PROJECT MANUAL FOR

Lunenburg Academy
Roof Upgrades

97 Kaulbach St.,
Lunenburg, Nova Scotia

Prepared for:

119 Cumberland St., Lunenburg, Nova Scotia B0J 2C0
T: 902-634-4410 | www.townoflunenburg.ca

Client Project No.: TOL2026001

Prepared by

71 Avondale Rd., Newport, Nova Scotia B0N 2A0
T: 782-351-1285 | www.fsaeng.com

FSA Project No.: 25141DA

January 2026

END OF SECTION

Name of Project: Lunenburg Academy Roof Upgrades
Location: 97 Kaulbach Street, Lunenburg NS

Owner: Town of Lunenburg
119 Cumberland Street, PO Box 129, Lunenburg NS B0J 2C0

Consultant: Fishburn Sheridan Atlantic Inc.
71 Avondale Road, Newport Landing NS B0N 2A0

1.1 GENERAL

.1 A complete Tender includes the following:

.1 The Tender Form in its entirety, with all pages and spaces for entry of information by Tenderers filled in as instructed.

.2 Acknowledgment of addenda received by the Tenderer during the tendering period.

.3 Tender Security (refer to applicable clause herein).

1.2 TENDER SUBMISSION

.1 Hard Copy Tender Submission

.1 Submit completed tender form for above project in sealed envelope marked as follows:

TENDER

TOL2026001

Lunenburg Academy Roof Upgrades

Closing up to 2:00:00 PM, local time January 28, 2026

Town of Lunenburg
97 Kaulbach Street
Lunenburg NS B0J 2C0

and must be delivered to the following address **up until 2:00:00 p.m.**, AST local time, on **January 28, 2026**, hereinafter referred to as the Tender Closing.

Town of Lunenburg
119 Cumberland Street
PO Box 129
Lunenburg NS. B0J 2C0

Attention: Lisa Kendall

.2 Electronic Tender Submission

.1 Tenders shall be submitted exclusively by email to purchasing@townoflunenburg.ca **up until 2:00:00 p.m.**, AST local time, on **January 28, 2026**, hereinafter referred to as the Tender Closing. Subject heading of email to read “TOL2026001 – Lunenburg Academy Roof Upgrades – TENDER SUBMISSION.” The time stamp of the email received by purchasing@townoflunenburg.ca will be used to determine if the submission was received on time, not the time it was emailed by the sender. Last minute submissions are not recommended.

1.3 SAFETY CERTIFICATION

.1 Submit with tender a copy of tenderer's current and valid safety accreditation issued by Nova Scotia Workers' Compensation Board or Certificate of Recognition (COR) issued by Construction Safety Nova Scotia.

.2 Out-of-province tenderers with a current and valid COR from a Canadian Federation of Construction Safety Associations member shall obtain and submit, with tender, a current and valid Letter of Good Standing from Construction Safety Nova Scotia.

1.4 WORKERS' COMPENSATION

.1 Submit with tender a copy of tenderer's current and valid clearance letter issued by the Workers' Compensation Board of Nova Scotia.

.2 Out-of-province tenderers shall submit, with tender, a current and valid clearance letter from a government workers' compensation board but must register with the Nova Scotia Workers' Compensation Board prior to being awarded the Contract.

1.1 ACCURACY OF REFERENCING

.1 Indexing and cross-referencing are for convenience only.

1.2 CONDITIONS OF TENDERING

.1 Take full cognizance of content of all Contract Documents in preparation of tender. Refer to Section 00 41 43 – Tender Form, Subsection 1.3.7 for a complete list of Contract Documents.

1.3 NON-MANDATORY PRE-BID SITE MEETING

.1 A non-mandatory pre-bid site meeting will be held for Tenderers to walk the site and review the project scope and deliverables.

.2 Non-mandatory Pre-Bid Site Meeting will be held on **January 19, 2026,** at **10:00AM.**

.3 All Tenderers are required to sign in upon arrival.

.4 Questions by Tenderers must be submitted electronically, in writing within the stipulated Question period. Appropriate responses will be published in a project Addendum and made available to Tenderers.

1.4 TENDERERS TO INVESTIGATE

.1 Tenderers will be deemed to have familiarized themselves with existing site and 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.

1.5 CLARIFICATION AND ADDENDA

.1 Notify Consultant not less than five (5) Working Days before tender closing of omissions, errors, or ambiguities found in Contract Documents. If Consultant considers that correction, explanation, or interpretation is necessary, a written addendum will be issued. All addenda will form part of Contract Documents.

.2 Confirm in the tender form that all addenda have been received. Tenderers are solely responsible to obtain and acknowledge the receipt of addenda at time of tender closing.

1.6 PREPARATION OF TENDER

.1 Legibly complete tender form provided with Project Documents. Tender all items and fill in all blanks. Have corrections initialed by person signing tender.

1.7 TENDER SECURITY

.1 Provide tender security in the minimum amount of ten percent (10%) of total price including HST, shall be in favour of the Owner, and shall be in the form of a Certified Cheque, irrevocable Letter of Credit or a Bid Bond which shall guarantee to the Owner that in the event of the successful Tenderer declining to enter into a formal agreement with the Owner as called for in the Contract Documents, or declining or neglecting to provide the Insurance or Contract Security required by the Contract Documents, then the Owner will be reimbursed the additional cost of accepting another tender or Tender Security amount, whichever is the lesser.

.2 Where a bid bond is submitted it may be submitted in a digital format provided it meets the following criteria:

.1 The version submitted by the Tenderer must be verifiable by the Owner with respect to the totality and wholeness of the bond form, including: the content; all digital signatures; all digital seals; with the Surety Company, or an approved verification service provider of the Surety Company.

.2 The version submitted must be viewable, printable and storable in standard electronic file formats acceptable to the Owner, and in a single file. Allowable formats include pdf.

.3 The verification may be conducted by the Owner immediately or at any time during the life of the bond and at the discretion of the Owner with no requirement for passwords or fees.

.4 The results of the verification must provide a clear, immediate and printable indication of pass or fail regarding the requirements contained herein.

.5 Bonds failing the verification process will NOT be considered to be valid.

.6 Bonds passing the verification process will be treated as original and authentic.

1.8 INSURANCE

.1 Provide signed "Undertaking of Insurance" on standard form provided by insurance company stating intention to provide insurance to Bidder in accordance with insurance requirements of Contract Documents. Include this form with Bid submission.

.2 Refer to CCDC 41 for insurance requirements.

1.9 FORM OF AGREEMENT

.1 Form of Agreement is attached for information purposes only until execution of the Contract.

1.10 RETURN OF TENDER SECURITY

.1 Tender security will be returned to:

.1 All except the three (3) lowest acceptable tenderers within five (5) Working Days of tender opening.

.2 Two (2) remaining unsuccessful tenderers within ten (10) Working Days of date of award.

.3 Successful tenderer following receipt by Owner of executed agreement, specified contract security, and insurance documents.

1.11 AMENDMENT OR WITHDRAWAL OF TENDER

.1 Tenders may be amended or withdrawn prior to tender closing.

.2 Amendment of individual Unit Prices is the only acceptable price amendment. Amendments shall not disclose either original or revised total price.

.3 Head amendment or withdrawal as follows: "Amendment/ Withdrawal of tender for TOL2026001 - Lunenburg Academy Roof Upgrades ". Sign as required for tender and submit by email or to the address given for receipt of tenders. In order to be considered, submissions shall be received prior to time of tender closing.

1.12 OFFER, ACCEPTANCE, REJECTION

.1 The Owner reserves the right to accept or reject any tender and to cancel the tendering process and reject all tenders at any time prior to the award of Contract without incurring any liability to affected tenderers.

END OF SECTION

1.1 SALUTATION:

.1 To: Town of Lunenburg
119 Cumberland Street, PO Box 129, Lunenburg NS B0J 2C0

.2 For: TOL2026001
Lunenburg Academy Roof Upgrades
97 Kaulback Street, Lunenburg, Nova Scotia

.3 From: [Name of Contractor]
[Contractor Address]

1.2 TENDERER DECLARES:

.1 That this tender was made without collusion or fraud.

.2 That the proposed Work was carefully examined.

.3 That the tenderer was familiar with local conditions.

.4 That Contract Documents and Addenda No. __ to __ inclusive were carefully examined.

.5 That all the above were taken into consideration in preparation of this tender.

1.3 TENDERER AGREES:

.1 To enter into a contract to supply all labour, material and equipment and to do all work necessary to construct the Work as described and specified herein for the unit prices stated in Subsection 1.4 hereunder, Schedule of Quantities and Unit Prices.

.2 That the estimated Contract Price shall be the sum of the products of the tendered unit prices multiplied by the estimated quantities in Subsection 1.4 hereunder excluding Harmonized Sales Tax (HST).

.3 That this tender is valid for acceptance for sixty (60) days from tender closing.

.4 To execute in triplicate the Form of Agreement and forward same together with the specified contract security and insurance documents to the Owner within ten (10) Working Days of written notice of award.

.5 That failure to enter into a formal contract and provide specified insurance documents and contract security within time required will constitute grounds for forfeiture of tender security.

.6 That if tender security is forfeited, Owner will retain difference in money between amount of tender and amount for which Owner legally contracts with another party to perform the Work and will refund balance, if any, to tenderer.

.7 Contract Documents include:

.1 Standard Specification for Municipal Services listed in Table of Contents Page Dated January 2026

.2 Information to Tenderers

.3 Tender Form

.4 Form of Agreement

.5 Specifications (per Table of Contents)

.6 Drawings

Lunenburg Academy Roof Upgrades / 2026-01-09 / FOR TENDER
Drawing No. 1 / PLAN / 2026-01-09 / FOR TENDER
Drawing No. 2 / ELEVATIONS / 2026-01-09 / FOR TENDER
Drawing No. 3 / ELEVATIONS / 2026-01-09 / FOR TENDER
Drawing No. 4 / DETAILS 2026-01-09 / FOR TENDER
Drawing No. 5 / DETAILS / 2026-01-09 / FOR TENDER
Drawing No. 6 / DETAILS / 2026-01-09 / FOR TENDER
Drawing No. 7 / DETAILS / 2026-01-09 / FOR TENDER
Drawing No. 8 / DETAILS / 2026-01-09 / FOR TENDER

.7 Addenda issued during bidding period

1.4 BASE BID PRICE – SCHEDULE OF QUANTITIES AND UNIT PRICES

Item No.	Description	Unit of Measurement	Estimated Quantity	Unit Price	Item Total
BASE BID PRICING					
1.	Wood Shingle Replacement at Roof Areas/ towers A2*, A3*, T1B, T2B.	m^2	_____	_____	_____
2.	Wood Shingle Replacement at Roof Areas B2* & B3.	m^2	_____	_____	_____
3.	Modified Bitumen Roofing Replacement at Roof Area T1BB (tower T1B enclosed space), and crickets/ valleys between towers T1B & T2B.	m^2	_____	_____	_____
4.	Modified Bitumen Roofing Replacement at Roof Area T1AA (tower T1A enclosed space), and crickets/ valleys between towers T1A & T2A.	m^2	_____	_____	_____
5.	Modified Bitumen Roofing Replacement at crickets/ valleys between towers T1A & T2A.	m^2	_____	_____	_____
6.	Modified Bitumen Roofing Replacement at tower T1A interior space, Roof Area T1AA.	m^2	_____	_____	_____
7.	Other, Specify: _____ _____	____	_____	_____	_____

All roofing system replacement shall include the removal and installation of all components including, but not limited to, flashing, detailing, sealants, associated electrical, mechanical, or ancillary elements required to provide weathertight installation and integration between all new and existing roof areas, systems, components.

* Roof system replacements include Mod. Bit. at eyebrow roofs.

SUBTOTAL $_____

CONTRACT PRICE (EXCLUDING HST) $_____ (A)

HARMONIZED SALES TAX (14% of Contract Price) $_____ (B)

TOTAL BID PRICE (A + B) $_____

TENDERER'S HST REGISTRATION NO. _____

1.5 SEPARATE PRICE – SCHEDULE OF QUANTITIES AND UNIT PRICES

Item No.	Description	Unit of Measurement	Estimated Quantity	Unit Price	Item Total
SEPERATE PRICING					
1.	Modified Bitumen Roofing Replacement at Roof Areas A1, B1, C1, & D1.	m^2	_____	_____	_____
2.	Metal cap flashing replacement at Roof Area C1 Chimney.	m^2	_____	_____	_____
3.	Wood Shingle Replacement at Roof Areas/ towers C2*, C3*, T1A, & T2A.	m^2	_____	_____	_____
4.	Wood Shingle Replacement at Roof Areas D2* & D3.	m^2	_____	_____	_____
5.	Other, Specify: _____ _____	____	_____	_____	_____

All roofing system replacement shall include the removal and installation of all components including, but not limited to, flashing, detailing, sealants, associated electrical, mechanical, or ancillary elements required to provide weathertight installation and integration between all new and existing roof areas, systems, components.

* Roof system replacement includes Mod. Bit. at eyebrow roofs.

SUBTOTAL $_____

SEPERATE PRICE (EXCLUDING HST) $_____ (A)

HARMONIZED SALES TAX (14% of Separate Price) $_____ (B)

TOTAL SEPERATE PRICE (A + B) $_____

1.6 COMPLETION TIME

.1 Tenderer agrees to complete the Work within ___ weeks of written notification of award.

1.7 SIGNATURES**

DATED THIS _____ DAY OF_____ , 20_____.

_____
Name of Tenderer

_____ _____
Witness Signature of Signing Officer

_____
Name and Title (Printed)

_____ _____
Witness Signature of Signing Officer

_____
Name and Title (Printed)

**NOTE: Tenders submitted by or on behalf of any Corporation must be signed in the name of such Corporation by a duly authorized officer(s) or agent(s).

END OF SECTION

This Agreement made on the __ day of ____ in the year___.

BY AND BETWEEN

Town of Lunenburg

hereinafter called the "Owner"

and

[Contractor]

hereinafter called the "Contractor"

The Owner and the Contractor agree as follows:

ARTICLE A1 - THE WORK

.1 The Contractor shall:

.1 Perform the Work required by the Contract Documents for

TOL2026001 - Lunenburg Academy Roof Upgrades

located at 97 Kaulback Street, Lunenburg, Nova Scotia

for which the Agreement has been signed by the parties, and for which

Fishburn Sheridan Atlantic Inc.
(Insert above the name of the Consultant)

is acting as and is hereinafter called the “Consultant” and

.2 do and fulfill everything indicated by this Agreement, and

.3 commence the Work by the ___ day of _____in the year _____ and attain Ready-for-Takeover of the work as confirmed by the Consultant by the __ day of _____in the Year ___.

ARTICLE A2 – AGREEMENTS AND AMENDMENTS

.1 This Contract supersedes all prior negotiations, representations, or agreements, either written or oral, relating in any manner to the work, including the bidding documents that are not expressly listed in Article A3 of the Agreement.

ARTICLE A3 - CONTRACT DOCUMENTS

.1 The following is an exact list of the Contract Documents of this Agreement. This list is subject to subsequent amendments in accordance with the provisions of the Contract Documents.

.1 STANDARD SPECIFICATION FOR MUNICIPAL SERVICES.
Table of Contents Dated January 2026

.2 Tender Form

.3 Form of Agreement

.4 Specifications:

01 00 11	General Requirements
01 14 00	Work Restrictions
01 33 00	Submittal Procedures
01 45 00	Quality Control
01 61 00	Common Product Requirements
01 74 00	Cleaning
01 77 00	Closeout Procedures
01 78 00	Closeout Submittals
02 41 13	Selective Site Demolition
02 83 10	Lead-Base Paint Abatement – Minimum Precautions
06 10 53	Miscellaneous Rough Carpentry
07 14 00	Fluid Applied Waterproofing
07 31 29	Wood Shingles
07 52 00	Modified Bituminous Membrane Roofing
07 62 00	Sheet Metal Flashing and Trim
07 92 00	Joint Sealants
09 91 13	Exterior Painting
Appendix A	Heritage Reference Documents

.5 Drawings:

Lunenburg Academy Roof Upgrades / 2026-01-09 / FOR TENDER
Drawing No. 1 / PLAN / 2026-01-09 / FOR TENDER
Drawing No. 2 / ELEVATIONS / 2026-01-09 / FOR TENDER
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Drawing No. 7 / DETAILS / 2026-01-09 / FOR TENDER
Drawing No. 8 / DETAILS / 2026-01-09 / FOR TENDER

.6 Addenda

.1

ARTICLE A4 - CONTRACT PRICE

.1 The Lump Sum Contract Price is the sum of the products of the estimated quantities multiplied by the appropriate Unit Prices in the tender form excluding the amount of Harmonized Sales Tax.

.2 The Lump Sum Contract Price is $ _____

.3 All amounts shall be in Canadian funds.

.4 The amounts shall be subject to adjustment as provided in the Contract Documents.

ARTICLE A5 - PAYMENT

.1 The Owner shall pay the Contractor in Canadian funds for the performance of the Contract.

.2 The Owner shall make monthly payments on account to the Contractor for the Work performed, as certified by the Consultant, subject to a 10% holdback.

.3 The amount of the monthly payments shall be calculated as follows:

.1 The quantity for each pay item on which actual work has been performed shall be measured.

.2 For each Unit Price item this quantity shall be multiplied by the applicable Unit Price as provided in the Tender Form.

.3 For each lump sum item, multiply the percent complete by the value of the lump sum item.

.4 The total value of work completed for the payment period shall be calculated by adding the total of the products for all pay items from 3.2 and 3.3 of this Article.

.5 The amount of the monthly payment shall be determined by deducting the 10% holdback and the total of all previous payments from the total value of such completed work as determined under 3.4 of this Article.

.6 To the amount calculated above, the Harmonized Tax shall be added.

.4 The last day of the payment period shall be the 30th of the month.

.5 Upon Substantial Performance of the Work as certified by the Consultant the Owner shall pay to the Contractor the holdback monies then due in accordance with the provisions of Section 00 72 45 - General Conditions, subsection GC5.6 –SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK

.6 Upon the issuance of the final certificate for payment as certified by the Consultant, the Owner shall pay to the Contractor the balance of monies then due in accordance with the provision of Section 00 72 45 - General Conditions – FINAL PAYMENT.

.7 In the event of loss or damage occurring where payment becomes due under the property and boiler insurance policies, payment shall be made to the Contractor in accordance with the provisions of Section 00 72 45 - General Conditions.

.8 If the Owner fails to make payment to the Contractor as it becomes due under the terms of the Contract, interest shall be payable as follows:

.1 The annual interest rate applicable to the contract is 2 % compounded monthly.

.2 Interest shall be calculated on the overdue balance from the due date.

ARTICLE A6 - RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING

.1 Notices in writing shall be addressed to the recipient at the address set out below.

.2 The delivery of a notice in writing shall be by hand, courier, prepaid first class mail, facsimile or e-mail.

.3 A notice in writing delivered by one party in accordance with this Contract shall be deemed to have been received by the other party on the date of delivery if delivered by hand or courier, or if sent by mail it shall be deemed to have been received five (5) Working Days after the date on which it was mailed.

.4 A notice in writing sent by facsimile or e-mail shall be deemed to have been received on the date of its transmission provided that if such day is not a Working Day or if it is received after the end of normal business hours at the place of receipt, then it shall be deemed to have been received at the opening of business at the place of receipt on the first Working Day following the transmission thereof.

.5 An address for a party may be changed by notice in writing setting out the new address delivered to the other party in accordance with this Article.

.1 The Owner at [Address of Owner]

.2 The Contractor at [Address of Contractor]

.3 The Consultant at [Address of Consultant]

ARTICLE A7 - QUANTITIES AND MEASUREMENT

.1 The quantities shown in Section 00 41 43 Tender Form - Schedule of Quantities and Unit Prices and For Tender Drawings are estimated.

.2 Measurement for the actual quantities used to determine payments and Contract Price shall be in accordance with the Contract.

ARTICLE A8 - SUCCESSION

.1 The aforesaid Contract Documents are to be read into and form part of the Agreement and the whole shall constitute the Contract between the parties and subject to law and the provisions of the Contract Documents shall inure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors and assigns.

ARTICLE A9 - RIGHTS AND REMEDIES

.1 No action or failure to act by the Owner, Consultant, or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

ARTICLE A10 - TIME

.1 Time shall be construed as being of the essence of the Contract.

In witness whereof the parties hereto have executed this Agreement and by the hands of their duly authorized representatives.

SIGNED AND DELIVERED
In the presence of:

OWNER

Name of Owner

Witness

Signature

Name and Title of Person Signing

Witness

Signature

Name and Title of Person Signing

CONTRACTOR

Name of Contractor

Witness

Signature

Name and Title of Person Signing

Witness

Signature

Name and Title of Person Signing

N.B. Where legal jurisdiction, local practice or Owner or Contractor requirements calls for proof of authority to execute this document, attach such proof of authority in the form of a certified copy of a resolution naming the representative(s) authorized to sign the Agreement for and on behalf of the corporation or partnership.

END OF SECTION

Part 1 General

1.1 GENERAL DESCRIPTION OF THE WORK

.1 Work to be carried out under this Contract, Roof Upgrades at Lunenburg Academy located in Lunenburg, Nova Scotia.

.2 Provide the necessary labour and materials to complete the Work as described and specified herein.

.3 Roof upgrades shall be as follows and as specified in the areas indicated on the drawings:

.1 Replacement of wood shingles at **Roof Areas A2, A3, B2, B3, C2, C3, D2, D3**, and tower **Roof Areas T1A, T2A, T1B, and T2B**.

.1 Removal of existing wood shingle down to wood deck.

.2 Removal of existing metal valley flashings and replacement with new.

.3 Installation of underlayment membrane.

.4 Installation of breather fabric.

.5 Installation of cedar shingle (factory coated, colour to match existing).

.6 Installation of new ridge/ hip caps to match existing.

.2 Mechanically fasten and recap existing modified bituminous roof system. **Roof Areas A1, B1, C1 & D1** and **Roof Areas** (within towers) **T1AA & T2BB.**

.1 Inspection and repair of existing modified bituminous roof systems.

.2 Mechanically fasten existing mod. bit. roof membrane through existing wood deck into structure.

.3 Replacement of existing metal flashings, termination flashings, penetrations and transitions

.4 Prepare existing mod. bit. roof membrane for installation of new, fully adhered mod. bit. capsheet.

.5 Installation of mod. bit. membrane capsheet.

.3 Replacement of existing modified bituminous roof membrane at saddles and valleys at **Roof Areas A2 & C2** and at all eyebrow dormers.

.1 Removal of existing mod. bit. roof membrane to wood deck.

.2 Installation of roof overlay board.

.3 Installation of new adhered 2-ply mod. bit. roof membrane.

.4 Colour to match existing sheet metal dormers (gray).

.4 Targeted repair and replacement of significantly deteriorated wood shingles at mansard roof areas at all elevations.

.1 Removal, disposal of deteriorated materials

.2 Inspection and preparation substrate

.3 Installation of new material

.4 Prepare and repaint/ stain at all near-vertical mansard roof areas as indicated.

.4 Roof upgrades shall include:

.1 Supply and installation of related rough carpentry as necessary and specified within the project scope.

.2 Supply and install all sheet metal caps, counter flashings, scuppers, torch stops, fascia and all other roof-related metal flashings required to complete roof installation.

.3 Supply and installation of all sealants required to seal the transition of membrane and related metal detailing and the termination of sheet metal and non-membrane surfaces.

.4 Removal of existing lightening protection to facilitate the completion of roof upgrades. Reinstallation of lightening protection.

.5 Exterior preparation and repainting of wood shingles (red) across all mansard elevations.

1.2 CONTRACT

.1 The Contract shall be in the form of a CCDC 2-2020 stipulated price contract. The following associated supplemental appendices, which are comprised of the Division 01 and technical specifications, shall further form part of the overall Contract.

1.3 DEFINITIONS

.1 "CONSULTANT" and “Fishburn Sheridan & Associates Ltd.", “Fishburn Sheridan Atlantic Inc.”, “Fishburn Sheridan Atlantic” and “FSA” are synonymous.

.2 "OWNER" and "Town of Lunenburg" and "TOL" are synonymous.

.3 “CONSTRUCTOR” and “CONTRACTOR” are synonymous.

1.4 OTHER CONTRACTORS

.1 Other Contractors, Sub-Contractors and the Owner’s own forces, may be performing work on the site at the same time as the Work is being done under this Contract. The successful bidder shall provide all reasonable co-operation and collaboration with these other forces to ensure a timely completion of the work, taking into consideration and without undermining its own role as the “Constructor”.

1.5 USE OF THE SITE

.1 Carry out the Work so as to have the least possible interference and disturbance to the normal use of the premises. The successful bidder is expected to include in the bid an allowance for the performance of off-hours work should it be required to conform with the above.

.2 Maintain services to existing building and provide for personnel and vehicle access.

.3 Restrict construction access to and from site to approved location. Do not allow construction traffic to block entrances or exits for any reason.

.4 Co-ordinate any interference with Owner's operation in this area and abide by Owner's direction in this regard. In cases of conflicting requirements, Owner's operation takes precedence but all reasonable effort to accommodate Contractor's needs will be made.

1.6 EXISTING SERVICES

.1 Before commencing work, establish location and extent of service lines in area of Work and notify Consultant of findings.

.2 Remove abandoned service lines within 2.4 m of structures. Cap or otherwise seal lines at cut-off points as directed by Consultant.

.3 Services are to be left operational unless otherwise authorized by Owner.

.4 Unless otherwise specified, the Contractor will be responsible for disconnection, relocation, re-installation and extending all services required to facilitate work under this Contract. Co-ordinate work with the Owner and provide minimum 48 hours notification if services are to be interrupted.

1.7 CUTTING AND PATCHING

.1 Generally patch and "make good" any and all surfaces cut, damaged, exposed, or disturbed to comply with any appropriate statutory requirements and to the Owner's acceptance.

.2 All efforts must be made to protect, conserve and/ or stabilize all heritage elements both within and outside the project scope.

1.8 PROTECTION OF PROPERTY

.1 Protect surrounding private and public property from damage during the performance of the Work.

.2 Be responsible for damage incurred.

1.9 PRECONSTRUCTION/ EXISTING CONDITIONS

.1 Prior to commencing mobilization, the Contractor shall record preconstruction/ existing conditions by photographing all items that could potentially be claimed by the Owner or Consultant as damaged during the course of the work.

.2 The Contractor shall document heritage elements including architectural woodwork, trims, finishes, paints, etc., within the project scope and/ or which may be impacted by the project scope. The Contractor shall provide image documentation of existing conditions to the Consultant prior to the commencement of the Work.

.3 These items should include adjacent wall areas, landscaping, pavement, windows, paint finishes and any roof top equipment on or adjacent to the subject work areas.

