

City of Saint John

TENDER

Tender # 2022-082401T Masonry Remediation – Carnegie Building

Sealed tenders, hand delivered or couriered, addressed to Monic MacVicar, CCLP, CPPB, Supply Chain Management, 1st Floor – 175 Rothesay Avenue, Saint John, NB, E2J 2B4, and marked on the envelope:

“Tender # 2022-082401T Masonry Remediation – Carnegie Building”

will be received until 2:30:00 pm, Tuesday, June 7th, 2022 for the supply of all materials, labor and equipment necessary to complete the masonry remediation at the Carnegie Building located at 20 Peel Plaza in accordance with the enclosed specifications, drawings, terms and conditions.

In light of the current Covid-19 pandemic, there will be no public opening. Tenders will be opened by the Tender Opening Committee, in the second-floor boardroom, 175 Rothesay Avenue, Municipal Operations Complex, immediately following the tender closing time. **Registered bidders may attend remotely via Teams invitation.**

The lowest or any tender not necessarily accepted.

**Monic MacVicar, CCLP, CPPB
Supply Chain Management**

Issued: Wednesday, May 18th, 2022

T E N D E R
Tender # 2022-082401T
Masonry Remediation – Carnegie Building

SCOPE OF WORK:

The City of Saint John is soliciting tenders from qualified bidders to supply all materials, labor and equipment necessary to complete the masonry remediation at the Carnegie Building located at 20 Peel Plaza, as per the specifications, drawings, terms and conditions outlined in this document.

A pre-bid site visit will be held on Friday, May 27th, 2022, at 11:30:00 AM. All bidders are strongly urged to attend.

SPECIFICATIONS:

See Appendix A.

TERMS AND CONDITIONS

Governing Law, Trade Treaties and Policies

This procurement will be in accordance with the laws of the province of New Brunswick and the federal laws of Canada.

This procurement is also subject to the following Policies, Legislation and Internal Trade Agreement(s) including:

- Atlantic Trade and Procurement Partnership (ATAPP)
- Canadian Free Trade Agreement (CFTA)
- New Brunswick Procurement Act and Regulation 2014-93
- City of Saint John Policy for the Procurement of Goods, Services and Construction

Submission Instructions

Sealed tenders, hand delivered or couriered, addressed to Monic MacVicar, CCLP, CPPB, Supply Chain Management, 1st Floor – 175 Rothesay Avenue, Saint John, NB, E2J 2B4, and marked on the envelope:

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Enquiries

Bidders shall promptly examine the bid documents and report any errors, omissions or ambiguities and may direct enquiries or seek additional information in writing by email before the deadline for enquiries to the Authorized Enquiries Contact as set out below. No such communications are to be directed to anyone other than the Authorized Enquiries Contact.

Authorized Enquiries Contact

Monic MacVicar, CCLP, CPPB
Supply Chain Management
City of Saint John
Email: supplychainmanagement@saintjohn.ca

It is the Bidder's responsibility to seek clarification from the City on any matter it considers unclear. The City shall not be responsible for any misunderstanding on the part of the Bidder concerning this bid document or its process.

The City intends to confirm receipt of a bidder's communication by way of an email or facsimile in reply. If a bidder has not received a reply, the bidder may wish to resend its communication as the lack of reply may have resulted from a technical problem. The City is under no obligation to respond to enquiries or provide additional information but may do so at its sole discretion.

Responses to inquiries may be distributed to all bidders on the invitation list as having received the bid documents as of the date the response is prepared. The source of the question will not be identified in the response. Verbal information shall not be binding upon the City. Inquiries received after the deadline for enquiries will not receive a response.

Tender to be Submitted on Prescribed Form

Bidders are to submit their tender on the prescribed form contained in this document. Failure to submit on this form may result in the disqualification of the bid.

Taxes

The bid price shall be all taxes extra. The City of Saint John shall be invoiced for and pay all applicable taxes related to this bid.

Schedule for the Bid Process

Issue Date	Wednesday, May 18 th , 2022
Pre-Bid Site Visit	Friday, May 27 th , 2022 at 11:30:00 AM Atlantic Time
Deadline for Enquiries	Monday, May 30 th , 2022 at 4:00:00 PM Atlantic Time
Deadline for Issuing Addenda	Tuesday, May 31 st , 2022 at 4:00:00 PM Atlantic Time
Submission Deadline	Tuesday, June 7 th , 2022 at 2:30:00 PM, Atlantic Time
Date of Award	Monday, June 13 th , 2022 (Tentative)

The Schedule for the bid process is tentative only and may be changed by the City in its sole discretion.

Advisory Notice(s)

Periodically, the City of Saint John is required to issue clarification notices to a bid document in the form of Advisory Notices. Normally these notifications will not have a direct bearing on the cost of a project and will not influence bidding.

Bidders are responsible for obtaining all advisory notice(s) issued by the City. Advisory Notice(s) may be obtained from the City's website (www.saintjohn.ca) under the Menu option, City Hall header, then "Tender and Proposals".

Bidders are instructed to sign the Advisory Notice and return it either by fax to (506) 658-4742 or email to supplychainmanagement@saintjohn.ca prior to the closing date. Failure to comply with the instructions on an advisory may result in rejection of the bid.

Addenda

Periodically, the City of Saint John is required to issue notification of changes or corrections to a bid document by way of addenda. Normally these notifications will have direct bearing on the cost of a project and will influence bidding. Therefore, it is important that the City have assurances that bidders have in-fact received the notification(s).

Bidders are responsible for obtaining all addenda issued by the City. Addenda may be obtained from the City's website (www.saintjohn.ca) under the Menu option, City Hall header, then "Tender and Proposals".

Bidders are required to sign and include all addenda with their bid submission.

Failure to include a copy of all signed addenda with the bid submission may result in rejection of the bid regardless of whether or not the changes noted in the addendum are included in the bid submission.

Mandatory Requirements

Each submission will be evaluated to ensure that it complies with the mandatory requirements and may be rejected if it does not comply. The evaluation of mandatory requirements will confirm that:

- the submission was received prior to the applicable Submission Deadline;
- the bid submission is signed;
- the bid submission is legible;
- the bid submission does not contain a substantive qualification or conditions that are contrary to the terms of the bid document;
- the bid submission does not contain a change in price that was not initialled by the person who signed the submission; and
- the bid submission is in English;

Payment

Payment shall be based on Net 45 Days from date of invoice or receipt of goods/services, whichever is later. Invoices can either be mailed to: City of Saint John, Accounts Payable Department, P.O. Box 1971, Saint John, NB, E2L 4L1, or by email to the Accounts Payable department (accounts payable@saintjohn.ca). Vendors are to ensure invoices are not sent both ways.

Pricing

The tender prices shall include all installation wages, fringe benefits, insurance, transportation, delivery, duty, working tools, equipment costs, and any other charges incurred in order to provide required materials and/or services.

