN

SCALE: 3/32" = 1'-0"

PHASING

THE WORK FOR PHASE 1 AND 2 WAS DESIGNED BY OTHERS. THESE PHASES ONLY INCLUDED REPLACEMENT OF THE BRICK VENEER. THEY DID NOT INCLUDE REPLACEMENT OF WINDOWS. THE BRICK VENEER REPLACEMENT AT PHASE 1, 2, AND 3 IS COMPLETE.

PHASE 3A: INSTALL NEW DOORS IN EXISTING BRICK VENEER.

PHASE 4: INSTALL NEW BRICK VENEER ASSEMBLY, DOORS, WINDOWS, AND LOUVERS.

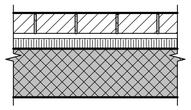
PHASE 5: INSTALL NEW BRICK VENEER ASSEMBLY, DOORS, WINDOW, LOUVERS, AND METAL ROOFING.

PHASE 6: INSTALL NEW BRICK VENEER ASSEMBLY, DOORS, AND WINDOW.

GENERAL NOTES

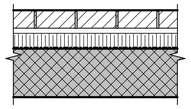
1. CONTRACTOR TO MAKE GOOD ALL EXISTING SURFACES AND FINISHES AFFECTED BY THE WINDOW AND EXTERIOR WALL REMOVAL WORK AS DETAILED AND /OR IMPLIED BY THE DRAWINGS. WHERE NECESSARY TO REPAIR TO MATCH ADJACENT MATERIALS AND FINISHES, EXTEND PATCH TO NEAREST NATURAL BREAK POINT i.e. INSIDE CORNER, EXIST. JOINT OR LOCATION APPROVED BY THE ARCHITECT.
2. CONTRACTOR TO PROTECT AND MAINTAIN THE INTEGRITY OF EXISTING FINISHES IN ALL AREAS NOT SCHEDULED FOR DEMOLITION WORK. ANY DAMAGE DUE TO DEMOLITION AND/OR NEW CONSTRUCTION TO BE REPAIRED AND MADE GOOD.
3. DO NOT ALLOW ANY ADHESIVE ODOURS AND OTHER FUMES FROM CONSTRUCTION ACTIVITIES TO ENTER MECHANICAL SYSTEMS.
4. REMOVE EXTERIOR WALL CONSTRUCTION AND WINDOWS WHERE INDICATED FOR REMOVAL, INCLUDING TRIMS, CLIPS, FLASHINGS, SEALANTS, FASTENERS.
5. REMOVE ALL EXISTING STEEL SHELF ANGLES AND LOOSE LINTELS; REPLACE WITH NEW GALVANIZED ANGLES, AS INDICATED.
6. CONTRACTOR TO REMOVE AND LAWFULLY DISPOSE OFF SITE ALL RUBBISH AND DEBRIS RESULTING FROM CONSTRUCTION. KEEP PROJECT AREA BROOMCLEAN. WHENEVER APPLICABLE, ALL DEMOLITION AND CONTRUCTION DEBRIS TO BE SORTED AND TAKEN TO APPROPRIATE FACILITIES FOR RECYCLING.
7. CONTRACTOR TO REPAIR AND MAKE GOOD ALL EXISTING FLOORS, WALLS, AND CEILINGS THAT ARE TO REMAIN AFTER DEMOLITION AND PREPARE SURFACES TO RECEIVE NEW FINISHES.
8. ALLOW FOR PROPER VENTILATION OF THE PREMISES DURING THE WORK.
9. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, COORDINATION AND EXECUTION OF CONSTRUCTION METHODS, PROCEDURES AND SCHEDULES. tHE OPERATIONAL PROCEDURES AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR INSOFAR AS THEY DO NOT PRESENT HAZARDS TO PERSONNEL OR PROPERTY OR INFRINGE ON WORK SCHEDULES FOR NORMAL SITE ACTITY.
10. REPORT ANY HAZARDOUS MATERIALS FOUND ON SITE TO HRCE PROJECT MANAGER.
11. GREY SHADED COMPONENTS ARE NOT PART OF THE WORK OF THIS CONTRACT.
12. VERIFY ALL DIMENSIONS ON SITE PRIOR TO PROCEEDING WITH WORK. NOTIFY HRCE OF ANY DISCREPANCIES BETWEEN AS FOUND CONDITIONS AND THE CONTRACT DOCUMENTS IMMEDIATELY UPON DISCOVERY OF SUCH CONDITIONS.

WALL ASSEMBLY



EXISTING ASSEMBLY

1. JUMBO BRICK VENEER (w/ MASONRY TIES)
2. AIR SPACE
3. 2-1/2" FIBREGLASS BOARD INSULATION (SPOT-ADHERED)
4. 10" CONCRETE BLOCK WALL



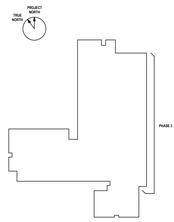
NEW ASSEMBLY

1. BRICK VENEER (w/ MASONRY PLATES/TIES)
2. 1" AIR SPACE
3. 3" POLYISOCYANURATE BOARD INSULATION
4. SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
5. 10" EXISTING CONCRETE BLOCK WALL

FBM
architecture
interior design
planning

H51-1660 Hollis Street, Halifax, Nova Scotia B3J 1V7
T: (902) 429 4100 architects@fbm.ca fbm.ca

KEY PLAN



No	REVISION	BY	DATE
0	ISSUED FOR TENDER (PHASE 3A, 4, 5, AND 6)		24 MAY 2024

STAMP

SCALE	As indicated
DRAWN	RTW
CHECKED	SD
DATE	24 MAY 2024

PROJECT

A.J. SMELTZER SCHOOL
MASONRY AND WINDOWS
PHASE 4-8

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1

CLIENT

Halifax Regional Centre for Education

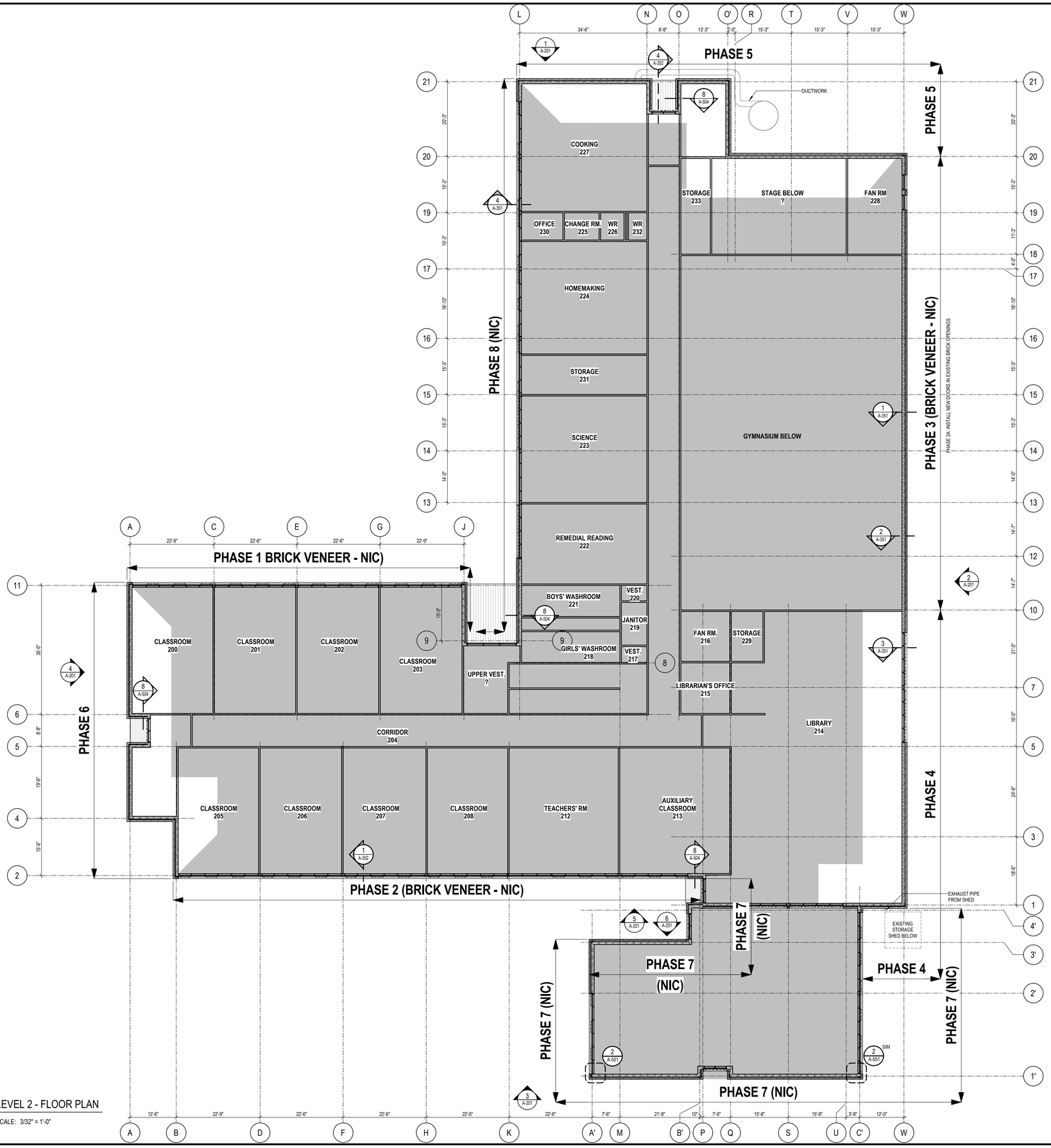
PROJECT No. 2023-157

SHEET TITLE

FLOOR PLANS - EXISTING - LEVEL 1

A-101

C:\Users\sdyson\Documents\J.Smeltzer School_ARCH_v23_sdyson@fbm.ca.rvt
5/24/2024 2:06:55 PM



1 A-102 LEVEL 2 - FLOOR PLAN

SCALE: 3/32" = 1'-0"

PHASING

THE WORK FOR PHASE 1 AND 2 WAS DESIGNED BY OTHERS. THESE PHASES ONLY INCLUDED REPLACEMENT OF THE BRICK VENEER. THEY DID NOT INCLUDE REPLACEMENT OF WINDOWS. THE BRICK VENEER REPLACEMENT AT PHASE 1, 2, AND 3 IS COMPLETE.

PHASE 3A: INSTALL NEW DOORS IN EXISTING BRICK VENEER.

PHASE 4: INSTALL NEW BRICK VENEER ASSEMBLY, DOORS, WINDOWS, AND LOUVERS.

PHASE 5: INSTALL NEW BRICK VENEER ASSEMBLY, DOORS, WINDOW, LOUVERS, AND METAL ROOFING.

PHASE 6: INSTALL NEW BRICK VENEER ASSEMBLY, DOORS, AND WINDOW.

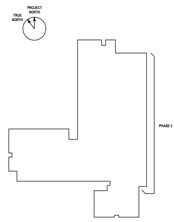
GENERAL NOTES

1. CONTRACTOR TO MAKE GOOD ALL EXISTING SURFACES AND FINISHES AFFECTED BY THE WINDOW AND EXTERIOR WALL REMOVAL WORK AS DETAILED AND /OR IMPLIED BY THE DRAWINGS. WHERE NECESSARY TO REPAIR TO MATCH ADJACENT MATERIALS AND FINISHES, EXTEND PATCH TO NEAREST NATURAL BREAK POINT i.e. INSIDE CORNER, EXIST. JOINT OR LOCATION APPROVED BY THE ARCHITECT.
2. CONTRACTOR TO PROTECT AND MAINTAIN THE INTEGRITY OF EXISTING FINISHES IN ALL AREAS NOT SCHEDULED FOR DEMOLITION WORK. ANY DAMAGE DUE TO DEMOLITION AND/OR NEW CONSTRUCTION TO BE REPAIRED AND MADE GOOD.
3. DO NOT ALLOW ANY ADHESIVE ODOURS AND OTHER FUMES FROM CONSTRUCTION ACTIVITIES TO ENTER MECHANICAL SYSTEMS.
4. REMOVE EXTERIOR WALL CONSTRUCTION AND WINDOWS WHERE INDICATED FOR REMOVAL, INCLUDING TRIMS, CLIPS, FLASHINGS, SEALANTS, FASTENERS.
5. REMOVE ALL EXISTING STEEL SHELF ANGLES AND LOOSE LINTELS; REPLACE WITH NEW GALVANIZED ANGLES, AS INDICATED.
6. CONTRACTOR TO REMOVE AND LAWFULLY DISPOSE OFF SITE ALL RUBBISH AND DEBRIS RESULTING FROM CONSTRUCTION. KEEP PROJECT AREA BROOMCLEAN. WHENEVER APPLICABLE, ALL DEMOLITION AND CONTRUCTION DEBRIS TO BE SORTED AND TAKEN TO APPROPRIATE FACILITIES FOR RECYCLING.
7. CONTRACTOR TO REPAIR AND MAKE GOOD ALL EXISTING FLOORS, WALLS, AND CEILINGS THAT ARE TO REMAIN AFTER DEMOLITION AND PREPARE SURFACES TO RECEIVE NEW FINISHES.
8. ALLOW FOR PROPER VENTILATION OF THE PREMISES DURING THE WORK.
9. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, COORDINATION AND EXECUTION OF CONSTRUCTION METHODS, PROCEDURES AND SCHEDULES. tHE OPERATIONAL PROCEDURES AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR INSOFAR AS THEY DO NOT PRESENT HAZARDS TO PERSONNEL OR PROPERTY OR INFRINGE ON WORK SCHEDULES FOR NORMAL SITE ACTITY.
10. REPORT ANY HAZARDOUS MATERIALS FOUND ON SITE TO HRCE PROJECT MANAGER.
11. GREY SHADED COMPONENTS ARE NOT PART OF THE WORK OF THIS CONTRACT.
12. VERIFY ALL DIMENSIONS ON SITE PRIOR TO PROCEEDING WITH WORK. NOTIFY HRCE OF ANY DISCREPANCIES BETWEEN AS FOUND CONDITIONS AND THE CONTRACT DOCUMENTS IMMEDIATELY UPON DISCOVERY OF SUCH CONDITIONS.

FBM
architecture
interior design
planning

H51-1660 Hollis Street, Halifax, Nova Scotia B3J 1V7
T: (902) 429 4100 architects@fbm.ca fbm.ca

KEY PLAN



No	REVISION	BY	DATE
0	ISSUED FOR TENDER (PHASE 3A, 4, 5, AND 6)		24 MAY 2024

STAMP

SCALE	3/32" = 1'-0"
DRAWN	RTW
CHECKED	SD
DATE	24 MAY 2024

PROJECT

A.J. SMELTZER SCHOOL
MASONRY AND WINDOWS
PHASE 4-8

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1

CLIENT

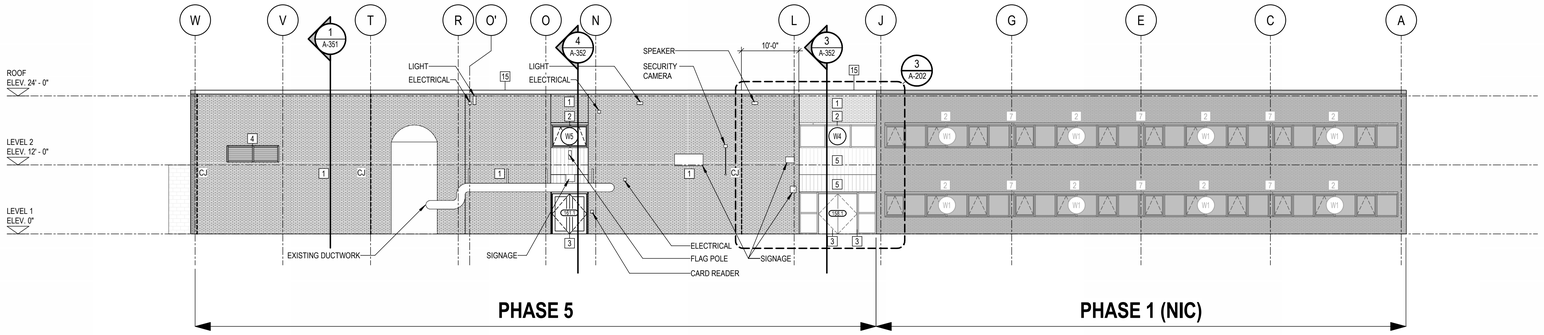
Halifax Regional Centre for Education

PROJECT No. 2023-157

SHEET TITLE

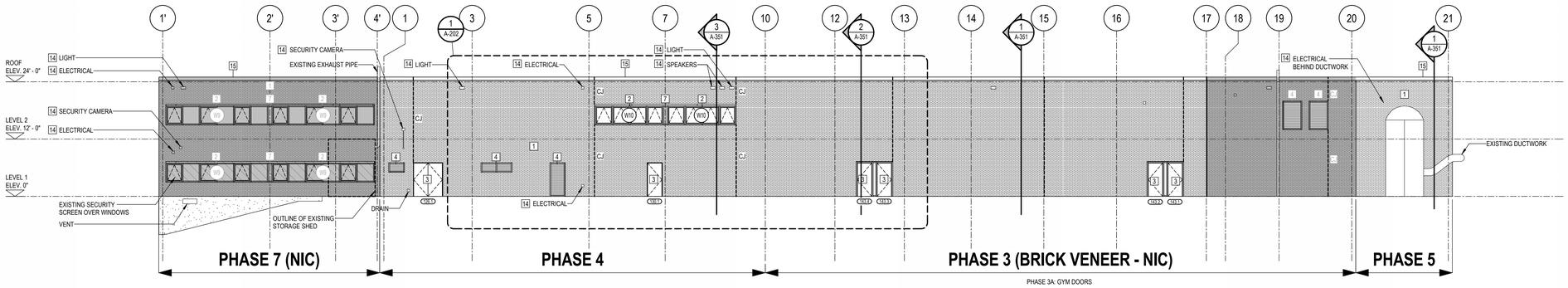
FLOOR PLANS - EXISTING - LEVEL 2

A-102



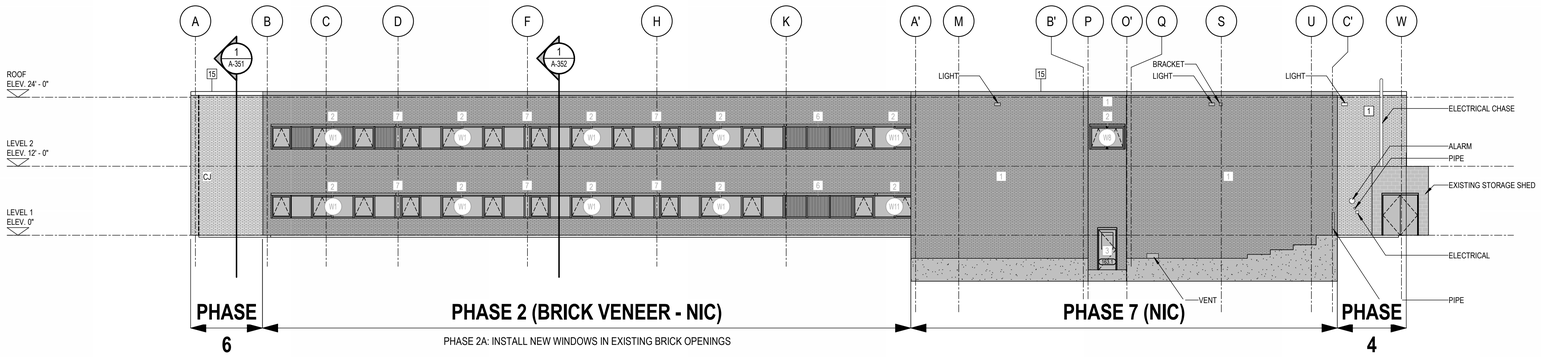
1 A-201 NORTH ELEVATION

SCALE: 3/32" = 1'-0"



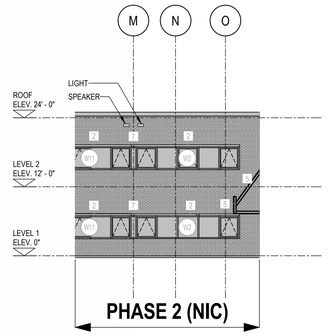
2 A-201 EAST ELEVATION

SCALE: 3/32" = 1'-0"



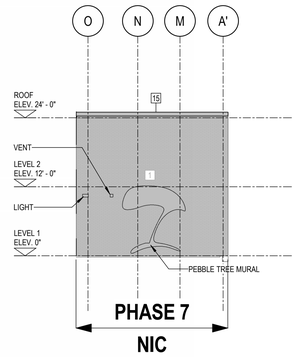
3 A-201 SOUTH ELEVATION

SCALE: 3/32" = 1'-0"



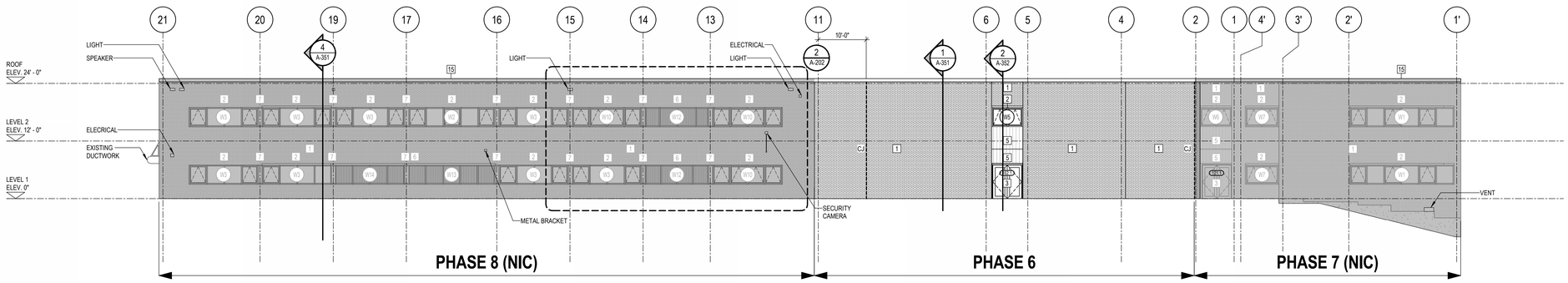
5 A-201 SOUTH ELEVATION AT ENTRANCE

SCALE: 3/32" = 1'-0"



6 A-201 NORTH ELEVATION AT ENTRANCE

SCALE: 3/32" = 1'-0"



4 A-201 WEST ELEVATION

SCALE: 3/32" = 1'-0"

ELEVATION LEGEND

- AREA NOT IN CONTRACT (NIC)
- JUMBO 'SAXON' BRICK VENEER; COLOUR TO MATCH EXISTING (KEYNOTE 1)
- GLASS SPANDREL WITH INSULATED BACKPAN (KEYNOTE 6)
- W# WINDOW TYPE ID TAG
- # DOOR TYPE TAG (REFER TO DOOR SCHEDULE ON A-601)
- CJ CONTROL JOINT IN BRICK VENNER w/ AIR BAFFLE

KEYNOTE LEGEND

1. EXISTING BRICK VENEER; REMOVE AND REPLACE WITH NEW BRICK VENEER (COLOUR TO MATCH EXISTING), c/w PLATE/TIE MASONRY CONNECTORS.
2. EXISTING WINDOW ASSEMBLY; REMOVE AND REPLACE WITH NEW ALUMINUM FRAMED WINDOWS, AS INDICATED AND DETAILED.
3. EXISTING DOOR AND FRAME; REMOVE AND REPLACE WITH NEW INSULATED DOORS AND FRAMES, AS INDICATED.
4. EXISTING LOUVER; REMOVE AND REPLACE WITH NEW ALUMINUM LOUVER WITH POWDER COAT PAINT FINISH. LOUVER STYLE IS TO MATCH EXISTING, c/w BIRD/INSECT SCREEN.
5. EXISTING METAL ROOF PANELS; REMOVE AND REPLACE PANELS WITH NEW PRE-FINISHED STANDING SEAM ROOF PANELS, AS INDICATED AND DETAILED.
6. EXISTING ALUMINUM PANELS; REMOVE AND REPLACE PANELS AND FRAMES WITH NEW ALUMINUM FRAMING AND SPANDREL PANELS, AS INDICATED AND DETAILED.
7. EXISTING ALUMINUM COLUMN COVERS; REMOVE AND REPLACE COVERS WITH NEW ALUMINUM COVERS, AS INDICATED AND DETAILED.
8. NEW PRE-FINISHED METAL FLASHING AT PARAPET.
9. NEW PRE-FINISHED METAL AND ALUMINUM HEAD FLASHING.
10. NEW PRE-FINISHED METAL SILL FLASHING.
11. EXISTING STRUCTURAL STEEL HANGERS AT CONCRETE BLOCK WALL BEHIND. ENSURE AIR/VAPOUR BARRIER MEMBRANE IS CONTINUOUS OVER HANGERS. REFER TO DETAIL 2, THIS SHEET, FOR MEMBRANE SUPPORT REQUIREMENTS AND CONCRETE BLOCK VOIDS.
12. LINE OF STRUCTURAL STEEL BEAM/JOIST FRAMING BEHIND (APPROX.).
13. NEW GALVANIZED STEEL SHELF ANGLE (OR LOOSE LINTELS - REFER TO DETAILS).
14. EXISTING ELECTRICAL ITEMS AND FIXTURES (LIGHTS, CAMERAS, HORNS, SPEAKERS, CONDUIT, ETC.). ALL ELECTRICAL IS TO BE REMOVED AND REINSTALLED (OR REPLACED WITH NEW). ALL WORK IS TO BE PERFORMED BY HRCE, IN COORDINATION WITH THE CONTRACTOR.
15. NEW PRE-FINISHED METAL CAP FLASHING

PHASING

THE WORK FOR PHASE 1 AND 2 WAS DESIGNED BY OTHERS. THESE PHASES ONLY INCLUDED REPLACEMENT OF THE BRICK VENEER, THEY DID NOT INCLUDE REPLACEMENT OF WINDOWS. THE BRICK VENEER REPLACEMENT AT PHASE 1, 2, AND 3 IS COMPLETE.

PHASE 3A: INSTALL NEW DOORS IN EXISTING BRICK VENEER.

PHASE 4: INSTALL NEW BRICK VENEER ASSEMBLY, DOORS, WINDOWS, AND LOUVERS.

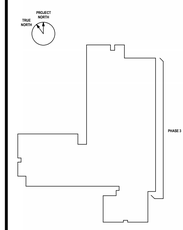
PHASE 5: INSTALL NEW BRICK VENEER ASSEMBLY, DOORS, WINDOW, LOUVERS, AND METAL ROOFING.

PHASE 6: INSTALL NEW BRICK VENEER ASSEMBLY, DOORS, AND WINDOW.

FBM
architecture
interior design
planning

H51-1660 Hollis Street, Halifax, Nova Scotia B3J 1V7
T: (902) 429.4100 architects@fbm.ca fbm.ca

KEY PLAN



No	REVISION	BY	DATE
0	ISSUED FOR TENDER (PHASE 3A, 4, 5, AND 6)		24 MAY 2024

STAMP

SCALE	3/32" = 1'-0"
DRAWN	RTW
CHECKED	SD
DATE	24 MAY 2024

PROJECT

A.J. SMELTZER SCHOOL
MASONRY AND WINDOWS
PHASE 4-8

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1

CLIENT

Halifax Regional Centre for Education

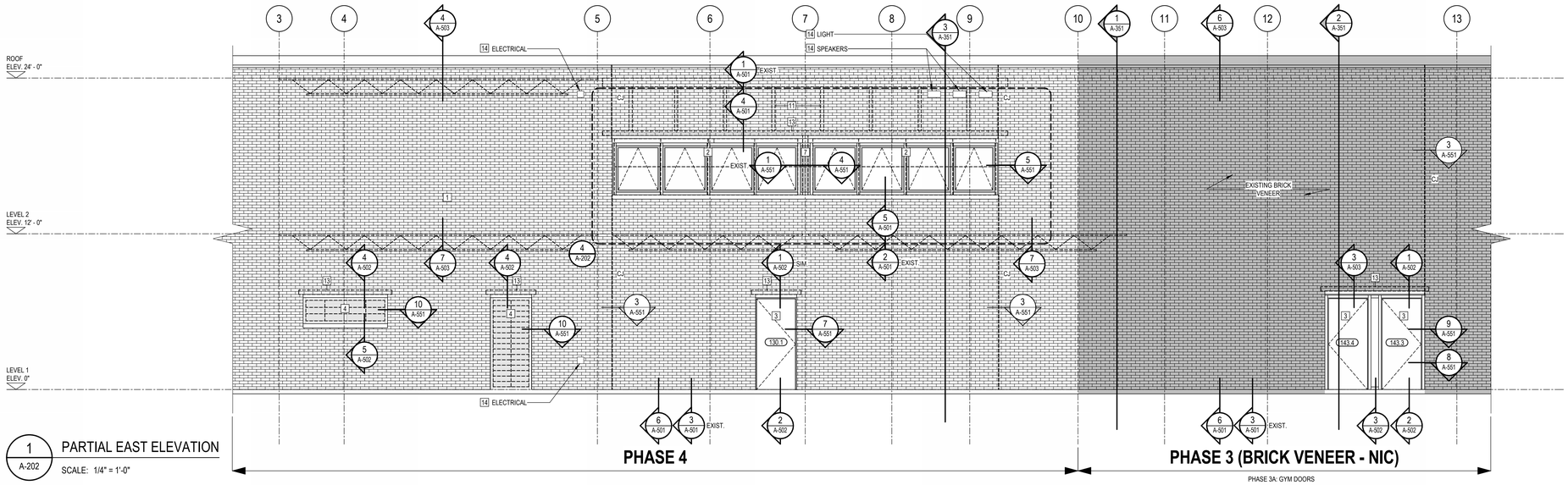
PROJECT No. 2023-157

SHEET TITLE

BUILDING ELEVATIONS - NEW

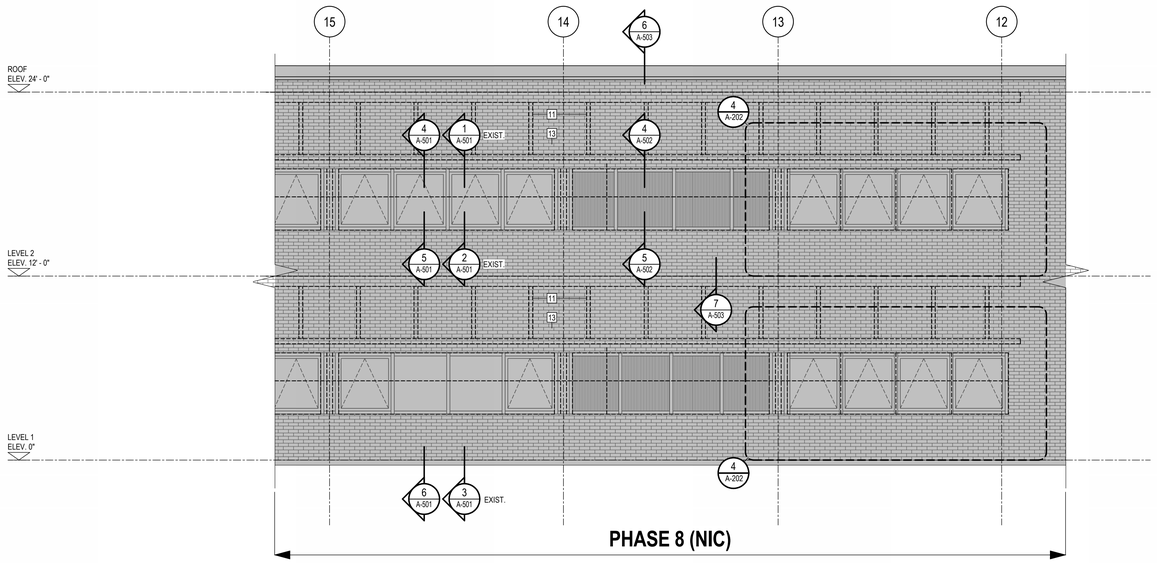
A-201

C:\Users\rtw\Documents\A.J Smeltzer School_MOD_v23_rtw@fbm.ca.rvt
5/24/2026 2:07:02 PM



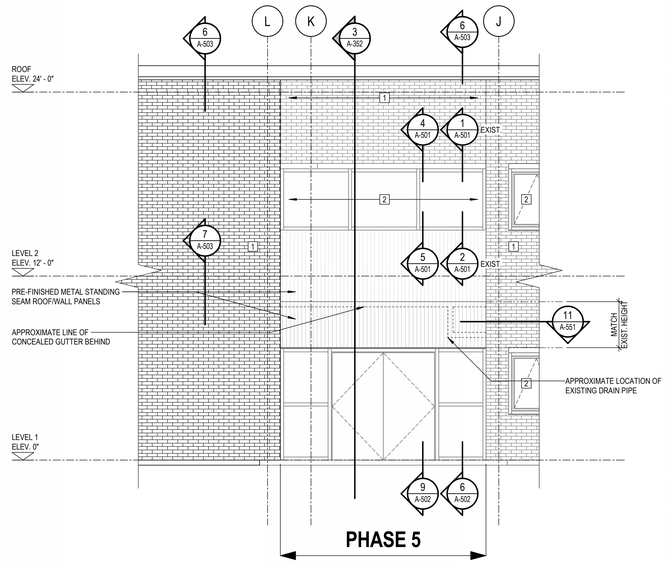
1 A-202 PARTIAL EAST ELEVATION

SCALE: 1/4" = 1'-0"



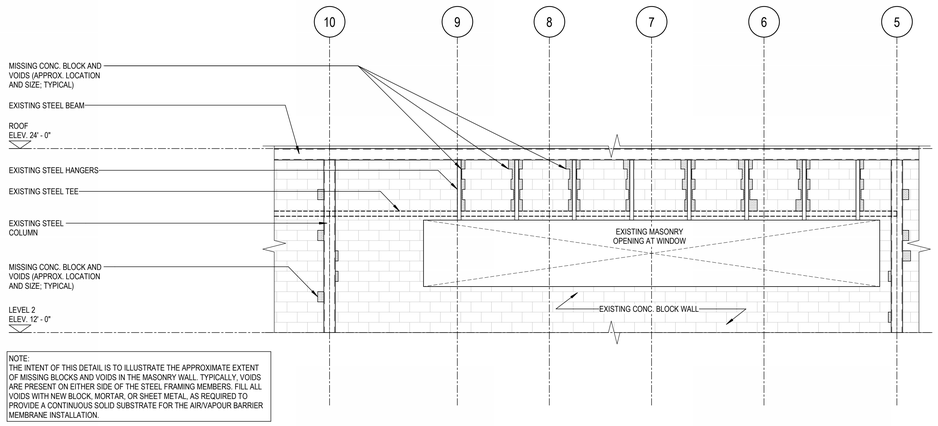
2 A-202 PARTIAL WEST ELEVATION

SCALE: 1/4" = 1'-0"



3 A-202 ELEVATION AT MAIN ENTRANCE

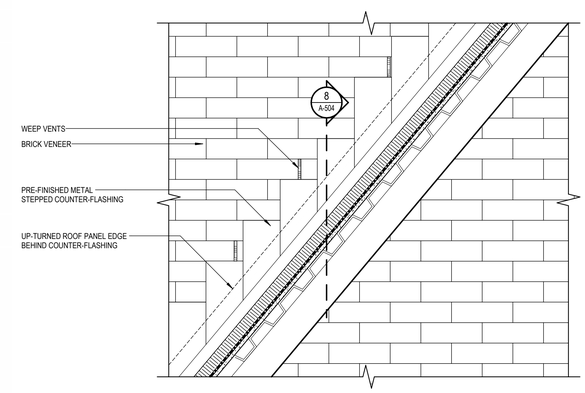
SCALE: 1/4" = 1'-0"



NOTE:
THE INTENT OF THIS DETAIL IS TO ILLUSTRATE THE APPROXIMATE EXTENT OF MISSING BLOCKS AND VOIDS IN THE MASONRY WALL. TYPICALLY, VOIDS ARE PRESENT ON EITHER SIDE OF THE STEEL FRAMING MEMBERS. FILL ALL VOIDS WITH NEW BLOCK, MORTAR, OR SHEET METAL, AS REQUIRED TO PROVIDE A CONTINUOUS SOLID SUBSTRATE FOR THE AIR/VAPOUR BARRIER MEMBRANE INSTALLATION.