.4 All efforts must be made to protect, conserve and/ or stabilize all heritage elements.

.5 Should results of the Work negatively impact the heritage elements of the building and/or surrounding property, the Contractor shall notify the Consultant, in writing prior to engaging in such activities. The Contractor shall not proceed with the Work without written confirmation from the Owner, Owner's Heritage representative and/or the Consultant.

.6 In the event that the Contractor is permitted to store materials or equipment on the Owner's property or adjacent property, these areas shall be reviewed with photographic record of preconstruction conditions prior to mobilization of materials or equipment.

.7 In the event that the Contractor is permitted to store materials or equipment at roofs or use adjacent roofs to access the subject roofs, these areas shall also be reviewed for preconstruction damage and photographed.

.8 Provide Consultant and Owner with photographic record of preconstruction photographs a minimum of 24 hours prior to commencing mobilization.

.9 All such damages observed during final or post construction review that cannot be verified as pre-existing, are potentially considered the Contractor's responsibility to rectify.

1.10 FIRE PROTECTION

.1 Provide and maintain temporary fire protection equipment during the performance of the Work as required by insurance companies and governing codes, regulations and by-laws having jurisdiction.

.2 Generally, open flames and 'hot work' are not permitted on site. Work requiring the generation of open flames (welding, soldering, etc.) cannot be performed until an Owner's Permit has been issued. It is the responsibility of the successful bidder to apply for here said permit prior to engaging in any such activities.

.3 Open fires and burning of rubbish are not permitted on site.

1.11 OCCUPATIONAL HEALTH AND SAFETY

.1 Follow the Nova Scotia Provincial Occupational Health and Safety Act and Regulations for Construction Projects. For the purposes of the act, the person or company contracted to carry out the work shall be deemed the **"Constructor".**

.2 Hazardous materials, not identified by the Owner, may be encountered at the worksite. Use all necessary precautions when handling such material. It is possible that asbestos and/ or lead may exist in some form and if encountered the Contractor is responsible to notify the Owner and to follow Provincial and local regulations governing the handling of asbestos and/or lead in the workplace.

.3 The Owner may cause those who do not comply with Provincial and local Regulations to be escorted from the site.

.4 Temporary overhead protection will be required at ground street level sidewalks, where pedestrians are walking. All entrances shall have overhead protection. Additional protection will also be required to prevent material from falling to the street from overhead scaffold platforms.

1.12 PROTECTION OF BUILDING FINISHES AND EQUIPMENT

.1 Prevent movement, settlement, or other damage to other adjacent structures, utilities, and parts of building to remain in place. Provide bracing and shoring if required.

.2 Keep noise, dust, and inconvenience to occupants to a minimum.

.3 Protect building systems, services and equipment. Protect all furnishings within work area with (6 mil) polyethylene film during construction. Remove film during non-construction hours and leave premises in clean, unencumbered and safe manner for normal daytime function.

.4 Provide temporary dust tight screens, partitions, covers, railings, barricades, supports and/or other protection as required. Protect workers, finished areas of work and public.

1.13 PARKING

.1 Limited parking is available on site. Do not obstruct or encumber owners use of property. All reasonable efforts will be employed between contractor and site staff to coordinate suitable parking.

.2 All vehicles must be parked in designated parking areas (except for reasonable loading and unloading of equipment and/or materials to a local entrance). Contractor's vehicles on site shall be limited to reasonable loading and unloading of equipment and/or materials to a local entrance. Failure to observe these requirements may result the vehicle being ticketed and/or towed at the Contractors expense.

1.14 SIGNS AND ADVERTISEMENTS

.1 No signs or advertisements of any description other than notices regarding safety shall be displayed at the Work Site without permission of the Owner.

.2 Upon completion of the Work, all signs shall be removed except those specifically directed by the Owner to remain.

1.15 CLEAN-UP

.1 Maintain the work area in tidy condition, free from the accumulation of waste products and debris.

.2 Remove waste and materials regularly so as to maintain a tidy work site. Do not dispose of any waste in the Owner's facilities unless specifically directed to do so by authorised personnel.

.3 Store materials in areas specially designated by the Owner. Dispose of this debris in a legal manner so as to avoid causing a hazard to occupants and visitors on site.

1.16 MATCHING AND MAINTAINING HERITAGE DEFINING ELEMENTS & CHARACTERISTICS

.1 Where new work occurs in or adjacent to existing work, it is the intent that colours and textures of visible finishes within these areas shall be matched to the satisfaction of the Owner.

.2 Products, materials, equipment and articles incorporated in Work shall maintain, the heritage characteristics and heritage defining elements of the building envelope including layout, installation, colour, texture, and finish.

1.17 PERMITS, FEES, CERTIFICATES

.1 A Building Permit may be required for this work at the discretion of the municipality. Upon award of the project, the Contractor shall submit all required documentation to the Authority Having Jurisdiction in order to determine of a permit is required.

.2 Should the Authority Having Jurisdiction determine a permit IS NOT required, the Contractor shall receive confirmation in writing prior to work commencing.

.3 Should the Authority Having Jurisdiction determine a permit IS required, the Owner shall obtain and pay for all required permits necessary to complete the work.

.4 Arrange and pay for all inspection certificates required by Authorities having jurisdiction, (i.e., Electrical Safety Authority Certificate). Provide the Owner with copies of these certificates upon completion.

1.18 DISRUPTION OF SERVICES

.1 The Contractor is responsible to provide adequate written notice to the Owner of any interruption of services (i.e., mechanical, electrical etc.) for the connection of new services or the alteration of existing.

.2 The Contractor is expected to co-operate reasonably with the Owner in the scheduling of service interruptions.

1.19 SANITARY FACILITIES

.1 Temporary sanitary facilities will be provided by the Constructor in compliance with Provincial and regional Occupational Health and Safety Acts and Regulations for Construction Projects. The Owner’s sanitary facilities will not be available for the Contractor’s use.

1.20 POWER

.1 Maximum power of 110V will be available at no cost. Any connection to this power source will be done at the Contractor’s expense and liability, and in accordance with the Canadian Electrical Code.

1.21 WATER SUPPLY

.1 Water supply is available at no cost. Connection and disconnection will be at Contractor’s expense and liability.

1.22 TEMPORARY FACILITIES

.1 Any temporary facilities provided at the site by the Contractor must be removed upon completion of the work and the area used must be returned to the original condition.

1.23 DOCUMENTS REQUIRED

.1 Maintain at the job site, one copy each of the following:

.1 Original Plans and Specifications and completed Form of Tender.
.2 Building Department stamped drawings if required.
.3 Any changes to Drawings or Details.
.4 Shop Drawings and any changes.
.5 Addenda.
.6 Change Orders.
.7 Site Instructions.
.8 Contractor's Safety Policy.
.9 Safety Data Sheets.

1.24 WORK SCHEDULE

.1 All off-site activities related to the project are required to commence immediately upon award, including site measurements, provision of shop drawings, material ordering, etc. The intent is to ensure that all long-lead delivery items required to complete the project are available immediately upon commencement of on-site activities.

.2 All on-site activities related to the project are to commence no later than **two (2) weeks after contract execution**, weather permitting. Where weather affects the commencement date, the Contractor, Owner and Consultant shall agree to a reasonable start date. Early commencement of the work may be allowed with the Owners approval.

.3 Substantial Performance of the Contract shall be achieved no later than **August 14, 2026**. On-site activities occurring after this date will be restricted as required to accommodate the normal operation of the facility, including after hours and weekend work, at the cost of the Contractor.

.4 Within 5 working days of intent to award, provide a schedule showing anticipated progress stages and final completion of the Work within the specified time period, indicating each trade and inter-phasing. Allow for expected poor weather days.

1.25 MAINTAIN WARRANTEES

.1 Ensure that work of this Contract does not invalidate warrantees on adjacent work. Provide written confirmation and arrange and pay for all services and costs to ensure that warrantees on adjacent work are maintained.

.2 Warranties on adjacent work include, but are not limited to:

.1 Newly installed roof systems

.2 Newly installed cladding systems including but not limited to architectural woodwork, trim, windows and finishes.

.3 The Contractor accepts full and complete responsibility of maintaining existing warrantees.

1.26 CHANGES IN WORK

.1 All changes to the Contract Documents which result in an extra or credit to the Contract amount or time are not to be executed until written instructions have been received and the extra or credit agreed to in writing by all parties.

.2 Execute variations, alterations and substitutions that do not affect the intent, function, duration, or Contract amount, as instructed by the Consultant.

.3 Where the Contractor's price quotation for a Change Order results in a change to the Contract Price, the Contractor's entitlement to a fee for combined overhead and profit in the quotation shall be as follows, as applicable:

Change in Contract Price (excluding value added taxes)	Contractor mark-up on work performed by own forces	Contactor mark-up on subcontractor work	Subcontractor mark-up on subcontractor work
Credit of $0 or more	0%	0%	0%
Increase of $0 to less than $50,000	10%	5%	10%
Increase of $50,000 or more	5%	5%	5%

Interpretive note: The mark-ups in the above table are flat not graduated, (i.e. the table is not intended to provide one set of mark-ups for the first $49,999 of the change and a different set of mark-ups for the balance).

.4 Changes to the work that are considered urgent by the Owner shall be acted upon by the Contractor on the basis of a written field instruction to be confirmed by a Change Order. Costs are to be kept and presented along with all appropriate timesheet vouchers and bills of materials, or fixed sum if work is done by a Sub-Contractor on a lump sum basis.

.5 Consultant may issue Supplemental Instructions authorizing minor changes in the Work, not involving adjustment to the Contract Price or the Contract Time, on Consultant's standard forms.

.1 If the Contractor considers a Supplemental Instruction to require an adjustment in Contract Price or Contract Time, the Contractor shall promptly notify the Consultant and the Owner in writing and shall not proceed with any work related to the Supplemental Instruction pending receipt of a Change Order, a Change Directive, or, in accordance with the dispute resolution provisions of the General Conditions of Contract, a Notice in Writing of a dispute and instructions to proceed.

1.27 ADJUSTMENT OF CONTRACT PRICE BASED ON SEPARATE PRICE

.1 Provide Separate Pricing as requested on the Section 00 41 43 - Tender Form to adjust the cost for the quantity of work completed in comparison to that specified.

.2 The Separate Price shall be applied as a credit to adjust the Contract price.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 NOT USED

.1 Not used.

END OF SECTION

Part 1 General

1.1 ACCESS AND EGRESS

.1 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

1.2 USE OF SITE AND FACILITIES

.1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Consultant to facilitate work as stated.

.2 Maintain existing services to building and provide for personnel and vehicle access.

.3 Where security is reduced by work provide temporary means to maintain security.

.4 Restrict construction access to and from site to approved location. Do not allow construction traffic to block entrances or exits for any reason.

.5 Temporary overhead protection will be required at ground street level sidewalks, where pedestrians are walking. All entrances shall have overhead protection. Additional protection will also be required to prevent material from falling to the street from overhead scaffold platforms.

.6 Temporary sanitary facilities will be provided by the Constructor in compliance with Provincial and regional Occupational Health and Safety Acts and Regulations for Construction Projects. The Owner’s sanitary facilities will not be available for the Contractor’s use.

.7 Use only elevators, dumbwaiters, conveyors or escalators existing in building for moving workers and material.

.1 Protect walls of passenger elevators, to approval of Consultant prior to use.

.2 Accept liability for damage, safety of equipment and overloading of existing equipment.

.8 Closures: Protect work temporarily until permanent enclosures are completed.

1.3 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

.1 Execute work with least possible interference or disturbance to building operations, occupants, public and normal use of premises. Arrange with Consultant to facilitate execution of work.

.2 Where new work occurs in or adjacent to existing work, it is the intent that colours and textures of visible finishes within these areas shall be matched to the satisfaction of the Owner.

.3 Products, materials, equipment and articles incorporated in Work shall maintain, the heritage characteristics and heritage defining elements of the building envelope including layout, installation, colour, texture, and finish.

1.4 EXISTING SERVICES

.1 Notify Consultant and utility companies of intended interruption of services and obtain required permission.

.2 Where Work involves breaking into or connecting to existing services, give Consultant 48 hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum. Carry out interruptions after normal working hours of occupants, preferably on weekends.

.3 Provide for personnel, pedestrian and vehicular traffic.

.4 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.5 SPECIAL REQUIREMENTS

.1 Carry out noise generating Work Monday to Friday from 18:00 to 07:00 hours only and on Saturdays, Sundays, and statutory holidays.

.2 Submit work schedule no more than 7 days following Contract award.

.3 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.

.4 Keep within limits of work and avenues of ingress and egress.

.5 Limit Contractor vehicles at site to only those necessary to complete the Work. Do not obstruct fire lanes, ingress or egress.

.6 Deliver materials outside of peak traffic hours 17:00 to 07:00 and 13:00 to 15:00 unless otherwise approved by Consultant.

.7 Provide adequate protection to the public and building occupants during surface preparation work that generate dust and/or airborne particles and/or may impact air-quality. Unknown and/ or untested paint/ stain finishes to be treated as lead-based products until verification is complete. Refer to Sections 01 14 25 Designated Substance Report & 02 83 10 Lead-Base Paint Abatement.

1.6 SECURITY

.1 Where security has been reduced by Work of Contract, provide temporary means to maintain security.

1.7 BUILDING SMOKING ENVIRONMENT

.1 Comply with smoking restrictions. Smoking is not permitted.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 GENERAL

.1 This section specifies general requirements and procedures for the approval and use of alternatives. Additional requirements may be specified in individual sections of the specifications.

1.2 ALTERNATIVES

.1 Requests for “acceptance” of materials in addition to those presently established as “acceptable” by the Contract documents shall be submitted in writing to the Consultant at the following address:

Fishburn Sheridan Atlantic Inc.
71 Avondale Road
Newport, NS B0N 2A0
Attention: Ryan Beecroft
Email: ryan.beecroft@fsaeng.com

.2 Such a request shall be accompanied with a complete description of the alternative proposed including the advantages and cost savings that could be realized. In addition, provide the name of manufacturer brand name, technical data and samples of both the specified and proposed substitute items.

.3 Identify and allow for in the bid price, any submission of alternatives to products specified including any changes required in the related work and modifications surrounding work as required to complete the project under each alternative designated. A later claim by the Bidder for any addition to the Contract price, because of changes in work necessitated by use of alternatives shall not be considered.

.4 In any case, where substitutions are permitted, the Contractor shall bear the cost to evaluate and test the equality of the materials and pay any design charges and costs to change the working drawings and specifications that occur due to their use.

.5 Approval of alternative materials will be communicated to all bidders via addendum during the tender period. Alternatives presented to the consultant which were not previously approved may or may not be accepted at the discretion of the Owner and Consultant.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

.2

END OF SECTION

Part 1 General

1.1 GENERAL

.1 This Section specifies general requirements and procedures for project meetings. Additional requirements may be specified in individual Sections of the specifications.

1.2 ADMINISTRATIVE

.1 Consultant will administer the pre-construction meeting.

.2 The Consultant will distribute electronic written notice in advance of each meeting date to the Owner, the Contractor, the Subcontractor and suppliers, as required.

.3 The Owner/ Owner's Representative will reproduce and distribute copies of minutes, after meetings and transmit to meeting participants and affected parties not in attendance.

.4 Representatives of the Owner, the Contractor, the Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of the party each represents.

1.3 PRE-CONSTRUCTION MEETING

.1 The Consultant will request a meeting of parties to the Contract to discuss and resolve administrative procedures and responsibilities. Attendance of the roofing superintendent and foremen is compulsory. The Contractor's cost to attend this meeting shall be accounted for in their Base Bid submission.

.2 Agenda to include:

.1 Appointment of official representative of participants in the Work.

.2 Schedule of Work.

.3 Schedule of submission of materials list, shop drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.

.4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.

.5 Site security, emergency response and protective measures shall be established.

.6 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.

.7 The Contractor is to provide for review, their photographic pre-start condition survey documents.

.8 Record drawings in accordance with Section 01 33 00 - Submittal Procedures.

.9 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.

.10 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.

.11 Monthly progress claims, administrative procedures, photographs, hold backs.

.12 Appointment of inspection and testing agencies or firms.

.13 Insurances, transcript of policies.

1.4 PROGRESS MEETINGS

.1 During course of Work, scheduled progress meetings may be required until project completion. Timing and frequency will be determined at the pre-construction meeting.

.2 Agenda to include the following:

.1 Review, approval of minutes of previous meeting.

.2 Review of Work progress since previous meeting.

.3 Field observations, problems, conflicts.

.4 Problems which impede construction schedule.

.5 Review of off-site fabrication delivery schedules.

.6 Corrective measures and procedures to regain projected schedule.

.7 Revision to construction schedule.

.8 Progress schedule, during succeeding work period.

.9 Review submittal schedules: expedite as required.

.10 Maintenance of quality standards.

.11 Pending changes and substitutions.

.12 Review proposed changes for effect on construction schedule and on completion date.

.13 Other business.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 NOT USED

.1 Not used.

END OF SECTION

Part 1 General

1.1 GENERAL

.1 This Section specifies general requirements and procedures for submittals. Additional requirements may be specified in individual Sections of the specifications.

1.2 ADMINISTRATIVE

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

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

.3 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.4 Where items or information is not produced in SI Metric units converted values are acceptable.

.5 Review submittals 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.

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

.7 Verify field measurements and affected adjacent Work are coordinated.

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

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

.10 Keep one reviewed copy of each submission on site.

1.3 SHOP DRAWINGS AND PRODUCT DATA

.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.

.2 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Nova Scotia.

.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.

.4 Allow 5 days for Consultant's review of each submission.

.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.

.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.

.7 Accompany submissions with transmittal letter, in duplicate, containing:

- .1 Date.
- .2 Project title and number.
- .3 Contractor's name and address.
- .4 Identification and quantity of each shop drawing, product data and sample.
- .5 Other pertinent data.

.8 Submissions include:

- .1 Date and revision dates.
- .2 Project title and number.
- .3 Name and address of:
  - .1 Subcontractor.
  - .2 Supplier.
  - .3 Manufacturer.
- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of Work as applicable:
  - .1 Fabrication.
  - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
  - .3 Setting or erection details.
  - .4 Capacities.
  - .5 Performance characteristics.
  - .6 Standards.
  - .7 Operating weight.
  - .8 Wiring diagrams.

.9 Single line and schematic diagrams.

.10 Relationship to adjacent work.

.9 After Consultant's review, distribute copies.

.10 Submit an electronic copy of shop drawings for each requirement requested in specification Sections and as Consultant may reasonably request.

.11 Submit an electronic copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Consultant where shop drawings will not be prepared due to standardized manufacture of product.

.12 Submit an electronic copy of test reports for requirements requested in specification Sections and as requested by Consultant.

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

.2 Testing must have been within 3 years of date of contract award for project.

.13 Submit an electronic copy of certificates for requirements requested in specification Sections and as requested by Consultant.

.1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.

.2 Certificates must be dated after award of project contract complete with project name.

.14 Submit an electronic copy of manufacturer's instructions for requirements requested in specification Sections and as requested by Consultant.

.1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.

.15 Submit an electronic copy of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Consultant.

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

.17 Submit an electronic copy of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Consultant.

.18 Delete information not applicable to project.

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

.20 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.

.21 The review of shop drawings by the Owner/ Consultant is for sole purpose of ascertaining conformance with general concept.

.1 This review shall not mean that the Owner approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.

.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 co-ordination of Work of sub-trades.

1.4 SAMPLES

.1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.

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

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

.4 Where colour, pattern or texture is criterion, submit full range of samples. Submit minimum ten (10) shingle samples (new material) for each project colour. Wood shingle samples to be no less than 120 mm x 444 mm x 12 mm.

.5 Adjustments made on samples by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.

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

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

1.5 MOCK-UPS

.1 Erect mock-ups in accordance with 01 45 00 - Quality Control.

1.6 PHOTOGRAPHIC DOCUMENTATION

.1 Submit electronic copy of colour digital photography, standard resolution before the start of the Work and as directed by Consultant. Photographic documentation to capture the existing conditions, materials, finishes, colour, etc.

related to heritage architecture and/ or finishes where the Work is adjacent to and/or ties-into or otherwise affects existing systems.

.2 Frequency of photographic documentation: as directed by Consultant.

.3 Upon completion of the Work, submit electronic copy of colour digital photography, standard resolution of fit, finish, tie-in of the Work at existing heritage systems, components and architectural finishes.

1.7 CERTIFICATES AND TRANSCRIPTS

.1 Immediately after award of Contract, submit Workers' Compensation Board status.

.2 Submit transcription of insurance immediately after award of Contract.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations

.2 Province of Nova Scotia

.1 Occupational Health and Safety Act, Chapter 7 of the Acts of 1996, as amended.

.2 Workplace Health and Safety Regulations, N.S. Reg. 52/2013, amended to N.S. Reg. 119/2024.

.3 Health Canada / Workplace Hazardous Materials Information System (WHMIS 2015).

.1 Safety Data Sheet (SDS).

1.2 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:

.1 Results of site specific safety hazard assessment.

.2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.

.3 Submit 2 copies of Contractor's authorized representative's work site health and safety inspection reports to authority having jurisdiction, daily / weekly, Consultant.

.4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.

.5 Submit copies of incident and accident reports.

.6 Submit WHMIS 2015 SDS - Safety Data Sheets.

.7 Consultant will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 2 days after receipt of plan. Revise plan as appropriate and resubmit plan to Consultant within 1 day after receipt of comments from Consultant.

.8 Consultant’s review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.

.9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to

commencement of Work, and submit additional certifications for any new site personnel to Consultant.

1.3 FILING OF NOTICE

.1 File Notice of Project with Provincial authorities prior to beginning of Work.

.2 Contractor shall be responsible and assume the Principal Contractor role for each work zone location and not the entire complex. Contractor shall provide a written acknowledgement of this responsibility with 3 weeks of contract award.

.3 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

1.4 SAFETY ASSESSMENT

.1 Perform site specific safety hazard assessment related to project.

1.5 REGULATORY REQUIREMENTS

.1 Do Work in accordance with Section 01 41 00 - Regulatory Requirements.

1.6 GENERAL REQUIREMENTS

.1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

.2 Consultant may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.7 RESPONSIBILITY

.1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.

.2 Contractor will be responsible and assume the role Constructor as described in the Occupational Health and Safety Act.

.3 Contractor shall be the Principal Contractor as described in the Occupational Health and Safety Act for only their scope and areas of work as defined and described this project specification.

.4 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.8 COMPLIANCE REQUIREMENTS

.1 Comply with Occupational Health and Safety Act, S.N.S. 1996, c. 7 and Workplace Health and Safety Regulations, N.S. Reg. 52/2013 amended to N.S. Reg. 119/2024.

.2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.9 UNFORSEEN HAZARDS

.1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Consultant verbally and in writing.

.2 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, advise Health and Safety coordinator / Safety Officer and follow procedures in accordance with Acts and Regulations of Province having jurisdiction and advise Consultant verbally and in writing.

1.10 HEALTH AND SAFETY CO-ORDINATOR

.1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:

.1 Have site-related working experience specific to activities associated with roof replacement operations.

.2 Have working knowledge of occupational safety and health regulations.

.3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.

.4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

.5 Be on site during execution of Work and report directly to and be under direction of Registered Occupational Hygienist / Certified Industrial Hygienist / site supervisor.

1.11 POSTING OF DOCUMENTS

.1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Consultant.

1.12 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Consultant.

.2 Provide Consultant with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Consultant may stop Work if non-compliance of health and safety regulations is not corrected.

1.13 POWDER ACTUATED DEVICES

.1 Use powder actuated devices only after receipt of written permission from Consultant.

1.14 WORK STOPPAGE

.1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 INFORMATION SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.

1.2 FIRES

.1 Fires and burning of rubbish on site is not permitted.

1.3 DRAINAGE

.1 Provide temporary drainage and pumping required to keep site free from water.

.2 Ensure pumped water into waterways, sewer or drainage systems is free of suspended materials.

.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.4 NOTIFICATION

.1 Consultant will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits and other elements of Contractor's Environmental Protection Plan.

.2 Contractor: after receipt of such notice, inform Consultant of proposed corrective action taken and take such action for approval by Consultant.

.1 Do not take action until after receipt of written approval by Consultant.

.3 Consultant will issue stop work order until satisfactory corrective action has been taken.

.4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

1.5 CLEANING

.1 Clean in accordance with Section 01 74 00 – Cleaning.

.2 Waste Management: separate waste materials for reuse and recycling in accordance with Municipal regulations.

.3 Do not bury rubbish and waste materials on site.

.4 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES TO REGULATORY REQUIREMENTS

.1 Perform Work in accordance with National Building Code of Canada (NBC), National Fire Code of Canada (NFCC) and National Plumbing Code of Canada (NPCC), including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.

.2 Specific design and performance requirements listed in specifications or indicated on Drawings may exceed minimum requirements established by referenced Building Code; these requirements will govern over the minimum requirements listed in Building Code.

.1 Meet or exceed requirements of:

.1 Contract documents.

.2 Specified standards, codes and referenced documents.

.3 CRCA.

.4 Various CSA, CGSB and ASTM standards referenced in the applicable Sections.

.5 Gas pipes and equipment to national or provincial gas utilization codes.

.6 Manufacturer's printed literature.

1.2 HAZARDOUS MATERIAL DISCOVERY

.1 Asbestos: Demolition of spray or trowel-applied asbestos is hazardous to health. Stop work immediately when material resembling spray or trowel-applied asbestos is encountered during demolition work. Notify Consultant.

.2 Mould: Stop work immediately when material resembling mould is encountered during demolition work. Notify Consultant.

1.3 BUILDING SMOKING ENVIRONMENT

.1 Comply with smoking restrictions and municipal by-laws.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 GENERAL

.1 This Section specifies the general requirements and procedures for quality control. Additional requirements may be specified in individual Sections of the specifications.

1.2 REFERENCES

.1 American Society for Testing and Materials International, (ASTM)

.1 ASTM D1761-20, Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials.

.2 Factory Mutual (FM Global)

.1 FM 1-52, Bonded Plate Uplift Test Procedures. FMDS0152, FM Property Loss Prevention Data Sheets, Feb 2020, Interim Revision October 2024, *Field Verification of Roof Wind Uplift Resistance.*

1.3 INSPECTION

.1 Allow Consultant access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.

.2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Consultant instructions, or law of Place of Work.

.3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

.4 Consultant will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction.

1.4 INDEPENDENT INSPECTION AGENCIES

.1 The Owner may choose to engage an independent Inspection/Testing Agency for the purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Owner.

.2 Provide equipment required for executing inspection and testing by appointed agencies.

.3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.

.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 defects and irregularities as advised by Consultant at no cost to Owner and/or Consultant. Pay costs for retesting and reinspection.

