Project Manual for

Coronation Hall
Exterior Conservation
1 King Street West, Omemee, ON

Credit: Stevens Burgess Architects

SBA Project No.: 24012

Issued for Tender

22 April 2025

Company (Author) Abbreviations:
Stevens Burgess Architects Ltd. – SBA

SPECIFICATION SECTIONS

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

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Part 1 General

1.1 PROJECT TITLE

Coronation Hall
Exterior Conservation
SBA Project No. 24012

1.2 OWNER

City of Kawartha Lakes (CoKL)
26 Francis St, Lindsay, ON, K9V 5R8

Attention: Leah James
Facility Projects Coordinator,
Building & Property Division
Telephone: 705-324-9411 Ext. 2337
Email: ljames@kawarathalakes.ca

1.3 CONSULTANTS

.1 Architectural

Stevens Burgess Architects Ltd.
120 Carlton St., Suite 204
Toronto, Ontario M5A 4K2

Attention: Sheldon Kennedy
Telephone: (416) 961-5690
Email: sheldonk@sba.on.ca

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

Part 1 General

1.1 SPECIAL REQUIREMENTS

.1 Prepare a progress schedule taking into consideration the following.

.2 Execute Work to cause minimum interference with adjacent structures, landscaping and maintain maximum safety of the public. Take reasonable measures to eliminate the spread of noise, dirt and dust during Work from the site to surrounding areas.

.3 The building will remain operational in short-term accommodation during the extent of the work.

1.2 PROJECT SCHEDULE

.1 The **Project Schedule** is as specified by City of Kawartha Lakes Contract form.

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Documents and terminology.

.2 Associated requirements.

.3 Work expectations.

.4 Work by other parties.

.5 Premises usage.

1.2 RELATED SECTIONS

.1 Section 01 21 00 - Allowances.

.2 Section 01 78 10 - Closeout Submittals.

.3 This section describes requirements applicable to all Sections.

1.3 RELATED DOCUMENTS

.1 All other Division 01 specification sections.

.2 Division 01 sections describe requirements applicable to all Sections.

1.4 DEFINITIONS

.1 Refer to and acknowledge other words, terms, and definitions in **CCDC2 2020 Stipulated Price Construction Contract**. Additional words and terms are described in Supplementary Conditions.

1.5 COMPLEMENTARY DOCUMENTS

.1 Drawings, specifications, and schedules are complementary each to the other and what is called for by one to be binding as if called for by all. Should any discrepancy appear between documents which leave doubt as to the intent or meaning, abide by Precedence of Documents article below or obtain direction from the Consultant.

.2 Drawings indicate general location and route of conduit and wire/conductors. Install conduit or wiring/conductors and plumbing piping not shown or indicated diagrammatically in schematic or riser diagrams to provide an operational assembly or system.

.3 Install components to physically conserve headroom, to minimize furring spaces, or obstructions.

.4 Examine all discipline drawings, specifications, and schedules and related Work to ensure that Work can be satisfactorily executed. Conflicts or additional Work beyond Work described to be brought to attention of Consultant.

1.6 PRECEDENCE OF DOCUMENTS

.1 In the event of conflict within and between the Contract Documents, the order of priority within specifications and drawings for this Project are - from highest to lowest:

- .1 the Agreement and Definitions between the Owner and the Contractor;
- .2 the Definitions;
- .3 Supplementary Conditions;
- .4 the General Conditions;
- .5 Sections of Division 01 of the specifications;
- .6 Sections of Divisions 02 through 49 of the specifications.
- .7 Schedules and Keynotes:
  - .1 Material and finishing schedules within the specifications, then;
  - .2 Material and finishing schedules on drawings, then;
  - .3 Keynotes and definitions thereto, then;
- .8 Diagrams.
- .9 Drawings:
  - .1 Drawings of larger scale shall govern over those of smaller scale of the same date, then;
  - .2 Dimensions shown on drawings shall govern over dimensions scaled from drawings, then;
  - .3 Location of utility outlets indicated on architectural detail drawings takes precedence over positions or mounting heights located on mechanical or electrical Drawings.
- .10 Later dated documents shall govern over earlier documents of the same type.

.2 In the event of conflict between documents, the decision of the Consultant shall be final.

1.7 DESCRIPTION OF THE WORK

.1 Work of this Contract comprises Conservation of Coronation Hall at 01 King Street West, Omemee, ON.

.2 The scope of work includes, but is not limited to:

- .1 Masonry conservation
- .2 Metal roof & rain drainage conservation
- .3 Stair removal & door opening infills.
- .4 Window opening stabilization & surround conservation
- .5 Exterior plaster conservation
- .6 Wood conservation
- .7 Foundation parging repairs.

.3 Division of the Work among suppliers, vendors, and Subcontractors is solely the Contractor's responsibility. Neither the Owner nor Consultant assumes any responsibility to act as an arbiter to establish subcontract terms between sectors or disciplines of Work.

1.8 CONTRACT METHOD

.1 Construct Work under single, **CCDC2 2020 Stipulated Price Construction Contract** .

.2 Relations and responsibilities are between the Contractor and the Owner.

.3 Provide the required liability insurance and bonds to ensure such specified assurances to the Owner.

.4 Refer to Section 01 21 00 for cash allowance amounts applicable to assignable contracts.

.5 Assume responsibility for assigned contracts as Subcontracts forming part of the Work.

.6 Contract Documents were prepared by Stevens Burgess Architects Ltd. (SBA) for the Owner. Any use which a third party makes of the Contract Documents, or any reliance on or decisions to be made based on them, are the responsibility of such third parties. The Owner/SBA accepts no responsibility for damages, suffered by any third party as a result of decisions made or actions based on the Contract Documents.

.7 For purposes of reference in these Contract Documents, the term "Contractor" shall mean the party in contract with the Owner.

1.9 DOCUMENTS PROVIDED

.1 Owner will supply the Contractor with PDF copies of Contract Documents for construction purposes.

.2 The Contractor is responsible for production of hard copy documents required for construction purposes.

.3 An electronic set of documents will be provided near the end of the Project for purposes of transferring changed information recorded on as-built documents to the electronic Record Documents.

1.10 WORK SEQUENCE

.1 Construct Work in to accommodate Owner's usage requirements during the construction period, coordinate construction schedule and operations with Owner / Tenants.

.2 Coordinate Progress Schedule and with Owner use during construction.

.3 Maintain fire access and control of fire protection equipment.

1.11 PROTECTION OF WORK

.1 Adequately protect Work completed or in progress. Work damaged or defaced due to failure in providing such protection is to be removed and replaced, or repaired, as directed by the Owner, at no increase in Contract Price.

.2 Prevent overloading of any part of the Work or building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated without written approval of the Owner.

.3 Maintain and monitor protection of roofing membrane when Work is done on or above finished roofing system.

1.12 WORK BY OWNER / TENANT

.1 N/A.

1.13 CONTRACTOR USE OF PREMISES

.1 Limit use of site and premises to allow:

.1 Tenant access to the building at all times.

.2 Damage to the landscaping due to construction related work is to be repaired prior to Total Completion.

.2 Emergency Building Exits During Construction:

.1 Emergency exits are to remain operable with unobstructed path of travel when the building is occupied by the owner, tenants, or other user groups.

.3 Construction Operations:

.1 Mobilization areas are to be confirmed with the owner prior to mobilization.

1.14 OWNER OCCUPANCY

.1 The building will be occupied by tenants throughout construction.

.2 Cooperate with Owner in scheduling operations to minimize conflict and to facilitate Owner/tenant usage.

1.15 PERMITS

.1 A building permit is required for the proposed scope of work. Owner to provide copy of approved documentation to appointed Contractor prior to commencement of works.

.3 The Contractor is responsible for all other permits.

1.16 HERITAGE SIGNIFICANCE

.1 Coronation Hall was designated under Part IV of the *Ontario Heritage Act* by the City of Kawartha Lakes in 2003 with By-Law 2003-38.

.2 Statement of Cultural Heritage Value or Interest (Schedule ‘B’ to By-Law 2003-38 as per Schedule B:

Statement of the Reason for Designation: Historically serving as the former Village of Omemee’s “Town Hall”, Coronation Hall is an important historic and architectural landmark of the Omemee area. Mrs. J.C. Eaton, ‘Lady Eaton’, commissioned the construction of the hall in 1911 as a gift to the municipality.

The hall was officially opened on December 19, 1911, with an evening celebration of music, speeches and ceremonial presentation of the key to the hall to Mrs. Eaton, entitling her to entrance and use of ten reserved seats. Appropriately named, the hall's inaugural year corresponded with the crowning of King George V and Queen Mary at West Minister Abbey in London, England.

With its excellent acoustics, capacious stage and seating for 600, the hall has hosted many concerts and events over the years. One of the most significant occasions was the presentation of the Victoria Cross (VC) to the mother of Private Harry Brown of Emily Township, by the Duke of Devonshire, Governor General of Canada, on January 22, 1918. The VC was awarded to recognize the exceptional bravery of Private Brown who was killed in France in World War I, on August 17th, 1917.

Omemee's Coronation Hall, located centrally at King and Sturgeon Streets, is distinguished as a landmark and pillar of the community. Designation of the exterior and interior of the subject building is recommended because of the aforementioned historical and cultural significance. The designation should not preclude any changes that may be deemed necessary for the efficient use of the building but that any and all such changes shall be in keeping with the original and present character of the building, and in consultation with the Local Architectural Conservation Advisory Committee.

.3 Character Defining Elements:

.1 Character defining elements that contribute to the heritage value of Coronation Hall include its:

.1 Prominent siting and location on King Street West and Sturgeon Road

.2 Massing and structure of the original building (excluding the East addition)

.3 Symmetrical organization of the South (King Street) façade

.4 Original roof massing, combination of flat and sloped roofs

.5 Brick masonry cladding

.6 Wood cornice with stucco banding

.7 Original window and door openings

.8 Brick chimneys

.9 Original South entrances including canopy structures (including canopy over infilled SW entrance

.10 Interior organization and massing of the auditorium

.11 Balcony form, balcony rail, structure, and log columns

.12 Original balcony seating

.13 Extant original wood doors

.14 Extant original wood trim

.15 Interior plaster finishes, including crown moulding

Part 2 **Products** (Not Used)
Part 3 **Execution** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Connecting to existing services.

.2 Special scheduling requirements.

1.2 RELATED SECTIONS

.1 Section 01 53 00 - Temporary Construction.

.2 Section 01 33 00 - Submittal Procedures.

.3 All other Division 01 specification sections.

1.3 RESTRICTIONS ON USE OF PREMISES

.1 Limit use of premises for Work, to allow;

.1 Owner/tenant occupancy.

.2 Events which require no disturbance of noise and access.

.2 Coordinate use of premises under direction of Owner.

1.4 WORK SEQUENCE

.1 Schedule and construct Work in stages to accommodate Owner/tenant use of premises during construction.

.2 Schedule and construct Work in stages to provide for continuous public usage. Do not close off public usage of facilities until use of one stage of Work will provide alternate usage.

1.5 OWNER USE AND OCCUPANCY OF PREMISES

.1 Owner will occupy premises during entire construction period.

.2 Cooperate with Owner in scheduling operations to minimize disruptions and to facilitate Owner usage.

.3 The building will be occupied during operation hours of 8:30am to 5pm daily and will remain so for the duration of the Work. All Work shall be scheduled and co-ordinated to accommodate the building occupants and all necessary precautions shall be taken to ensure safe occupancy. Coordinate use of premises under direction of the Owner and Consultant.

1.6 RESTRICTIONS ON CONTACTOR MOVEMENT

.1 Contractor personnel are restricted to the job site and necessary access routes. No personnel shall visit other buildings without prior authorization. The extent of the Work site shall be confined to the areas in which Work is occurring and access routes to those areas.

1.7 NOISY WORK RESTRICTIONS IN OCCUPIED FACILITIES

.1 Schedule excessively noisy work to avoid disturbance to building occupants. Perform excessive noise generating work outside of Owner's business hours unless otherwise coordinated with the owner/tenants.

.2 Construction noise is not permitted from 7 p.m. to 7 a.m. the next day or until 9 a.m. on Saturdays, and all-day Sunday and statutory holidays.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Cash allowances.

.2 Inspection and testing allowances.

.3 Contingency allowance.

1.2 RELATED SECTIONS

.1 Section 01 29 00 - Payment Procedures.

.2 Section 01 62 00 - Product Exchange Procedures.

.3 This section describes requirements applicable to all Sections.

1.3 CASH ALLOWANCES

.1 Costs Included in Cash Allowances: Cost of Product to Contractor less applicable trade discounts; delivery to site, and applicable taxes.

.2 If a Cash Allowance item described in the Allowances Schedule below indicates the inclusion of installation, include in the Cash Allowance amount, provision for Product handling at the site, including unloading, uncrating, storage, protection of Products from elements and from damage, labour for installation and finishing, insurance, labour costs, taxes, bonding if applicable & equipment rental.

.3 If a Cash Allowance item described in the Allowances Schedule below indicates supply only, include in the Contract Price costs not included in Cash Allowances: Product handling at the site including unloading, uncrating, storage, protection of Products from elements and from damage, labour for installation and finishing, insurance, labour costs, taxes, bonding if applicable, equipment rental, overhead and profit.

.4 Contract Sum, and not Cash Allowance(s) includes Contractor's overhead, profit and other associated costs not specifically stated to be covered in Cash Allowance(s), in connection with such Cash Allowances(s).

.5 Consultant Responsibilities:

.1 Consult with Contractor for consideration and selection of Products, suppliers, and installers.

.2 Owner and Consultant to select Products.

.3 Prepare Approval for Allocation of Cash Allowance (AACA), and Change Orders (CO).

.6 Contractor Responsibilities:

.1 Assist Consultant in selection of Products, suppliers and installers.

.2 Obtain proposals from suppliers and installers and offer recommendations.

.3 On notification of selection by Consultant or Owner, execute purchase agreement with designated supplier and installer.

.4 Arrange for and process shop drawings, product data, and samples. Arrange for delivery.

.5 Promptly inspect Products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.

.7 Differences in costs will be adjusted by Change Order.

.8 Individual cash allowances are for budget purposes only and may be transferred from one allowance to another or used for other Work at the discretion of the Owner. At the completion of the Work, any remaining or unspent portions of individual cash allowances will be credited to Owner through written Notice of Change.

.9 Allowances Schedule:

Cash Allowance 1	South Window Lintel Repairs	$10,000 (excl. HST)

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Quantity measurement with unit value of Products determined by and expanded in the Bid Documents.

.2 Schedule of Products and their quantities.

.3 Schedule of applicable values.

1.2 RELATED SECTIONS

.1 Refer to stipulated price construction contract for specific contractual requirements.

.2 Section 01 29 00 – Payment Procedures: Application for Payment.

1.3 SCHEDULE OF VALUES

.1 Submit Schedule of Values within ten (10) days after date of Owner-Contractor Agreement.

.2 Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the primary associated specification section. Also identify site mobilization and allowances.

.3 For unit cost, identify quantities taken from Contract Documents items multiplied by the unit cost to achieve a total for the item.

.4 Revise schedule to list approved Change Orders, with each Application for Payment.

1.4 SCHEDULE OF UNIT PRICE ITEMS

.1 Submit a separate price table of unit price items.

.2 Make form of submittal parallel to Schedule of Values:

.1 Additional columns are to be added for inventoried Quantity and work completed;

.2 Once contractors repair inventory has been signed off upon, the inventoried columns are to be populated;

.3 As work completed, the work completed column will be updated and utilized to verify profess draws.

.3 Ensure unit prices multiplied by quantities given equal material cost of that item in Schedule of Values.

.4 Unit Quantities: Quantities and measurements indicated in the Bid Form are for bid and contract purposes only. Quantities and measurements actually supplied or placed in the Work shall determine payments.

.5 Payment Includes: Full compensation for required labour, Products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.5 MEASUREMENT OF QUANTITIES

.1 Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes - measured by handbook weights. Welded assemblies measured by handbook or scale weight.

.2 Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.

.3 Measurement by Area: Measured by square dimension using mean length and width or radius.

.4 Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.

.5 Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination as appropriate, as a completed item or unit of Work.

1.6 DEFECT ASSESSMENT

.1 Replace the Work, or portions of the Work, not conforming to specified requirements.

.2 If, in the opinion of the Consultant, it is not practical to remove and replace the Work, the Consultant will direct one of the following two (2) remedies:

.1 The defective Work may remain, but the unit sum/price will be adjusted to a new sum/price at the discretion of the Consultant.

.2 The defective Work will be partially repaired to the instructions of the Consultant, the unit sum/price will be adjusted to a new sum/price at the discretion of the Consultant.

.3 The individual specification sections may modify these options or may identify a specific formula or percentage sum/price reduction.

.4 The authority of the Consultant to assess the defect and identify payment adjustment is final.

1.7 NON-PAYMENT FOR REJECTED PRODUCTS

.1 Payment will not be made for any of the following:

.1 Products wasted or disposed of in a manner that is not acceptable.

.2 Products determined as unacceptable before or after placement.

.3 Products not completely unloaded from the transporting vehicle.

.4 Products placed beyond the lines and levels of the required Work.

.5 Products remaining on hand after completion of the Work.

.6 Loading, hauling, and disposing of rejected Products.

1.8 UNIT PRICE SCHEDULE

.1 Refer to Bid form, Schedule B.

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Applications for progress payments.

.2 Substantial performance procedures.

.3 Release of hold-back procedures.

.4 Price adjustments.

1.2 RELATED DOCUMENTS

.1 Section 01 62 00 - Product Exchange Procedures.

1.3 RELATED SECTIONS

.1 Section 01 22 10 – Contract Values & Unit Prices.

.2 Section 01 62 00 - Product Exchange Procedures.

1.4 GENERAL

.1 All submissions under this section shall bear the Project Name, Owner's Name and Project No., Consultant Project No., and Date.

.2 Where a Certificate of Clearance from the Workplace Safety and Insurance board (WSIB) is requested, the Certificate submitted shall clearly show that the contractor is in good standing with the WSIB.

.3 WSIB "independent operator" status for any Contractor is not acceptable.

.4 Contractor is solely responsible for ensuring that each of the Contractor's personnel, including but not limited to employees, directors, officers, principals and executives of the Contractor, are covered by WSIB insurance.

.5 Contractor warrants and certifies to the Owner that each of the Contractor's personnel, including but not limited to employees, directors, officers, principals and executives of the Contractor, are covered by WSIB insurance.

.6 Contractor shall defend, indemnify and hold harmless the Owner against any and all claims made due to failure to pay WSIB premiums or provide WSIB coverage for any person engaged by the Contractor, directly or indirectly, for Work of this Contract.

.7 Obtain a valid WSIB Certificate of Clearance from each Subcontractor or Supplier prior to releasing payment to the subcontractor or Supplier. Indemnify and hold harmless the Owner against any failure of the contractor to Obtain valid Subcontractor's or Supplier's WSIB Certificate of Clearance prior to releasing payment to respective Subcontractor or Supplier.

1.5 SCHEDULE OF VALUES

.1 Refer to Section 01 22 10 Contract Values & Unit Prices.

.2 Costs of temporary facilities and utilities shall be amortized over the duration of the Work. Claims for 'mobilization', 'bidding costs', or similar lump sums at or before start of work not acceptable.

1.6 ANTICIPATED SCHEDULE OF PAYMENTS

.1 Provide monthly anticipated Schedule of Payments for the Owner's budgeting purposes.

1.7 APPLICATIONS FOR PROGRESS PAYMENT

.1 In addition to other requirements of the Contract, the following information applies to applications for payments, and applications under the Construction Lien Act.

.2 Progress applications:

.1 Progress applications for payment shall indicate the value complete of each item in the Schedule of Values, percentage complete to date of application, value previously certified for payment by the Consultant, and value of work remaining. Refer to 01 29 10 – Sample Invoice Format for ample progress invoice format. All values shall be exclusive of HST, except that HST shall be applied to the total amount claimed, and the value of HST indicated on the application.

.2 Include a summary of changes with application for payment, showing values complete.

.3 No payment will be made for Products ordered or manufactured, but not yet delivered to the Place of the Work.

.4 Include evidence to support claims for Products delivered to the Place of the Work, but not yet incorporated into the Work, as the Consultant may require to establish the value and delivery of the products

.5 Products delivered to the Place of the Work are the property of the Owner and shall not be removed without the Owner's consent, except where rejected as defective products or removed as legitimate debris.