Holdback

A Hold back of 10% of all monies due to the contractor will be retained by the City until 60 days after the substantial completion date of the work, approved by the project manager, and receipt of a statutory declaration.

Substitutes

Substitute products will not be considered (where applicable).

Verbal Agreement

No verbal agreement or conversation with any officer, agent or employee of the owner either before or after execution of the contract shall effect or modify any of the terms or obligations contained in any of the documents comprising the said contract.

Fax Tenders

Tenders received by fax WILL NOT be accepted.

Late Bids

Bids received after the time and date as shown in this document shall not be considered.

Cancelation Clause

In the event that the successful bidder does not comply with the specifications and terms and conditions of this tender, at any time throughout the duration of the contract, the City of Saint John reserves the right to cancel the contract in its entirety.

Basis for Award

A The city does not limit itself to accepting the lowest, or any tender submitted, but reserves the right to award the tender in any manner deemed to be in the City's best interest. It is the City of Saint John's intention to award this agreement to one Vendor.

No guarantee

The City makes no guarantee as to the volume of the Deliverables.

Acceptance, Revocation and Rejection Of Tenders

The bidder agrees that his tender is a firm offer to supply the goods and/or services specified herein at the quoted price, and in accordance with the terms and conditions herein contained. The bidder may revoke his tender at any time prior to the time fixed for tender opening by delivering, or causing to be delivered, written notice of revocation to the designated official at the City of Saint John. Revocation will take effect from the time the notice is actually received. A notice of revocation will not be accepted after the time fixed for tender opening.

The bid shall not be restricted by a statement added to the Tender Form, or by a covering letter, or by alterations to the tender form as supplied, unless otherwise provided herein and further, a tender form that has been altered in any way may be deemed to be a non-confirming bid and, therefore, rejected. Bidders shall be allowed to attach descriptive literature; whose sole purpose is to amplify the bid.

Due Diligence

In the event that a health and safety offence is committed, the onus falls on the employer to prove that it exercised due diligence (i.e. did everything it reasonably could) in order to avoid the offence.

When hiring contractors, the City of Saint John is responsible for ensuring compliance with Health and Safety Legislation and must make sure that the appropriate accident prevention systems are implemented in the workplace.

Therefore, if any contractor is found to be working in an unsafe manner, or outside of current legislation, he will be made to stop work immediately. Any losses which may arise as a result of this work stoppage are the responsibility of the contractor.

Failure to comply with current legislation on the part of the contractor, may lead to cancellation of this contract and any bid deposits that may be in place.

Insurance

The successful contractor shall provide evidence of the following insurance coverage:

General Liability with minimum limits of two million dollars, (\$2,000,000.00). The policy shall include:

- *operations of the contractor in connection with this tender;
- *products and completed operations coverage;
- *contractual liability with respect to this tender;
- *the City of Saint John added as an additional insured;
- *a cross liability clause;
- *non-owned automobile;
- *thirty (30) days notice of cancellation of this policy "will" be given to the City of Saint John, by the insurers;

Standard automobile insurance for owned automobiles with at least the minimum limits allowed by law. This coverage is to remain in effect for the entire time frame of the contract.

WorksafeNB Certificate and Business Corporations Act Certificate

New Brunswick Tenderers shall provide to the City a WorkSafeNB certificate which confirms proper registration and good standing with WorkSafeNB and a Business Corporations Act Certificate which confirms proper registration and good standing with the Province of New Brunswick - Corporate Affairs within five (5) Working Days following the City's notice of selection.

Out-of-province Tenderers shall provide to the City a WorkSafeNB certificate which confirms proper registration and good standing with WorkSafeNB or a letter or certificate issued under the equivalent applicable legislation in the province of origin of the Tenderer confirming extension of coverage from said legislation to the Province of New Brunswick for the term of the Contract. Subject to paragraph c), out-of-province Tenderers shall also provide a Business Corporations Act Certificate which confirms proper registration and good standing with the Province of New Brunswick - Corporate Affairs within five (5) Working Days following the City's notice of selection.

Tenderers from Nova Scotia may submit the appropriate Business Corporations Act Certificate from the Province of Nova Scotia.

Reserved Rights

The City reserves the right to:

- a) Reject an unbalanced bid submission. For the purpose of this section, an unbalanced bid submission is a bid submission containing a unit price which deviates substantially from, or does not fairly represent reasonable and proper compensation for the unit of work bid or one that contains prices which appear to be so unbalanced as to adversely affect the interests of the City.

- The City reserves the right to use other bids submitted in response to this bid solicitation or for other like or similar work as a guideline in determining if a bid is unbalanced.
- b) Amend or modify the scope of the Work, and/or cancel or suspend the bid award, at any time for any reason;
 - c) Require bidders to provide additional information after the submission deadline to support or clarify their bid submission;
 - d) Not accept any or all bids;
 - e) Not accept a bid submission from a bidder who is itself, or whose principals, owners or directors are also principals, owners or directors of another entity which is, involved in litigation, arbitration or any other similar proceeding against the City;
 - f) Reject any or all bid submissions without any obligation, compensation or reimbursement to any bidder or any of its team members;
 - g) Withdraw this bid solicitation and cancel or suspend the bid process;
 - h) Extend, from time to time, any date, any time period or deadline provided in this bid solicitation (including, without limitation, the submission deadline), upon written notice to all bidders;
 - i) Assess and reject a bid submission on the basis of:
 - (i) information provided by references;
 - (ii) the bidder's past performance on previous contracts;
 - (iii) the information provided by a bidder pursuant to the City exercising its clarification rights under this bid process;
 - (iv) the bidder's experience with performing the type and scope of work specified;
 - (v) other relevant information that arises during this procurement process;
 - j) Waive formalities and accept bids which substantially comply with the requirements of this bid solicitation;
 - k) Verify with any bidder or with a third party any information set out in a bid submission;
 - l) Disqualify any bidder whose bid submission contains misrepresentations or any other inaccurate or misleading information;
 - m) Disqualify any bidder who has engaged in conduct prohibited by the bid solicitation;
 - n) Make changes, including substantial changes, to the bid solicitation provided that those changes are issued by way of addenda in the manner set out in this bid document;
 - o) Select any bidder other than the bidder whose bid submission reflects the lowest cost to the City;

- p) Cancel this procurement process at any stage, for any reason;
- q) Cancel this procurement process at any stage and issue a new bid solicitation for the same or similar deliverables;
- r) Accept any bid submission in whole or in part;
- s) Waive minor non-compliance with the mandatory requirements of the bid solicitation and accept the bid submission; or
- t) Accept a bid submission which contains the following errors:
 - (i) error in mathematics – whether this involves the extension of a unit price or an error in addition, the mistake will be corrected and the correct total will be used for evaluation purposes and will be binding on the bidder.
 - (ii) conflict between the written and numerical bid prices. In all cases, the total bid price will be corrected to reflect the written bid price, whether lump sum or unit price (where applicable).
 - (iii) failure to include the contingency allowance in the total bid price (where applicable). If the contingency allowance was not included in the addition, the bid price shall be corrected to reflect its inclusion.

and these reserved rights are in addition to any other express rights or any other rights which may be implied in the circumstances and the City shall not be liable for any expenses, costs, losses or any direct or indirect damages incurred or suffered by any bidder or any third party resulting from the City exercising any of its express or implied rights under this bid solicitation.