1.5 ACCESS TO WORK

.1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.

.2 Co-operate to provide reasonable facilities for such access.

1.6 PROCEDURES

.1 Notify appropriate agency and Consultant in advance of requirement for tests, in order that attendance arrangements can be made.

.2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.

.3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.7 REJECTED WORK

.1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Consultant as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

.2 Make good other Contractor's work damaged by such removals or replacements promptly.

.3 If in opinion of Consultant it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Consultant.

1.8 REPORTS

.1 Submit 2 copies of inspection and test reports to Consultant.

1.9 FIELD QUALITY CONTROL & TESTING

.1 Adhesion Testing:

.1 If requested by the Consultant, facilitate the carrying out adhesion tests to confirm adhesion of membrane to substrate and substrate layers to each other, down to existing wood deck.

.2 Perform Bonded Plate Uplift Testing in accordance with FM 1-52 test procedure in the presence of the Consultant.

.1 Bonded uplift test to be completed at roof areas specified for modified bituminous membrane recapping.

.3 Locations and timing of tests will be directed by Consultant. Provide labour and materials as required to assist Consultant in conducting tests.

.4 If inadequate adhesion is found, conduct further testing to determine the extent of the inadequate adhesion. Replace all defective areas to the satisfaction of the Consultant. Replace substrate materials as necessary with new materials, and patch cut tests with membrane patches extending at least 150 mm beyond the cut.

.5 Contractor is to assume all costs of test preparation, repair and correction.

.2 Fastener Pullout Testing:

.1 At each deck type perform fastener pull-out testing in accordance with ASTM D1761-20, Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials.

.3 Submit all testing results in writing to Consultant for review. Do not proceed without written approval from Consultant.

1.10 MOCK-UPS

.1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of Sections required to provide mock-ups.

.2 Construct in locations as indicated by the Owner/ Consultant or as specified in specific Section.

.3 Prepare mock-ups for Owner/ Consultant's review with reasonable promptness and in orderly sequence, to not cause delays in Work.

.4 Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.5 If requested, Consultant will assist in preparing schedule fixing dates for preparation.

.6 Mock-ups may remain as part of Work.

.7 Do not proceed with the Work without written approval by the Owner/ Consultant following the examination of the mock-up.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 GENERAL

.1 This Section specifies the general requirements and procedures for construction facilities. Additional requirements may be specified in individual Sections of the specifications.

1.2 HOISTING

.1 Provide, operate and maintain hoists or cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.

.2 Hoists and cranes to be operated by qualified operators.

1.3 SITE STORAGE/LOADING

.1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.

.2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

1.4 CONSTRUCTION PARKING

.1 Limited parking is available on site. Coordinate location and quantity of parking spaces with Owner.

.2 Provide and maintain adequate access to project site.

.3 Clean runways and taxi areas where used by Contractor's equipment.

1.5 EQUIPMENT, TOOL AND MATERIALS STORAGE

.1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.6 SANITARY FACILITIES

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.7 PROTECTION AND MAINTENANCE OF TRAFFIC

.1 Provide access and temporary relocated roads as necessary to maintain traffic.

.2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Consultant.

.3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs

.4 Protect travelling public from damage to person and property.

.5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.

.6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.

.7 Construct access and haul roads necessary.

.8 Haul roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided.

.9 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.

.10 Dust control: adequate to ensure safe operation at all times.

.11 Location, grade, width, and alignment of construction and hauling roads: subject to approval by Consultant.

.12 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.

.13 Provide snow removal during period of Work.

.14 Remove, upon completion of work, haul roads designated by Consultant.

1.8 CLEAN-UP

.1 Remove construction debris, waste materials and packaging material from work site daily.

.2 Clean dirt or mud tracked onto paved or surfaced roadways.

.3 Store materials resulting from demolition activities that are salvageable.

.4 Stack stored new or salvaged material not in construction facilities.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 INSTALLATION AND REMOVAL

.1 Provide temporary controls in order to execute Work expeditiously.

.2 Remove from site all such work after use.

1.2 GUARD RAILS AND BARRICADES

.1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs.

.2 Provide as required by governing authorities.

1.3 WEATHER ENCLOSURES

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

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

.3 Design enclosures to withstand wind pressure and snow loading.

1.4 DUST TIGHT SCREENS

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

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

1.5 ACCESS TO SITE

.1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

1.6 PUBLIC TRAFFIC FLOW

.1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.

1.7 FIRE ROUTES

.1 Maintain access to property including overhead clearances for use by emergency response vehicles.

1.8 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred.

1.9 PROTECTION OF BUILDING FINISHES

.1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.

.2 Provide necessary screens, covers, and hoardings.

.3 Confirm with Consultant locations and installation schedule 3 days prior to installation.

.4 Be responsible for damage incurred due to lack of or improper protection.

1.10 OVERHEAD PROTECTION

.1 Provide, as required, at all entrance/egress locations, suitable overhead protection. Level of acceptance to include temporarily secured scaffold assembly with adequately attached plywood roof decking and appropriate signage.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Within text of each specifications section, reference may be made to reference standards.

.2 Conform to these reference standards, in whole or in part as specifically requested in specifications.

.3 If there is question as to whether products or systems are in conformance with applicable standards, Consultant reserves right to have such products or systems tested to prove or disprove conformance.

.1 Cost for such testing will be born by Contractor in event of conformance with Contract Documents or in event of non-conformance.

1.2 QUALITY

.1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.

.2 Products, materials, equipment and articles incorporated in Work shall maintain, the heritage characteristics and heritage defining elements of the building envelope including layout, installation, colour, texture, and finish.

.3 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.

.4 Procurement policy is to acquire, in a cost-effective manner, products which are made in Canada unless the cost of such products are project prohibitive and/ or products are unavailable in Canada and/ or acquiring Canadian made products will significantly impact the construction schedule. An acceptable alternative may be chosen at the discretion of the Owner/ Consultant.

.5 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

.6 Should disputes arise as to quality or fitness of products, decision rests strictly with Consultant based upon requirements of Contract Documents.

.7 Unless otherwise indicated in specifications, maintain uniformity of manufacturer for any particular or like item throughout building.

.8 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.3 AVAILABILITY

.1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.

.2 In event of failure to notify Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Consultant reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.4 STORAGE, HANDLING AND PROTECTION

.1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.

.2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.

.3 Store products subject to damage from weather in weatherproof enclosures.

.4 Store sheet materials, lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.

.5 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

.6 Remove and replace damaged products at own expense and to satisfaction of Consultant.

.7 Touch-up damaged factory finished surfaces to Consultant’s satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.5 TRANSPORTATION

.1 Pay costs of transportation of products required in performance of Work.

.2 Transportation cost of products supplied by Owner will be paid for by Owner. Contractor will unload, handle and store such products at no increase to the contract price.

1.6 MANUFACTURER'S INSTRUCTIONS

.1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

.2 Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant will establish course of action.

.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.

1.7 QUALITY OF WORK

.1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.

.2 Do not employ anyone unskilled in their required duties. Consultant reserves right to require dismissal from site, workers deemed incompetent or careless.

.3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Consultant, whose decision is final.

1.8 CO-ORDINATION

.1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.

.2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.9 CONCEALMENT

.1 In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

.2 Before installation inform Consultant if there is interference. Install as directed by Consultant.

1.10 REMEDIAL WORK

.1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.

.2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

.3 Perform remedial work to match existing heritage defining characteristics and elements.

1.11 LOCATION OF FIXTURES

.1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.

.2 Inform Consultant of conflicting installation. Install as directed.

1.12 FASTENINGS

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.

.2 Prevent electrolytic action between dissimilar metals and materials.

.3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.

.4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.

.5 Keep exposed fastenings to a minimum, space evenly and install neatly.

.6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.13 FASTENINGS - EQUIPMENT

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.

.3 Bolts may not project more than one diameter beyond nuts.

.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.14 PROTECTION OF WORK IN PROGRESS

.1 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Consultant.

1.15 EXISTING UTILITIES

.1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work and/or building occupants, and pedestrian, and vehicular traffic.

.2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 EXISTING SERVICES

.1 Before commencing work, establish location and extent of service lines in area of Work and notify Consultant of findings.

.2 Remove abandoned service lines within 2 m of structures. Cap or otherwise seal lines at cut-off points as directed by Consultant.

1.2 LOCATION OF EQUIPMENT AND FIXTURES

.1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.

.2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.

.3 Inform Consultant of impending installation and obtain approval for actual location.

.4 Submit field drawings to indicate relative position of various services and equipment when required by Consultant.

1.3 RECORDS

.1 Record locations of maintained, re-routed and abandoned service lines.

1.4 SUBSURFACE CONDITIONS

.1 Promptly notify Consultant in writing if subsurface conditions at Place of Work differ materially from those indicated in Contract Documents, or a reasonable assumption of probable conditions based thereon.

.2 After prompt investigation, should Consultant determine that conditions do differ materially, instructions will be issued for changes in Work as provided in Changes and Change Orders.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 PROJECT CLEANLINESS

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by sub-contractors.

.2 Remove waste materials from site at daily regularly scheduled times or dispose of according to all local and provincial regulations. Do not burn waste materials on site.

.3 Clear snow and ice from access to building.

.4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.5 Provide and use marked separate bins for waste and recycling.

.6 Dispose of waste materials and debris at designated dumping areas.

.7 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.

.8 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

.9 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

.10 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

.11 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.2 FINAL CLEANING

.1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

.2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

.3 Prior to final review remove surplus products, tools, construction machinery and equipment.

.4 Remove waste products and debris including that caused by other Contractors.

.5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.

.6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.7 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.

.8 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, floors.

.9 Clean lighting reflectors, lenses, and other lighting surfaces.

.10 Vacuum clean and dust building interiors, behind grilles, louvres and screens.

.11 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

.12 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.

.13 Remove dirt and other disfiguration from exterior surfaces.

.14 Clean and sweep roofs, gutters, areaways, and sunken wells.

.15 Sweep and wash clean paved areas.

.16 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.

.17 Clean roofs, downspouts, and drainage systems.

.18 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

.19 Remove snow and ice from access to building.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 GENERAL

.1 This Section specifies the general procedures for closeout submittals. Additional requirements may be specified in individual Sections of the specifications

1.2 ADMINISTRATIVE REQUIREMENTS

.1 Acceptance of Work Procedures:

- .1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
  - .1 Notify Consultant in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
  - .2 Request Consultant’s inspection.
- .2 Consultant’s Inspection:
  - .1 Consultant and Contractor to inspect Work and identify defects and deficiencies.
  - .2 Contractor to correct Work as directed.
- .3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
  - .1 Work: completed and inspected for compliance with Contract Documents.
  - .2 Defects: corrected and deficiencies completed.
  - .3 Equipment and systems: tested, adjusted and balanced and fully operational.
  - .4 Work: complete and ready for final inspection.
- .4 Final Inspection:
  - .1 When completion tasks are done, request final inspection of Work by Consultant, and Contractor.
  - .2 When Work incomplete according to Owner and Consultant, complete outstanding items and request re-inspection.
- .5 Declaration of Substantial Performance: when Consultant considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.
- .6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
- .7 Final Payment:
  - .1 When Consultant considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.
- .8 Payment of Holdback:

.1 Provide proof of publication of the Certificate of Substantial Performance to Consultant.

.2 Submit application for payment of holdback amount in accordance with contractual agreement.

1.3 FINAL CLEANING

.1 Clean in accordance with Section 01 74 00 - Cleaning.

.1 Remove surplus materials, excess materials, rubbish, tools and equipment.

.2 Waste Management: separate waste materials for reuse and recycling in accordance with jurisdictional authorities.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 GENERAL

.1 This Section specifies the general requirements for closeout submittals. Additional requirements may be specified in individual Sections of the specifications.

1.2 ADMINISTRATIVE REQUIREMENTS

.1 Pre-warranty Meeting:

.1 Convene meeting 3 weeks prior to contract completion with contractor's representative and Consultant, to:

.1 Verify Project requirements.

.2 Review manufacturer's installation instructions and warranty requirements.

.2 Consultant to establish communication procedures for:

.1 Notifying construction warranty defects.

.2 Determine priorities for type of defects.

.3 Determine reasonable response time.

.3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.

.4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Prior to being granted Substantial Performance of the Work, submit to the Consultant, digital copies of operating and maintenance manuals in English. The manual will be reviewed and comments returned for final digital submission to the client.

.3 Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work.

.4 Provide evidence, if requested, for type, source and quality of products supplied.

1.4 FORMAT

.1 Organize data as instructional manual.

.2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.

.3 When multiple binders are used correlate data into related consistent groupings.

.1 Identify contents of each binder on spine.

.4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.

.5 Arrange content by systems, under Section numbers and sequence of Table of Contents.

.6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

.7 Text: manufacturer's printed data, or typewritten data.

.8 Drawings: provide with reinforced punched binder tab.

.1 Bind in with text; fold larger drawings to size of text pages.

1.5 CONTENTS - PROJECT RECORD DOCUMENTS

.1 Table of Contents for Each Volume: provide title of project;

.1 Date of submission, names.

.2 Addresses, and telephone numbers of Consultant and Contractor with name of responsible parties.

.3 Schedule of products and systems, indexed to content of volume.

.2 For each product or system:

.1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

.3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.

.4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

.5 Typewritten Text: as required to supplement product data.

.1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

1.6 AS-BUILT DOCUMENTS AND SAMPLES

.1 Maintain, in addition to requirements in General Conditions, at site, one record copy of:

.1 Contract Drawings.

.2 Specifications.

.3 Addenda.

.4 Change Orders and other modifications to Contract.

.5 Reviewed shop drawings, product data, and samples.

.6 Field test records.

.7 Inspection certificates.

.8 Manufacturer's certificates.

.2 Store record documents and samples in field office apart from documents used for construction.

.1 Provide files, racks, and secure storage.

.3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.

.1 Label each document "PROJECT RECORD" in neat, large, printed letters.

.4 Maintain record documents in clean, dry and legible condition.

.1 Do not use record documents for construction purposes.

.5 Keep record documents and samples available for inspection by Consultant.

1.7 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS

.1 Record as-built information on set of opaque drawings, provided by Consultant, and return drawings to Consultant at Substantial Performance of the Work.

.2 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Consultant.

.3 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.

.4 Record information concurrently with construction progress.

.1 Do not conceal Work until required information is recorded.

.5 Contract Drawings and shop drawings: mark each item to record actual construction, including:

.1 Measured depths of elements of foundation in relation to finish first floor datum.

.2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

.3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.

.4 Field changes of dimension and detail.

.5 Changes made by change orders.

.6 Details not on original Contract Drawings.

.7 References to related shop drawings and modifications.

.6 Specifications: mark each item to record actual construction, including:

.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.

.2 Changes made by Addenda and change orders.

.7 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

.8 Provide digital photos, of pre-construction, construction progress and completed work for site records. Digital photos will be used to document the Work undertaken and completed in relation to Heritage status, heritage character statement and heritage defining characteristics and elements.

1.8 MATERIALS AND FINISHES

.1 Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations.

.1 Provide information for re-ordering custom manufactured products.

.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Moisture-protection and weather-exposed products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.4 Additional requirements: as specified in individual specifications sections.

1.9 MAINTENANCE MATERIALS

.1 Extra Stock Materials:

.1 Provide maintenance and extra materials, in quantities specified in individual specification sections.

.2 Provide items of same manufacturer and quality as items in Work.

.3 Deliver to site, place and store.

.4 Receive and catalogue items.

.1 Submit inventory listing to Consultant.

.2 Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit prior to final payment.

.2 Special Tools:

.1 Provide special tools, in quantities specified in individual specification section.

.2 Provide items with tags identifying their associated function and equipment.

.3 Deliver to site, place and store.

.4 Receive and catalogue items.

.1 Submit inventory listing to Consultant.

.2 Include approved listings in Maintenance Manual.

1.10 DELIVERY, STORAGE AND HANDLING

.1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.

.2 Store in original and undamaged condition with manufacturer's seal and labels intact.

.3 Store components subject to damage from weather in weatherproof enclosures.

.4 Store paints and freezable materials in a heated and ventilated room.

.5 Remove and replace damaged products at own expense and for review by Consultant.

1.11 WARRANTIES AND BONDS

.1 Contractors Warranty for Labour and Material:

.1 Submit 24-month labour warranty for materials workmanship, dated from the date of Substantial Performance.

.2 Make all necessary repairs and replacements within 48 hours of receipt of written notification.

.3 Provide written warranties, confirming above, issued on the corporate letterhead, signed and sealed by an authorized signing officer. The warranties will specifically reference the name of the Building, location and Owner.

.4 Nothing contained in this Article shall be construed as in any way restricting or limiting the liability in common law and statutory liability of the Contractor.

.2 Manufacturer’s Warranty:

.1 Submit 10-year membrane material warranty for Modified Bituminous Membrane Roofing.

.3 Separate warranties may be indicated in individual specification sections.

.4 Develop warranty management plan to contain information relevant to Warranties.

.5 Submit warranty management plan, 7 days before planned pre-warranty conference, to Consultant for approval.

.6 Warranty management plan to include required actions and documents to assure that Consultant receives warranties to which it is entitled.

.7 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.

.8 Submit, warranty information made available during construction phase, to Consultant for approval prior to each monthly pay estimate.

.9 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:

- .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within 14 days after completion of applicable item of work.
- .4 Verify that documents are in proper form, contain full information, and are notarized.
- .5 Co-execute submittals when required.
- .6 Retain warranties and bonds until time specified for submittal.

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

.11 Conduct joint 12 month and 18 month warranty inspection, measured from time of acceptance, by Consultant.

.12 Include information contained in warranty management plan as follows:

- .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
- .2 Provide list for each warranted equipment, item, feature of construction or system indicating:
  - .1 Name of item.
  - .2 Model and serial numbers.
  - .3 Location where installed.
  - .4 Name and phone numbers of manufacturers or suppliers.
  - .5 Names, addresses and telephone numbers of sources of spare parts.
  - .6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
  - .7 Cross-reference to warranty certificates as applicable.
  - .8 Starting point and duration of warranty period.
  - .9 Summary of maintenance procedures required to continue warranty in force.
  - .10 Cross-Reference to specific pertinent Operation and Maintenance manuals.
  - .11 Organization, names and phone numbers of persons to call for warranty service.
  - .12 Typical response time and repair time expected for various warranted equipment.

.3 Contractor's plans for attendance at 12 and 18 month post-construction warranty inspections.

.4 Procedure and status of tagging of equipment covered by extended warranties.

.5 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

.13 Respond in timely manner to oral or written notification of required construction warranty repair work.

.14 Written verification to follow oral instructions.

.1 Failure to respond will be cause for the Consultant to proceed with action against Contractor.

1.12 WARRANTY TAGS

.1 Tag, at time of installation, each warranted item. Provide durable, oil and water resistant tag approved by Consultant.

.2 Attach tags with copper wire and spray with waterproof silicone coating.

.3 Leave date of acceptance until project is accepted for occupancy.

.4 Indicate following information on tag:

.1 Type of product/material.
.2 Model number.
.3 Serial number.
.4 Contract number.
.5 Warranty period.
.6 Inspector's signature.
.7 Construction Contractor.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 02 83 10 - Lead-Based Paint Abatement – Minimum Precautions.

1.2 REFERENCES

.1 Definitions:

.1 Demolition: Rapid destruction of building following removal of hazardous materials.

.2 Hazardous materials: Dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: Asbestos PCB's, CFC's, HCFC's poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health or well being or environment if handled improperly.

.2 Reference Standards:

.1 Health Canada/Workplace Hazardous Materials Information System (WHMIS 2015)

.1 Safety Data Sheets (SDS).

.2 Transport Canada (TC)

.1 Transportation of Dangerous Goods Act, 1992 (TDGA), c. 34.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Shop Drawings:

.1 Submit for approval drawings, diagrams, schedules or details showing sequence of demolition work.

.3 Hazardous Materials:

.1 Provide description of Hazardous Materials and Notification of Filing with proper authorities prior to beginning of Work as required.

.4 Certificates:

.1 Submit copies of certified weigh bills, bills of landing, receipts from authorized disposal sites and reuse and recycling facilities for material removed from site on weekly basis, upon request of Consultant.

1.4 QUALITY ASSURANCE

.1 Regulatory Requirements: Ensure Work is performed in compliance with authorities having jurisdiction.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Store and manage hazardous materials in accordance with authorities having jurisdiction.

.2 Storage and Protection.

.1 Protect existing items designated to remain in place and items designated for salvage. In event of damage to such items, immediately replace or make repairs to approval of Owner/ Consultant and at no cost to Owner.

.2 Remove and store materials to be salvaged, in manner to prevent damage or theft.

.3 Store and protect in accordance with requirements for maximum preservation of material.

.4 Handle salvaged materials as new materials.

1.6 SITE CONDITIONS

.1 Site Environmental Requirements.

.1 Ensure that selective demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.

.2 Do not dispose of waste of volatile materials including but not limited to, mineral spirits, oil, petroleum-based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.

.1 Ensure proper disposal procedures are maintained throughout the project.

.3 If applicable, protect trees, plants and foliage on site and adjacent properties where indicated. Protect paving, sidewalks and all hard landscaping.

.4 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers or onto adjacent properties.

.5 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities and as directed by Owner/ Consultant.

.6 If applicable, protect trees, plants and foliage on site and adjacent properties where indicated. Protect paving, sidewalks and all hard landscaping.

.2 Existing Conditions.

.1 Remove contaminated or hazardous materials as defined by authorities having jurisdiction, prior to start of demolition Work, and dispose of at designated disposal facilities in safe manner in accordance with TDGA and other applicable regulatory requirements.

.2 List of hazardous materials:

.1 Lead containing paints and finishes.

1.7 SPECIAL CONDITIONS

.1 Treasures, such as coins, bills, paper of value, and articles of antiquity, discovered during demolition work at the site shall remain property of the Owner.

Part 2 Products

2.1 EQUIPMENT

.1 Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

Part 3 Execution

3.1 PREPARATION

.1 Inspect site with Owner 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. Preserve active utilities traversing site in operating condition.

.3 Notify and obtain approval of utility companies before starting demolition.

.4 If necessary, disconnect and cap designated mechanical services.

.1 Natural gas supply lines: Remove in accordance with gas company requirements / contact utility company to arrange for removal, as directed by Consultant.

3.2 REMOVAL OF HAZARDOUS WASTES

.1 Remove contaminated or dangerous materials defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.

.2 Do not stockpile dangerous or hazardous waste/ materials on site.

3.3 REMOVAL OPERATIONS

.1 Remove items as indicated.

.2 Do not disturb items designated to remain in place.

.3 Salvage masonry brick/ stone units, metal (copper) flashings, architectural trim and finishes and/ or finishes and materials designated by the Owner/ Consultant.

.1 Dismantle items containing materials for salvage and stockpile salvaged materials at locations as indicated.

.4 Disposal of Material:

.1 Dispose of materials not designated for salvage or reuse on site at authorized facilities or as instructed by Owner/ Consultant and as approved by jurisdictional authorities.

3.4 STOCKPILING

.1 Label stockpiles, indicating material type and quantity.

.2 Designate appropriate security resources/ measures to prevent vandalism, damage and theft.

.3 Locate stockpiled materials convenient for use in new construction to eliminate double handling wherever possible.

.4 Do not stockpile dangerous or contaminated materials on site.

3.5 REMOVAL FROM SITE

.1 Remove stockpiled material as directed by Owner/ Consultant, when it interferes with operations of project.

.2 Dispose of materials in accordance with applicable regulations.

.3 Unless otherwise specified, materials for removal become the Contractor's property and shall be taken from site.

.4 Maintain work area and site, free of accumulated waste and rubbish and dispose of all debris on a daily basis with minimum disturbance to occupants.

.5 Provide garbage bins and chutes for daily disposal of debris. Co-ordinate location of bins with Client prior to commencement of work.

.6 Have full garbage bins removed immediately. Unless otherwise specified, removed materials will become the Contractors property and shall be taken from site and disposed of in accordance with Municipal, Provincial and Federal regulations.

3.6 RESTORATION

.1 Maintain and match heritage character defining characteristics and elements, finishes and aesthetic. Should elements of the Work interfere or alter the existing heritage finishes notify Owner/ Consultant immediately, allowing sufficient time for inspection. Do not proceed without written approval and/ or instruction by the Owner/ Consultant.

.2 Use treatments and procedures which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent water courses or ground water.

3.7 CLEANING

.1 Progress Cleaning: Clean in accordance with Section 01 74 00 - Cleaning.

.1 Leave Work area clean at end of each day.

.2 Remove debris, trim surfaces and leave work site clean, upon completion of Work

.3 Use cleaning solutions and procedures which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent water courses or ground water.

.2 Final Cleaning: Upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.

.3 Waste Management: Separate waste materials for reuse or recycling in accordance with jurisdictional authorities.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.8 PROTECTION

.1 Ensure adequate protection of materials, systems, heritage elements and properties adjacent to work areas.

.2 Repair damage to adjacent materials or property caused by selective site demolition.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Comply with the requirements of this Section when performing the following Work:

.1 Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap on exterior wood cladding, exterior wood cladding elements, and architectural trim and woodwork.

.2 Removal of lead-containing coatings or materials using a power tool with an effective dust collection system equipped with a HEPA filter at exterior elevations at exterior wood cladding, exterior wood cladding elements, and architectural trim and woodwork as required to complete the Work safely.

.3 Removal of lead-containing coatings or materials with non-powered hand tool, other than manual scraping and sanding at exterior wood cladding, exterior wood cladding elements, and architectural trim and woodwork.

1.2 RELATED REQUIREMENTS

.1 Section 02 41 13 - Selective Site Demolition.

.2 Section 06 10 53 - Miscellaneous Rough Carpentry.

.3 Section 07 31 29 - Wood Shingles.

.4 Section 09 91 13 - Exterior Painting.

1.3 REFERENCES

.1 Department of Justice Canada

.1 Canadian Environmental Protection Act, 1999 (CEPA).

.2 Health Canada

.1 Workplace Hazardous Materials Information System (WHMIS).

.1 Safety Data Sheets (SDS).

.3 Human Resources and Social Development Canada (HRSDC)

.1 Canada Labour Code Part II, - SOR 86-304 - Occupational Health and Safety Regulations.

.4 Transport Canada (TC)

.1 Transportation of Dangerous Goods Act, 1992 (TDGA).

.5 United States Environmental Protection Agency (EPA)

.1 EPA 747-R-95-007- [1995] , Sampling House Dust for Lead.

.6 U.S. Department of Health and Human Services/Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health (NIOSH)

.1 NIOSH 94-113 - NIOSH Manual of Analytical Methods (NMAM), 4th Edition (1994).