.6 In addition to other requirements, progress applications shall indicate the cost of the following items as separate items:

.1 Bonds

.2 Insurances

.3 Temporary facilities and controls

.4 Contract closeout, record and as-built drawings, maintenance and operating manuals.

.3 Make applications for payment on account as monthly as Work progresses.

.4 Accompany applications with a CCDC 9A-2001 Statutory Declaration form.

.5 Date applications for payment last day of agreed payment period and ensure amount claimed is for value, proportionate to amount of Contract, of Work performed and Products delivered to Place of Work as of that date.

.6 Submit to Consultant for review, minimum fourteen (14) days before first application for payment, schedule of values for parts of Work, aggregating total amount of Contract Price, so as to facilitate evaluation of applications for payment.

.7 Submit required support documentation with applications for payment, including workers' compensation clearance certificates statutory declarations.

.8 Commencing with the second progress claim a Statutory Declaration shall accompany all applications for payment. Consultant will issue to Owner, no later than ten (10) days after receipt of an application for payment, certificate for payment in amount applied for or in such other amount as Consultant determines to be properly due.

.9 If Consultant amends application, Consultant will give notification in writing giving reasons for amendment.

1.8 PROGRESSIVE RELEASE OF HOLD-BACK

.1 Where legislation permits, if Consultant has certified that Work has been performed prior to Substantial Performance of the Work, Owner will pay hold-back amount retained for such Work, or products supplied, on day following expiration of hold-back period for such Work stipulated in lien legislation applicable to Place of the Work.

.2 Notwithstanding provisions of preceding paragraph, and notwithstanding wording of such certificates, ensure that Subcontract Work or Products is protected pending issuance of final certificate for payment and be responsible for correction of defects or Work not performed regardless of whether or not such was apparent when such certificates were issued.

1.9 SUBSTANTIAL PERFORMANCE OF THE WORK

.1 Applications for a Certificate of Substantial Performance, release of holdback, and Statement of Completion shall be completed in accordance with OAA/OGCA Document 100 Takeover Procedures (latest edition). In document 100, substitute “Consultant” for “Architect”, and “review” for inspection where it appears in relation to the Consultant’s assessment of the work.

.2 Submit a schedule of payments.

.3 Accompany applications with a CCDC 9A-2001 Statutory Declaration form.

.4 Accompany application with current Workers’ compensation Clearance Certificiate.

.5 Prepare and submit to Consultant a comprehensive list of items to be completed or corrected. Failure to include an item on the list does not alter responsibility to complete the Contract.

.6 Request Consultant review to establish Substantial Performance of the Work.

.7 Where permitted by local lien legislation, Contractor may apply for substantial performance of a designated portion of the Work, subject to Owner acceptance of that portion of the Work being substantially performed.

.8 No later than ten (10) days after receipt of list and application, Consultant will review Work to verify validity of application, and no later than seven (7) days after completing review, will notify Contractor if the Work, or the designated portion of the Work, is substantially performed.

.9 Consultant will state in their certificate the date of Substantial Performance of the Work, or the date of the designated portion of the Work, as applicable.

.10 Immediately following issuance of certificate of Substantial Performance of the Work, in consultation with Consultant, establish reasonable date for finishing Work.

1.10 PAYMENT OF HOLD-BACK ON SUBSTANTIAL PERFORMANCE OF THE WORK

.1 Holdback monies will be released in accordance with applicable legislation except that Owner may withhold sufficient funds to protect himself from loss on account of any of the following:

.1 Defective work not remedied.

.2 Delay in performance of the work.

.3 Delay in submission of documentation.

.4 Claims filed or reasonable evidence indicating probable filing of claims.

.5 Overpayment for completed work.

.6 Damaged work caused by Contractor, Subcontractors or Suppliers.

.2 After issuance of Certificate of Substantial Performance of the Work:

.1 Submit an application for payment of hold-back amount.

.2 Submit sworn statement that all accounts for labour, subcontracts, products, construction machinery and equipment, and other indebtedness which may have been incurred in Substantial Performance of the Work and for which Owner might in any way be held responsible have been paid in full, except for amounts properly retained as hold-back or as identified amount in dispute.

.3 Submit proof of Publication of the Certificate of Substantial Performance from the publishing newspaper (Daily Commercial News).

.3 After receipt of application for payment, sworn statement and proof of publication, Consultant will issue certificate for payment of hold-back amount.

.4 Where the Contractor does not publish the Certificate of Substantial Performance within 10 calendar days of the Consultant's issuance of the Certificate, the Owner may, at the Owner's sole discretion, publish the Certificate of Substantial Performance, deducting the cost of the publication from the Contract Price. Cost of publication will include the advertising fees, plus Owner's and Consultant's labour costs charged at regular hourly rates for time involved in arranging publication. Where there are no regular hourly rates, costs shall be charged at hourly salary or wages multiplied by 3.

.5 Where hold-back amount has not been placed in a separate hold-back account, Owner will, within ten (10) days prior to expiry of hold-back period stipulated in lien legislation applicable to Place of the Work, place hold-back amount in bank account in joint names of Owner and Contractor.

.6 Amount authorized by certificate for payment of hold-back amount is due and payable on day following expiration of hold-back period stipulated in lien legislation applicable to Place of the Work.

.1 Where lien legislation does not exist or apply, hold-back amount is due and payable in accordance with other legislation, industry practice, or provisions which may be agreed to between parties.

.2 Owner may retain out of hold-back amount any sums required by law to satisfy any liens against Work or, if permitted by lien legislation applicable to Place of the Work, other third party monetary claims against Contractor which are enforceable against Owner.

1.11 FINAL PAYMENT

.1 Submit an application for final payment. Application to confirm to standards identified in paragraph 1.4- Application for Progress Payment.

.2 Consultant will, no later than ten (10) days after receipt of an application for final payment, review Work to verify validity of application. Consultant will give notification that application is valid or give reasons why it is not valid, no later than seven (7) days after reviewing Work.

.3 Consultant will issue final certificate for payment when application for final payment is determined valid.

1.12 PAYMENT OF FINISHING HOLDBACK

.1 Finishing holdback monies will be released in accordance with applicable legislation once the Consultant deems the project work complete.

.1 Contractor to submit an application for payment for finishing holdback amount.

.2 Submit sworn statement that all accounts for labour, subcontracts, products, construction machinery and equipment, and other indebtedness which may have been incurred in Substantial Performance of the Work and for which Owner might in any way be held responsible have been paid in full, except for amounts properly retained as hold-back or as identified amount in dispute.

.2 After receipt of applicable payment and sworn statement, Consultant will issue Certificate for Payment of finishing holdback amount.

.3 Consultant will issue final certificate for payment when application for final payment is determined valid.

1.13 PERMITTED MARK-UPS

.1 The following maximum net overhead and profit mark-ups by Sub-contractors will be permitted for extra work under Change Order or Change Directive:

.1 Sub-Contractor's Mark-up on Work of Own Forces: 15%.

.2 Sub-Contractor's Mark-up on Subcontracted Work: 10%.

.2 Where a proposed change order includes both credits and extras, overhead and profit mark-ups apply to the net extra or credits, if any, of the entire change.

1.14 SUPPLEMENTAL INSTRUCTIONS

.1 Field Instructions, Site Instructions and/or Supplemental Instructions (hereinafter called Supplemental Instructions) are issued only for the purpose of recording any clarifications or interpretation of the Contract Documents or giving direction on field conditions. These instructions are subject to the provisions of the Contract Documents and unless stated herein and specifically co-authorized by the Owner, will not affect the Contract Price or Contract Time.

.2 If in the opinion of the Contractor a Supplemental Instruction involves an increase in the Contract Price or Contract Time, the Contractor shall within 7 working days of receipt of the Supplemental Instruction advise the Consultant in writing accordingly, complete with an itemized proposal. Failure to provide written notification within time stipulated shall be deemed acceptance of Supplemental Instruction by the Contractor without any increase to the Contract Price or Contract Time.

.3 Where the Contractor requests a change in Contract Time or Contract Price due to the provisions of Supplemental Instruction, the Contractor shall not proceed with any work of the Supplemental Instructions until directed. If the Owner accepts the proposal, the Supplemental Instructions will be issued as a Change Order.

.4 Where, in the reasonable opinion of the Consultant or the Owner, the Supplemental Instruction involves a decrease in the Contract Price or Contract Time, the Consultant or the Owner through the Consultant shall advise the Contractor of such opinion, including the details of the proposed adjustment, in writing prior to the final payment being made. The Contractor shall provide satisfactory evidence that an adjustment is not warranted, failing which the Owner shall proceed to deduct the applicable amount from final payment or adjust the Contract Time, as the Case may be. Where, in the opinion of the Consultant or the Owner the Supplemental Instruction warrants a decrease in Contract Time or Contract Price, the Consultant or the Owner through the Consultant shall so advise the Contractor prior to release of final payment.

1.15 VALUATION OF CHANGES IN THE WORK

.1 Contract the method to be used in determining the value of a change to the Work, by either Change Order or Change Directive, shall be:

.1 estimate and acceptance in a lump sum, unless the Consultant otherwise determines that the method shall be one of:

.2 unit prices set out in the Contract.

.3 cost and a fee.

.2 Where methods 1.14.1.or 1.14.2 are used the Contractor shall provide the Consultant with a detailed cost analysis of the contemplated change indicating:

.1 quantity of each material.

.2 unit cost of each material.

.3 time involved.

.4 subtrade quotations including a complete analysis of costs.

.5 markups, if applicable.

.6 value of HST

.7 proposed change in Contract Time.

.3 Where method 1.14.3 is used, propose a fee, and a method for determining cost, and any proposed change in Contract Time.

.4 The following shall not be included in the cost of the work but are covered by the allowance (mark-ups) for overhead and profit:

.1 The Contractor's head office and site office expenses, including stationary, postage and other office supplies.

.2 The costs of the Contractor's Project Manager, clerical and administrative personnel, and executive personnel.

.3 Use of temporary offices, sheds, small tools, etc., including the cost of telephone, light, power, water and heat used therein,

.4 Transportation and overnight room expenses for out of town labour, if local labour is available.

.5 Insurance premiums.

.6 Licenses and permits, except when these are special for a particular item of work.

.7 Printing charges for Proposed Changes, Change Orders and Drawings for Contractor's and Subcontractors' use in the work. Consultant will provide one copy of change notice documentation and in the event of re-issue of full size drawings will provide one reproducible and one print.

.8 The cost of record drawings and shop drawings.

.9 The cost of clean up and disposal of waste material.

.5 The Contractor shall not be entitled to any additional compensation arising out of changes to the Work other than the amounts determined and agreed to under the contract.

.6 The maximum percentage fee for markups shall be as stated above.

.7 In computing accounts for extras and credits for any Proposed Change, all credits shall be deducted from the total sum of the extras before markups or charges for overhead and profit are added.

.8 The Contractor shall inform the Surety Company or Companies who have issued any bonds for this Contract, and any Insurers who have insured any apart of the work or operations or who have an interest in this Contract, of all changes in the

Contract. Pay all costs of any changes in bonds or insurances required to maintain bonds or insurances in conformance with the requirements of the Contract Documents. Provide Owner immediately with any revised bonds or insurances.

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

1.0 Sample Invoice Format

.1 Refer to Section 01 29 00 for Payment Procedures

.2 The following illustrates a sample format to follow when submitting progress invoices. Values shown are for illustration purposes only. Provide actual project name and numbers, City's purchase order number and name of Owner's representative on completed invoices. Variations from this format are acceptable where all of the information indicated below is provided.

.3 Invoice shall bear be printed on the Contractor's corporate letterhead or otherwise bear the Contractor's name, address, telephone number, HST registration numbers.

Project Coordinator
Name
Position Title
City Title
Address
City, ON POSTAL CODE

Project: City Title
Project Title
Consultant Project No. #####
Date:

Application for Payment No. XX

City Purchase Order No.: XX

Contract Summary

1	Original *Contract Price* (excluding HST)	$100,000.00	
2	Change Orders	$2,000.00	
3	Current Value of Change Directives Certified	$0.00	
4	Value of *Contract Price* on last day of payment period (1+2+3)	$102,000.00	$102,000.00
5	*Value Added Taxes* @ 13%		$15,650.00
6	Total amount payable for the construction of the *Work* including Value Added Taxes (4+5)		$117,650.00

Payment Application Summary

7	Total Value Requested to be Certified	$45,000.00	
8	Total Holdback @ 10%	4,500.00	
9	Holdback Released	$0.00	
10	Current Holdback (8-9)	$4,500.00	
11	Amount (value of *Work* performed and products delivered to the Place of Work less holdback retained (7-10)	$40,500.00	$40,500.00
12	Less amount from previous certificate for payment	$15,000.00	
13	Amount of Contract Price invoiced for current period (11-12)	$25,500.00	$25,500.00
14	Value Added Taxes @ 13%	$3,315.00	$3,315.00
15	**Total Amount Invoiced including Value Added Taxes (13+14)**		**$28,815.00**

Invoice to be signed by Contractor

Name, credentials and position of person signing
attachments ***(WSIB, summary of change orders, contract price breakdown, substantiation for cash allowance expenditures, Statutory Declaration, etc.)***
Contractor's HST Registration No.: _____

Part 1 General

1.1 SECTION INCLUDES

.1 Schedules, form, content, submission.

.2 Construction Progress scheduling.

.3 Submittals schedule.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 This section describes requirements applicable to all Sections.

1.3 SUBMITTAL SCHEDULE

.1 Indicate dates for submitting, review time, resubmission time, and last date for meeting fabrication schedule.

.2 Include dates when reviewed submittals will be required from Consultant.

.3 Submit schedules as follows:

- .1 Submittal Schedule for Shop Drawings and Product Data.
- .2 Submittal Schedule for Samples.
- .3 Submittal Schedule for Mock-ups.

.4 Format and Content:

- .1 Prepare schedule in form of a horizontal bar chart.
- .2 Provide a separate bar for each major item of work.
- .3 Split horizontally for projected and actual performance.
- .4 Provide horizontal time scale identifying first Working Day of each week.
- .5 Format for listings: Chronological order of start of each item of Work.
- .6 Identification of listings: By systems description.
- .7 Prepare schedule identifying all required Shop Drawings, Product data, and sample submissions including those for Owner supplied Products.
- .8 Prepare schedule in electronic format.

.5 Submission of Schedule:

- .1 Submit initial schedule to Consultant within 20 Working Days after Contract award.
- .2 Submit schedule via e-mail as .pdf.
- .3 Consultant will review format and content of initial schedule and request necessary changes, if any, within 5 Working Days after receipt.
- .4 If changes are required, resubmit finalized schedule within 5 Working Days after return of review copy.
- .5 Submit updated submittals schedule monthly to Consultant.

1.4 DAILY LOG

.1 Maintain a daily log recording the following data:

.1 An address directory recording the names, address and telephone number of the representative of all subcontractors, trades and suppliers doing Work or supplying material for project.

.2 Record briefly various items of Work being carried out on each day including the number of workers and amount of Work completed.

.3 Record ordering dates and receiving dates of material F.O.B. job site to the site.

.4 Record accidents and first aid given.

.2 Daily log shall be open to review by the Consultant and by the City. Upon request, provide copy of log to City or Consultant.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Shop drawings and product data.

.2 Samples.

.3 Certificates and transcripts.

1.2 RELATED SECTIONS

.1 Section 01 32 00 - Construction Progress Documentation.

.2 Section 01 78 10 - Closeout Submittals.

.3 Other sections requesting submittals.

.4 This section describes requirements applicable to all Sections.

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 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.

.3 Allow ten (10) days for Consultant's review of each submission.

.4 Shop Drawing submittals shall include:

.1 Contractor’s stamp, date, and signature of Contractor’s authorized representative responsible for Shop Drawing review, indicating that each Shop Drawing has been reviewed and compliance with Contract Documents and, where applicable, that field measurements have been verified.

.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 any revisions other than those requested.

.7 Accompany submissions with [duplicate] transmittal letter, containing:

.1 Date.

.2 Project title and number.

.3 Contractor's name and address.

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

.5 Other pertinent data.

.8 Submissions shall include:

.1 Date and revision dates.

.2 Project title and number.

.3 Name and address of:

.1 Subcontractor.

.2 Supplier.

.3 Manufacturer.

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

.5 Details of appropriate portions of Work as applicable:

.1 Fabrication.

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

.3 Setting or erection details.

.4 Capacities.

.5 Performance characteristics.

.6 Standards.

.7 Operating weight.

.8 Wiring diagrams.

.9 Single line and schematic diagrams.

.10 Relationship to other parts of the Work.

.9 After Consultant's review, distribute copies.

.10 Submit electronic copy of Shop Drawings for each requirement requested in specification Sections and as consultant may reasonably request.

.11 Submit 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 Delete information not applicable to project.

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

.14 Consultant’s notations on submittals are intended to ensure compliance with Contract Documents and are not intended to constitute a change in the Work requiring change to the Contract Price or Contract Time. If Contractor considers any Consultant’s notation to be a change in the Work, promptly notify the Consultant in writing before proceeding with the Work.

.15 Resubmit corrected submittals through same procedure indicated above, before any fabrications or installation of the Work proceeds. When resubmitting, notify Consultant in writing of any revisions other than those requested by Consultant.

.16 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 re-submission of corrected Shop Drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

.17 Shop drawings shall be prepared specifically for project shall be fully dimensioned. Use of standard drawings or brochures is acceptable only if accompanied by drawing showing product in assembled form and showing its relation to adjacent work, methods of anchorage, and other relevant information. Catalogue pages alone are not acceptable. All shop drawings must be to scale.

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.

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

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

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

.8 Keep all approved samples at Place of the Work. Maintain in good order and available to the Consultant and his or her representatives for the duration of the Work.

1.5 MOCK-UPS

.1 Refer to Section 01 45 00 – Quality Control.