4 A-202 PARTIAL ELEVATION AT CONC. BLOCK BACK-UP WALL

SCALE: 1/4" = 1'-0"



5 A-202 ELEVATION AT STEP FLASHING

SCALE: 1 1/2" = 1'-0"

KEYNOTE LEGEND

1. EXISTING BRICK VENEER; REMOVE AND REPLACE WITH NEW BRICK VENEER (COLOUR TO MATCH EXISTING), c/w PLATE/TIE MASONRY CONNECTORS.
2. EXISTING WINDOW ASSEMBLY; REMOVE AND REPLACE WITH NEW ALUMINUM FRAMED WINDOWS, AS INDICATED AND DETAILED.
3. EXISTING DOOR AND FRAME; REMOVE AND REPLACE WITH NEW INSULATED DOORS AND FRAMES, AS INDICATED.
4. EXISTING LOUVER; REMOVE AND REPLACE WITH NEW ALUMINUM LOUVER WITH POWDER COAT PAINT FINISH. LOUVER STYLE IS TO MATCH EXISTING, c/w BIRD/INSECT SCREEN.
5. EXISTING METAL ROOF PANELS; REMOVE AND REPLACE PANELS WITH NEW PRE-FINISHED STANDING SEAM ROOF PANELS, AS INDICATED AND DETAILED.
6. EXISTING ALUMINUM PANELS; REMOVE AND REPLACE PANELS AND FRAMES WITH NEW ALUMINUM FRAMING AND SPANDREL PANELS, AS INDICATED AND DETAILED.
7. EXISTING ALUMINUM COLUMN COVERS; REMOVE AND REPLACE COVERS WITH NEW ALUMINUM COVERS, AS INDICATED AND DETAILED.
8. NEW PRE-FINISHED METAL FLASHING AT PARAPET.
9. NEW PRE-FINISHED METAL AND ALUMINUM HEAD FLASHING.
10. NEW PRE-FINISHED METAL SILL FLASHING.
11. EXISTING STRUCTURAL STEEL HANGERS AT CONCRETE BLOCK WALL BEHIND. ENSURE AIR/VAPOUR BARRIER MEMBRANE IS CONTINUOUS OVER HANGERS. REFER TO DETAIL 2, THIS SHEET, FOR MEMBRANE SUPPORT REQUIREMENTS AND CONCRETE BLOCK VOIDS.
12. LINE OF STRUCTURAL STEEL BEAM/JOIST FRAMING BEHIND (APPROX.).
13. NEW GALVANIZED STEEL SHELF ANGLE (OR LOOSE LINTELS - REFER TO DETAILS).
14. EXISTING ELECTRICAL ITEMS AND FIXTURES (LIGHTS, CAMERAS, HORNS, SPEAKERS, CONDUIT, ETC.). ALL ELECTRICAL IS TO BE REMOVED AND REINSTALLED (OR REPLACED WITH NEW). ALL WORK IS TO BE PERFORMED BY HRCE, IN COORDINATION WITH THE CONTRACTOR.
15. NEW PRE-FINISHED METAL CAP FLASHING

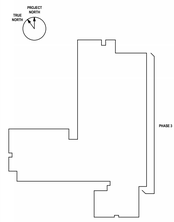
ELEVATION LEGEND

- AREA NOT IN CONTRACT (NIC)
- JUMBO 'SAXON' BRICK VENEER; COLOUR TO MATCH EXISTING (KEYNOTE 1)
- GLASS SPANDREL WITH INSULATED BACKPAN (KEYNOTE 6)
- Ref. WINDOW TYPE ID TAG
- DOOR TYPE TAG (REFER TO DOOR SCHEDULE ON A-601)
- CJ CONTROL JOINT IN BRICK VENNER w/ AIR BAFFLE

FBM
architecture
interior design
planning

H51-1660 Hollis Street, Halifax, Nova Scotia B3J 1V7
T: (902) 429.4100 architects@fbm.ca fbm.ca

KEY PLAN



No	REVISION	BY	DATE
0	ISSUED FOR TENDER (PHASE 3A, 4, 5, AND 6)		24 MAY 2024

STAMP

SCALE	As indicated
DRAWN	RTW
CHECKED	SD
DATE	24 MAY 2024

PROJECT

A.J. SMELTZER SCHOOL
MASONRY AND WINDOWS
PHASE 4-8

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1

CLIENT

Halifax Regional Centre for Education

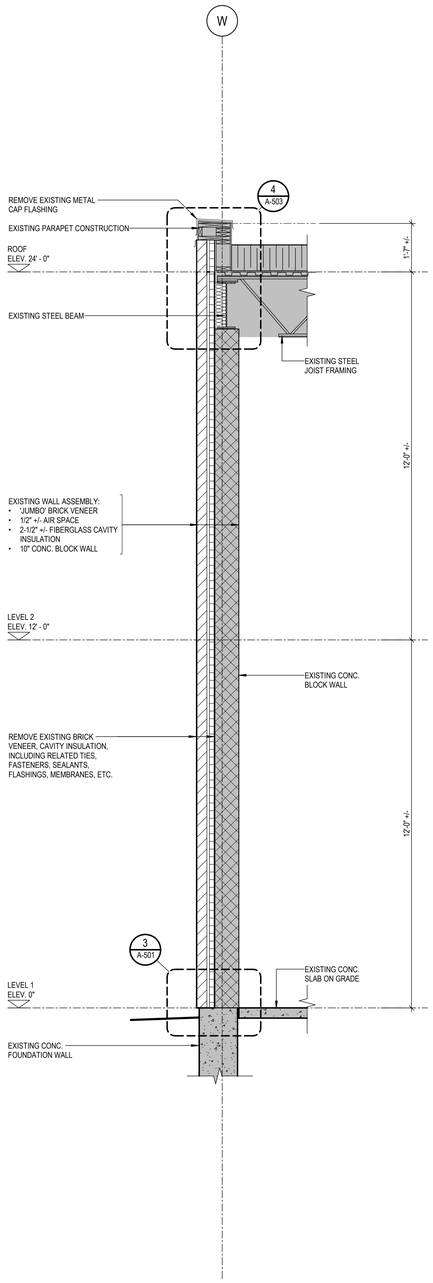
PROJECT No. 2023-157

SHEET TITLE

BUILDING ELEVATION DETAILS

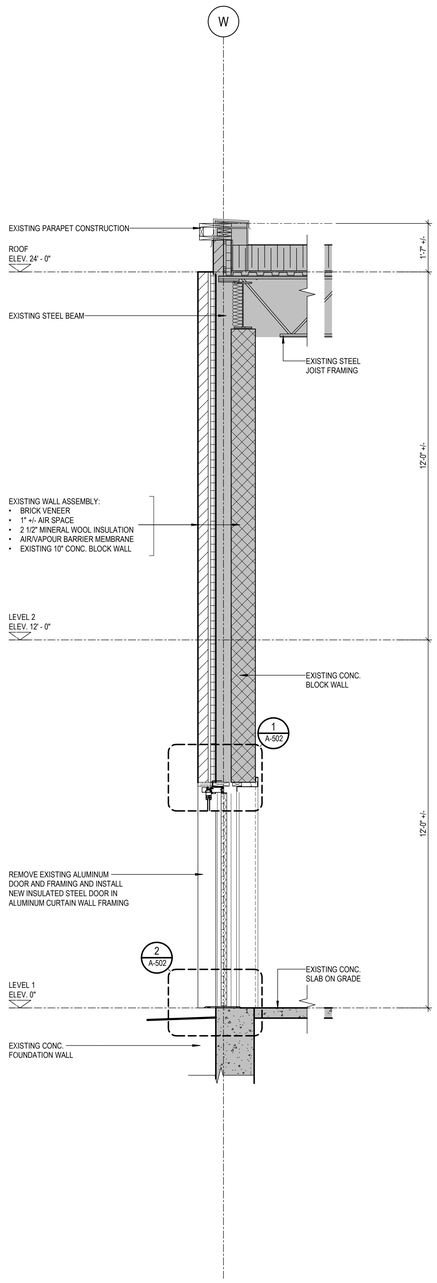
A-202

C:\Users\sd\Documents\Smeltzer Gym_ARCH_v23_dwg@fbm.ca.rvt
5/24/2024 2:07:06 PM



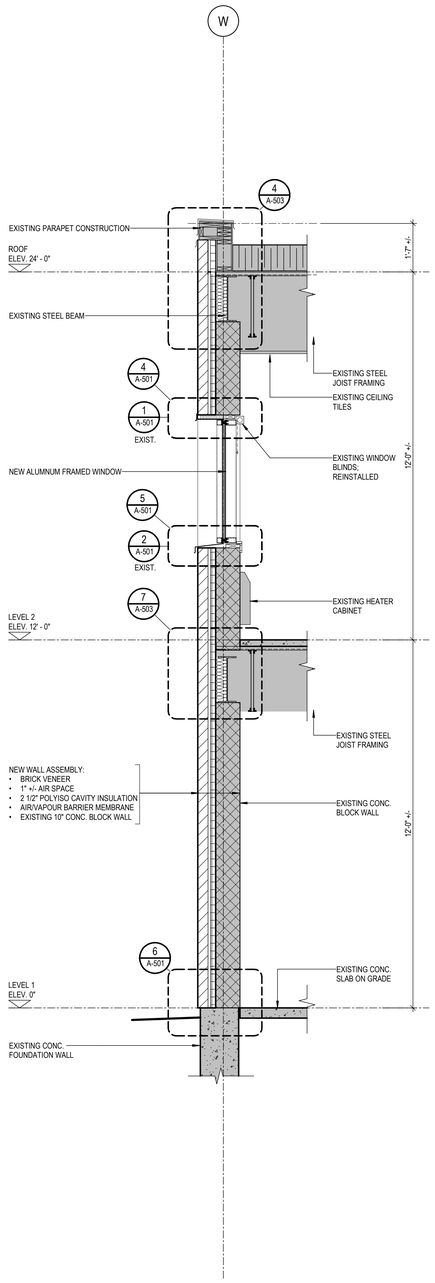
1 A-351 TYPICAL ASSEMBLY (EXISTING)

SCALE: 1/2" = 1'-0"



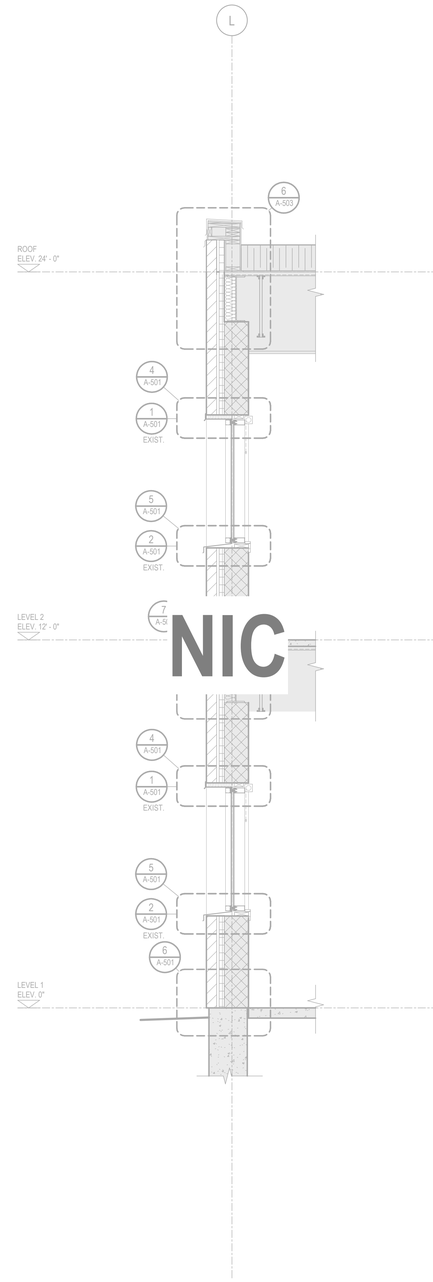
2 A-351 GYM DOOR (NEW)

SCALE: 1/2" = 1'-0"



3 A-351 LIBRARY WINDOWS (NEW)

SCALE: 1/2" = 1'-0"



4 A-351 WINDOWS IN NEW BRICK VENEER (NEW)

SCALE: 1/2" = 1'-0"

GENERAL NOTES

1. CONTRACTOR TO MAKE GOOD ALL EXISTING SURFACES AND FINISHES AFFECTED BY THE WINDOW AND EXTERIOR WALL REMOVAL WORK AS DETAILED AND /OR IMPLIED BY THE DRAWINGS. WHERE NECESSARY TO REPAIR TO MATCH ADJACENT MATERIALS AND FINISHES, EXTEND PATCH TO NEAREST NATURAL BREAK POINT i.e. INSIDE CORNER, EXIST. JOINT OR LOCATION APPROVED BY THE ARCHITECT.
2. CONTRACTOR TO PROTECT AND MAINTAIN THE INTEGRITY OF EXISTING FINISHES IN ALL AREAS NOT SCHEDULED FOR DEMOLITION WORK. ANY DAMAGE DUE TO DEMOLITION AND/OR NEW CONSTRUCTION TO BE REPAIRED AND MADE GOOD.
3. DO NOT ALLOW ANY ADHESIVE ODOURS AND OTHER FUMES FROM CONSTRUCTION ACTIVITIES TO ENTER MECHANICAL SYSTEMS.
4. REMOVE EXTERIOR WALL CONSTRUCTION AND WINDOWS WHERE INDICATED FOR REMOVAL, INCLUDING TRIMS, CLIPS, FLASHINGS, SEALANTS, FASTENERS.
5. REMOVE ALL EXISTING STEEL SHELF ANGLES AND LOOSE LINTELS; REPLACE WITH NEW GALVANIZED ANGLES, AS INDICATED.
6. CONTRACTOR TO REMOVE AND LAWFULLY DISPOSE OFF SITE ALL RUBBISH AND DEBRIS RESULTING FROM CONSTRUCTION. KEEP PROJECT AREA BROOMCLEAN. WHENEVER APPLICABLE, ALL DEMOLITION AND CONTRUCTION DEBRIS TO BE SORTED AND TAKEN TO APPROPRIATE FACILITIES FOR RECYCLING.
7. CONTRACTOR TO REPAIR AND MAKE GOOD ALL EXISTING FLOORS, WALLS, AND CEILINGS THAT ARE TO REMAIN AFTER DEMOLITION AND PREPARE SURFACES TO RECEIVE NEW FINISHES.
8. ALLOW FOR PROPER VENTILATION OF THE PREMISES DURING THE WORK.
9. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, COORDINATION AND EXECUTION OF CONSTRUCTION METHODS, PROCEDURES AND SCHEDULES. tHE OPERATIONAL PROCEDURES AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR INSOFAR AS THEY DO NOT PRESENT HAZARDS TO PERSONNEL OR PROPERTY OR INFRINGE ON WORK SCHEDULES FOR NORMAL SITE ACTITY.
10. REPORT ANY HAZARDOUS MATERIALS FOUND ON SITE TO HRCE PROJECT MANAGER.
11. GREY SHADED COMPONENTS ARE NOT PART OF THE WORK OF THIS CONTRACT.
12. VERIFY ALL DIMENSIONS ON SITE PRIOR TO PROCEEDING WITH WORK. NOTIFY HRCE OF ANY DISCREPANCIES BETWEEN AS FOUND CONDITIONS AND THE CONTRACT DOCUMENTS IMMEDIATELY UPON DISCOVERY OF SUCH CONDITIONS.

FBM
architecture
interior design
planning

H51-1660 Hollis Street, Halifax, Nova Scotia B3J 1V7
T: (902) 429.4100 architects@fbm.ca fbm.ca

No	REVISION	BY	DATE
0	ISSUED FOR TENDER (PHASE 3A, 4, 5, AND 6)		24 MAY 2024

STAMP

SCALE	As indicated
DRAWN	LAA
CHECKED	SD
DATE	24 MAY 2024

PROJECT

A.J. SMELTZER SCHOOL
MASONRY AND WINDOWS
PHASE 4-8

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1

CLIENT

Halifax Regional Centre for Education

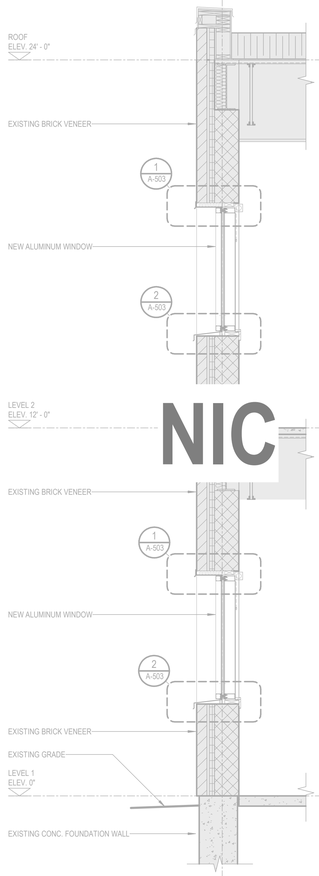
PROJECT No. 2023-157

SHEET TITLE

WALL SECTIONS

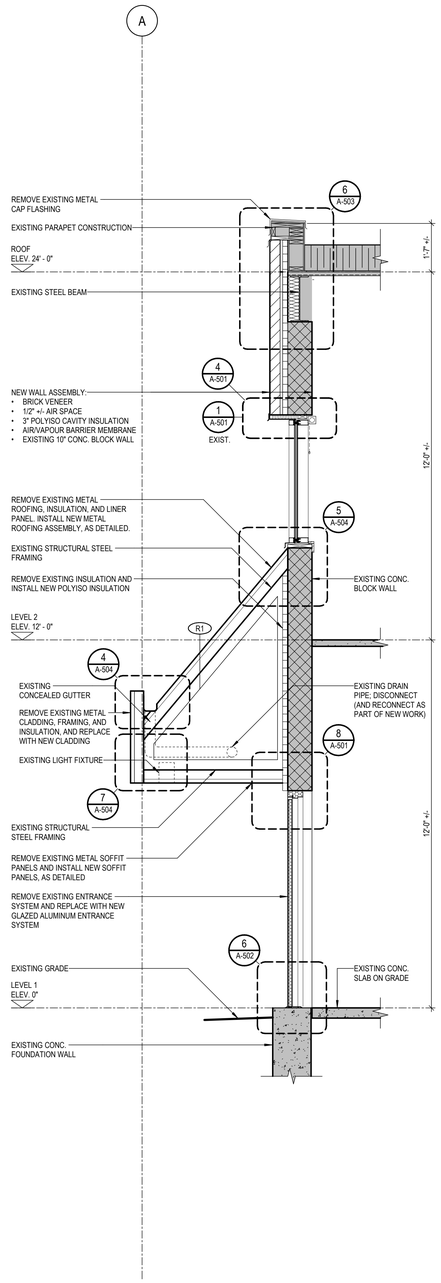
A-351

C:\Users\admin\Documents\Creative Sync_ARCH_v23_dcarg@fbm.ca.rvt
5/24/2024 2:07:07 PM



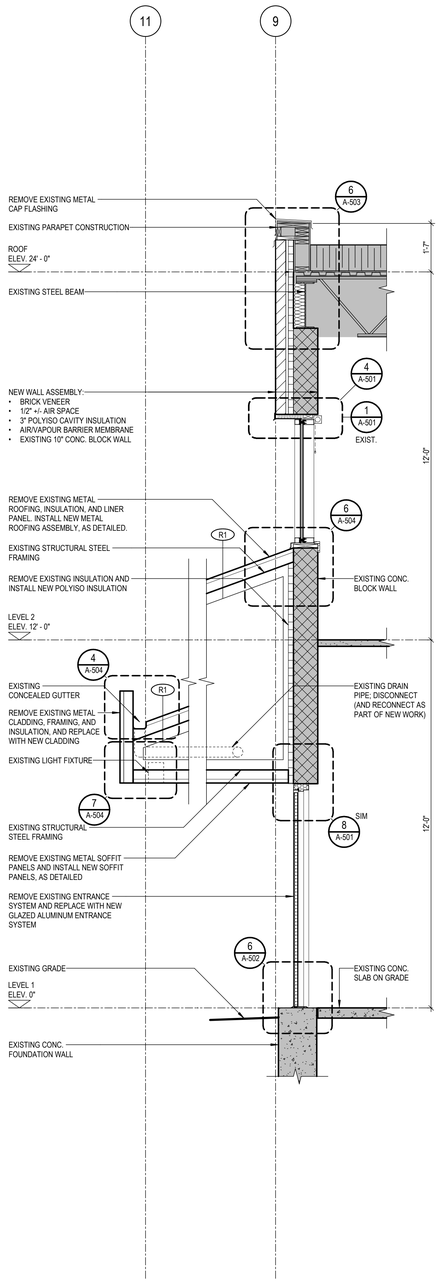
1 A-352 WINDOWS IN EXISTING BRICK VENEER (NEW)

SCALE: 1/2" = 1'-0"



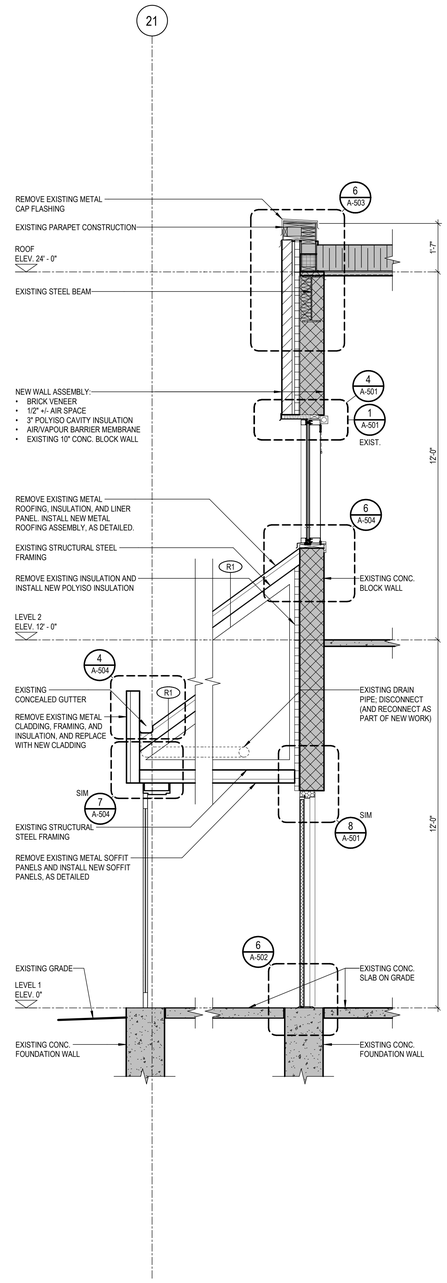
2 A-352 AUXILIARY ENTRANCES (NEW)

SCALE: 1/2" = 1'-0"



3 A-352 MAIN ENTRANCE (NEW)

SCALE: 1/2" = 1'-0"



4 A-352 CANOPY AT DOOR 161.1

SCALE: 1/2" = 1'-0"

GENERAL NOTES

1. CONTRACTOR TO MAKE GOOD ALL EXISTING SURFACES AND FINISHES AFFECTED BY THE WINDOW AND EXTERIOR WALL REMOVAL WORK AS DETAILED AND /OR IMPLIED BY THE DRAWINGS. WHERE NECESSARY TO REPAIR TO MATCH ADJACENT MATERIALS AND FINISHES, EXTEND PATCH TO NEAREST NATURAL BREAK POINT i.e. INSIDE CORNER, EXIST. JOINT OR LOCATION APPROVED BY THE ARCHITECT.
2. CONTRACTOR TO PROTECT AND MAINTAIN THE INTEGRITY OF EXISTING FINISHES IN ALL AREAS NOT SCHEDULED FOR DEMOLITION WORK. ANY DAMAGE DUE TO DEMOLITION AND/OR NEW CONSTRUCTION TO BE REPAIRED AND MADE GOOD.
3. DO NOT ALLOW ANY ADHESIVE ODOURS AND OTHER FUMES FROM CONSTRUCTION ACTIVITIES TO ENTER MECHANICAL SYSTEMS.
4. REMOVE EXTERIOR WALL CONSTRUCTION AND WINDOWS WHERE INDICATED FOR REMOVAL, INCLUDING TRIMS, CLIPS, FLASHINGS, SEALANTS, FASTENERS.
5. REMOVE ALL EXISTING STEEL SHELF ANGLES AND LOOSE LINTELS; REPLACE WITH NEW GALVANIZED ANGLES, AS INDICATED.
6. CONTRACTOR TO REMOVE AND LAWFULLY DISPOSE OFF SITE ALL RUBBISH AND DEBRIS RESULTING FROM CONSTRUCTION. KEEP PROJECT AREA BROOMCLEAN. WHENEVER APPLICABLE, ALL DEMOLITION AND CONTRUCTION DEBRIS TO BE SORTED AND TAKEN TO APPROPRIATE FACILITIES FOR RECYCLING.
7. CONTRACTOR TO REPAIR AND MAKE GOOD ALL EXISTING FLOORS, WALLS, AND CEILINGS THAT ARE TO REMAIN AFTER DEMOLITION AND PREPARE SURFACES TO RECEIVE NEW FINISHES.
8. ALLOW FOR PROPER VENTILATION OF THE PREMISES DURING THE WORK.
9. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, COORDINATION AND EXECUTION OF CONSTRUCTION METHODS, PROCEDURES AND SCHEDULES. IHE OPERATIONAL PROCEDURES AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR INSOFAR AS THEY DO NOT PRESENT HAZARDS TO PERSONNEL OR PROPERTY OR INFRINGE ON WORK SCHEDULES FOR NORMAL SITE ACTIITY.
10. REPORT ANY HAZARDOUS MATERIALS FOUND ON SITE TO HRCE PROJECT MANAGER.
11. GREY SHADED COMPONENTS ARE NOT PART OF THE WORK OF THIS CONTRACT.
12. VERIFY ALL DIMENSIONS ON SITE PRIOR TO PROCEEDING WITH WORK. NOTIFY HRCE OF ANY DISCREPANCIES BETWEEN AS FOUND CONDITIONS AND THE CONTRACT DOCUMENTS IMMEDIATELY UPON DISCOVERY OF SUCH CONDITIONS.

CANOPY ROOF ASSEMBLIES

Rx EXISTING ASSEMBLY

1. METAL ROOFING PANELS (EXPOSED FASTENERS)
2. METAL Z-GIRTS
3. BATT INSULATION
4. METAL LINER PANEL
5. STRUCTURAL STEEL FRAMING

R1 NEW ASSEMBLY

1. STANDING METAL ROOFING PANELS (CONCEALED CLIPS)
2. 1 1/2" GALVANIZED METAL Z-GIRTS (2'-0" o.c.)
3. 1 1/2" EXTRUDED POLYSTYRENE INSULATION
4. SELF-ADHERED UNDERLAYMENT MEMBRANE
5. 1/2" GYPSUM SHEATHING
6. 1 1/2" DEEP STRUCTURAL STEEL DECKING
7. EXISTING STRUCTURAL STEEL FRAMING

FBM
architecture
interior design
planning

H51-1660 Hollis Street, Halifax, Nova Scotia B3J 1V7
T: (902) 429.4100 architects@fbm.ca fbm.ca

No	REVISION	BY	DATE
0	ISSUED FOR TENDER (PHASE 3A, 4, 5, AND 6)		24 MAY 2024

STAMP

SCALE	As indicated
DRAWN	LAA
CHECKED	SD
DATE	24 MAY 2024

PROJECT

A.J. SMELTZER SCHOOL
MASONRY AND WINDOWS
PHASE 4-8

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1

CLIENT

Halifax Regional Centre for Education

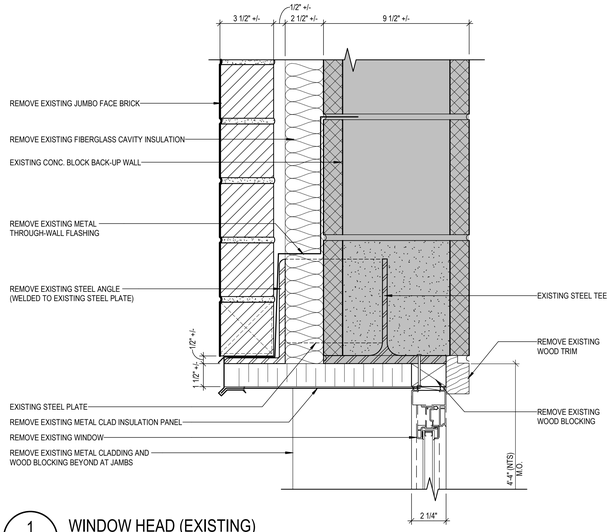
PROJECT No. 2023-157

SHEET TITLE

WALL SECTIONS

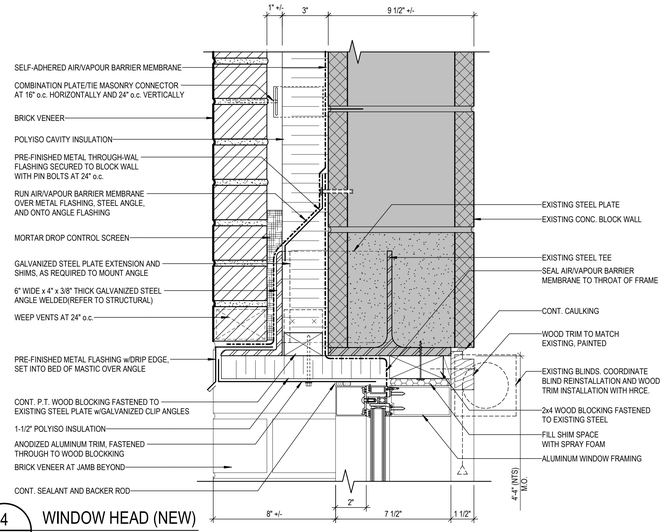
A-352

C:\Users\sysadmin\Documents\A_Smeltzer School_ARCH_v23_dcarp@fbm.ca.rvt
5/24/2024 2:07:08 PM



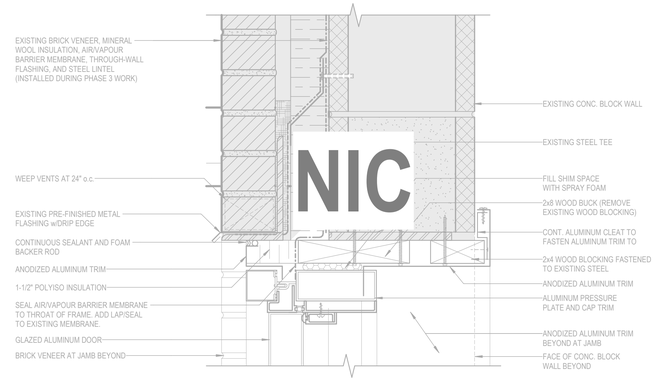
1 A-501 WINDOW HEAD (EXISTING)

SCALE: 3" = 1'-0"



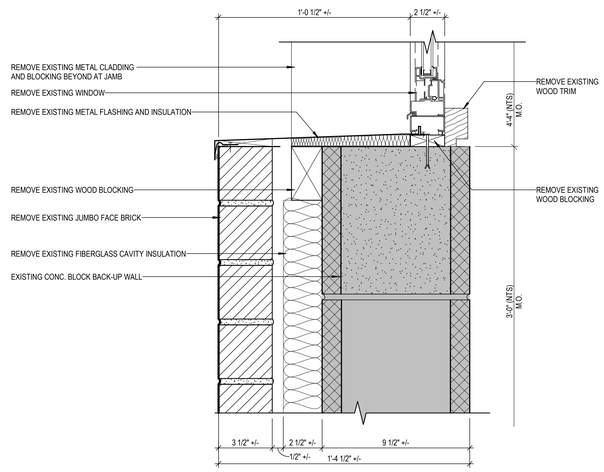
4 A-501 WINDOW HEAD (NEW)

SCALE: 3" = 1'-0"



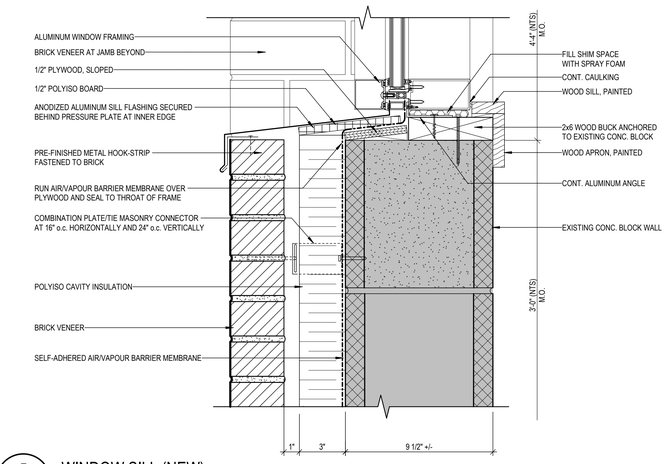
7 A-501 DOOR HEAD AT ENTRANCE DOORS

SCALE: 3" = 1'-0"



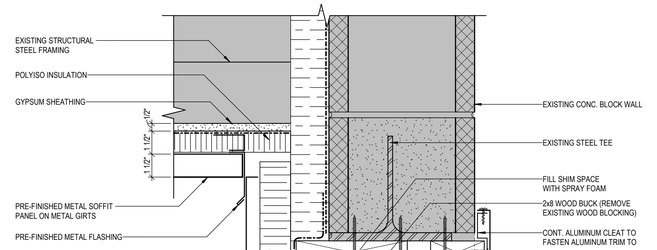
2 A-501 WINDOW SILL (EXISTING)