.7 U.S. Department of Labour - Occupational Safety and Health Administration (OSHA) - Toxic and Hazardous Substances

.1 Lead in Construction Regulation - 29 CFR 1926.62.

.8 Province of Nova Scotia

.1 Occupational Safety General Requirements. N.S. Reg. 44/1999 amended to N.S. Reg. 53/2013

.2 Workplace Health and Safety Regulations NS Reg. 52/2013 amended to N.S. Reg. 73/2024.

1.4 DEFINITIONS

.1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.

.2 Authorized Visitors: Consultant or designated representative(s).

.3 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects over cuts and tears, and elsewhere as required to provide protection and isolation. For protection of underlying surfaces from damage and to prevent lead dust entering in clean area.

.4 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.

.5 Action level: employee exposure, without regard to use of respirators, to airborne concentration of lead of 50 micrograms per cubic meter of air (50 ug/m^3) calculated as 8-hour time-weighted average (TWA). Minimum precautions for lead abatement are based on airborne lead concentrations less than 0.05 milligrams per cubic meter of air for removal of lead-based paint by methods noted in paragraph 1.1.

.6 Competent person: Individuals capable of identifying existing lead hazards in workplace taking corrective measures to eliminate them.

.7 Lead dust: wipe sampling on vertical surfaces and/or horizontal surfaces, dust and debris is considered to be lead contaminated if it contains more than 40 micrograms of lead in dust per square foot.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Provide proof satisfactory to Consultant that suitable arrangements have been made to dispose of lead based paint waste in accordance with requirements of authority having jurisdiction.

.3 Provide proof of Contractor's General and Environmental Liability Insurance.

.4 Quality Control:

.1 Provide Consultant necessary permits for transportation and disposal of lead-based paint waste and proof that lead based paint waste has been received and properly disposed.

.2 Provide proof satisfactory to Consultant that employees have had instruction and appropriate training on hazards of lead exposure, respirator use, dress, and aspects of work procedures and protective measures.

1.6 QUALITY ASSURANCE

.1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to lead paint, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.

.2 Health and Safety:

.1 Comply with construction occupational health and safety authorities having jurisdiction.

.2 Safety Requirements: worker and visitor protection.

.1 Protective equipment and clothing to be worn by workers and visitors in work Area when significant abatement of hazard materials is conducted:

.1 Respirator NIOSH approved and equipped with replaceable HEPA filter cartridges with an assigned protection factor of 10, acceptable to Authority having jurisdiction. Suitable for type of lead and level of lead dust exposure. Provide sufficient number of filters.

.2 Half mask respirator: half-mask particulate respirator with appropriate series filter, and 95% efficiency could be provided.

.2 Eating, drinking, chewing, and smoking are not permitted in work area.

.3 Ensure workers wash hands and face when leaving work area.

.4 Visitor Protection:

.1 Provide approved respirators to Authorized Visitors to work areas when required by the Work at hand.

.2 Instruct Authorized Visitors procedures to be followed in entering and exiting work area.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling.

.2 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.

.3 Disposal of lead waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of lead waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels.

.4 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.8 EXISTING CONDITIONS

.1 Reports and information pertaining to lead-based paint to be handled, removed, or otherwise disturbed and disposed of during this Project will be made available.

.2 Notify Consultant of lead-based paint discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Consultant.

.3 All work shall be executed in a manner that minimizes impact to existing conditions and finishes outside the scope of work. To the extent possible, heritage conditions, finishes, and elements shall be protected in place.

1.9 SCHEDULING

.1 Not later than two days before beginning Work on this Project notify authorities have jurisdiction of the following, in writing if required:

.1 Appropriate Regional or Zone Director of Medical Services Branch, Health Canada.

.2 Provincial Ministry of Labour.

.3 Disposal Authority.

.2 Inform sub trades of presence of lead-containing materials identified in Existing Conditions.

.3 Provide Consultant copy of notifications prior to start of Work.

.4 Hours of Work: perform work during regular working hours unless the Work endangers persons using the facility or instructed by the Owner/ Consultant.

1.10 PERSONNEL TRAINING

.1 Provide Consultant satisfactory proof that every worker has had instruction and training in hazards of lead exposure, in personal hygiene, in aspects of work procedures, and in use, cleaning, and disposal of respirators.

.2 Instruction and training related to respirators includes, at minimum:

.1 Proper fitting of equipment.

.2 Inspection and maintenance of equipment.

.3 Disinfecting of equipment.

.4 Limitations of equipment.

.3 Instruction and training must be provided by competent, qualified person.

.4 Supervisory personnel to complete required training.

Part 2 Products

2.1 MATERIALS

.1 Polyethylene 0.15 mm thick unless otherwise specified; in sheet size to minimize joints.

.2 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under dry conditions and wet conditions using amended water.

.3 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual lead paint residue.

.4 Lead waste containers: Type acceptable to dump operator with tightly fitting covers and 0.15 mm thickness sealable polyethylene liners.

.1 Label containers with pre-printed bilingual cautionary Warning Lead clearly visible when ready for removal to disposal site.

Part 3 Execution

3.1 SUPERVISION

.1 One Supervisor for every ten workers is required.

.2 Supervisor must remain within work area during disturbance, removal, or handling of lead based paints.

3.2 PREPARATION

.1 Remove and store items to be salvaged or reused.

.1 Protect and wrap items and transport and store in area specified by Owner/ Consultant.

.2 Work Area:

.1 Shut off and isolate HVAC system to prevent dust dispersal into other building areas. Conduct smoke tests to ensure duct work is airtight.

.2 Pre-clean fixed casework and equipment within work area, using HEPA vacuum and cover and seal with polyethylene sheeting and tape.

.3 Clean work area using HEPA vacuum. If not practicable, use wet cleaning method. Do not raise dust.

.4 Seal off openings with polyethylene sheeting and seal with tape.

.5 Protect floor surfaces covered from wall to wall with polyethylene sheets.

.6 Maintain emergency fire exits or establish alternatives satisfactory to Authority having jurisdiction.

.7 Where water application is required for wetting lead containing materials, provide temporary water supply appropriately sized for application of water as required.

.8 Provide electrical power and shut off for operation of powered tools and equipment. Provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical cables and equipment.

.3 Do not start work until:

.1 Arrangements have been made for disposal of waste.

.2 Tools, equipment, and materials waste containers are on site.

.3 Arrangements have been made for building security.

.4 Notifications have been completed and preparatory steps have been taken.

3.3 LEAD ABATEMENT

.1 Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap; or removal equipped with HEPA filters; or removal with using power tools non-powered hand tool, other than manual scraping and sanding.

.2 Remove lead-based paint in small sections and pack as it is being removed in sealable 0.15 mm plastic bags and place in labelled containers for transport.

.3 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to staging area. Clean external surfaces thoroughly again by wet sponging. Wash containers thoroughly pending removal to outside. Ensure containers are removed by workers who have entered uncontaminated areas dressed in clean coveralls.

.4 After completion of stripping work, wire brush and wet sponge surface from which lead based paint has been removed to remove visible material. During this work keep surfaces wet.

.5 After wire brushing and wet sponging to remove visible lead-based paint, and after encapsulating lead containing material impossible to remove, wet clean entire work area, and equipment used in process. After inspection by Consultant apply continuous coat of slow drying sealer to surfaces of work area. Do not disturb work area for [8] hours no entry, activity, ventilation, or disturbance during this period.

.6 Do not remove paint/ finishes that is firmly adhered to and thus protecting finishes. Do not strip historical finishes/ paint to reveal bare wood as this may expose historically coated surfaces to accelerated weathering. Report conditions to Consultant and do not proceed without written approval by the Consultant.

.7 Do not use destructive paint removal methods such as propane or butane torches, sandblasting or water-blasting.

3.4 INSPECTION

.1 Perform inspection to confirm compliance with specification and governing authority requirements. Deviations from these requirements not approved in writing by Consultant will result in work stoppage, at no cost to Owner.

.1 Adhere to specific procedures and materials.

.2 Provide final cleaning upon completion of the Work.

.3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

3.5 LEAD SURFACE SAMPLING - WORK AREAS

.1 Final lead surface sampling to be conducted as follows:

.1 After work area has passed a visual inspection for cleanliness approved and accepted by Consultant. Apply coat of lock-down agent to surfaces within enclosure, and appropriate setting period of 8 hours has passed, Consultant will perform lead wipe sampling.

.1 Final lead wipe sampling results from horizontal and vertical surfaces must show lead levels of less than 40 micrograms of lead in dust per square foot. Samples collected and analyzed in accordance with EPA 747-R-95-007.

.2 If wipe sampling results show levels of lead in excess of 40 micrograms per square foot, re-clean work area at contractor's expense and apply another acceptable coat of lock-down agent to surfaces.

.3 Repeat as necessary until fibre levels are less than 40 micrograms per square foot.

3.6 FINAL CLEANUP

.1 Following cleaning and when lead wipe surfaces sampling are below acceptable concentrations, proceed with final cleanup.

.2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible lead containing particles observed during cleanup, immediately, using HEPA vacuum.

.3 Place polyethylene sheets, tape, cleaning material, clothing, and contaminated waste in plastic bags and sealed labelled waste containers for transport.

.4 Conduct final check to ensure no dust or debris remains on surfaces as result of dismantling operations.

3.7 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

.1 Repair or replace objects damaged in course of work to their original state or better, as directed by Consultant.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Miscellaneous rough carpentry shall include but is not limited to the following so as to complete the Work as specified:

- .1 Repair or replacement of substrate including existing sheathing, tongue and groove board, etc.
- .2 Installation of new plywood sheathing at dormers.
- .3 Repair or replacement of existing wood strapping.
- .4 Repair or replacement of various wood trim elements to complete transitions, tie-ins, terminations, etc. of various materials and/or systems.
- .5 Repair, stabilization and reinforcing of roof related structural wood members.
- .6 Installation of backing, nailers, support members.
- .7 Repair of wood crickets and/or saddles.
- .8 Repair, stabilization, replacement of minor architectural woodwork including trims and finishes.

1.2 RELATED SECTIONS

.1 Section 02 41 13 - Selective Site Demolition.

.2 Section 02 83 10 - Lead-Based Paint Abatement – Minimum Precautions.

.3 Section 07 14 00 - Fluid Applied Waterproofing.

.4 Section 07 31 29 - Wood Shingles.

.5 Section 07 52 00 - Modified Bituminous Membrane Roofing.

.6 Section 07 62 00 - Sheet Metal Flashing and Trim.

.7 Section 07 92 00 - Joint Sealants.

1.3 REFERENCES

.1 ASTM International

- .1 ASTM A653/A653M-11, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2 CSA International

- .1 CSA A123.22-08 (R2013) - Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
- .2 CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.
- .3 CSA O141-05 (R2009), Softwood Lumber.

.4 CSA O151-09, Canadian Softwood Plywood.

.3 National Lumber Grades Authority (NLGA)

.1 Standard Grading Rules for Canadian Lumber 2010.

.4 Underwriters' Laboratories of Canada (ULC)

.1 CAN/ULC-S701-05, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.

.2 CAN/ULC-S702-14, Standard for Mineral Fibre Thermal Insulation for Buildings.

.3 CAN/ULC-S702.2-10, Standard for Mineral Fibre Thermal Insulation for Buildings, Part 2: Application.

.4 CAN/ULC-S705.1-01, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Material Specification.

.5 CAN/ULC-S705.2-05, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Application.

1.4 QUALITY ASSURANCE

.1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

.2 Plywood identification: by grade mark in accordance with applicable CSA Standards.

1.5 MOCK-UPS

.1 Provide mock-up of wood blocking system, sheathing repair/ replacement, stabilization, closures for neccessary detail or profile for review in a location designated by the Consultant in accordance with Section 01 33 00 – Submittal Procedures.

.2 Provide hand-sketch detailing repair, stabilization, reinforcement, transition, attachement, etc., when requested by the Consultant or when miscellenaous rough-carpentry is required to comeplete the Work as specified. Hand-sketches to include:

.1 Location of proposed changes, alterations, repairs or replacement

.2 List of materials including wood members, sheathing, fasteners, adhesives, metal flashings, etc.

.3 Method(s) of attachment including fastener, adhesive or other product/ technical specifications. Reference 01 33 00 - Submittal Procedures.

.4 Material dimensions.

.5 Dimensions of location where Work is being carried out.

.6 List of locations where similar work is required.

.3 Provide mock-up where directed by the Consultant.

.4 Allow sufficient time for review of the mock-up by the Consultant. Do not proceed without written confirmation by the Consultant.

.5 Review mock-up to ensure design intent can be achieved. Verify all intersecting and adjoining elevations to ensure that continuity of roofing and closures can be achieved. Verify attachment, methods for securing and pullout strengths to ensure that work can support the anticipated loads and will remain in place against all wind, weather and service conditions without warping or deforming.

1.6 PRECAUTIONS

.1 Provide temporary protection, to the satisfaction of the Consultant, to render all wood blocking and plywood watertight, if for any reason permanent membrane protection cannot be provided within the same day. Ensure the base of any curbs are temporarily sealed to prevent water from entering below the curb assembly, or behind sheathing, should the roof assembly not be completed on the same day as the carpentry work.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 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, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Store materials off ground with moisture barrier at both ground level and as a cover forming a well-ventilated enclosure, with drainage to prevent standing water.

.3 Replace defective or damaged materials with new.

Part 2 Products

2.1 LUMBER MATERIAL

.1 Lumber: Unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:

.1 CSA O141.

.2 NLGA Standard Grading Rules for Canadian Lumber.

.2 Furring, blocking, nailing strips, grounds, rough bucks, curbs, fascia backing and sleepers:

.1 S2S is acceptable for all surfaces.

.2 Board sizes: "Standard" or better grade.

.3 Dimension sizes: "Standard" light framing or better grade.

.4 Post and timbers sizes: "Standard" or better grade.

2.2 PLYWOOD

.1 Canadian softwood plywood (CSP): to CSA O151.

.1 Ttreated, 6 mm thick.

2.3 OVERLAY BOARD

.1 Glass mat gypsum sheathing: Glass mat faced treated core gypsum roof board, for installation over wood deck to ASTM C1177/C1177M. Boards to be 1.2 m x 2.4 m, thickness as indicated, with pre-primed surface where indicated.

.1 Standard of acceptance:

.1 DensDeck Roof Board by GP Gypsum.

.2 Securock by USG.

.3 Or accepted alternate.

.2 Overlay board, mechanically fastened, for use over eyebrow dormers.

.1 Type: Glass-mat faced gypsum core roof board.

.2 Thickness: 6.4 mm or 9.5 mm.

.3 Performance:

.1 Conforms to ASTM C1177.

.2 Mold, moisture, and fire resistant.

.3 Compatible with adhered and mechanically fastened roofing systems.

.4 Capable of conforming to curved substrates when installed per manufacturer's recommendations.

.3 Overlay board, mechanically fastened, for use over existing wood roof deck at mod. bit. valley and saddle locations.

.1 Type: Glass-mat faced gypsum core roof board.

.2 Thickness: 9.5 mm or 12.7 mm.

.3 Performance:

.1 Conforms to ASTM C1177.

.2 Mold, moisture, and fire resistant.

.3 Compatible with adhered and mechanically fastened roofing systems.

2.4 FASTENERS

.1 Wood to wood fasteners: Wood screw #12 or as indicated, galvanized flat head, of sufficient length to completely penetrate through base minimum 25 mm.

.2 Fasteners for securement into framing members to be minimum #14 roofing screws with anticorrosion coating where indicated.

.1 Material: Hardened carbon steel.

.2 Thread diameter: 6.1 mm min.

.3 Shank diameter: 4.6 mm min.

.4 Head diameter: 11.4mm min.

.5 Head style: #3 deep recess Phillips

.6 Point type: Dill Point

.7 Minimum embedment into dimensional lumber: 40mm

.8 Standard of acceptance:

.1 Soprema #12 roofing screw.

.2 Or accepted alternate

.3 Exposed fasteners for metal to wood or masonry: Use #10 cadmium plated hex screws with neoprene and steel washers. Minimum length 38 mm. Use lead shields, as required for anchoring. Colour of screw head to meet approval of Consultant.

.1 Standard of acceptance:

.1 Atlas Bolt.

.2 Rawl.

.3 Or accepted alternate.

.4 Fasteners for securement into wood deck and framing members:

.1 Type: Corrosion-resistant with insulation plates.

.2 Thread diameter: 6.1 mm min.

.3 Shank diameter: 4.6 mm min.

.4 Head diameter: 11.4mm min.

.5 Head style: #3 deep recess Phillips

.6 Point type: Dill Point

.7 Minimum embedment into dimensional lumber: 40mm

.8 Plates: 50 mm diameter as recommended by manufacturer.

.9 Standard of acceptance:

.1 Soprema #14 roofing screw.

.2 OMG Roofing Products – Twinlock.

.3 Or accepted alternate

.5 Nails, spikes and staples: To CSA B111.

2.5 ACCESSORIES

.1 Gypsum board: To ASTM C1177. Glass mat faced treated core gypsum roof board. Thickness 12.7 mm unless as indicated. Pre-primed surface.

.1 Standard of acceptance:

.1 DensDeck Prime Roof Board by Georgia-Pacific.

.2 Or accepted alternate.

.2 Metal closure: 0.56 mm (26 ga.) galvanized steel unless otherwise shown or specified.

.3 Self-adhered membrane: To CSA A123.22, self-adhering membrane consisting of SBS rubberized asphalt compound laminated to a polyethelene film. Minimum thickness 1 mm.

.1 Standard of acceptance:

.1 Blueskin SA by Henry Bakor.

.2 GoldShield by IKO.

.3 Soprastick 1100 by Soprema.

.4 Or accepted alternate.

.4 Spray-in-place polyurethane foam insulation: Thickness as shown or specified to CAN/ULC S705.1 Materials and CAN/ULC S705.2 Application.

.5 Semi-rigid insulation: semi-rigid mineral wool, rockwool, or slagwool boards, to CAN/ULC 702.2.

2.6 FINISHES

.1 Galvanizing: To ASTM A653/A653M, use galvanized fasteners for all work unless otherwise directed by the Consultant and/ or Manufacturer.

.2 Interior paint: 2 coats interior acrylic latex, colour to match existing, eggshell.

Part 3 Execution

3.1 GENERAL INSTALLATION

.1 Extend underlayment membrane up vertical surfaces and curbs and onto the deck, valleys, saddles and dormers as shown on the Drawings, to provide continuity.

.2 Slope the top of all wood blocking at the roof perimeter in towards the roof at a minimum of 5%, unless otherwise shown on the Drawings.

.3 Comply with requirements of NBC, supplemented by the following paragraphs.

.4 Align and plumb faces of furring and blocking to tolerance of 1:600.

.5 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.

.6 Install wood, fascia backing, nailers, curbs and other wood supports as required and secure using galvanized steel fasteners.

.7 Install wood backing, dressed, tapered and recessed slightly below top surface of roof insulation for roof hopper.

3.2 SECUREMENT OF WOOD BLOCKING

.1 Comply with more stringent requirements as required by drawings or NBC 2015 requirements. Increase number and spacing of all fasteners by 50% for 2400 mm from all outside roof corners.

.2 Install fasteners to the design intent to hold all wood blocking permanently in place to prevent warping, deflection and to resist all wind and weather conditions.

.3 Install fasteners in two rows in the direction of the grain, offset one to another in a staggered fashion by approximately 50%. All fasteners shall be placed minimum 10 mm from any edge of framing.

.4 Unless specified otherwise, the number of fasteners shall be doubled at all outside parapet corners, for a distance of 3 m from the corner.

.5 For any exposed fastening, provide touch-up paint as required to coat all exposed surfaces of screws damaged during the driving process.

3.3 OVERLAY INSTALLATION

.1 At roof areas over existing modified bituminous roofing including valleys, saddles and eyebrow dormers.

.2 Gypsum Plywood:

.1 Not less than 2 mm gaps shall be provided between sheets, to allow for material expansion.

.2 Unless otherwise indicated, fasten plywood with a minimum of thirty-six fasteners per 1200 mm x 2400 mm sheet.

3.4 ERECTION

.1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.

.2 Countersink bolts where necessary to provide clearance for other work.

.3 Bevel leading edge of wood panel products on vertical applications to facilitate membrane installation and as detailed on drawings.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

.1 ASTM International (ASTM)

.1 ASTM D1761-20, Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials.

.2 ASTM D226- Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing

.3 ASTM D4869- Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing.

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-51.32- M77, Sheathing, Membrane, Breather Type.

.2 CAN/CGSB-51.34- M86(R1988), Vapour Barrier, Polyethylene Sheet for Use in Building Construction.

.3 CSA Group (CSA)

.1 CSA A123.3- 05(R2020), Asphalt Saturated Organic Roofing Felt.

.2 CSA B111- 1974(R2003), Wire Nails, Spikes and Staples.

.3 CSA O118.2- 08, Eastern White Cedar Shingles.

.4 CAN/CSA-Z809- 08, Sustainable Forest Management.

.4 Cedar Shake and Shingle Bureau (CSSB)

.1 CSSB- 97, Cedar Shake and Shingle Grading Rules.

.2 CSSB New Roof Construction Manual for Roof Application Details 2020.

.3 CSSB Exterior and Interior Wall Manual for Sidewall Application Details 2020.

.5 Forest Stewardship Council (FSC)

.1 FSC-STD-01-001- 2004, FSC Principle and Criteria for Forest Stewardship.

.6 National Research Council Canada (NRC)

.1 National Building Code of Canada 2015 (NBC).

.7 Sustainable Forestry Initiative (SFI)

.1 SFI- 2010-2014 Standard.

1.2 DEFINITIONS

.1 Shingle: tapered slice of wood sawn from block with taper in direction of grain or axial direction.

1.3 RELATED REQUIREMENTS

.1 Section 02 41 13 - Selective Site Demolition.

.2 Section 06 10 53 - Miscellaneous Rough Carpentry.

.3 Section 07 52 00 - Modified Bituminous Membrane Roofing.

.4 Section 07 62 00 - Sheet Metal Flashing and Trim.

.5 Section 07 92 00 - Joint Sealants.

.6 Section 09 91 13 - Exterior Painting.

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 for wood shingles and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Include information on preservation and restoration of shingles.

.3 Shop Drawings:

.1 Submit drawings stamped and signed by professional engineer registered or licensed in Nova Scotia, Canada.

.2 Indicate details of flashing installation.

.4 Samples:

.5 Where colour, pattern or texture is criterion, submit full range of samples. Submit a minimum of ten (10) shingle samples (new material) for each project colour. Wood shingle samples to be no less than 120 mm x 444 mm x 12 mm.

1.5 QUALITY ASSURANCE

.1 Qualifications:

.1 Installer: company or person specializing in shingle and shake work installations with 5 years documented experience approved by manufacturer.

.2 Mock-ups:

.1 Construct mock-up in accordance with Section 01 43 00 - Quality Assurance.

.2 Construct 1200 x 1200 mm panel of shingle pattern including eave, ridge hip, gable rake, valley details.

.3 Construct portion of fancy or pattern roof/ sidewall/shingling showing repetitive pattern, weather exposure, fitting, dressing and nailing.

.4 Allow minimum 24 hours for inspection of mock-up by Consultant.

.5 Mock-up may be part of finished work. Will demonstrate standard quality, tie-in/ matching of existing required for the work.

.3 Testing:

.1 At each deck type perform fastener pull-out testing in accordance with ASTM D1761.

.2 Submit testing results in writing to Consultant for review. Do not proceed without written approval from Consultant.

.4 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.

.5 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

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 Exercise care to avoid damage during unloading and storing.

.2 Store materials off ground, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.3 Store and protect shingles from nicks, scratches, and blemishes.

.4 Replace defective or damaged materials with new.

.5 Remove only in quantities required for same day use.

1.7 WARRANTY

.1 Extended Correction Period.

.1 For work under this Section provide warranty on materials and labour of 24 months.

1.8 UNUSED MATERIALS

.1 Unused shingles remain property of Owner.

.2 Return unused shingles to Owner. Retain packaging or rewrap shingles to form complete bundles.

.3 Label packages to identify product, quantity and manufacturer/supplier.

.4 Deliver and store in location designated by Owner/ Consultant.

Part 2 Products

2.1 MATERIALS

.1 New materials to match existing wood shingle colour, finish, layout and installation.

2.2 WOOD SHINGLES

.1 White cedar shingles: to CSA O118.2, 457 mm length, random width, square pattern, A (Extra) or B (Clear), factory finished, solid stain to match existing.

.1 CAN/CSA-Z809 or FSC or SFI certified.

.2 Colour & Finish: See Section 09 91 13 Exterior Painting.

2.3 UNDERLAYMENT MEMBRANE (SELF-ADHERED APPLICATION)

.1 Type: SBS modified bituminous base sheet for application over existing wood roof deck.

.1 Reinforcement: Glass fiber mat

.2 Top Surface: Sanded.

.3 Type: 2

.4 Conforms to: ASTM D4601

.5 Application: Pressure-sensitive (self-adhered).

.6 Standard of Acceptance:

.1 Armourvent Base by IKO

.2 Colvent Base 830 by Soprema

.3 Or Approved Alternate

2.4 FASTENERS

.1 Nails: Stainless steel Type 304, Type 316

2.5 ACCESSORIES

.1 Roofing felt: to CSA A123.3, perforated asphalt felt; No.15 unless otherwise specified. No. 30 typical at valleys unless otherwise specified.

.2 Sheathing paper: to CAN/CGSB-51.32, single-ply laminated type.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify that the conditions of substrate previously installed under other Sections or Contracts are acceptable in accordance with manufacturer’s written instructions.

.1 Visually inspect substrate and provide photographic documentation to the Consultant.

.2 Inform Consultant of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

3.2 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.

3.3 REMOVAL OF EXISTING ROOFING

.1 Remove existing roofing, flashings and underlay, and expose sheathing or shingle lath of roof.

.2 Withdraw existing shingle and flashing nails, set those which break off. Leave surfaces free from dirt and loose material.

.3 Take up, cut out, remove burn out portion of sheathing boards affected by fungal or insect attack as directed on site by Consultant.

.4 Replace cut out portions of sheathing boards or lath with boards of equal sectional dimensions, and specified grade. Seat each end of board on rafter, with 25 mm bearing, and secure to rafter.

.5 Resecure wood deck to framing with minimum #10 treated deck screws, 2 screws at each support member penetrating 30mm min. into the support member.

.6 Perform fastener pull-out testing as required.

3.4 UNDERLAYMENT MEMBRANE (SELF-ADHERED APPLICATION)

.1 Refer to Section 07 52 00 - Modified Bituminous Membrane Roofing.

.2 Preparation:

.1 Ensure the existing wood board roof deck is structurally sound, dry, and free of debris, protrusions, or contaminants.