By submitting a bid, the bidder authorizes the collection by the City of the information set out at paragraph i) in the manner contemplated in that subparagraph.

Limitation of Liability and Waiver

Each bidder, by submitting a bid, agrees that:

- a) Neither the City nor any of its employees, agents, advisors or representatives will be liable, under any circumstances, for any Claim arising out of this procurement process including but not limited to costs of preparation of the bid submission, loss of profits, loss of opportunity or for any other Claim; and
- b) The bidder waives any Claim for any compensation of any kind whatsoever, including Claims for cost of preparation of the bid submission, loss of profit or loss of opportunity by reason of the City's decision to not accept the bid submitted by the bidder, to award a Contract to any other bidder or to cancel this procurement process, and the bidder shall be deemed to have agreed to waive such right or Claim.

Validity Period

The bid submission constitutes an offer which shall remain open and irrevocable until 90 days after the submission deadline.

Minor Irregularities

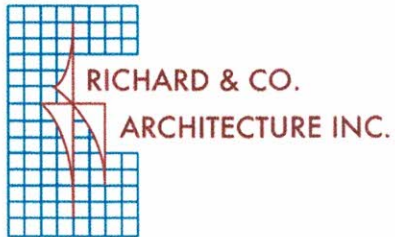
The City of Saint John reserves the right to waive minor non-compliances in accordance with Section 120 of the Province of New Brunswick's Regulation 2014-93 under the Procurement Act.

APPENDIX A – SPECIFICATIONS

TENDER No. 2022-082401T
Masonry Remediation – Carnegie Building

Project Title:

City of Saint John
Carnegie Building
Masonry Remediation
Saint John, NB



38 WATER STREET
SAINT JOHN, N.B. E2L 2A5



SECTION	DESCRIPTION	PAGES
01 11 00	SUMMARY OF WORK	5
01 14 00	WORK RESTRICTIONS	1
01 31 19	PROJECT MEETINGS	2
01 32 16.19	CONSTRUCTION PROGRESS SCHEDULE – BAR (GANTT) CHART	3
01 33 00	SUBMITTAL PROCEDURES	4
01 35 29.06	HEALTH AND SAFETY REQUIREMENTS	3
01 35 35	FIRE SAFETY REQUIREMENTS	2
01 35 43	ENVIRONMENTAL PROCEDURES	1
01 41 00	REGULATORY REQUIREMENTS	1
01 45 00	QUALITY CONTROL	1
01 51 00	TEMPORARY UTILITIES	1
01 52 00	CONSTRUCTION FACILITIES	1
01 56 00	TEMPORARY BARRIERS AND ENCLOSURES	1
01 61 00	COMMON PRODUCT REQUIREMENTS	2
01 73 00	EXECUTION	1
01 74 11	CLEANING	1
01 74 21	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL	2
01 77 00	CLOSEOUT PROCEDURES	1
01 78 00	CLOSEOUT SUBMITTALS	3
01 91 51	BUILDING MANAGEMENT MANUAL (BMM)	2
04 03 01.13	PERIOD MASONRY CLEANING	6
04 03 05.13	PERIOD MASONRY MORTARING	6
04 03 05.21	PERIOD MASONRY REPOINTING	7
04 03 43.13	PERIOD STONE REPAIRING	7
04 03 43.19	PERIOD STONE DISMANTLING	6

DRAWING:

A1 EXTERIOR ELEVATIONS

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- .1 The work under this contract includes the masonry remediation, work and procedures associated with the Carnegie Building located at 20 Peel Plaza, Saint John, NB. The work is to include the coordination, supply and installation of all improvements necessary to complete the following project in full as per the drawings and specifications:
 - .1 Project Title: **Carnegie Building
Masonry Remediation
Saint John NB**
 - .2 Construct work under single price contract.
 - .3 Partial Owner's occupancy: Carry out work in a manner to keep disruption of normal building activities minimized.
 - .1 The Carnegie Building is to remain fully operational and secure throughout the duration of the work of this contract. Protect existing finishes to remain, building personnel, users and visitors from exposure to construction processes, materials as well as odours, dust and debris.
 - .2 This Contractor will schedule/coordinate all work to be performed with the City of Saint John Project Manager and the Architect.
- .2 The work under this contract includes, but is not limited to the following:
 - .1 Construct temporary barriers/walls as necessary to facilitate the separating of the construction areas from occupied areas ensuring containment of dust and debris.
 - .2 Supply all labour and materials necessary to complete the remediation of the sandstone as described on the drawings and in the specifications.
 - .3 Include within the scope of work; dialogue with the Architect leading to a comprehensive identification of mortar and grouting mixes.
 - .4 Remove existing gutter assembly where it interferes with identified work items and reinstall with fastening restricted to joints of brick masonry only.
 - .5 Supply and install all materials, labour and equipment required to complete the identified improvements as noted on drawings and described in the specifications.
 - .6 Clean all work areas complete as work of each section of the work is completed.
 - .7 Complete all specified administrative requirements.

1.2 CONTRACTORS USE OF PREMISES

- .1 Installation/Removal
 - .1 Provide construction facilities and temporary controls in order to execute work expeditiously.
 - .2 Remove from site all such work after use.
- .2 Site Storage/Loading
 - .1 Confine the Work and operations of employees to limits indicated by Contract Documents and as designated at the start-up meeting. Do not unreasonably encumber site with Products.
 - .2 Do not load or permit to be loaded any part of the Work with a weight or force that will endanger the Work.
- .3 Sanitary Facilities
 - .1 Contractor to provide, maintain and clean portable sanitary facilities during construction unless otherwise agreed and documented within Project Minutes.

- .4 Water Supply
 - .1 Existing potable water supply as designated may be used during construction period.
- .5 Temporary Power
 - .1 Contractor to provide for temporary power required during construction for temporary lighting and operating of power tools unless otherwise agreed and documented within Project Minutes.

1.3 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy of each of the following:
 - .1 Contract drawings.
 - .2 Specifications.
 - .3 Set of documents for recording changes or deviation from drawings.
 - .4 Reviewed shop drawings.
 - .5 Change orders.
 - .6 Modifications to Contract.
 - .7 Copy of approved work schedule.
 - .8 Manufacturers installation and/or application instructions.
 - .9 Manufacturers SDS product sheets.

1.4 PROJECT COORDINATION

- .1 Coordinate progress of the Work, Work schedules, submittals, use of site, temporary utilities, construction facilities and controls and material and equipment location.
- .2 Work on this project is to begin immediately following award of contract.
- .3 Schedule verification of site dimensions, shop drawing review and ordering of materials before work commences on site so that no delays will occur.