SCALE: 3" = 1'-0"



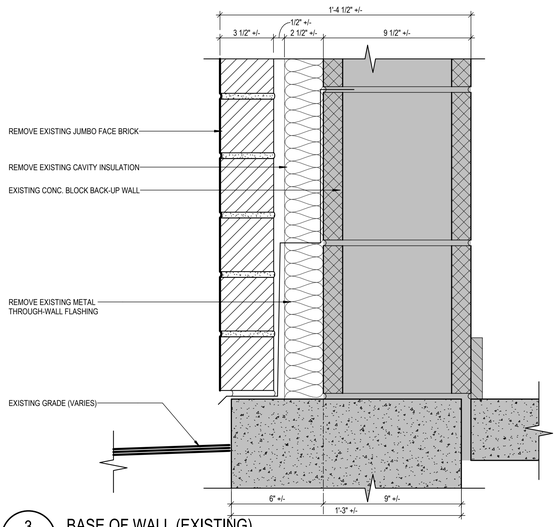
5 A-501 WINDOW SILL (NEW)

SCALE: 3" = 1'-0"



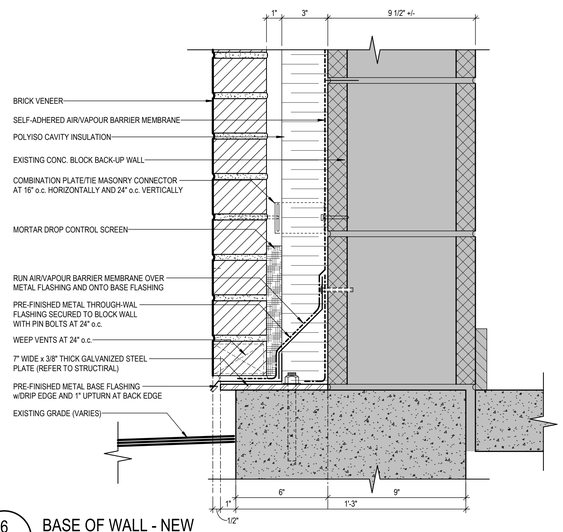
8 A-501 CANOPY SOFFIT AT DOOR HEAD

SCALE: 3" = 1'-0"



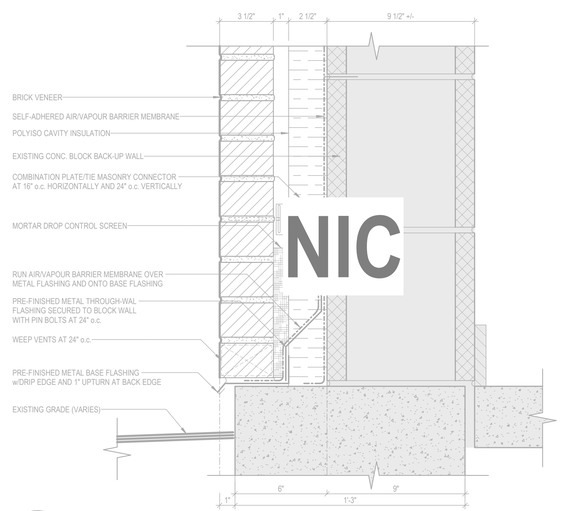
3 A-501 BASE OF WALL (EXISTING)

SCALE: 3" = 1'-0"



6 A-501 BASE OF WALL - NEW

SCALE: 3" = 1'-0"



9 A-501 BASE OF WALL AT EAST ELEVATION

SCALE: 3" = 1'-0"

FBM
architecture
interior design
planning

H51-1660 Hollis Street, Halifax, Nova Scotia B3J 1V7
T: (902) 429 4100 architects@fbm.ca fbm.ca

No	REVISION	BY	DATE
0	ISSUED FOR TENDER (PHASE 3A, 4, 5, AND 6)		24 MAY 2024

STAMP

SCALE	3" = 1'-0"
DRAWN	RTW
CHECKED	SD
DATE	24 MAY 2024

PROJECT

A.J. SMELTZER SCHOOL
MASONRY AND WINDOWS
PHASE 4-8

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1

CLIENT

Halifax Regional Centre for Education

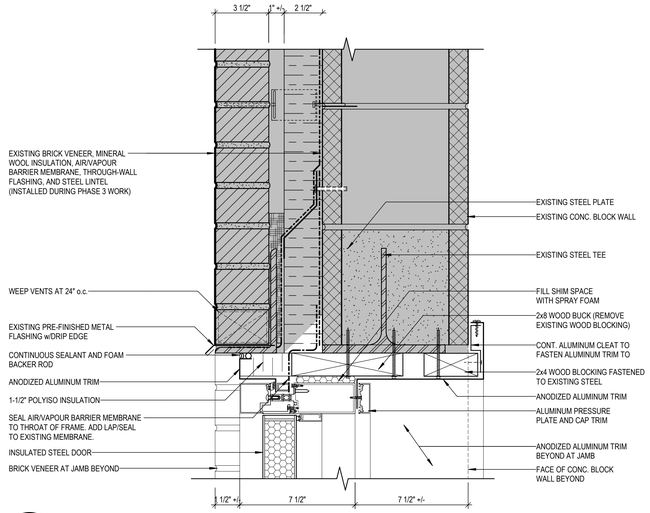
PROJECT No. 2023-157

SHEET TITLE

SECTION DETAILS

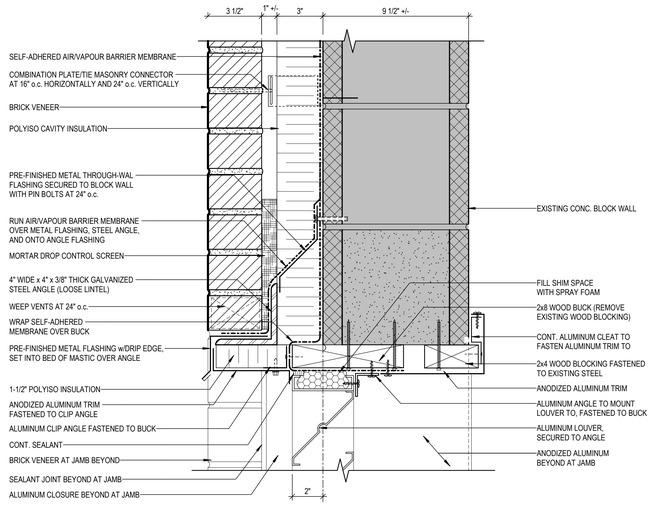
A-501

C:\Users\sd\Documents\Revitor School_ARCH_v23_dsd@fbm.ca.rvt
5/24/2024 2:07:59 PM



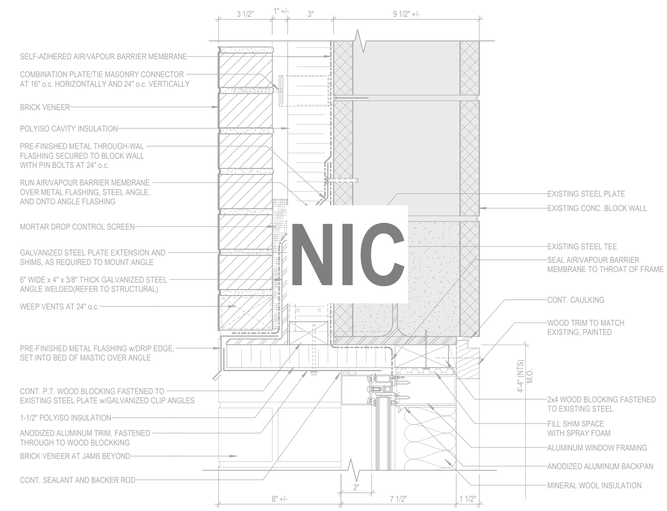
1 / A-502 DOOR HEAD AT GYM DOOR

SCALE: 3" = 1'-0"



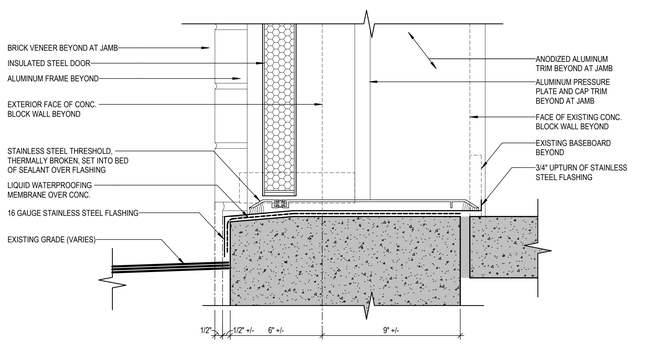
4 / A-502 LOUVER HEAD

SCALE: 3" = 1'-0"



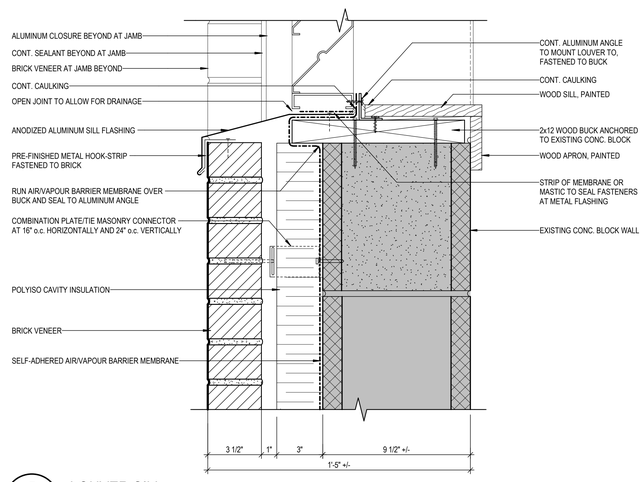
7 / A-502 WINDOW HEAD AT SPANDREL

SCALE: 3" = 1'-0"



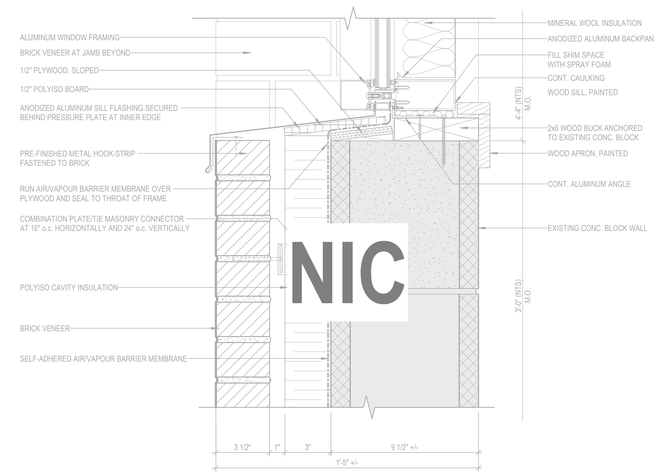
2 / A-502 DOOR THRESHOLD AT GYM DOOR

SCALE: 3" = 1'-0"



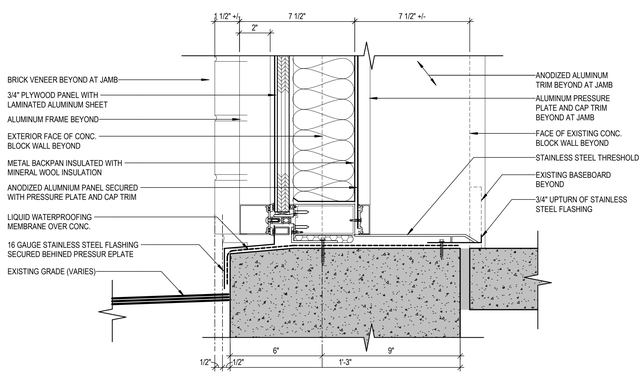
5 / A-502 LOUVER SILL

SCALE: 3" = 1'-0"



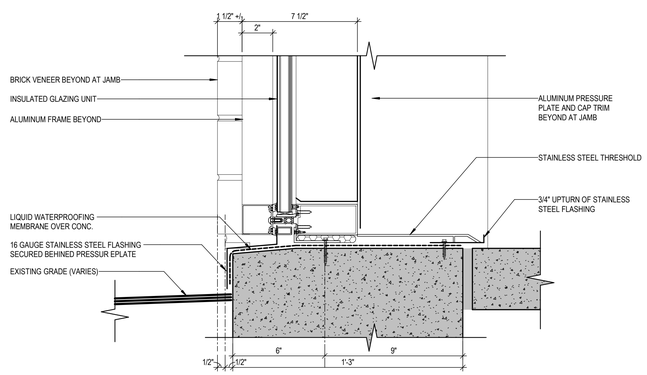
8 / A-502 WINDOW SILL AT SPANDREL

SCALE: 3" = 1'-0"



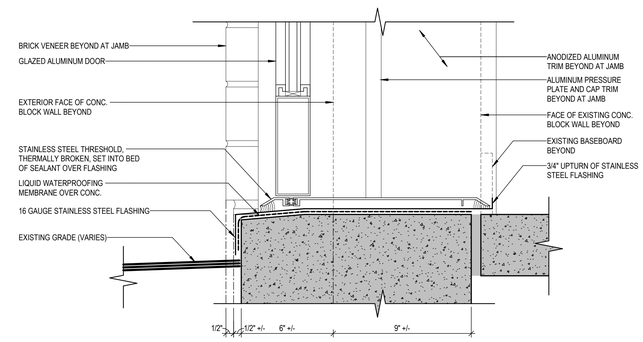
3 / A-502 BASE OF FRAME AT GYM DOOR

SCALE: 3" = 1'-0"



6 / A-502 BASE OF FRAME AT MAIN ENTRANCE

SCALE: 3" = 1'-0"



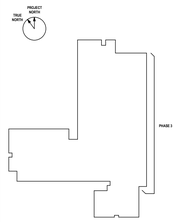
9 / A-502 DOOR THRESHOLD AT ENTRANCE DOORS

SCALE: 3" = 1'-0"

FBM
architecture
interior design
planning

H51-1660 Hollis Street, Halifax, Nova Scotia B3J 1V7
T: (902) 429 4100 architects@fbm.ca fbm.ca

KEY PLAN



No	REVISION	BY	DATE
0	ISSUED FOR TENDER (PHASE 3A, 4, 5, AND 6)		24 MAY 2024

STAMP

SCALE	3" = 1'-0"
DRAWN	LAA
CHECKED	SD
DATE	24 MAY 2024

PROJECT

A.J. SMELTZER SCHOOL
MASONRY AND WINDOWS
PHASE 4-8

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1

CLIENT

Halifax Regional Centre for Education

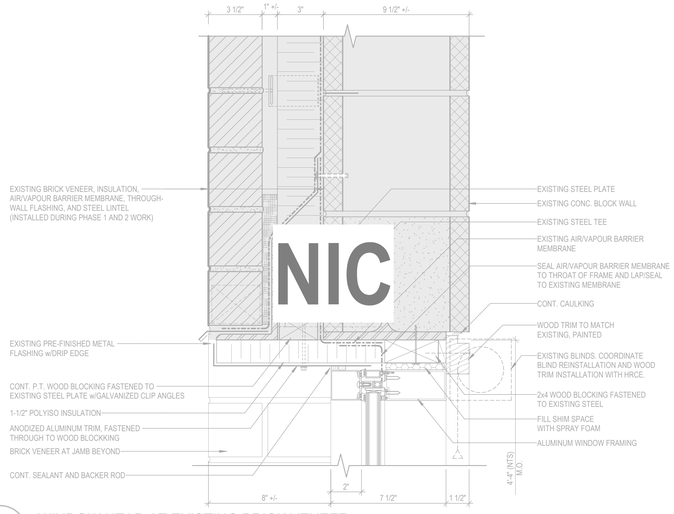
PROJECT No. 2023-157

SHEET TITLE

SECTION DETAILS

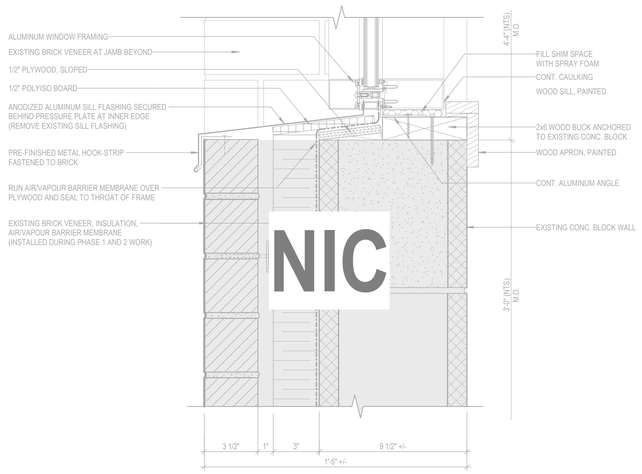
A-502

C:\Users\sydn\Documents\Smeltzer School_ARCH_v23_dsydney@fbm.ca.rvt
5/24/2024 2:21:11 PM



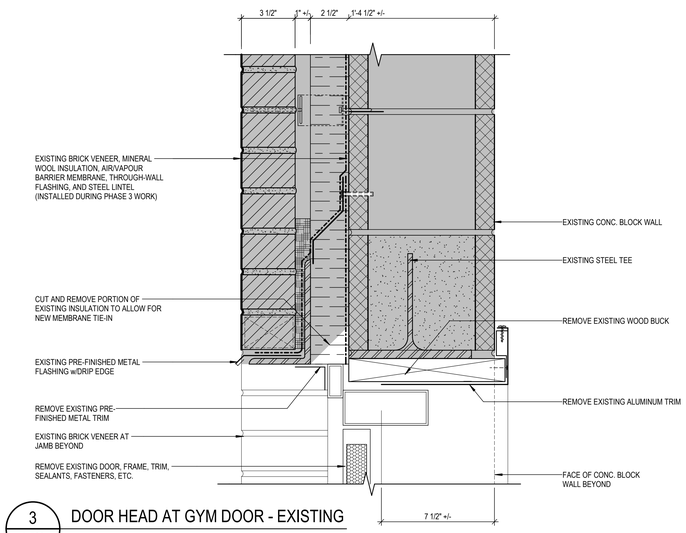
1 A-503 WINDOW HEAD AT EXISTING BRICK VENEER

SCALE: 3" = 1'-0"



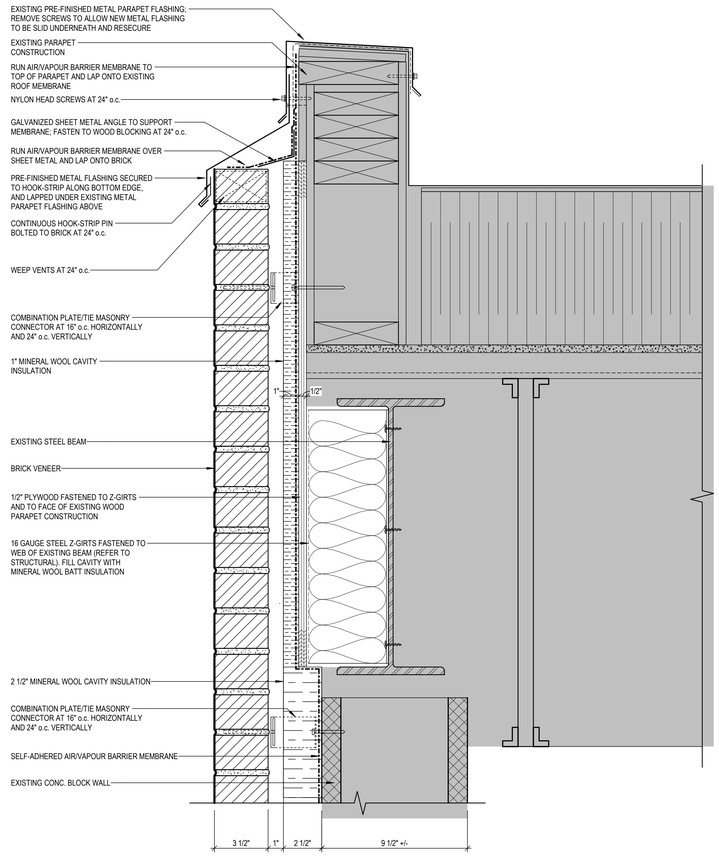
2 A-503 WINDOW SILL AT EXISTING BRICK VENEER

SCALE: 3" = 1'-0"



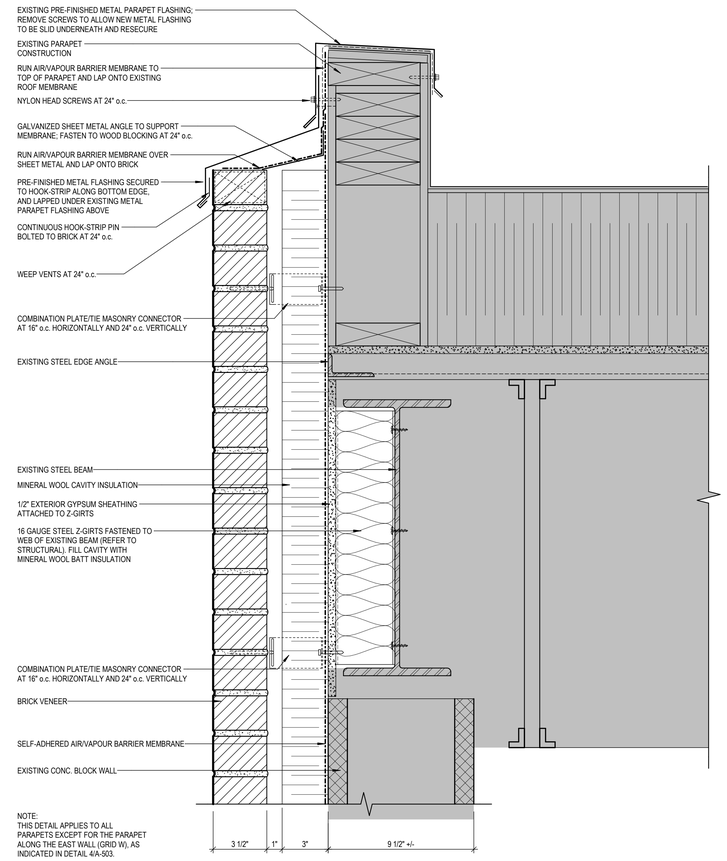
3 A-503 DOOR HEAD AT GYM DOOR - EXISTING

SCALE: 3" = 1'-0"



4 A-503 BRICK VENEER AT PARAPET AT EAST ELEVATION

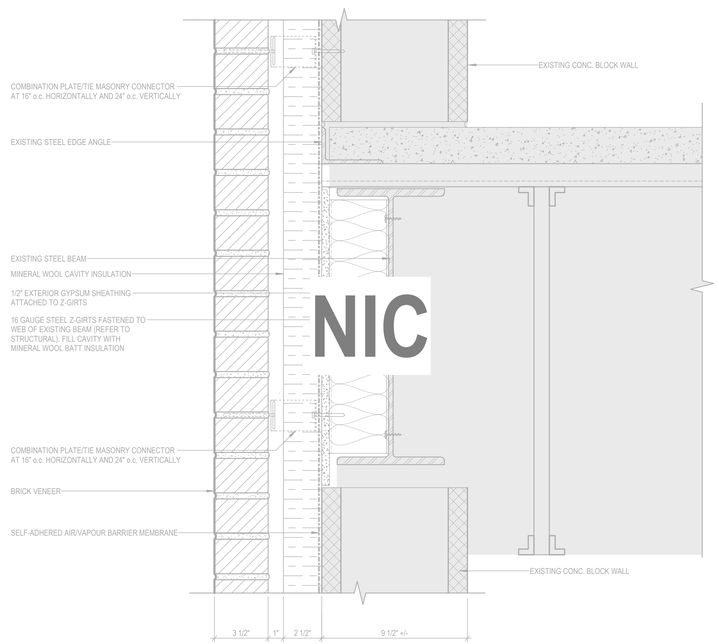
SCALE: 3" = 1'-0"



NOTE:
THIS DETAIL APPLIES TO ALL PARAPETS EXCEPT FOR THE PARAPET ALONG THE EAST WALL (GRID W), AS INDICATED IN DETAIL 4/A-503.

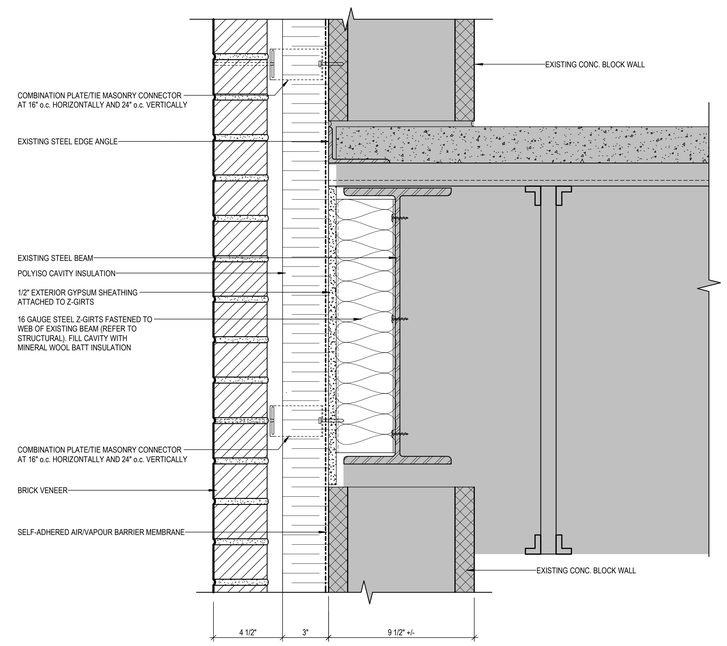
6 A-503 BRICK VENEER AT PARAPET

SCALE: 3" = 1'-0"



5 A-503 BRICK VENEER AT FLOOR EDGE - PHASE 3

SCALE: 3" = 1'-0"



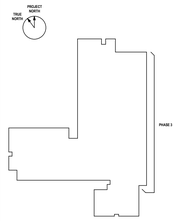
7 A-503 BRICK VENEER AT FLOOR EDGE

SCALE: 3" = 1'-0"

FBM
architecture
interior design
planning

H51-1660 Hollis Street, Halifax, Nova Scotia B3J 1V7
T: (902) 429 4100 architects@fbm.ca fbm.ca

KEY PLAN



No	REVISION	BY	DATE
0	ISSUED FOR TENDER (PHASE 3A, 4, 5, AND 6)		24 MAY 2024

STAMP

SCALE	3" = 1'-0"
DRAWN	LAA
CHECKED	SD
DATE	24 MAY 2024

PROJECT

A.J. SMELTZER SCHOOL
MASONRY AND WINDOWS
PHASE 4-8

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1

CLIENT

Halifax Regional Centre for Education

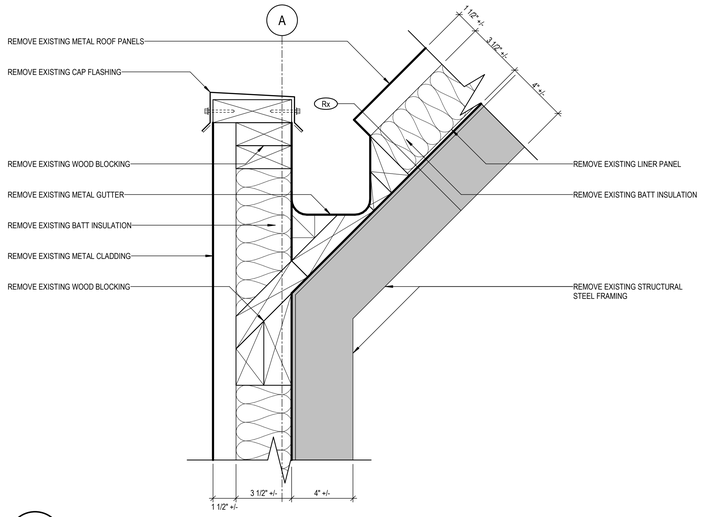
PROJECT No. 2023-157

SHEET TITLE

SECTION DETAILS

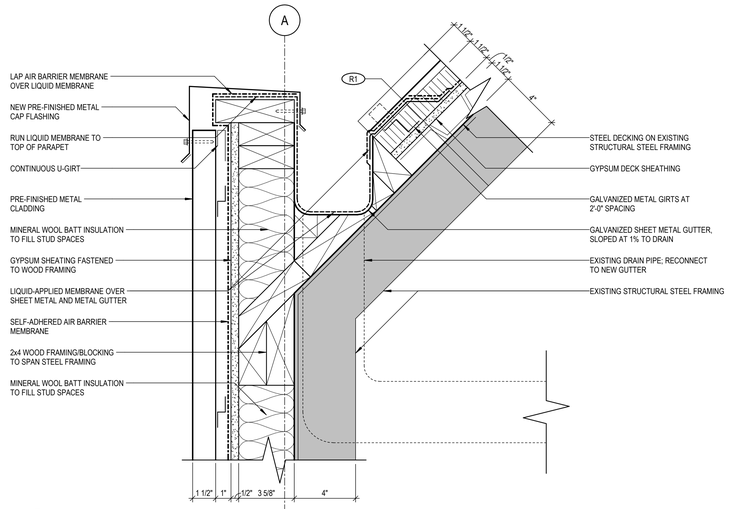
A-503

C:\Users\sd\Documents\Smeltzer Cons_WCN_v23_sd.rvt
5/24/2024 2:37:11 PM



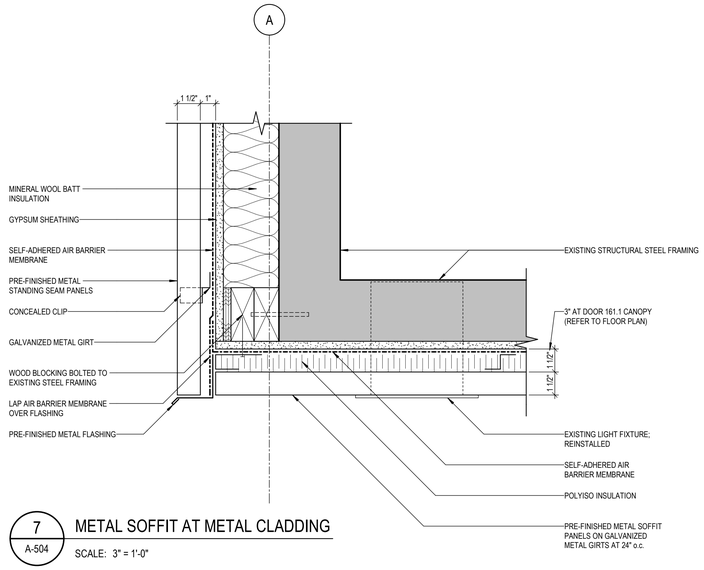
1 / A-504 GUTTER AT CANOPY (EXISTING)

SCALE: 3" = 1'-0"



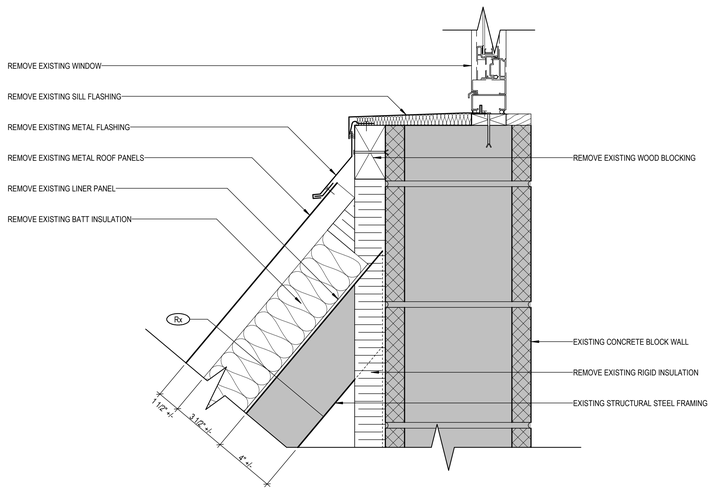
4 / A-504 GUTTER AT CANOPY (NEW)

SCALE: 3" = 1'-0"



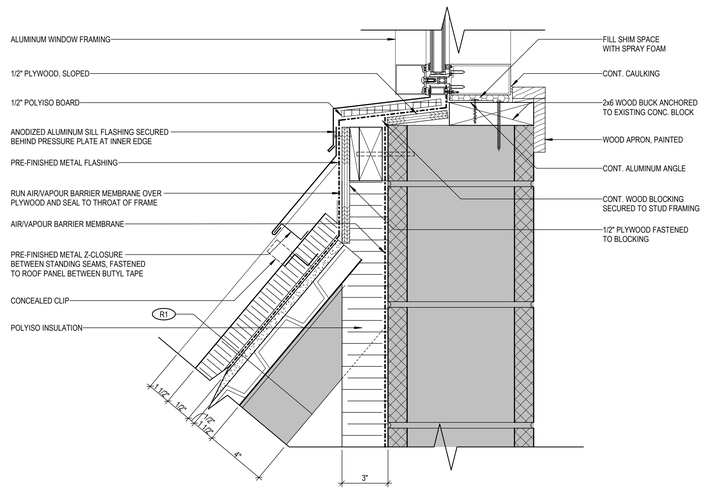
7 / A-504 METAL SOFFIT AT METAL CLADDING

SCALE: 3" = 1'-0"



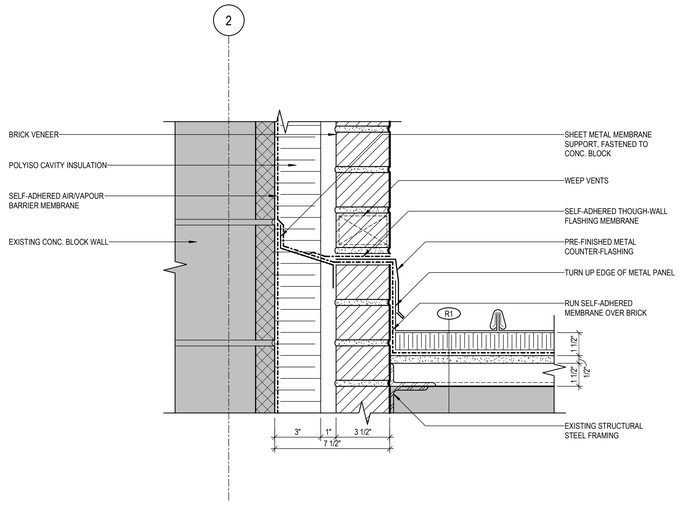
2 / A-504 METAL ROOF AT AUXILIARY ENTRANCES (EXISTING)

SCALE: 3" = 1'-0"