.2 Verify that all fasteners in the existing deck are secure and that the surface is suitable for base sheet installation.

.3 Notify the Consultant of any deficiencies prior to proceeding.

.3 Installation:

.1 Align rolls to ensure straight, uniform installation.

.2 Stagger end laps a minimum of 150 mm.

.3 Overlap side laps a minimum of 75 mm or as specified by Manufacturer.

.4 Ensure full adhesion at laps using roller pressure.

.4 Protection:

.1 Protect installed base sheet from damage and contamination.

.2 Coordinate installation of flashing to ensure continuity of waterproofing.

3.5 GENERAL ROOFING APPLICATION

.1 Do wood shingle work in accordance with National Building Code of Canada NBCC 2015 and CSA O118.2, Appendix B, except where indicated or specified otherwise.

.2 Do wood shingle work in accordance with National Building Code of Canada NBC and CSA O118.2, Appendix D except where indicated or specified otherwise.

.3 Install shingles over dry substrate.

.4 Space shingles from 6 to 10 mm.

.5 Stagger joints minimum of 40 mm in succeeding courses. Ensure that in any 3 courses no two joints are aligned.

.6 Use two stainless steel, Type 316 nails per shingle. Space nails 20 mm from edge and 40 mm above butt line of following course.

.7 Drive nails flush but do not crush shingles.

.8 Apply touch-up paint/stain to all cut edges and bare wood, even if wood is to be covered with sealant, molding or other.

3.6 SHINGLE ROOFING

.1 Eave protection:

.1 Install 2-ply Type No.15 roofing felt system.

.2 Underlayment:

.1 Do not interlay shingles with felt.

.2 Install shingles with 140 mm weather exposure and having triple thickness of shingles at any given point.

.3 Triple shingles at eaves, projecting butts 40 mm from first sheathing board. Project shingles 19 mm minimum at gable ends.

.4 Lay shingles with grain perpendicular to eaves.

.5 Saw shingles parallel to valley center line. Do not break joints into valley.

.6 Apply strip of sheathing paper minimum 200 mm wide over hips and ridges. Use shingles no less than 101 mm in width. Apply shingles at same weather exposure as site of roof.

.7 Match existing heritage character defining elements, including shingle layout, weather exposure, solid colour finish, texture, etc.

.8 Apply touch-up paint/stain to all cut edges and bare wood, even if wood is to be covered with sealant, molding or other. Touch ups to be made according to manufacturer's instructions.

3.7 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 00 - 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 00 - Cleaning.

3.8 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by wood shingles and shakes installation.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Materials and installation for the restoration and replacement of modified bitumen roof systems at the Lunenburg Academy.

.1 Mechanically fasten and recap existing modified bituminous roof system.

.1 Inspection of the existing roof system including thermographic scan to confirm the existing mod. bit. roof system is dry and/or identify locations of moisture impacted components.

.2 Perform necessary repairs/ targeted replacement of any moisture impacted components.

.3 Repeat thermographic scan of existing mod. bit. roof systems following any repairs/ targeted replacement including repair/ replacement of necessary membrane flashings.

.4 Mechanically fasten existing 2-ply mod. bit. membrane roof system to existing wood deck according to project documents.

.5 Clean and prepare existing mod. bit roof system(s) to accommodate installation of new fully adhered modified bitumen membrane cap sheet.

.6 Installation of new fully adhered mod. bit. membrane cap sheet to achieve minimum 10-year warranty. No open flame or hot work.

.7 Tie-in to adjacent roof systems, metal flashings, perimeters and penetrations.

.8 Installation of associated components and sealants.

.2 Replacement of existing modified bituminous roof membrane.

.1 Removal of existing modified bitumen roof system including roof membrane and membrane flashings and all system components to existing wood deck.

.2 Preparation and cleaning of the existing roof deck, and perimeter, and penetrations to receive the new roof system components.

.3 Targeted removal and modification of existing wall cladding, shingles and/or metal flashings at sidewalls (towers T1A, T2A, T1B & T2B) to accommodate underlay membrane and tie-in of new 2-ply mod. bit. membrane and membrane flashings.

.4 Continue underlay membrane through mod. bit. valleys and at saddles, as indicated.

.5 Continue underlay membrane over eyebrow dormers ensuring continuity.

.6 Installation of new roof system including gypsum overlay board (mechanically fastened), and 2-ply mod. bit. membrane system including appropriate accessories, as described herein. Application to be fully adhered or pressure-sensitive materials. No open flame or hot work.

.7 Tie-in to adjacent roof systems, metal flashings, perimeters and penetrations.

.8 Installation of associated components and sealants.

1.2 RELATED SECTIONS

.1 Section 02 41 13 - Selective Site Demolition.

.2 Section 06 10 53 - Miscellaneous Rough Carpentry.

.3 Section 07 31 29 - Wood Shingles.

.4 Section 07 62 00 - Sheet Metal Flashing and Trim.

.5 Section 07 92 00 - Joint Sealants.

1.3 REFERENCES

.1 American Society for Testing and Materials International, (ASTM)

.1 ASTM A653/A653M-19, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2 ASTM C1177/C1177M-24, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.

.3 ASTM C1396/C1396M-24, Standard Specification for Gypsum Board.

.4 ASTM D4637/D4637M-15 Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane.

.5 ASTM C578-16, Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.

.6 ASTM D1621-16, Standard Test Method for Compressive Properties of Rigid Cellular Plastics

.7 ASTM D448-12, Standard Classification for Sizes of Aggregate for Road and Bridge Construction.

.2 Canadian Standards Association (CSA International)

.1 CAN/CGA-8.1-M86 (R2011), Elastomeric Composite Hose and Couplings for Conducting Propane and Natural Gas.

.2 CSA A123.3-05, Asphalt Saturated Organic Roofing Felt. (updated)

.3 CAN/CSA-A123.4-04 (R2013) - Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems.

.4 CSA A123.22-08(r2013), Self-Adhering Polymer Modified Bituminous Membrane Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

.5 CSA A123.23-15 - Product specification for polymer-modified bitumen sheet, prefabricated and reinforced.

.6 CSA B149.1-10 (R2015), Natural Gas and Propane Installation Code

.7 CSA B272-93 (R2000), Prefabricated Self-Sealing Roof Vent Flashings.

.8 CSA O151-09, Canadian Softwood Plywood.

.9 CAN/CSA B72-M87 (R2013) Installation Code for Lightning Protection Systems.

.3 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-1.108-M89, Bituminous Solvent Type Paint.

.2 CAN/CGSB-37.5-M89, Cutback Asphalt Plastic Cement.

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

.4 Factory Mutual (FM Global)

.1 Hot Work Permit Form F2630.

.2 FM 1-52, Bonded Plate Uplift Test Procedures. FMDS0152, FM Property Loss Prevention Data Sheets, Feb 2020, Interim Revision October 2024, *Field Verification of Roof Wind Uplift Resistance.*

.5 Underwriters Laboratories' of Canada (ULC)

.1 CAN/ULC-S107-10, Standard Methods of Fire Tests of Roof Coverings.

.2 CAN/ULC-S126-06, Standard Method for Test for Fire Spread Under Roof Deck Assemblies.

.3 CAN/ULC-S701-05, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.

.4 CAN/ULC-S702.2-03, Standard for Mineral Fibre Thermal Insulation for Buildings.

.5 CAN/ULC-S704-03, Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.

.6 CAN/ULC-S705.1-01, Standard for Thermal Insulation – Spray-Applied Rigid Polyurethane Foam, Medium Density.

.7 CAN/ULC-S705.2-05, Standard for Thermal Insulation - Spray-Applied Rigid Polyurethane Foam, Medium Density – Application.

.8 CAN/ULC-S770-09, Standard Test Method for Determination of Long-Term Thermal Resistance of Closed-Cell Thermal Insulating Foams.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Convene pre-installation meeting one week prior to beginning roofing Work, with roofing contractor's representative and Consultant to:

.1 Verify project requirements.

.2 Review installation and substrate conditions.

.3 Co-ordination with other building subtrades.

.4 Review manufacturer's installation instructions and warranty requirements.

1.5 COORDINATION

.1 Coordinate work of this Section with related work specified in other Sections to ensure proper sequencing of materials/ installation, construction schedule is maintained and water tightness and protection of the building and finished work is maintained at all times.

1.6 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 System summary:

.1 Provide a one-page synopsis of each roof type that lists the assembly components in order from top to bottom.

.3 Product Data:

.1 Provide two copies or an electronic copy of most recent technical roofing components data sheets describing materials' physical properties and include product characteristics, performance criteria, physical size, finish and limitations for all products to be incorporated in the new system.

.2 Provide two copies or an electronic copy of WHMIS 2015 Safety Data Sheets to Consultant for:

.1 Primers.

.2 Sealers.

.3 Liquid membrane.

.4 Adhesives.

.4 Provide shop drawings:

.1 Indicate sloped insulation layout and details.

.2 Provide shop drawing or submittal indicating adhesive pattern specified by adhesive manufacturer for the required wind uplift pressures indicated on the Drawings.

.5 Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

.6 Manufacturer's field report: In accordance with Section 01 45 00 - Quality Control.

1.7 QUALITY ASSURANCE

.1 Installer qualifications: Company or person specializing in application of modified bituminous roofing systems with 5 years documented experience, approved by manufacturer. Installer to be members of Roofing Contractors Association of Nova Scotia (RCANS) and/or Canadian Roofing Contractors' Association (CRCA) in good standing.

.2 Only certified applicators are permitted to use torch welding equipment. No open flame or hot-work is permitted without express written approval from the Consultant.

.3 Hold a pre-installation meeting prior to the start of roofing works, with the roofing contractor’s representative and the Consultant, to review installation conditions particular to this project.

.4 Roof membrane manufacturer shall delegate a representative to visit the work site at the start of roofing installation. Contractor shall engage membrane

manufacturer's technical representative as required to provide technical guidance for and inspection of membrane application. The Contractor shall at all times enable and facilitate access to the worksite by this representative.

1.8 FIELD QUALITY CONTROL

.1 Water Testing:

.1 In the event the Consultant deems any of the Work to be deficient, provide water test of all flashing, projections, equipment on roof and roofing system. Co-ordinate test with the Owner's operations personnel.

.2 Contractor is to assume all costs of testing and correction.

.2 Adhesion Testing:

.1 If requested by the Consultant, facilitate the carrying out of adhesion tests to confirm adhesion of membrane to substrate and substrate layers to each other, down to existing wood deck.

.2 Perform Bonded Plate Uplift Testing in accordance with FM 1-52 test procedure in the presence of the Consultant.

.1 Bonded uplift test to be completed at roof areas specified for modified bituminous membrane recapping.

.3 Locations and timing of tests will be directed by Consultant. Provide labour and materials as required to assist Consultant in conducting tests.

.4 If inadequate adhesion is found, conduct further testing to determine the extent of the inadequate adhesion. Replace all defective areas to the satisfaction of the Consultant. Replace substrate materials as necessary with new materials, and patch cut tests with membrane patches extending at least 150 mm beyond the cut.

.5 Contractor is to assume all costs of test preparation, repair and correction.

.3 Fastener Pull-Out Testing:

.1 At each deck type perform fastener pull-out testing in accordance with ASTM D1761-20, Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials.

.4 Submit testing results in writing to Consultant for review. Do not proceed without written approval from Consultant.

.5 Submit testing results in writing to Consultant for review. Do not proceed without written approval from Consultant.

.6 Sample Testing:

.1 If requested by the Consultant, at each roof drainage area, following installation of membrane base sheet, carry out sample tests to confirm materials and installation of roof assembly components. Sample size to be 609 mm x 609 mm.

.2 Locations and timing of tests will be directed by Consultant.

.3 If inadequate construction is found, conduct further testing to determine the extent of the inadequate adhesion. Replace all defective areas to the satisfaction of the Consultant. Replace substrate materials as necessary with new materials, and patch cut tests with membrane patches extending at least 150 mm beyond the cut.

.4 Contractor is to assume all costs of testing and correction.

1.9 FIRE PROTECTION

.1 Fire Extinguishers:

.1 Pressure rechargeable type with hose and shut-off nozzle,

.2 ULC labeled for ABC class protection.

.3 ULC labeled for A class protection, for wood, paper and fibreboard.

.4 Size 14 kg.

.5 Have one fully charged ABC extinguisher, and one fully charged Type A extinguisher on roof per torch applicator, within 3 m of the propane source.

.6 Have one fully charged ABC extinguisher on the roof. Have one fully charged ABC extinguisher at staging. Have one fully charged ABC extinguisher at basket of elevated work platform. Extinguishers to be located no more than 12 m from work areas and at the elevation of work being performed.

.7 Have one fully charged ABC fire extinguisher in the attic space no more than 3 m from the base of access hatch stairs.

.2 Maintain fire watch for 2 hours after each day's hot work or torching operations cease. Fire watch to include regular thermographic scan of work area(s) throughout the duration of the fire watch.

1.10 GENERAL REQUIREMENTS

.1 Comply with the General Requirements, General Instructions and Supplementary Conditions.

.2 Execute work in accordance with this Section and other related Sections, Drawings and Details.

.3 Attach roofing to structure to meet requirements of insurance underwriter and authorities having jurisdiction.

.4 Regard manufacturer’s printed recommendations as minimum requirement for materials, methods and workmanship not otherwise specified.

.5 Contact the Consultant if the specifications conflict with the manufacturer’s recommendations. Otherwise, it will be assumed that the Contractor and manufacturer are in agreement with procedures outlined.

.6 Advise the Consultant of adjustments to specified roofing procedures caused by weather and site conditions. Make adjustment to specified procedures only after review with the Consultant.

.7 Maintain equipment in good working order to ensure control of roofing operations and protection of work. Types of roofing equipment and laying techniques to be employed are to meet the approval of the Consultant.

.8 Do not penetrate roof deck with any fastening devices that would do damage or impair the function of the assembly.

.9 All temporary drains shall be connected with a mechanical connection (MJ coupling) or a U-flow connection, until new drains are installed.

1.11 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.2 Safety: Comply with requirements of Workplace Hazardous Materials Information System (WHMIS 2015) regarding use, handling, storage, and disposal of, sealing compounds, primers and caulking materials.

.3 Manufacturer’s recommendations for handling and storing products are to be considered a minimum requirement.

.4 Materials shall be delivered to the site, undamaged and in their original packages, with manufacturer’s labels visible, attesting to their conformity to specific standards.

.5 Ensure that shelf life of materials has not expired.

.6 Remove damaged material from site and replace all rejected materials with new product.

.7 Elevate on raised platform and store as to prevent deformation of materials.

.8 Provide and maintain dry, off-ground weatherproof storage.

.9 Store rolls of felt and membrane in upright position. Store membrane rolls with selvage edge up.

.10 Remove only in quantities required for same day use.

.11 Place plywood runways over completed Work and over areas not in Contract, as required, to enable movement of material and other traffic.

.12 Store sealants at +5°C minimum.

.13 Protect insulation by slitting manufacturer’s packaging and installing a waterproof UV-resistant tarp.

.14 Handle roofing materials in accordance with manufacturer's written directives, to prevent damage or loss of performance.

.15 Avoid stockpiling of materials or use of equipment on decks in a way which could cause overloading.

1.12 ENVIRONMENTAL REQUIREMENTS

.1 Ensure protection of products that are sensitive to damage by moisture. Do not work during rain, snow or fog. Stop work and make watertight before the onset of inclement weather or when weather appears imminent.

.2 Ensure protection of the building from weather at all times. If inclement weather is forecast or appears imminent, postpone work that would risk the building from moisture damage.

.3 If it becomes apparent that work would threaten the building watertightness, the Owner has the right to stop work. Any additional expenses due to work stoppage or postponement of work will be at the Contractor's expense.

.4 Ambient Conditions

.1 Do not install roofing when ambient temperature remains below -18°C for torch application.

.2 Minimum ambient temperature for solvent-based adhesive is -5°C.

.5 Install roofing on dry deck, free of snow and ice, use only dry materials and apply only during weather that will not introduce moisture into roofing system.

1.13 COMPATIBILITY

.1 Compatibility between materials is essential. Use only materials that are known to be compatible when incorporated in a complete assembly. Provide written declaration to Consultant stating that materials and components, as assembled in system, meet this requirement.

.2 Materials shall be as described herein and shall be as described in the roof assembly tested to CSA 123.21 approved for installation on this project.

.3 Defective work resulting from work with incompatible materials will be considered the responsibility of the Contractor.

.4 Repair all work that could result in damage or interfere with performance.

1.14 EXISTING SUBSTRATES

.1 Following removal of existing material to the substrate, inspect the deck for soundness and notify the Consultant of any deck found unsound and not suitable for roofing. Do not commence work until conditions are documented and the Consultant rules on the acceptability of surfaces and/or corrective measures required. The cost of any delays due to postponement of work that results from investigating the site problem or obtaining a ruling will be at the Owner's expense.

.2 The commencement of work is proof that the Contractor has accepted surfaces as satisfactory and accepts responsibility for appearance and performance of completed work.

.3 Defective work resulting from application of material on unsatisfactory surfaces will be considered the responsibility of the Contractor.

.4 The Contractor will be responsible for all repairs, costs and pay all cost and fees required to rectify damage or defective work. Use materials and finish to match the original preconstruction conditions in accordance with and to maintain all heritage character defining elements.

1.15 DAILY OPERATIONS

.1 Unless otherwise specified, complete the entire roofing operation up to line of termination of each day's work, as required by design intent, in order to safeguard and protect the work and building from damage and weather. The contractor is responsible to develop and deploy appropriate temporary seals between new and existing components and to protect new constructions and to keep the building watertight between work periods.

1.16 EXAMINATION

.1 Before proceeding with roofing application, ensure that:

.1 All surfaces are clean and free of debris, snow, frost and moisture.

.2 The deck is clean and sufficiently dry to ensure specified adhesion will be obtained.

.3 Adjacent construction and installation of related work (i.e. curbs, drains, penetrations, wood nailers, etc.) incorporated with the roof are complete.

.4 Roof deck is sound, existing fasteners are tight and irregularities are corrected to provide a suitable surface for new roofing.

.2 Ensure substrate is smooth. Remove sharp edges or protrusions that could impair the function of the roof assembly.

.3 Inform Owner/Consultant in writing of any defects.

1.17 DRAINS AND DRAINAGE PLANE

.1 Inspect surfaces and ensure that roof deck is level or sloped in conforming to design intent.

.2 Inspect surfaces and ensure that roof drains are set at a level to drain and are connected or capped.

1.18 EXAMINE UNDERSIDE OF DECK

.1 Inspect the underside of deck to ensure fasteners will not damage the structure, affect interior surfaces or electrical and mechanical services.

1.19 HIDDEN SERVICES

.1 Investigate the location of all known hidden services by reviewing interior conditions, plans, specifications and drawings for the original building, any subsequent alterations, completion of cut tests and interviewing those involved in the construction and maintenance of building services. These services include but are not limited to mechanical, electrical, cable, communication, computer, security or roof assembly. Ensure all services are located and will be protected from damage under the Contract. In some cases, services may be located over the roof deck and within the roof assembly. Notify Owner/Consultant in such occurrence and proceed with installation as directed.

1.20 EQUIPMENT

.1 Inspect equipment affected by the work, including but not limited to rooftop equipment, curbs, existing drains and plumbing, mechanical, electrical and lightning protection services, to ensure they are in good repair and working order. Record any damage and advise the Consultant.

.2 During re-roofing, ensure that all mechanical equipment, ducts, pipes, etc. are properly supported.

.3 Notify Owner and/or Consultant of any equipment which is not operational or damaged prior to the commencement of work.

1.21 ADVISE CONSULTANT

.1 Advise the Consultant of any unusual circumstances affecting the work. Notify the Consultant of any defective or malfunctioning equipment or drainage deficiencies. Do not commence work until defects and incorrect levels have been verified and rectified.

1.22 PROTECTION OF ROOFTOP EQUIPMENT

.1 Remove any equipment and flashing intended for re-use and save from harm. Store in approved location and reset at project conclusion unless specified or shown to be removed.

.2 Protect all openings, vents and stacks from weather and contamination from debris.

.3 Provide temporary plumbers plugs to protect drains during roofing operations. Ensure that temporary protection is removed at completion of work period and/or at the end of each days work.

1.23 SERVICES

.1 Services are to be left operational unless otherwise authorized by the Owner.

.2 Unless otherwise specified, the Contractor will be responsible for disconnection, relocation, re-installation and extending all services required to facilitate work

under this Contract. Co-ordinate work with the Owner and provide minimum of 48 hours notification if services are to be interrupted.

.3 Contractor to verify location of services prior to commencement of work. Notify Owner/Consultant of any unusual conditions.

.4 The Contractor and their employees must hold valid certificates for the work undertaken.

.5 Complete work of this Section as required by local authorities having jurisdiction. Have work inspected and pay all fees relative to such inspection to ensure work meets with published standards and codes.

.6 Submit Certificate or Letter of Approval by authority responsible for the work to the Owner and Consultant with final documentation.

.7 All fans, air handling units, and any electrical equipment affected by the replacement of the roof sections under this Section, whether disconnected or extended must be inspected by an ESA representative to verify the integrity of the existing wiring and/or the new installation.

.8 The roofing Contractor must obtain a "Certificate of Inspection" from the ESA (Electrical Safety Authority 1-800-952-2687) and fill in the appropriate ESA log sheet and provide the certificate to Fishburn Sheridan & Associates Ltd. Failure to do so will result in an amount deducted from the Contractor's final invoice equal to the cost of doing this work.

1.24 WARRANTY

.1 Contractor's Warranty for Labour and Material:

.1 For Work of this Section 07 52 00 - Modified Bituminous Membrane Roofing, 12 months warranty period is extended to 24 months.

.2 Make all necessary repairs and replacements within 48 hours of receipt of written notification.

.3 Nothing contained in this Article shall be construed as in any way restricting or limiting the liability in common law and statutory liability of the Contractor.

.4 Provide these written warranties, confirming above, issued on the corporate letterhead, signed and sealed by an authorized signing officer. The warranties will specifically reference the name of the building, location and Owner.

.2 Manufacturer's Warranty:

.1 Provide a minimum 10-year roof system warranty.

Part 2 Products

2.1 GENERAL

.1 All standards, regulations and specifications listed herein are considered to be the latest available edition.

2.2 ROOF DECK SHEATHING MATERIALS

.1 Canadian softwood plywood (CSP): To CSA O151.

.1 Urea-formaldehyde free.

2.3 UNDERLAYMENT MEMBRANE (SELF-ADHERED APPLICATION)

.1 Type: SBS modified bituminous base sheet for application over existing wood roof deck as underlayment for wood shingles.

.1 Reinforcement: Glass fiber mat

.2 Top Surface: Sanded.

.3 Type: 2

.4 Conforms to: ASTM D4601

.5 Application: Pressure-sensitive (self-adhered).

.6 Standard of Acceptance:

.1 Armourvent Base by IKO

.2 Colvent Base 830 by Soprema

.3 Or Approved Alternate

2.4 OVERLAY BOARD

.1 Mechanically fastened overlay board for use at mod. bit. valleys, saddles and eyebrow dormers.

.2 Glass mat gypsum sheathing: Glass mat faced treated core gypsum roof board, for installation over wood deck to ASTM C1177/C1177M. Boards to be 1.2 m x 2.4 m, thickness as indicated, with pre-primed surface where indicated.

.1 Standard of acceptance:

.1 DensDeck Roof Board by GP Gypsum.

.2 Securock by USG.

.3 Or accepted alternate.

.2 Overlay board, mechanically fastened, for use over eyebrow dormers.

.1 Type: Glass-mat faced gypsum core roof board.

.2 Thickness: 6.4 mm or 9.5 mm.

.3 Performance:

.1 Conforms to ASTM C1177.

.2 Mold, moisture, and fire resistant.

.3 Compatible with adhered and mechanically fastened roofing systems.

.4 Capable of conforming to curved substrates when installed per manufacturer's recommendations.

.3 Overlay board, mechanically fastened, for use over existing wood roof deck at mod. bit. valley and saddle locations.

.1 Type: Glass-mat faced gypsum core roof board.

.2 Thickness: 9.5 mm or 12.7 mm.

.3 Performance:

.1 Conforms to ASTM C1177.

.2 Mold, moisture, and fire resistant.

.3 Compatible with adhered and mechanically fastened roofing systems.

2.5 PRIMERS

.1 Asphalt Primer: To manufacturer's recommendations.

.2 Self-adhesive membrane primer. As recommended by membrane manufacturer. Use low VOC, polymer emulsion-based primer, unless directed otherwise by Consultant on site.

2.6 MEMBRANE AND MEMBRANE FLASHINGS

.1 Acceptable membrane manufacturers:

.1 Soprema Canada.

.2 IKO Industries Ltd.

.3 Henry Bakor.

.4 Or accepted alternate.

.2 Self-adhesive (pressure-sensitive) base sheet membrane flashing (combustible substrates): To CSA A123.23.

.1 Styrene-butadiene-styrene (SBS) elastomeric polymer prefabricated sheet, polyester or composite polyester and glass reinforcement.

.2 Type B or Type C.

.3 Grade 1 or Grade 2.

.4 Top and bottom surfaces:

.1 Polyethylene/release film.

.5 Standard of Acceptance

.1 Sopema

.2 IKO

.3 Or accepted alternate

.3 Self-adhesive (pressure-sensitive) cap sheet membrane and membrane flashing: To CSA A123.23.

.1 Styrene-butadiene-styrene (SBS) elastomeric polymer, prefabricated sheet, polyester or composite polyester/fibreglass reinforcement.

.2 Type B or Type C.

.3 Grade 1, granule surfaced.

.1 Colour for granular surface: Gray.

.4 Grade 1-standard service.

.5 Bottom surface:

.1 Polyethylene/ release film.

.6 Standard of Acceptance:

.1 Soprema

.2 IKO

.3 Or accepted alternate

.4 Fireguard tape:

.1 Modified bituminous membrane supplied in strips, 150 mm wide, 1.6 mm thick, glass fleece reinforced with self-adhesive underside.

.2 Provided by membrane manufacturer.

2.7 LIQUID MEMBRANE

.1 Two-component methacrylate or one component polyurethane/bitumen resin, solid content 80% or greater, compatible with roof membrane.

.1 Standard of acceptance:

.1 Alsan Flashing by Soprema.

.2 MS Detail by IKO.

.3 PermaFlash by Johns Manville.

.4 Or accepted alternate.

.2 Reinforcement mesh: As recommended by liquid membrane manufacturer.

2.8 ADHESIVES

.1 Adhesive for attachment of adhered mod. bit. base sheets and cap sheets: To be fully compatible with all materials in the roofing assembly. Applicability of use to adhere the different materials in the roofing assembly to be included in the manufacturer's literature.