1.6 CERTIFICATES AND TRANSCRIPTS

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

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

1.7 PRELIMINARY SUBMITTAL AND MOCK-UP CHECKLIST

Timing	Item	Description of Submittal	Specification Reference No.
1.0 With Bid	1.1	Bid Form	Bid Form
	1.2	Addenda Inclusion	Bid Form
	1.3	Schedule 1 – Tender Price Schedule with List of Subtrades/Suppliers	Bid Form
	1.4	Schedule 2 – Separate, Itemized & Alternate Prices	Bid Form
	1.5	Schedule 3 - Unit Prices	Bid Form
	1.6	Bid Bond	00100
	1.7	Agreement to Bond	00100
	1.8	Mandatory Site Visit Attendance	Bid Form/ 00100
	1.9	Appendices inclusion	Bid form
	1.10	Signed “Undertaking of Insurance” on standard form	00 21 13 / CCDC-2-2008
2.0 Before	2.1	Performance Bond	00600
	2.2	Material and Labour Bond	00600
	2.3	Certificate of Third Party Liability Insurance	submitted in prequalification
3.0 1 week After Signing	3.1	Transcript of Insurance	01 33 00
	3.2	Proof of good standing with Workplace Safety and Insurance Board of Workers Compensation Board - for General Contractor and all Subcontractors	01 33 00
	3.3	On-site Contingency and Emergency Response Plan	01 33 00
	3.4	Construction Progress Schedule Format	G.C. 3.5 / 01 32 00
4.0 2 week After Signing	4.1	Schedule of Values	G.C. 5.2/ 01 22 10
	4.3	Schedule of Payment	01 29 00
	4.4	Schedule of Site Meetings	01 31 00
	4.5	Construction Progress Schedule	01 32 00
	4.6	Submittal Schedule	01 32 00
	4.7	General Contractor Method Statement and Compound Layout	01 33 00
	4.8	Qualification Statements for GC Superintendent and Site Personnel	Prequal
	4.9	'Notice of Project' in compliance with OHSA	01 35 23
	4.10	Qualification Statements for Subcontractor - Scaffolding, Stair Towers and Hoists	01 52 10
	4.11	Shop Drawings and Product Data for Scaffold	01 52 10
	4.13	List of required no. of sets of Document (Prints and Electronic) for Construction.	-
5.0 Prior to Mobilization	5.1	Health and Safety Plan	01 35 23
	5.2	SDS Sheets	01 35 23
	5.3	Shop Drawings – Scaffolding, etc.	01 52 10

6.0 To Accommodate Construction Schedule	6.1	Shop Drawings - Temporary construction support and attic weather protection	01 53 00
	6.2	Selective Demolition – Method Statement	02 41 19
	6.3	Selective Demolition – Survey Conditions	02 41 19
	6.4	Masonry Restoration – Method Statement	04 03 40
	6.5	Masonry Restoration – Survey Conditions	04 03 40
	6.6	Masonry Restoration – Repair Inventory	04 03 40
	6.7	Masonry Restoration – Qualification Statement	04 03 40
	6.8	Masonry Restoration – Samples	04 03 40
	6.9	Masonry Restoration – Product Data Sheets and MSDS Sheets	04 03 40
	6.10	Masonry Restoration – Daily log of date, temperature, masons	04 03 40
	6.11	Masonry Restoration – Qualification Statement, installer qualifications	04 03 40

	6.12	Restoration Mortar - Samples of Cured Mortar	04 03 41
	6.13	Restoration Mortar - Clean sample to determine acceptability of match	04 03 41
	6.14	Restoration Mortar - Product Data Sheets and MSDS Sheets	04 03 41
	6.15	Woodwork Restoration - Method Statement	06 35 00
	6.16	Woodwork Restoration - Site Inventory	06 35 00
	6.17	Woodwork Restoration - Shop Drawings	06 35 00
	6.18	Woodwork Restoration - Qualification Statement	06 35 00
	6.19	Sheet Metal Roofing Restoration - Samples of typical, material, and finish	07 03 73
	6.20	Sheet Metal Roofing Restoration - Mock-up of Installation	07 03 73
	6.21	Sheet Metal Roofing Restoration - Product Data Sheets and MSDS Sheets	07 03 73
	6.22	Joint Sealants - Product Data	07 92 00
	6.23	Joint Sealants - Shop Drawings	07 92 00
	6.24	Joint Sealants - Samples	07 92 00
	6.25	Joint Sealants - Applicator qualifications	07 92 00
	6.26	Joint Sealants - Installation Data	07 92 00
	6.27	Restoration Painting - Product Data	09 03 98
	6.28	Restoration Painting - Samples of colour and luster	09 03 98
	6.29	Restoration Painting - Paint Schedule	09 03 98
	6.30	Restoration Painting – Qualification Statement	09 03 98
7.0 Close-Out	7.1	Operating and Maintenance Manuals	01 78 10
	7.2	As- built Documents and Samples	01 78 10
	7.3	Warranty	01 78 36
	7.4	Record Documents	01 78 10

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Safety requirements and adherence.

1.2 RELATED SECTIONS

.1 Section 01 31 00 - Project Managing and Coordination.

.2 Section 01 33 00 - Submittal Procedures.

.3 This section describes requirements applicable to all Sections within.

1.3 REFERENCES

.1 Province of Ontario: Occupational Health and Safety Act, Regulation and Code R.S.A -Amended 1995, including requirements for a "Prime Contractor" as defined by the Act.

.2 The Ontario Building Code 2006 (OBC) as amended.

.3 Canadian Construction Safety Code 659/79, Workers' Compensation Board and regulations, by-laws and municipal statutes of other authorities having jurisdiction including the latest amendments thereto; all hereafter referred to as Code.

.4 Fire Protection and Prevention Act 1997, the Ontario Fire Code 0. Reg 398/98, 428/98, 475/00, and 315/01.

.5 National Fire Protection Association (NFPA) 101, Life Safety Code for exit requirements.

.6 In the event of conflict between any provisions of above authorities, the most stringent provision will apply.

1.4 SAFETY PLAN

.1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any 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.

1.5 RESPONSIBILITY

.1 The "Prime Contractor" according applicable local jurisdiction, is 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 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.

.3 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, and follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of [Province] [Territory] having jurisdiction. Advise Consultant verbally and in writing.

1.6 SUBMITTALS

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

.2 Submit site-specific Health and Safety Plan: Within seven (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.

.3 Submit copy of Contractor's authorized representative's Work Site Health and Safety Inspection Reports to 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 Safety Data Sheets (SDS) to Consultant.

.7 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.

.8 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.

.9 File Notice of Project with Provincial authorities prior to commencement of Work.

1.7 SAFETY ACTIVITIES

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

.2 Schedule and administer Health and Safety meeting with Consultant prior to commencement of Work.

.3 Perform Work in accordance with Section 01 41 00 - Regulatory Requirements and this Section.

1.8 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.

1.9 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.

1.10 HAZARDOUS MATERIALS

.1 Hazardous materials shall not be introduced for experimental or any other use prior to being evaluated by the Consultant.

.2 Make known and hazardous materials to be used and method of application before using. Be responsible for storage and proper safety requirements.

1.11 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.

1.12 FIRE PROTECTION

.1 Provide and maintain temporary fire protection equipment during performance of Work required by governing codes, regulations and bylaws.

.2 Provide fire extinguishers as required by the stricter of the Occupational Health and Safety Act and regulations made thereunder, and the Ontario Fire Code.

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

.4 Particular attention shall be paid to the elimination of fire hazards.

.5 Take all necessary precautions to prevent fire, and to prevent damage to buildings, materials, personnel, equipment, furnishings and chattels.

.6 Comply with Owner and City directives regarding fire safety.

.7 Flammable Liquids:

.1 Flammable liquids are to be kept to a minimum and shall be stored in approved safety containers. Obtain Owner prior approval for storing flammable and combustible liquids in occupied buildings.

1.13 COMPRESSED GAS OR EXPLOSIVE – ACTUATED FASTENER TOOLS

.1 Use explosive-actuated and compressed gas fastener tools only under strictest safety conditions. Keep equipment locked in storage cabinet unless in active use by personnel. Equipment shall not be left unattended, or be accessible to anyone other than authorized user.

Part 2 **Products** (Not Used)

Part 3 **Products** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Site fires.

.2 Site Drainage.

.3 Pollution control.

1.2 RELATED SECTIONS

.1 Section 01 35 43 - Hazardous Materials.

.2 Section 01 74 00 - Cleaning and Waste Processing.

.3 This section describes requirements applicable to all Sections.

1.3 FIRES

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

1.4 DRAINAGE

.1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.

.2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.

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

1.5 POLLUTION CONTROL

.1 Maintain temporary erosion and pollution control features installed under this contract.

.2 Control emissions from equipment and plant to local authorities emission requirements.

.3 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.

.4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Historic significance of Product or entity.

.2 Restoration procedures.

.3 Historic artifacts.

.4 Salvaged materials.

.5 Alterations.

.6 Hazardous material procedures.

1.2 RELATED SECTIONS

.1 Section 01 35 43 - Hazardous Materials.

.2 This section describes requirements applicable to all sections.

1.3 DEFINITIONS

.1 Match Existing: Provide new materials to match existing, in place material in all aspects as closely as possible. Existing materials are those which are visible in whole or in part in the building.

.2 Match Original: Provide new materials to match original material in all aspects as closely as possible. Original materials are those which were originally installed in the building at the time of its completion, prior to previous alterations, and which may predate existing materials.

.3 Preservation: The act or process of applying measures necessary to sustain existing form, integrity, and materials of an historic property.

.4 Reconstruction: The act or process of reproducing, by means of new construction, form, features, and detailing of a non-surviving building, structure, or object for purpose of replicating its appearance at a specific period of time and in its historic location.

.5 Restoration: The act or process of accurately depicting form, features, and character as it appeared at a particular time by means of removal of features from other periods in its history and reconstruction of missing features from the restoration period.

1.4 HERITAGE SIGNIFICANCE

.1 Coronation Hall was officially opened on December 19, 1911. The hall was designated under Part IV of the *Ontario Heritage Act* by the City of Kawartha Lakes in 2003 with By-Law 2003-38.

.2 Character Defining Elements:

.1 Character defining elements that contribute to the heritage value of Coronation Hall include its:

.1 Prominent siting and location on King Street West and Sturgeon Road

.2 Massing and structure of the original building (excluding the East addition)

.3 Symmetrical organization of the South (King Street) façade

.4 Original roof massing, combination of flat and sloped roofs

.5 Brick masonry cladding

.6 Wood cornice with stucco banding

.7 Original window and door openings

.8 Brick chimneys

.9 Original South entrances including canopy structures (including canopy over infilled SW entrance

.10 Interior organization and massing of the auditorium

.11 Balcony form, balcony rail, structure, and log columns

.12 Original balcony seating

.13 Extant original wood doors

.14 Extant original wood trim

.15 Interior plaster finishes, including crown moulding

1.5 QUALITY ASSURANCE

.1 Historic Significance:

.1 Coronation Hall was designated under Part IV of the Ontario Heritage Act by the City of Kawartha Lakes in 2003 with By-Law 2003-38.

.2 Due to its unique historical significance, special procedures and precautions shall be used in selective demolition and restoration.

.3 Since its inception in 1911, the building has gradually refurbished over the years with an extension being added on.

.2 General Restoration Procedures:

.1 Preserve existing materials, finishes, and profiles.

.2 Blend new and existing Work to provide smooth transitions and uniform appearance.

.3 Cease Work, notify Consultant, and await instructions if materials or conditions encountered at the site are not as indicated by the Contract Documents or if structure is in danger of movement or collapse.

.3 Historic Artifacts: If artifacts of a historic nature are encountered during the Work:

.1 Cease Work in affected area immediately.

.2 Protect artifacts from damage.

.3 Notify Owner and [Consultant] and await instructions.

.4 Salvage or dispose of artifacts as directed by Owner.

Part 2 Products

2.1 MATERIALS

.1 New Materials:

.1 Provide new materials to match existing adjacent materials or original materials for closing of openings, repairs, and reconstructions where suitable salvaged materials do not exist, are insufficient in quantity, or where reuse is not permitted.

.2 Retain samples of existing materials on site for comparison purposes.

.3 Match existing materials in material, type, size, quality, color, finish, and other attributes.

.2 Reused Materials:

.1 Clean and prepare salvaged materials for reuse.

.2 Do not use materials with objectionable chips, cracks, splits, dents, scratches, or other defects.

.3 Repair operable items to function properly.

Part 3 Execution

3.1 PREPARATION

.1 Test materials to be used in repairs for compatibility with existing materials; do not use incompatible materials.

.2 Cut, move, or remove items to provide access for alterations and restoration Work. Replace and restore upon completion.

.3 Protect existing materials and surfaces from damage by construction operations.

3.2 ALTERATIONS

.1 Coordinate alterations and renovations to expedite completion.

.2 Minimize damage to existing materials and surfaces; provide means for restoring Products and finishes to their original or specified new condition.

.3 Remove unsuitable materials not marked for salvage.

.4 Remove debris and abandoned items from areas of Work and from concealed spaces.

.5 Refinish visible surfaces to specified condition, with neat transition to adjacent surfaces.

.6 Install Products and finish surfaces as specified in individual sections, or where no specification section exists, to match existing.

.7 Finish patches to provide uniform color and texture over entire surface, with repairs not discernible from normal viewing distance. If finish cannot be matched, refinish entire surface to nearest intersections.

.8 Rework finished surfaces to smooth plane, without breaks, steps, or bulkheads:

.9 Where new Work abuts or aligns with existing, provide smooth and even transition.

.10 Where a change in plane of 1/4 inch or more occurs, submit recommendation to Consultant for transition.

.11 Where alterations expose mechanical and electrical components which were previously concealed, rework to be concealed in completed Work.

3.3 HAZARDOUS MATERIAL PROCEDURES

.1 If hazardous or suspected hazardous materials are encountered:

.1 Stop Work in affected area immediately.

.2 Notify Consultant and await instructions.

.3 Prevent damage to materials.

.4 Prevent human contact.

.5 Owner will arrange for abatement or removal of hazardous materials under a separate contract.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Laws, notices, permits, and fees.

.2 Discovery of hazardous materials.

1.2 RELATED SECTIONS

.1 This section describes requirements applicable to all Sections.

1.3 LAWS, NOTICES, PERMITS AND FEES

.1 The laws of the Place of the Work shall govern the Work.

.2 The Owner shall obtain and pay for the building permit, permanent easements and rights of servitude. The Contractor shall be responsible for permits, licenses or certificates necessary for the performance of the Work which were in force at the date of executing the Agreement.

.3 Give the required notices and comply with the laws, ordinances, rules, regulations or codes which are or become in force during the performance of the Work and which relate to the Work, to the preservation of the public health and to construction safety.

.4 If the Contractor knowingly performs or allows work to be performed that is contrary to any laws, ordinances, rules, regulations or codes, the Contractor shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations or codes.

.5 Determine detailed requirements of authorities having jurisdiction.

1.4 HAZARDOUS MATERIAL DISCOVERY

.1 Asbestos: If material resembling asbestos is encountered in course of demolition work, immediately stop work and notify Consultant.

1.5 PERSONNEL SMOKING

.1 Comply with regulatory and Owner imposed smoking restrictions during execution of the Work within or outside the premises.

Part 2 **Products** (Not Used)

Part 3 **Products** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Quality assurance criteria.

1.2 RELATED SECTIONS

.1 Section 01 45 00 - Quality Control.

.2 This section describes requirements applicable to all Sections.

1.3 QUALITY ASSURANCE

.1 Testing organization: Current member in good standing of their respective professional or industry organization and certified to perform specified services.

.2 Comply with applicable procedures and standards of the certification sponsoring association.

.3 Perform services under direction of supervisor qualified under certification requirements of sponsoring association.

.4 Qualifications:

.1 Provide adequate workforce training through meetings and demonstrations.

.2 Have someone on site with deconstruction experience throughout project for consultation and supervision purposes.

1.4 QUALITY OF WORK

.1 Work shall be of the best quality, executed by workers experienced and skilled in the respective duties for which they are employed. Immediately notify the Consultant if required Work is such as to make it impractical to produce required results.

.2 Do not employ any unfit persons or anyone unskilled in their required duties.

.3 Decisions as to the quality or fitness of workmanship in cases of dispute rest solely with the consultant, whose decision is final.

.4 All Contractor personnel are restricted to the job site and necessary access routes. No personnel shall visit other areas or building without specific authorizations.

.5 Pre-qualified [subcontractors] [craftsman] named in the Contractor's Bid Form shall be engaged for Work of this Contract including and not limited to preforming required mock-ups and overseeing of associated Work. Contractor to submit list of names as per Bid form for Consultant's review.

Part 2 **Products** (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Inspection and testing, administrative and enforcement requirements.

.2 Mock-ups.

.3 Written and electronic reports.

.4 Equipment and system adjust and balance.

1.2 RELATED SECTIONS

.1 Section 01 43 00 - Quality Assurance.

.2 This section describes requirements applicable to all Sections.

1.3 INSPECTION BY AUTHORITY

.1 Allow Authorities Having Jurisdiction 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 The Contractor shall arrange all inspections required by Authority(s) Having Jurisdiction.

.3 Give timely notice requesting inspection whenever portions of the Work are designated for special tests, inspections or approvals, either when described in the Contract Documents or when required by law in the Place of the Work.

.4 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.

.5 Where Owner feels it necessary, for any reason whatsoever, the Owner may also arrange for the Authority(s) Having Jurisdiction to attend at the Work site.

1.4 REVIEW BY CONSULTANT

.1 Consultant may order any part of the Work to be reviewed or inspected if Work is suspected to be not in accordance with Contract Documents.

.2 If, upon review such work is found not in accordance with Contract Documents, correct such Work and pay cost of additional review and correction.

.3 If such Work is found in accordance with Contract Documents, Owner will pay cost of review and replacement.

1.5 ACCESS TO WORK

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

.2 Cooperate to provide reasonable access and facilities for such access.

.3 Contractor's Responsibilities:

.1 Contractor's Responsibilities
- .1 Provide equipment required for executing inspection and testing by appointed agencies. Facilitate inspections and tests.
- .2 Co-ordinate with, and supply all materials for inspection and testing purposes as requested by the inspection and testing company.
- .3 Make good work disturbed by inspection and testing.
- .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.

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 materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.

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

1.7 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 may deduct from Contract Price the difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Consultant.

1.8 REPORTS

.1 Submit one (1) electronic copy of signed inspection and test reports to Consultant.

.2 Provide signed paper copies to Subcontractor of work being inspected or tested.

1.9 MOCK-UPS

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

.2 No Work is to proceed prior to Consultant’s approval.

.3 Construct in all locations as specified in specific Section. Where location is not specified, obtain direction from Consultant. Mock-up location to be identified through visual means.

.4 Prepare mock-ups for Consultant's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.

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

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

.7 Where mock-up(s) are not incorporated into the Work, remove mock-up at conclusion of Work or when acceptable to Consultant. Repair any damage and clean-up at place of mock-up.

.8 Entire mock-up to be removed if not followed prescribed procedure.

.9 Approved mock-up may remain as part of Work at Consultant's discretion. .

.10 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed.

.11 Selected mock-up to be performed in front of Consultant.

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Temporary utilities.

.2 Salvaging products for reuse.

1.2 RELATED SECTIONS

.1 Section 01 52 00 - Construction Facilities.

.2 Section 01 53 00 - Temporary Construction.

1.3 INSTALLATION AND REMOVAL

.1 Provide temporary utilities controls in order to execute work expeditiously.

.2 Salvage and assist in recycling products for potential reuse.

.3 Remove from site all such work after use.

.4 This section describes requirements applicable to all Sections.

1.4 WATER SUPPLY

.1 Owner will provide continuous supply of potable water for construction use.

1.5 TEMPORARY POWER AND LIGHT

.1 Owner will provide a source for, and pay the costs of temporary power during construction for temporary lighting and operating of power tools, to a maximum supply of 120 volt, 30 amps.

.2 Provide and pay for temporary power for electric cranes and other equipment requiring temporary power in excess of above noted requirements.

1.6 TEMPORARY COMMUNICATION FACILITIES

.1 Email capable smart phones are acceptable.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Office and sheds.

.2 Parking.

.3 Project identification.

1.2 RELATED SECTIONS

.1 Section 01 51 00 - Temporary Utilities.

.2 This section describes requirements applicable to all Sections.

1.3 INSTALLATION AND REMOVAL

.1 Provide construction facilities in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.4 SCAFFOLDING

.1 Provide and maintain ladders, platforms, and scaffolding as required to complete the work.

1.5 HOISTING

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

.2 Hoists shall be operated by qualified operator.

1.6 ELEVATORS/LIFTS

.1 Elevators/lifts may not be used by construction personnel or transporting of materials.

1.7 USE OF THE WORK

.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 a weight or force that will endanger the Work.

1.8 CONSTRUCTION PARKING

.1 Parking will be available in the mobilization area highlighted in documentation.

1.9 SECURITY

.1 Comply with Owner's policy and practices regarding site and building security. Do not reduce level of security afforded to building and site by Work of this Contract.

.2 The Contractor is responsible for arranging access for all workers and sub-contractors.

.3 Ensure all doors are locked and secured prior to leaving the site.

1.10 OFFICES

.1 An official site office is not required.

.2 Provide a clearly marked and fully stocked first-aid case in a readily available location.

1.11 EQUIPMENT, TOOL AND MATERIALS STORAGE

.1 Provide and maintain, in a 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 a manner to cause least interference with work activities.

1.12 SANITARY FACILITIES

.1 Post notices and take such precautions as required by local health authorities.

.2 Periodically remove wastes from Site.

.3 Existing sanitary facilities may be used.

.4 Keep sanitary facilities clean and fully stocked with the necessary supplies at all times.

1.13 DISCOVERED VALUABLES

.1 All articles, such as relics, antiquities, or items of historical or scientific interest which may be discovered during demolition, dismantling, or excavation of the place of Work are the property of the Owner and shall be immediately delivered into the custody of the Owner.

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

PART 1 General

1.1 SECTION INCLUDES

.1 Section 01 35 26 – Environmental Protection.

.2 Section 01 51 00 – Temporary Utilities.

.3 Section 01 52 00 – Construction Facilities.

.4 Section 01 53 00 – Temporary Construction.

.5 Division 4 – Masonry.

1.2 GENERAL

.1 Scaffolding, stair tower(s) and hoist(s) shall all be the responsibility of the General/Masonry Contractor and shall not be transferred.