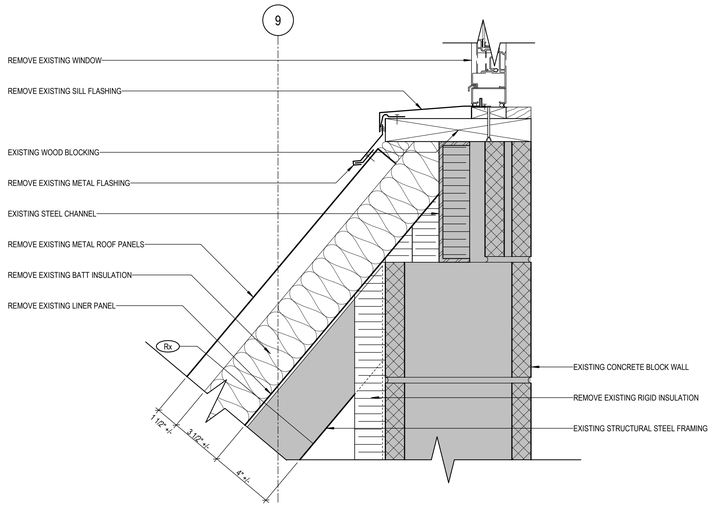
5 / A-504 METAL ROOF AT AUXILIARY ENTRANCES (NEW)

SCALE: 3" = 1'-0"



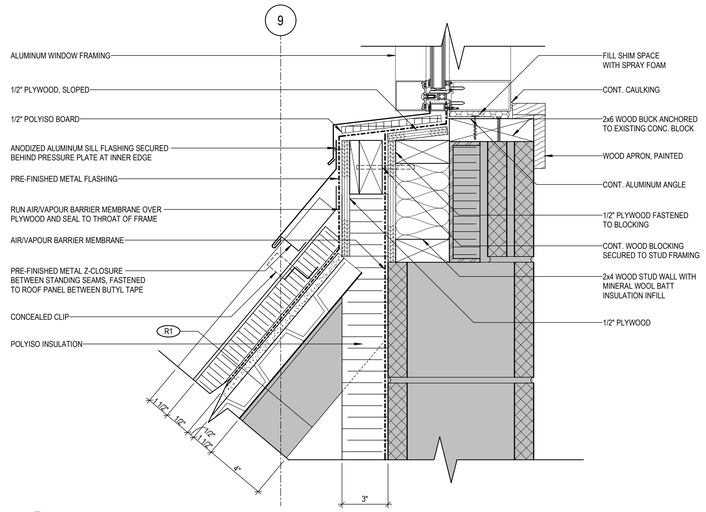
8 / A-504 STEP FLASHING AT CANOPY

SCALE: 3" = 1'-0"



3 / A-504 METAL ROOF AT MAIN ENTRANCE (EXISTING)

SCALE: 3" = 1'-0"



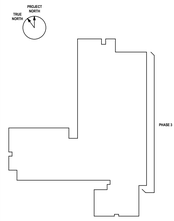
6 / A-504 METAL ROOF AT MAIN ENTRANCE (NEW)

SCALE: 3" = 1'-0"

FBM
architecture
interior design
planning

H51-1660 Hollis Street, Halifax, Nova Scotia B3J 1V7
T: (902) 429 4100 architects@fbm.ca fbm.ca

KEY PLAN



No	REVISION	BY	DATE
0	ISSUED FOR TENDER (PHASE 3A, 4, 5, AND 6)		24 MAY 2024

STAMP

SCALE	3" = 1'-0"
DRAWN	LAA
CHECKED	SD
DATE	24 MAY 2024

PROJECT

A.J. SMELTZER SCHOOL
MASONRY AND WINDOWS
PHASE 4-8

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1

CLIENT

Halifax Regional Centre for Education

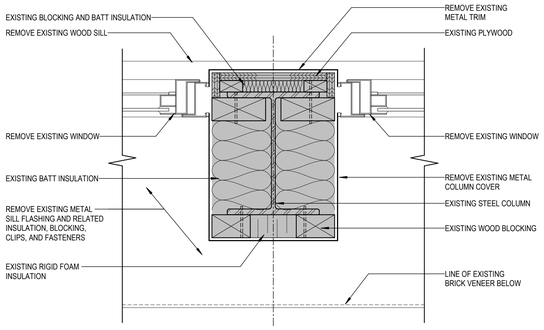
PROJECT No. 2023-157

SHEET TITLE

SECTION DETAILS

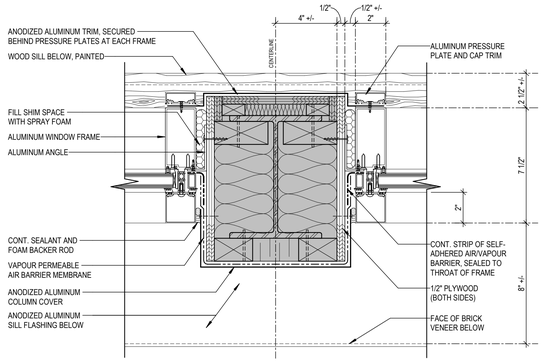
A-504

C:\Users\sdyck\Documents\Lt Pinellar Grout_ARCH_v22_dyck@fbm.ca.rvt
5/24/2024 2:01:19 PM



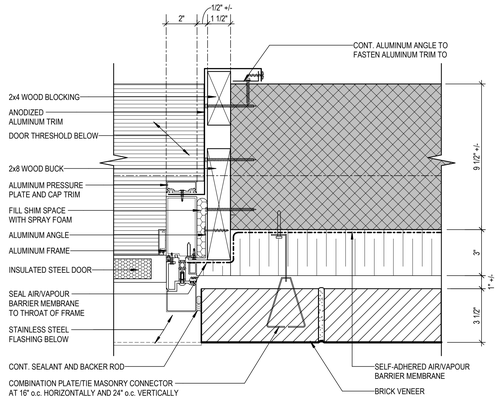
1 A-551 COLUMN COVER (EXISTING)

SCALE: 3" = 1'-0"



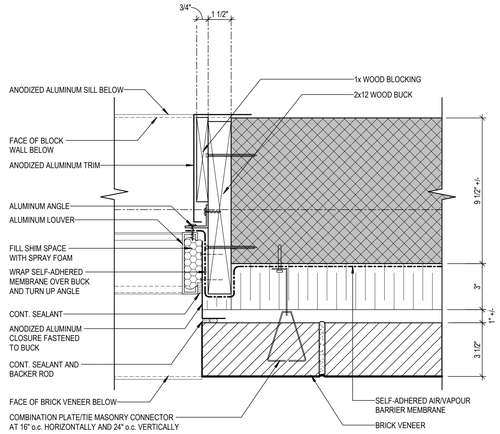
4 A-551 COLUMN COVER (NEW)

SCALE: 3" = 1'-0"



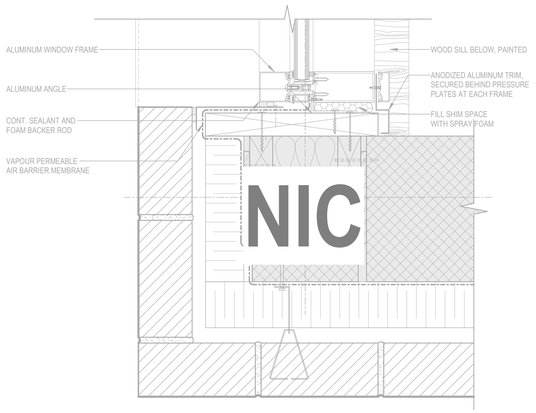
7 A-551 DOOR JAMB AT BRICK (NEW)

SCALE: 3" = 1'-0"



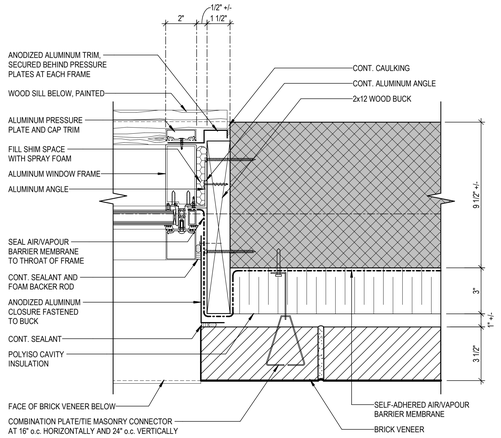
10 A-551 LOUVER JAMB AT BRICK

SCALE: 3" = 1'-0"



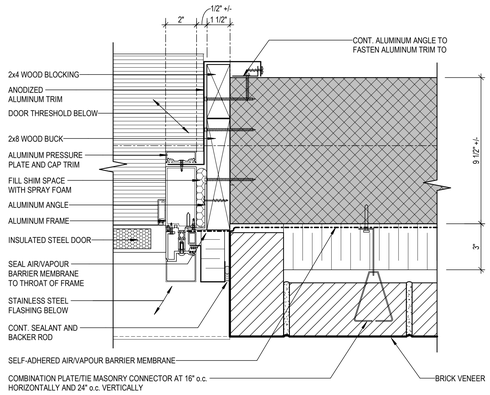
2 A-551 WINDOW JAMB AT BRICK CORNER (NEW)

SCALE: 3" = 1'-0"



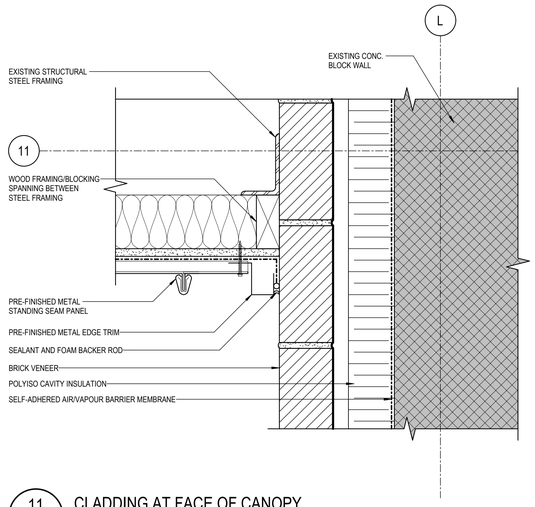
5 A-551 WINDOW JAMB AT BRICK

SCALE: 3" = 1'-0"



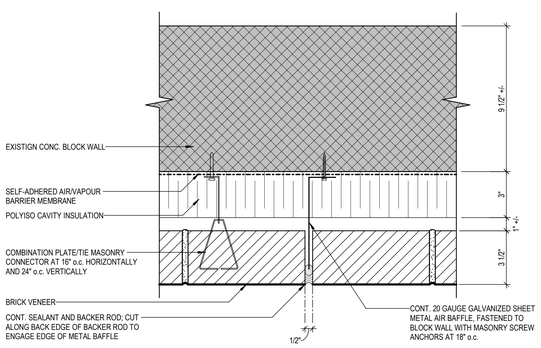
8 A-551 DOOR JAMB AT BRICK AT GYM WALL (NEW)

SCALE: 3" = 1'-0"



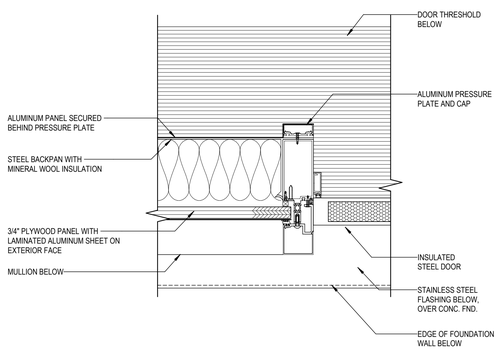
11 A-551 CLADDING AT FACE OF CANOPY

SCALE: 3" = 1'-0"



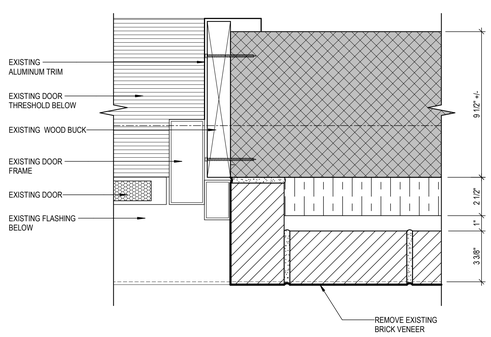
3 A-551 CONTROL JOINT AT BRICK

SCALE: 3" = 1'-0"



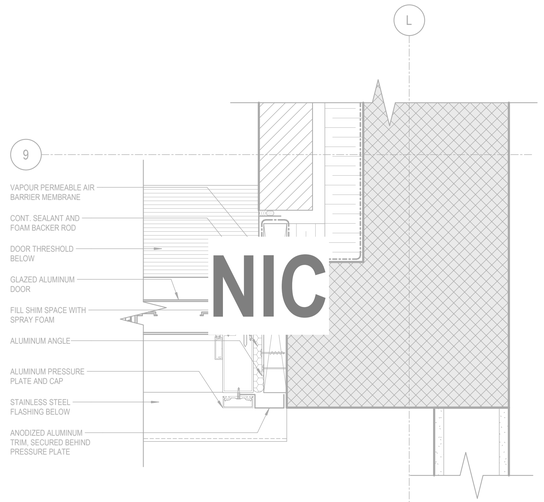
6 A-551 DOOR JAMB AT PANEL

SCALE: 3" = 1'-0"



9 A-551 DOOR JAMB AT BRICK (EXISTING)

SCALE: 3" = 1'-0"



12 A-551 DOOR JAMB AT BRICK

SCALE: 3" = 1'-0"

FBM
architecture
interior design
planning

H51-1660 Hollis Street, Halifax, Nova Scotia B3J 1V7
T: (902) 429 4100 architects@fbm.ca fbm.ca

No	REVISION	BY	DATE
0	ISSUED FOR TENDER (PHASE 3A, 4, 5, AND 6)		24 MAY 2024

STAMP

SCALE	3" = 1'-0"
DRAWN	SD
CHECKED	SD
DATE	24 MAY 2024

PROJECT

A.J. SMELTZER SCHOOL
MASONRY AND WINDOWS
PHASE 4-8

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1

CLIENT

Halifax Regional Centre for Education

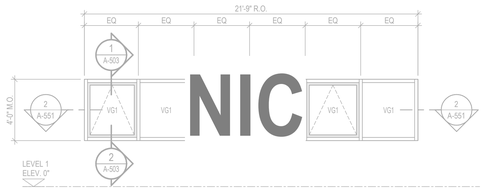
PROJECT No. 2023-157

SHEET TITLE

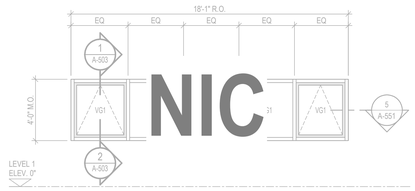
PLAN DETAILS

A-551

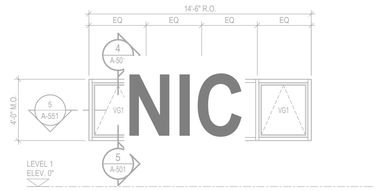
C:\Users\sdyer\Documents\Shelter School_ARCH_43_dyer@fbm.ca.rvt
5/24/2024 2:07:10 PM



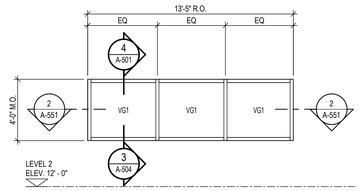
W1



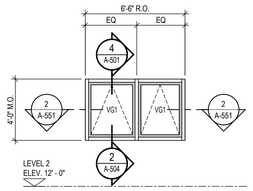
W2



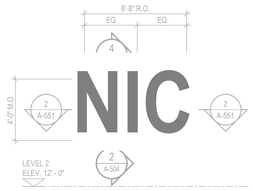
W3



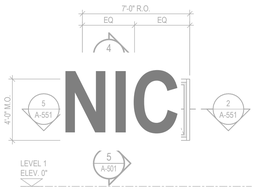
W4



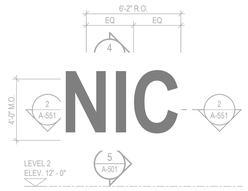
W5



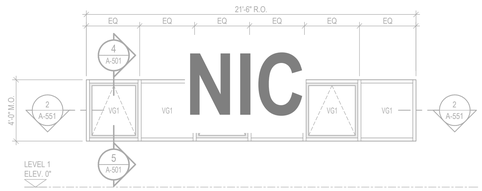
W6



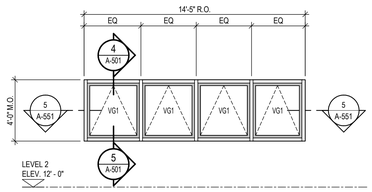
W7



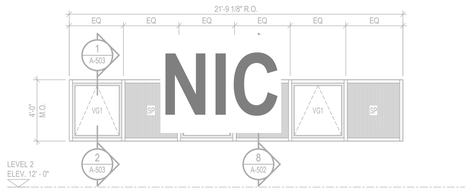
W8



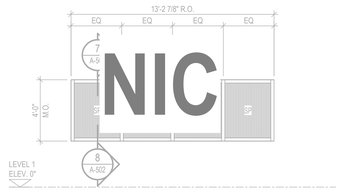
W9



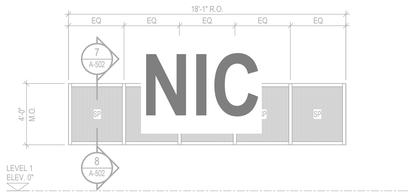
W10



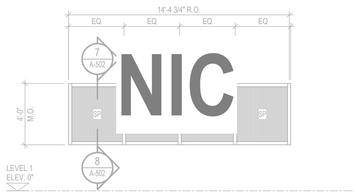
W11



W12

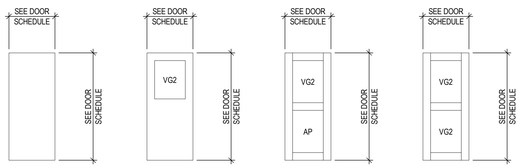


W13

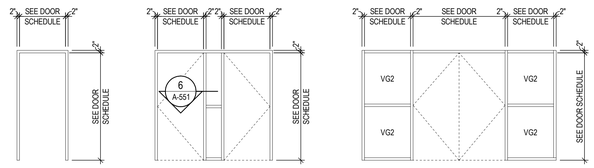


W14

DOOR TYPES



FRAME TYPES



DOOR SCHEDULE AND WINDOW LEGEND

Door Materials	Frame Materials	Glazing
AL Aluminum HM Hollow Metal Insulated	AL Aluminum	VG1 Vision Glass, Insulated, Annealed VG2 Vision Glass, Insulated, Tempered SP Glazed Spandrel with insulated backpan AP Aluminum Panel R.O. Rough Opening (dimensioned from buck to buck) M.O. Masonry Opening (existing concrete block opening) F.S. Frame Size
Finishes	**Door Types**	**Frame Types**
PF Pre-finished PT Painted	A1, A2, etc. Aluminum Doors D1, D2, etc. Hollow Metal Doors	AS1, AS2, etc. Exterior Aluminum Frames
	Jamb Details	**General Notes:**
	Refer to plan details on A-551	1. Door sizes are rebate dimensions.

DOOR SCHEDULE

	No.	Size	DOOR Type	DOOR Mat'l	DOOR Finish	FRAME Type	FRAME Mat'l	FRAME Finish	Throat	Jamb	Fire Rating	Glass	Schedule Notes	Hardware Set
	121.1	2'-3" - 0" x 7' - 0"	A1	AL	PF	AS1	AL	PF						H-3
	126.1	2'-3" - 0" x 7' - 0"	D1	HM	PT	AS1	AL	PF						H-1
	130.1	3' - 0" x 7' - 0"	D1	HM	PT	AS1	AL	PF						H-2
	143.1	3' - 0" x 7' - 0"	D1	HM	PT	AS2	AL	PF						H-2
	143.2	3' - 0" x 7' - 0"	D1	HM	PT	AS2	AL	PF						H-2
	143.3	3' - 0" x 7' - 0"	D1	HM	PT	AS2	AL	PF						H-2
	143.4	3' - 0" x 7' - 0"	D1	HM	PT	AS2	AL	PF						H-2
NIC	158.1	2'-3" - 4" x 7' - 0"	A1	AL	PF	AS3	AL	PF						H-3
	161.1	2'-3" - 0" x 7' - 0"	A1	AL	PF	AS1	AL	PF						H-4
NIC	162.1	2'-3" - 0" x 7' - 0"	A1	AL	PF	AS1	AL	PF						H-3
NIC	163.1	3' - 0" x 7' - 0"	D2	HM	PT	AS1	AL	PF						H-2

LEVEL 1: 11
TOTAL DOORS THIS SCHEDULE: 11

FBM
architecture
interior design
planning

H51-1660 Hollis Street, Halifax, Nova Scotia B3J 1V7
T: (902) 429.4100 architects@fbm.ca fbm.ca

No	REVISION	BY	DATE
0	ISSUED FOR TENDER (PHASE 3A, 4, 5, AND 6)		24 MAY 2024

STAMP

SCALE	As indicated
DRAWN	LAA
CHECKED	SD
DATE	24 MAY 2024

PROJECT
A.J. SMELTZER SCHOOL
MASONRY AND WINDOWS
PHASE 4-8

46 PRINCE STREET
LOWER SACKVILLE, NS B4C 1L1

CLIENT
Halifax Regional Centre for Education

PROJECT No. 2023-157

SHEET TITLE
WINDOWS, SCREENS & CURTAIN WALL ELEVATIONS

A-601

C:\Users\sd\Documents\Shelter School_ARCH_43_dwa@fbm.ca.rvt
5/24/2024 2:01:17 PM

Halifax
Regional Centre for Education

AJ Smeltzer School
Exterior Wall Renovation
Phase 3A, 4, 5, and 6

46 Prince Street., Lower Sackville,

NS B4C 1L1

Issued for Tender

FBM Project # 2023-157

May 24, 2024

00	**PROCUREMENT AND CONTRACTING REQUIREMENTS**	
00 01 10	List of Contents	1
00 11 10	List of Drawings	1
-	Outlined in “Halifax Regional Centre for Education” General Requirements	
01	**GENERAL REQUIREMENTS**	
-	Outlined in “Halifax Regional Centre for Education” General Requirements	
02	**EXISTING CONDITIONS**	
02 41 19	Selective Demolition	7
03	**CONCRETE**	
-	Not used	
04	**MASONRY**	
04 05 13	Masonry Mortar and Grout	4
04 22 00	Unit Masonry	6
05	**METALS**	
-	Not Used.	
06	**WOODS, PLASTICS, AND COMPOSITES**	
06 10 00	Rough Carpentry	3
06 20 00	Finish Carpentry	4
07	**THERMAL AND MOISTURE PROTECTION**	
07 21 13	Board Insulation	4
07 27 13	Air and Vapour Barriers	7
07 61 13	Metal Roofing	6
07 62 00	Sheet Metal Flashing and Trim	5
07 92 00	Joint Sealing	5
08	**OPENINGS**	
08 11 14	Metal Doors	4
08 44 13	Glazed Aluminum Framing Systems	12
08 71 00	Door Hardware	20
08 80 50	Glazing	5
09	**FINISHES**	
-	Not Used.	
10	**SPECIALTIES**	
-	Not Used.	
12	**FURNISHINGS**	
-	Not Used.	
13	**SPECIAL CONSTRUCTION**	
-	Not Used.	

END OF SECTION

ARCHITECTURE

A-101	FLOOR PLANS – EXISTING – LEVEL1
A-102	FLOOR PLANS – EXISTING – LEVEL 2
A-201	BUILDING ELEVATIONS – NEW
A-202	BUILDING ELEVATION DETAILS
A-351	WALL SECTIONS
A-352	WALL SECTIONS
A-501	SECTION DETAILS
A-502	SECTION DETAILS
A-503	SECTION DETAILS
A-504	SECTION DETAILS
A-551	PLAN DETAILS
A-601	WINDOWS, SCREENS, AND CURTAINWALL ELEVATIONS

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Drawings: refer to drawings A101, A102, A351, and GENERAL NOTES included on drawings.

1.2 REFERENCES

.1 American National Standards Institute (ANSI)
- .1 ANSI A10.8-2011, Safety Requirements for Scaffolding.

.2 American Society of Safety Professionals (ASSE)
- .1 ASSE A10.4-2016, Safety Requirements for Personnel Hoists and Employee Elevators on Construction and Demolition Sites.

.3 ASME International (ASME)
- .1 ASME B30.5-2018, Mobile and Locomotive Cranes.
- .2 ASME B30.16-2017, Overhead Underhung and Stationary Hoists.

.4 Canadian Federal Legislation
- .1 Motor Vehicle Safety Act (MVSA), 1995.
- .2 Hazardous Materials Information Review Act, 1985.

.5 Codes
- .1 National Building Code of Canada 2015.
- .2 CSA C22.1-18, Canadian Electrical Code, Part I, Safety Standard for Electrical Installations (24th Edition).
- .3 National Plumbing Code of Canada 2015.
- .4 National Fire Code of Canada 2015.

.6 CSA Group (CSA)
- .1 CSA S269.2-16, Access Scaffolding for Construction Purposes.
- .2 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.
- .3 CSA Z94.1-15, Industrial Protective Headwear - Performance, selection, care, and use.
- .4 CSA Z94.2-14, Hearing Protection Devices - Performance, Selection, Care, and Use.
- .5 CSA Z94.3-15, Eye and Face Protectors, Includes Update No. 1.
- .6 CAN/CSA Z94.4-11(R2016), Selection, Use, and Care of Respirators, Includes Update No. 1 (2012).
- .7 CSA Z195-14, Protective Footwear.
- .8 CSA Z259.1-05 (R2015), Body Belts and Saddles for Work Positioning and Travel Restraint.
- .9 CSA Z259.10-18, Full Body Harnesses.

.7 International Organization for Standardization (ISO)
- .1 ISO 4302:2016, Cranes - Wind load assessment.

.8 Provincial Legislation
- .1 Nova Scotia Occupational Health and Safety Act and Regulations made under the Act.
- .2 Technical Safety Standards Regulations made under Section 50 of the Technical Safety Act S.N.S. 2008, c. 10, N.S. Reg. 102/2014 (effective July 1, 2014) as amended to N.S. Reg. 41/2018 (effective March 6, 2018).
- .3 Other legislation specific to authority having jurisdiction for all Work governed by this Section.

1.3 SPECIAL CONSTRAINTS

.1 Any fire alarm or fire extinguishing systems disruption requires a 24-hour fire watch for the duration of the disruption.

.2 The health and safety of supervisors, workers and trades, consultants' staff, HRCE's staff, students, and the general public is a priority. Take all precautions necessary.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Pre-Demolition Meeting: Conduct a pre-demolition meeting at project site to confirm extent of salvaged and demolished materials and to review Contractor's demolition plan. Invite Contractor, Consultant and HRCE representative to meeting and provide minimum 5-days' advance notice to all parties.

.2 Coordination:

.1 Coordinate demolition work so that Work of this Section adheres to aesthetic criteria established by the Drawings and specified dimensions with all elements in planes as drawn, maintaining their relationships with all other building elements.

.2 Coordinate with HRCE representative.

.3 Coordinate with HRCE representative for shutoff, capping, and continuation of utility services.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Division 01 requirements.

.2 Qualification Data: For firms and persons specified below to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses and other information specified.

.3 Prior to beginning of Work on site submit detailed Waste Reduction Workplan in accordance with Division 01 requirements.

.4 Removal and Dismantling Program: Prepare and submit a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of removal and dismantling work, including protection of surrounding and substrate materials and site.

.5 Proposed Dust-Control and Noise-Control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation.

1.6 QUALITY ASSURANCE

.1 Regulatory Requirements: Perform work as follows; use most restrictive requirements where differences occur between the municipal, provincial and federal jurisdictions:

.1 Provincial and Federal Requirements: Perform work in accordance with governing environmental notification requirements and regulations of the authorities having jurisdiction.

.2 Municipal Requirements: Perform hauling and disposal operations in accordance with regulations of regional and municipal authorities having jurisdiction.

.3 Comply with the requirements and instructions of affected utilities, including but not necessarily limited to water, power, sewage, and communications (telephone, internet, etc.).

.4 Conform to Workers' Compensation Board of Nova Scotia guidelines.

.5 Conform to applicable portions of Nova Scotia's Occupational Health and Safety Act and Regulations made under the Act.

.6 Conform to Halifax Regional Municipality bylaws, ordinances and regulations governing this type of work.

.2 Demolition Firm Qualifications: an experienced firm that has specialized in demolition work similar in material and extent to that indicated for this project.

1.7 SITE CONDITIONS

.1 Investigate site and structure to determine dismantling, processing and storage logistics required prior to beginning of Work. Note all characteristics and irregularities affecting the work of this Section. Identify locations of all utilities, embedded conduits and services, and other hidden-from-view elements that may adversely affect the project.

.2 Develop strategy for deconstruction and demolition to facilitate optimum salvage of reusable and recyclable materials.

.3 Protect trees, plants and foliage on site and adjacent properties where indicated.

.4 Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities:

.1 Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from HRCE.

.5 Should material resembling spray or trowel-applied asbestos, or other asbestos containing material, or other designated substance listed as hazardous as defined in the Hazardous Materials Act be encountered, stop work in location identified, take preventative measures, and notify HRCE immediately.

Part 2 Products

2.1 GENERAL SAFETY REQUIREMENTS

.1 Comply with the requirements of Division 01 General Requirements.

.2 Comply with Nova Scotia Technical Safety Standards Regulations, and Occupational Health and Safety Act and Regulations as applicable to the Work.

.3 Meet or exceed the requirements of NBCC 2015.

.4 Comply with the directions and requirements of all authorities having jurisdiction.

.5 Ensure all parties at site are properly equipped with suitable CSA-certified personal protective equipment (PPE), safety devices and apparel (e.g., gloves, eye protection, safety boots, safety hardhat, NIOSH-approved respiratory protection, etc.).

.6 All electrical work involving energized electrical installations shall be performed by an electrician with a Certificate of Qualification issued by the Province of Nova Scotia.

.7 Ensure workers preforming regulated work have the requisite Certificates of Qualification pertaining to their trade.

.8 Obtain and pay for all permits required by authorities having jurisdiction that pertain to the Work of this Section.

.9 Scaffolding erection shall meet or exceed the requirements of CSA S269.2.

.10 Personnel hoists and employee elevators and their operation shall meet or exceed the requirements of ASSE A10.4-2016.

.11 Overhead underhung and stationary hoists and their operation shall meet or exceed the requirements of ASME B30.16.

.12 Mobile and locomotive cranes and their operation shall meet or exceed the requirements of ASME B30.5.

.13 Cranes shall meet ISO standards for erection, maintenance and operation.

.14 Comply with the requirements of Crane Operators Regulations made under Section 49 of the Nova Scotia Technical Safety Act.

2.2 DEBRIS

.1 Make all arrangements for transport and disposal of all demolished materials from the site.

2.3 EQUIPMENT

.1 Supply all tools and equipment suitable for the Work and project conditions as required.

2.4 REPAIR MATERIALS

.1 Use repair materials identical to existing materials:

.1 If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible, and that has physical properties and performance characteristics that match or exceed the existing.

.2 Use material with an installed performance that equals or surpasses that of existing materials.

.3 Comply with material and installation requirements specified in the technical specification Sections of this Contract.

.2 Hoarding and Dust Screens: refer to Division 01 requirements and as required by HRCE.

Part 3 Execution

3.1 EXAMINATION

.1 Inspect building with HRCE and Consultant and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.

.2 Locate and protect utilities. Verify that utilities have been disconnected and capped as required. Coordinate with HRCE.

.3 Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

.4 Notify HRCE and Consultant where existing mechanical, electrical, or structural elements conflict with intended function or design:

.1 Investigate and measure the nature and extent of conflict and submit a written report to HRCE and Consultant.

.2 Consultant will issue additional instructions or revise drawings as required to correct conflict.

.5 Perform surveys as the Work progresses to detect hazards resulting from demolition activities.

3.2 COORDINATION

.1 Coordinate and cooperate with other trades as required to maintain the construction schedule and avoid disruption of work flows or otherwise cause the need for reinstallation of previous work already completed.

3.3 PREPARATION

.1 Obtain necessary permits and approvals required by authorities having jurisdiction.

.2 Provide copies to HRCE prior to start of Work on site, and within 24 hours of written request.

.3 Maintain or otherwise re-route as required electrical, telephone and communication service lines effected by the work of this Section to ensure continuity and ongoing, uninterrupted performance of systems effected.

.1 Coordinate such utility work with HRCE.

.4 Post warning signs on electrical lines and equipment that must remain energized to serve other products and parts of the Work during period of demolition.

.5 Locate and protect utility lines. Do not disrupt active or energized utilities designated to remain undisturbed.

.6 Disconnect and cap designated services as required. Comply with requirements of utility companies and authorities having jurisdiction.

.7 Identify and mark all equipment and materials identified to be retained by HRCE operator or to be re-used in subsequent construction. Separate and store items to be retained in an area away from area of demolition and protect from accidental disposal.

.8 Provide and maintain barricades, warning signs, protection for personnel, occupants and the public during the full extent of the Work. Read drawings carefully to ascertain extent of protection required.

.9 Mark all materials required to be re-used, store in a safe place until ready for re-installation.

.10 Adjust all junction boxes, receptacles and switch boxes flush with new wall construction where additional layers to existing construction are indicated.

3.4 PROTECTION

.1 Per Section 01 11 00, Part 12 Protection of Work Property and Persons, of HRCE's 'front end' document, and as supplemented below.

.1 Take precautions to guard against damage to adjacent materials, substrates, finishes and assemblies. Be liable for any damage or injury caused.

.2 Fencing:

.1 The outside work area shall be appropriately demarked and/or surrounded by rigid chain link panels or fencing to prevent unauthorized entry to the work area. Any area of roof having work completed is to be covered below with this fencing approximately 10' from the edge of the building. It is to be maintained at all times throughout the project. All waste disposal bins are to be fenced in using the same type of fencing as indicated above during working hours.

.2 Fencing shall be continuous around the work area. Ensure that fencing is properly secured and anchored at its base to prevent displacement and collapse. This requirement relates to fencing failures observed at previous HRCE work sites where fencing was damaged or had fallen and was not properly maintained.

.3 Waste disposal Bins: After working hours, all waste disposal bins shall be located a minimum of 25 feet from any structure. Any windows where the debris chute is located are to be covered.

.4 Overhead Protection: Provide overhead protection at all doors and entrances. Protection is to be comprised of tube and clamp scaffolding structure complete with planks as required to protect areas from work above, for a distance of ten feet from edge of

building. All workers shall contain their activity to the work site area. Access to the school shall only be allowed as planned in coordination with HRCE Operations and the school administration.

.2 Cease operations and notify HRCE if safety or any adjacent work appears to be endangered. Do not resume operations until reviewed with HRCE.

.3 Ensure safe passage of building occupants around and through area of demolition.

.4 Keep noise, dust, and inconvenience to occupants to minimum.