.1 Standard of acceptance:

.1 Thermostik 880-33 by Henry Bakor.

.2 Duotack by Soprema.

.3 Millenium by IKO.

.4 2-Part UIA by Johns Manville.

.5 Or accepted alternate.

.2 Asphalt: To CAN/CSA A123.4, Type 3.

2.9 SPRAYED POLYURETHANE INSULATION

.1 Thickness as shown or specified to CAN/ULC S705.1 Materials and CAN/ULC S705.2 Application.

2.10 SEALERS

.1 Plastic cement: Asphalt, to CAN/CGSB-37.5.

.2 For sealants, mastic, adhesives or caulk, refer to Section 07 92 00 – Joint Sealants.

2.11 MEMBRANE FASTENING BAR

.1 Galvanized sheet steel or extruded aluminum, thickness 1 mm (20 ga.), 38 mm width, supplied in minimum 2.4 m lengths, with pre-drilled 2 mm holes, secured with #14 stainless steel screws @ 150 mm c/c.

2.12 FASTENERS

.1 Fasteners for exposed metal flashing and cladding to wood or steel: Minimum 38 mm #10 galvanized/plated hex head screws, colour matched, with neoprene and steel washers.

.2 Fasteners for sheet metal into steel: Self-drilling, self-tapping screws, galvanized, #8 or larger size, Teks or equivalent, head to suit application.

.3 Fasteners for sheet metal and wood to wood: Corrosion resistant #10 wood screws or nails to suit application.

.4 Structural fasteners into wood: Lag screws, 12.7 mm diameter hot dipped galvanized steel, length 125 mm.

.5 Fasteners for securement into wood deck and framing members:

- .1 Type: Corrosion-resistant with insulation plates.
- .2 Thread diameter: 6.1 mm min.
- .3 Shank diameter: 4.6 mm min.
- .4 Head diameter: 11.4mm min.
- .5 Head style: #3 deep recess Phillips
- .6 Point type: Drill Point
- .7 Minimum embedment into dimensional lumber: 40mm
- .8 Plates: 50 mm diameter as recommended by manufacturer.
- .9 Standard of acceptance:
  - .1 Soprema #14 roofing screw.
  - .2 OMG Roofing Products – Twinlock.
  - .3 Or accepted alternate

.6 Expansion fasteners for wood plates and steel to concrete deck: AISI Type 304 stainless steel, with stainless nuts and washers. Stainless steel threaded rod

with stainless nuts and washers may be use for through bolting where appropriate.

.1 Standard of acceptance:

.1 Hilti Kwik Bolt TZ.

.2 Or accepted alternate.

2.13 PLUMBING VENTS

.1 2-piece spun aluminum with integral flange, diameter to suit existing pipe size.

.1 Standard of acceptance:

.1 Thaler SJ-24

.2 Lexcor Flash-tite Standard or Hub Style Vent Stack Cover

.3 Or accepted alternate.

2.14 CONDUIT PENETRATION FLASHING

.1 Consists of metal flashing sleeve with bent integral flange, pre-molded urethane insulation liner, EPDM triple pressure grommet seal & EPDM base seal.

.1 Material: Aluminum

.2 Standard of acceptance:

.1 MEF-2A by Thaler.

.2 Or accepted alternate.

2.15 LIGHTNING PROTECTION CONDUCTOR ATTACHMENT

.1 Components to reinstate lightning protection system shall comply with CAN/CSA B72-M87 Installation Code for Lightning Protection Systems.

.2 Report system deficiencies in writing prior to commencing roofing demolition phase. Commencement of demolition in the absence of any reported deficiencies will be considered such that the pre-construction conditions met current code requirements.

.3 Include for all copper/brass base plates, anchorage, straps, rods and connectors to reinstate the lightning protection system to comply with CAN/CSA B72-M87 and provide copy of certification prior to contract close-out.

.4 Standard of acceptance:

.1 C711 Cast Adhesive Conductor Holder by KLP Inc.

.2 Or accepted alternate.

Part 3 Execution

3.1 QUALITY OF WORK

.1 Do examination, preparation and roofing Work in accordance with Roofing Manufacturer's Specification Manual and CRCA Roofing Specification Manual.

.2 Do priming in accordance with manufacturer's written recommendations.

.3 Fit the interface of all walls and roof assemblies with durable rigid material sheet metal or plywood providing connection point for continuity of air barrier.

.4 Make assembly, component and material connections in consideration of appropriate design loads, with reversible mechanical attachments.

.5 In the event that any product contains a manufacturing defect or anomaly, the Contractor shall notify the Consultant and manufacturer immediately and request direction.

3.2 REMOVAL OF EXISTING ROOFING

.1 Remove all existing roofing, flashing and insulation materials down to wood deck. Leave existing blocking and framing in place.

3.3 EXAMINATION OF ROOF DECKS

.1 Verification of Conditions:

.1 Inspect roof deck including existing framing, construction joints, attachment, etc., to determine readiness to proceed.

.2 Evaluation and Assessment:

.1 Prior to beginning of work ensure:

.1 Decks are firm, straight, smooth, dry, free of snow, ice or frost, and swept clean of dust and debris. Do not use calcium or salt for ice or snow removal.

.2 Necessary repairs including ensuring appropriate attachment of existing framing and roof deck for new application.

.3 Conduct fastener pull-out test if directed by the Consultant and/ or Manufacturer.

.4 Plywood and lumber nailer plates have been installed to deck and walls as indicated.

.5 Ensure the existing wood board roof deck is structurally sound, dry, and free of debris, protrusions, or contaminants.

.6 Verify that all fasteners in the existing deck are secure and that the surface is suitable for overlay board installation.

.7 Notify the Consultant of any deficiencies prior to proceeding.

.3 Do not install roofing materials during rain or snowfall or when such weather is imminent.

3.4 EXAMINATION OF EXISTING MODIFIED BITUMINOUS MEMBRANE ROOFING

.1 Inspection of the existing roof system including thermographic scan to confirm the existing mod. bit. roof system(s) are dry and/or identify locations of moisture impacted components.

.2 Perform necessary repairs/ targeted replacement of any moisture impacted components.

.3 Repeat thermographic scan of existing mod. bit. roof systems following any repairs/ targeted replacement including repair/ replacement of necessary membrane flashings.

3.5 PROTECTION OF IN-PLACE CONDITIONS

.1 Cover walls, walks and adjacent work where materials hoisted or used.

.2 Use warning signs and barriers. Maintain in good order until completion of Work.

.3 Protect roof from traffic and damage. Comply with precautions deemed necessary by Consultant.

.4 At end of each day's work or when stoppage occurs due to inclement weather, provide protection for completed Work and materials out of storage.

.5 Metal connectors and decking will be treated with rust proofing or galvanization.

.6 Fit the interface of the walls and roof assemblies with durable rigid material sheet metal or plywood providing connection point for continuity of air barrier.

3.6 INSTALLATION OF UNDERLAYMENT MEMBRANE (SELF-ADHERED APPLICATION)

.1 Preparation:

.1 Ensure the existing wood board roof deck is structurally sound, dry, and free of debris, protrusions, or contaminants.

.2 Verify that all fasteners in the existing deck are secure and that the surface is suitable for base sheet installation.

.3 Notify the Consultant of any deficiencies prior to proceeding.

.2 Installation:

.1 Align rolls to ensure straight, uniform installation.

.2 Stagger end laps a minimum of 150 mm.

.3 Overlap side laps a minimum of 75 mm or as specified by Manufacturer.

.4 Ensure full adhesion at laps using roller pressure.

.3 Protection:

.1 Protect installed base sheet from damage and contamination.

.2 Coordinate installation of flashing to ensure continuity of waterproofing.

3.7 INSTALLATION OF OVERLAY BOARD (AT EYEBROW DORMERS AND EXISTING MOD. BIT. VALLEY/ SADDLES)

.1 Preparation:

.1 Ensure the existing wood board roof deck is structurally sound, dry, and free of debris, protrusions, or contaminants.

.2 Verify that all fasteners in the existing deck are secure and that the surface is suitable for overlay board installation.

.3 Notify the Consultant of any deficiencies prior to proceeding.

.2 Installation:

.1 Install overlay board in a staggered pattern with joints offset from those in the underlying deck.

.2 Orient boards perpendicular to the slope where possible to minimize deflection.

.3 Cut boards cleanly to around penetrations and at edges. Do not force-fit.

.4 Mechanically fasten each board using approved fasteners and plates ensuring:

.1 Minimum 40 mm penetration into wood deck.

.2 Fasteners are installed flush with board surface without crushing.

.3 Fastener spacing does not exceed 300 mm on center along edges and 300 mm in field or as required to meet CSA 123.21 and manufacturers instructions.

.4 At valleys, saddles and drainage areas, ensure boards are tightly fitted and fully supported to prevent bridging or deflection.

.5 Do not install overlay board during rain, snow or when deck is wet or frozen.

.3 Protection:

.1 Protect installed overlay board from moisture and damage until roofing membrane is applied.

.2 Cover exposed areas with temporary waterproofing if membrane installation is delayed.

3.8 PRIMING

.1 Unless otherwise indicated or directed by Consultant, prime all surfaces which will be in direct contact with bituminous materials at the rate of 0.15 L/m^2 to manufacturer's recommendations. For self-adhering membrane, install primer at a rate recommended by manufacturer. Ensure that surfaces are tack-free before proceeding.

.2 Limit quantity of primer at deck openings and points of termination and provide supplemental protection to prevent bleedthrough to the building interior.

.3 Roll primer into surface.

.4 Re-prime all surfaces, including pre-primed surfaces, that become contaminated with dust or become marred due to their exposure to roof traffic or weather.

.5 Seal all points of termination at horizontal planes and vertical surfaces with sealant Type 'A'. Tool sealant to consistent smooth and even surface.

3.9 MODIFIED BITUMINOUS MEMBRANE - GENERAL APPLICATION

.1 Inspect and seal all substrates to eliminate fire hazard. Use fireguard tape as required or recommended by manufacturer.

.2 Mechanical spreaders are not permitted to install modified membranes.

.3 Use only bitumen, sealants, adhesive or mastics as specified by membrane manufacturer. Provide written approval from manufacturer when proposing any alternatives or substitutions.

.4 Lay out all sheets as to allow them to relax a minimum of 30 minutes. When temperatures are below 4.4°C keep and lay out rolls in heated storage. Install rolls before temperature fallback of the sheet occurs.

.5 Roof membrane to be installed in one sheet if possible.

.6 Lay all membrane starting at low point to ensure that seams do not face water flow. Roll all membrane into place, true to line, free of buckles, air pockets, fishmouths and tears.

.7 Overlap all end laps minimum 150 mm and side laps 75 mm.

.8 Offset all side laps between plies by 50%.

.9 Offset all end laps between plies minimum 1200 mm.

.10 At valley locations, run membrane continuously with the slope of the main roof. Lay out all sheets to ensure minimum side laps are maintained through valley area and short section of roof beyond. At these locations the side laps for the main roof will increase. Install membrane to details and Consultant's direction onsite.

.11 Ensure that a watertight seal is achieved at all overlaps and points of termination.

.12 Carry base sheet flashing over face of building as shown on the drawings.

.13 Carry membrane up all vertical surfaces to point shown. Cut off corners at 45° at end laps to be covered by the next roll prior to installation of following sheet.

.14 Verify procedure with Consultant on site. Seal fasteners through membrane immediately with Type 'A' sealant.

.15 Do not walk on membrane during applications and until sufficient cooling has taken place as to allow for traffic without doing damage or marking surface.

3.10 BASE SHEET, PRESSURE-SENSITIVE (SELF-ADHERED APPLICATION)

.1 Prime all surfaces to receive membrane to manufacturer's recommendations. Ensure all surfaces are free of dust, debris, voids or other contaminants prior to commencement of the membrane installation.

.2 Lay out roll commencing from the low point, align and re-roll approximately half of the roll.

.3 Carefully cut the protective film on backside and peel away slowly, carefully unrolling membrane into place. Immediately use steel roller as recommended by manufacturer to ensure complete adhesion of membrane to substrate free of voids, air pockets, etc.

.4 Repeat process for remainder of roll. Ensure corners are cut off end laps that are to be covered with the next roll.

.5 Use hot air welder to seal all joints and points of termination. Install Type 'A' sealant where specified or as shown on drawings.

.6 At terminations, on nailable vertical surfaces, extend membrane 50 mm up vertical surface and adhere to wall. Secure membrane at 225 mm c/c with nails or screws having 25 mm diameter caps.

.7 Review base membrane for low areas (ponding) and correct with additional base sheet membrane.

3.11 BASE SHEET FLASHINGS, PRESSURE-SENSITIVE (SELF-ADHERED APPLICATION)

.1 All flashings to be cut across the roll in 1 m sections. Cut off corners at end laps to be covered by next flashing piece.

.2 Provide chalk lines and install all membrane true to line. Install gusset reinforcement pieces at all corner locations.

.3 Ensure wall or eave surfaces are clean and dry, free of contaminants or other irregularities. Re-prime as necessary.

.4 Commence flashings from the drain or low points and overlap all side laps minimum 75 mm. Base sheet flashings to extend 100 mm onto roof surface and terminate as shown in drawings.

.5 Place sheet into primer or adhesive and press into place using hand roller to ensure uniform adhesion. Use hot air welder on all seams and joints to ensure a waterproof seal on all points of termination. Apply flashings free of air pockets, voids, wrinkles or fishmouths.

3.12 CAP SHEET, PRESSURE-SENSITIVE (SELF-ADHERED APPLICATION)

.1 Prime all surfaces to receive membrane to manufacturer's recommendations. Ensure all surfaces are free of dust, debris, voids or other contaminants prior to commencement of the membrane installation.

.2 Lay out roll commencing from the low point, align and re-roll approximately half of the roll.

.3 Carefully cut the protective film on backside and peel away slowly, carefully unrolling membrane into place. Immediately use steel roller as recommended by manufacturer to ensure complete adhesion of membrane to substrate free of voids, air pockets, etc.

.4 Repeat process for remainder of roll. Ensure corners are cut off end laps that are to be covered with the next roll.

.5 Use hot air welder to seal all joints and points of termination. Install Type 'A' sealant where specified or as shown on drawings.

.6 Ensure that a watertight seal of all joints and points of termination is achieved.

3.13 CAP SHEET FLASHINGS, PRESSURE-SENSITIVE (SELF-ADHERED APPLICATION)

.1 All flashings to be cut across the roll in 1 m sections. Cut off corners at end laps to be covered by next flashing piece.

.2 Provide chalk lines and install all membrane true to line. Install base sheet gusset reinforcement pieces at all corner locations.

.3 Commence flashings from the drain or low points and overlap all side laps minimum 75 mm. Cap sheet flashings to extend 150 mm onto roof surface and terminate as shown in drawings. At wall locations, unless otherwise specified, cap sheet flashings to extend up to 50 mm higher than base sheet flashings.

.4 Place sheet into primer or adhesive and press into place to ensure uniform adhesion and 13 mm bitumen flow each side of the roll. Apply flashings free of air pockets, voids, wrinkles or fishmouths.

.5 Use a hot air welder where required for touch-ups or detail work in corner locations or as necessary.

.6 Secure flashings at 225 mm c/c at walls, eaves and parapets as shown on drawings with nails or screws with 25 mm caps. Cover fasteners with Type 'A' sealant.

3.14 DRIP FLASHINGS

.1 Follow manufacturer's recommendations as to whether pre-finished flashings built into the roof are to be primed. When primer is required, prime top and underside of all drip flashings to be incorporated with roofing prior to application. Primer must be compatible with both membrane and finishes on pre-finished flashing material. Use primer supplied by the membrane manufacturer. All primer to be dry before proceeding.

.2 Fabricate and install metal drip flashings built into the roof at locations noted on the drawings as per detail and Section 07 62 00 - Sheet Metal Flashing and Trim. Join flashing with S-lock on face and overlap horizontal joints 50 mm. Mitre and seal inside and outside corners of roof flanges. Seal all overlaps, apply sealant

Type 'B' as metal flashing is being installed and clean off any material exposed to view. Avoid contact between caulking and bitumen products.

.3 Install drip flashing true to line set on top of completed base sheet membrane roofing in continuous strip of Type 'A' sealant. Secure flashings with roofing nails installed in a double staggered row at 100 mm centres. Locate nails no closer than 75 mm from face.

.4 Install an additional piece of base sheet (minimum 150 mm X 150 mm) centered over joints and corners of drip flashing and carried to within 25 mm of edge. Review procedures with the Consultant before proceeding.

.5 Install 1-ply of base to 25 mm from drip edge and continuing a minimum of 150 mm beyond flashing flange. Ensure positive bond to all metal as to provide a continuous permanent watertight seal.

.6 Install cap sheet as specified and trim flush with outside face with hot roofing knife. Work underlying surfaces with broom, roller or wet sponge as required to obtain a positive continuous permanent watertight seal.

3.15 PLUMBING VENTS, B-VENTS, STACKS AND SLEEVES

.1 Inspect and clean soil pipes of debris to ensure they are operational.

.2 Protect exposed surface during roofing operation and clean surfaces free of bitumen before leaving site.

.3 Make all penetrations air and watertight at air/vapour barrier by installing self-adhesive membrane flashings 150 mm onto air/vapour barrier and carry up and around projection. Clamp in place and caulk.

.4 Trim base sheet at roof projections.

.5 Adjust existing pipes to new flashing heights by either cutting down or extending pipes with matching materials attached with mechanical couplers. Ensure pipes are 38 mm higher than flashing to allow for sealing to prevent condensation.

.6 Clear all projections free of contaminants and seal junction of base sheet and roof projections with trowel applications of sealant as shown on drawings.

.7 Install all metal flanges to be built into the membrane before the installation of cap sheet. Insulate sleeves in accordance with drawings as specified. Where required, install telescoping caps to detail.

.8 Prime topside and underside of all flanges to be incorporated with roofing prior to application. Use primer supplied by the membrane manufacturer. All primer to be dry before installation of membrane roofing or flashing.

.9 Before installing flashings, install 1-ply base sheet extending to opening. Set flanges in bed of Type 'A' sealant prior to membrane installation, as per manufacturer's recommendations.

.10 Install 1-ply of base sheet flashings thermofused to the flange to within 25 mm from upturn and continuing a minimum of 225 mm beyond flange. Continue cap sheet to metal upturn. Seal around upturn junction with sealant and touch up with matching granules, as per manufacturer's recommendations.

.11 Install rain collars over sleeves and stacks as indicated to match adjoining materials and seal with sealant as indicated on drawings.

3.16 LIQUID MEMBRANE FLASHING

.1 Using a slow-speed mechanical agitator, thoroughly mix the entire container of resin for two minutes before the addition of catalyst. Pour the resin into a second container if you make a batch mix. Add pre-measured catalyst to the resin component according to the amounts indicated in manufacturer's Catalyst Mixing Chart. Add catalyst only to the amount of material that can be used within 10 to 15 minutes. Stir again for two minutes before applying.

.2 Apply the first resin layer to the substrate using rollers, brushes or notched squeegees provided for this purpose. The thickness of the first layer must be 1.3 mm to 1.5 mm when wet.

.3 Lay out the polyester reinforcement on the resin to prevent the formation of wrinkles, swellings or fishmouths.

.4 Use rollers, brushes or notched squeegees in order to fully saturate resin reinforcement and remove wrinkles and air bubbles under the reinforcement. The appearance of the reinforcement should be slightly opaque without any white trace. It is important to correct these defaults before the resin cures.

.5 Apply the second resin layer on top of the reinforcement using rollers, brushes or notched squeegees provided for this purpose. The second layer thickness must be 0.6 mm to 0.7 mm when wet.

.6 Excess resin which is not absorbed should be used to saturate adjacent reinforcement.

.7 The final resin coating should be smooth and even.

.8 Each reinforcement shall overlap the previous one by 50 mm laterally and by 100 mm at the ends.

3.17 CLEAN UP

.1 At all times, keep the premises free from accumulation of waste materials or rubbish. Stock piling of debris on the roof will not be permitted.

.2 Repair defects in surface and bitumen runs with granules to match existing to leave the roof in an even consistent finish.

.3 Leave roof clear of debris and bitumen left by spills and machine tracking.

.4 Leave grounds and building free of debris and bitumen spread by pedestrian traffic where applicable.

.5 Clean surfaces and penetrations of all contaminants and touch up to the satisfaction of the Owner. Include rooftop equipment, curbs, soil stacks, sleeves, gas lines, vents, drains and ladders.

.6 Check drains to ensure they are functional and where required remove all debris by vacuum.

.7 At the completion of the work remove all rubbish, tools, equipment and surplus materials.

.8 Be responsible to repair and pay all costs and fees required to rectify damage caused by work of the Contract with materials and finish to match original.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 02 41 13 - Selective Site Demolition.

.2 Section 06 10 53 - Miscellaneous Rough Carpentry.

.3 Section 07 31 29 - Wood Shingles.

.4 Section 07 92 00 - Joint Sealants.

.5 Section 09 91 13 - Exterior Painting.

1.2 REFERENCE STANDARDS

.1 American Society for Testing and Materials International (ASTM)

.1 ASTM A653/A653M-15e1, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2 Canadian Roofing Contractors Association (CRCA)

.1 Roofing Specifications Manual 2012.

.3 Health Canada/Workplace Hazardous Materials Information System (WHMIS 2015)

.1 Safety Data Sheets (SDS).

.4 Sheet Metal and Air Conditioning Contractors Association of North America (SMACNA)

.1 Architectural Sheet Metal Manual – 2012.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit to the Consultant a list of materials intended for use before they are ordered. Submit samples in accordance with Section 01 33 00 – Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's printed product literature including product specifications and technical data sheets for sheet metal flashing fasteners and accessory materials. Include product characteristics, performance criteria, physical size, finish and limitation.

.2 Submit copies of WHMIS 2015 SDS - Safety Data Sheets

.3 Shop Drawings:

.1 Submit shop drawings for all sheet metal fabrications.

.2 Indicate sheet thickness, flashing dimensions and fastenings. Include anchorage, expansion joints and other provisions for thermal movement.

.3 Submit manufacturer’s catalogue cut sheets for manufactured items.

.4 Samples:

.1 Submit duplicate 50 x 50 mm samples of each type of sheet metal material, finishes and colours.

1.4 COORDINATION

.1 Coordinate work of this Section with Related Work specified in other Sections to ensure construction schedule is maintained and watertightness and protection of the building and finished work is maintained at all times.

1.5 EXAMINATION

.1 Do not commence work until surface to be covered has been inspected.

.2 Inspect work and advise the Consultant of conditions that would adversely affect the work of this trade.

.3 Commencement of work is proof that the Contractor has accepted surfaces as satisfactory for intended operations and accepts responsibility for appearances and performance of completed work.

.4 Repair damaged and inferior work caused by work of this Contract with materials and finish to match original to the Consultant's approval.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.2 Safety: Comply with requirements of Workplace Hazardous Materials Information System (WHMIS 2015) regarding use, handling, storage, and disposal of materials.

.3 Manufacturer's recommendations for handling and storing products are to be considered a minimum requirement.

.4 Materials shall be delivered to the site, undamaged and in their original packages, with manufacturer's labels visible, attesting to their conformity to specific standards.

Part 2 Products

2.1 GENERAL

.1 All standards, regulations and specifications listed herein are considered to be the latest available edition.

.2 Compatibility between materials is essential. Use only materials that are known to be compatible when incorporated in a completed assembly.

2.2 PREFINISHED SHEET METAL FLASHING

.1 Pre-finished metal flashings: As shown on drawings, fabricate from 0.65 mm (24 ga.) steel to ASTM A653 Grade 230 with G90 zinc coating. Surface with Perspectra Series baked enamel finish. Colour to match existing from manufacturer's standard colour range.

.2 Metal Valley Flashing shall be minimum 24-gauge prefinished fabricate from 0.65 mm (24 ga.) steel to ASTM A653 Grade 230 with G90 zinc coating. Surface with Perspectra Series baked enamel finish. Colour to match existing from manufacturer's standard colour range. Minimum width: 610 mm (24 inches), with a center crimp or "W" profile to direct water flow. Hem all exposed edges for rigidity and safety.

2.3 ACCESSORIES

.1 Metal cleat: Same material as metal flashings, 50 mm wide @ 600 mm c/c.

.2 Continuous metal starter strip: 0.71 mm (24 ga.) galvanized steel, secured at 400 mm c/c.

.3 Use galvanized, copper, aluminum or stainless steel nails or screws as most compatible with materials and preservatives being utilized.

.4 Masonry fasteners: Tapcon, Permagrip or Tapgrip or Rawl. Spike sized to penetrate concrete 38 mm minimum as specified or shown.

.5 Exposed fasteners: Where exposed fasteners are specified or as shown, use #10 screws with metal and neoprene washers pre-finished to match colour of flashing. Alternatively, use screws with colour match nylon caps where shown or approved by the Consultant.

.6 Screws for starter strips and fascia: #8 @ 400 mm c/c.

.7 Wedges: Rolled plumber sheet lead.

.8 Sealant: Refer to Drawings and Section 07 92 00 – Joint Sealants.

.9 Touch-up paint: As recommended by prefinished material manufacturer.

2.4 FABRICATION

.1 Fabricate metal flashings and other sheet metal work in accordance with applicable details, as indicated. Where not indicated, follow applicable CRCA 'FL' series details and SMACNA architectural details.

.2 Metal shall be formed on a bending brake, shaping trimmed and hard seaming shall be done on bench, as far as practicable, with proper sheet metal working tools. Angles of bends and folds for interlocking metal shall be made with full regard to expansion and contraction to avoid buckling and to avoid damaging metal surfaces.

.3 Fabricate all possible work in shop in maximum 2400 mm lengths by brake forming, bench cutting, drilling and shaping. Match existing profiles where metal flashing is to be repaired.

.4 Hem exposed edges on underside 13 mm. Mitre and seal corners with sealant.

.5 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

.6 Dry joints are to be tight but not dented so as to permit slight adjustments of sheets and yet remain watertight.

.7 Lock seams at all corners.

.8 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

.9 Supply all accessories required for installation of sheet metal work of this Section. Fabricate accessories of same material to which they will be used.

2.5 REGLETS

.1 Form reglet flashings from same material as other metal flashings, unless otherwise indicated.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: Comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 SHEET METAL FLASHING INSTALLATION

.1 Install sheet metal flashings at copings, walls, expansion joints, roof openings and other components required to protect the membrane flashings as shown on the drawings or otherwise required. Where not indicated, follow applicable CRCA ‘FL’ series details.

.2 Install continuous concealed starter strips at all exterior faces. Install cleats between lock joints and as indicated to permanently hold flashing in place. Install hook strip fasteners with 2 fasteners per cleat.

.3 Sheet metal work shall be installed to cover the entire area it protects and shall be watertight under all service and weather conditions. Install in a uniform manner, true to line, free of dents, warping and distortion.