1.5 CUTTING AND PATCHING

- .1 Approvals
 - .1 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of any element of Project.
 - .2 Efficiency, maintenance, or safety of any operational element.
 - .3 Visual qualities of sight-exposed elements.
- .2 Inspection
 - .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
 - .2 After uncovering, inspect conditions affecting performance of work.
 - .3 Beginning of cutting or patching means acceptance of existing conditions.
- .3 Execution
 - .1 Perform cutting, fitting, and patching to complete the Work.
 - .2 Remove and replace defective and non-conforming work.
 - .3 Perform work to avoid damage to other work.
 - .4 Prepare surfaces to receive patching and finishing.
 - .5 Cut rigid materials using power saw or core drill. Pneumatic or impact tools not allowed. Do not use power tools for masonry repair and repointing procedures.
 - .6 Restore work with new products in accordance with Contract Documents.
 - .7 Refinish surfaces to match adjacent finishes; for continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

- .4 Record Drawings
 - .1 After award of Contract, Project Manager will provide 2 sets of white print drawings for purpose of maintaining record drawings. Using RED INK, accurately and neatly record deviations from Contract Documents caused by site conditions and changes ordered by Architect.
 - .2 Identify drawings as "Project Record Copy". Maintain in new condition and make available for inspection on site, and at all job meetings, by Architect.
 - .3 On completion of Work and **prior to Substantial Completion Inspection**, submit complete and comprehensive record documents (Drawings and Specifications) to Architect for preparation of "AS BUILTS".

1.6 SITE INSTRUCTION

- .1 When a clarification or modification of the Work is required which does not require an adjustment of the Contract Price or Contract Time, the Architect will issue a Site Instruction.
- .2 Upon receipt of a Site Instruction, the Contractor to proceed promptly with the Work.

1.7 VALUATION OF CHANGES IN THE WORK

- .1 The value of any changes in the work will be determined in one or more of the following ways, as determined by the Architect:
 - .1 Lump Sum: An agreement between the Architect and the Contractor on a fixed price.
 - .2 Cost Plus: Cost of work and percentage; or cost and fixed fee.
- .2 When determining costs using the Lump Sum or Cost Plus method, the Contractor to submit an itemized account of the cost of expenditures and savings that includes, but is not limited to, the subcontractors' and suppliers' signed quotations and breakdown estimates for material and labour (i.e. itemized materials lists and labour, including labour rates and number of hours to perform work).
- .3 When determining costs using the Lump Sum or Cost Plus method, the itemized account to include all documents and supporting data required to certify the adjustments to the Contract Price, as determined by the Architect.
- .4 For changes where the individual trade cost is anticipated to be less than \$1,000.00, the requirement for the itemized account may be waived, however individual trade quotations must be supplied.
- .5 If appropriate submittals are not provided as required above, the Architect, the Architect's sub-consultants nor Owner will be held responsible for costs of delays associated with this Work.

1.8 MARKUP PERCENTAGES

- .1 When determining costs using the Lump Sum or Cost Plus method, markup:
 - .1 Contract Price adjustment of \$2,500.00 or less

Work completed by Contractor's own forces	-	20%
Completed by subcontractor	-	10%
 - .2 Contract Price adjustment over \$2,500.00

Work completed by Contractor's own forces	-	15%
completed by subcontractor.	-	5%
 - .3 No markup to be applied to deductions..

- .2 Markup Costs:
 - .1 Included within the mark-up percentages are all overhead costs such as safety, all office costs, project management, change estimating, as-built, office supplies, courier as well as profit.

1.9 QUALITY CONTROL

- .1 Inspection
 - .1 Architect and CoSJ Project Manager shall have access to the Work.
 - .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Architect instructions, or law of Place of the Work.
 - .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

1.10 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

- .1 Project Cleanliness
 - .1 Maintain Work in tidy condition, free of accumulation of waste products and debris.
 - .2 Remove waste material and debris from site at end of each working shift. Clean area surrounding work area of dust at end of each working shift.
 - .3 Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.

1.11 PROJECT CLOSEOUT

- .1 Final Cleaning
 - .1 When each portion of the work is Substantially Performed and inspected, remove surplus products, tools construction machinery and equipment not required for performance of remaining Work.
 - .2 Remove waste materials and debris from site at regularly scheduled times. Do not interfere with the normal operations of the Carleton Community Centre.
 - .3 Leave work broom clean before inspection process commences.
 - .4 Remove dirt and other disfigurations from exterior surfaces.
- .2 Documents
 - .1 Collect reviewed submittals and assemble documents executed by Subcontractors, suppliers, and manufacturers.
 - .2 Submit material prior to final Application for Payment.
 - .3 Submit operation and maintenance data, record (project record copies) drawings.
 - .4 Provide warranties and bonds fully executed and notarized.
 - .5 Execute transition of Performance and Labour and Materials Payment Bond to warranty period requirements.
 - .6 Submit a final statement of accounting giving total adjusted Contract Price, previous payments, and monies remaining due.
 - .7 Architect/CoSJ Project Manager will issue a final change order reflecting approved adjustments to Contract Price not previously made.

1.12 INSPECTION AND DECLARATION PROCEDURES

- .1 Contractor's Inspections: Contractor and all Subcontractors shall conduct inspections of the Work, identify deficiencies and defects; repair as required to conform to Contract Documents. Notify Architect in writing of satisfactory completion of Contractor's Inspection and that corrections have been made. The Contractor may then request the Architect to perform an interim completion inspection of the work.
- .2 Architect, CoSJ Project Manager and Contractor will perform an Inspection of the Work to identify obvious defects or deficiencies. Contractor shall correct the deficiencies within a time period agreeable to the Architect and CoSJ Project Manager.
- .3 Interim Certificate of Completion: Upon completion of the interim inspection, if Architect is satisfied that work is substantially completed and acceptable for use, an Interim Certificate of Completion will be issued describing portions of work not completed to his satisfaction. Completion of Interim Certificates of Completion will not constitute Substantial Completion of the Work and the commencement of the Mechanic's Lien period.
- .4 After the completion of the Substantial Completion Inspection and the correction of all deficiencies are completed the Contractor may call for a final inspection.
- .5 Final Completion when Architect considers final deficiencies and defects have been corrected and it appears requirements of contract have been totally performed he may issue to the contractor a final certificate of completion.
- .6 Interim/Final Certificates of Completion: If the Architect does not find the Work to be substantially completed and an Interim/Final Certificate is not issued, the costs associated with extra inspections shall be borne by the Contractor.
- .7 Commencement of Lien and warranty periods: all lien and warranty periods shall commence at date of Substantial Completion Certificate of Completion.

END OF SECTION

PART 1- GENERAL

1.1 ACCESS AND EGRESS

- .1 Design, construct and maintain temporary "access to" and "egress from" work areas independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.
- .2 Ensure temporary barrier is occupying least amount of area to perform construction work and does not interfere with daily functions of building employees and users.