.5 Protect building systems, services and equipment.

.6 Provide temporary dust screens, covers, railings, supports and other protection as required.

.7 Provide and maintain fire prevention equipment and alarms accessible during demolition.

3.5 SELECTIVE DEMOLITION

.1 Coordinate with project drawings for items to be carefully dismantled, cleaned and safeguarded for reuse during the project.

.2 Materials not identified for reuse during later phases of Work, or identified to be set aside and delivered to HRCE, shall be removed from site and are property of Contractor.

.3 Work by HRCE:

.1 Disconnection of existing fixtures and utilities mounted on exterior wall.

.4 Remove and store materials to be salvaged in manner to prevent damage.

.5 Store and protect in accordance with requirements for maximum preservation of material.

.6 Handle salvaged materials as new materials.

.7 Where existing materials are to be re-used in Work, use special care in removal, handling, storage and re-installation to assure proper function in completed work.

.8 Remove windows, doors, frames, and related fasteners, connectors, flashings, sealants, etc.

.9 Systematically remove finishes, furnishings, and mechanical and electrical equipment of value, as indicated, or as instructed by HRCE and/or Consultant.

.10 Disassemble exterior brick veneer construction and related components for removal and remove materials from structure; repair existing to remain to match adjacent.

.11 Demolish and dismantle in accordance with CSA S350 and other applicable safety standards.

.12 Workers shall utilize adequate fall protection in compliance with requirements of Division 01.

.13 Maintain structural integrity of structure.

.14 Demolish and dismantle work in a neat and orderly manner and in accordance with all governing regulations.

.15 At end of each day’s work, leave Work in safe condition so that no part is in danger of toppling or falling.

.16 Demolish in a manner to minimize dusting and to prevent migration of dust.

.17 Selling or burning of materials on the site is not permitted.

.18 Demolish ceiling finishes scheduled for demolition.

.19 Remove all wall coverings scheduled for demolition. Patch and repair wall surfaces with skim coat of gypsum board joint compound leaving wall surfaces smooth and even ready for new wall finishes.

.20 Patch and repair all walls, floor and ceilings damaged during demolition with material matching adjacent walls, prepare ready for new finishes.

.21 Patch and repair all mechanical equipment and electrical fixtures damaged or exposed during demolition to match adjacent finished surfaces.

3.6 REMOVAL FROM SITE

.1 Transport material designated for alternate disposal to approved facilities and receiving organizations.

.2 Dispose of materials not designated for alternate disposal in accordance with applicable regulations.

3.7 CLEANING

.1 Progress Cleaning: Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment. Perform cleaning after installation to remove construction and accumulated environmental dirt.

.3 Manage and dispose of demolition and construction waste materials in accordance with Division 01 requirements.

3.8 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent assemblies, materials and finishes caused by Work of this Section.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 04 22 00 – Unit Masonry.

1.2 REFERENCE STANDARDS

.1 CSA Group (CSA)

.1 CSA A23.1/A23.2-14, Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.

.2 CAN/CSA-A179-14, Mortar and Grout for Unit Masonry.

.3 CAN/CSA-A371-14, Masonry Construction for Buildings.

.4 CAN/CSA-A3000-13, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).

.2 International Masonry Industry All-Weather Council (IMIAC)

.1 Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

.3 South Coast Air Quality Management District (SCAQMD)

.1 SCAQMD Rule 1168-[05], Adhesive and Sealant Applications.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for masonry mortar and grout and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit 1 copy of WHMIS SDS in accordance with Section 01 35 29 - Health and Safety Requirements 01 35 43 - Environmental Procedures. Indicate VOC's mortar, grout, parging, colour additives and admixtures. Expressed as grams per litre (g/L).

.3 Manufacturers' Instructions: submit manufacturer's installation instructions.

1.4 QUALITY ASSURANCE

.1 Test Reports: submit certified test reports including sand gradation tests in accordance with CAN/CSA-A179 showing compliance with specified performance characteristics and physical properties.

.2 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

.3 Mock-ups:

.1 Construct mock-ups in accordance with Section 04 22 00 – Unit Masonry.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:

.1 Store materials off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Store and protect masonry mortar and grout packages from nicks, scratches, and blemishes.

.3 Replace defective or damaged materials with new.

.4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials as specified in Construction Waste Management Plan.

1.6 SITE CONDITIONS

.1 Ambient Conditions: maintain materials and surrounding air temperature to:

.1 Minimum 10 degrees C prior to, during, and 48 hours after completion of masonry work.

.2 Maximum 32 degrees C prior to, during, and 48 hours after completion of masonry work.

.2 Weather Requirements: CAN/CSA-A371 and the International Masonry Industry All-Weather Council (IMIAC) - Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

Part 2 Products

2.1 MATERIALS

.1 Use same brands of materials and source of aggregate for entire project.

.2 Cement:

.1 Portland Cement: to CAN/CSA-A3000, Type GU - General use hydraulic cement gray colour.

.1 Use low VOC products in compliance with SCAQMD Rule 1168.

.3 Aggregate: supplied by one supplier.

.4 Fine Aggregate: to CAN/CSA-A179, natural sand.

.5 Water: clean and potable.

.6 Lime: Hydrated Lime: to CAN/CSA-A179, Type S

2.2 MORTAR MIXES

.1 Mortar mixes specified in this section are based on proportion specifications for portland cement-lime mortars, per Table 3 of CSA A179, Type N.

.1 Parts by volume: 1 part cement, 1 part lime, and 6 parts aggregate.

.2 Mortar for exterior masonry above grade:

.1 Non-Load Bearing: N based on proportion specifications.

2.3 MORTAR MIXING

.1 Mix mortar ingredients in accordance with CAN/CSA-A179 in quantities needed for immediate use.

.2 Maintain sand uniformly damp immediately before mixing process.

.3 Using anti-freeze compounds including calcium chloride or chloride based compounds is prohibited.

.4 Adding air entraining admixture to mortar mix is prohibited.

.5 Use a batch type mixer in accordance with CAN/CSA-A179.

.6 Re-temper mortar only within two hours of mixing, when water is lost by evaporation.

.7 Use mortar within 1-1/2 hours after mixing at temperatures of 25 degrees C or higher, and 2-1/2 hours at temperatures under 25 degrees C.

2.4 MIX TESTS

.1 Tests specified in this section are to be paid for by the contractor.

.2 Testing Mortar Mix:

.1 Test mortar (laboratory) in accordance with CAN/CSA-A179, for mortar-based proportion specification. Test prior to construction as part of mock-up and during construction for:

.1 Compressive strength.

.2 Air content.

.2 Results of laboratory tests are to be used as a baseline for field tests (mortar cubes) specified in 3.5.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for masonry installation in accordance with manufacturer's written instructions.

.1 Inform Consultant of unacceptable conditions immediately upon discovery.

.2 Proceed with installation only after unacceptable conditions have been remedied and approval to proceed from Consultant has been provided.

3.2 CONSTRUCTION

.1 Do masonry mortar work in accordance with CAN/CSA-A179 except where specified otherwise.

3.3 MIXING

.1 Clean mixing boards and mechanical mixing machine between batches.

.2 Mortar: weaker than units it is binding.

.3 Contractor to appoint one individual to mix mortar, for duration of project. In event that this individual is changed, mortar mixing must cease until new individual is trained, and mortar mix is tested.

3.4 MORTAR PLACEMENT

.1 Install mortar to manufacturer's instructions.

.2 Install mortar and grout to requirements of CAN/CSA-A179.

3.5 FIELD QUALITY CONTROL

.1 Tests specified in this section are to be paid for by the Contractor.

.2 Conduct testing on field prepared mortar cubes for compressive strength and air content, taken at 7 and 28 days.

.3 Test and evaluate mortar prior to construction in accordance with CAN/CSA-A179.

.1 Frequency of testing:

.1 One (1) test for east elevation work.

.4 Field Services: Contractor to coordinate with consultant for periodic site reviews.

3.6 CLEANING

.1 Per Section 04 22 00, Unit Masonry.

3.7 PROTECTION

.1 Per Section 04 22 00, Unit Masonry.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 04 05 13 – Masonry Mortar and Grout.

.2 Section 07 21 13 – Board Insulation

.3 Section 07 27 14 – Air and Vapour Barriers

.4 Section 07 62 00 – Sheet Metal Flashing and Trim

.5 Section 07 92 00 – Joint Sealing

.6 Section 08 11 14 – Metal Doors and Frames

.7 Section 08 44 13 – Glazed Aluminum Framing Systems

1.2 REFERENCES

.1 ASTM International (ASTM)

.1 ASTM A153/A153M-09, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

.2 ASTM A580/A580M-18, Standard Specification for Stainless Steel Wire.

.3 ASTM A653/A653M-13, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.4 ASTM C216-15, Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale).

.2 CSA International (CSA)

.1 CSA A23.1-14/A23.2-14, Concrete Materials and Methods of Concrete Construction/Methods of Test for Concrete, Includes Update No.1 (2011).

.2 CAN/CSA A82.1-M87 (R2003), Burned Clay Brick (Solid Masonry Units Made From Clay or Shale).

.3 CSA A370-14, Connectors for Masonry.

.4 CSA A371-14, Masonry Construction for Buildings.

.5 CSA S304.1-04(R2010), Design of Masonry Structures.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Coordination:

.1 Coordinate lines, levels and coursing with work of other Sections.

.2 Obtain built-in items prior to start of this work.

.2 Pre-Installation Meetings: convene pre-installation meeting one week prior to beginning work of this Section and on-site installation, with Contractor's representative, trade contractor, material supplier and Consultant to:

.1 Verify project requirements including specification and details for project.

.2 Confirm required mortar testing; review batch control and grouting procedures.

.3 Co-ordination with related Work including, but not limited to, door installation, air/vapour membranes and insulation.

.4 Review cavity drainage requirements and methods for keeping mortar out of cavity spaces.

.5 Coordinate crack control measures.

.6 Review membranes and membrane flashing materials and details used for construction.

.7 Confirm trowelled or tooled joints to concealed and exposed masonry faces.

.8 Review methods for controlling efflorescence during construction.

.9 Review hot and cold weather requirements.

1.4 SUBMITTALS

.1 Provide submittals in accordance with the following:

.1 Provide manufacturer's printed product literature, specifications and data sheet. Indicate masonry types, shapes, sizes, and textures.

.2 Cementitious Materials: per Section 04 05 13.

.2 Submit samples in accordance with the following:

.1 Provide one clay brick unit to show texture and colour variance of finish.

.2 Obtain review comments from Consultant prior to ordering.

1.5 QUALITY ASSURANCE

.1 Sole Source: Obtain brick masonry from a single manufacturer for entire project. Conform to CSA A371, except as modified by this specification.

.2 The masonry contractor shall be a member in good standing of the Canadian Masonry Contractors' Association (CMCA) through a registered Chapter.

.3 The masonry contractor shall have a minimum of 5 years of experience on projects of similar size and magnitude and shall provide continuous active supervision by a journeyman mason while masonry work is in progress.

.4 Connectors and joint reinforcement shall conform to CSA A370.

.5 Miscellaneous masonry accessories and their use where not otherwise specified but shown or required for proper completion of the Work, shall conform to CSA A371.

1.6 MOCK-UPS

.1 Construct one mock-up panel of unit masonry construction. Construct mock-up to establish a standard of construction, workmanship, and appearance.

.2 Do not continue with work of this Section until Consultant has reviewed mock-up.

.3 Accepted mock-up may form part of Work.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Deliver masonry units on pallets or cubes, suitably protected from road grime and moisture absorption due to exposure to rain or melting snow.

.2 Unload and store on dry, level areas.

.3 Deliver cement, lime, and mortar in dry condition with manufacturer’s label intact and store under waterproof cover and protected from elements.

1.8 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and divert waste materials from landfill.

1.9 SITE CONDITIONS

.1 Ambient Conditions: maintain materials and surrounding air temperature to:

.1 Minimum 10 degrees C prior to, during, and 48 hours after completion of masonry work.

.2 Maximum 32 degrees C prior to, during, and 48 hours after completion of masonry work.

.2 Provide adequate bracing for masonry during construction and until permanent lateral supports are in place.

1.10 WARRANTY

.1 Contractor agrees to correct any deficiencies of labour or material found in the work performed for a period of 5 years from the date of Substantial Performance.

Part 2 Products

2.1 BRICK MASONRY UNITS

.1 Face brick, to CSA A82.1: by Shaw Brick, physical properties and performance criteria, as follows:

.1 ASTM C216, Type S metric modular.

.2 Compressive strength (Gross Area), to CSA A82.1: 80 MPa.

.3 Absorption (24 hr. cold water), to CSA A82.1: 3%.

.4 Maximum Saturation Coefficient, to CSA A82.1: 0.78.

.5 Freeze-Thaw test results after 50 cycles, to CSA A82.1: not to exceed 0.5% dry mass weight loss.

.6 Initial Rate of Absorption (IRA) maximum, to CSA A82.1: 1g/min/5,000 mm^2.

.7 Colour and texture: to match existing brick veneer.

2.2 MORTAR AND GROUT MATERIALS

.1 Mortar colour at brick walling: to match existing mortar.

2.3 TIES AND ANCHORS

.1 To CSA A370 and CSA S304.

.2 At exterior brick masonry veneer to concrete block back-up walls:

.1 Masonry veneer connector assembly to be comprised of tie and plate components, as specified.

.1 Plate: 1.5mm (16 gauge), 2” wide with 1” return bend with three holes for screw connection to substrate material. Slotted connection for ties. Length of plate to suit existing cavity thickness.

.1 Hot dipped galvanized to ASTM A153/A153M.

.2 Tie: 4.76mm diameter wire.

.1 Stainless steel to ASTM A580 / A580M.

.3 Fasteners, as recommended by manufacturer, Type 316 stainless steel.

.4 Acceptable material:

.1 BL-407, by Blok-Lok.

.2 Slotted Rap-Tie, by Fero.

.3 Approved alternative.

.2 Accessories:

.1 Insulation support/retainer: Polyethylene. Friction fit onto plate to hold insulation snug against sheathing/air barrier.

.1 Standard of acceptance: Wedge-Lok, by Blok-Lok.

2.4 FLASHING

.1 Air/Vapour Barrier Through-wall Flashing Membrane: per Section 07 27 14.

.2 Sheet metal flashing: per Section 07 62 00.

2.5 ACCESSORIES

.1 Sealants and joint fillers: per Section 07 92 00.

.2 Bond Breaker Strips: #15 asphalt saturated, organic roofing felt in accordance with CSA A123.3.

.3 Cavity Drainage Material: Pre-manufactured cavity insert, sized for width of cavity designed to offset or stagger the accumulation of mortar droppings to reduce risk of clogging vents or weeps:

.1 Acceptable Materials:

.1 Mortar Net USA, Mortar Net.

.2 Blok-Lok, Mor-Control.

.4 Air Circulation and Weep Vents (insect and rodent proof):

.1 Acceptable Materials:

.1 CavClear® *Weep Vents*, by Archovations, Inc..

.2 TERM Weep and Vent Barrier, by Polyguard Products, Inc.

.3 QV - Quadro-Vent, by Hohmann & Barnard, Inc.

.4 CellVent, by Mortar Net Solutions.

.5 CellVent, by Blok-Lok.

.5 Cavity Wall Insulation: per Section 07 21 13.

2.6 CLEANING COMPOUNDS

.1 Use low VOC products in compliance with SCAQMD Rule 1168.

.2 Compatible with substrate and acceptable to masonry manufacturer for use on products.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's printed installation instructions, data sheets, and standard details.

3.2 REMOVALS

.1 Per Section 02 41 19.

3.3 EXAMINATION

.1 Verify surfaces and conditions are ready to accept work of this Section.

.2 Examine work of other Sections upon which work of this section is dependent. Should discrepancies be found which affect the proper performance of the work of this section, do not commence work until such discrepancies have been resolved.

3.4 PREPARATION

.1 Protect adjacent finished materials from damage due to masonry work.

3.5 INSTALLATION – GENERAL

.1 Work shall conform to CAN/CSA A371.

.2 Where mortar has started to harden at units requiring repositioning, remove and replace with fresh mortar.

.3 Masonry horizontal and vertical joints to be 10 mm thick except where adjustments are necessary to maintain the bond pattern or to adjust coursing.

.4 Air/Vapour barrier membrane and cavity insulation: per Sections 07 27 14 and 07 21 13.

3.6 BRICK MASONRY

.1 Construct cavity walls using techniques that will minimize mortar dropping in cavity space. No mortar shall bridge cavity space or plug cavity vents at bottom of cavity.

.2 Mixing and blending: mix units within each pallet and with other pallets to ensure uniform blend of colour and texture.

.3 Bond: to match existing.

.4 Jointing: concave.

.5 Mixing and blending: mix units within each pallet and with other pallets to ensure uniform blend of colour and texture.

.6 Clean clay masonry as work progresses.

.7 Tolerances: to CAN/CSA A371.

3.7 BONDING AND TYING

.1 Tie masonry veneer to backing in accordance with National Building Code, CSA S304.1, CSA A371 and as indicated.

3.8 FLASHING

.1 Build in flashing in masonry in accordance with CSA A371.

.2 Install metal through-wall flashings, as indicated.

.3 Install membrane flashing over metal flashing, as indicated.

3.9 CELL VENTS FOR DRAINAGE AND AIR CIRCULATION

.1 Install weep vents in head joints in exterior wythes of first course of masonry immediately above embedded flashing and as follows:

.1 Use pre-manufactured inserts to form weep vents, spaced at 400mm on center.

3.10 ACCESSORIES

.1 Install sealants: to Section 07 92 00, at joints and penetrations to ensure continuity of weatherproofing.

.2 Install cavity drainage material to maintain cavity free of obstructions in order to accommodate free drainage through weep holes.

.3 Install cavity wall insulation: to Section 07 21 13.

.4 Install other accessories as required for a complete installation of wall assemblies.

3.11 REPAIR/RESTORATION

.1 Upon completion of masonry, fill holes and cracks, remove loose mortar and repair defective work.

3.12 FIELD QUALITY CONTROL

.1 Period site reviews of work of this section by Architect.

.2 Testing: to Section 04 05 13.

3.13 CLEANING

.1 Clean in accordance with Section 01 74 11 - Cleaning.

.2 Brick Masonry:

.1 Perform cleaning as soon as possible after installation to remove construction and accumulated environmental dirt.

.2 Clean clay masonry: 10 m^2 area of wall designated by Consultant and leave for one week. If no harmful effects appear and after mortar has set and cured, protect windows, sills, doors, trim and other work, and clean brick masonry as follows:

.1 Remove large particles with wood paddles without damaging surface. Saturate masonry with clean water and flush off loose mortar and dirt.

.2 Scrub with solution of 25 mL trisodium phosphate and 25 mL household detergent dissolved in 1 L of clean water using stiff fibre brushes, then clean off immediately with clean water using hose. Alternatively, use proprietary compound recommended by brick masonry manufacturer in accordance with manufacturer's directions.

.3 Repeat cleaning process as often as necessary to remove mortar and other stains.

.4 Use acid solution treatment for difficult to clean masonry as described in Technical Note No. 20 by the Brick Industry Association.

.3 Upon completion of installation, remove surplus materials, rubbish, tools, and equipment barriers.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 08 11 14 – Metal Doors and Frames.

1.2 REFERENCES

.1 ASTM International (ASTM)

.1 ASTM A153/A153M-16 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

.2 ASTM A653/A653M-15e1, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.3 ASTM D1761-12, Standard Test Methods for Mechanical Fasteners in Wood.

.4 ASTM E1333-14, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates from Wood Products Using a Large Chamber.

.5 ASTM F1667-15, Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.

.2 CSA Group (CSA)

.1 CAN/CSA G164-18, Hot Dip Galvanizing of Irregularly Shaped Articles.

.2 CSA O121-17, Douglas Fir Plywood.

.3 CSA O141-05 (R2014), Softwood Lumber.

.4 CAN/CSA O325-16, Construction Sheathing.

.3 National Lumber Grading Association (NLGA):

.1 NLGA SPS 2-2017, Machine Graded Lumber.

.2 Standard Grading Rules for Canadian Lumber 2017

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit product data in accordance with Division 01 General Requirements:

.1 Submit manufacturer's printed product literature, specifications and technical datasheets.

.2 Submit MSDS sheets or official manufacturer literature stating no added urea-formaldehyde was used in the manufacturing of composite wood.

1.4 QUALITY ASSURANCE

.1 Lumber identification: Use CLS grade marked lumber conforming to the Standard Grading Rules for Canadian Lumber published by the National Lumber Grades Authority.

1.5 DELIVERY, STORAGE, AND HANDLING

.1 Deliver wood products bundled or crated to provide adequate protection during transit. Inspect wood products for damage upon delivery and remove and replace damaged materials.

.2 Store materials a minimum of 150 mm off the ground on blocking. Keep materials under cover and dry. Provide for air circulation within and around stacks and under temporary coverings.

.3 Protect sheet materials to prevent breaking of corners and damage to surfaces.

Part 2 Products

2.1 LUMBER

.1 Lumber: Structural Light Framing to CAN/CSA O141, softwood, S-P-F, S4S, graded and stamped in accordance with National Lumber Grading Association (NLGA) Standard Grading Rules for Canadian Lumber and as follows:

- .1 Moisture Content: maximum 14% at time of installation.
- .2 Grade: No. 2 or better.
- .3 Dimensions: as indicated.
- .4 Provide lumber for support or attachment of construction, including rough bucks, furring, blocking, nailing strips, and similar members.

2.2 ACCESSORIES

.1 Sealants: in accordance with Section 07 92 00 – Joint Sealants. Maximum allowable VOC limit 250 g/L in accordance with SCAQMD Rule 1168.

.2 General purpose adhesive: to CSA O112 Series. Maximum allowable VOC limit 70 g/L in accordance with SCAQMD Rule 1168.

.3 Nails, spikes, and staples: to ASTM F1667, double hot dipped galvanized for exterior work and pressure preservative and fire-retardant treated materials; hot dipped galvanized for all other purposes.

.4 Masonry anchors; one of the following:

- .1 Steel screws designed for anchoring to concrete and masonry substrates, 6mm diameter, flat head, with 38mm minimum embedment.
  - .1 Genuine Tapcon, by ITW, or approved alternate.
- .2 Pin bolts: light duty pin bolt anchor assembly comprised of corrosion resistant zinc/aluminum alloy anchor body with stainless steel pin; length to provide 38mm minimum embedment into existing masonry, 6mm (1/4”) diameter.
  - .1 Standard of acceptance: Zamac Pin Bolt, by UCAN.

.5 Proprietary fasteners: hot dip galvanized or type 304 or 316 stainless steel toggle bolts, expansion shields and lag bolts, screws and lead plugs, recommended for purpose by manufacturer.

2.3 FASTENER FINISHES

.1 Galvanizing: use hot-dipped galvanized fasteners complying with ASTM A153 and connectors complying with ASTM A653, class G185.

Part 3 Execution

3.1 COMPLIANCE

.1 Comply with requirements of National Building Code of Canada 2015 and amendments (NBC), and the requirements of this Section.

.2 Accurately frame and properly assemble rough carpentry work. Include all necessary nails or other connectors.

3.2 INSTALLATION

.1 Install members true to line, levels and elevations, square and plumb.

.2 Construct continuous members from pieces of longest practical length.

.3 Install rough bucks (doors), nailers and linings to rough openings as required to provide backing for frames and other work.

.4 Countersink bolts and fasteners where necessary to provide clearance for other work.

.5 Use dust collectors and high-quality respirator masks when cutting or sanding wood panels.

3.3 CLEANING

.1 Progress Cleaning: clean in accordance with Division 01 General Requirements. Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Division 01 General Requirements. Perform cleaning after installation to remove construction and accumulated environmental dirt.

.3 Manage and dispose of demolition and construction waste materials in accordance with Division 01 General Requirements.

3.4 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by Work of this Section.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 06 10 00 – Rough Carpentry.

.2 Section 08 44 13 – Glazed Aluminum Framing Systems.

1.2 REFERENCES

.1 American National Standards Institute (ANSI)

.1 ANSI/ASME 18.6.1 (R2012) Wood Screws (Inch Series).

.1 American Society for Testing and Materials International (ASTM)

.1 ASTM E1333-14, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emissions Rates from Wood Products Using a Large Chamber.

.2 ASTM F1667-17, Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.

.2 Architectural Woodwork Manufacturers Association of Canada (AWMAC)

.1 ARCHITECTURAL WOODWORK STANDARDS, EDITION TWO (2014) PLUS ALL ERRATA THROUGH APRIL 29, 2016.

.3 Canadian Standards Association (CSA International)

.1 CAN/CSA O141-05 (R2014), Softwood Lumber.

.4 National Lumber Grades Authority (NLGA)

.1 Standard Grading Rules for Canadian Lumber 2017.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 – Submittal Procedures.

.2 Submit Shop Drawings:

.1 Indicate details of construction, profiles, jointing, fastening and other related details.

.2 Indicate materials, thicknesses, finishes and hardware.

.3 Samples.

.1 Submit one sample for each colour selection, finished as specified.

.2 Reviewed samples shall become the standard for the work.

.4 Closeout Submittals:

.1 Provide operations and maintenance data in accordance with Section 01 78 00 – Closeout Submittals.

1.4 QUALITY ASSURANCE

.1 Perform Work of this Section by finish carpentry contractor with minimum 5 years of current experience and having completed minimum one project in the past 5 years.

.2 Architectural Woodwork Standards (AWS) published by the Architectural Woodwork Manufacturers Association of Canada, together with authorized additions and amendments will be used as a reference standard and shall form part of this project specification. Where differences occur between the drawings and specifications requirements and the AWS, the more restrictive requirement shall prevail.

.3 Any reference to Custom or Premium grade in this specification shall be as defined in the AWS.

.4 Any item not given a specific quality grade shall be Premium grade as defined in the AWS.

.5 A copy of the AWS shall be made readily available for reference purposes on the job site.

.6 References in this specification to part and item numbers mean those parts and items contained within the AWS.

.7 Materials and installation shall be in Metric measurements as specified.

1.5 DELIVERY, STORAGE AND HANDLING

.1 The Architectural Woodwork Manufacturer and the Contractor shall be jointly responsible to make certain that architectural woodwork is not delivered until the building and storage areas are sufficiently dry so that the architectural woodwork will not be damaged by excessive changes in moisture content.

.2 Architectural woodwork delivery, storage and handling shall be in accordance with Section 2 Care and Storage of the AWS.

.3 Delivered materials which are damaged in any way or do not comply with these specifications will be rejected by the Consultant and shall be removed from the job site and replaced with acceptable materials.

1.6 PROJECT CONDITIONS

.1 Environmental Conditions: Comply with the AWS Section 2 – Care & Storage for optimum temperature and humidity conditions for woodwork during its storage and installation. Do not install woodwork until these conditions have been attained and stabilized.

1.7 COORDINATION

.1 Coordinate provision of concealed blocking or supports.

.2 Ensure that back-priming of finish carpentry surfaces concealed after installation, has been performed, prior to installation.

Part 2 Products

2.1 MATERIALS

.1 Trim and manufactured trim: Softwood lumber: Sound lumber to specified AWS grade requirements, kiln-dried to moisture content recommended for location of the Work.

- .1 For use as interior trims at windows to finish around perimeter of window frames where it transitions from frame to existing materials/finishes. Refer to details on sheets A-501 to A-504, and A-551.
- .2 Configuration: as indicated.
- .3 Dimensions:
  - .1 Thickness: 19mm for sills and aprons, and 38mm for head trim.
  - .2 Width: to suit at sills, and 90mm at aprons.
  - .3 Length: to suit.
- .4 Profiles: as indicated, or as required to suit conditions.
- .5 Finish: paint coating, per PAINT FINISH below.

2.2 PAINT FINISH

.1 Paint PT-1: for all wood window trims and sills, apply:

.1 One coat Speedhide Interior Latex Sealer (PPG Code 6-2: <50 g/L VOC). Two coats Pitt-Glaze WB1 Interior Pre-Catalyzed Acrylic Semi-Gloss Epoxy (PPG Code 16-510 Series; <100g/L VOC) @ 3.0 to 4.0 mils DFT per coat.

.2 One coat Dulux Gripper Interior Primer Sealer (Dulux Code 60000; <99g/L VOC) @1.8 mils DFT. Two coats Dulux Diamond Interior Acrylic Pearl (Dulux Code 14220; <125 g/L VOC) @ 3.0 to 4.0 mils DFT per coat.

.3 Once coat Pro Mar 200 Zero VOC primer (SW Code B28W02600; <50 g/L VOC). Two coats Pro Industrial Pre Catalyzed Semi Gloss Epoxy (SW Code K46W00151; 135 g/L VOC) @ 1.5 mil DFT.

.2 Colour: to match existing.

2.3 ACCESSORIES

.1 Fasteners: to suit size and nature of components being fastened.

.2 Nails and staples: to ASTM F1667.

.3 Wood screws: to ANSI/ASME 18.6.1, countersunk flush type unless indicated otherwise, in sizes to suit application, electroplated steel for other locations.

.4 Splines: wood.

.5 Adhesive: recommended by manufacturer.

2.4 SITE FABRICATION

.1 Fabricate items rigid, plumb and square, as detailed, with tight, bevelled, hairline joints. Sand work smooth, set all nails and screws.

.2 Countersink bolts and washers, fill holes with matching wood plugs.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for wood products installation in accordance with AWS tolerances and requirements of Contract Documents.

3.2 PREPARATION

.1 Back prime woodwork before installation, to AWS.

3.3 INSTALLATION

.1 Do finish carpentry to Premium Quality Standards of the AWS, except where specified otherwise.

.2 Install items of finish carpentry at locations shown on drawings.

.1 Position accurately, level, plumb straight.

.2 Fasten and anchor securely.

.3 Scribe and cut as required, fit to abutting walls, and surfaces, fit properly into recesses and to accommodate piping, columns, fixtures, outlets, or other projecting, intersecting or penetrating objects.

.4 Form joints to conceal shrinkage.

3.4 CONSTRUCTION

.1 Fastening:

.1 Position items of finished carpentry work accurately, level, plumb, true and fasten or anchor securely.

.2 Design and select fasteners to suit size and nature of components being joined. Use proprietary devices as recommended by manufacturer.

.3 Set finishing nails to receive filler. Where screws are used to secure members, countersink screw in round smooth cut hole and plug with wood plug to match material being secured.

.4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.

3.5 CLEANING

.1 Progress Cleaning: clean in accordance with Division 01 General Requirements. Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Division 01 General Requirements. Perform cleaning after installation to remove construction and accumulated environmental dirt.

.3 Manage and dispose of demolition and construction waste materials in accordance with Division 01 General Requirements.

3.6 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by Work of this Section.

3.7 SCHEDULE

.1 Refer to Contract Drawings for construction and locations.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 04 22 00 – Unit Masonry.

.2 Section 07 61 13 – Metal Roofing.

1.2 REFERENCES

.1 Underwriters Laboratories of Canada (ULC).

.1 CAN/ULC S770: Standard Test Method for Determination of Long-Term Thermal Resistance of Closed-Cell Thermal Insulating Foams

.2 CAN/ULC-S704.1:2017: Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced

.3 CAN/ULC-S102.2:2018: Standard test method of test for surface burning characteristics of flooring, floor coverings, and miscellaneous materials and assemblies.

1.3 PRE-INSTALLATION MEETINGS

.1 Pre-Installation Meetings: convene pre-installation meeting one week prior to beginning work of this Section and on-site installation, with contractor's representative and Consultant in accordance with Division 01 General Requirements to:

.1 Verify project requirements.

.2 Review installation and substrate conditions.

.3 Coordination with other building trades.

.4 Review manufacturer's installation instructions.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Division 01 General Requirements.

.2 Product Data:

.1 Submit manufacturer's printed product literature, specifications and technical datasheet.

.3 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

.4 Submit warranties.

1.5 QUALITY ASSURANCE

.1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.

.2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics, criteria, and physical requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

.1 Storage and Handling Requirements:

.1 Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

.2 Protect insulation as follows:

.1 Do not expose to sunlight, except to extent necessary for period of installation and concealment.

.2 Protect against ignition at all times. Do not deliver insulating materials to Project site before installation time.

.3 Complete installation and concealment of materials as rapidly as possible in each area of construction.

1.7 WARRANTIES

.1 Contractor agrees to correct any deficiencies of labour or material found in the work performed for a period of 2-years from date of Substantial Performance.

Part 2 Products

2.1 INSULATION

.1 Exterior Wall Cavity Insulation: Rigid polyisocyanurate insulation board designed for cavity wall rain screen applications; to CAN/ULC S704.1, Type 2, Class 2, with the following characteristics:

.1 Thickness: 75mm (typical), and as indicated.

.2 Thermal resistance (LTTR): r-value 17.3, for 75mm thickness.

.3 Flame Spread: >25, <500, to CAN/ULC S102.

.4 Water Absorption: 1.1% by volume.

.5 Standard of Acceptance:

.1 Sopra-ISO V Plus, by Soprema.

.2 Acceptable alternate: products meeting or exceeding the standard of acceptance.

.2 Canopy Roof Insulation: Same as specified for wall cavity insulation, except with a thickness of 38mm.

.1 Adhesive: Two-part low-rise foam adhesive.

.1 Standard of Acceptance: Duotack, by Soprema.

.3 Exterior Window Sill Flashing Underlayment: High-density polyisocyanurate insulation board; to CAN/ULC S704.1, Type 4, Class 3, with the following characteristics:

.1 Thickness: 13mm

.2 Thermal resistance (LTTR): r-value 2.5.

.3 Flame Spread: 40-60, to CAN/ULC S102.

.4 Water Absorption: <3% by volume.

.5 Standard of Acceptance:

.1 Sopra-ISO Plus HD, by Soprema.

.2 Acceptable alternate: products meeting or exceeding the standard of acceptance.

2.2 ACCESSORIES

.1 Fastener assembly for board insulation at wall areas:

.1 Purpose made fastener and washer assembly designed to mechanically secure cavity wall board insulation in rain screen applications. Fasteners to be intended for concrete block substrates, hot dipped galvanized minimum corrosion resistance. Washers to be high density polyethylene, nominal 75mm diameter.

.2 Acceptable material:

.1 Thermal-Grip, by Trufast

.2 Approved equal.

.2 Fastener assembly for board insulation at canopy roof areas:

.1 #12 screws and 75mm diameter (nominal) pressure distribution plates must meet Factory Mutual 4470 Standard for corrosion resistance and be acceptable by the board manufacturer.

.2 Acceptable manufacturers: DekFast, Trufast, OMG, or as recommended by board manufacturer.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's printed installation instructions, data sheets, standard details, and specifications.

3.2 EXAMINATION

.1 Examine substrates and immediately inform Consultant in writing of defects.

.2 Prior to commencement of work, ensure:

.1 Substrates are firm, straight, smooth, dry, free of snow, ice or frost, and clean of dust and debris.