.2 Design, construction and maintenance of scaffolding system required for the convenient use of all contractors and consultant/public to provide access to all portions of the work and all surfaces of the parapets. This Division will provide for complete cost of this section.

.3 Scaffolding shall stay in place until all final inspections by Consultant have been concluded and Consultant has given instructions in writing to remove scaffolding.

.4 Provide scaffolding for all work areas, complete with stair tower(s) and electrically powered hoisting equipment for access of materials to all levels.

.5 The Contractor shall provide and maintain scaffold and hoist(s) free of charge to all subcontractors, Owner and Consultant.

.6 At commencement of work provide protection for face of building, from beneath limit of work.

1.3 QUALITY ASSURANCE

.1 Work of this Section can only be performed by scaffolding companies experienced in working on designated heritage buildings.

.2 As per Section 01 33 00 Submittal Procedures, submit Qualification Statements, indicating a minimum of three (3) similar projects and associated references, on heritage buildings, whereby the scaffolding erected was similar to this project.

1.4 SUBMITTALS

.1 Submit detailed shop drawings bearing seal and signature of professional engineer licensed to practice in Ontario. Engineer to have at least five (5) years' experience designing scaffolding and hoists. Shop drawings to include for all aspects of the scaffold including weather protection, cold weather protection, stair tower(s) and hoist(s).

.2 Submit engineer's design calculations, including loadings on existing structures and analysis of existing structure's ability to sustain these loads for review by Consultant.

.3 Shop drawings of scaffold to be submitted within two weeks of award of contract.

.4 Submit written approval from authorities having jurisdiction for scaffold design.

.5 Entire scaffolding system shall be inspected at the beginning of each one month period by qualified representatives of scaffold supplier, and a written report shall be provided to the Consultant within 48 hours.

.6 Product data on scaffold framing, accessories, decking and mesh.

.7 Submit engineer stamped drawings of any modifications to scaffolding a minimum of 2 weeks prior to requirement for said modifications.

1.5 DESIGN REQUIREMENTS

.1 Assume complete design responsibility for scaffolding system and all associated elements such as stairs, hoists, guardrails, and enclosures.

.2 Comply with most current applicable requirements of:

.1 CSA S269.2-M87 Access Scaffolding for Construction Purposes.

.2 CAN/CSA-Z256-M87 Safety Code for Material Hoists.

.3 Other regulatory requirements such as OHSA, Ministry of Labour, Workers' Compensation Board.

.4 In case of conflict most stringent requirements shall apply.

.3 The scaffolding shall be designed to the following requirements:

.1 Provide and maintain adequate access to the building.

.2 Scaffolding shall enclose the parapets.

.3 Design scaffold working levels adjacent to parapets for 75 psf live load. Design scaffold levels for weight of material plus workmen and tools.

Material may not be stored on the scaffold or moved across the roof except on routes shown on scaffold roof access shop drawing. For design of scaffold ties, bridges and sleepers, assume that workers will be at parapet levels and stone removal will be underway on at least one level.

.4 Scaffolding may be affixed to the Brick Masonry wall utilizing scaffolding anchors. Anchors to be drilled into the mortar joints only.

.5 Scaffolding platforms shall coincide with parapet levels as well as other levels as required to complete the work. Width of working platforms between rows of scaffolding legs shall not be less than 3'-6" clear.

.6 Working platforms must be provided for all work shown on drawings, providing close access to all surfaces of the parapets.

.7 The decking shall be designed to be level throughout each scaffold level thus eliminating all trip hazards.

.8 Provide scaffold complete with guardrails, safety curbs. Covering to be provided to provide adequate shading to masonry to prevent rapid evaporation of mortars and masonry treatments.

.9 Provide overhead protection at all entrances and exits

.10 Provide weatherproof / watertight enclosures at the parapets for the duration of the Work and maintain minimum heat requirements during cold weather work.

.11 Provide water tight protection and enclosures at the roof and upper levels of the scaffolding.

.12 Stair tower(s) to be complete with proper guard and handrails in continuous tower from the construction compound to the roof level. Stair tower(s) to be hoarded with plywood to 8 feet.

.13 Provide electrically powered hoisting elevator of sufficient lifting capacity to all levels of scaffold. Provide, install, maintain, locate where directed and pay costs for hoisting equipment as required. Operate equipment by qualified hoist operator. Trade Sections shall make their own financial and schedule arrangements with Contractor for use thereof.

.14 Provide adequate security lighting at base of scaffold and entirety of stair towers.

.15 Provide adequate security, egress, and work lighting for the entire work areas, stairs hoist, and access areas to allow for work at night and for work within hoarding.

.16 Provide removable outriggers as required to facilitate the work.

.17 Ensure no part of the scaffold other than non-destructive anchors touch the building face in any location. Protect the face of the building at all times from contact from scaffold or scaffolding accessories.

.18 Ensure window openings are protected in the manner shown on the drawings from commencement of project.

1.6 PERMITS

.1 Apply and pay for required permits and security deposits.

1.7 USE OF SCAFFOLDING

.1 Use and maintain scaffolding in safe and secure manner, in accordance with applicable regulatory requirements. Modifications and maintenance are to be carried out by the scaffold supplier.

.2 Ensure that no part of scaffolding is subjected to loading that will endanger its safety, or the safety of the existing building.

.3 Scaffolding shall not be removed until all inspections have been carried out and deficiencies completed to the full satisfaction of the Consultant.

1.8 FIELD QUALITY CONTROL

.1 Professional engineer responsible for design of scaffolding system shall visit site and inspect erected scaffolding immediately after its erection or modification and periodically thereafter but not less than once every month and report his findings in writing with copy to Consultant.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Site enclosure.

.2 Guardrails and barriers.

.3 Weather enclosures.

.4 Protection for off-site and public property.

.5 Protection of applied finishes.

.6 Protection of surrounding Work.

1.2 RELATED SECTIONS

.1 Section 01 51 00 - Temporary Utilities.

.2 Section 01 52 00 – Construction Facilities

.3 This section describes requirements applicable to all Sections.

1.3 SUBMITTALS

.1 Submit shop drawings for all temporary enclosures, structural support, and bracing required to facilitate the work including, but not limited to, weather protection of spaces and temporary support of roof structure.

1.4 INSTALLATION AND REMOVAL

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

.2 Maintain temporary facilities in good operating order.

.3 Remove from site all such work after use.

1.5 SITE ENCLOSURE

.1 Erect and maintain pedestrian walkways including roof and side covers, complete with signs and electrical lighting as required by law in areas of overhead work.

.2 Erect temporary site enclosure using new 8ft high freestanding temporary welded wire fencing panels.

.1 Provide one (1) lockable truck gate.

.2 Maintain enclosure in good repair.

.3 Provide barriers around trees and plants designated to remain.

.4 Protect from damage by equipment and construction procedures.

1.6 GUARD RAILS AND BARRIERS

.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.

1.7 WEATHER ENCLOSURES

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

.2 Design enclosures to withstand wind pressure.

1.8 DUST TIGHT BARRIERS

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

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

1.9 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.

1.10 PROTECTION OF APPLIED FINISHES

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

.2 Provide necessary screens, covers, and hoardings.

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

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

1.11 PROTECTION OF SURROUNDING WORK

.1 Provide protection for finished and partially finished Work from damage.

.2 Provide necessary cover and protection.

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

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Product quality, availability, storage, handling, protection, and transportation.

.2 Product substitution procedures.

.3 Manufacturer's instructions.

.4 Quality of Work, coordination and fastenings.

.5 Existing facilities.

1.2 RELATED SECTIONS

.1 Section 01 62 00 - Product Exchange Procedures.

.2 This section describes requirements applicable to all Sections.

1.3 DEFINITIONS

.1 New: Produced from new materials.

.2 Re-newed: Produced or rejuvenated from an existing material to like-new condition to serve a new or existing service.

.3 Defective: A condition determined exclusively by the Consultant.

1.4 PRODUCT QUALITY

.1 Products, materials, equipment, parts or assemblies (referred to as Products) incorporated in Work: New, not damaged or defective, of best quality (compatible with specification requirements) for purpose intended. If requested, provide evidence as to type, source and quality of Products provided.

.2 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.

.3 Should any dispute arise as to quality or fitness of Products, decision rests strictly with Consultant.

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

.5 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.

1.5 AVAILABILITY

.1 Immediately upon signing Contract, review Product delivery requirements and anticipate foreseeable supply delays for any items.

.2 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.

.3 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.

1.6 STORAGE AND PROTECTION

.1 Store and protect Products in accordance with manufacturers' written instructions.

.2 Store with seals and labels intact and legible.

.3 Store sensitive Products in weather tight, climate controlled, enclosures in an environment favourable to Product.

.4 For exterior storage of fabricated Products, place on sloped supports above ground.

.5 Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of Products.

.6 Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

.7 Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.

.8 Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

1.7 TRANSPORTATION AND HANDLING

.1 Transport and handle Products in accordance with manufacturer's written instructions.

.2 Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.

.3 Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.8 PRODUCT CHANGES

.1 Change in Product/Products: Submit request for substitution or alternative in accordance with Section 01 62 00 – Product Exchange Procedures.

1.9 MANUFACTURER'S WRITTEN INSTRUCTIONS

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

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

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

1.10 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 any 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.

1.11 COORDINATION

.1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.

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

1.12 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.

1.13 REMEDIAL WORK

.1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate 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.

1.14 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.

1.15 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.

1.16 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 Type 316 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.

1.17 PROTECTION OF WORK IN PROGRESS

.1 Prevent overloading of any part of the Project.

.2 Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated, without written approval of Consultant.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Substitutions.

.2 Alternatives.

.3 Separate prices.

1.2 RELATED SECTIONS

.1 Section 01 21 00 - Allowances.

.2 Section 01 29 00 - Payment Procedures.

.3 This section describes requirements applicable to all Sections.

1.3 SUBSTITUTIONS

.1 Refer to Contract general conditions.

.2 Instructions to Bidders specify time restrictions for submitting requests for Substitutions during the bidding period to requirements specified in this section.

.3 Consultant will consider requests for Substitutions only within sixty (60) days after date of Owner-Contractor Agreement.

.4 Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.

.5 Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

.6 A request constitutes a representation that the Contractor:

.1 Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product and will provide a cost saving to the Owner.

.2 Will provide the same warranty for the Substitution as for the specified Product.

.3 Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.

.4 Waives claims for additional costs or time extension which may subsequently become apparent.

.5 Will reimburse Owner and Consultant for review or redesign services associated with re-approval by authorities.

.7 Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

.8 Request for Substitution (RFS) procedure:

.1 Submit one electronic PDF or three (3) copies of request for Substitution for consideration. Limit each request to one (1) proposed Substitution.

.2 Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.

.3 The Consultant will notify Contractor in writing of decision to accept or reject request.

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Submittal requirements associated with connecting to new and existing facilities.

.2 Execution requirements for all Work.

1.2 RELATED SECTIONS

.1 Section 01 70 00 - Examination and Preparation.

.2 This section describes requirements applicable to all Sections.

1.3 TOLERANCES

.1 Monitor fabrication and installation tolerance control of Products to produce acceptable Work.

.2 Do not permit tolerances to accumulate beyond effective or practical limits.

.3 Comply with manufacturers' tolerances. In case of conflict between manufacturers' tolerances and Contract Documents, request clarification from Consultant before proceeding.

.4 Adjust Products to appropriate dimensions; position and confirm tolerance acceptability, before permanently securing Products in place.

1.4 EXECUTION

.1 Execute cutting, fitting, and patching to complete the Work.

.2 Perform all required excavation and fill to complete the Work.

.3 Fit several parts together, to integrate with other Work.

.4 Uncover Work to install ill-timed Work.

.5 Remove and replace defective or non-conforming Work.

.6 Remove samples of installed Work for testing, if not designated in the respective Section as remaining as part of the Work.

.7 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.

.8 Employ competent workers to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.

.9 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry or concrete work without prior approval.

.10 Restore work with new products in accordance with requirements of Contract Documents.

.11 Fit Work reasonably close to opening size to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.12 Re-finish surfaces to match adjacent finishes: For continuous surfaces re-finish to nearest intersection; for an assembly, re-finish entire unit.

.13 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

1.5 PROTECTION OF COMPLETED WORK AND WORK IN PROGRESS

.1 Do not load or permit to be loaded any part of the Work with a weight or force that will endanger the safety or integrity of the Work.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Progressive cleaning.

.2 Cleaning prior to acceptance.

1.2 RELATED SECTIONS

.1 This section describes requirements applicable to all Sections.

Part 2 Products

2.1 CLEANING MATERIALS

.1 Cleaning Agents and Materials: Low VOC content.

Part 3 Execution

3.1 GENERAL CLEANING REQUIREMENTS

.1 Notify the Consultant of the need for cleaning caused by Owner or other contractors.

3.2 PROGRESSIVE CLEANING

.1 Maintain the Work in tidy and safe condition, free from accumulation of waste materials and construction debris, other than that caused by Owner or other Contractors.

.2 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.

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

.4 Containers:

.1 Provide on-site containers for collection of waste materials and debris.

.2 Provide and use clearly marked, separate bins for recycling.

.5 Remove waste material and debris from site at end of each working day.

.6 Dispose of waste materials and debris off site.

.7 Clean interior areas prior to start of finish 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 enclosure 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.

3.3 FINAL CLEANING

.1 Execute final cleaning prior to final project assessment.

.2 Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces.

.3 Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

.4 Clean site; sweep paved areas, rake clean landscaped surfaces.

.5 Remove waste and surplus materials, rubbish, and construction facilities from the site.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Inspections and declarations.

.2 Closeout submittals.

.3 Operation and maintenance manual format.

.4 Contents each volume.

.5 Recording actual site conditions.

.6 Record (as-built) documents and samples.

.7 Record documents.

.8 Final survey.

.9 Warranties and bonds.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 45 00 - Quality Control.

.3 This section describes requirements applicable to all Sections.

1.3 REVIEW / TAKE-OVER PROCEDURES

.1 In accordance with OAA/OGCA Document 100, latest edition, except where specified otherwise.

.2 In OAA/OGCA Document 100, where the term “Architect” is used, substitute the term “Consultant”, and where the term “inspection” is used in relation to the Consultant’s assessment of the Work, substitute the term “review”.

.3 Arrange and pay for review by local authorities to obtain permission to occupy/occupancy permit (where applicable) prior to requesting Substantial Performance.

.4 Refer also to Section 01 29 00 - Payment Procedures for requirements related to applications for certificates and for applications for payment.

1.4 PREREQUISITES TO FINAL PAYMENT

.1 Remove from the Place of the Work all remaining surplus Products, Construction Equipment, and Temporary Work.

.2 Perform final cleaning and waste removal necessitated by the Contractor’s work performed after Ready-For-takeover, as specified in Section 01 74 00 – Cleaning and Waste Management.

1.5 INSPECTIONS AND DECLARATIONS

.1 Contractor's Inspection: Contractor and all Subcontractors shall conduct an 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 that corrections have been made.

.2 Request Consultant's Inspection.

.2 Consultant's Inspection: Consultant and Contractor will perform inspection of Work to identify defects or deficiencies. Correct defective and deficient Work accordingly.

.3 Completion: Submit written certificate that following have been performed:

.1 Work has been completed and inspected for compliance with Contract Documents.

.2 Defects have been corrected and deficiencies have been completed.

.3 Equipment and systems have been tested and are fully operational.

.4 Certificates required by authorities having jurisdiction have been submitted.

.5 Work is complete and ready for Final Inspection.

.4 Final Inspection: When items noted above are completed, request final inspection of Work by Consultant, Owner, and Contractor. If Work is deemed incomplete by Consultant, complete outstanding items and request reinspection.

.5 Declaration of Substantial Performance: When Consultant considers deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for Substantial Performance of the Work.

.6 Commencement of Warranty Periods: The date of Substantial Performance of the Work shall be the date for commencement of the warranty period.

.7 Commencement of Lien Periods: The date of publication of the certificate of Substantial Performance of the Work shall be the date for commencement of the lien period, unless required otherwise by the lien legislation applicable at the Place of the Work.

.8 Final Payment: When Consultant considers final deficiencies and defects have been corrected and it appears requirements of Contract have been completed, make application for final payment.

.9 Payment of Hold-back: After issuance of certificate of Substantial Performance of the Work, submit an application for payment of hold-back amount.

1.6 CLOSEOUT SUBMITTALS

.1 Prepare instructions and data using personnel experienced in maintenance and operation of described products.

.2 Copy will be returned with Consultant's comments.

.3 Revise content of documents as required prior to final submittal.

.4 Two (2) weeks prior to Substantial Performance of the Work, submit to the Consultant, one electronic copy of operating and maintenance manuals in Canadian English.

.5 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.

.6 If requested, furnish evidence as to type, source and quality of products provided.

.7 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

.8 Pay costs of transportation.

1.7 OPERATION AND MAINTENANCE MANUAL FORMAT

.1 Organize data in the form of an instructional manual.

.2 Compile PDF files within single folder, clearly identified and numbered consistently with the table of contents.

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

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

.5 Text: Manufacturer's printed data, or typewritten data.

.6 Drawings: full size PDF drawings, compiled into single file.

.7 Provide scaled CAD files in *.dwg AutoCAD format.

1.8 CONTENTS - EACH VOLUME

.1 Table of Contents: Provide:

.1 Title of project.

.2 Date of submission.

.3 Names, addresses, and telephone numbers of Consultant and Contractor with name of responsible parties.

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

.5 Record Documents (see details below).

.6 Warranties and Bonds (see details below). Copy of Building Permit.

.7 Copies of field tests, all inspection and testing reports

.8 Relevant certificates issued by authorities having jurisdiction including fire alarm verification certificate; final inspection certificate by Electrical Safety Authority; sprinkler test verification certificate; and certificates issued by other authorities.

.9 For Mechanical and Electrical include: description of system; controls including diagrams; maintenance and testing schedule; method of operation for each piece of equipment, and list of equipment with replacement parts, parts number, suppliers, addresses, etc. Refer also to

Divisions 21 through 28 as applicable for particular requirements relevant to respective Division.

.10 Neatly typed lists and notes. Use clear drawings, diagrams or manufacturers' literature

.11 Complete set of reviewed shop drawings and product data sheets, indicating corrections and changes made during fabrication and installation.

.12 Maintenance instructions for finished surfaces and materials.

.13 Copy of hardware schedule.

.14 Copy of paint schedule.

.15 For each product or system, list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts

.2 For each product or system, list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

.3 Product Data: Organize data by specification number. Mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 – Quality Control.

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

.5 Edit the following paragraph, by deletion and addition, to incorporate relevant certificates of acceptance issued by the authorities having jurisdiction, as required by safety code legislation and occupational health and safety requirements.

.6 Certificate of Acceptance: Relevant certificates issued by authorities having jurisdiction.

.7 Photographs: Monthly photographs as per section 01 32 00 - Construction Progress Documentation

.8 Training: Refer to Section 01 79 00 – Demonstration and Training.

1.9 RECORDING ACTUAL SITE CONDITIONS

.1 Record information on set of black line opaque drawings, and within the Project Manual, provided by Consultant.

.2 Annotate with coloured felt tip marking pens, maintaining separate colours for each major system, for recording changed information.

.3 Record information concurrently with construction progress. Do not conceal Work of the Project until required information is accurately recorded.

.4 Contract drawings and shop drawings: legibly mark each item to record actual construction, including:

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

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

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

.4 Field changes of dimension and detail.

.5 Changes made by change orders.

.6 Details not on original Contract Drawings.

.7 References to related shop drawings and modifications.

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

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

.2 Changes made by Addenda and change orders.

.6 Other Documents: Maintain manufacturer's certifications, field test records, and inspection certifications required by individual specifications sections.

1.10 RECORD (AS-BUILT) DOCUMENTS AND SAMPLES

.1 In addition to requirements in General Conditions, maintain at the site for Consultant, two (2) record copies of:

.1 Contract Drawings.

.2 Specifications.

.3 Addenda.

.4 Change Orders and other modifications to the Contract.

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

.6 Field test records.

.7 Inspection certificates.

.8 Manufacturer's certificates.

.9 As-found and monthly construction photographs (two (2) per page).

.2 Store as-built documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.

.3 Label as-built documents and file in accordance with section number listings in List of Contents of the Project Manual. Label each document AS-BUILT DOCUMENTS in neat, large, printed letters.