1.2 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with CoSJ Project Manager to facilitate work as stated.
- .2 Maintain existing services to building and provide for personnel and vehicle access.
- .3 Where security is reduced by work provide temporary means to maintain security.
- .4 Closures: protect work temporarily until permanent enclosures are completed.

1.3 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

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

1.4 EXISTING SERVICES

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

1.5 SPECIAL REQUIREMENTS

- .1 Submit schedule showing work broken down as to item, duration, location and division.
- .2 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .3 Keep within limits of work and avenues of ingress and egress.
- .4 Parking is available adjoining the facility or as directed by the CoSJ Project Manager.

1.6 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions. Smoking is not allowed in this building or on the Carnegie Building property.

END OF SECTION

PART 1 GENERAL

1.1 ADMINISTRATIVE

- .1 Schedule and administer project meetings throughout the progress of the work at the call of CoSJ Project Manager and Architect.
- .2 Prepare agenda for meetings.
- .3 Distribute written notice of each meeting four days in advance of meeting date to CoSJ Project Manager and Architect.
- .4 Provide physical space and make arrangements for meetings.
- .5 Preside at meetings.
- .6 Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
- .7 Reproduce and distribute copies of minutes within three days after meetings and transmit to meeting participants, CoSJ Project Manager and Architect and affected parties not in attendance.
- .8 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

1.2 PRECONSTRUCTION MEETING

- .1 Within 15 days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Senior representatives of CoSJ Project Manager and Architect, Contractor, major Subcontractors, field inspectors and supervisors will be in attendance.
- .3 Establish time and location of meeting and notify parties concerned minimum 5 days before meeting.
- .4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5 Agenda to include:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work:
Construction Progress Schedule – Bar (GANTT) Chart Section 01 32 16.19.
 - .3 Schedule of submission of shop drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
 - .5 Delivery schedule of specified equipment and materials.
 - .6 Site security in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
 - .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
 - .8 Owner provided products.
 - .9 Record drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .10 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.

- .11 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
- .12 Monthly progress claims, administrative procedures, photographs, hold backs.
- .13 Appointment of inspection and testing agencies or firms.
- .14 Insurances, transcript of policies.

1.3 PROGRESS MEETINGS

- .1 During course of Work and two weeks prior to project completion, schedule progress meetings bi-weekly.
- .2 Contractor, major Subcontractors involved in Work and CoSJ Project Manager and Architect are to be in attendance.
- .3 Notify parties minimum 4 days prior to meetings.
- .4 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within 3 days after meeting.
- .5 Agenda to include the following:
 - .1 Review, approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts.
 - .4 Problems which impede construction schedule.
 - .5 Review of off-site fabrication delivery schedules.
 - .6 Corrective measures and procedures to regain projected schedule.
 - .7 Revision to construction schedule.
 - .8 Progress schedule, during succeeding work period.
 - .9 Review submittal schedules: expedite as required.
 - .10 Maintenance of quality standards.
 - .11 Review proposed changes for affect on construction schedule and on completion date.
 - .12 Other business.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Specification Sections associated with Masonry Remediation.

1.2 DEFINITIONS

- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2 Bar Chart (GANTT Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.
- .6 Master Plan: summary-level schedule that identifies major activities and key milestones.
- .7 Milestone: significant event in project, usually completion of major deliverable.
- .8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.
- .9 Project Planning, Monitoring and Control System: overall system operated by CoSJ Project Manager and Architect to enable monitoring of project work in relation to established milestones.

1.3 REQUIREMENTS

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.
- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to CoSJ Project Manager and Architect within 5 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .3 Submit Project Schedule to CoSJ Project Manager and Architect within 5 working days of receipt of acceptance of Master Plan.

1.5 PROJECT MILESTONES

- .1 Project milestones form interim targets for Project Schedule.
 - .1 Interim Certificate (Substantial Completion) within 45 working days of date of Award of Contract.

1.6 MASTER PLAN

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 CoSJ Project Manager and Architect will review and return revised schedules within 5 working days.
- .3 Revise impractical schedule and resubmit within 5 working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

1.7 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
 - .1 Award.
 - .2 Shop Drawings, Samples.
 - .3 Permits.
 - .4 Mobilization.
 - .5 Mortar analysis and determination of composition based on location and intended use.
 - .6 Restoration/Remediation by procedure, by elevation.
 - .7 Testing of materials.
 - .8 Substantial Completion.
 - .9 Demobilization and Final Cleaning.

1.8 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.9 PROJECT MEETINGS

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
- .2 Weather related delays with their remedial measures will be discussed and negotiated.

2 PRODUCTS

2.1 NOT USED

- .1 Not used.

3 EXECUTION

3.1 NOT USED

- .1 Not used.

END OF SECTION

1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 04 03 01.13 Period Masonry Cleaning
- .2 Section 04 03 05.13 Period Masonry Mortaring
- .3 Section 04 03 05.21 Period Masonry Repointing
- .4 Section 04 03 43.13 Period Stone Repairing
- .5 Section 04 03 43.19 Period Stone Dismantling

1.2 REFERENCE STANDARDS

- .1 As identified within Specification Sections.

1.3 ADMINISTRATIVE

- .1 Submit to Architect and CoSJ Project Manager submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Architect and CoSJ Project Manager. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify Architect and CoSJ Project Manager, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are coordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Architect and CoSJ Project Manager review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Architect and CoSJ Project Manager review.
- .10 Keep one reviewed copy of each submission on site.

1.4 SHOP DRAWINGS AND PRODUCT DATA

- .1 Refer to CCDC 2 GC 3.11.
- .2 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow four (4) days for Architect and CoSJ Project Manager review of each submission.
- .5 Adjustments made on shop drawings by Architect and CoSJ Project Manager are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Architect and CoSJ Project Manager prior to proceeding with Work.
- .6 Make changes in shop drawings as Architect and CoSJ Project Manager may require, consistent with Contract Documents. When resubmitting, notify Architect and CoSJ Project Manager in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .8 Submissions include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Relationship to adjacent work.
- .9 After Architect and CoSJ Project Manager review, distribute copies.
- .10 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as Architect and CoSJ Project Manager may reasonably request additional paper copies.
- .11 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Architect and CoSJ Project Manager where shop drawings will not be prepared due to standardized manufacture of product.

- .12 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Architect and CoSJ Project Manager.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within 3 years of date of contract award for project.
- .13 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Architect and CoSJ Project Manager.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit electronic copies of manufacturers instructions for requirements requested in specification Sections and as requested by Architect and CoSJ Project Manager.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit electronic copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Architect and CoSJ Project Manager.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .17 Submit copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Architect and CoSJ Project Manager.
- .18 Delete information not applicable to project.
- .19 Supplement standard information to provide details applicable to project.
- .20 If upon review by Architect and CoSJ Project Manager, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .21 The review of shop drawings by Architect and CoSJ Project Manager is for sole purpose of ascertaining conformance with general concept.
 - .1 This review shall not mean that Architect and CoSJ Project Manager approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
 - .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.5 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 Architect at 38 Water Street Saint John, NB E2L 2A5.
- .3 Notify Architect and CoSJ Project Manager 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 Architect and CoSJ Project Manager are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Architect and CoSJ Project Manager prior to proceeding with Work.
- .6 Make changes in samples which Architect and CoSJ Project Manager may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.6 MOCK-UPS

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

1.7 PHOTOGRAPHIC DOCUMENTATION

- .1 Submit electronic copy of colour digital photography in jpg format, fine resolution, weekly and with monthly with progress statement.
- .2 Project identification: name and number of project and date of exposure indicated.
- .3 Number of viewpoints: all work item locations.