3.3 SEQUENCING

.1 Do not perform the Work of this Section until the installation of air barriers have been tested and accepted by the Consultant. Refer to Section 07 27 14 - Air and Vapour Barriers.

3.4 INSULATION – GENERAL

.1 Install insulation in accordance with insulation manufacturer’s installation instructions, illustrations and technical datasheets.

.2 Fit courses of insulation between confining obstructions in cavity; butt edges tightly in vertical and horizontal directions and as follows:

.3 Install insulation after building substrate materials are dry.

.4 Install insulation to maintain continuity of thermal protection to building elements and spaces.

.5 Fit insulation tight around electrical boxes, plumbing and heating pipes and ducts, around exterior doors and windows and other protrusions.

.6 Use largest possible dimensions to reduce number of joints.

.7 Install insulation to maintain continuous thermal insulation for building spaces and elements.

.8 Cut and trim insulation neatly to fit spaces. Butt edges and ends tight. Fit insulation tight against mechanical, electrical, and other items protruding plane of insulation. Fill voids with foamed-in-place insulation compatible with installed insulation.

.9 Follow the instructions for use of materials of insulation and accessory manufacturers.

.10 Install insulation horizontally.

.1 Offset vertical joints minimum 300 mm.

.11 Do not enclose or cover insulation until it has been reviewed by Consultant.

.12 Use only insulation boards that are dry and unsoiled.

.13 Cut the top of the insulation as indicated to form snug fit under the sloping through-wall flashing supported on sheet metal per Section 07 62 00. Fit tight behind continuous shelf angle and supports as required.

.14 Secure insulation tight to substrate with retainers/wedges friction fit to masonry tie plates, per Section 04 22 00.

.15 Fasteners:

.1 It is anticipated that insulation retainers at each masonry tie is sufficient to securely hold insulation in place, tight to the substrate. Install additional fasteners, as specified, if requested by the consultant to address insufficient insulation securement.

.2 Install specified fastener assembly in accordance with insulation manufacturer's recommendations, at locations and spacings requested by the consultant.

3.5 FIELD QUALITY CONTROL

.1 Field Inspection: Periodic reviews by the Consultant.

.2 Manufacturer's Services:

.1 Have manufacturer review work involved in handling, installation, protection, and cleaning of insulation and accessories. Report any inconsistencies from manufacturer's recommendations immediately to Consultant.

3.6 CLEANING

.1 Progress Cleaning: clean in accordance with Division 01 General Requirements. Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Division 01 General Requirements. Perform cleaning after installation to remove construction and accumulated environmental dirt.

.3 Manage and dispose of demolition and construction waste materials in accordance with Division 01 General Requirements.

3.7 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by Work of this Section.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 ASTM International (ASTM)

.1 ASTM E96/E96M-10, Standard Test Methods for Water Vapor Transmission of Materials.

.2 ASTM D412-06ae2, Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension.

.3 ASTM D903-98(2010), Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.

.4 ASTM D1970/D1970M-11, Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

.5 ASTM E96/E96M-13, Standard Test Methods for Water Vapor Transmission of Materials.

.6 ASTM E283-04 (2012), Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

.7 ASTM E2178-11, Standard Test Method for Air Permeance of Building Materials.

.8 ASTM E2357-11, Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.

1.2 ADMINISTRATIVE REQUIREMENTS

.1 Coordination:

.1 Select products to be compatible with adjoining membranes previously installed under related Sections

.2 Select products from a single manufacturer, or products that are compatible from different manufacturers.

.3 Coordination between all installers of each component of vapour and air retarder system is essential to ensure continuity of system and that junctions between the various components are effectively sealed.

.4 Verify with manufacturers and all tradesmen involved with installation procedures of building products incorporated into air barrier elements including, but not limited to, various membranes, coating and sealants as well as continuity with roofing membrane.

.2 Pre-installation Meeting:

.1 Convene one week before commencing Work of this Section.

.2 Arrange for manufacturer’s factory-trained agent to be on site at beginning of installation to provide training and supervision of personnel who will install membrane. Agent shall also provide frequent inspection visits thereafter to assure quality and competence of membrane installations.

.3 Sequencing:

.1 Sequence work in accordance with Construction Progress Schedule.

.2 Sequence work to permit installation of materials in conjunction with related materials and seals.

.3 Overlap (shingle) materials to direct water down and away from the structure.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Division 01 General Requirements.

.2 Submit Product Data:

.1 Submit manufacturer's printed product literature, specifications, and datasheets, and include product characteristics, performance criteria, physical size, finish, and limitations.

.2 Submit statement from manufacturer(s), indicating products supplied under this Section are compatible with one another and with products previously installed under the work of related Sections.

1.4 QUALITY ASSURANCE

.1 Applicator: company specializing in performing work of this section with minimum 3 years documented experience with installation of air/vapour barrier systems.

.1 Completed installation must be approved by the material manufacturer.

.2 Applicator: company:

.1 Currently licensed by National Air Barrier Association certifying organization.

.2 Must maintain their license throughout the duration of the project.

.3 Existing Substrate Condition: report deviations, as described in PART 3 -EXAMINATION in writing to Consultant.

.4 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.5 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence, cleaning procedures.

1.5 MOCK-UP

.1 Construct typical exterior wall panel, 3 m long by 4 m wide, incorporating door frame; illustrating materials interface and seals.

.2 Locate where directed.

.3 Mock-up may remain as part of finished work.

.4 Allow review of mock-up by Consultant before proceeding with air/vapour barrier Work. Accepted mock-up will demonstrate minimum standard of quality required for this project.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with product requirements.

.2 Deliver, store and handle materials in accordance with manufacturer's written instructions.

1.7 AMBIENT CONDITIONS

.1 Install solvent curing sealants and vapour release adhesive materials in open spaces with ventilation.

.2 Maintain temperature and humidity recommended by materials manufacturer before, during and after installation.

1.8 WARRANTIES

.1 Contractor agrees to correct any deficiencies of labour or material found in the work performed for a period of 2 years from date of Substantial Performance.

Part 2 Products

2.1 SELF ADHESIVE AIR/VAPOUR BARRIER

.1 Primer: SBS synthetic rubbers, adhesive resins and solvents used to prime porous substrates to enhance adhesion of self-adhesive membranes at temperatures above -10°C.

.1 Acceptable Materials: as recommended by membrane manufacturer for substrate and site conditions.

.2 Air and Vapour Barrier Membrane: to ASTM D1970; SBS-modified bitumen, self-adhering sheet membrane with polyethylene facer, for application temperatures between -10°C and 10°C, and as follows:

.1 Thickness: 1 mm to 1.5 mm

.2 Tensile strength: 11.3 kN/m to 15.4 kN/m to ASTM D5147.

.3 Ultimate elongation: 25% to 40%

.4 Flexibility at cold temperature: minimum -30°C

.5 Air permeability: <0.0003 L/sec. m^2

.6 Water vapour permeability: <0.05 perm

.7 Static puncture: minimum 178 N

.8 Tear resistance: 375 to 400 N

.9 Lap adhesion: 800 N/m

.10 Standard of Acceptance:

.1 Blueskin SALT, Bakor.

.2 CCW-705LT, Carlisle

.3 Bituthene 3000 Low Temperature Membrane, Grace Construction Products.

.4 Exoair 110 LT, Tremco Inc.

.5 Sopraseal Stick 1100 T, Soprema.

.6 Air Shield LT, W.R. Meadows.

.7 Aquabarrier AVB LT, IKO.

.3 Air and Vapour Barrier Metal Roof Underlayment Membrane: to ASTM D1970; SBS-modified bitumen, self-adhering sheet membrane with a slip resistant polyethylene facer, for application temperatures between -10°C and 10°C, and as follows:

.1 Thickness: 1 mm

.2 Breaking strength: 11 kN/m to 12 kN/m.

.3 Ultimate elongation: 30% to 20%

.4 Flexibility at cold temperature: minimum -30°C

.5 Water vapour permeability: <0.037 perm

.6 Static puncture: minimum 400 N

.7 Tear resistance: 375 to 400 N

.8 Standard of Acceptance:

.1 Lastobond Shield, by Soprema.

.4 Waterproofing Mastic: solvent-based mastic containing SBS modified bitumen, fibres and mineral fillers, used to seal around penetrations and extrusions.

.1 Compatibility: With air/vapour barrier membrane, substrate, and insulation.

.2 Specific gravity at 20°C: 1.0 kg/l to 1.12 kg/l

.3 Application Temperature: -10°C to +35°C

.4 Solids by Weight: 70% to 83 %

.5 Standard of Acceptance:

.1 Air-Bloc 21 or Air-Bloc 230-21 Adhesive, Henry Bakor.

.2 570-05 Polybitume, Henry Bakor

.3 925 BES Sealant, Henry Bakor

.4 Exoair Termination Mastic, Tremco Inc.

.5 Roofcraft AquaBarrier Mastic, IKO.

.6 Sopreamastic, Soprema.

.7 Pointing Mastic, W.R. Meadows.

.8 Aquabarrier Mastic, IKO.

2.2 SELF-ADHESIVE VAPOUR PERMEABLE MEMBRANE

.1 Self-adhesive membrane composed of a tri-layer laminated polypropylene facer. Underface covered with silicone release film. For applications between at -7°C to 40°C.

.1 Properties:

.1 Thickness: 0.6 mm

.2 Tensile strength (kN/m): (MD) = 5.95 - (XD) = 3.65

.3 Breaking strength (N): (MD) = 400 - (XD) = 310

.4 Air permeability, 75 Pa (L/sec. m²): 0.0025

.5 Air leakage resistance, 75 Pa (L/sec. m²): < 0.005

.6 Air leakage rate classification (CAN/ULC S742): A1

.7 Water vapour permeability (perm): ASTM E96-A: 11 E96-B: 17

.8 Dimensional stability at 85°C (185°F) (%): (MD) = -0.45 - (XD) = 0.11

.9 Tear resistance (N): (MD) = 64 - (XD) = 54

.10 Lap joint strength (N/m): 300

.11 Adhesion after elevated temperature exposure AAMA 711-05, level 3, 7 days @ 80°C (176°F) (N/m): 1200

.12 Nail sealability: Pass

.2 Basis of Design: Sopraseal Stick VP, by Soprema.

2.3 ACCESSORIES

.1 Thinners and cleaners: as recommended by sheet material manufacturer.

.2 Adhesive Primers and Adhesives: all primers and adhesives shall be manufactured by the air barrier system manufacturer and compatible with systems installed:

.1 Adhesive with low-VOC content for self-adhering membranes at all temperatures; synthetic rubber-based adhesive, quick setting.

.2 Primer for self-adhering membranes at temperatures above -4°C; polymer emulsion-based adhesive, quick setting.

.3 Through-Wall Membranes: Manufacturer's recommended reinforced self adhesive, compatible with air and vapour membrane and that will not become plastic and extrude onto finished surfaces when exposed to high wall temperatures.

.1 Accessories and Ancillary Products: supply manufacture's supplied and/or recommended accessories, including primers, mastics and sealants as required for a complete installation and effective tie-ins at transitions.

.2 Standard of Acceptance:

.1 Blueskin TWF, Henry Bakor.

.2 AquaBarrier™ TWF, by IKO.

.3 Air-Shield Thru-Wall Flashing, W. R. Meadows.

.4 Penetration and Termination Sealants: all penetration and termination sealants shall be manufactured by the air barrier system manufacturer and compatible with systems installed.

.1 Termination Sealant shall be moisture cure, medium modulus polymer modified sealing compound.

.2 Termination sealant shall be a non-sag, non-staining, one component, high performance thermoplastic sealant.

.5 Fasteners: supply stainless steel screws, plastic clips and other fasteners as recommended by manufacturer required for complete installation of work.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: prepare surfaces and Work and install products in accordance with manufacturers' printed preparation and installation instructions, typical details, and datasheets.

3.2 ENVIRONMENTAL REQUIREMENTS

.1 All membrane shall be installed at surface and ambient temperature of 5°C or above, in dry weather conditions.

.2 For applications below 5°C consult membrane manufacturer's technical representative for instructions and, obtain Consultant's approval before proceeding with Work.

3.3 COORDINATION

.1 Coordinate with other trades as required to ensure continuity of air barrier and vapour retarder performance at entire enclosure perimeter. Tie-in to adjacent systems as required, and seal transitions.

3.4 EXAMINATION AND PREPARATION

.1 Verify that surfaces and conditions are ready to accept work of this section.

.2 Ensure surfaces are clean, dry, sound, smooth, and continuous, and comply with air barrier manufacturer's requirements.

.3 Remove loose or foreign matter, which might impair adhesion of materials.

.4 Ensure substrates are clean of oil or excess dust; masonry joints struck flush, and open joints filled; and concrete surfaces free of large voids, spalled areas or sharp protrusions

.5 Do not install materials during rain or snowfall.

.6 Report unsatisfactory conditions to Consultant in writing.

.7 Do not start work until deficiencies have been corrected. Beginning of Work implies acceptance of conditions.

.8 Gaps greater than 12 mm shall have sheet metal backing installed, to Section 07 62 00 – Metal Flashing and Trim.

3.5 SELF-ADHESIVE MEMBRANE

.1 Use winter or summer grade membrane materials as required to suit conditions.

.2 Application of Substrate Adhesive Primer:

.1 Required Adhesive Primer for SBS Modified Self-Adhered Membranes:

.1 For the application of SBS modified self-adhered window sill pan flashings, through-wall flashings and other applications of SBS modified self adhered transition membranes, the substrate shall be conditioned with applicable primer.

.2 Apply primer at rate recommended by manufacturer to all areas to receive SBS modified self-adhering sheet membrane by roller and allow to dry.

.3 Primed surfaces not covered by self-adhering membrane or self-adhering through-wall flashing membrane during the same working day shall be re primed.

.3 To the extent practicable, pre-cut membrane to manageable lengths each day.

.4 Install multiple courses in shingle fashion at overlaps to properly shed water and avoid reverse laps. Use a non-metallic roller to apply membrane firmly and evenly to substrate; blind nail within lap to be covered to hold in place during cold weather applications.

.5 Apply through-wall flashing membrane along the base of masonry veneer walls and over lintels as detailed.

.1 Apply adhesive primer to surfaces and allow to dry, press membrane firmly into place, over lap minimum 50 mm at all side and end laps. Promptly roll all laps and membrane to ensure the seal.

.2 Seal the top edge of the membrane where it meets the substrate using termination sealant. Trowel-apply a feathered edge to seal termination to shed water.

.6 Seal membrane terminations, heads of mechanical fasteners, masonry tie fasteners, around penetrations, duct work, electrical and other apparatus extending through the primary membrane and around the perimeter edge of membrane terminations with specified termination sealant.

3.6 FIELD QUALITY CONTROL

.1 Manufacturer's Field Services:

.1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting, and cleaning of product and submit Manufacturer's Field Reports.

.2 The Consultant shall inspect installed membrane for continuity of air/vapour barrier prior to placement of insulation.

.3 Replace defective materials and materials damaged due to faulty installation, careless handling or other causes resulting from work of this section.

3.7 CLEANING

.1 Progress Cleaning: Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment. Perform cleaning after installation to remove construction and accumulated environmental dirt.

.3 Manage and dispose of demolition and construction waste materials.

3.8 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by Work of this Section.

3.9 SCHEDULE

.1 Refer to Drawings for locations.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 06 10 00 – Rough Carpentry.
.2 Section 07 21 13 – Board insulation.
.3 Section 07 27 14 – Sheet Membrane Air and Vapour Barriers
.4 Section 07 62 00 – Sheet Metal Flashing and Trim.

1.2 SUMMARY

.1 Work of this Section includes the following:
  .1 Roof panel clip system.
  .2 Roof panel.
  .3 Insulation.
  .4 Underlayment.
  .5 Metal sub-girts.
  .6 Gypsum sheathing.
  .7 Wall membrane.
  .8 Accessories including associated girts, flashings, closures, sealants.

.2 Related work not included:
  .1 Flashings associated with other trades.
  .2 Steel decking (per structural requirements).

1.3 REFERENCE STANDARDS

.1 ASTM International
  .1 ASTM A 653/A 653M-10, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  .2 ASTM D 523-89(2008), Standard Test Method for Specular Gloss.
  .3 ASTM C 1396/C 1396M-13, Standard Specification for Gypsum Board.

.2 CSA International
  .1 CSA A136, Design of Cold Formed Steel Structural Members

.3 Department of Justice Canada (Jus)
  .1 Canadian Environmental Protection Act (CEPA), 1999.

.4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  .1 Material Safety Data Sheets (MSDS).

.5 National Building Code of Canada 2015 (NBC).
  .1 CCMC- Registry of Product Evaluations.

.6 Transport Canada (TC)
  .1 Transportation of Dangerous Goods Act (TDGA), 1992.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:
- .1 Submit manufacturer's instructions, printed product literature and data sheets and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Proof of manufacturer's CCMC listing and listing number.
- .3 Submit 2 copies of WHMIS MSDS.

.3 Shop Drawings:
- .1 Submit drawings indicating panel layout, attachment, connections, flashings, and installation details.
- .2 Samples:
  - .1 Submit 300 x 300 mm sample of sheet metal roofing material complete with fasteners, clips, and snap-on batten cap.

1.5 QUALITY ASSURANCE

.1 Mock-ups:
- .1 Submit mock-ups in accordance with Section 01 45 00 - Quality Control.
- .2 Construct full size panel mock-up using identical project materials and methods to include three (3) typical seams.
- .3 Mock-up will be used:
  - .1 To judge workmanship, substrate preparation, operation of equipment and material application.
- .4 Locate where directed by Architect.
- .5 Allow 24 hours for inspection of mock-up by Architect before proceeding with work.
- .6 When accepted, mock-up will demonstrate minimum standard of quality required for this Work.
- .7 Approved mock-up may remain as part of finished Work.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:
- .1 Store materials off ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .1 Store and protect sheet metal roofing from nicks, scratches, and blemishes.
  - .2 Replace defective or damaged materials with new.

.4 Packaging Waste Management: remove in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 PRODUCTS

2.1 SHEET METAL MATERIALS

.1 Zinc coated steel sheet: to ASTM A 653/A 653M, commercial quality, with Z275 coating, regular spangle surface, prefinish as specified, chemically treated (passivated) for unpainted finish structural quality Grade 230 having a nominal core thickness 0.76mm (0.030”).

2.2 PREFINISHED STEEL SHEET

.1 Prefinished steel with factory applied silicone modified polyester.

.1 Colour selected by Architect from manufacturer's standard range.

.2 Specular gloss: 30 units +/-5 to ASTM D 523.

.3 Coating thickness: 0.9 – 1.1 mils total system thickness.

.4 Resistance to accelerated weathering for chalk rating of 8, colour fade 5 units or less and erosion rate less than 20% to ASTM D 822 as follows:

.1 Outdoor exposure period 1000 hours minimum.

.2 Humidity resistance exposure period 1000 hours minimum.

2.3 CANOPY ROOF SYSTEM COMPONENTS

.1 Pre-finished metal roofing panels: Standing seam roof panels with batten style capped seams.

.1 Acceptable material:

.1 Tradition 100-4, with ribs at 400mm spacing, by Vicwest.

.2 Diamond Batten, with ribs at 400mm spacing, by Agway Metals.

.2 Clip system: Thermally responsive clips to be fabricated from a minimum of 0.91 mm (.036") steel, with minimum Z275 galvanized coating designed to accommodate expansion and contraction of the roof sheet.

.3 Snap cap batten: Provide 25 mm high minimum snap caps for full length of the roof panel and retained by panel clips, fabricated from Z275 galvanized (zinc coated) sheet steel conforming to ASTM A653M structural quality Grade 230 having a minimum nominal core thickness 0.61mm (0.024”). Finish and colour to match roof sheet.

.4 Solid substrate: rigid insulation, per Section 07 21 13.

.5 Insulation: per Section 07 21 13.

.6 Underlayment membrane: per Section 07 27 14.

.7 Deck Sheathing: as specified in this Section.

.8 Metal sub-girts: Minimum 1.3 mm (18 gauge) base metal thickness, galvanized steel to ASTM A653/A653M, Grade 230, hot dipped galvanized steel after fabrication with a zinc coating of not less than 275 g/m2; profiled to accept exterior sheet with structural attachment to building frame. Exposed materials of wall assembly to match panel finish and colour.

.1 Z-bars: 38mm wide with 38mm vertical legs.

.2 Length: to provide 50mm gap for drainage between z-bars along center of roof area, and at each end of z-bars (between z-bar and brick wall).

2.4 WALL CLADDING

.1 This section applies to metal canopy roof areas where the roof panels are continued down vertically as wall cladding at the face of canopies, as indicated.

.2 Cladding: Same panel material and profile as specified in 2.3 CANOPY ROOF SYSTEM COMPONENTS.

.3 Seaming, clip support system, and battens: per 2.3.

2.5 DECK SHEATHING

.1 Glass Mat Gypsum board sheathing: to ASTM C 1396/C 1396M 12.7 mm thick.

.1 Standard of Acceptance:

.1 Densdeck Prime by Georgia Pacific.

.2 Securock Roof Board by CGC Inc.

.3 Securerock Glass Mat, by CGC

2.6 METAL SOFFIT PANELS

.1 Pre-finished steel: to 2.1 and 2.2.

.2 Size: 305mm wide x 38mm deep x 24 gauge x length to suit (profile as indicated) with tabs to permit concealed fastening.

.3 Profile: Basis-of-Design: HF-12F, by Agway Metals Inc.

2.7 METAL FLASHING AND TRIM

.1 Metal Flashing and Trim: per Section 07 62 00.

2.8 ACCESSORIES

.1 Isolation coating: alkali resistant bituminous paint.

.2 Plastic cement: to CAN/CGSB-37.5.

.3 Water cut-off mastic: One component, low viscosity, self-wetting, butyl blend mastic.

.1 Colour: Grey.

.2 For Use at underside of concealed roof panel clips and closures.

.3 Sealant: Asbestos-free sealant, compatible with systems materials, recommended by system manufacturer.

.4 Rubber-asphalt sealing compound: to CAN/CGSB-37.29.

.5 Fasteners: as recommended by panel manufacturer.

.6 Washers: of same material as sheet metal, 1 mm thick with rubber packings.

.7 Foam closures: to suit panel profiles, as recommended by panel manufacturer.

2.9 FABRICATION

.1 Form individual pieces in 2400 mm maximum lengths. Make allowances for expansion at joints.

.2 Hem exposed edges on underside 12 mm, mitre and seal.

.3 Form sections square, true and accurate to size, free from distortion and other defects

detrimental to appearance or performance.

.4 Apply minimum 0.2 mm dry film thickness coat of plastic cement to both faces of dissimilar metals in contact.

.5 Protect metals against oxidization by backpainting with isolation coating where indicated.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for sheet metal roofing installation in accordance with manufacturer's written instructions.

.1 Inform Architect of unacceptable conditions immediately upon discovery.

.2 Proceed with installation only after unacceptable conditions have been remedied and approved by Architect.

3.2 DECK SHEATHING

.1 Install gypsum deck board to steel deck's upper rib surface with specified fasteners and pressure distribution plates with 8 fasteners per 1220mm x 12440mm board; Install in accordance with manufacturers' instructions.

3.3 UNDERLAYMENT MEMBRANE

.1 Per Section 07 27 14, Air and Vapour Barriers

3.4 INSULATION

.1 Per Section 07 21 13, Board Insulation.

3.5 ROOF PANELS

.1 Use concealed fastenings except where approved in writing by Architect before installation.

.2 Install sheet metal roof panels using concealed clips spaced at 610mm maximum on center.

.4 Apply water cut-off mastic between base of clips and underlayment membrane. Secure clips with 2 fasteners each and cover with cleat tabs.

.5 Ensure metal roofing sheet side-lap is positively retained by clips, and proper sheet coverage is maintained.

.6 Install the snap-cap at all side laps as shown on the approved shop drawings. Mitre snap-cap as required to resist water entry.

.7 Where indicated on approved shop drawings, secure the end-lap of metal roofing sheets in accordance with the manufacturers specifications and details to provide a weather-tight seal. Exposed fasteners to match colour of the roof sheet.

.8 Provide notched and formed closures, sealed against weather penetration, at changes in

pitch, and at ridges and eaves, where required.

3.6 WALL CLADDING

.1 Install air/vapour barrier over existing substrate in accordance with manufacturer's instructions.

.2 Fasten girts to existing structure/substrate, spaced at no more than 915mm on center.

.3 Insulation: Mechanically secure insulation using fasteners and washers in accordance with manufacturers recommendations and instructions. Use 5 fasteners, minimum, per board of insulation.

.4 Install metal panels with seams/ribs running vertically, aligned with ribs of roof panels. Install in accordance with manufacturer's instructions.

.5 Install flashings at corners, intermediate trims, and parapets, and as indicated.

3.4 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  .1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.3 Waste Management: separate waste materials for reuse and recycling] in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal
  .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.5 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by sheet metal roofing installation.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 ASTM International (ASTM)

.1 ASTM A167-99(2009), Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

.2 ASTM A653/A653M-15e1, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.3 ASTM B209M-14, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric)

.4 ASTM F1667-17, Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.

.5 ASTM F468-15, Standard Specification for Nonferrous Bolts, Hex Cap Screws, Socket Head Cap Screws, and Studs for General Use.

.2 CSA Group (CSA)

.1 CSA A123.3-05 (R2015), Asphalt Saturated Organic Roofing Felt.

.3 Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)

.1 SMACNA Architectural Sheet Metal Manual, 7th Edition.

1.2 ADMINISTRATIVE REQUIREMENTS

.1 Coordination:

.1 Coordinate work of this Section with interfacing and adjoining Work for proper sequencing of each installation and to provide positive weather resistance, durability of the work, and protection of materials and finishes.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit manufacturer's printed product literature, specifications and datasheets, and include product characteristics, performance criteria, physical size(s), finish(es) and constraints.

.2 Submit shop drawings showing proposed method of shaping, forming, jointing, fastening, and application of flashing and sheet metalwork.

.3 Submit warranty.

1.4 QUALITY CONTROL

.1 General: Fabricate and install sheet metal flashing and trim in accordance with SMACNA Architectural Sheet Metal Manual.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Stack pre-formed and pre-finished material in manner to prevent twisting bending and rubbing.

.2 Provide protection for finished surfaces.

.3 Prevent contact of dissimilar metals during storage and protect from acids, flux, and other corrosive materials and elements

.4 Protect prefinished surfaces from scratches and from rust staining.

1.6 WARRANTY

.1 Contractor agrees to correct any deficiencies of labour or material found in the work performed for a period of 5 years from the date of Substantial Performance.

.2 Provide Warranty for sheet metal flashing and trim to include in maintenance manuals.

Part 2 Products

2.1 METAL FLASHING

.1 Hot dip galvanized steel sheet (pre-finished): Type A commercial quality to ASTM A653/A653M, with Z275 designation zinc coating.

.1 Class: F1S-Finished one side (manufacturer's standard prime finish on unexposed face).

.2 Thickness: minimum 0.71 mm (24 gauge) base metal thickness.

.3 Manufacturer’s Coil Coating System: silicone modified polyester (SMP) system, applied over a zinc phosphate pre-treatment, and high-performance, flexible primer.

.1 Standards of Acceptance:

.1 WeatherXL, by Vicwest.

.2 Prespectra Plus, by Agway.

.4 Colours: as selected by Consultant from manufacturer's full range.

.1 The intent is to match the existing brown coloured flashing at the parapets.

.2 Formed aluminum flashing: Tension levelled, commercial quality aluminum sheet in accordance with ASTM B209 and ANSI H35.1 alloy designation 5005-H14 and as follows:

.1 Minimum Thicknesses: 1.3 mm thick (0.050”).

.2 All exposed aluminum surfaces including flashings, trims, and panels shall be dark bronze anodized. Comply with Aluminum Association designation AA-M12 C22 A44, 0.018mm (0.7 mils) minimum coating thickness (Class I).

.3 Unexposed aluminum: Mill finish.

.3 Stainless steel flashing: Stainless steel plate: ASTM A167, Type 316, 16 gauge thick.

.4 Form flashing, coping, and fascia to profiles indicated or as required to achieve the design intent illustrated on the Drawings.

2.2 GUTTER

.1 Hot dip galvanized sheet, as specified under METAL FLASHING, without paint coating finish.

2.3 ACCESSORIES

.1 Isolation coating: alkali resistant bituminous paint.

.2 Sealants: as indicated in Section 07 92 00 – Joint Sealants.

.1 Mastic Sealant: polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.

.2 Elastomeric Sealant: Generic type recommended by sheet metal manufacturer and fabricator of components being sealed and complying with requirements for joint sealants as specified in Section 07 92 00.

.3 Fasteners: of same material as sheet metal, to ASTM F1667, as recommended by sheet metal manufacturer; non-corrosive. Finish of exposed parts to match material being fastened.

.4 Washers: of same material as sheet metal, 1 mm thick with rubber packings.

.5 Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather resistant seaming and adhesive application of flashing sheet metal.

.6 Prefinished Steel Accessories: Provide non-corrosive sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of Work. Accessories shall match or be compatible with material being installed; size and thickness as required.

.7 Touch-up paint: as recommended by prefinished material manufacturer.

2.4 FABRICATION

.1 Galvanized sheet steel: Fabricate in accordance with SMACNA Architectural Sheet Metal Manual.

.2 Form sections square, true, and accurate to size, free from distortion and other defects detrimental to appearance or performance.

.3 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

.4 Make joints to allow for thermal movement, space S-Lock joints at 3000 mm maximum centers.

.5 Strengthen free edges of metal flashings by folding to form a 13-mm hem.

.6 Make flashings to walls a minimum of 100 mm high.

.7 Make joints for corners and intersections with standing seams except where exposed of pre-finished metal when seams shall be flat locked.

.8 All bends machine made. Form sections square, true, and accurate to size, free from distortion and other defects detrimental to appearance or performance.

Part 3 Execution

3.1 EXAMINATION

.1 Check mounting and counterflashing of mechanical items and report any defect to the Consultant.

.2 Verify that solid wood blocking or sheathing provided to back-up all flashings and that all nails, screws set and wood provides a smooth flat plane.

.3 Commencement of Work means acceptance of existing conditions.

3.2 INSTALLATION

.1 Install sheet metal flashing and trim in accordance with applicable CRCA 'FL' series details, SMACNA's Architectural Sheet Metal Manual, and as indicated.

.2 Verify shapes and dimensions of surfaces being covered before fabricating sheet metal.

.3 Where possible, secure flashings to supporting building elements with concealed continuous cleats or locking strips. Use hot dipped galvanized steel locking strips / cleats for prefinished steel flashing.

.4 Do not use exposed fastening unless indicated, or concealed fastening is not possible. Locations and methods shall be approved by Consultant.

.5 Anchor units of work securely in place, providing for thermal expansion of metal units. Conceal fasteners where possible and set units true to line and level.

.6 Install work with laps, joints, and seams that are watertight and weatherproof.

.7 Install exposed sheet metal work that is without oil canning, buckling and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weatherproof performance.

.8 Fasten metal base flashing to walls or upstands along top of flashing. Form lapped corner joints.

.9 Expansion Provisions:

.1 Provide for the thermal expansion of exposed sheet metal Work.

.2 Space movement joints at maximum of 3050 mm, with no joints allowed within 610 mm of a corner or intersection, or as otherwise indicated per Drawings.

.3 Form expansion joints of intermeshing hooked flanges, not less than 25 mm deep, filled with mastic sealant (concealed within joints) where lapped or bayonet type expansion provisions in the work cannot be used or are not sufficiently weatherproof and waterproof.

.4 Provide slip joints to allow for movement.

.10 Sealed Joints:

.1 Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant.

.2 Fill joint with sealant and form metal to conceal sealant completely.

.3 Use joint adhesive for non-moving joints specified.

.11 Lock Seams:

.1 Fabricate non-moving seams in sheet metal with flat lock seams.

.12 Separations:

.1 Separate metal from non-compatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with bituminous paint or other permanent separation as recommended by the manufacturer.

.2 Underlayment: Install a slip-sheet of No. 15 perforated asphalt saturated felt and a course of polyethylene underlayment where installing sheet metal directly on cementitious or wood substrates. Secure in place and lap joints minimum 100 mm.

.13 Flashing and metal closures: where flashing and metal closures overlap at any point in a system, ensure that flashing and closures are shingled over top lower sheet(s) and not behind, so that water is directed, and drains, to the exterior.

3.3 SCHEDULE

.1 Head of window and door frames: anodized aluminum.

.2 Jambs of window and door frames: anodized aluminum.

.3 Column cover: anodized aluminum.

.4 Parapets: pre-finished steel sheet.

.5 Through-wall flashings: pre-finished steel sheet

.6 Steel shelf angles and lintels: pre-finished steel sheet

.7 Base of wall: pre-finished steel sheet

.8 Base of doors and frames: stainless steel sheet.

.9 Control joints: galvanized steel sheet.

3.4 CLEANING

.1 Progress Cleaning: Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment. Perform cleaning after installation to remove construction and accumulated environmental dirt.

.3 Manage and dispose of demolition and construction waste materials in accordance with Division 01 General Requirements.

3.5 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by Work of this Section.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 This Section specifies caulking and sealants not specified in other Sections.

.2 Refer to other sections for other caulking and sealants.

1.2 RELATED SECTIONS

.1 Section 04 22 00 – Unit Masonry
.2 Section 08 11 14 – Metal Doors and Frames
.3 Section 08 44 13 – Glazed Aluminum Framing Systems

1.3 REFERENCES

.1 American Society for Testing and Materials International, (ASTM)
  .1 ASTM C920-11, Standard Specification for Elastomeric Joint Sealants.

.1 Department of Justice Canada (Jus)
  .1 Canadian Environmental Protection Act, 1999 (CEPA).

.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  .1 Material Safety Data Sheets (MSDS).

.3 Transport Canada (TC)
  .1 Transportation of Dangerous Goods Act, 1992 (TDGA).

1.4 ACTION AND INFORMATIONAL SUBMITTALS.

.1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.

.2 Manufacturer's product to describe.
  .1 Caulking compound.
  .2 Primers.
  .3 Sealing compound, each type, including compatibility when different sealants are in contact with each other.

.3 Submit manufacturer's instructions: Instructions to include installation instructions for each product used.

1.5 QUALITY ASSURANCE

.1 Retain purchase orders, invoices and other documents to prove that all materials utilized in this contract meet requirements of the specifications. Produce documents when requested by Consultant.

.2 Manufacturer's obligations:
  .1 The manufacturer shall play an active role in the application and inspection of their product during the period of this contract.
  .2 The manufacturer shall be represented at all relevant meetings by a qualified technical representative, with a minimum of 5 years' experience.

1.6 STORAGE, AND HANDLING

.1 Deliver, handle, store and protect materials.

.2 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture, water and contact with ground or floor.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling.