.4 Maintain as-built documents in clean, dry and legible condition. Do not use as-built documents for construction purposes.

.5 Keep as-built documents and samples available for inspection by Consultant.

1.11 WARRANTIES AND BONDS

.1 Warranties and bonds to be included in the Operations and Maintenance Manual.

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

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

.4 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten (10) days after completion of the applicable item of work.

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

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

.7 Co-execute submittals when required.

.8 Retain warranties and bonds until time specified for submittals.

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 At no cost to the Owner, all labour and materials to correct the defects and deficiencies. This shall include removal and reinstating components where required to gain access to defect and/or deficiency.

.2 All performance and aesthetic related issues as determined by the Consultant, such as leakage, debonding, corrosion, fading, discolouration, etc.

.3 Excludes reasonable wear and tear.

1.2 The warranty period is two years unless otherwise noted.

Part 2 **Products** (Not Used)

Part 3 **Execution** (Not Used)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Alteration project procedures.

.2 Removal of designated building equipment and fixtures.

.3 Removal of designated construction.

.4 Identification of utilities.

1.2 ALTERATION PROJECT PROCEDURES

.1 Materials: As specified in Product sections; match existing Products and work for patching and extending work.

.2 Employ skilled and experienced installer to perform alteration work.

.3 Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.

.4 Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring Products and finishes to specified condition.

.5 Refinish existing visible surfaces to remain in renovated rooms and spaces, to renewed condition for each material, with a neat transition to adjacent finishes.

.6 Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

.7 When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Consultant for review.

.8 Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition; to Consultant for review.

.9 Patch or replace portions of existing surfaces which are damaged, lifted, discoloured, or showing other imperfections.

.10 Finish surfaces as specified in individual Product sections.

1.3 SUBMITTALS FOR REVIEW

.1 Section 01 33 00 – Submittal Procedures.

.2 Shop Drawings: Indicate removal sequence and location of salvageable items and demolition; location and construction of temporary work.

1.4 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00 – Submittal Procedures.

1.5 REGULATORY REQUIREMENTS

.1 Obtain required permits from authorities.

.2 Do not close or obstruct egress width to any building or site exit.

.3 Do not disable or disrupt building fire or life safety systems without three (3) days prior written notice to Owner.

.4 Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.

1.6 PROJECT CONDITIONS

.1 Conduct demolition to minimize interference with adjacent and occupied building areas.

.2 Cease operations immediately if structure appears to be in danger and notify Consultant. Do not resume operations until directed.

Part 2 Products

2.1 MATERIALS

.1 Not Used.

Part 3 Execution

3.1 PREPARATION

.1 Provide, erect, and maintain temporary barriers at locations indicated.

.2 Erect and maintain weatherproof closures for exterior openings.

.3 Erect and maintain temporary partitions to prevent spread of dust, odours, and noise to permit continued Owner occupancy.

.4 Protect existing materials and elements which are not to be demolished.

.5 Prevent movement of structure; provide bracing and shoring.

.6 Provide appropriate temporary signage including signage for exit or building egress.

3.2 DEMOLITION

.1 Disconnect and identify designated utilities within demolition areas.

.2 Demolish in an orderly and careful manner. Protect existing supporting structural members.

.3 Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.

.4 Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

.5 Remove temporary Work.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Work requirements for concrete restoration and waterproofing [in accordance with Section 01 11 00 – Summary of Work] including the following:

.1 Chipping and breaking out all deteriorated, spalled and delaminated concrete, defective cold joints, and the subsequent filling of voids, cracks and rebuilding of exterior surface profiles.

.2 General surface preparation and sandblasting of all exterior concrete wall and roof surfaces of lighthouse structures above level of breakwater.

.3 Coating of exterior wall surfaces.

1.2 RELATED SECTIONS

.1 Section 04 03 40 - Masonry Restoration.

1.3 REFERENCES

.1 ASTM International (ASTM):

.1 ASTM C109/C109M- [21], Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50 mm) Cube Specimens)

.2 ASTM C157/C157M- [17], Standard Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete

.3 ASTM C348- [21], Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars

.4 ASTM C469/C469M- [22], Standard Test Method for Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression

.5 ASTM C496/C496M- [17], Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens

.6 ASTM C596- [18], Standard Test Method for Drying Shrinkage of Mortar Containing Hydraulic Cement

.7 ASTM C666/C666M- [15], Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing

.8 ASTM C779/C779M- [19], Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces

.9 ASTM C920- [18], Standard Specification for Elastomeric Joint Sealants

.10 ASTM C1059/C1059M- [21], Standard Specification for Latex Agents for Bonding Fresh To Hardened Concrete

.11 ASTM C1202- [22e1], Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration

.2 Canadian General Standards Board (CGSB):

.1 CAN/CGSB-19.24-M90, Multicomponent, Chemical-Curing Sealing Compound

.3 Transport Canada (TC):

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

.4 International Concrete Repair Institute (ICRI):

.1 ICRI Concrete Repair Terminology [2010]

.5 The Association for Materials Protection and Performance (AMPP):

.1 ANSI/NACE No. 13/SSPC-ACS-1- [2016], Industrial Coating and Lining Application Specialist Qualification and Certification

.2 SSPC-SP7, Brush-Off Blast Cleaning, [latest edition]

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Pre-installation Meetings: Schedule a site visit with Consultant to examine existing site conditions.

1.5 SUBMITTALS FOR REVIEW

.1 Section 01 35 91 – Restoration Project Procedures.

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

.3 Product Data:

.1 Submit product literature and data sheets for [compounds] and include product characteristics, performance criteria, physical properties, finish and limitations.

.2 Submit WHMIS Safety Data Sheet (SDS).

.4 Submit a proposed work plan for approval by Consultant. Work plan should include a list of materials and a proposed plan to perform the work.

.5 Qualification Statements: Submit a list of [three] jobs of a similar nature that the Subcontractor has completed within the past 12 months [, before signing of Subcontractor contract,] for review by [Departmental Representative] [DCC Representative] [Consultant].

.6 Certificates:

.1 [Submit certifications for Application Specialists to demonstrate compliance to the requirements of ANSI/NACE No.13/SSPC-ACS-1.]

.7 Manufacturer's Instructions: Submit manufacturer's application instructions and special handling criteria and cleaning procedures.

.8 Sustainable Design Submittals:

.1 Submit Environmental Product Declaration (EPD), in accordance with Section [01 33 29 - Sustainable Design Reporting], identifying the following impact categories:

.1 Global Warming Potential (GWP);

.2 Ozone Depletion Potential (ODP);

.3 Eutrophication Potential (EP); and

.4 Photochemical Ozone Creation (POC)/Smog Formation Potential (SFP).

1.6 QUALITY ASSURANCE

.1 Submit [testing] [inspection] results [and] [reports] for review by [Departmental Representative] [DCC Representative] [Consultant] and do not proceed without written approval when deviations from mix design or parameters are found.

.1 Submit in accordance with Section [01 43 00 – Quality Assurance].

.2 Qualifications:

.1 Ensure that a minimum [50] % of [industrial coating] [lining applications] specialists who perform concrete surface preparation and coating applications, are certified by a recognized Applicator Certification Agency, in accordance with ANSI/NACE No. 13/SSPC-ACS-1.

.2 Maintain a current and valid Applicator Certification Standard (ACS) certification during Project period.

.1 Application specialists who perform surface preparation and coating application work on this Project must have a current ACS.

.3 Notify [Departmental Representative] [DCC Representative] [Consultant] of any change in application specialist certification status.

.1 Any delays in the completion of the Project due to invalid certifications will not be accepted.

1.7 MOCK-UPS

.1 Section 01 35 91 – Restoration Project Procedures.

.2 Provide mock-up for each type of cleaning material used, and for each stain type.

.3 Clean a 4 x 4 foot panel of wall to determine extent of cleaning.

.4 Repeat, using different cleaning methods on up to three (3) different panels until acceptable.

.5 Test panels to be dry three (3) to seven (7) days prior to Consultant review.

.6 Locate where directed by Consultant.

.7 Acceptable panel and method of procedure will become the standard for Work of this Section. The accepted panel may remain as part of the Work.

1.8 DELIVERY, STORAGE, AND PROTECTION

.1 Store materials in manufacturer's original packaging.

1.9 PROTECTION

.1 Protect the general public, adjacent property and new construction from contact with the cleaning materials by erecting properly constructed protection, positioned to confine overspray of water, abrasives or chemicals.

.1 Protection shall be of the full enclosure type with provision to contain spent cleaning materials so as to prevent their escape.

.2 Contain and collect all spent cleaning materials and water immediately below the area of cleaning to prevent run-down onto areas of masonry not being cleaned.

.1 Dispose of spent cleaning materials in accordance with all relevant legislation and requirements.

.3 Any materials that may be damaged by the effects of any of the cleaning operations shall be protected as described herein:

.1 All heritage wood windows to have been previously removed and window openings shall be protected with plywood.

.2 Verify that each installation is tight and passes no dust or water during the Work of this Section and take corrective action to ensure no materials enter the building during the Work.

.3 Employ polyethylene sheet with adhesive tape, strippable latex caulking and closed cell backer rod to protect all other situations as necessary.

.4 Protect all other surrounding areas, streets and adjacent new construction as recommended by the product manufacturer or as directed the Consultant.

.5 Operatives shall be aware of hazardous nature of cleaning operations and shall wear appropriate safety clothing at all times during the cleaning operations.

1.10 ENVIRONMENTAL REQUIREMENTS

.1 Maintain materials and surrounding air temperature to minimum 10 degrees Celsius prior to, during, and 48 hours after completion of masonry Work.

.2 Cold and Hot Weather Requirements: CAN/CSA-A371 - Masonry Construction for Buildings.

.3 No masonry cleaning shall be performed during winds sufficiently strong to spread cleaning materials or rinsed cleaning materials to adjacent unprotected areas.

.4 Comply with the requirements of the following Federal and Provincial Legislation, latest updates, related to the transportation, use and disposal of all cleaning materials:

.1 Federal Transportation of Dangerous Good Act.

.2 Ontario Regulation #309: Liquid Industrial and Hazardous Waste Regulations.

.5 All waste materials shall be legally transported and disposed of.

Part 2 Products

2.1 MATERIALS

1 Patching compound (for 6-50 mm horizontal and 6-25 mm for vertical applications): fast setting, non-shrink, premixed, requiring addition of water only, free of wax, metal, tar, emulsion and calcium chloride.

.1 Compressive Strength: To ASTM C109/C109M, 24 MPa at 24 h and 44 MPa at 28 days.

.2 Flexural Strength: To ASTM C348, 6.8 MPa at 7 days, 8.5 MPa at 28 days.

.3 Modulus of Elasticity: To ASTM C469/C469M, 1.5 x 10 MPa at 28 days.

.2 Patching compound (for 6-25 mm horizontal applications): fast setting, non-shrink, one component, polymer modified cementitious based, repair mortar.

.1 Compressive Strength: To ASTM C109/C109M, 17.4 MPa at 1 day; 38.2 MPa at 7 days; 52.1 MPa at 28 days.

.2 Flexural Strength: To ASTM C348, 5.6 MPa at 1 day; 6.9 MPa at 7 days; 10.4

MPa at 28 days.

.3 Splitting Tensile Strength: To ASTM C496/C496M, 2.6 MPa at 1 day; 3.1 MPa at 7 days; 4.2 MPa at 28 days.

.4 Bond Strength: To ASTM C1059/C1059M, 6.8 MPa at 1 day; 12.1 MPa at 7 days; 17.7 MPa at 28 days.

.5 Drying Shrinkage (to ASTM C596), 28 day, percent length change: maximum 0.093%.

.6 Chloride Ion Penetrability (to ASTM C1202), 28 day: 100-1,000 coulombs charge passed/Very Low.

.7 Freeze/Thaw Resistance (to ASTM C666/C666M, Procedure A), 300 cycles: minimum 93% range of average durability factor.

.8 Abrasion Resistance: To ASTM C779/C779M, (Procedure A), depth of wear 0.419 mm/h.

.3 Bonding Agent: Acrylic polymer emulsion formulated for bonding new concrete to cured concrete in accordance with Section 03 30 00 – Cast-in-Place Concrete, non-yellowing, water based, compatible with [and] [or] recommended by patching compound manufacturer.

.1 Compressive Strength: To ASTM C109/C109M, 31 MPa at 28 days.

.2 Flexural Strength: To ASTM C348, 12.4 MPa at 28 days.

.4 Base Coating: Cement base waterproof coating for concrete, chloride-free, premixed, requiring addition of water and bonding agent, colour: white.

.1 Compressive Strength: To ASTM C109/C109M, 42 MPa at 28 days.

.2 Flexural Strength: To ASTM C348, 7 MPa at 28 days.

.3 Tensile Strength: To ASTM C190, 3 MPa at 28 days.

.5 Finish Coating: 100% acrylic emulsion paint for concrete; weather, alkali, acid and mildew resistant, colour: to be verified by Consultant.

.6 Fibre reinforced cementitious mortar: Two-part acrylic modified cement.

.1 Compressive Strength: To ASTM C109/C109M, 41 MPa at 7 days, 57.2 MPa at 28 days.

.2 Flexural Strength: To ASTM C348, 5.3 MPa at 7 days, 11.0 MPa at 28 days.

.3 Bond Strength: To ASTM C1059/C1059M, 13.8 MPa at 7 days, 20 MPa at 28 days.

.4 Chloride Ion Penetrability (to ASTM C1202): 1,000-2,000 coulombs charge passed/Low.

.7 Water: Potable.

.8 Aggregate: 6 to 9 mm clean limestone or pea gravel.

.9 Joint filler: Extruded polyethylene, closed-cell, Shore A hardness 20, tensile strength of 140 to 200 kPa, outsized 30 to 50%, CFC free.

.10 Sealant: Multi-component, chemical curing to [ASTM C920, Type M, Grade NS, Use CAN/CGSB-19.24, Type 2, Class B, white colour from manufacturer’s standard range], Ecologo certified, primer recommended by sealant manufacturers.

2.2 TOOLS

.1 Brushes: soft fibered nylon or natural soft and stiff bristle.

.2 Scrapers: wood, plastic or stainless steel only.

.3 Trowels: corrosion resistant.

.4 Pails: Rubber or moulded plastic only.

.5 Spray bottles: Hand held polyethylene bottles with spray device.

.6 Rubbing stones: fine grained natural sandstone or fine carborundum.

.7 Hand cleaning rinsing aids: natural sponge and lint-free cotton.

Part 3 Execution

3.1 EXAMINATION

.1 Examine Site conditions and existing surfaces to be restored.

3.2 PREPARATION

.1 Remove protective coatings using pneumatically operated scabbler and HEPA vacuum /drumming system.

.2 Remove loose, spalled, cracked, eroded and disintegrated concrete to a solid surface with a minimum depth of 9 mm.

.3 Chisel under perimeter of areas to be patched.

.4 Sandblast loose rust and scale from exposed steel surfaces.

.5 Utilize dustless decontamination and surface preparation system for scabbling concrete floors and slabs.

.6 Clean area of loose material, dirt, oil, and scale.

.7 Clean cracks 6 mm thick or wider with pressurized water jet or sandblasting.

.8 Chip and break out all deteriorated concrete, previous repairs that are delaminated, existing delaminations and defective cold joints to reveal sound concrete.

.9 Chip concrete away from exposed rusted surfaces of reinforcing bars, chipping to extend for a distance of about 150 mm along the bars beyond evident rusting.

.1 If chipping operation results in a bar becoming debonded from the concrete, cut out the concrete behind the debonded bar to a depth of at least 25 mm.

.10 Rout out wall cracks wider than 1 mm to a minimum width and depth of 6 mm and clean free of dust and debris, for subsequent filling (after sandblasting).

3.3 MIXING

.1 Patching Compound:

.1 Mix components in accordance with manufacturer’s written instructions.

.2 Use drill mixer to mechanically mix components. Ensure components are thoroughly mixed.

.1 Add up to 6.8 kg of aggregate to 25 kg bag of patching compound for large cavities and patches in excess of 25 mm thick.

.3 Apply mix immediately.

.4 Dispose of unused mix immediately, do not retemper.

.2 Base Coating:

.1 Perform coating in accordance with manufacturer's written instructions.

.2 Mix 1 part bonding agent to 3 parts water.

.3 Add bonding mixture to base coating and mix to cement mortar consistency with 50 mm to 76 mm slump.

3.4 SURFACE REPAIRS

.1 Rebuild surface profile following surface preparation and fill with patching compound and bonding agent.

.2 Install repair material in accordance with manufacturer's written instructions.

.3 Mix patching compound to batter consistency and apply by brush over dampened concrete within patching area.

.4 Slush mix over old concrete within patching area with brush coat before filling patch with heavier, trowel coat of patching compound.

.5 Place and level patching compound within five to ten minutes after mixing water is added.

.6 Apply mix in successive 12 mm to 25 mm layers.

.1 Scratch first layer, cool with water and apply second layer within 15 to 20 minutes.

.7 Sponge float surface. If patch gets hot and turns light grey, cool by wetting. Keep patch damp 30 to 45 minutes after filling.

.8 Repair scaled or spalled concrete and missing corners that are deeper or greater than 6 mm with patching compound and bonding agent to render a regular flush surface.

.1 When rebuilding projecting concrete, such as cracked caps, key into existing concrete by means of edge cutting at a minimum depth of 20 mm.

.9 Protect other Subcontractors' work and other prepared surfaces from patching material spills.

3.5 INSPECTION

.1 Consultant will review work for:

.1 Adherence to specific procedures and materials.

.2 Final cleanliness and completion.

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

3.6 MOCK-UPS

.1 Mock-ups to adequately demonstrate and assess the performance of each cleaning system and the variables involved. For example:

.1 Nozzle size.

.2 Working pressure.

.3 Working distance from masonry to be cleaned.

.4 Required protection measures.

.5 Product used.

.2 Acceptance of any one cleaning systems or technique shall depend on the Contractor's ability to meet the following performance criteria:

.1 Acceptable moisture absorption values on cleaned surfaces.

.2 Acceptable visual appearance and level of clean to the approval of the Consultant.

.3 If initial methods prove unsatisfactory, combinations of methods shall be tried from acceptable alternatives.

.4 Accepted mock-ups will form the standard and quality of work for the entire project.

3.7 LOW PRESSURE WATER CLEANING

.1 Apply water intermittently using soaker hoses, spray racks, or other approved low pressure methods.

.2 After soaking, remove remaining dirt by lightly brushing and low pressure washing.

.3 Repeat process if required until masonry is clean.

3.8 SPECIFIC CLEANING PROCEDURES

.1 Cleaning of Brick Surfaces to Remove **Atmospheric Staining**:

.1 The location of all cleaning shall be agreed with the Consultant.

.2 Perform cleaning as determined by mock-up. Mock-up will have determined if detergent or other type of cleaning is required.

.3 Clean without damage to brick.

.4 Collect and dispose of cleaning materials from the work area at the end of the working day.

.5 Cleaning system selection:

.1 The nature of the soiling conditions may require the use of more than one detergent or type of cleaning.

.2 Cleaning of Stone Surfaces to Remove **Organic Staining/Growth**:

.1 Apply proprietary solution of ammonium based biocide in accordance with manufacturer's directions, by hand-held spray unit.

.1 Apply as flood coat, allowing solution to penetrate the masonry.

.2 Mask off and protect all other masonry from treatment.

.2 Contain solution in area being cleaned.

.1 Collect any run off and dispose of in accordance with hazardous waste legislation.

.3 Re-apply as necessary.

.3 Cleaning to Remove Efflorescence:

.1 Dry brush wall areas containing salts to remove surface residues.

.1 Tarp and cover all surfaces, including ground, to collect debris.

.2 Collect salts in bags and remove from site.

.3 Repeat as necessary.

.2 Thoroughly irrigate blocks identified to be poulticed to put salts into solution.

.1 Employ nebulized spray heads arranged to achieve maximum saturation with minimum water run-off. Mount heads on scaffolding, not on building.

.2 Construct eavestrough to collect run-off and run to containers.

.3 Operate irrigation system.

.4 Remove run-off from site.

.3 Prepare clay poultice medium with clean water to consistency of stiff cream.

.1 Reinforce with fibres as necessary.

.2 Trowel apply poultice to contaminated wall areas approximately 1/2" thick and leave neatly finished.