1.8 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.

2 PRODUCTS

2.1 NOT USED

- .1 Not Used.

3 EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Specification sections associated with the remediation of the masonry at the Carnegie Building.

1.2 REFERENCE STANDARDS

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of New Brunswick
 - .1 Occupational Health and Safety Act, S.N.B. - Updated 2009.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation.
- .3 Submit 3 copies of Contractor's authorized representative's work site health and safety inspection reports to CoSJ Project Manager and Architect and authority having jurisdiction.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit WHMIS Safety Data Sheets (SDS) in accordance with Section 01 33 00 – Submittal Procedures.
- .7 CoSJ Project Manager and Architect will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 3 days after receipt of plan. Revise plan as appropriate and resubmit plan to CoSJ Project Manager and Architect within 3 days after receipt of comments from CoSJ Project Manager and Architect.
- .8 CoSJ Project Manager and Architect review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to CoSJ Project Manager and Architect.
- .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

1.4 FILING OF NOTICE

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

1.5 SAFETY ASSESSMENT

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

1.6 MEETINGS

- .1 Schedule and administer Health and Safety meeting with CoSJ Project Manager and Architect prior to commencement of Work.

1.7 REGULATORY REQUIREMENTS

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

1.8 PROJECT/SITE CONDITIONS

- .1 Work at site will involve contact with:
 - .1 Work at heights.
 - .2 Work with chemicals.

1.9 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 CoSJ Project Manager and Architect may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.10 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.11 COMPLIANCE REQUIREMENTS

- .1 Comply with Occupational Health and Safety Act, General Regulation, N.B. Reg.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.12 UNFORSEEN HAZARDS

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, advise Health and Safety co-ordinator, Safety Officer and follow procedures in accordance with Acts and Regulations of Province having jurisdiction and advise CoSJ Project Manager and Architect verbally and in writing.

1.13 HEALTH AND SAFETY CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:
 - .1 Have site-related working experience specific to activities associated with masonry restoration/restoration work at elevated heights.
 - .2 Have working knowledge of occupational safety and health regulations.
 - .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
 - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

1.14 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 CoSJ Project Manager and Architect.

1.15 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by CoSJ Project Manager and Architect.
- .2 Provide CoSJ Project Manager and Architect with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 CoSJ Project Manager and Architect may stop Work if non-compliance of health and safety regulations is not corrected.

1.16 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.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.1 NOT USED

- .1 Not used.

END OF SECTION

PART 1 - GENERAL

1.1 REPORTING FIRES

- .1 Know the location of the nearest fire alarm box and telephone, including the emergency phone number.
- .2 Report immediately all fire incidents to the fire department as follows:
 - .1 Activate nearest fire alarm box or telephone.
- .3 Person activating fire alarm box will remain at the box to direct Fire Department to scene of fire.
- .4 When reporting a fire by telephone, give location of fire, name and number of building and be prepared to verify location.

1.2 INTERIOR AND EXTERIOR FIRE PROTECTION AND ALARM SYSTEMS

- .1 Fire protection and alarm system will not be:
 - .1 obstructed;
 - .2 shut-off; and
 - .3 left inactive at the end of a working day or shift without authorization of the Fire Chief.

1.3 FIRE EXTINGUISHERS

- .1 Supply fire extinguishers as scaled by the Fire Chief, necessary to protect, the work in progress and the Contractor's physical plant on site.

1.4 SMOKING PRECAUTIONS

- .1 Smoking is not permitted.

1.5 RUBBISH AND WASTE MATERIALS

- .1 Rubbish and waste materials are to be kept to a minimum.
- .2 The burning of rubbish is prohibited.
- .3 Removal:
 - .1 Remove all rubbish from the work site at the end of the work day or as
- .4 Storage:
 - .1 Store oily waste in approved receptacles to ensure maximum cleanliness and safety.
 - .2 Deposit greasy or oily rags and materials subject to spontaneous combustion in approved receptacles and remove as required.

1.6 FLAMMABLE AND COMBUSTIBLE LIQUIDS

- .1 The handling, storage and use of flammable liquids are to be governed by the current National Fire Code of Canada.
- .2 Flammable and combustible liquids such as gasoline, kerosene and naphtha will be kept in ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing the Underwriter's Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable or combustible liquids exceeding 45 litres for work purposes, requires the permission of the Fire Chief.

1.7 HAZARDOUS SUBSTANCES

- .1 Work entailing the use of toxic or hazardous materials, chemicals and/or explosives, otherwise creates a hazard to life, safety or health, will be in accordance with the National Fire Code of Canada.
- .2 Obtain from CoSJ Maintenance staff a "Hot Work" permit for work involving welding, burning or the use of blow torches and salamanders, in building or facilities.
- .3 When work is carried out in dangerous or hazardous areas involving use of heat, provide fire watchers, equipped with sufficient fire extinguishers. Determination of dangerous or hazardous areas along with the level of protection necessary for Fire Watch is at the discretion of the Fire Chief. Contractors are responsible for providing fire watch service for work on a scale established and in conjunction with the Fire Chief at the pre-work conference.

END OF SECTION

PART 1 - GENERAL

1.1 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prior to commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by CoSJ Project Manager. Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction.
- .3 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .4 Environmental protection plan: include:
 - .1 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, do not become air borne and travel off project site.
 - .2 Contaminant prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.

1.2 FIRES

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

1.3 DISPOSAL OF WASTES

- .1 Do not bury rubbish and waste materials on site.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .3 Disposal of refrigerants is to be in strict accordance with published regulations and requirements of the NB Department of the Environment.

1.4 PLANT PROTECTION

- .1 Protect bushes, trees and plants on site and adjacent properties.

1.5 NOTIFICATION

- .1 CoSJ Project Manager will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations.
- .2 Contractor: after receipt of such notice, inform Architect/CoSJ Project Manager of proposed corrective action and take such action.
- .3 Architect/CoSJ Project Manager will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

END OF SECTION

PART 1.1 - GENERAL

- .1 Perform Work in accordance with National Building Code of Canada (NBC) including amendments up to signing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 Specified standards, codes and referenced documents.