.2 Place materials defined as hazardous or toxic in designated containers.

.3 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.

.4 Unused material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.

.5 Divert unused joint sealing material from landfill to official hazardous material collections site approved by Consultant.

.6 Empty plastic joint sealer containers are not recyclable. Do not dispose of empty containers with plastic materials destined for recycling.

.7 Fold up metal banding, flatten, and place in designated area for recycling.

1.8 PROJECT CONDITIONS

.1 Environmental Limitations:
- .1 Do not proceed with installation of joint sealants under following conditions:
  - .1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 4.5 degrees C.
  - .2 When joint substrates are wet.

.2 Joint-Width Conditions:
- .1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

.3 Joint-Substrate Conditions:
- .1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.9 ENVIRONMENTAL REQUIREMENTS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of material safety data sheets acceptable to Labour Canada.

.2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

.3 Ventilate area of work by use of approved portable supply and exhaust fans.

1.10 EXTENDED WARRANTIES

.1 For respective trade sections where sealants are used, provide a warranty of five years, for material and workmanship beyond date of Substantial Performance.

Part 2 Products

2.1 SEALANT MATERIALS

.1 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.

.2 When low toxicity caulks are not possible, confine usage to areas which off-gas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize off-gas time.

.3 Where sealants are qualified with primers use only these primers.

2.2 LOW EMITTING MATERIALS

.1 Although this project is not seeking LEED certification, all site-applied interior paints, coatings, adhesives, sealants, sealant primers, etc., must conform to VOC content requirements of LEED Canada-NC - 2009.

.2 Submit Material Safety Data Sheets (MSDS) for all products and materials of these types incorporated into the construction of the project.

2.3 SEALANT MATERIAL DESIGNATIONS

.1 Type 1: One-component polyurethane sealant; non-sag, for general constructions.

.1 To ASTM C920: type S; grade NS; class 25; use NT, M, A, O.

.2 Acceptable materials:

.1 Polyurethane Sealant 540, 3M Company

.2 Dymonic or Dymonic FC, Tremco Inc

.3 Multiflex, Chemtron.

.4 Sonolastic NP 1, BASF Sonneborn.

.5 Sikaflex 1a, Sika.

.6 DynaTrol I-XL, Pecora.

.2 Type 2 - Acrylic Latex One Part.

.1 To CAN/CGSB-19.17.

.2 Acceptable material:

.1 Tremco 100 latex.

.2 Sonneborn Sonolac.

.3 Pecora AC-20 + Silicone.

2.4 ACCESSORIES

.1 Preformed compressible and non-compressible back-up materials that are non-staining, compatible with joint substrate, sealants, primers, and other joint fillers, and are approved for applications indicated by sealant manufacturer based on site experience and laboratory testing.

.1 Rod Type Sealant Backings:

.1 ASTM C1330, Type C (closed cell material with a surface skin), Type O (open cell material) or Type B (bi-cellular material with a surface skin).

.2 Use any of the preceding types, as approved in writing by joint sealant manufacturer for joint application indicated.

.3 Size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

.4 Non-adhering to sealant, to maintain two sided adhesion across joint.

.2 Bond Breaker Tape.

.1 Polyethylene bond breaker tape which will not bond to sealant.

.2 Primer: Non-staining type as recommended by sealant manufacturer.

.3 Joint Cleaner: Non-corrosive solvent type recommended by sealant manufacturer for applicable substrate materials.

2.1 SEALANT SELECTION

.1 Exterior perimeter of doors in at masonry veneer: Sealant Type: 1.

.2 Expansion/control joints in masonry veneer: Type 1.

.3 Interior wood trims: Type 2.

Part 3 Execution

3.1 PROTECTION

.1 Protect installed work of other trades from staining or contamination.

3.2 PREPARATION OF JOINT SURFACES

.1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.

.2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair work.

.3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.

.4 Ensure joint surfaces are dry and frost free.

.5 Prepare surfaces in accordance with manufacturer's directions.

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/backer rod to achieve correct joint depth and shape, with approximately 30% compression.

3.5 MIXING

.1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.6 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.

.4 Defective work:
- .1 Shall include, but not be restricted to, joint leakage, cracking, crumbling, melting, runny, loss of adhesion, loss of cohesion, or staining of adjoining or adjacent work or surfaces. Contractor to make good any defective sealant work.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 This section includes steel door products, as indicated.

1.2 RELATED REQUIREMENTS

.1 Section 08 71 00 – Door Hardware

.2 Section 08 44 13 – Glazed Aluminum Framing Systems

1.3 REFERENCES

.1 American National Standards Organization (ANSI) / Steel Door Institute (SDI)

.1 ANSI/SDI A250.8-2003 (R2008), Recommended Specifications for Standard Steel Doors and Frames.

.2 ASTM International (ASTM)

.1 ASTM A653/A653M-17, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2 ASTM A924 / A924M-17a, Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.

.3 Builders Hardware Manufacturers Association (BHMA)

.1 BHMA A156.16-2013, Auxiliary Hardware.

.4 Canadian Steel Door Manufacturers' Association (CSDMA)

.1 CSDMA Guide Specification for Installation and Storage of Hollow Metal Doors and Frames, 2012.

.2 CSDMA Recommended Specifications for Commercial Steel Doors and Frames, 2006.

.3 CSDMA, Selection and Usage Guide for Commercial Steel Doors, 2009.

.5 The Society for Protective Coatings (SSPC)

.1 SSPC-PS 12.01, One Coat Zinc-Rich Painting System (Includes 2004 Revisions).

.2 SSPC-PS Guide 12.00, Guide to Zinc-Rich Coating Systems , 03/01/2007.

.6 Underwriters' Laboratories of Canada (ULC)

.1 CAN/ULC S701-11, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Division 01 General Requirements.

.2 Submit Product Data:

.1 Submit manufacturer’s printed product literature, specifications and data sheets for each type of door and frame specified.

.3 Submit Shop Drawings:

.1 Indicate general construction of each type of door, frame, configurations, material, material thickness, jointing methods, mortises, reinforcements, anchors, arrangement of hardware, fire ratings, finish and special features.

.2 Reference door types to Door Schedule. Indicate door numbers where applicable.

1.5 QUALITY ASSURANCE

.1 Manufacturer/Fabricator: member in good standing of the Canadian Steel Door and Frame Manufacturer's Association.

.2 Installer: Use installers who are experienced with the installation of hollow metal doors and frames of similar complexity and extent to that required for the Project.

.3 Manufacture door assemblies to ANSI/SDI A250.8.

1.6 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, store and handle materials in accordance with Division 01 General Requirements, and as follows:

.1 Receive and store materials as recommended by materials manufacturer.

.2 Adequately protect surfaces from damage during moving, handling and storage.

Part 2 Products

2.1 PERFORMANCE/DESIGN CRITERIA

.1 Perform work in accordance with CSDMA, Recommended Specifications for Commercial Steel Doors, except as otherwise specified herein.

.2 Exterior frames: to Section 08 44 13.

.3 Maximum deflection for exterior steel entrance doors under wind load of 1.2 kPa not to exceed 1/175th of span.

2.2 MATERIALS

.1 Steel:

.1 Doors: coated steel sheets to ASTM A924/M924; coating designation to ASTM A653/A653M: Commercial Steel (CS), Type B, ZF180 galvannealed; stretcher levelled.

.2 Aluminum: Frames, to Section 08 44 13.

.3 Nominal Base Metal Thickness Requirements:

.1 Frames: to Section 08 44 13.

.2 Doors: refer to door fabrication requirements specified in this section.

.3 Hardware Reinforcement for Doors and Frames: Carbon steel, welded in place, prime painted.

.4 Door Core Materials.

.1 Polystyrene: Rigid extruded, closed cell insulation, fire retardant treated meeting the requirements of ULC S701, Type 4, minimum thermal resistance RSI 0.8/25 mm thickness.

2.3 ACCESSORIES

.1 Metallic paste filler: to manufacturer's standard.

.2 Exterior top and bottom caps: steel.

.3 Fasteners: type 304 stainless steel screws with countersunk flat head.

.4 Adhesive: Polystyrene cores: heat resistant, epoxy resin based, low viscosity, contact cement.

.5 Sealant: Section 07 92 00 – Joint Sealants.

2.4 FABRICATION - GENERAL

.1 Permit access by an approved inspection and testing company for the purpose of inspecting at random, doors being fabricated for this project.

2.5 FRAME ANCHORAGE

.1 Per Section 08 44 13.

2.6 DOOR FABRICATION - GENERAL

.1 Doors: swing type, flush, as indicated.

.2 Fabricate doors with longitudinal edges locked seamed with adhesive and spot-welded for larger doors. Seams: not visible, grind welded joints to a flat plane, fill with metallic paste filler and sand to a uniform smooth finish. Bevel both stiles of single doors 1 in 16.

.3 Mortise, reinforce, drill, and tap doors to receive templated hardware, security, and electrical devices.

.1 Door hardware and keying: in accordance with Section 08 00 00. Additional miscellaneous hardware shall be manufacturer's heavy-duty commercial quality accessories and hardware as required for a complete installation.

.4 Reinforce doors where required, for surface mounted hardware. Provide flush steel top and bottom caps to exterior doors.

.5 Factory prepare holes 12.7 mm diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation.

.6 Cut-outs: Where openings are required, provide integrally formed cut-outs with steel framing, and closely fitted steel glass and grille stops, as required. Mitre corners of stops. Drill and countersink fasteners symmetrically at 150 mm on centre. Supply and install coated steel stops, with same coating type and thickness as doors. Screw stops in place.

.7 Provide touch-up primer at areas where zinc coating has been removed or damaged during fabrication.

.8 Manufacturer's nameplates on doors are not permitted.

.9 Face sheets: Minimum 1.6 mm base steel sheet thickness.

.10 Stiffened, insulated and sound deadened with polystyrene core laminated under pressure to each face sheet.

.11 Longitudinal edges mechanically interlocked, adhesive assisted with edge seams

2.7 PRIMER

.1 Touch-up primer: Commercial rust inhibitive primer, shop prime coat doors and frames before delivery; grey or red coloured primer. Clear primer not acceptable; provide primer for field touch-up.

2.1 PAINTING

.1 All painting work to be in accordance with MPI Premium Grade (minimum 3 coats) finish requirements.

.2 Galvanealed Metal: steel doors.

.1 EXT 5.3D - Polyurethane, pigmented finish (over vinyl wash and epoxy primer).

.2 Colour: as selected by consultant.

.3 Field paint steel doors. Protect weatherstrips from paint. Provide final finish free of scratches or other blemishes.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 EXAMINATION

.1 Verify condition and dimensions of previously installed work upon which this Section depends. Report defects to Consultant. Commencement of work means acceptance of existing conditions

3.3 INSTALLATION GENERAL

.1 Install doors to CSDMA Guide Specification for Installation and Storage of Hollow Metal Doors and Frames.

3.4 FRAME INSTALLATION

.1 Per Section 08 44 13.

3.5 DOOR INSTALLATION

.1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions.

.2 Provide even margins between doors and jambs and doors and finished floor and thresholds as follows.

.1 Hinge side: 1.0 mm.

.2 Latchside and head: 1.5 mm.

.3 Finished floor, top of thresholds: 6 mm.

.3 Adjust operable parts for correct function.

3.6 FINISH REPAIRS

.1 Touch-up areas where galvanized coating has been removed or damaged with primer.

3.7 CLEANING

.1 Progress Cleaning: Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Division 01 General Requirements. Perform cleaning after installation to remove construction and accumulated environmental dirt.

.3 Manage and dispose of demolition and construction waste materials.

3.8 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by Work of this Section.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 04 22 00 – Unit Masonry
.2 Section 06 10 00 – Rough Carpentry
.3 Section 07 27 14 – Air and Vapour Barriers
.4 Section 07 62 00 – Sheet Metal Flashing and Trim
.5 Section 07 92 00 – Joint Sealing
.6 Section 08 11 14 – Metal Doors.
.7 Section 08 80 50 – Glazing.

1.2 SUMMARY

.1 Capped glazed aluminum curtain wall framing for windows, doors, and screens with tubular aluminum sections with continuous thermal break material integral with nose of mullion complete with self-supporting and supplementary support framing, shop fabricated, and factory prefinished.

.2 The work of this Section shall include but not be limited to:

.1 Prefinished aluminum framing, incorporating windows, aluminum doors, and steel doors, per Section 08 11 14;
.2 Air/vapour barrier seals between framing and wall construction;
.3 Sealants and caulking between framing and wall construction;
.4 All gaskets, splines, setting blocks, weather stripping, and sealants;
.5 All aluminum panels and closures associated with the framed assemblies;
.6 Insulated backpans and interior panels.
.7 All bracing, brackets, screws, bolts, etc. necessary for installation and to ensure frames are in compliance with specified performance criteria;
.8 Shop applied anti-corrosive coating of all steel shapes and ferrous metal used in attachment of frames and field painting after steel shapes are installed, except that galvanized steel need not be painted; touch-up galvanized steel shapes after installation;
.9 Expanded foam at perimeter of frames, sealants and fasteners;

1.3 REFERENCES

.1 Aluminum Association (AA):

.1 AA DAF45:2003 (R2009), Designation System for Aluminum Finishes.

.2 American Architectural Manufacturers Association (AAMA):

.1 AAMA CW AAMA -DG1-96(2005), Aluminum Curtain Wall Design Guide Manual.
.2 CW-10-15, Care and Handling of Architectural Aluminum from Shop to Site.
.3 AAMA CW-11-85, Design Wind Loads for Buildings and Boundary Layer Wind Tunnel Testing.
.4 AAMA 501-15, Methods of Test for Exterior Walls.

.3 American Society for Testing and Materials International, (ASTM):

.1 ASTM A36/A36M-14, Specification for Carbon Structural Steel.
.2 ASTM A123/A123M-15, Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products.
.3 ASTM A653/A653M-15e1, Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot Dip Process.

.4 ASTM B209-14, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

.5 ASTM B221-14, Specification for Aluminum Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

.6 ASTM E283-04(2012), Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

.7 ASTM E330/E220M-14, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls, by Uniform Static Air Pressure Difference.

.8 ASTM E331-00(2016), Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform Static Air Pressure Difference.

.4 Canadian General Standards Board (CGSB):

.1 CAN/CGSB 1.108-M89, Bituminous Solvent Type Paint.

.5 Canadian Standards Association (CSA International):

.1 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.

.2 CSA S157-05/S157.1-05 (R2015), Strength Design in Aluminum.

.3 CSA W59-13, Welded Aluminum Construction.

.6 National Building Code of Canada (NBCC) 2020.

.7 Nova Scotia Building Code Regulations 2022.

1.4 DESIGN RESPONSIBILITY

.1 The details shown on the drawings are included for the purpose of indicating the preferred profiles and dimensions necessary to achieve the design intent. Minor dimensional adjustments to those shown may be made in the proposed design in the interest of fabrication or erection methods or techniques, provided that the design intent and the intent of the specifications are maintained. The design, engineering, procurement, fabrication and erection of the window assemblies, including the loads related to the anchorage of the window assemblies as required to meet these performance specifications, shall be the complete responsibility of the Trade Contractor.

1.5 PRODUCT DATA

.1 Submit manufacturer's instructions, printed product literature and data sheets for all window components, panels, anchorage and fasteners, glass, and internal drainage details and include product characteristics, performance criteria, physical size, finishes and limitations.

1.6 SHOP DRAWINGS

.1 Submit shop drawings.

.2 Indicate system dimensions, framed opening requirements and tolerances, adjacent construction, air/vapour barrier tie-ins, finishes, and/or details anticipated deflection under load, affected related Work, weep drainage network, expansion and contraction joint location and details, mullion reinforcing (if applicable) separation of dissimilar materials and field welding required.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.2 Delivery and acceptance requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and handling requirements:

.1 Handle work of this section in accordance with AAMA CW-10.

.2 Store materials indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.3 Store and protect aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.

.4 Replace defective or damaged materials with new.

.4 Delivery and storage of materials on site is to be coordinated with the Project Manager.

1.8 ENVIRONMENTAL REQUIREMENTS

.1 Do not install sealants when ambient and surface temperature is less than 5 degrees C.

.2 Maintain this minimum temperature during and after installation of sealants.

1.9 MAINTENANCE DATA

.1 Provide operation and maintenance data for framed assemblies.

1.10 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material for recycling.

.4 Separate for reuse and recycling all steel, metal, glass and plastic waste.

.5 Handle and dispose of hazardous materials in accordance with Regional and Municipal regulations.

1.11 EXTENDED WARRANTY

.1 Provide a written warranty, signed and issued in the name of owner, stating that the total aluminum framed door and panel systems are warranted against leakage, defects and malfunction under normal usage for a period of five (5) years from date of Certificate of Substantial Performance. Total system includes related caulking. Defective materials and workmanship include, but are not limited to: abnormal deterioration, aging and weathering of the work; leakage of water and air exceeding specified limits; structural failure of components resulting from forces and movements up to specified limits; condensation; deterioration, peeling and discoloration of finishes in excess of normal usage.

Part 2 Products

2.1 PERFORMANCE REQUIREMENTS

.1 Design and size components to withstand dead and live loads caused by pressure and suction of wind, acting normal to plane of system as calculated in accordance with Climatic Data included in the National Building Code of Canada (NBCC), 2020.

.2 Design and size components to withstand seismic loads and sway displacement as calculated in accordance with NBCC and other applicable codes.

.4 The design of the curtain wall aluminum framing, shall incorporate a thermal-break system so that no condensation shall form on any interior surfaces of the aluminum members

before any of the exposed glass area of the sealed units reaches the dew point temperature when subjected to the specified environmental conditions. Thermally, the grid members shall have a resistance to heat transfer equal to or better than that of the area along the bottom of the sealed glass units with the selected spacer edge construction

.6 Anchorage shall be designed to accommodate all thermal, seismic and building movements. All anchorage and fastenings for curtain wall window frames shall be concealed.

.7 Structural Test Performance: to ASTM E330, as follows:

.1 When tested at a positive and negative wind load design pressures, assemblies do not evidence deflection exceeding L/175 of clear span.

.2 A static design load of 40 psf (1916 Pa) shall be applied in the positive and negative direction.

.1 When tested at 150% of positive and negative wind-load design pressures, assemblies, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding 0.2% of clear span.

.2 Minimum test duration according to ASTM E330 is 10 seconds.

.8 Provide system to accommodate, without damage to components or deterioration of seals:

.1 Movement within system.

.2 Movement between system and perimeter framing components.

.3 Dynamic loading and release of loads.

.4 Deflection of structural support framing.

.9 Limit air infiltration through assembly to 0.2 L/s.m2 of wall area, measured at a reference differential pressure across assembly of 300 Pa as measured in accordance with AAMA 501 and ASTM E 283.

.11 Water leakage: none, when measured in accordance with AAMA 501, and ASTM E 331, at differential pressure across assembly of 720 Pa.

.12 Condensation resistance: to CAN/CSA A440.2, temperature index: I 58-60.

.13 Systems to provide for expansion and contraction within all system components caused by a cycling temperature range of 110 degrees C over a 12 hour period without causing detrimental effect to system components.

.14 Design framing on the Rain Screen Principle. Drain water entering joints, condensation occurring in channels, or migrating moisture occurring within system, to the exterior by a weep drainage network.

.15 Maintain continuous air barrier and vapour retarder throughout assembly, primarily in line with the throat of framing.

.16 Ensure no vibration harmonics, wind whistles, noises caused by thermal movement, thermal movement transmitted to other building elements, loosening, weakening, or fracturing of attachments or components of system occur.

.17 All dissimilar metals shall be separated by an inert material to prevent any possibility of galvanic action.

.18 Summary Table of Required Performance Levels:

Airtightness Level	Fixed and A2	Design Pressure	1916 pa
Specified DRWP	440 pa	Condensation Resistance	I-58-60
Specified Wind Load	1916 kpa		

.19 Performance Designation: in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11 – NAFS:

.1 **AW-PG40-FW/AP**

.2 Designation Legend:

.1 AW – Performance Class

.2 PG – Performance Grade

.3 40 – Design Pressure

.4 FW – Fixed Window / AP – Awning Window

2.2 MATERIALS

.1 Aluminum materials:

.1 Extruded aluminum: to CSA HA-Series 6063 alloy, T5 or T6 temper, free from perceptible distortions, waves, twists, buckling or other deficiencies of appearance or performance.

.2 Reinforcing Members: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.

.3 Sheet and plate: to ASTM B209/B209M, anodizing quality, alloy and temper suitable for purpose and finish required, special hardness for flat panel application, re-squared saw cut edges, free from perceptible distortions, waves, twists, buckling or other deficiencies in appearance or performance.

.4 Sills, trims, closures, flashings and other such components:

.1 Refer to Section 07 62 00 – Sheet Metal Flashing and Trim.

.5 Extruded bars, rods, profiles, and tubes: In accordance with ASTM B221/B221M, and AA-6063-T5 or T6 temper, anodizing quality.

.6 Aluminum welding: to CSA W59.2.

.2 Steel: to CSA G40.20/G40.21, 300W hot dipped galvanized after fabrication to ASTM A653/A653M, minimum coating of 600 g/m2 shapes to suit mullion sections.

.3 Galvanizing, unless otherwise specified: hot dipped galvanizing, with minimum zinc coating of 600 g/m2 to ASTM A653/A653M.

.4 Stainless steel: to ASTM A167, Type 304 or 316; of one type throughout.

.5 Fasteners: to ASTM A167, stainless steel, type 304 as recommended by curtain wall manufacturer selected to prevent galvanic action with the components fastened, of suitable size to withstand imposed loads.

.6 Anti-rotation spacers: manufacturer's extruded aluminum spacers with integral gaskets as required at frame transitions and termination points, including at dual-glazed framing to single-pane spandrel panel transitions.

.7 Primers and Adhesives: as recommended by curtain wall manufacturer.

.8 Thermal barrier consists of 1” (25 mm) separation between the interior and exterior metal members in a typical condition, while maintaining a continuous watertight seal. Thermal barrier assembly shall be tested to the thermal cycling requirements of ASTM E2692 and show no sign of degradation following the test.

.9 Thermal separators (thermal break): Thermal separator shall be extruded of a silicone compatible elastomer that provides for silicone adhesion, of size to conform to the extruded

aluminum members or other locations where required, and having a minimum tensile strength of 14 MPa (2000 psi) and Durometer A Hardness of 60, +/- 5.

.10 Concealed flashing: manufacturer's standard corrosion resistant, non staining, non bleeding flashing compatible with adjacent materials.

.11 Gaskets: gaskets shall be silicone-compatible EPDM to ASTM C864, with dimensional tolerances and durometer hardness and of suitable size and shape to meet the requirements of the specifications and their specific application, designed to remain flexible at low temperatures, and provides for silicone adhesion; heat-resistant where required due to proximity of heating units.

.12 Isolation coating: alkali resistant bituminous paint.

.13 Primer for ferrous metals: CISC/CPMA 2-75.

.14 Zinc chromate primer, by PPG Industries, Inc. or similar.

.15 Touch up primer for galvanized steel: organic zinc rich primer, by Sherwin Williams Company of Canada Ltd. or similar.

.16 Sealants shall be from the same manufacturer for all work of this Section.

.17 Materials used in the work shall be resistant to rodents, vermin, mildew, fungus and algae.

2.3 COMPONENTS

.1 Aluminum Extrusions: Alloy and temper recommended by sliding aluminum-framed glass door manufacturer for strength, corrosion resistance, and application of required finish and not less than 2.3 mm wall thickness at any location for the main frame and sash members.

.2 Mullion profile:

- .1 51mm (2”) wide x 102mm (4”) back section depth, nominal dimensions for vertical and horizontal back members.
- .2 Thermally broken with interior tubular section insulated from exterior pressure plate by a continuous high performance thermal break integral with mullion nose.
- .3 Drainage holes, deflector plates and internal flashings to accommodate internal weep drainage system
- .4 Acceptable material:
  - .1 TW2200 Series, by Alumicor.
  - .2 5400HTP Series, by Windspec.
  - .3 5200 Series, by Commdoor.
  - .4 1620UT Series, by Kawneer.

.3 Exterior trims and connectors:

- .1 Extruded aluminum snap-on cap trims secured to pressure plate with concealed fastening method.
- .2 2" nominal (51mm) deep, as indicated x width of back members.

.4 Interior trims and connectors:

- .1 Extruded aluminum snap-on cap trims secured to pressure plate with concealed fastening method.
- .2 3/4" (19mm) deep, as indicated x width of back members.

.5 Back Pan/Metal Closure Panel Air Seal: galvanized sheet metal to ASTM A653/A653M, as detailed, minimum 20 ga thick. Reinforcing of hot or cold rolled steel or galvanized sheet steel sections, to the requirements of this Section shall be provided if required for stability of the sheet.

.6 Exterior and Interior panels:

.1 Exterior panels: 1.3mm (0.050”) aluminum sheet, to ASTM B209, laminated/bonded to 19mm thick marine grade plywood. Finish: anodized to match framing.

.1 Location: between gym doors.

.2 Interior Panels: 2.0mm (0.08”) aluminum sheet, to ASTM B209, anodized finish to match framing.

.7 Anchors, Clips, and Accessories: Aluminum or nonmagnetic stainless steel; provide sufficient strength to withstand design pressure indicated.

.8 Weather Seals: Provide weather stripping with integral barrier fin or fins of semi rigid, polypropylene sheet or polypropylene-coated material. Comply with AAMA 701/702.

.9 Gaskets shall be either EPDM elastomeric extrusions or a thermoplastic elastomer.

.10 Membrane Flashing: per Section 07 27 14

.11 Metal flashing: per Section 07 62 00

.12 Joint Sealants: per Section 07 92 00

2.4 OPERATORS

.1 Performance: to AAMA/WDMA/CSA 101/I.S.2/A440-11 – NAFS, in accordance with PART 2.1 of this Section, and as follows:

.1 Designation: CW-PG40-AP

.2 Air tightness: A2.

.3 Condensation resistance: I-58-60.

.4 Thermal resistance (U-factor): 0.48

.2 Projected: top hung opening out (THOO) (awning) with removable double glazed insulating glass.

.1 All windows locations, as indicated.

.3 Acceptable material:

.1 Alumicor Univent 1350.

.2 Windspec 535 Series.

.3 Commdoor 225 Series

.4 Kawneer 526

.4 Hardware and screens:

.1 Hinges: Equip each window with 1 pair of stainless steel friction arms.

.2 Operator:

.1 Awning: Equip each awning window with a crank operated, single lever type roto-operator.

.3 Locking: Equip each window with two claw locking handles with painted finish to match anodized aluminum frame finish.

.4 Screens: to CAN/CGSB-79.1.

.1 Type: Insect screening mesh: count 18x14, fibreglass.

.2 Fasteners: Stainless steel, tamper proof

.3 Screen frames: Aluminum colour to match window frames.

2.5 ALUMINUM ENTRANCES

.1 Aluminum Extrusions: Alloy and temper recommended by aluminum-framed glass door manufacturer for strength, corrosion resistance, and application of required finish and not less than 2.3 mm wall thickness at any location for the main frame and sash members.

.2 Fasteners: Aluminum, nonmagnetic stainless steel or other materials to be non-corrosive and compatible with sliding aluminum-framed glass door members, trim hardware, anchors, and other components.

.3 Anchors, Clips, and Accessories: Aluminum or nonmagnetic stainless steel; provide sufficient strength to withstand design pressure indicated.

.4 Reinforcing Members: Aluminum or nonmagnetic stainless steel; provide sufficient strength to withstand design pressure indicated.

.5 Weather Seals: Provide weather stripping with integral barrier fin or fins of semi rigid, polypropylene sheet or polypropylene-coated material. Comply with AAMA 701/702.

.6 Heavy-duty commercial flush door adaptors.

.7 Glazing gaskets shall be either EPDM elastomeric extrusions or a thermoplastic elastomer.

.8 Provide adjustable glass jacks to help center the glass in the door opening.

.9 Commercial grade, thermally broken aluminum door system.

.10 Construct doors of porthole extrusions with minimum wall thickness of 2.4 mm.

.11 Door stiles nominal 4" (102mm) wide plus or minus 12 mm.

.12 Top rail nominal 4" (102mm) wide plus or minus 6 mm.

.13 Bottom rail nominal 4" (102mm) wide plus or minus 6 mm.

.14 Doors to be of welded construction:

.1 Weld aluminum to CAN/CSA W59-2.

.15 Weld with SIGMA deep penetration plug weld and fillet weld at stile/rail connection.

.16 Reinforce corners of doors to produce sturdy door unit.

.17 Construct doors square and plumb, no distortion, waves, twists, buckles or other defects.

.18 Glazing stops: interlocking snap-in type for dry glazing. Exterior stops: tamperproof type.

.19 Acceptable materials:

.1 Exterior doors: thermally broken 57mm (2-1/4") thick, overall:

.1 Thermaporte 7700, by Alumicor.

.2 HTP Series, by Windspec.

.3 4300 Series, by Commdoor.

.4 AA425 Series, by Kawneer.

2.6 FINISHES – INTERIOR AND EXTERIOR ALUMINUM

.1 All exposed aluminum surfaces including curtainwall window frames, flashings, trims, and panels shall be dark bronze anodized. Comply with Aluminum Association designation AA-M12 C22 A44, 0.018mm (0.7 mils) minimum coating thickness (Class I).

.2 Colour and sheen shall be uniform with no visible variations.

2.7 INSULATION

.1 Spray foam insulation:

1. Low expansion, one component foam polyurethane, solvent free to CAN/ULC-S705.1; for use at shim spaces and voids.
2. Acceptable Material
   - .1 Enerfoam, by Dow Chemical
   - .2 Handi-foam, by Fomo Products
   - .3 CF 128-DW, by Hilti

.2 Back Pan Insulation, Semi-rigid mineral wool, 4” (100mm) thick at centre of back pan, minimum R-4.2 per inch (RSI of 0.74 per 25mm); provide additional layer of insulation around perimeter to provide improved thermal performance at aluminum mullions.

1. Acceptable materials:
   - .1 CurtainRock by Rockwool.
   - .2 Thermafibre FireSpan 40 by Owens Corning.
   - .3 Or approved alternate.

2.8 FABRICATION: FRAMING AND WINDOWS

.1 Fabricate in accordance with CSA-A440/A440.1 from framing material, supplemented as follows:

- .1 Fabricate units square and true with a maximum tolerance of plus or minus 1.5mm for units with a diagonal measurement of 1800mm or less and plus or minus 3mm for units with a diagonal measurement over 1800mm.
- .2 Face dimensions detailed are maximum permissible sizes.
- .3 Brace frames to maintain squareness and rigidity during shipment and installation.
- .4 Finish steel angles, clips and reinforcement with 380 g/m2 zinc coating to CAN/CSA-G164.
- .5 Visible manufacturer's identification labels not permitted.
- .6 Fabricate system components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
- .7 Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
- .8 Prepare components to receive anchor devices. Install anchors.
- .9 Arrange fasteners and attachments to ensure concealment from view.
- .10 Reinforce framing members for external imposed loads.
- .11 Visible manufacturer's identification labels not permitted.

2.9 FABRICATION: ENTRANCES

.1 Fabricate aluminum-framed glass entrance doors in sizes indicated. Include a complete system for assembling components and anchoring doors. Comply NBC 2015 criteria.

.2 Door hardware and keying: in accordance with Section 08 71 00. Additional miscellaneous hardware shall be manufacturer’s heavy-duty commercial quality accessories and hardware as required for a complete installation.

.3 Fabricate aluminum-framed glass doors that are re-glazable without dismantling perimeter framing.

.4 Door corner construction shall consist of mechanical clip fastening, SIGMA deep penetration plug welds and 1-1/8" (29 mm) long fillet welds inside and outside of all four

corners. Glazing stops shall be hook-in type with EPDM glazing gaskets reinforced with non-stretchable cord.

.5 Accurately fit and secure joints and corners. Make joints hairline in appearance.

.6 Prepare components with internal reinforcement for door hardware.

.7 Arrange fasteners and attachments to conceal from view.

.8 Door hardware to be supplied by door hardware contractor under the door hardware Section, to be installed by curtainwall contractor. Prepare curtainwall framing for installation of all door hardware and accessories.

.9 Provide all hardware of each type from one manufacturer.

2.10 SOURCE QUALITY CONTROL

.1 Perform work in accordance with CANS-A440-00.

.2 Manufacturer qualifications: company specializing in manufacturing the Products specified in this section with minimum five years documented experience.

.3 Installer qualifications: company specializing in performing the work of this section with minimum five years documented experience and approved by manufacturer.

Part 3 Execution

3.1 EXAMINATION

.1 Verify dimensions, tolerances, and methods of attachment.

.2 Verify conditions of substrates, wall openings and adjoining air barrier and vapour retarder materials, etc., and are ready to receive Work of this Section.

.3 Proceed with installation only after unacceptable conditions have been remedied. Commencement of Work will be taken as acceptance of conditions.

3.2 INSTALLATION

.1 Install framing in accordance with manufacturer's instructions, engineering requirements and CSA-A440/A440.1.

.2 Attach to wood bucks to permit sufficient adjustment to accommodate construction tolerances and other irregularities.

.3 Provide all anchors, angles, alignment attachments and shims to permanently fasten system to rough opening. Clean weld surfaces; apply protective primer to field welds and adjacent surfaces.

.4 Framing is to have continuous angle supports at head, jambs, and sills.

.5 Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances and align with adjacent work.

.6 Install and seal perimeter of frames to adjacent substrates with self-adhesive air/vapour barrier membrane, as indicated. Apply termination sealant/mastic at all membrane terminations.

.7 Install sills, flashings, trims, and closures for complete installation.

.8 Insulate shim spaces at perimeter of assembly to maintain continuity of thermal barrier with foamed-in-place polyurethane foam insulation, in strict accordance with manufacturer’s instructions.

.9 Install aluminum panels. Install pressure plates and caps.

.10 Install perimeter sealant to achieve performance criteria, including backing materials, and installation criteria.

.11 Steel Doors: per Section 08 11 14.

3.3 BACK PANS

.1 Ensure back pans are continuous and all joints within the back pan are fully sealed.

.2 Provide a continuous seal from the back pan to the framing.

.3 All fasteners that penetrate the back pan shall be bedded in sealant and have the fastener head sealed.

.4 Ensure spandrel spaces are adequately drained and vented, including eliminating obstructions that may trap water.

3.4 ENTRANCES

.1 Comply with Drawings and manufacturer's printed installation instructions for installing aluminum swing entrance doors, hardware, accessories, and other components.

.2 Install aluminum swing entrance doors level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.

.3 Set sill threshold in bed of sealant, as indicated, for weather tight construction.

.4 Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

3.5 SITE TOLERANCES

.1 Maximum variation from plumb: 1/16"/36" (1.5 mm/m) noncumulative or ½" / 100' (12 mm/30 m), whichever is less.

.2 Maximum misalignment of two adjoining members abutting in plane: 5/16" (0.8 mm).