.4 Back-paint sheet metal that comes into contact with another kind of metal, masonry or concrete with bituminous paint at the rate of 0.15 L/m^2.

.5 Install sheet metal with concealed fasteners at lock joints. Exposed fastening will only be permitted with the approval of the Consultant. When exposed fasteners are shown, space all fasteners evenly in an approved manner. Use lead plugs and screws with neoprene washers where fasteners are exposed, otherwise use concrete drive fasteners where metal flashings are installed over concrete masonry.

.6 Install weather barrier membrane under sheet metal where indicated.

.7 Self-Adhered Membrane:

.1 Install 1-ply of self-adhered membrane to detail under sheet metal on horizontal or vertical surfaces that are not otherwise covered by membrane flashings. See 07 52 00 - Modified Bituminous Membrane Roofing, Shingles, 07 31 29 - Wood Shingles.

.2 Ensure all surfaces to be covered with self-adhered membrane are complete and free of moisture and contaminants. At temperatures below 5°C (40°F) heat materials to be covered with hot air gun. Store all materials in heated storage above 5°C (40°F) and remove only as much material as can be used before cooling.

.3 Prime all surfaces to be covered with self-adhered membrane. Let primer tack dry and complete thumb test to ensure.

.4 Remove paper backing and install membrane true to line to completely cover the area intended to be protected to points shown on the drawing.

.5 Roll or work material into place by hand to ensure a positive bond.

.6 Membrane to be installed without air blisters and wrinkles. Rework, repair or replace all poorly installed membrane. Do not stretch material that would result in pull back and deformity of the membrane at intersections.

.7 Lap all side laps 75 mm and end laps 150 mm. Secure all membrane on vertical surface at points of termination at 150 mm c/c.

.8 Turn up membrane 150 mm at edge where horizontal surface meets vertical planes.

.9 Seal all points of termination at horizontal planes and vertical surfaces with modified sealant. Tool sealant to consistent smooth and even surface.

.10 It is recommended that all self-adhering membrane be installed by a team of two workmen. Avoid working in windy conditions or weather that would result in inferior product.

.8 Join sheet metal by “S” lock seams, to permit thermal movement. Seal all fasteners and completely fill all joints with Type ‘B’ sealant as flashing is being installed. Clean off all excessive visible material subsequent to installation.

.9 When flashing is being installed in more than one piece, offset joints in adjacent flashings by approximately 50%.

.10 Form inside and outside corners by means of locked seams. Do not use pop rivets unless accepted by Consultant.

.11 Slope all metal to interior of roof area to maintain slope, unless otherwise indicated. Do not form open joints or pockets that fail to drain water.

.12 Where existing reglets are to be re-used, remove existing sealant and re-cut to conform to the size requirements specified herein.

3.3 REGLETS

.1 Cut reglets in existing mortar joint or other materials as indicated. Unless otherwise indicated, cut continuous rectangular slot 25 mm deep height of mortar joint where metal flashings are to terminate. Clean free of dust and contaminants.

.2 Install membrane flashing materials as indicated. Form metal flashing to fit into reglet slot with return.

.3 Install lead wedges at maximum 300 mm c/c, keep back 6 mm from face of joint.

.4 Install backer rod and sealant Type 'B' to fill reglet slot and shed water out onto metal flashing face. Tool uniformly.

.5 Fasten metal flashing to vertical walls as indicated below reglet level, maximum 900 mm on centre.

3.4 METAL VALLEY INSTALLATION – WOOD SHINGLE ROOFING

.1 Preparation:

Ensure valley substrate is clean, dry, and free of debris. Install underlayment in accordance with roofing system requirements, extending a minimum of 450 mm (18 inches) on each side of the valley centerline. Install underlayment membrane centered in the valley, extending a minimum of 900 mm (36 inches) total width.

.2 Installation:

Lay valley metal in continuous lengths where possible. Overlap sections a minimum of 150 mm (6 inches) in direction of water flow. Secure valley flashing with corrosion-resistant fasteners spaced no more than 300 mm (12 inches) on center, located along the edges only. Do not fasten through the center of the valley. Apply compatible sealant between overlapping sections and at fastener penetrations as required.

.3 Integration with Wood Shingles:

Maintain a minimum 100 mm open valley between opposing shingle courses. Trim shingles to form a straight, clean edge parallel to the valley centerline. Do not nail shingles within 150 mm (6 inches) of the valley centerline. Ensure shingles are installed to shed water freely into the valley without obstruction.

.4 Protection and Final Inspection:

Protect installed valley flashing from damage during remaining roofing perations. Inspect for proper alignment, secure fastening, and watertight overlaps. Remove debris and seal any exposed fasteners or joints as required.

3.5 CLEANING

.1 Proceed in accordance with Section 01 74 00 - Cleaning.

.2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment. Remove and replace all sheet metal sections that received surface damage or scratches during fabrication, delivery or installation.

.3 For scratches and scuffs to be retained in the new installation, use touch up paint recommended by the metal material supplier.

.4 Leave work areas clean, free from grease, finger marks and stains.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 06 10 53 - Miscellaneous Rough Carpentry.

.2 Section 07 31 29 - Wood Shingles.

.3 Section 07 52 00 - Modified Bituminous Membrane Roofing.

.4 Section 07 62 00 - Sheet Metal Flashing and Trim.

.5 Section 09 91 13 - Exterior Painting.

1.2 REFERENCES

.1 American Society for Testing and Materials International, (ASTM)

.1 ASTM C920-18, Standard Specification for Elastomeric Joint Sealants.

.2 Canadian General Standards Board (CGSB)

.1 CGSB-19-GP-5M-1984, Sealing Compound, One Component, Acrylic Base, Solvent Curing (Issue of 1976 reaffirmed, incorporating Amendment No. 1).

.2 CGSB 19-GP-14M-1984, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing (Reaffirmation of April 1976).

.3 CAN/CGSB-19.17-M90, One-Component Acrylic Emulsion Base Sealing Compound.

.4 CAN/CGSB-19.21-M87, Sealing and Bedding Compound Acoustical.

.5 CAN/CGSB-19.24-M90, Multi-component, Chemical Curing Sealing Compound.

.3 Health Canada/Workplace Hazardous Materials Information System (WHMIS 2015)

.1 Safety Data Sheets (SDS).

1.3 COORDINATION

.1 Coordinate work of this Section with Related Work specified in other Sections to ensure construction schedule is maintained and watertightness and protection of the building and finished work is maintained at all times.

1.4 EXAMINATION

.1 Do not commence work until surface to be covered has been inspected.

.2 Inspect work and advise the Consultant of conditions that would adversely affect the work of this trade.

.3 Commencement of work is proof that the Contractor has accepted surfaces as satisfactory for intended operations and accepts responsibility for appearances and performance of completed work.

1.5 SAMPLES

.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

1.6 MOCK-UP

.1 Construct mock-ups in accordance with Section 01 33 00 - Submittal Procedures.

.2 Provide a list of materials and manufacturer's colour charts to the Consultant for review.

.3 Before proceeding with fabrication submit samples and provide a 1200 mm mock-up of all joints to be sealed showing size, shape, depth of joint, back-up material, primer, and sealant. Mock-up may be part of finished work.

.4 Allow 24 hours for inspection of mock-up by the Consultant before proceeding with sealant work.

1.7 DELIVERY, STORAGE AND HANDLING

.1 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.

1.8 ENVIRONMENTAL AND SAFETY REQUIREMENTS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS 2015) regarding use, handling, storage, and disposal of hazardous materials, and regarding labeling and provision of 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 In confined spaces provide portable supply of outside air and exhaust fans to ensure fumes will not impact workmen or building occupants.

.4 Compatibility is essential in use of any materials that will be compatible when incorporated in finished assembly.

Part 2 Products

2.1 MATERIALS

.1 Sealants acceptable for use on this project must be listed on CGSB Qualified Products List issued by CGSB Qualification Board for Joint Sealants. Where sealants are qualified with primers use only these primers.

.2 Modified bitumen sealant (Sealant Type 'A'):

.1 For penetration and terminations of bituminous and modified bituminous membrane: To CAN/CGSB-37.5. As recommended by membrane manufacturer.

.2 Standard of acceptance:

.1 Sopramastic 200 by Soprema.

.2 MBR Flashing Cement by Johns Manville.

.3 Polybitume 570-05 by Henry Bakor.

.4 Or accepted alternate.

.3 Urethanes one part (Sealant Type 'B'):

.1 Non-sag: To ASTM C920, Type S, Class 25 or higher, use NT.

.2 Standard of acceptance:

.1 Tremco Dymonic.

.2 BASF NPI.

.3 Sika IA.

.4 Mulco Flextra.

.5 Sherwin-Williams Loxon SI.

.6 Or accepted alternate.

Type		Use		Movement Capability Class	
S	Single Component	T	Traffic	Class 100/50	100% expansion
M	Multi-Component	NT	Non-traffic		50% compression
Grade		I	Immersed	Class 50	50%
P	Pourable	M	Mortar	Class 35	35%
NS	Non-sag	G	Glass	Class 25	25%
		O	Other	Class 12.5	12.5%

.3 Non-sag: To CAN/CGSB-19.13, Type 2, MCG-2-25, colour to match surfaces.

.4 Standard of acceptance:

.1 Dymonic by Tremco.

.2 Sonolastic NP1 Ultra by Sonneborn.

.3 Or accepted alternate.

.4 High temperature sealant (Sealant Type 'C'):

.1 One component, low modulus, gun grade, non-sag, moisture-cure polyurethane sealant with UV resistance, designed to cure into a fire

rated, elastic weatherproof seal. Sealant shall comply with AS1530 Part 4-1997 (Fire Resistance Test of Elements of Building Construction) and AS4072 Part 1-1992 (Service penetrations and control joints). Tested by BRANZ.

.2 Standard of acceptance:

.1 Dow Corning 736 Silicone.

.2 Or accepted alternate.

.5 Butyl sealant (Sealant Type 'D'):

.1 Single-component, non-skinning, non-hardening synthetic butyl rubber sealant to CAN/CGSB-19.21.

.2 For use on non-exposed interior surfaces only.

.3 Standard of acceptance:

.1 Mono Acoustical Sealant by DAP.

.2 Or accepted alternate.

.6 Siliconized acrylic latex sealant for interior finishes (Sealant Type 'E'):

.1 Single-component, paintable, suitable for interior wood, painted gypsum board, aluminum, and steel surfaces.

.2 For use on interior surfaces only.

.3 Standard of acceptance:

.1 Alex Pus Acrylic Latex Caulk Plus Silicone by DAP.

.2 Tremflex 834 by Tremco.

.3 133 Siliconized Latex by Mulco.

.4 AC-20 Plus Silicone by Pecora.

.5 Or accepted alternate.

.7 Butyl tape sealant:

.1 Synthetic rubber sealant in ribbon form, thickness 1.6 mm or 3.2 mm to suit application, 100% solids, width to suit application. Shore 'A' hardness of 30 at 23°C.

.2 Standard of acceptance:

.1 3M Weatherban PF5423 ribbon sealant.

.2 Or accepted alternate.

.8 Preformed compressible and non-compressible back-up materials:

.1 Backer rod:

.1 Polyethylene, urethane, neoprene, or vinyl foam closed cell, oversized 30 to 50 %, Shore 'A' hardness 20, tensile strength 140 to 210 kPa.

.2 Bond breaker tape:

.1 Polyethylene bond breaker tape which will not bond to sealant.

2.2 JOINT CLEANER

.1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

2.3 PRIMER

.1 As recommended by sealant manufacturer for specific substrate adhesion.

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 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 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 - General:

.1 Apply sealant when air and substrate temperatures are not forecast to be less than minimum recommended by manufacturer. Do not work during inclement weather. Perform all work 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 and 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.

.9 The use of liquid tooling aids, such as soapy water or alcohols, are prohibited as they may impact effective sealant cure, adhesion and potentially cause aesthetic issues.

.2 Sealant Type 'A':

.1 Install sealant Type 'A' to the top of membrane flashings where required or as shown on drawings. Modified sealant to be installed around finished flashings at all protrusions including soil stacks, sleeves, pitch boxes and fasteners securing membrane to walls.

.2 Apply sealant Type 'A' with hand trowel to achieve a 25 mm width and minimum 3 mm thickness.

.3 Apply sealant Type 'A' immediately after flashings have been installed and are still warm. No membrane flashings shall be left uncovered at the end of any work period. *(Non-compliance with this mandate may result in rejection, removal, and replacement of the membrane flashings to the affected area).*

.4 Trowel sealant Type 'A' in two directions to ensure proper adhesion to substrate and that all surface irregularities are filled. Tool surface of modified sealant to smooth finish.

.5 Install sealant Type 'A' at the underside of drains, metal sleeves and other location where specified on drawings.

.3 Curing:

.1 Cure sealants in accordance with sealant manufacturer's instructions.

.2 Do not cover up sealants until proper curing has taken place.

.4 Install sealant Type 'B' at sheet metal terminations.

.5 Install sealant Type 'C' at all B-vent collars and at all high temperature locations.

3.7 CLEANING

.1 Clean adjacent surfaces immediately and leave work neat and clean.

.2 Remove excess droppings using recommended cleaners as work progresses.

.3 Remove masking tape after initial set of sealant.

.4 Clean all contaminated surfaces to Owner's acceptance.

.5 Remove all rubbish and surplus materials from the job site on a daily basis.

3.8 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by joint sealants installation.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Includes specifications related to preparation and execution for painting of existing wood shingle surfaces (red shingles) at all mansard elevations following targeted repair/ replacement at locations of significant deterioration.

.2 Includes stain and finish requirements for new factory-finished wood shingles for targeted repair/ replacement at mansard elevations.

.3 All effort to be made to adhere to the existing colour scheme and finish. The existing colour scheme is recognized as a heritage character defining element. All efforts to be made to preserve, repair and stabilize heritage elements, features and finishes.

1.2 RELATED SECTIONS

.1 Section 06 10 53 - Miscellaneous Rough Carpentry.

.2 Section 07 31 29 - Wood Shingles.

1.3 REFERENCES

.1 Environmental Protection Agency (EPA)

.1 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings).

.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.3 The Master Painters Institute (MPI)

.1 Architectural Painting Specification Manual - February 2004.

.2 Standard GPS-1-05, MPI Green Performance Standard for Painting and Coatings.

.4 National Fire Code of Canada.

.5 Society for Protective Coatings (SSPC)

.1 Systems and Specifications, SSPC Painting Manual 2005.

.6 Standards and Guidelines for the Conservation of Historic Places in Canada, 2003

1.4 DEFINITIONS

.1 Mansard elevation(s): refers to near-vertical elevations clad in red wood shingles.

.2 Exterior surfaces: refers to surfaces of a historic structure which is exposed to exterior weather including wet conditions of rain, sleet or snow, high temperatures and sunlight as well as temperatures below the freezing point.

1.5 QUALITY ASSURANCE

.1 Qualifications:

.1 Contractor: to have a minimum of five years proven satisfactory experience. When requested, provide list of last three comparable jobs including, job name and location, specifying authority, and project manager.

.2 Qualified journeypersons as defined by local jurisdiction to be engaged in painting work

.3 Apprentices: may be employed provided they work under direct supervision of qualified journeyperson in accordance with trade regulations.

.4 Conform to latest MPI requirements for exterior painting work including preparation and priming.

.5 Materials: in accordance with MPI Painting Specification Manual "Approved Product" listing and from a single manufacturer for each system used.

.6 Paint materials such as linseed oil, shellac, and turpentine to be highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and to be compatible with other coating materials as required.

.7 Retain purchase orders, invoices and documents to prove conformance with noted MPI requirements when requested by Consultant.

.8 Standard of Acceptance:

.1 All finishes to match existing heritage colours and characteristics.

.2 Walls: No defects visible from a distance of 1000 mm at 90 degrees to surface.

.3 Soffits: No defects visible from floor at 45 degrees to surface when viewed using final lighting source.

.4 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

.9 All exterior repainting work shall be inspected by a Paint Inspection Agency (inspector) acceptable to the specifying authority. The painting contractor shall notify the Paint Inspection Agency a minimum of one week prior to commencement of work and provide a copy of the project painting specification, plans and elevation drawings (including pertinent details) as well as a Finish Schedule.

.10 All surfaces requiring repainting shall be inspected by the Painting Subcontractor who shall notify the Consultant, Paint Inspection Agency, and General Contractor in writing of any defects or problems, prior to commencing repainting or after preparation work.

.11 Where "special" coatings or decorating systems (i.e. textured coatings or non-MPI listed products or systems) are to be used in repainting, the paint manufacturer shall provide as part of this work, certification of all surfaces and conditions for specific paint or coating system application as well as on site supervision, inspection and approval of their paint or coating system application as required at no additional cost to the Owner.

1.6 SCHEDULING

.1 Submit work schedule for various stages of painting to Consultant for approval. Submit schedule minimum of 48 hours in advance of proposed operations.

.2 Schedule painting operations to prevent disruption of occupants in and about building.

1.7 SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit WHMIS MSDS - Material Safety Data Sheets.

.3 Samples:

.1 Submit full range of coating colour sample matches for review and selection.

.2 Submit 1 one-litre sample of each paint delivered to site:

.1 1 sample from manufacturer’s containers; and,

.2 1 sample from painter’s pot.

.4 Upon completion, submit records of products used. List products in relation to finish system and include the following:

.1 Product name, type and use.

.2 Manufacturer's product number.

.3 Colour numbers.

.4 MPI Environmentally Friendly classification system rating.

.5 Manufacturer's Material Safety Data Sheets (MSDS).

.5 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.

.1 Submit duplicate 200 x 300 mm sample panels of each paint stain clear coating special finish with specified paint or coating in colours, gloss/sheen and textures required to MPI Painting Specification Manual standards submitted on the following substrate materials:

.1 Cedar shingles, 1 bundle mixed, main colour finishes: white, black and red.

.2 When approved, samples shall become acceptable standard of quality for appropriate on-site surface with one of each sample retained on-site.

.3 Submit full range of available colours where colour availability is restricted.

1.8 EXISTING CONDITIONS

.1 The Contractor shall document heritage elements including architectural woodwork, trims, finishes, paints, etc., within the project scope and/ or which may be impacted by the project scope.

.2 The Contractor shall provide image documentation of existing conditions including form, type, colour, finish, texture of existing wood shingles/ element to be matched to the Consultant prior to the commencement of the Work.

.3 All efforts must be made to protect, maintain, conserve and/ or stabilize all heritage elements.

.4 Should results of the Work negatively impact the heritage elements of the building and/or surrounding property, the Contractor shall notify the Consultant, in writing prior to engaging in such activities. The Contractor shall not proceed with the Work without written confirmation from the Owner, Owner's Heritage representative and/or the Consultant.

1.9 QUALITY CONTROL

.1 Provide mock-up in accordance with Section 01 45 00 - Quality Control.

.2 When requested by Consultant or Paint Inspection Agency, prepare and paint designated surface, area, or item to requirements specified herein, with specified paint or coating showing selected colours, number of coats, gloss/sheen, textures and workmanship to MPI Painting Specification Manual standards for review and approval. When approved, surface, area, room and/or items shall become acceptable standard of finish quality and workmanship for similar on-site work.

1.10 MAINTENANCE

.1 Extra Materials:

.1 Submit maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.

.2 Submit one, unopened, four litre can of each type and colour of primer, stain, finish coating. Identify colour and paint type in relation to established colour schedule and finish system.

1.11 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements, supplemented as follows:

.1 Deliver and store materials in original containers, sealed, with labels intact.

.2 Labels: to indicate:

.1 Manufacturer's name and address.

.2 Type of paint or coating.

.3 Compliance with applicable standard.

.4 Colour number in accordance with established colour schedule.

.3 Remove damaged, opened and rejected materials from site.

.4 Provide and maintain dry, temperature controlled, secure storage.

.5 Observe manufacturer's recommendations for storage and handling.

.6 Store materials and supplies away from heat generating devices.

.7 Store materials and equipment in well ventilated area with temperature range 10°C to 30°C.

.8 Store temperature sensitive products above minimum temperature as recommended by manufacturer.

.9 Keep areas used for storage, cleaning and preparation, clean and orderly to approval of Owner/ Consultant. After completion of operations, return areas to clean condition to approval of Owner/ Consultant.

.10 Remove paint materials from storage only in quantities required for same day use.

.11 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.

.12 Fire Safety Requirements:

.1 Provide one 9 kg Type ABC dry chemical fire extinguisher adjacent to storage area.

.2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.

.3 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.

.2 Waste Management and Disposal:

.1 Paint, stain and wood preservative finishes and related materials (thinners, solvents, etc.) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.

.2 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.

.3 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.

.4 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into the ground the following procedures shall be strictly adhered to:

.1 Retain cleaning water for water-based materials to allow sediments to be filtered out.

.2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.

.3 Return solvent and oil-soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.

.4 Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.

.5 Empty paint cans are to be dry prior to disposal or recycling (where available).

.5 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

.6 Set aside and protect surplus and uncontaminated finish materials. Deliver to or arrange collection for verifiable re-use or re-manufacturing.

.7 Close and seal tightly partly used sealant and adhesive containers, and store protected in well ventilated fire-safe area at moderate temperature.

1.12 AMBIENT CONDITIONS

.1 Heating, Ventilation and Lighting:

.1 Ventilate enclosed spaces containing solvent based materials at all times.

.2 Do not perform painting work unless adequate and continuous ventilation and sufficient heating facilities are in place to maintain ambient air and substrate temperatures above 10°C for 24 hours before, during and after paint application until paint has cured sufficiently.

.3 Where required, provide continuous ventilation for seven days after completion of application of paint.

.4 Co-ordinate use of existing ventilation system with Owner/ Consultant and ensure its operation during and after application of paint as required.

.5 Provide temporary ventilating and heating equipment where permanent facilities are not available or supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.

.6 Perform no painting work unless a minimum lighting level of 323 Lux is provided on surfaces to be painted. Adequate lighting facilities to be provided by General Contractor.

.2 Temperature, Humidity and Substrate Moisture Content Levels:

.1 Unless specifically pre-approved by specifying body, Paint Inspection Agency and applied product manufacturer, perform no painting work when:

.1 Ambient air and substrate temperatures are below 10°C.

.2 Substrate temperature is over 32°C unless paint is specifically formulated for application at high temperatures.

.3 Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer's prescribed limits.

.4 Relative humidity is above 85 % or when dew point is less than 3°C variance between air/surface temperature.

.5 Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.

.2 Perform no painting work when maximum moisture content of substrate exceeds:

.1 12 % for concrete and masonry (clay and concrete brick/block).

.2 15 % for wood.

.3 Conduct moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple "cover patch test".

.4 Test concrete, masonry and plaster surfaces for alkalinity as required.

.3 Surface and Environmental Conditions:

.1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.

.2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits noted herein.

.3 Apply paint when previous coat of paint is dry or adequately cured.

.4 Apply paint finishes when conditions forecast for entire period of application fall within manufacturer's recommendations.

.5 Do not apply paint when:

.1 Temperature is expected to drop below 10°C before paint has thoroughly cured.

.2 Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer's limits.

.3 Surface to be painted is wet, damp or frosted.

.6 Provide and maintain cover when paint must be applied in damp or cold weather. Heat substrates and surrounding air to comply with temperature and humidity conditions specified by manufacturer. Protect until paint is dry or until weather conditions are suitable.

.7 Schedule painting operations such that surfaces exposed to direct, intense sunlight are scheduled for completion during early morning.

.8 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.

.9 Paint occupied facilities in accordance with approved schedule only. Schedule operations to approval of Owner/ Consultant such that painted surfaces will have dried and cured sufficiently before occupants are affected.

Part 2 Products

2.1 MATERIALS

.1 Paint materials listed in latest edition of MPI Approved Products List (APL) are acceptable for use on this project.

.2 Paint materials for paint systems: to be products of single manufacturer.

.3 Paints, stains, coatings, adhesives, solvents, cleaners, lubricants, and other fluids, to be as follows:

.1 Oil/ Acrylic, exterior, solid colour stain.
.2 Water repellent.
.3 Gloss Level: low sheen.
.4 UV and mildew resistant.
.5 VOCs according to ASTM D3960-05: < 150 g/L
.6 VOCs Canadian Regulation: < 250 g/L
.7 Non-flammable.

.4 Standard of Acceptance:

.1 WoodPride Solid Deck Stain by Dulux.

.1 Base: Ultra Deep or Solid Base.
.2 Formulation: 9690 Accent.
.3 Colour: 9690 Accent.
.4 Mixing Code:

.1 BLK 3P60
.2 OXR 5P25
.3 MAG 2P32+
.4 VWH 1P0

.2 Or Accepted Alternate.

.5 Oil-based paints/ stains and/or other surface coatings must be manufactured and transported in a manner that steps of processes, including disposal of waste products arising therefrom, will meet requirements of applicable governmental acts, by-laws and regulations including, for facilities located in Canada, Fisheries Act and Canadian Environmental Protection Act (CEPA).

.6 Water-borne surface coatings must not be formulated or manufactured with aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds.

.7 Water-borne surface coatings and recycled water-borne surface coatings must have flash point of 61°C or greater.

.8 Both water-borne surface coatings and recycled water-borne surface coatings must be made by a process that does not release:

.1 Matter in undiluted production plant effluent generating a 'Biochemical Oxygen Demand' (BOD) in excess of 15 mg/L to a natural watercourse or a sewage treatment facility lacking secondary treatment.

.2 Total Suspended Solids (TSS) in undiluted production plant effluent in excess of 15 mg/L to a natural watercourse or a sewage treatment facility lacking secondary treatment.

.9 Water-borne paints and stains, recycled water-borne surface coatings and water borne varnishes must meet a minimum "Environmentally Friendly" E2 rating.

.10 Recycled water-borne surface coatings must contain 50 % post-consumer material by volume.

.11 Recycled water-borne surface coatings must not contain:

.1 Lead in excess of 600.0 ppm weight/weight total solids.

.2 Mercury in excess of 50.0 ppm weight/weight total product.

.3 Cadmium in excess of 1.0 ppm weight/weight total product.

.4 Hexavalent chromium in excess of 3.0 ppm weight/weight total product.

.5 Organochlorines or polychlorinated biphenyls (PCBS) in excess of 1.0 ppm weight/weight total product.

.12 The following must be performed on each batch of consolidated post-consumer material before surface coating is reformulated and canned. These tests must be performed at a laboratory or facility which has been accredited by the Standards Council of Canada.

.1 Lead, cadmium and chromium are to be determined using ICP-AES (Inductively Coupled Plasma - Atomic Emission Spectroscopy) technique no. 6010 as defined in EPA SW-846.