1.2 HAZARDOUS MATERIAL DISCOVERY

- .1 Asbestos: demolition of spray or trowel-applied asbestos is hazardous to health. Stop work immediately when material resembling spray or trowel-applied asbestos is encountered during demolition work. Notify CoSJ Project Manager/ Architect.
- .2 Mould: stop work immediately when material resembling mould is encountered during demolition work. Notify CoSJ Project Manager/ Architect.

1.3 BUILDING SMOKING ENVIRONMENT

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

END OF SECTION

PART 1 – GENERAL

1.1 INSPECTION

- .1 Allow and facilitate Architect/CoSJ Project Manager access to Work.
- .2 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.

1.2 PROCEDURES

- .1 Notify Architect/CoSJ Project Manager in advance of requirement for inspections, in order that attendance arrangements can be made.

1.3 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 Architect/CoSJ Project Manager as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 If in opinion of Architect/CoSJ Project Manager it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Architect/CoSJ Project Manager.

1.4 REPORTS

- .1 Submit 4 copies of inspection and test reports to CoSJ Project Manager. Note specific requirement for report associated with mortar analysis.

END OF SECTION

PART 1 - GENERAL

1.1 SUBMITTALS

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

1.2 INSTALLATION AND REMOVAL

- .1 Provide temporary utilities controls in order to execute work expeditiously.
- .2 Remove from site all such work after use.

1.3 SANITARY FACILITIES

- .1 Provide sufficient sanitary facilities for work in accordance with governing regulations and ordinances.
- .2 Existing services as designated may be used during construction period, if permission granted by CoSJ Project Manager.

1.4 WATER SUPPLY

- .1 CoSJ Project Manager will provide a continuous supply of potable water for construction use.
- .2 Existing potable water supply as designated may be used during construction period, if permission granted by CoSJ Project Manager.

1.5 TEMPORARY POWER AND LIGHT

- .1 CoSJ Project Manager will arrange for temporary power during construction for operating of power tools, to a maximum supply of 230 volts 30 amps.

1.6 FIRE PROTECTION

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.
- .2 Burning rubbish and construction waste materials is not permitted on site.

END OF SECTION

PART 1 – GENERAL

1.1 INSTALLATION AND REMOVAL

- .1 Provide construction facilities in order to execute work expeditiously.
- .2 Remove from site all such work after use.

1.2 SCAFFOLDING

- .1 Scaffolding in accordance with CAN/CSA-S269.2.
- .2 Provide and maintain scaffolding, ladders.

1.3 SITE STORAGE/LOADING

- .1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger work.

1.4 CONSTRUCTION PARKING

- .1 On-street Contractor parking is available.

1.5 SECURITY

- .1 Contractor will ensure the building remains secure throughout construction.

1.6 EQUIPMENT, TOOL AND MATERIALS STORAGE

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.7 SANITARY FACILITIES

- .1 Sanitary Facilities
 - .1 Contractor to provide, maintain and clean portable sanitary facilities during construction unless otherwise agreed and documented within Project Minutes.
- .2 Water Supply
 - .1 Designated potable water supply may be used during construction period.

1.8 PROTECTION AND MAINTENANCE OF TRAFFIC

- .1 Protect travelling public from damage to person and property.

1.9 CLEAN-UP

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

END OF SECTION

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 04 03 01.13 Period Masonry Cleaning
- .2 Section 04 03 05.13 Period Masonry Mortaring
- .3 Section 04 03 05.21 Period Masonry Repointing
- .4 Section 04 03 43.13 Period Stone Repairing
- .5 Section 04 03 43.19 Period Stone Dismantling

1.2 DUST TIGHT SCREENS

- .1 Provide dust tight screens to localize dust generating activities, and for protection of workers, existing equipment, finished areas of work and public areas.

1.3 PUBLIC TRAFFIC FLOW

- .1 Provide and maintain as required public walkways around construction areas to perform work and protect public.
- .2 Do not obstruct walkways with stored materials or tools at any time.

1.4 FIRE ROUTES

- .1 Maintain access around construction areas. Do not block established routes to fire exits.

1.5 PROTECTION FOR PUBLIC PROPERTY

- .1 Protect surrounding areas from damage during performance of work.
- .2 Be responsible for damage incurred.

1.6 PROTECTION OF BUILDING FINISHES

- .1 Provide protection for finished building finishes during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.
- .3 Confirm with Architect/CoSJ Project Manager, locations and installation schedule prior to installation.
- .4 Be responsible for damage and clean-up incurred due to lack of or improper protection.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 Within text of specification sections, reference may be made to reference standards.
 - .1 Conform to these reference standards, in whole or in part as specifically requested in specifications.
- .2 If there is question as to whether products or systems are in conformance with applicable standards, CoSJ Project Manager reserves the right to have such products or systems verified to prove or disprove conformance.
 - .1 Cost for such testing will be borne by Contractor in event of non-conformance.

1.2 QUALITY

- .1 Products, materials, equipment incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2 Procurement policy is to acquire, in cost effective manner, items containing percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.
- .3 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is a precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .4 Should disputes arise as to quality or fitness of products, decision rests strictly with CoSJ Project Manager based upon requirements of Contract Documents.
- .5 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

1.3 AVAILABILITY

- .1 Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Architect/CoSJ Project Manager of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In event of failure to notify Architect/CoSJ Project Manager at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Architect/CoSJ Project Manager reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.4 STORAGE, HANDLING AND PROTECTION

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Remove and replace damaged products at Contractor's expense to CoSJ's satisfaction.

1.5 TRANSPORTATION

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

1.6 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Architect/CoSJ Project Manager in writing, of conflicts between specifications and manufacturer's instructions, so that Architect/CoSJ Project Manager will establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes CoSJ Project Manager to require removal and re-installation at no increase in Contract Price or Contract Time.

1.7 QUALITY OF WORK

- .1 Ensure Quality of Work is of the highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify CoSJ Project Manager if required work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. CoSJ Project Manager reserves the right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with CoSJ Project Manager, whose decision is final.

1.8 CO-ORDINATION

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

1.9 REMEDIAL WORK

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.10 PROTECTION OF WORK IN PROGRESS

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

END OF SECTION

PART 1 - GENERAL

1.1 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of elements of project.
 - .2 Integrity of weather-exposed or moisture-resistant elements.
 - .3 Efficiency, maintenance, or safety of operational elements.
 - .4 Visual qualities of sight-exposed elements.

1.2 MATERIALS

- .1 Required for original installation.
- .2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00 - Submittal Procedures.

1.3 PREPARATION

- .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of Work.
- .3 Beginning of cutting or patching means acceptance of existing conditions.
- .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
- .5 Provide protection from elements for areas which are to be exposed by uncovering work.

1.4 EXECUTION

- .1 Execute cutting, fitting, and patching to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Remove and replace defective and non-conforming Work.
- .4 Provide openings in non-structural elements of Work for penetrations of Mechanical and Electrical work.
- .5 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .6 Restore work with new products in accordance with requirements of Contract Documents.