.3 Maximum sealant space between curtain wall and adjacent construction: ½" (13 mm).

3.6 FIELD QUALITY CONTROL

.1 Architect is to conduct periodic site visits at various stages of the Work, including the following:

.1 After delivery and storage of products, and when preparatory Work on which Work of this Section depends is complete, but before installation begins.

.2 Mock-up reviews.

.3 Various times during progress of the Work.

.4 Upon completion of Work, after cleaning is carried out.

3.7 CLEANING

.1 Remove protective material from prefinished panel surfaces.

.2 Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.

.3 Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.

3.8 PROTECTION

.1 Protect finished Work from damage during construction.

.2 Repair damage to adjacent materials caused by Work of this Section.

END OF SECTION

GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes:

1. Mechanical and electrified door hardware for:

   a. Swinging doors.
   b. Sliding doors.

2. Field verification, preparation and modification of existing doors and frames to receive new door hardware.
3. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

B. Exclusions: Unless specifically listed in hardware sets, hardware is not specified in this section for:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

C. Related Sections:

1. Division 01 Section "Alternates" for alternates affecting this section.
2. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
3. Division 09 sections for touchup, finishing or refinishing of existing openings modified by this section.
4. Division 13 Section "Radiation Protection" for requirements for lead-lining for door hardware at openings indicated to receive radiation protection.
5. Division 26 sections for connections to electrical power system and for low-voltage wiring.
6. Division 28 sections for coordination with other components of electronic access control system.

1.03 REFERENCES

A. UL - Underwriters Laboratories

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Key Systems and Nomenclature

C. ANSI - American National Standards Institute

1. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties

1.04 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 requirements.
2. Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
3. Prior to forwarding submittal, comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, “EXAMINATION” article, herein.

B. Action Submittals:

1. Product Data: Technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:

    a. Wiring Diagrams: For power, signal, and control wiring and including:
        1) Details of interface of electrified door hardware and building safety and security systems.
        2) Schematic diagram of systems that interface with electrified door hardware.
        3) Point-to-point wiring.
        4) Risers.

3. Samples for Verification: If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.

    a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.

4. Door Hardware Schedule: Submit schedule with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening, include:

    a. Door Index; include door number, heading number, and Architects hardware set number.
    b. Opening Lock Function Spreadsheet: List locking device and function for each opening.
    c. Quantity, type, style, function, size, and finish of each hardware item.
    d. Name and manufacturer of each item.
    e. Fastenings and other pertinent information.
    f. Location of each hardware set cross-referenced to indications on Drawings.
    g. Explanation of all abbreviations, symbols, and codes contained in schedule.
    h. Mounting locations for hardware.
    i. Door and frame sizes and materials.
    j. Name and phone number for local manufacturer's representative for each product.
    k. Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and access control components). Operational description should include operational descriptions for: egress, ingress (access), and fire/smoke alarm connections.
        1) Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.

5. Key Schedule:

    a. After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used and door numbers controlled.
    b. Use ANSI/BHMA A156.28 “Recommended Practices for Keying Systems” as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
    c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
    d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
    e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.
        1) Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.

    f. Prepare key schedule by or under supervision of supplier, detailing Owner’s final keying instructions for locks.

6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory or shop prepared for door hardware installation.

C. Informational Submittals:

1. Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.

2. Product data for electrified door hardware:

    a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.

3. Warranty: Special warranty specified in this Section.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:

    a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
    b. Catalog pages for each product.
    c. Factory order acknowledgement numbers (for warranty and service)
    d. Name, address, and phone number of local representative for each manufacturer.
    e. Parts list for each product.
    f. Final approved hardware schedule, edited to reflect conditions as-installed.
    g. Final keying schedule
    h. Copies of floor plans with keying nomenclature
    i. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
    j. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

1.05 QUALITY ASSURANCE

A. Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.

1. Warehousing Facilities: In Project's vicinity.
2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
4. Coordination Responsibility: Assist in coordinating installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.

    a. Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.

B. Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:

1. For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).
2. Can provide installation and technical data to Architect and other related subcontractors.
3. Can inspect and verify components are in working order upon completion of installation.
4. Capable of producing wiring diagrams.

5. Capable of coordinating installation of electrified hardware with Architect and electrical engineers.

C. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

D. Fire-Rated Door Openings: Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

E. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

F. Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in “REFERENCES” article, herein.

G. Keying Conference

1. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:

   a. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
   b. Preliminary key system schematic diagram.
   c. Requirements for key control system.
   d. Requirements for access control.
   e. Address for delivery of keys.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

1. Deliver each article of hardware in manufacturer’s original packaging.

B. Project Conditions:

1. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.

C. Protection and Damage:

1. Promptly replace products damaged during shipping.
2. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.
3. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

D. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.07 COORDINATION

A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

E. Existing Openings: Where existing doors, frames and/or hardware are to remain, field verify existing functions, conditions and preparations and coordinate to suit opening conditions and to provide proper door operation.

F. *All door hardware outlined in the door hardware specification (08 71 00) to be supplied by a door hardware contractor. Where the equipment is identified on the electrical drawings, but not under the door hardware specification, the equipment shall be provided by the electrical contractor. In general, the door access control panels, coordinate power to the openings and auxiliary system wiring integrations are to be provided by the electrical contractor* (ADDED ADD# 02)

1.08 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Beginning from date of Substantial Completion, for durations indicated.

   a. Closers:
      1) Mechanical: **LCN 4000 series, 30 years, LCN 1460 series, 30 years**

   b. Automatic Operators: **LCN, 2 years**
   c. Exit Devices:
      1) Mechanical: 3 years.
      2) Electrified: 1 year.

   d. Locksets:
      1) Mechanical: **Schlage, 3 years, Schlage ND series, 10 years**
      2) Electrified: 1 year.

   e. Continuous Hinges: Lifetime warranty.

2. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.

1.09 MAINTENANCE

A. Maintenance Tools: Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

PRODUCTS

2.01 MANUFACTURERS

A. Approval of manufacturers and/or products other than those listed as “Scheduled Manufacturer” or “Acceptable Manufacturers” in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.

B. Approval of products from manufacturers indicated in “Acceptable Manufacturers” is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer’s product.

C. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.02 MATERIALS

A. Fasteners

1. Furnish all TORX screws where the screws are exposed
2. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
3. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
4. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
5. Install hardware with fasteners provided by hardware manufacturer.

B. Modification and Preparation of Existing Doors: Where existing door hardware is indicated to be removed and reinstalled.

1. Provide necessary fillers, Dutchmen, reinforcements, and fasteners, compatible with existing materials, as required for mounting new opening hardware and to cover existing door and frame preparations.
2. Use materials which match materials of adjacent modified areas.
3. When modifying existing fire-rated openings, provide materials permitted by NFPA 80 as required to maintain fire-rating.

C. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

2.03 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Ives 5BB series.

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:

   a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
   b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high

3. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:

   a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
   b. Interior: Heavy weight, steel, 5 inches (127 mm) high

4. 2 inches or thicker doors:

   a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
   b. Interior: Heavy weight, steel, 5 inches (127 mm) high

5. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
6. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
7. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

   a. Steel Hinges: Steel pins
   b. Non-Ferrous Hinges: Stainless steel pins
   c. Out-Swinging Exterior Doors: Non-removable pins
   d. Out-Swinging Interior Lockable Doors: Non-removable pins
   e. Interior Non-lockable Doors: Non-rising pins

8. Width of hinges: 4-1/2 inches (114 mm) at 1-3/4 inch (44 mm) thick doors, and 5 inches (127 mm) at 2 inches (51 mm) or thicker doors. Adjust hinge width as required for door, frame, and wall conditions to allow proper degree of opening.
9. Provide hinges with electrified options as scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component.
10. Provide mortar guard for each electrified hinge specified.
11. Provide spring hinges where specified. Provide two spring hinges and one bearing hinge per door leaf for doors 90 inches (2286 mm) or less in height. Provide one additional bearing hinge for each 30 inches (762 mm) of additional door height.

2.04 CONTINUOUS HINGES

A. Aluminum Geared

1. Manufacturers:

    a. Scheduled Manufacturer: Ives.

2. Requirements:

    a. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
    b. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.
    c. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
    d. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
    e. On fire-rated doors, provide aluminum geared continuous hinges that are classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
    f. Provide aluminum geared continuous hinges with electrified option scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware.
    g. Install hinges with fasteners supplied by manufacturer.
    h. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

2.05 FLUSH BOLTS

A. Manufacturers:

    1. Scheduled Manufacturer: Ives.

B. Requirements:

    1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

2.06 MORTISE LOCKS

A. Manufacturers and Products:

    1. Scheduled Manufacturer and Product: Schlage L9000 series.

B. Requirements:

    1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3 hour fire doors.
    2. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
    3. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to “KEYING” article, herein.

4. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1 inch (25 mm) throw, constructed of stainless steel.
5. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
6. Provide electrified options as scheduled in the hardware sets. Where scheduled, provide switches and sensors integrated into the locks and latches.
7. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.

    a. Lever Design: Schlage **06**

2.07 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Von Duprin 99/33A, 98/35A series.

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to “KEYING” article, herein.
3. Provide touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide flush end caps for exit devices.
7. Provide exit devices with manufacturer’s approved strikes.
8. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
9. Mount mechanism case flush on face of doors, or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
10. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
11. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
12. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
13. Provide electrified options as scheduled.
14. **CX 98/99:** Provide delayed egress devices, where scheduled, that are UL 294 listed, meet National Fire Protection Association (NFPA) and International Building Code (IBC) governing delayed egress, and/or other local and national fire codes acceptable to authority having jurisdiction as required.

    a. Provide non-handed and field sizable device with 3/4 (19mm) throw deadlocking latch bolt. Device incorporates an internal RX switch that detects attempt to exit from applying less than 15lbs to the push pad, which causes this switch to start an irreversible alarm cycle. Key switch in device is capable of arming, disarming, or resetting the device; and indicator lamp determines status of the device

b. Provide devices capable of standard 15 second release delay and indefinite release delay as required by code, when tied into fire alarm system will release immediately when an alarm condition exists.
c. Provide devices with all control inputs – door position input, external inhibit input, fire alarm input; auxiliary locking; nuisance alarm and internal horn; and, remote signaling output self-contained in the device assembly..

2.08 CYLINDERS

A. Manufacturers:

1. Scheduled Manufacturer: **EXISTING**

B. Requirements:

1. Provide cylinders/cores to Owner's EXISTING key system, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.

2.09 KEYING

A. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Provide cylinders/cores keyed into a EXISTING factory registered keying system.

C. Comply with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

D. Requirements:

1. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.

   a. Master Keying system as directed by the Owner.

2. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
3. Provide keys with the following features:

   a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
   b. Patent Protection: Keys and blanks protected by one or more utility patent(s)

4. Identification:

   a. Mark permanent cylinders/cores and keys with applicable blind code per DHI publication "Keying Systems and Nomenclature" for identification. Do not provide blind code marks with actual key cuts.
   b. Identification stamping provisions must be approved by the Architect and Owner.
   c. Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO

NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.

d. Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
e. Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.

5. Quantity: Furnish in the following quantities.

   a. Change (Day) Keys: 3 per cylinder/core.
   b. Permanent Control Keys: 3.
   c. Master Keys: 6.

2.10 DOOR CLOSERS

A. Manufacturers and Products:

   1. Scheduled Manufacturer and Product: LCN 4040XP series.

B. Requirements:

   1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
   2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
   3. Cylinder Body: 1-1/2 inch (38 mm) diameter with 3/4 inch (19 mm) diameter double heat-treated pinion journal.
   4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
   5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
   6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
   7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
   8. Pressure Relief Valve (PRV) Technology: Not permitted.
   9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
   10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.11 ELECTRO-MECHANICAL AUTOMATIC OPERATORS

A. Manufacturers and Products: **MUST BE SUPPLIED AND INSTALLED**

   1. Scheduled Manufacturer and Product: LCN Senior Swing.

B. Requirements:

1. Provide low energy automatic operator units that are electro-mechanical design complying with ANSI/BHMA A156.19.

    a. Opening: Powered by DC motor working through reduction gears.
    b. Closing: Spring force.
    c. Manual, hydraulic, or chain drive closers: Not permitted.
    d. Operation: Motor is off when door is in closing mode. Door can be manually operated with power on or off without damage to operator. Provide variable adjustments, including opening and closing speed adjustment.
    e. Cover: Aluminum.

2. Provide units with manual off/auto/hold-open switch, push and go function to activate power operator, vestibule interface delay, electric lock delay, hold-open delay adjustable from 2 to 30 seconds, and logic terminal to interface with accessories, mats, and sensors.
3. Provide drop plates, brackets, or adapters for arms as required to suit details.
4. Provide hard-wired motion sensors and/or actuator switches for operation as specified. Provide weather-resistant actuators at exterior applications.
5. Provide key switches, with LED's, recommended and approved by manufacturer of automatic operator as required for function as described in operation description of hardware sets. Cylinders: Refer to "KEYING" article, herein.
6. Provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of automatic operator for each individual leaf. Actuators control both doors simultaneously at pairs. Sequence operation of exterior and vestibule doors with automatic operators to allow ingress or egress through both sets of openings as directed by Architect. Locate actuators, key switches, and other controls as directed by Architect.
7. Provide units with inputs for smoke evacuation doors, where specified, which allow doors to power open upon fire alarm activation and hold open indefinitely or until fire alarm is reset, presence detector input, which prevents closed door from opening or door that is fully opened from closing, hold open toggle input, which allows remote activation for indefinite hold open and close second time input is activated, vestibule inputs, which allow sequencing operation of two units, and SPDT relay for interfacing with latching or locking devices.

2.12 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer: Ives.

B. Requirements:

1. Provide push plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick and beveled 4 edges. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
2. Provide push bars of solid bar stock, diameter and length as scheduled. Provide push bars of sufficient length to span from center to center of each stile. Where required, mount back to back with pull.
3. Provide offset pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
4. Provide flush pulls as scheduled. Where required, provide back-to-back mounted model.

5. Provide pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
6. Provide pull plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick, beveled 4 edges, and prepped for pull. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
7. Provide wire pulls of solid bar stock, diameter and length as scheduled.
8. Provide decorative pulls as scheduled. Where required, mount back to back with pull.

2.13 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer: Ives.

B. Requirements:

1. Provide kick plates, mop plates, and armor plates minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes of plates:

   a. Kick Plates: 10 inches (254 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
   b. Mop Plates: 4 inches (102 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
   c. Armor Plates: 36 inches (914 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs

2.14 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers: Glynn-Johnson.

B. Requirements:

1. Provide heavy duty concealed mounted overhead stop or holder as specified for exterior and interior vestibule single acting doors.
2. Provide heavy duty concealed mounted overhead stop or holder as specified for double acting doors.
3. Provide heavy or medium duty and concealed or surface mounted overhead stop or holder for interior doors as specified. Provide medium duty surface mounted overhead stop for interior doors and at any door that swings more than 140 degrees before striking wall, open against equipment, casework, sidelights, and where conditions do not allow wall stop or floor stop presents tripping hazard.
4. Where overhead holders are specified provide friction type at doors without closer and positive type at doors with closer.

2.15 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

1. Scheduled Manufacturer: Zero

B. Requirements:

1. Provide thresholds, weather-stripping (including door sweeps, seals, and astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items.
2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
3. Size of thresholds:

   a. Saddle Thresholds: 1/2 inch (13 mm) high by jamb width by door width
   b. Bumper Seal Thresholds: 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width

4. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.

2.16 FINISHES

A. Finish: BHMA 626/652 (US26D); except:

1. Hinges at Exterior Doors: BHMA 630 (US32D)
2. Continuous Hinges: BHMA 630 (US32D)
3. Continuous Hinges: BHMA 628 (US28)
4. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
5. Protection Plates: BHMA 630 (US32D)
6. Overhead Stops and Holders: BHMA 630 (US32D)
7. Door Closers: Powder Coat to Match
8. Wall Stops: BHMA 630 (US32D)
9. Latch Protectors: BHMA 630 (US32D)
10. Weatherstripping: Clear Anodized Aluminum
11. Thresholds: Mill Finish Aluminum

EXECUTION

3.01 INSTALLATION

A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

B. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

H. Lock Cylinders: Install construction cores to secure building and areas during construction period.

   1. Replace construction cores with permanent cores as indicated in keying section.
   2. Furnish permanent cores to Owner for installation.

I. Wiring: Coordinate with Division 26, ELECTRICAL sections for:

   1. Conduit, junction boxes and wire pulls.
   2. Connections to and from power supplies to electrified hardware.
   3. Connections to fire/smoke alarm system and smoke evacuation system.
   4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
   5. Testing and labeling wires with Architect's opening number.

J. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

K. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.

L. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

M. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.

N. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

O. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

P. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

Q. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

R. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.02 FIELD QUALITY CONTROL

A. Engage qualified manufacturer trained representative to perform inspections and to prepare inspection reports.

1. Representative will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.03 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.04 DOOR HARDWARE SCHEDULE

A. Hardware items are referenced in the following hardware. Refer to the above-specifications for special features, options, cylinders/keying, and other requirements.

B. Hardware Sets:

Hardware Group No. 01

For use on Door #(s):
126.1
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1 4.5 X 4 NRP	630	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	CYLINDER	TO BE TIED INTO AN EXISTING KEYING SYSTEM		EXI
2	EA	OH STOP	90H	630	GLY
1	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
1	EA	MTG PLATE	4040XP-18G	689	LCN
1	SET	GASKETING	312A-S x door width x (2) door height	A	ZER
1	EA	ASTRAGAL	8193AA x (2) door height	AA	ZER
2	EA	DOOR SWEEP	8192AA x door width	AA	ZER
1	EA	THRESHOLD	545A x door widths	A	ZER

ACTIVE DOOR IS ALWAYS LOCKED ALWAYS NEED A KEY TO GET IN. FREE EGRESS AT ALL TIMES

Hardware Group No. 02

For use on Door #(s):
130.1 143.1 143.2 143.3 143.4 163.1
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4 NRP	630	IVE
1	EA	PANIC HARDWARE	98-L-06	626	VON
1	EA	CYLINDER	TO BE TIED INTO AN EXISTING KEYING SYSTEM		EXI
1	EA	OH STOP	90S	630	GLY
1	EA	SURFACE CLOSER	4040XP LONG	689	LCN
1	EA	CEILNG MTG PLATE	4040XP-18G	689	LCN
1	SET	GASKETING	312A-S x door width x (2) door height	A	ZER
1	EA	DOOR SWEEP	8192AA x door width	AA	ZER
1	EA	THRESHOLD	545A x door width	A	ZER

ACTIVE DOOR CAN BE LOCKED OR UNLOCKED MECHANICALLY WITH KEY. FREE EGRESS AT ALL TIMES.

Hardware Group No. 3

For use on Door #(s):
121.1 158.1 162.1

Provide each PR door(s) with the following:

2	EA	CONT. HINGE	112XY	628	IVE
2	EA	PANIC HARDWARE	CD-3347A-NL-OP-LBR-388	US26D	VON
4	EA	CYLINDER	CYLINDER TO BE TIED INTO AN EXISTING KEYING SYSTEM		EXI
2	EA	90 DEG OFFSET PULL	8190HD 10" A	630	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP LONG	689	LCN
2	EA	MTG PLATE	4040XP-18G	689	LCN
2	EA	BLADE STOP SPACER	4040XP-61	693	LCN
1	EA	DOOR SEALANT	GASKETING/ASTRAGAL BY DOOR SUPPLIER		UNK
2	EA	DOOR SWEEP	8192AA x door width	AA	ZER
1	EA	THRESHOLD	545A x door width		ZER

DURING DAY TIME HOURS THE LATCH ON THE EXIT DEVICE IS RETRACED BY INSERTING A KEY INTO THE CYLINDER ON THE RAIL. DURING THIS TIME THE DOORS ARE NOT LOCKABLE. AFTER HOURS DOORS ARE SECURED BY INSERTING KEY INTO THE RAIL OF THE EXIT DEVICE AND RELEASING THE LATCH. ONLY ENTRY AFTER HOURS IS BY KEY. FREE EGRESS AT ALL TIMES

Hardware Group No. 4

For use on Door #(s):
161.1

Provide each PR door(s) with the following:

2	EA	CONT. HINGE	112XY	628	IVE
2	EA	PANIC HARDWARE	CD-3347A-NL-OP-388	626	VON
5	EA	CYLINDER	CYLINDER TO BE TIED INTO AN EXISTING KEYING SYSTEM		EXI
2	EA	90 DEG OFFSET PULL	8190HD 10" A	630	IVE
2	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP LONG	689	LCN
1	EA	SURF. AUTO OPERATOR	9542 MS	689	LCN
1	EA	MTG PLT	4040XP-18G	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61	689	LCN
2	EA	ACTUATOR, TOUCH	8310-836T	630	LCN
2	EA	DOOR SWEEP	8192AA x door width	AA	ZER
1	EA	THRESHOLD	545A x door width	A	ZER
1	EA	KEY SWITCH	653 series	626	SCE

MODE OF OPERATION:
DURING DAY TIME HOURS THE LATCH ON THE EXIT DEVICE IS RETRACED BY INSERTING A KEY INTO THE CYLINDER ON THE RAIL AND DOOR OPERATOR IS TURNED ON BY INSERTING KEY INTO KEY SWITCH. DURING THIS TIME THE DOORS ARE NOT LOCKABLE. A PERSON CAN GET IN BY THE PUSH RAIL OR BY PRESSING THE ACTUATOR BUTTON WHICH WILL AUTOMATICALLY OPEN A DOOR. AFTER HOURS DOORS ARE SECURED BY INSERTING KEY INTO THE RAIL OF THE EXIT DEVICE AND RELEASING THE LATCH AND TURNING OFF OPERATOR BY INSERTING KEY INTO THE KEY SWITCH. ONLY ENTRY AFTER HOURS IS BY KEY. FREE EGRESS AT ALL TIMES

Part 1 General

1.1 RELATED SECTIONS

.1 Section 08 44 13 – Glazed Aluminum Framing Systems

1.2 REFERENCES

.1 Codes and standards referenced in this section refer to the latest thereof.

.2 American National Standards Institute (ANSI).
- .1 ANSI/ASTM E330, Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

.3 American Society for Testing and Materials (ASTM)
- .1 ASTM D2240, Test Method for Rubber Property – Durometer Hardness.
- .2 ASTM C920-11, Standard Specification for Elastomeric Joint Sealants.

.4 Canadian General Standards Board (CGSB).
- .1 CAN/CGSB-12.1, Tempered or Laminated Safety Glass.
- .2 CAN/CGSB-12.3, Clear Float Glass
- .3 CAN/CGSB-12.8, Insulating Glass Units.
- .4 CAN/ CGSB-12.9-M, Heat Strengthened Glass.

.5 Canadian Standards Association (CSA).
- .1 CSA A440.2, Energy Performance Evaluation of Windows and Sliding Glass Doors.
- .2 CSA Certification Program for Windows and Doors.

.6 Glass Association of North American (GANA)
- .1 GANA Glazing Manual.

1.3 SYSTEM DESCRIPTION

.1 Performance Requirements:
- .1 Provide continuity of building enclosure vapour and air barrier using glass and glazing materials as follow:
  - .1 Utilize inner light of multiple light sealed units for continuity of air and vapour seal.
  - .2 Size glass to withstand wind loads, dead loads and positive and negative live loads as measured in accordance with ANSI/ASTM E330 and NBC latest edition.
  - .3 Limit glass deflection to 1/200 with full recovery of glazing materials.

1.4 SUBMITTALS

.1 Product Data:
- .1 Submit manufacturer's printed product literature, specifications and data sheet.
- .2 Samples: Submit one 300mm x 300mm sample specified glass unit. Glazing materials to illustrate edges and corners.

1.5 QUALITY ASSURANCE

.1 Perform work in accordance with GANA Glazing Manual and Laminated Glazing Reference Manual for glazing installation methods. Provide shop inspection and testing for glass.

1.6 MOCK-UPS

.1 Construct mock-up to including glass glazing, and perimeter air barrier seal.

.2 Mock-up will be used to judge workmanship, substrate preparation, operation of equipment and material application.

.3 Construct mock-up where directed.

.4 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.

.5 Allow 48 hours for inspection of mock-up by Architect before proceeding with work.

1.7 WARRANTY

.1 Provide ten 10 year warranty for glazing units from the date of Substantial Completion.

1.8 ENVIRONMENTAL REQUIREMENTS

.1 Install glazing when ambient temperature is 10˚C minimum. Maintain ventilated environment for 24 hours after application.

.2 Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

Part 2 Products

2.1 FLAT GLASS

1. Annealed glass, to CAN/CGSB-12.3, glazing quality, transparent, 6mm thickness.

2. Heat strengthened glass, to CAN/ CGSB-12.9-M, glazing quality, transparent, Type 2, Class B-float, 6mm thickness.

3. Spandrel glass, heat strengthened to CAN/ CGSB-12.9-M, glazing quality, transparent, Type 2, Class B-float, opaque coated, 6mm thickness.
   .1 Opaque coating: Basis of Design: Opaci-Coat-300, 4-5 mil minimum dry film thickness. Colour: TBD.

4. Tempered glass, to CAN/CGSB-12.1, glazing quality, transparent, Type 2, Class B-float, Category II-540 impact resistance.

   .1 Thickness: 6mmTempering shall be performed using the horizontal tong-free method. If roller lines are apparent within acceptable limits as specified, they shall be in horizontal direction after installation.

.2 Lo-E Coating:

1. Low-emissivity (Low-e) coating, having the following properties based on an insulating glass unit with low-e coating on 2nd surface, argon gas fill, and transparent inner glass.
   .1 Metallic coating: soft, sputtered.
   .2 Light transmittance:
      .1 Ultra-violet: 14%.
      .2 Visible: 70%.
   .3 Exterior reflectance:

.1 Visible light: 11%.
.4 U-Value (Imperial):
.1 Winter Night-time: ≤ 0.24.
.2 Summer Day-time: ≤ 0.29.
.5 Shading co-efficient: 0.43.
.6 Solar Heat Gain Coefficient: 0.39.
.7 Light to Solar Gain: 1.79.
.8 Basis-of-Design:
.1 PPG Solarban 60 (2) Clear + Clear, or similar with same or better physical properties and performance characteristics.
.2 Acceptable alternate manufacturers include: Cardinal, Guardian, Viracon, and Prelco.

2.2 SEALED INSULATING GLASS UNITS

1. VG1: Vision Glass:
   .1 Double glazed insulating units to CAN/CGSB-12.8; sizes as noted on drawings, 25mm (1”) overall thickness:
   .2 6mm clear outer lite, annealed.
   .3 Low "E" coating on #2 surface.
   .4 Edge deletion of Low-E coating as required at thermal spacer.
   .5 13mm high performance non-metallic thermal spacer.
   .6 Inert gas filled cavity: Argon.
   .7 6mm clear inner lite, annealed.

2. VG2: Vision Glass:
   1. Double glazed insulating units to CAN/CGSB-12.8; sizes as noted on drawings, 25mm (1”) overall thickness.
   2. 6mm clear outer lite, tempered.
   3. Low "E" coating on #2 surface.
   4. Edge deletion of Low-E coating as required at thermal spacer.
   5. 13mm high performance non-metallic thermal spacer.
   6. Inert gas filled cavity: Argon.
   7. 6mm clear inner lite, tempered.

3. SP: Spandrel Glass:
   1. Double glazed insulating units to CAN/CGSB-12.8; sizes as noted on drawings, 25mm (1”) overall thickness:
   2. 6mm clear outer lite, heat strengthened.
   3. Low "E" coating on #2 surface.
   4. Edge deletion of Low-E coating as required at thermal spacer.
   5. 13mm high performance non-metallic thermal spacer.
   6. Inert gas filled cavity: Argon.
   7. 6mm clear inner lite, heat strengthened spandrel glass with opaque coating on surface #4.

2.3 ACCESSORIES

.1 Setting blocks: Neoprene, 80-90 Shore A durometer hardness to ASTM D2240, minimum 100 mm x width of glazing rabbet space minus 1.5 mm x height.

.2 Spacer shims: Neoprene, 50-60 Shore A durometer hardness to ASTM D2240, 75 mm long x one half height of glazing stop x thickness to suit application. Self adhesive on one face.

.3 Glazing tape:
.1 Preformed butyl compound with integral resilient tube spacing device, 10-15 Shore A durometer hardness to ASTM D2240; coiled on release paper; black colour.

.4 Glazing splines: resilient polyvinyl chloride, extruded shape to suit glazing channel retaining slot, colour as selected.

.5 Glazing clips: manufacturer's standard type.

.6 Sealant: Silicone Sealant; to ASTM C920: type S; grade NS; class 25; use NT, A, G, O.
- .1 Acceptable materials:
  - .1 995 Silicone, Dow Corning.
  - .2 Proglaze SSG, Tremco Inc.
  - .3 SSG4000, General Electric.
  - .4 895NST, Pecora.

2.4 FABRICATION

1. Verify glazing dimensions on Site.
2. Clearly label each glass light with maker's name, weight, quality, type and certification number. Do not remove labels until after work has been reviewed by Consultant.
3. Accurately size glass to fit openings allowing the clearances recommended by manufacturer.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 EXAMINATION

.1 Verify that openings for glazing are correctly sized and within tolerance.

.2 Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

3.3 PREPARATION

.1 Clean contact surfaces with solvent and wipe dry.

.2 Seal porous glazing channels or recesses with substrate compatible primer or sealer.

.3 Prime surfaces scheduled to receive sealant.

3.4 INSTALLATION: EXTERIOR

.1 Perform work in accordance with GANA Glazing Manual and GANA Laminated Glazing Reference Manual for glazing installation methods.

.2 Cut glazing tape to length and set against permanent stops, 6 mm below sight line. Seal corners by butting tape and dabbing with sealant.

.3 Apply heel bead of sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete continuity of air and vapour seal.

.4 Place setting blocks at 1/4 points, with edge block maximum 150 mm from corners.

.5 Rest glazing on setting blocks and push against tape and heel of sealant with sufficient pressure to attain full contact at perimeter of light or glass unit.

.6 Install removable stops with spacer strips inserted between glazing and applied stops 6 mm

below sight line.

.7 Fill gap between glazing and stop with sealant to depth equal to bite of frame on glazing, maximum 9 mm below sight line.

.8 Apply cap head of sealant along void between stop and glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.5 CLEANING

.1 Perform cleaning after installation to remove construction and accumulated environmental dirt.

.2 Remove traces of primer, caulking.

.3 Remove glazing materials from finish surfaces.

.4 Remove labels after work is complete.

.5 Clean glass using approved non-abrasive cleaner in accordance with manufacturer's instructions.

.6 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

3.6 PROTECTION OF FINISHED WORK

.1 After installation, mark light with an "X" by using removable plastic tape or paste.

.2 Repair damage to adjacent materials caused by glazing installation.

END OF SECTION

Project Experience and References Form

Refer Technical Submission Requirements in Section 11.3.1 Section I.

Project #1 – The most recent HRCE project, if applicable.

Company Name	
Brief Project Description	
Project Manager Name	
Project Dollar Value $	
Reference Name **and Position Title**	
Reference Contact Info **- Email Address** **- Phone Number**	

Project Experience and References Form

Refer Technical Submission Requirements in Section 11.3.1 Section I.

Project #2 – The next most recent HRCE project, if applicable

Company Name	
Brief Project Description	
Project Manager Name	
Project Dollar Value $	
Reference Name **and Position Title**	
Reference Contact Info **- Email Address** **- Phone Number**	

Project Experience and References Form

Refer Technical Submission Requirements in Section 11.3.1 Section I.

Project #3 – Any recent project

Company Name	
Brief Project Description	
Project Manager Name	
Project Dollar Value $	
Reference Name **and Position Title**	
Reference Contact Info **- Email Address** **- Phone Number**	

Halifax
Regional Centre for Education

Project Safety Plan Outline

During the planning of each project, environmental and occupational health and safety issues will be assessed like any other key project component.

Prior to beginning a new project, tendering contractors shall examine the work area to identify potentially hazardous site specific situations.

Once identified, these hazards should be prioritized on this Hazard Assessments/Project Safety Plan Outline and corrective *actions* noted to eliminate or control each hazard. The dates of when and names of the persons who are responsible for completing the *action* should also be assigned.

Copies of the completed Safety Plan Outline shall be submitted post award, sent to the HRCE Operations Services Regional Manager, made available on the job site and communicated to the workers.

Project Name: _____

Project Location: _____

Project Start date: _____

Project End date: _____

Company Name: _____

Completed by: _____
(Contractor's project manager)

Date: _____

Copy to: _____

PLANNING:

Does the Contractor's Occupational Health and Safety Program deal with the work activities associated with this project? ☐ Yes ☐ No

Describe tasks to be undertaken:_____

_____

_____

_____

HAZARDS ASSESSMENT:

Identify the hazards that could present themselves on this project (e.g. live electrical wires, over water, confined space, etc) and describe what steps will be taken to prevent an incident (e.g. cover up, de-energize, safe work practices, netting, etc). Prioritize from #1 as needing immediate action.

#	Hazard	Required Action	Completed by	Date
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

ENVIRONMENTAL ASSESSMENT:

Identify the environmental issues that could present themselves on this project (e.g. oil spills, asbestos, etc.) and describe the action that will betaken to eliminate or reduce the risk of occurrence (e.g. mop kits, air sampling, etc.)

#	Hazard	Required Action	Completed by	Date
1				
2				
3				
4				
5				

EMERGENCY RESPONSE:

In the event of an incident, pre-plan the response and write up the procedures. Minimally, the following list should be completed and posted on site:

Contact	Phone #	Contact	Phone #
Fire	911	Poison Control	428-8161
Ambulance	911	Dangerous Goods	1-800-565-1633
Doctor	911	Waste Disposal	
Police	911	Insurance	
HRCE Office	493-5110	Min/Dept of Labour	1-800-952-2687
Min./Dept.of Transport.		Min/Dept of Environment	1-800-565-1633

- Identify and arrange source of first aid, ambulance and rescue.
- Accidents will be reported to: _____
- Accidents will be investigated by: _____
- Back-up call to: _____
- HRCE # emergency/after hours: day 493-5110 after 4:00 pm 442-2476

SAFETY MEETINGS:

On this project, given the nature of the work and the anticipated size of the work force, the following frequency will apply:

Site meetings _____

Site Audits _____

Follow up with HRCE Manager: _____

SITE IMPLEMENTATION:

- Health and Safety Rep & Safety Committee:
  Establish liaison between HRCE, contractor, site administration
  First Aid, PPE, other safety items as required.

- Documentation:
  Applicable MSDS
  Safety program
  Applicable work procedures
  Permits
  First Aid Certification

TRAINING:

The following training/testing will be mandatory on site:

1) _____

_____

2) _____

_____

3) _____

_____

Halifax
Regional Centre for Education

End of Document