.4 Apply cover of polyethylene film of sheet and tape edges to control rate of drying.

.5 Remove plastic after 24 hours.

.6 Allow poultice to dry.

.7 Carefully scrape residue into plastic bags, seal and remove from site.

.8 Dispose of waste in accordance with hazardous waste legislation.

.9 Pick-up any droppings and dispose of as above.

.10 Re-apply poultice up to four times as directed by the Consultant.

3.9 CLEANING

.1 As Work proceeds and on completion, remove excess cleaning materials and products.

.2 Clean surrounding surfaces.

.3 Use non-metallic tools in cleaning operations.

3.10 PROTECTION

.1 Protect adjacent finished work against damage which may be caused by on-going work.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Replacement of damaged and missing stone.

.2 Patching deteriorated and damaged stone.

.3 Modification and re-setting of stone.

.4 Veneering deteriorated and damaged masonry.

.5 Repointing mortar joints.

.6 Work of this Section to be completed by prequalified Heritage Mason (Heritage Mason).

1.2 RELATED SECTIONS

.1 Division 00 – Procurement and Contracting and Division 1 - General Requirements, shall be read in accordance with this Section.

.2 Section 04 03 41 – Restoration Mortar

.3 Section 04 03 50 – Masonry Cleaning

.4 Section 07 98 00 – Joint Sealants

.5 The Specification shall be read as a whole by all parties concerned. Sectioning of the Specification is for convenience. Each Section may contain more or less than the complete work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their work.

1.3 REFERENCES

.1 ASTM C97/C97M-09 - Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone.

.2 CAN/CSA-A371-04 (R2009) - Masonry Construction for Buildings.

.3 IMIAC (International Masonry Industry All-Weather Council) - Recommended Practices and Guide Specification for Cold Weather Masonry Construction.

1.4 DEFINITIONS

.1 Defective Mortar Joints: Joints in which mortar is missing, loose, spalled, eroded, powdered, broken, hollow, unsound, soft, or weathered more than 3/16 inch from original plane. Sound joints containing fine hairline cracks are excluded.

1.5 SUBMITTALS

.1 Section 01 33 00 – Submittal Procedures

.2 Method Statement: Include one Comprehensive Method Statement for the entire scope of Work; inclusive of Work Related Section noted in item 1.3 above, and illustrating understanding of the Work utilizing good conservation practices.

.3 Survey Conditions: The base scope of Work has been detailed on the drawings with quantity estimates, listed in the Bid Form. Once scaffolding is in place, the Heritage Mason's Foreman and Consultant shall together survey surfaces of the building establishing exact quantities of repairs, treatments and cleaning noting them on clean set of survey drawings. These quantities will be rectified against the tendered quantities and the contract amount adjusted up or down based on tendered unit costs. If new repairs are discovered during the course of construction, the Contractor shall update the survey drawings accordingly. At the end of the Work, these drawings shall form part of the masonry as-built drawings package. Changes in survey quantities during the course of the Work are to be tallied and the cost adjusted at the completion of the project.

.4 Repair Inventory: On a separate copy of drawings provided, Heritage Mason to re-inventory repairs and annotate any discrepancies. Heritage Mason to submit to Consultant for joint review on site.

.5 Qualification Statement: Individual masons' qualifications, including experience and list of related projects.

.6 Samples:

.1 Submit stone in sufficient quantity to show full colour and texture range.

.2 Remove two (2) samples of existing mortar from different un-weathered locations; submit for comparison to new mortar samples.

.3 Submit samples of all materials used in the Work.

.4 Submit itemized list of all tools, machinery and equipment required to complete the Work.

.7 Product Data Sheets and MSDS sheets: Submit for all products to be used.

.8 Provide daily log noting date, daily high/low temperature, and names of all masons working on site. Identify with each mason the area/location where Work was performed.

.9 Qualification Statement: Installer qualifications, including previous projects.

1.6 CLOSEOUT SUBMITTALS

.1 Section 01 78 10 – Closeout Submittals.

1.7 QUALITY ASSURANCE

.1 Company Qualifications:

.1 Company specializing in performing the Work of this section with minimum three (3) years documented experience.

.2 Successful completion of at least three (3) projects of similar scope and complexity within past five (5) years.

.3 Provide demonstrated, specialized, skilled and competent trades persons who shall have considerable experience in this type of Work. The skills of the masons will be subject to review and acceptance by the Consultant. Review will include production of basic mock-up.

.4 Provide list of the proposed workers a minimum one (1) week prior to commencement of the Work and include for each person their experience and list of related projects. Only masons that can demonstrate and have the specialized, skilled and considerable experience in this type of Work will be accepted. The skills of the masons will be subject to review and acceptance by the Consultant. Review will include production of basic mock-ups.

.5 No workers shall be changed during the progress of the Work without written acceptance by the Consultant.

.6 Typical Masonry Repair qualification demonstrations will be carried out on site with each person as directed by the Consultant.

1.8 MOCK-UP

.1 Section 01 45 00 – Quality Control: Requirements for mock-up.

.2 Perform Work in presence of Consultant.

.1 Only masons who complete acceptable mock-ups can undertake that repair type.

.3 Locate where directed by Consultant.

.4 Identify in writing, the methodologies and equipment for the following:

.1 Masonry reconstruction procedures.

.2 Raking out and re-pointing procedures for stone.

.3 Mortar mixing and testing.

.4 Mortar colour and texture.

.5 Joint tooling sequence and profile for stone.

.6 Overall workmanship and procedures.

.5 Masonry Mock-up requirements – mock-ups in situ;

.1 Stone mortar joint rake-out and repointing

.2 Stone resetting

1.9 PROJECT CONDITIONS

.1 Section 04 05 01 – Protection of Work

.2 Protection of Work:

.1 Cover partially completed walls when Work is not in progress.

.2 Extend cover minimum of 24 inches down exposed faces; hold securely in place.

.3 Prevent staining and damage to exposed masonry.

.4 Protect sills, ledges, and projections from mortar droppings; remove droppings immediately.

.5 Protection on completion:

.1 Protect newly laid mortar from precipitation, rapid drying conditions full sun, and temperature above 20 degrees Celsius or

conditions below 10 degrees Celsius for minimum of thirty (30) days.

.2 Provide burlap enclosure and misting for minimum forty-eight (48) hours to prevent initial shrinkage of mortar.

.3 Cut out and replace all joints that dry prematurely and are lighter than the surrounding joints and have shrinkage cracks.

.3 Load Application:

.1 Do not apply uniform loads for at least twelve (12) hours after building masonry columns or walls.

.2 Do not apply concentrated loads for at least three (3) days after building masonry columns or walls.

.4 Environmental Requirements:

.1 Provide daily log noting date, daily high/low temperatures at each discrete area of Work.

.5 Cold weather requirements:

.1 CAN/CSA-A371 requirements.

.2 Do not use frozen materials or build upon frozen Work.

.3 No masonry Work shall be carried out when air temperatures fall below 10 degrees Celsius, unless the following provisions are made.

.4 When air temperatures fall below 10 degrees Celsius, provide a weather tight, heated enclosure in which to carry out Work, store all materials and mix mortars. The air temperature must be maintained above 10 degrees Celsius at all times.

.5 Maintain these conditions for a minimum thirty (30) days following completion of any masonry rebuild Work. Minimum fourteen (14) days for repointing work.

.6 Do not remove heat or enclosure where masonry is not thoroughly cured. Request and obtain permission of Consultant before removing heat or enclosure.

.7 Maintain minimum/maximum thermometers on the scaffold at every building floor, on every elevation or heat zone and in all temporary facilities including but not limited to storage sheds and mixing sheds. Provide relative humidity gauges as required by the Consultant. Provide and maintain a daily record of all temperature and humidity readings. Submit record on a daily basis to Consultant.

.8 Provide such weather tight enclosure after October 1st.

.9 For Work not completed by October 1st, the cure provided shall be extended to sixty (60) days. For Work not completed by November 1st, the cure period shall be extended to ninety (90) days.

.10 Should temperatures in any location drop below 10 degrees Celsius the cure period will be extended by 1 day for each occasion that the temperature falls below 10 degrees Celsius. Should the temperature fall below 0 degrees Celsius then all items not having completed the minimum cure period shall be cut out.

.6 Hot Weather Requirements:

.1 If ambient temperature is over 18 degrees Celsius or relative humidity is less than 50%, protect from direct sun and wind exposure for minimum forty-eight (48) hours after installation.

.2 If the ambient temperature is over 25 degrees Celsius protect ongoing mortar work from direct sun exposure as well as protecting for forty-eight (48) hours after installation.

.7 Protection on Completion:

.1 Protect newly laid mortar from precipitation, rapid drying conditions or conditions below 10 degrees Celsius for a minimum of forty-five (45) days.

.2 Provide burlap for minimum of forty-eight hours (48) to prevent initial shrinkage of mortar.

.3 Cut out and replace all joints that dry prematurely or are lighter than the surrounding joints or have shrinkage cracks.

1.10 SEQUENCING

.1 Restore and clean masonry in following sequence:

.1 Replace damaged and missing masonry.

.2 Rout and re-point mortar joints.

.2 Schedule the Work to accomplish identified construction schedule.

Part 2 Products

2.1 MATERIALS

.1 Salvaged Brick: Reuse existing materials salvaged during demolition in identified areas only. Only bricks in good condition to be salvaged for re-use.

.2 Brick: Provide new materials to match existing in compressive strength, absorption, initial rate of absorption, colour, size, and surface texture.

.3 Stone: Provide new materials to match original in compressive strength, absorption, initial rate of absorption, colour, size, and surface texture.

.4 Mortar: Provide as per **Section 04 03 41 – Restoration Mortar**.

.5 Grout: Provide as per **Section 04 03 41 – Restoration Mortar**

2.2 ACCESSORIES

.1 Refer to **Section 04 04 15 - Restoration Masonry Accessories**.

Part 3 Execution

3.1 PREPARATION

.1 Prior to beginning Work examine existing mortar joints to determine procedures required to match new mortar to existing, including:

.1 Style of tooling including depth and profile.

.2 Any part of the scaffolding, hoist or any construction plant shall not directly bear against the masonry. Provide isolating material, lumber or plywood with additional padding as necessary to prevent damage to the existing masonry.

3.2 MORTAR REMOVAL

.1 Contractor to inventory and review with Consultant joints to be raked out in areas where less than 100% is noted on drawings.

.2 Mortar is defective when:

.1 It is cracked.

.2 It is spalled, chalked, dusted, friable, crumbling or weathered back.

.3 If it is declared defective by the Consultant.

.3 Where mortar is found to be defective beyond specified raking depths, continue raking until sound mortar is encountered.

.4 Be aware that additional raking out beyond specified depths will be necessary and that voiding can be expected, requiring alternately backpointing prior to finish pointing.

.5 If masonry unseats or bond is broken, remove unit and reset.

3.3 TOOLS AND TECHNIQUES

.1 Tools for cutting out shall be narrower than the joint.

.2 Cutting out of mortar shall be carried out by one of the following techniques:

.1 Cutting out with hammer and chisels with dust channels, cutting away from the arises to prevent spalling of the masonry.

.2 Flat-bladed quirks and light hammers, hacksaw blades or similar tools are to be used where fine joints are encountered.

.3 Hand held rotary saws, grinder, or wheels are not permitted on stone joints due to the non-linear nature of the existing stone masonry.

.3 Clean joints back for the full specified depth, removing all mortar on the masonry surfaces to a square surface of existing mortar at back of joint.

.4 Clear out all loose particles with compressed air and leave ready for inspection.

3.4 DAMAGE

.1 Take care to prevent damage to masonry units resulting from cutting out operation.

.2 Damage includes the widening of existing joints, nicks, gouges and chipped or scratched surfaces from cutting out tools, resulting from improper workmanship.

.3 All damaged units shall be replaced or repaired to the satisfaction of the Consultant at no change in the contract price or schedule.

3.5 DEPTH OF RAKING

.1 Depth of Raking Mock-ups: Provide mock-up of raking out of joints as detailed in drawings.

.2 Raking shall be carried out to a depth of not less than 1” measured from the arris of masonry unit.

3.6 CUTTING OUT AND REPLACEMENT OF STONE, RESETTING OF EXISTING STONE

.1 Cutting Out of Stone

.1 Cut out all damaged stone where indicated on the drawings for replacement or repair. Obtain approval of Consultant prior to proceeding.

.2 Provide shoring as required to ensure safety of the Work engineered by a structural engineer licensed to practice in the Province of Ontario.

.3 Where stone blocks are scheduled for reuse, remove all old mortar and wash thoroughly.

.4 Stockpile removed stone on skids in the site staging area. Clearly tag each removed stone giving location from where it was removed and indicating its top side.

.5 All existing stone removed shall become property of the Owner.

.6 Advise the Consultant of any damaged masonry not identified for replacement or repair prior to commencing repair Work.

.7 Coordinate with all repairs to structural support steel before resetting stone.

.8 Stone which has previously become dislodged but remains on site is to be salvaged for re-use.

.2 Angles/ties

.1 Supply and install angles, ties or other accessories as per structural engineer recommendations.

.3 Setting Stone

.1 Install anchors, dowels and cramps, providing all proper cutouts as required.

.2 Set stones true and in alignment, maintain joint thicknesses with soaked softwood wedges until bedding mortar has set. New replacement stone

to be set with proper bedding plane orientation. Stone to be textured to match adjacent stone.

.3 Fill bed and vertical joints solidly packing tight and evenly.

.4 Fill solidly the core. Use brick or stone shards to fill larger voids.

.5 Rake back joints to specified depth for front pointing lift.

.6 Sponge off any mortar droppings as Work progresses.

.7 Remove wedges when dry without breaking them off.

.8 Damage to new or reset stones including breaking of arrisses to be repaired or replaced at no additional cost and to the satisfaction of the Consultant.

.4 Stone Removal and Reinstallation

.1 Cut out joints of stone to be removed to full depth of joint. Provide shimming to support the stone at bottom joint.

.2 Cut anchors, pins and ties using reciprocating saw and carbide blade. Control metal filings to prevent rust staining.

.3 Back banded stone may require shock hammering to the face to break the mortar band. Provide protection to the face of stone before performing this action. Note that this activity will have to take place on off hours due to the vibrational noise it creates.

.4 Ensure that no damage occurs to the removed stone or to the adjacent stones.

3.7 BACKPOINTING

.1 Obtain acceptance of raked out Work prior to commencing pointing operations.

.2 Where cut out joints are deeper than raking out depths specified above, backpoint joints to bring mortar face to specified depth for raked out joints, in preparation for finish pointing. Where voids exist that conventional backpointing cannot fill, grout fill voids.

.3 For backpointing, fill all joints full with pointing mortar, compacting mortar firmly into joints to ensure positive adhesion to all inner surfaces. Place mortar in layers, maximum 1-1/4 inch thick, minimum ½ inch thick, allowing each layer to set to thumbprint hard before placing next layer. Bring face of mortar in backpointed joint to specified depth for raked out joints, measured from the arris of the masonry unit, leave ready for final pointing.

.4 Prevent mortar from being placed or smeared onto face of masonry to prevent mortar staining of masonry faces during backpointing.

.5 Keep Work clean, remove all droppings as Work proceeds, and again at the end of each day.

3.8 POINTING OF JOINTS

.1 General

.1 Obtain Consultant acceptance of raked out, backpointed, and grouted Work prior to commencing pointing operation.

.2 Prevent mortar from being placed or smeared onto face of stone to prevent mortar staining of masonry faces during pointing.

.3 Fill all bed and head joints full with pointing mortar, compact joints firmly to ensure positive adhesion to all inner surfaces.

.4 Thoroughly compact mortar into joint.

.5 At initial set, tool joint to match adjacent profile(s) as approved through mock-ups.

.6 Keep Work clean, remove all droppings as Work proceeds, and again at the end of each day.

.2 Pointing of Joints

.1 Wet down inside of joints with fine misting springs and clean water keep face dry.

.2 Place mortar into joint in a maximum of ¾ inch lift. Avoid smearing mortar on face of stone.

.3 Ensure mortar fills joint completely by continually tamping back mortar with pointing tools.

.4 Finish joints as noted on drawing.

.5 Moist cure mortar to prevent premature drying and shrinkage.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Mortar materials.

.2 Mortar mixes.

.3 Grouts.

1.2 RELATED SECTIONS

.1 Section 01 35 91 – Restoration Project Procedures.

.2 Section 04 03 40 - Masonry Restoration.

.3 Section 04 03 50 - Masonry Cleaning.

1.3 REFERENCES

.1 ASTM C144-11 - Standard Specification for Aggregate for Masonry Mortar.

.2 ASTM C150/C150M-12 - Standard Specification for Portland Cement.

.3 ASTM C207-06(2011) - Standard Specification for Hydrated Lime for Masonry Purposes.

.4 ASTM C1324-10 - Standard Test Method for Examination and Analysis of Hardened Masonry Mortar.

.5 CAN/CSA-A179-04 (R2009) - Mortar and Grout for Unit Masonry.

.6 CAN/CSA-A3000-08 - Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).

.7 ASTM C1324-10 - Standard Test Method for Examination and Analysis of Hardened Masonry Mortar.

1.4 SUBMITTALS

.1 Section 01 33 00 – Submittal Procedures

.2 Section 01 35 91 – Restoration Project Procedures.

.3 Samples: Submit four (4) cured mortar samples, 6 x 1/2 x 1/2 inches in size for each mortar type.

.4 Samples will be compared to existing, clean sample to determine acceptability of match.

.5 Submit Product Data Sheets for each mortar type and associated MSDS sheets.

1.5 DELIVERY, STORAGE, AND PROTECTION

.1 Protect materials from moisture absorption and damage; reject damaged containers.

.2 Store sand to prevent inclusion of foreign matter.

Part 2 Products

2.1 MATERIALS

.1 Use same manufacturer, brands and suppliers for sources of mortar materials for entire project.

.2 Water: Potable, clean, and free from deleterious amounts of acids, alkali, and organic matter.

.3 Colouring Additive: Not required. The percentage of pigment shall not exceed 10% of the binder total volume.

.4 Other Components: As determined by existing mortar analysis to produce visual and performance characteristics to match existing mortar.

.5 It is strictly forbidden to use any type of additive to modify the setting time, workability, fluidity or any other property of mortars and grouts, in the plastic or hardened state.

.6 Air Entraining, Antifreeze, Bonding, and Other Additives: Not permitted.

.7 **Premixed Mortar**: Premixed restoration mortars by the following manufacturer are to be used provided requirements of Contract Documents and manufacturer's requirements are met:

.1 Mortar Types (**Exterior**):

.1 **Type A:** Brick resetting/repointing:

.1 HLM-350 Mortar Mix: colour to match existing, (colour to be determined via site mock-ups to match existing).

.2 Grout: King Packaged Materials Company: 1:1:6.

.3 Substitutions: Not permitted.

2.2 MIXING MORTAR

.1 For premixed mortars, raw materials are mixed at the factory then kneaded with water on the job site following the manufacturer’s written instruction.

.2 Thoroughly mix ingredients in quantities needed for immediate use.

.3 Mix dry ingredients mechanically until uniformly distributed; add water to achieve workable consistency.

.4 Discard lumpy, caked, frozen, and hardened mixes, and mixes not used within 2 hours after initial mixing.

.5 Use mortar within 2-1/2 hours after initial mixing at ambient temperatures below 27 degrees C / 80 degrees F. and within 1-1/2 hours after initial mixing at ambient temperatures over 27 degrees C / 80 degrees F.

.6 Do not add antifreeze compounds to lower freezing temperature of mortar.

.7 Provide consistent colour for exposed mortar.

Part 3 Execution

3.1 INSTALLATION

.1 Install mortar and masonry grout to requirements of Section 04 03 40 - Masonry Restoration.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Water cleaning of brick and stone surfaces to remove overall dirt and grime.

.2 Cleaning of brick surfaces to remove organic staining and ivy growth.

.3 Cleaning of brick surfaces to remove atmospheric staining.

.4 Cleaning of brick surfaces to remove efflorescence.

.5 Cleaning of assumed bird droppings/staining on brick surfaces, primarily on the West elevation.

.6 Qualified Heritage Contractor to provide required scaffolding, hoists and access as required Work.

.7 Work of this Section to be completed by **Heritage Mason**.