.2 Mercury is to be determined by Cold Vapour Atomic Absorption Spectroscopy using Technique no. 7471 as defined in EPA SW-846.

.3 Organochlorines and PCBs are to be determined by Gas Chromatography using Technique no. 8081 as defined in EPA SW-846.

.12 Alkyd/oil-based primer for exterior wood siding and trim. This product is used for new and repainting work in residential, commercial and light industrial areas.

.1 Primer is used on woods prone to extractive bleeding, such as cedar and redwood, and must have bleeding resistance when applied to dry (less than 15% moisture content) wood substrates.

.2 Finish coatings, used over this primer include latex, alkyd and alkyd/oil-based paints. The straight alkyd products are faster drying than the oil/alkyd type primer.

.3 Must be mildew resistant.

.4 Application methods will include brushes, rollers, and airless and conventional spray equipment.

.14 Solvent based, high solids, clear paste filler for new open grained or damaged woods.

.1 This filler must fill the pores in hardwoods with minimal surface residues and not show cracking or shrinkage.

.2 When dry, the filler must be sand smoothly with no clogging or gumming of the sandpaper.

.3 This filler can be top coated with MPI #73, #74, #75 alkyd, MPI #56, #57 oil modified polyurethane varnishes.

.15 Solvent based, oil (or oil/alkyd), pigmented stain for new, or previously stained, wood siding.

.1 Provides hiding but allows grain texture to show.

.2 Application by brush, roller and air or airless spray. Can also be by commercial machine (i.e. 'factory staining').

2.2 COLOURS

.1 Colour schedule will match the existing exterior colours and finishes and heritage aesthetic.

.2 Second coat in three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.

2.3 MIXING AND TINTING

.1 Perform colour tinting operations prior to delivery of paint to site. On-site tinting of painting materials is allowed only with Consultant's written permission.

.2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.

.3 Add thinner to paint manufacturer's recommendations. Do not use kerosene or organic solvents to thin water-based paints.

.4 Thin paint for spraying according in accordance with paint manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to Consultant.

.5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

2.4 GLOSS/SHEEN RATINGS

.1 Paint gloss: defined as sheen rating of applied paint, in accordance with following values:

Gloss Level Category/	Units @ 60 Degrees/	Units @ 85 Degrees/
G1 - matte finish	0 to 5	max. 10
G2 - velvet finish	0 to 10	10 to 35
G3 - eggshell finish	10 to 25	10 to 35
G4 - satin finish	20 to 35	min. 35
G5 - semi-gloss finish	35 to 70	
G6 - gloss finish	70 to 85	
G7 - high gloss finish	> 85	

.2 Gloss level ratings of painted surfaces as specified and as noted on Finish Schedule. In general, woodwork will be finished to high gloss level and brick to matte.

2.5 EXTERIOR PAINTING SYSTEMS

.1 EXT 6.6A LATEX G2 over alkyd/oil primer

.2 EXT 6.6B ALKYD, Low sheen over alkyd/oil primer

.3 EXT 6.6C SOLID COLOR STAIN, S.B. over alkyd/oil primer

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 Exterior repainting work: inspected by MPI Accredited Paint Inspection Agency (inspector) acceptable to specifying authority and local Painting Contractor's Association. Painting contractor to notify Paint Inspection Agency minimum of one week prior to commencement of work and provide copy of project repainting specification and Finish Schedule.

.2 Exterior surfaces requiring repainting: inspected by both painting contractor and Paint Inspection Agency who will notify Consultant in writing of defects or problems, prior to commencing repainting work, or after surface preparation if unseen substrate damage is discovered.

.3 Where assessed degree of surface degradation of DSD-1 to DSD-3 before preparation of surfaces for repainting is revealed to be DSD-4 after preparation, repair or replacement of such unforeseen defects discovered are to be corrected, as mutually agreed, before repainting is started.

.4 Where "special" repainting or recoating system applications (i.e. elastomeric coatings) or non-MPI listed products or systems are to be used, paint or coating manufacturer to provide as part of work, certification of surfaces and conditions for specific paint or coating system application as well as on site supervision,

inspection and approval of their paint or coating system application as required at no additional cost to Owner/ Consultant.

3.3 PREPARATION

.1 Perform preparation and operations for exterior painting in accordance with MPI Maintenance Repainting Manual except where specified otherwise.

.2 Apply paint materials in accordance with paint manufacturer's written application instructions.

.3 Clean and prepare exterior surfaces to be repainted in accordance with MPI Maintenance Repainting Manual requirements. Refer to the MPI Manual in regard to specific requirements and as follows:

.1 Remove dust, dirt, and surface debris by vacuuming, wiping with dry, clean cloths or compressed air.

.2 Wash surfaces with a biodegradable detergent and bleach where applicable and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.

.3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.

.4 Allow surfaces to drain completely and allow to dry thoroughly. Allow sufficient drying time and test surfaces using electronic moisture meter before commencing work.

.5 Use water-based cleaners in place of organic solvents where surfaces will be repainted using water-based paints.

.6 Use pretreatment/ all purpose deck wash according to manufacturer’s instructions. Test a hidden area, rinse and let dry before widespread application.

.7 Many water-based paints cannot be removed with water once dried. Minimize use of kerosene or such organic solvents to clean up water-based paints.

.4 Clean metal surfaces to be repainted by removing rust, dirt, oil, grease and foreign substances in accordance with MPI requirements. Remove such contaminates from surfaces, pockets and corners to be repainted by brushing with clean brushes, blowing with clean dry compressed air, or brushing/vacuum cleaning as required.

.5 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before priming and between applications of remaining coats. Touch-up, spot prime, and apply primer, paint, or pretreatment as soon as possible after cleaning and before deterioration occurs.

.6 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.

.7 Do not remove paint/ finishes that is firmly adhered to and thus protecting finishes. Do not strip historical finishes/ paint to reveal bare wood as this may

expose historically coated surfaces to accelerated weathering. Report conditions to Consultant and do not proceed without written approval by the Consultant.

.8 Do not use destructive paint removal methods such as propane or butane torches, sandblasting or water-blasting.

3.4 PAINT/ STAIN PREPARATION

.1 Wood Shingles:

.1 Complete all work in accordance with the manufacturer's printed directions unless modified herein.

.2 Complete work with suitable, clean equipment in good condition.

.3 Complete work in dust free, suitable conditions and on surfaces free from machine, tool or sandpaper marks, insects, grease, oil rust, salts and any other condition liable to impair finished work or prevent the production of good results.

.4 All work shall be even, uniform of sheen, colour and texture, free from marks, well brushed in and free of sags, crawls, runs, joint marks and other defects.

.5 Use paint unaltered; use same brand of paint for primer, intermediate and finish coats.

.6 Conform to the Project colour schedule and exactly match approved samples.

.7 Surfaces soiled by the spillage of paint, paint splattering etc. shall be cleaned by this Trade. If such cleaning operations damage the surface, replacement or making good shall be at the expense of this Trade.

.8 All surface preparation must be done using hand tools such as scrapers and brushes supplemented by the heat gun. Hand tools must have rounded edges to prevent unnecessary damage such as gouging and scratching to the substrate.

.9 Surfaces must be hand-sanded as required.

.10 Use only biodegradable based paint strippers for paint stripping of woodwork.

.11 Wash woodwork according to manufacturer’s instructions.

.12 Apply wood restorer/ stain preparation product as per manufacturer's instructions.

.13 All new wood shall be pre-primed on all faces prior to installation and before exposure.

.14 Any open joints shall be sealed with caulking compound.

.15 Weathered and unweathered wood shingles shall be carefully treated by gently sanding the area by hand until it is relatively smooth. Wood restorer/ stain preparation product as per manufacturer’s instructions. Loose and damaged wood fibres to be removed.

.16 Carefully sand smooth between coats.

.17 Nail heads shall be sunk below the surface of the wood and the nail hole puttied with oil base putty and putty painted with one coat gum shellac cut in pure alcohol.

.18 After first coat, fill nail holes, splits and scratches, using putty coloured to match finish.

.19 Apply touch-up paint/stain to all cut edges and bare wood, even if wood is to be covered with sealant, molding or other. Do not leave cut edges exposed for more than 24 hours.

.2 Exterior woodwork formulae:

.1 All exterior woodwork is to be treated in the following manner:

.1 Disinfection.

.2 Scrape all loose, flaking and blistered paint, remove all alligatored paint.

.3 Spot prime and filling or

.1 Replaced deteriorated wood with new material, pre-primed on all faces.

.4 Two finish coats.

.2 Wash down all woodwork by scrubbing off any residue and mildew with a bristle brush and rinsing down with water; to be done with a solution of bleach, detergent and tri-sodium phosphate mixed in the following proportions or according to manufacturer's specific cleaning instructions:

- Bleach – 1 litre
- Detergent – 50 ml
- Tri-sodium phosphate – 200 ml
- Water – 3 litres
- Spot prime any bare wood. Apply a prime coat of exterior wood paint, applied liberally until the surface stays wet, paint not to be diluted. Using manufacturer's recommended primer for the exterior paint selected.

.3 Fill in all small cracks and fissures with putty tinted to match the finish coat colour.

.4 Seal joints between wood and metal with polyurethane based sealant.

3.5 EXISTING CONDITIONS

.1 Prior to commencing work, examine site conditions and existing exterior substrates to be repainted and report in writing to Consultant damages, defects, unsatisfactory or unfavourable conditions of surfaces that will adversely affect this work.

.2 Conduct moisture testing of surfaces to be painted using a properly calibrated electronic moisture meter, and report findings to Consultant. Maximum moisture content not to exceed specified limits.

.3 No repainting work to commence until such adverse conditions and defects have been corrected and surfaces and conditions are acceptable to Painting Subcontractor and Inspection Agency.

.4 Degree of surface deterioration (DSD) to be assessed using MPI Identifiers and Assessment criteria indicated in the MPI Maintenance Repainting Manual. MPI DSD ratings and descriptions are as follows:

Condition	Description
DSD-0	Sound Surface (includes visual (aesthetic) defects that do not affect film's protective properties).
DSD-1	Slightly Deteriorated Surface (indicating fading; gloss reduction, slight surface contamination, minor pin holes and scratches).
DSD-2	Moderately Deteriorated Surface (small areas of peeling, flaking, slight cracking, and staining).
DSD-3	Severely Deteriorated Surface (heavy peeling, flaking, cracking, checking, scratches, scuffs, abrasion, small holes and gouges).
DSD-4	Substrate Damage (repair or replacement of surface required).

3.6 PROTECTION

.1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore such surfaces as directed by Consultant.

.2 Protect items that are permanently attached such as Fire Labels on doors and frames. Do not paint over signs or placards.

.3 Protect factory finished products and equipment.

.4 Protect passing pedestrians, building occupants and general public in and about building.

.5 Remove surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Store items and re-install after painting is completed.

.6 Move and cover exterior furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.

.7 As painting operations progress, place "WET PAINT" signs in pedestrian and vehicle traffic areas to approval of Consultant.

3.7 APPLICATION (GENERAL)

.1 Method of application to be as approved by Consultant. Apply paint by brush roller air sprayer airless sprayer. Conform to manufacturer's application instructions unless specified otherwise.

.2 Brush and Roller Application:

.1 Apply paint/stain in a uniform layer using brush and/or roller of types suitable for application.

.2 Work paint into cracks, crevices and corners.

.3 Paint/stain surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.

.4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces shall be free of roller tracking and heavy stipple unless approved by Consultant.

.5 Remove runs, sags and brush marks from finished work and repaint.

.6 Apply coats of paint as continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.

.7 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.

.8 Sand and dust between coats to remove visible defects.

.9 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as projecting ledges.

.10 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

.3 Spray Application:

.1 Provide and maintain equipment that is suitable for intended purpose, capable of properly atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.

.2 Keep paint/stain ingredients properly mixed in containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.

.3 Apply paint/stain in a uniform layer, with overlapping at edges of spray pattern.

.4 Brush out immediately runs and sags.

.5 Use brushes to work paint into cracks, crevices and places which are not adequately painted by spray.

.4 Use dipping, sheepskins or daubers when no other method is practical in places of difficult access and when specifically authorized by Consultant.

.5 Apply coats of paint/stain as continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.

.6 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.

.7 Sand and dust between coats to remove visible defects.

.8 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as projecting ledges.

.9 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

3.8 APPLICATION

.1 Special Techniques:

.1 Apply coating in manner that replicates texture of historic/ existing paint coating and finishes.

.2 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

.3 Apply paint materials in accordance with paint manufacturer's written application instructions.

.1 Apply paint:

.1 To adequately prepared surfaces and within moisture limits.

.2 When previous coat of paint is dry and adequately cured.

.3 In accordance with manufacturer's written instructions.

.4 Apply paint with brush or roller unless otherwise specified.

.1 Obtain Consultant's approval of application method before commencing work.

.5 Brush and Roller Application:

.1 Apply paint in a uniform layer using brush suitable for application.

.2 Work paint into cracks, crevices and corners.

.3 Brush and roll out runs and sags, and overlap marks.

.4 Eliminate roller tracking and stipple by finishing with a brush. Maintain historic appearance.

.5 Remove runs and sags from finished work and repaint.

.6 Apply final coat of paint with brush.

3.9 APPLICATION (WOODWORK)

.1 Painting coats are intended to cover surfaces perfectly; if in the Painters opinion the formulae specified are inadequate to provide a first-class finished surface, report to the Consultant before commencing work; surfaces imperfectly covered shall receive additional coats at no additional cost.

.2 All paint is to be applied by hand brushing. Do not use roller or spray methods on the job unless specifically approved by the Owner/ Consultant.

.3 Brush on two coats of exterior paint, full strength, allowing each coat to dry between applications.

3.10 MECHANICAL/ ELECTRICAL EQUIPMENT

.1 Unless otherwise specified, paint exterior exposed conduits, piping, hangers, duct work and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as noted otherwise.

.2 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.

.3 Do not paint over nameplates.

3.11 SAMPLE AREAS

.1 Provide sample areas for painting/ staining of exterior woodwork. Do not proceed to general painting until both samples have been approved and approval provided by Consultant in writing.

3.12 FIELD QUALITY CONTROL

.1 Inspection:

.1 Field inspection of exterior painting operations to be carried out be qualified independent inspection firm.

.2 Provide regular written inspection to the Consultant for review.

.3 Advise Consultant when each surface and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.

.4 Co-operate with inspection firm and provide access to areas of work.

.2 Manufacturer's Field Services:

.1 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

3.13 CLEANING

.1 Remove paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.

3.14 RESTORATION

.1 Clean and re-install hardware items removed before undertaken painting operations.

.2 Remove protective coverings and warning signs as soon as practical after operations cease.

.3 Remove paint splashings on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.

.4 Protect freshly completed surfaces from paint droppings and dust to approval of Consultant. Avoid scuffing newly applied paint.

.5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Consultant.

END OF SECTION

Appendix A
Heritage Reference Documents

Canada's Historic Places
Lunenburg Academy
101 Kaulback Street, Lunenburg, Nova Scotia, Canada
Formally Recognized: 1983/06/30


From Lunenburg Cemetery


Interior staircase detail


Lunenburg Academy

OTHER NAME(S)

n/a

LINKS AND DOCUMENTS

Overview of Lunenburg, including architectural tour and town history provided by the Town of Lunenburg.
Web site of the Lunenburg Academy Foundation

CONSTRUCTION DATE(S)

1893/01/01 to 1895/12/31

LISTED ON THE CANADIAN REGISTER: 2004/08/26

STATEMENT OF SIGNIFICANCE

DESCRIPTION OF HISTORIC PLACE

The Lunenburg Academy, built between 1893-1895, is a massive, three-storey wooden Victorian building in the eclectic tradition, boldly painted in red, black and white in the town of Lunenburg, NS. It still functions as a public school for the primary level, and it is surrounded by an open playground area. It is located in a key location at the top of Gallows Hill, and is visible from most viewpoints when approaching Lunenburg. The property abuts Lunenburg's Old Town Heritage Conservation District. Designation covers the building and surrounding property.

HERITAGE VALUE

The heritage value of the Lunenburg Academy lies in its significance both historically and architecturally, and as both a local and national landmark. Designed by well-known New Brunswick architect H.H. Mott and built between 1893-1895, the Academy is a monument to the historical development of Nova Scotia's educational system. Along with the Old New Town School in Lunenburg, it provides an architectural example of the evolution of education in nineteenth century Nova Scotia from one-room schoolhouses to

the Academy system. It is the only surviving building from the Nova Scotia Academy system that continues to operate as a school, serving as Lunenburg's primary school.

The Academy is one of the very few large scale wooden buildings in Canada still surviving from the nineteenth century. Its unique and picturesque design makes it an excellent representation of late Victorian eclectic architecture. Except for a missing tower and the new cedar shingle roof, the exterior remains intact. Many interior features also remain, including wainscoting, stairways and banisters, detailed hinges and doorknobs, and the layout of classrooms and cloakrooms.

The Academy's imposing form and prominent towers can be seen for miles around, and it is visible from many approaches to Lunenburg. It is often referred to as 'the Castle on the Hill' and it is one of the most striking of Lunenburg's large stock of nineteenth century buildings. The colour scheme of the building - white, black and red – helps to bring out the details of the exterior and make it even more visible within the streetscapes and view planes of Lunenburg.

Source: Notice of Recommendation to Register as a Town Heritage Property, Heritage Designation, File 66400-40-01, Town of Lunenburg.

CHARACTER-DEFINING ELEMENTS

The character-defining elements of the Lunenburg Academy consist of all features that reflect its unusual architecture and role in the community as an educational facility, including:

- expanse of space around the building and prominent location on Gallows Hill overlooking Lunenburg and surrounding area, adding to its landmark status;
- large scale of the building, standing three storeys high and complemented by the absence of closely neighbouring buildings;
- a cedar-shingled mansard roof derived from the French Empire style, with a massive central chimney;
- on the north and south side elevations, a single central bay built out in relief and flanked by segmental dormer windows;
- large projecting frontispiece flanked by towers on both east and west elevations; the west has two towers and the east one tower;
- towers are flanked by segmental dormer windows;
- horizontal definition given by moulded belt courses, and vertical definition by pediments of varying design over the doors and pedimented windows, and the towers;
- detailed ornamentation including small ovaloid portholes on the sides of each uppermost central window on the side elevations, intricate bracketry on all windows and under the eaves, and decorative shinglework

enriching the exterior texture;

- contrasting paint scheme of black, red and white.

The character-defining elements of the interior of Lunenburg Academy consist of all the original features of note including:

- wooden wainscoting stairs, and banisters;
- original hinges and doorknobs;
- original layout of the rooms.

RECOGNITION

JURISDICTION

Nova Scotia

RECOGNITION AUTHORITY

Local Governments (NS)

RECOGNITION STATUTE

Heritage Property Act

RECOGNITION TYPE

Municipally Registered Property

RECOGNITION DATE

1983/06/30

HISTORICAL INFORMATION

SIGNIFICANT DATE(S)

n/a

THEME - CATEGORY AND TYPE

Building Social and Community Life
Education and Social Well-Being

Canada's Historic Places
Lunenburg Academy
101 Kaulback Street, Lunenburg, Nova Scotia, Canada
Formally Recognized: 1983/06/30

FUNCTION - CATEGORY AND TYPE

CURRENT

Education
Primary or Secondary School

HISTORIC

Education
Composite School

ARCHITECT / DESIGNER

Harry H. Mott

BUILDER

n/a

ADDITIONAL INFORMATION

LOCATION OF SUPPORTING DOCUMENTATION

Town of Lunenburg, 119 Cumberland Street, P.O. Box 129, Lunenburg, Nova Scotia, B0J 2C0

CROSS-REFERENCE TO COLLECTION

FED/PROV/TERR IDENTIFIER

37MNS0001

STATUS

Published

RELATED PLACES

Lunenburg Old Town Heritage Conservation District

Lunenburg is located on the southwest coast of Nova Scotia. The Old Town Heritage Conservation District is located on a hilly peninsula between Lunenburg (Front) Harbour and the...

Canada's Historic Places
Lunenburg Academy
101 Kaulback Street, Lunenburg, Nova Scotia, Canada
Formally Recognized: 1983/06/30

Lunenburg Academy National Historic Site of Canada

Lunenburg Academy is a large, late 19th century school building in Lunenburg, Nova Scotia. It is a three-storey, wooden building in the Second Empire style, surrounded by a...

Parks Canada Directory of Federal Heritage Designations
Old Town Lunenburg Historic District National Historic Site of Canada
Lunenburg, Nova Scotia

Panorama

Address : Lunenburg, Nova Scotia

Recognition Statute: Historic Sites and Monuments Act (R.S.C., 1985, c. H-4)

Designation Date: 1991-06-10

Dates:

- 1753 to 1991 (Construction)
- 1753 to 1753 (Significant)
- 1753 to 1753 (Significant)

Event, Person, Organization:

- First landing; laying out the township 1753 (Event)
- Charles Morris (Person)
- Other Name(s):
- Old Town Lunenburg Historic District (Designation Name)
- Research Report Number: 1991-022
- Plaque(s)

Existing plaque: Bluenose Drive, Lunenburg Harbour, Lunenburg, Nova Scotia

Parks Canada Directory of Federal Heritage Designations
Old Town Lunenburg Historic District National Historic Site of Canada
Lunenburg, Nova Scotia

- A remarkable historical continuity is found in the streets, public spaces, buildings and daily life of Old Town Lunenburg. Set on a hill overlooking the harbour, Lunenburg was founded in 1753. Its gridiron layout, with a parade square half-way up the hill, is one of the earliest and most intact British model plans in Canada. On this compact site, pioneer German-French- and English-speaking settlers constructed a variety of wood-frame buildings that set the tone for a colourful and harmonious town centre. Today, Lunenburg boasts fine examples of Cape Cod, British Classical, Second Empire and post-victorian buildings. Many houses feature the famous Lunenburg "bump" a large dormer popular in the late 19th century. Along the commercial streets, a well-maintained collection of shops and public buildings testifies to the town's commitment to heritage conservation. Still active on the waterfront are fishing and shipbuilding industries which have won Lunenburg international acclaim for more than 150 years.

Description of Historic Place

- The Old Town Lunenburg Historic District covers the core area of the town of Lunenburg, a well-preserved example of 18th-century colonization and settlement patterns with numerous outstanding examples of vernacular architecture spanning more than 240 years. It occupies the side of a hill and a narrow area along a natural harbour and includes the town's original parade square, as well as a waterfront area that is associated with the fishing and shipbuilding industries. The formal recognition consists of contributing buildings and lands contained within the boundaries of the original town plan of 1753. Old Town Lunenburg has also been designated a World Heritage Site.

Heritage Value

- The Old Town Lunenburg Historic District was designated a national historic site in 1991 by virtue of its gridiron layout, one of the earliest and most intact British model plans in Canada, its strong historical associations especially with the Atlantic fisheries, and the richness and homogeneity of its architecture.

  The heritage value of the Old Town Lunenburg Historic District resides in the original plan, the built forms and open spaces within the plan, the physical and cultural manifestations of the off-shore fishing and shipbuilding industries and the harmonious integration of the town and the seascape. Laid out by Charles Morris at the time of his landing on June 8, 1753, Lunenburg=s Old Town Plan was the second British >model plan= created in present-day Canada, a gridiron plan type which had a direct and important relationship to British imperial settlement policy.

  Sources: Historic Sites and Monuments Board of Canada, Minutes, 1991; World Heritage List Nomination (Appendix 3: Character Statement).

Character-Defining Elements

- The character-defining elements that relate to the townsite as a whole are: its gridiron, "model town" plan, as evidenced in its geometrically regular streets and blocks, its allocation of public spaces, and its distinction between urban and non-urban areas; its small lots; the densely built nature of the townsite; its comprehensive collection of 18th to 20th-century buildings and works, including residences, churches, institutional buildings, shops and wharves; the continuing tradition of painting buildings in bright colours; the unity and cohesiveness created by the predominance of wood construction and exterior finishes among all building types and styles; the general orientation of the town and its major institutional buildings towards the harbour; the larger-scaled waterfront buildings, including wooden warehouses, lofts, boatshops, and industrial buildings, many with their gable end

turned to the harbour, most of a large scale, and all painted in bright colours; its skyline punctuated by the spires of its churches; the heritage characters of St. John Anglican Church and the Knaut-Rhuland House National Historic Site of Canada.

The character-defining elements that relate to 18th-century construction are: a number of houses of "coulisse" construction, now clad in clapboard or shingles; single-storey Cape Cod dwellings; two-storey houses constructed in the British classical tradition; the former Court House; pre-fire surviving elements of St. John’s Anglican Church.

The character-defining elements that relate to 19th-century construction are: the larger and more elaborate buildings that continued earlier building traditions; traditional Cape Cod and British classical residences; modifications to 18th and early 19th-century houses; Second Empire-style residences of families associated with the fishing and shipbuilding industries; the frequent use of the Lunenburg "bump" dormer in all its variations; pre-fire surviving elements of St. John's Anglican Church; St. Andrew's Presbyterian Church and the Lunenburg Lutheran Church, buildings associated with the oldest continuing worshipping Presbyterian and Lutheran congregations in Canada.

The character-defining elements that relate to 20th-century construction are: its 20th-century housing stock, including simple post-World War II bungalows, "Four-Square" houses, and Dutch Colonial Revival-style houses, that continue earlier wood construction traditions on a modest scale; sympathetically scaled commercial buildings located along Lincoln Street that help create a cohesive streetscape.

The character-defining elements associated with the history of the shipbuilding and fishing industries in Canada are: waterfront shipyards, including those still used for shipbuilding and retrofitting; buildings and facilities associated with the work and community life of people who worked in the fishing industry, including the Adams & Knickle waterfront complex and the Smith and Rhuland shipyard.

Parks Canada Directory of Federal Heritage Designations
Old Town Lunenburg Historic District National Historic Site of Canada
Lunenburg, Nova Scotia

Panorama

Address : Lunenburg, Nova Scotia

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Appendix B
Reference Images

REFERENCE IMAGES

	
General overhead	General Overhead – Mod. Bit.
	
General – Towers and Hip	General – Hip and Tower

	
General – Sloped roof area and eye-brow dormer	General - at Mansard
	
View from mod. bit. to backside of towers	General – existing conditions – eyebrow dormer
	
General – Gable with metal valleys	General – Mod. Bit. at Towers

	
General – Existing saddle at backside of tower	Existing – mod. bit. at sidewall of tower
	
General – Existing Railing, Mod. Bit. at tower	General – existing mod. bit., penetration at tower
	
View from tower looking towards eye-brow dormer	General – Existing condition at fascia below mod. bit.

	
General – Existing condition at fascia below mod. bit.	Existing conidtion at chimney
	Intentionally Blank
Existing condition – saddle at gooseneck penetration	

END OF SECTION