1.2 RELATED SECTIONS

.1 Section 01 35 91 - Restoration Project Procedures.

.2 Section 02 41 19 - Selective Demolition.

.3 Section 04 03 40 - Masonry Restoration.

.4 Section 04 03 41 - Restoration Mortar.

1.3 REFERENCES

.1 CAN/CSA-A371-04 (R2009) - Masonry Construction for Buildings.

.2 CSA-S304.1-04 (R2010) - Design of Masonry Structures.

.3 Canadian Environmental Assessment Act.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Sequencing: Clean masonry surfaces prior to repointing.

.2 Cleaning shall be carried out to remove soiling and staining without causing damage to the substrate.

.3 The intent of cleaning is generally to improve the performance. A ‘like-new’ appearance is not the goal of this work.

1.5 SUBMITTALS FOR REVIEW

.1 Section 01 35 91 – Restoration Project Procedures.

.2 Shop Drawings:

.1 Contractor to inventory areas to be cleaned as shown on drawings and annotate any discrepancies on drawings provided and submit for review. Indicate proposed methods and materials to be used as well as protection measures for adjacent areas.

.2 Installation Data: Indicate special procedures, perimeter conditions requiring special attention and protection of adjacent surfaces/materials.

.3 Product Data: Provide data on all proposed cleaning materials/products.

.4 MSDS: Provide MSDS sheets for all materials/products proposed.

.5 Schedule:

.1 Provide a schedule of cleaning operations prior to commencing work for review by the Consultant.

.2 Provide the Consultant with a minimum 48 hours' notice on intent to commence cleaning operations.

1.6 QUALITY ASSURANCE

.1 Products of this Section: Manufactured to ISO 14000 certification requirements.

.2 Perform Work in accordance with CAN/CSA-A371.

1.7 MOCK-UPS

.1 Section 01 35 91 – Restoration Project Procedures.

.2 Provide mock-up for each type of cleaning material used, and for each stain type.

.3 Clean a 4 x 4 foot panel of wall to determine extent of cleaning.

.4 Repeat, using different cleaning methods on up to three (3) different panels until acceptable.

.5 Test panels to be dry three (3) to seven (7) days prior to Consultant review.

.6 Locate where directed by Consultant.

.7 Acceptable panel and method of procedure will become the standard for Work of this Section. The accepted panel may remain as part of the Work.

1.8 DELIVERY, STORAGE, AND PROTECTION

.1 Store materials in manufacturer's original packaging.

1.9 PROTECTION

.1 Protect the general public, adjacent property and new construction from contact with the cleaning materials by erecting properly constructed protection, positioned to confine overspray of water, abrasives or chemicals.

.1 Protection shall be of the full enclosure type with provision to contain spent cleaning materials so as to prevent their escape.

.2 Contain and collect all spent cleaning materials and water immediately below the area of cleaning to prevent run-down onto areas of masonry not being cleaned.

.1 Dispose of spent cleaning materials in accordance with all relevant legislation and requirements.

.3 Any materials that may be damaged by the effects of any of the cleaning operations shall be protected as described herein:

.1 All heritage wood windows to have been previously removed and window openings shall be protected with plywood.

.2 Verify that each installation is tight and passes no dust or water during the Work of this Section and take corrective action to ensure no materials enter the building during the Work.

.3 Employ polyethylene sheet with adhesive tape, strippable latex caulking and closed cell backer rod to protect all other situations as necessary.

.4 Protect all other surrounding areas, streets and adjacent new construction as recommended by the product manufacturer or as directed the Consultant.

.5 Operatives shall be aware of hazardous nature of cleaning operations and shall wear appropriate safety clothing at all times during the cleaning operations.

1.10 ENVIRONMENTAL REQUIREMENTS

.1 Maintain materials and surrounding air temperature to minimum 10 degrees Celsius prior to, during, and 48 hours after completion of masonry Work.

.2 Cold and Hot Weather Requirements: CAN/CSA-A371 - Masonry Construction for Buildings.

.3 No masonry cleaning shall be performed during winds sufficiently strong to spread cleaning materials or rinsed cleaning materials to adjacent unprotected areas.

.4 Comply with the requirements of the following Federal and Provincial Legislation, latest updates, related to the transportation, use and disposal of all cleaning materials:

.1 Federal Transportation of Dangerous Good Act.

.2 Ontario Regulation #309: Liquid Industrial and Hazardous Waste Regulations.

.5 All waste materials shall be legally transported and disposed of.

Part 2 Products

2.1 MATERIALS

.1 Water: use clean portable water free from harmful contaminants:

.1 Test water for high iron content prior to use.

.2 Where water has high iron or other metal content, pre-treat with complexing agents before use to reduce risk of staining.

.2 Cleaning of atmospheric staining on brick:

.1 Acceptable material: Sure Klean Restoration Cleaners by Prosoco,3741 Greenway Circle, Lawrence, KS 66046. Phone: 1-800-255-4255, fax: 785-830-9797, email: CustomerCare@prosoco.com.

.1 Light Duty Concrete Cleaner/ soap

.3 Cleaning of organic staining on brick:

.1 Biocide: D/2 Biological Solution distributed by Cathedral Stone® Products Inc., 7266 Park Circle Drive, Hanover, MD 21076. Tel: (410) 782-9150; Fax: (410) 789-9155.

.4 Poultice:

.1 Type 1: medium: absorbent clay medium, attapulgite, 100 mesh.

.2 Type 2: medium: absorbent paper pulp; cotton lint free

.3 Poultice reinforcement and accessories:

.1 Fibre reinforcing: Polypropylene fibrillated fibre concrete reinforcement containing no reprocessed olefin material. Acceptable material: “Fibremesh” as supplied by UMACS of Canada.

.2 Plastic mesh reinforcing: Alkali resisting

.3 3 mil clear polyethylene film

2.2 TOOLS

.1 Brushes: soft fibered nylon or natural soft and stiff bristle.

.2 Scrapers: wood, plastic or stainless steel only.

.3 Trowels: corrosion resistant.

.4 Pails: Rubber or moulded plastic only.

.5 Spray bottles: Hand held polyethylene bottles with spray device.

.6 Rubbing stones: fine grained natural sandstone or fine carborundum.

.7 Hand cleaning rinsing aids: natural sponge and lint-free cotton.

2.3 WATER RINSE EQUIPMENT

.1 Pipe and fittings to be plastic or non-ferrous to minimize rust staining of masonry.

.2 Water pumps:

.1 Fit with accurate pressure regulators and gauges that are capable of being pre-set and locked at maximum specified levels.

.2 Equipment shall be designed to provide a flow rate of:

.1 Between 4 to 6 gpm at pressures ranging from 5 to 60 psi.

.2 When rinsing masonry or adjacent to masonry, empty pressures below 20 psi and working distances to ensure that there is no loss of surface or damage to substrate.

.3 Spray heads to be equipped with nozzles of the fan type with spray tips of between 15 degrees Celsius and 25 degrees Celsius.

Part 3 Execution

3.1 EXAMINATION

.1 Verify that surfaces to be cleaned are ready for Work of this Section.

3.2 PREPARATION

.1 Seal off areas, landscaping materials, and surfaces not receiving Work of this section to protect from damage.

.2 Close off areas in which Work is being performed to pedestrian and vehicular traffic.

.3 Protect adjacent and underlying surfaces from damage.

.4 Install temporary dams and containment devices to collect runoff water.

3.3 MOCK-UPS

.1 Mock-ups to adequately demonstrate and assess the performance of each cleaning system and the variables involved. For example:

.1 Nozzle size.

.2 Working pressure.

.3 Working distance from masonry to be cleaned.

.4 Required protection measures.

.5 Product used.

.2 Acceptance of any one cleaning systems or technique shall depend on the Contractor's ability to meet the following performance criteria:

.1 Acceptable moisture absorption values on cleaned surfaces.

.2 Acceptable visual appearance and level of clean to the approval of the Consultant.

.3 If initial methods prove unsatisfactory, combinations of methods shall be tried from acceptable alternatives.

.4 Accepted mock-ups will form the standard and quality of work for the entire project.

3.4 LOW PRESSURE WATER CLEANING

.1 Apply water intermittently using soaker hoses, spray racks, or other approved low pressure methods.

.2 After soaking, remove remaining dirt by lightly brushing and low pressure washing.

.3 Repeat process if required until masonry is clean.

3.5 SPECIFIC CLEANING PROCEDURES

.1 Cleaning of Brick Surfaces to Remove **Atmospheric Staining**:

.1 The location of all cleaning shall be agreed with the Consultant.

.2 Perform cleaning as determined by mock-up. Mock-up will have determined if detergent or other type of cleaning is required.

.3 Clean without damage to brick.

.4 Collect and dispose of cleaning materials from the work area at the end of the working day.

.5 Cleaning system selection:

.1 The nature of the soiling conditions may require the use of more than one detergent or type of cleaning.

.2 Cleaning of Stone Surfaces to Remove **Organic Staining/Growth**:

.1 Apply proprietary solution of ammonium based biocide in accordance with manufacturer's directions, by hand-held spray unit.

.1 Apply as flood coat, allowing solution to penetrate the masonry.

.2 Mask off and protect all other masonry from treatment.

.2 Contain solution in area being cleaned.

.1 Collect any run off and dispose of in accordance with hazardous waste legislation.

.3 Re-apply as necessary.

.3 Cleaning to Remove **Efflorescence**:

.1 Dry brush wall areas containing salts to remove surface residues.

.1 Tarp and cover all surfaces, including ground, to collect debris.

.2 Collect salts in bags and remove from site.

.3 Repeat as necessary.

.2 Thoroughly irrigate blocks identified to be poulticed to put salts into solution.

.1 Employ nebulized spray heads arranged to achieve maximum saturation with minimum water run-off. Mount heads on scaffolding, not on building.

.2 Construct eavestrough to collect run-off and run to containers.

.3 Operate irrigation system.

.4 Remove run-off from site.

.3 Prepare clay poultice medium with clean water to consistency of stiff cream.

.1 Reinforce with fibres as necessary.

.2 Trowel apply poultice to contaminated wall areas approximately 1/2" thick and leave neatly finished.

.4 Apply cover of polyethylene film of sheet and tape edges to control rate of drying.

.5 Remove plastic after 24 hours.

.6 Allow poultice to dry.

.7 Carefully scrape residue into plastic bags, seal and remove from site.

.8 Dispose of waste in accordance with hazardous waste legislation.

.9 Pick-up any droppings and dispose of as above.

.10 Re-apply poultice up to four times as directed by the Consultant.

3.6 CLEANING

.1 As Work proceeds and on completion, remove excess cleaning materials and products.

.2 Clean surrounding surfaces.

.3 Use non-metallic tools in cleaning operations.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Consolidation of existing exterior woodwork carpentry components.

.2 Epoxy patching of existing exterior woodwork finish carpentry components.

.3 Replacement of damaged and missing exterior woodwork carpentry components.

1.2 RELATED SECTIONS

.1 Section 01 35 91 – Restoration Project Procedures

.2 Section 09 91 10 – Restoration Painting and Coatings.

1.3 REFERENCES

.1 ASTM E84 - Test Method for Surface Burning Characteristics of Building Materials.

.2 AWMAC (Architectural Woodwork Manufacturers Association of Canada) - Quality Standards.

.3 CLSAB (Canadian Lumber Standards Accreditation Board) - Grading Rules.

.4 FS MMM-A-130 - Adhesive, Contact.

.5 NLGA (National Lumber Grades Authority) - Standard Grading Rules for Canadian Lumber, 2010 edition.

1.4 SUBMITTALS FOR REVIEW

.1 Section 01 35 91 – Restoration Project Procedures.

.2 Method Statement: For wood conservation including as a minimum documentation, inventory of condition and repairs, methodology for installation of supporting structure, all methods, processes, materials and understanding of the Work utilizing good conservation practice.

.3 Site inventory of wood identified to remain including areas of wood repairs required.

.4 Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, accessories, and finishes.

1.5 SUBMITTALS FOR INFORMATION

.1 Qualification Statement: Wood Restoration Contractor qualifications, including previous projects.

1.6 CLOSEOUT SUBMITTALS

.1 Section 01 78 10 - Closeout Submittals.

.2 Record and submit the locations and sizes of wood repairs with photographs and annotations on construction drawings provided.

1.7 QUALITY ASSURANCE

.1 Restorer Qualifications:

.1 Company specializing in performing the Work of this section with minimum three (3) years documented experience.

.2 Successful completion of at least three (3) projects of similar scope and complexity within past five (5) years.

1.8 MOCK-UP

.1 Section 01 35 91 – Restoration Project Procedures.

.2 Provide mock-ups of the following:

.1 Wood epoxy repair

.2 Wood shingle replacement

.3 Log Repair

.4 Wood Door Staining

.5 Mock-up(s) may remain as part of the finished work.

.3 Include wood restoration process and finishing, associated attachments, joints and junctions, terminating items.

.4 Locate where directed by Consultant.

.5 Approved mock-up may remain as part of the Work.

1.9 DELIVERY, STORAGE, AND PROTECTION

.1 Store materials minimum above ground on framework or blocking and cover with protective waterproof covering providing for adequate air circulation.

.2 Do not store seasoned materials in damp location.

.3 Protect Work from moisture damage.

1.10 FIELD MEASUREMENTS

.1 Verify that field measurements are as indicated on shop drawings.

1.11 COORDINATION

.1 Coordinate the Work with roof repairs, window and door Work.

1.12 EXTENDED WARRANTY

.1 Submit warranty for Work of this section in accordance with the General Condition, except that the warranty period is extended to two (2) years.

.1 Warranty against defects in materials and workmanship including but not limited to opening of joints, cracking, shrinkage, and warpage.

Part 2 Products

2.1 MATERIALS

.1 Lumber: Use salvaged existing wood for patching holes and replacing deteriorated components. Do not reuse rotted, split, termite damaged, or otherwise damaged pieces.

.2 Lumber:

.1 Salvaged existing wood.

.2 If salvaged existing materials are unsuitable for use or are not available in sufficient quantities, provide new materials or materials salvaged from an off-site source to match original wood in species, cut, appearance, and other characteristics.

.3 Do not reuse rotten, split, termite damaged, or otherwise defective pieces.

2.2 ACCESSORIES

.1 Patching Compound: Epoxy based, multiple component:

.1 Manufactured by West system.

2 part low viscosity (LV) epoxy, and ceramic (grey tone) or phenolic microballoon (brown tone) epoxy/microballoon fills. Manufacturer West Systems epoxy resins, fillers and microballoons (available through Lee Valley) or approved equal.

.2 Wood Consolidant:

.1 West System 105 Epoxy with type and quantity of hardner to suit application .

.2 Protect adjacent surfaces.

.3 Using syringes inject in cracks.

.3 Waterproof Adhesives: Phenol and resorcinol resin adhesives for wood, confirm to CSA 0112 Series M1977 – Standards for Wood Adhesives. Submit proposed product for Consultant's review.

.4 Fasteners: Type and size as required by conditions of use; hot dip galvanized steel for exterior use.

2.3 FABRICATION

.1 Fabricate new wood components with profiles and dimensions to match original.

Part 3 Execution

3.1 PREPARATION

.1 Prior to installation, condition wood to average humidity that will prevail after installation.

.2 Back prime exterior wood prior to installation.

3.2 CONSOLIDATION OF EXISTING WOOD

.1 Remove paint.

.2 Apply consolidant to manufacturer's written instructions.

.3 Completely saturate damaged wood with consolidant; allow to cure eight (8) hours minimum.

.4 Apply to end grain where exposed. Where end grain is not exposed, drill 3 mm holes staggered and at angles to side grain to expose as much end grain as possible.

.5 Prevent leakage with wax or clay plugs. Clean leakage before it cures.

.6 Apply second coat if first coat does not completely saturate and harden wood.

3.3 REPAIR AND REPLACEMENT OF WOOD

.1 Severe Deterioration:

.1 Replace deteriorated wood frame and trim members with new wood.

.2 Match new wood to profile and grain of existing wood.

.3 Fabricate frame and sash members with mortise and tendon joints. Fit to hairline joint, glue and nail. Stapling not permitted.

.2 Moderate Deterioration:

.1 Epoxy patch voids.

.2 Consolidate soft wood.

.3 Minor Deterioration Fills: weathered surface

3.4 GENERAL WOOD REPAIRS

.1 Remove rotted wood as directed.

.2 Scrub all affected surfaces of wood with a bleach and detergent mixture in water to remove and kill fungus. Rinse with water. Rinse with bleach mixture. Allow to dry. For Painted surfaces only:

.1 Bleach and detergent mixture: Mix 1 litre bleach with 50ml detergent with 200ml Tri-sodium phosphate and 3 litres of water to create cleaning solution.

.2 Bleach mixture: Mix bleach and water 1:1. Ensure no bleach splashes on any of the millwork as it will permanently mark the unfinished millwork of this building.

.3 Take apart removable sections of woodwork and reset after repair of individual pieces.

.4 Insert one-piece wood Dutchmen into large voids. Set Dutchmen with grain in same direction as wood piece being replaced.

.5 Bed Dutchmen in semi-rigid patching compound. Fill all voids.

.6 Fill all open edge grain, checks, wanes and knot holes with epoxy/microballoon semi-rigid patching compound specified under this section

.7 After curing, sand down repairs for refinishing.

.8 Refer to West System User Manual for primary guide to the handling and basic techniques of epoxy/microballoon use, or manual of other approved system.

.9 Shave cured, exposed compound down to the original surface with woodworking tools.

.10 Construct new components in shop for site installation.

3.5 EPOXY WOOD REPAIR AND WOOD FILLS

.1 Epoxy/microballoon fills are made using low viscosity epoxy microballoons (phenolic balloons match the best but glass or ceramic can be used). Mix the epoxy and microballoons in a plastic bag with a zipper closure (a gallon size freezer bag works well). Completely mix the hardener and the resin (either in another container or directly in the bag) and then add the microballoons. Seal the bag and knead the two together. Add microballoons a bit at a time until the putty is the consistency of peanut butter cookie dough.

.2 Due to the heat given off by the epoxy as it cures, deep fills should be avoided. If filling a deep area you may need to fill it in stages. It is important that the second instalment of epoxy/microballoons be applied while the epoxy below is in its initial cure stage so that the two will be chemically bonded to one another. Apply the epoxy/microballoon filler so that it stands slightly proud. This allows the fill to be shaped once the epoxy is completely cured.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Replacement of damaged sheet metal roofing.

.2 Replacement of deteriorated metal flashings and accessories.

.3 Replacement of deteriorated underlayment and sheathing.

1.2 RELATED SECTIONS

.1 Section 06 11 00 – Framing and Sheathing.

.2 Section 07 03 75 - Joint Sealers.

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

1.3 REFERENCES

.1 ASTM A480/A480M-13b - Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.

.2 ASTM A653/A653M-13 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.3 ASTM A666-10 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

.4 ASTM B32-08 - Standard Specification for Solder Metal.

.5 [SMACNA 1120 - Architectural Sheet Metal Manual, 7th Edition (2012).]

1.4 SUBMITTALS FOR REVIEW

.1 Section 01 33 00 – Submittal Procedures.

1.5 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00 – Submittal Procedures.

.2 Qualification Statement: Installer qualifications, including previous projects.

.3 Sustainable Design:

- .1 Section 01 35 18 - LEED Requirements and Procedures.
- .2 Provide required LEED documentation for Product [regional materials] [Solar Reflectance Index] [recycled content].
- .3 Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.6 CLOSEOUT SUBMITTALS

.1 Section 01 78 10 – Closeout Submittals: Submission procedures.

1.7 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 certification requirements.

.2 Perform Work to SMACNA 1120.

.3 Restorer Qualifications:

.1 Company specializing in performing the Word of this section with minimum three (3) years experience.

.2 Successful completion of at least three (3) projects of similar scope and complexity within past five (5) years.

1.8 MOCK-UP

.1 Section 01 43 00 – Quality Assurance: Requirements for mock-up.

.2 Provide 10 sq ft mock-up including flashings, terminating items, underlayment, joints and junctions attachments.

.3 Locate where directed by Consultant.

.4 Approved mock-up may remain as part of the Work.

1.9 SITE CONDITIONS

.1 Ambient Conditions:

.1 Do not form sheet metal at ambient temperatures less than 10 degrees C.

.2 Do not install underlayment at ambient or surface temperatures less than 5 degrees C or on wet or frozen substrate.

.3 Do not install roofing on wet or frozen substrate.

Part 2 Products

2.1 MANUFACTURERS

.1 Acceptable Manufacturers:

.1 VicWest Building Products.

.2 Substitutions: Refer to Section 01 62 00 – Product Exchange Procedures.

2.2 MATERIALS

.1 Galvanized Steel Sheet: ASTM A653, Structural Quality; 24 gauge core steel thickness with minimum Z275 galvanized coating.

2.3 ACCESSORIES

.1 Solder: ASTM B32, Grade 50A.

.2 Fasteners: Material compatible with metal being fastened, with soft neoprene washers where exposed.

.3 Underlayment: ASTM D226, asphalt impregnated felt, No. 15, nonperforated.

.4 Slip Sheet: Rosin sized building paper.

.5 Wood Battens: SPF Stud Lumber

.6 Joint Sealers: Specified in Section 07 92 00 – Joint Sealants.

.7 Protective Backing Paint: Bituminous.

2.4 FABRICATION

.1 Form material for flat lock seams.

.2 Form pans in longest practical length.

.3 Fabricate cleats and starter strips of same material as roofing.

.4 Hem exposed edges 1/2 inch on underside. Mitre and seam corners.

.5 Form sections true to shape and size, square, and free from distortion.

.6 Solder shop formed metal joints. After soldering, remove flux and excess solder and clean joints.

Part 3 Execution

3.1 PREPARATION

.1 Remove existing roofing.

.2 Remove existing metal flashings.

.3 Remove deteriorated underlayment.

.4 Remove existing plywood boarding.

3.2 INSTALLATION OF UNDERLAYMENT

.1 Underlayment:

.1 Apply two-plies underlayment over deck surface.

.2 Start application at edge of canopy applying strips horizontally along roof.

.3 Lap each strip 6 inches minimum over preceding strip in direction of water flow. Lap ends 6 inches minimum.

.4 Extend 5 inches up abutting vertical surfaces.

.5 Fasten top of each strip with nails spaced 12 inches on centre maximum, located within 2 inches of top of strip.

.6 Lap underlayment minimum 12 inches.

.7 Nail at 12 inches spacing.

3.3 INSTALLATION OF FLAT SEAM ROOFING

.1 Install to SMACNA Manual.

.2 Apply roofing beginning at low edge.

.3 Install roofing with seams spaced 52 inches on centre.

.4 Lay sheets with long dimension perpendicular to longer side eave. Apply pans beginning at eaves.

.5 Flat lock cleats into seams; flatten seams in direction of drainage.

.6 At eaves and gable ends, terminate roofing by hooking over edge strip.

.7 Fold lower ends of seams at eaves to eave trim cleat to create drip profile.

.8 Fit flashings with square corners and surfaces true, aligned, and accurate to required profiles.

3.4 CLEANING

.1 Clean sheet metal; remove slag, flux, stains, spots, and minor abrasions without etching surfaces.

END OF SECTION

PART 1 General

1.1 SECTION INCLUDES

.1 Preparing substrate surfaces.

.2 Sealant and joint backing.

1.2 RELATED SECTIONS

.1 Section 06 35 00 – Woodwork Restoration.

.2 Section 08 52 00 – Solid Wood Windows.

.3 Section 09 03 98 – Restoration Painting.

1.3 REFERENCES

.1 ASTM C920-13 - Standard Specification for Elastomeric Joint Sealants.

.2 ASTM C1193-13 - Standard Guide for Use of Joint Sealants.

.3 ASTM C1330-02(2007) - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants. ASTM E330-02(2010) - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

1.4 PERFORMANCE REQUIREMENTS

.1 Sealant Design: Design structural sealant to withstand specified loads without breakage, loss, failure of seals, Product deterioration, and other defects.

.2 Design installed sealant to withstand:

- .1 Movement from ambient temperature range of 49 degrees Celsius.
- .2 Movement and deflection of structural support framing.
- .3 Water and air penetration.

1.5 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project Managing and Coordination.

.2 Coordination:

- .1 Coordinate with other Work having a direct bearing on Work of this section.
- .2 Coordinate the Work with all sections referencing this section.

1.6 SUBMITTALS FOR REVIEW

.1 Section 01 33 00 – Submittal Procedures.

.2 Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, colour availability.

.3 Shop Drawings: Indicate sealant joints and dimensions, materials, structural bite, glueline thickness, joint profile, and support framing.

.4 Samples: Submit two (2) samples, 6 inch in size illustrating sealant colours for selection.

1.7 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submittal Procedures.

.2 Submit applicator qualifications.

.3 Installation Data: Manufacturer's special installation requirements.

.1 Indicate special procedures, surface preparation, perimeter conditions requiring special attention.

1.8 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Closeout Submittals.

1.9 QUALITY ASSURANCE

.1 Perform Work to sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

.2 Perform sealant application Work to ASTM C1481.

.3 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

.4 Applicator Qualifications: Company specializing in performing the Work of this section with minimum five (5) years documented experience and approved by the manufacturer.

1.10 MOCK-UP

.1 Provide mock-up to include sealant joints in conjunction with window conservation and window replacement.

.2 Construct mock-up with specified sealant types and with other components noted.

.3 Locate where directed by Consultant.

.4 Approved mock-up may remain as part of the Work.

1.11 ENVIRONMENTAL REQUIREMENTS

.1 Section 01 35 26: Environmental Protections.

.2 Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.12 WARRANTY

.1 Section 01 78 10 - Closeout Submittals.

.2 Provide a five (5) year warranty against defects and deficiencies. Promptly correct to satisfaction of Consultant and at no expense to the owner, any defects or deficiencies which become apparent within the warranty period. Defects include, but are not limited to: cracking, crumbling, melting, shrinkage, sags, failure in adhesion, cohesion or reversion, air and moisture leakage, marbling or streaking due to improper mixing, discolouration due to dirt pick-up during curing, and staining of adjacent materials.

.3 Warranty: Include coverage for installed sealants and accessories which fail to achieve water tight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 Products

2.1 SEALANTS

.1 Polyurethane Sealant (Type A): ASTM C920, ; single-component, chemical curing, non-staining, non-bleeding, non-sagging type; colour to be selected from manufacturer's standard colour range.

.1 Elongation Capability 25%.
.2 Service Temperature Range -40 to 82 degrees C.
.3 Shore A Hardness Range 20 to 35.
.4 Product: Dymonic 100 manufactured by Tremco.

2.2 ACCESSORIES

.1 Primer: Non-staining type, recommended by sealant manufacturer to suit application.

.2 Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

.3 Joint Backing: ASTM C1330, round, closed cell; polyethylene foam rod, oversized 30% to 50% larger than joint width.

.4 Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

.5 Masking tape: Non-staining, non-absorbent type compatible with sealant and adjacent surfaces.

.6 Setting Blocks and Spacers: Compatible with silicone sealant and recommended by sealant manufacturer.

.7 Sharp Sand: to match mortar of brick joints.

PART 3 Execution

3.1 EXAMINATION

.1 Verify that joint openings and substrate surfaces are clean, dry, and free of frost and ready to receive Work.

.2 Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

.1 Remove all existing sealant from identified areas of work.

.2 Remove loose materials and foreign matter which might impair adhesion of sealant.

.3 Clean and prime joints to sealant manufacturer's written instructions.

.4 Perform preparation to ASTM C1193 for solvent release and latex base sealants.

.5 Perform preparation to manufacturer's written instructions.

.6 Protect elements surrounding the Work of this section from damage or disfiguration.

3.3 INSTALLATION

.1 Perform installation in accordance with ASTM C1193 for solvent release and latex base sealants.

.2 Install sealant to sealant manufacturer's written instructions.

.3 Measure joint dimensions and size materials to achieve 2:1 width/depth ratios.

.4 Install joint backing to achieve a neck dimension no greater than 1/3 of the joint width.

.5 Install bond breaker where joint backing is not used.

.6 Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

.7 Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

.8 Tool joints concave unless otherwise detailed.

.9 Where installation is visible at mortar joints, flashing reglets, etc, dress sealant with sharp sand while still tacky.

3.4 FIELD QUALITY CONTROL

.1 Section 01 45 00 – Quality Control.

.2 Joint Sealants: Perform adhesion tests to manufacturer's written instructions and ASTM C1193, Field-Applied Sealant Joint Hand Pull Tab.

.1 Perform test seven (7) days after installation at a rate of one test every 1000 ft of installed sealant.

.3 Remove sealants failing adhesion test, clean substrates, reinstall sealants and perform retesting.

.4 Maintain test log and submit report to Consultant indicating tests, locations, dates, results, and remedial actions.

3.5 CLEANING

.1 Section 01 74 00 – Cleaning and Waste Processing.

.2 Immediately clean adjacent surfaces which have been soiled and leave Work in neat, clean condition. Remove excess materials, compound smears or other soling resulting from application of sealants. Use recommended cleaners and solvents.

3.6 PROTECTION OF FINISHED WORK

.1 Remove masking tape and excess sealant.

.2 Protect sealants until cured.

3.7 SCHEDULE

.1 Colour(s) to match existing, and confirmed by consultant.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 **General Contractor** to provide required scaffolding, stair tower, hoists and access as required for extent of exterior work inclusive of masonry restoration, woodwork repairs/restoration, painting of siding, windows, doors and metal roofing, and recreation of gutters and downspouts.

.2 Intent for paint removal is to remove all existing flaking paint as well as enough that will provide a smooth finish, free from lips and edges once painted.

.3 Spray and roller coating of the paint is allowed on any visible or finished faces and edges/side of the woodwork.

1.2 RELATED SECTIONS

.1 Section 06 35 00 – Woodwork Restoration

.2 Section 07 03 71 – Shingle Restoration

.3 Section 02 41 19 - Selective Demolition: removal of lead based paints.

1.3 REFERENCES

.1 ASTM D4442-07 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.

.2 NACE (National Association of Corrosion Engineers) - Industrial Maintenance Painting.

.3 MPI (Master Painters Institute) – Architectural Painting Specifications Manual and Maintenance Repainting Manual.

.4 SSPC (The Society for Protective Coatings) (formerly SSPC - Steel Structures Painting Council) - Steel Structures Painting Manual.

1.4 DEFINITIONS

.1 Crazing: Fine, jagged, interconnected breaks in top layer or layers of paint.

.2 Intercoat Peeling: Loss of adhesion between layers of paint.

.3 Peeling: Loss of adhesion of paint from substrate.

.4 Alligatoring: Crazing extending to substrate.

.5 Abrasive Methods: Paint removal by mechanical or manual methods using putty knifes, scrapers, wire brushes, sandpaper, sanding blocks, or sanding sponges.

.6 Thermal Methods: Paint removal by softening and raising the paint by applying heat via heat plate or gun, followed by scraping.

.7 Chemical Methods: Paint removal by softening the paint by applying chemical stripper, followed by scraping.

.8 Conform to ASTM D16 for interpretation of terms used in this Section.

1.5 SUBMITTALS FOR REVIEW

.1 Section 01 33 00 – Submittal Procedures.

.2 Product Data: Provide manufacturer's data on materials proposed for use. Include:

.1 Product designation and grade of each paint type.

.2 Surface preparation materials and procedures.

.3 Product analysis and performance characteristics for each paint type.

.3 Samples: Submit two (2) samples, 6 x 6 inches in size illustrating each colour and luster, on representative substrate. Step each coat stepped back so that all coats remain exposed.

.4 Paint Schedule: Detailed schedule indicating type and location of surface, paint materials, and number of coats to be applied.

1.6 CLOSEOUT SUBMITTALS

.1 Section 01 78 10 – Closeout Submittals: Submission procedures.

1.7 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 certification requirements.

1.8 QUALIFICATIONS

.1 Restorer Qualifications:

.1 Company specializing in performing the Work of this section with minimum three (3) years documented experience.

.2 Successful completion of at least three (3) projects of similar scope and complexity within past five (5) years.

.2 Conform to MPI - Specification Manual quality standard for surface preparation, paint products and application quality.

1.9 REGULATORY REQUIREMENTS

.1 Conform to applicable code for flame and smoke rating requirements for finishes.

1.10 MOCK-UP

.1 Section 01 43 00 – Quality Assurance: Requirements for mock-up.

.2 Restore 10 sq ft of each paint type and color.

.3 Demonstrate surface preparation, primer, intermediate coats, and top coats.

.4 Locate where directed by Consultant.

.5 Approved mock-up may remain as part of the Work.

1.11 DELIVERY, STORAGE, AND PROTECTION

.1 Deliver Products to site in sealed and labeled containers; inspect to verify acceptability.

.2 Container label to include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, colour designation, and instructions for mixing and reducing.

.3 Store paint materials at ambient temperature from [9 to 32 degrees Celsius in ventilated area, or as required by manufacturer's instructions.

1.12 ENVIRONMENTAL REQUIREMENTS

.1 Ambient Conditions:

.1 Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint Product manufacturer.

.2 Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint Product manufacturer.

.3 Minimum application temperatures as required by paint product manufacturer's instructions

.2 Provide lighting level of 80 foot candles measured mid-height at substrate surface.

1.13 EXTRA MATERIALS

.1 Section 01 78 10 – Closeout Submittals.

.2 Provide 1 gallons of each colour, type, and surface texture to Owner.

.3 Label each container with colour, type, texture, and locations, in addition to the manufacturer's label.

Part 2 Products

2.1 MATERIALS

.1 Ferrous Metal Primer: Alkyd Metal Primer (KP06), Benjamin Moore

.2 Wood Primer: Aura Exterior Fresh Start Primer, Benjamin Moore

.3 Plaster Primer: Aura Exterior Fresh Start Primer, Benjamin Moore

.4 Metal Paint: A-100 Exterior Latex Flat, Sherwin Williams

.5 Wood Paint: A-100 Exterior Latex Flat, Sherwin Williams

.6 Exterior Wood Stain: SICO ProLuxe SRD RE Exterior Wood Finish

.7 Plaster Paint: A-100 Exterior Latex Flat, Sherwin Williams

2.2 ACCESSORIES

.1 Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials required to achieve specified finishes; commercial quality.

2.3 MIXES

.1 Uniformly mix paints to thoroughly disperse pigments prior to applying.

.2 Do not thin paint in excess of manufacturer's recommendations.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 70 00 – Examination and Preparation: Verify existing conditions before starting Work.

.2 Verify that surfaces are ready to receive Work.

3.2 PREPARATION - GENERAL

.1 Measure moisture content of surfaces using electronic moisture meter. Do not apply coatings unless moisture content of surfaces are below following maximums:

.1 Metal: 12%.

.2 Plaster: 12%.

.3 Wood: 15%, measured to [ASTM D4442].

.2 Protect adjacent and underlying surfaces.

.3 Mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.

.4 Correct defects and clean surfaces capable of affecting Work of this section.

.5 Seal marks that may bleed through surface finishes with shellac.

3.3 SURFACE PREPARATION

.1 Wash surfaces with mild solution of household detergent and gallon clean water, applied with medium soft fibre brush. Rinse with clean water and allow to dry completely.

.2 Crazing and Intercoat Peeling: Remove affected paint layers by abrasive methods.

.3 Peeling and Alligatoring: Remove all paint layers by abrasive, chemical, or thermal methods.

.4 Fill holes and indentations with filler appropriate to surface. Allow to dry; sand flush with adjacent surfaces.

.5 Lightly sand glossy paints.

.6 Sand surfaces smooth where paint is removed to expose substrate.

.7 Prevent damage to existing surfaces.

3.4 CLEANING EXISTING PAINTS

.1 Wash surfaces with mild solution of household detergent and clean water, applied with medium soft fibre brush.

.2 Rinse with clean water and allow to dry completely.

3.5 APPLICATION

.1 Apply primer or first coat immediately after surface preparation is complete to prevent recontamination.

.2 Do not apply finishes to surfaces that are not dry.

.3 Apply coatings to minimum dry film thickness recommended by manufacturer.

.4 Apply each coat of paint slightly darker than preceding coat unless specified otherwise.

.5 Apply coatings to uniform appearance without laps, sags, curtains, holidays, and brush marks.

.6 Allow applied coats to dry before next coat is applied.

.7 Sand between coats on metal and wood surfaces.

.8 Match final coat to approved color samples.

3.6 ADJUSTING

.1 Touch up abraded, stained, and otherwise disfigured surfaces or refinish as required.

3.7 SCHEDULES

.1 Exterior Ferrous Metal: One (1) coat ferrous metal primer; two coats exterior gloss enamel.

.2 Exterior Wood: One (1) coat wood primer; two (2) coats exterior gloss enamel.

.3 Exterior Cedar Shingles: two (2) coats exterior wood stain.

.4 Exterior Wood Logs: Confirmation by specialist.

.5 Interior Wood: One (1) coat wood primer; two (2) coats interior gloss enamel.

.6 Interior Plaster: Two (2) coats interior flat latex paint.

END OF SECTION

PART 1 General

1.1 SECTION INCLUDES

.1 Preparation of subsoil.

.2 Fertilizing.

.3 Seeding.

.4 Restoration of landscape.

1.2 REFERENCES

.1 ASPA (American Sod Producers Association) - Guideline Specifications to Sodding.

1.3 DEFINITIONS

.1 Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.4 SCOPE OF WORK

.1 Damage to landscape due to construction activities or Contractor use to be restored to pre-construction condition.

1.5 SUBMITTALS AT PROJECT CLOSEOUT

.1 Section 01 33 00 – Submittal Procedures.

.2 Operation Data: Submit for continuing Owner maintenance.

.3 Maintenance Data: Include maintenance instructions, cutting and trimming methods types, application frequency, and recommended coverage of fertilizer;.

.4 Submit list of plant life sources.

1.6 QUALITY ASSURANCE

.1 Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

1.7 REGULATORY REQUIREMENTS

.1 Comply with regulatory agencies for fertilizer and herbicide composition.

.2 Provide certificate of compliance from authority having jurisdiction indicating approval of fertilizer and herbicide mixture.

1.8 DELIVERY, STORAGE, AND PROTECTION

.1 Deliver sod on pallets. Protect exposed roots from dehydration.

.2 Do not deliver more sod than can be laid within twenty-four (24) hours.

.3 Protect and maintain plant life materials until planted.

.4 Deliver plant life material immediately prior to placement.

1.9 PROJECT CONDITIONS

.1 Section 01 31 00 – Project Managing and Coordination.

1.10 WARRANTY

.1 Section 01 78 10 – Closeout Submittals.

.2 Provide one (1) year warranty.

.3 Include coverage for one (1) continuous growing season; replace dead or unhealthy plants.

.4 Replacements: Plants of same size and species as specified, planted in the next growing season, with a new warranty commencing on date of replacement.

PART 2 Products

2.1 MATERIALS

.1 Type to match existing.

.2 Topsoil: Redistributed from site and free of weeds .

.3 Fertilizer: Type recommended for soil and grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil.

.4 Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.

2.2 ACCESSORIES

.1 Wood Pegs: Softwood, sufficient size and length to ensure anchorage of sod on slope.

.1 Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are [not] acceptable.

.2 Herbicide: As recommended by sod/plant supplier.

PART 3 Execution

3.1 EXAMINATION

.1 Verify that prepared soil base is ready to receive the Work of this section.

3.2 PREPARATION OF SOIL

.1 Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.

.2 Remove foreign materials, weeds and undesirable plants and their roots. Remove contaminated subsoil.

3.3 SEEDING

.1 Apply seed evenly in two intersecting directions. Rake in lightly.

.2 Do not seed areas in excess of that which can be mulched on same day.

.3 Planting Season: April to September.

.4 Do not sow immediately following rain, when ground is too dry, or during windy periods.

.5 Roll seeded area with roller not exceeding 50 kg.

.6 Immediately following seeding, apply mulch to a thickness of 3mm .Maintain clear of shrubs and trees.

.7 Apply water with a fine spray immediately after each area has been mulched. Saturate to 100 mm of soil.

3.4 FERTILIZING

.1 Apply fertilizer in accordance with manufacturer's instructions.

.2 Apply after smooth raking of topsoil and prior to installation of sod/plantings.

.3 Apply fertilizer no more than forty-eight (48) hours before laying sod/plantings.

.4 Mix thoroughly into upper 2 inches of topsoil.

.5 Lightly water to aid the dissipation of fertilizer.

END OF SECTION