END OF SECTION

PART 1 - GENERAL

1.1 GENERAL

- .1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
- .2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

1.2 MATERIALS

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

1.3 CLEANING DURING CONSTRUCTION

- .1 Provide on-site containers for collection of waste materials, and debris.
- .2 Dispose of waste materials, and debris at an approved regional landfill site.
- .3 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.4 FINAL CLEANING

- .1 Remove grease, dust dirt, stains, labels, fingerprints, and other foreign materials, from interior and exterior finished surfaces including glass and other polished surfaces.

END OF SECTION

PART 1 - GENERAL

1.1 WASTE MANAGEMENT GOALS

- .1 Prior to start of Work conduct meeting with Architect/CoSJ Project Manager to review and discuss Waste Management Plan and Goals.
- .2 Waste Management Goal - 75 percent of total Project Waste to be diverted from landfill sites. Provide documentation certifying that waste management, recycling, and reusable is being practiced.
- .3 Accomplish maximum control of solid construction waste.

1.2 RELATED SECTION

- .1 Associated specification sections for Period Masonry Remediation.

1.3 DOCUMENTS

- .1 Maintain at job site, one copy of following documents:
 - .1 Waste Reduction Workplan.

1.4 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prepare and submit following prior to project start-up:
 - .1 Submit 2 copies of completed Waste Reduction Workplan (WRW).
- .3 Submit before final payment summary of waste materials salvaged for reuse, recycling by project using (WRW) form.
 - .1 Failure to submit could result in hold back of final payment.
 - .2 Provide receipts, and show quantities and types of materials reused, recycled, or disposed of.

1.5 WASTE REDUCTION WORKPLAN (WRW)

- .1 Prepare WRW prior to project start-up.
- .2 WRW should include but not be limited to:
 - .1 Destination of materials listed.
 - .2 Clear labelling of storage areas.
 - .3 Details on materials handling and removal procedures.
 - .4 Quantities for materials to be salvaged for reuse or recycled and materials sent to landfill.
- .3 Structure WRW to prioritize actions and follow 3R's hierarchy, with Reduction as first priority, followed by Reuse, then Recycle.
- .4 Describe management of waste.
- .5 Identify opportunities for reduction, reuse, and recycling of materials. Based on information acquired from WA.
- .6 Set realistic goals for waste reduction, recognize existing barriers and develop strategies to overcome these barriers.
- .7 Monitor and report on waste reduction by documenting total volume and cost of actual waste removed from project.

1.6 STORAGE, HANDLING AND PROTECTION

- .1 Store, materials to be reused, recycled and salvaged in locations as noted by Contractor to Architect/CoSJ Project Manager.
- .2 Unless specified otherwise, materials for removal become Contractor's property.

1.7 DISPOSAL OF WASTES

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of volatile materials, mineral spirits, paint thinner into waterways, storm, or sanitary sewers.
- .3 Keep records of construction waste including:
 - .1 Total tonnage generated.
 - .2 Tonnage reused or recycled.
 - .3 Reused or recycled waste destination.
- .4 Remove materials from Construction Site as work progresses.
- .5 Prepare project summary to verify destination and quantities on a material-by-material basis as identified in pre-demolition material audit.

1.8 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Maintain security measures established by existing facility.

1.9 SCHEDULING

- .1 Co-ordinate Work with other activities at site to ensure timely and orderly progress of Work.

PART 2 - PRODUCTS

2.1 NOT USED

PART 3 - EXECUTION

3.1 APPLICATION

- .1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

3.2 CLEANING

- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition
- .2 Clean-up work area as work progresses.

END OF SECTION

PART 1 - GENERAL

1.1 INSPECTION AND DECLARATION

- .1 Contractor's Inspection:
 - .1 Prior to requesting a substantial completion inspection of the work by the Architect and Sub-Consultants, the Contractor and Subcontractors are to conduct an inspection of the work to identify obvious defects or deficiencies.
 - .2 Contractor and Sub-Consultants to correct work accordingly.
 - .3 Following corrections of the Contractor identified defects and deficiencies, the Contractor is to request through the CoSJ Project Manager that a Substantial Completion Inspection be scheduled.
- .2 Architects Inspection: Architect, CoSJ Project Manager and Contractor will perform an inspection of work to identify obvious defects or deficiencies. Contractor to correct 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 Work is complete and ready for final inspection.
- .4 Final Inspection: when items noted above are completed, request final inspection of work by Architect and Contractor. If work is deemed incomplete by Architect, complete outstanding items and request re-inspection.
- .5 Declaration of Substantial Performance: when Architect considers deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, the Contractor shall make application for Certificate of Substantial Performance.
- .6 Commencement of Lien and Warranty Periods: date of CoSJ Project Manager's acceptance of submitted declaration of Substantial Performance of the entire work shall be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
- .7 Final Payment: when CoSJ Project Manager and Architect consider final deficiencies and defects have been corrected and it appears requirements of Contract have been totally performed, make application for final payment. If Work is deemed incomplete by CoSJ Project Manager and Architect, complete outstanding items and request re-inspection.

1.2 CLEANING

- .1 In accordance with Section 01 74 11 - Cleaning.
- .2 Remove waste and surplus materials, rubbish and construction facilities from the site.

END OF SECTION

PART 1 - GENERAL

1.1 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Two weeks prior to Substantial Performance of the Work, submit to CoSJ Project Manager/Architect one electronic copy for review followed by two hard copies required once approved.
- .3 Pay costs of transportation.

1.2 - FORMAT

- .1 Organize data based on requirements of City of Saint John.

1.3 - AS-BUILTS AND SAMPLES

- .1 Maintain, in addition to requirements in General Conditions, at site for CoSJ Project Manager/Architect one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by CoSJ Project Manager/Architect.

1.4 - RECORDING ACTUAL SITE CONDITIONS

- .1 Record information on set of black line opaque drawings, provided by CoSJ Project Manager.
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress.
- .4 Contract Drawings and shop drawings: mark each item to record actual construction, including:
 - .1 Measured depths of pointing.
 - .2 Field changes of dimension and detail.
 - .3 Changes made by change orders.
 - .4 Details not on original Contract Drawings.
 - .5 References to related shop drawings and modifications.

- .5 Specifications: mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
- .6 Other Documents: qualified laboratory analysis and report, mason certifications, inspection certifications, field test records, and as required by individual specifications sections.

1.5 - MATERIALS AND FINISHES

- .1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products
- .2 Additional Requirements: as specified in individual specifications sections.

1.6 - WARRANTIES AND BONDS

- .1 Develop warranty management plan to contain information relevant to Warranties.
- .2 Submit warranty management plan, 30 days before planned pre-warranty conference, to CoSJ Project Manager's approval.
- .3 Warranty management plan to include required actions and documents to assure that Owner receives warranties to which it is entitled.
- .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
- .5 Submit, warranty information made available during construction phase, to CoSJ Project Manager for approval prior to each monthly pay estimate.
- .6 Assemble approved information in binder and submit upon acceptance of work. Organize binder as follows:
 - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
 - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
 - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
 - .4 Verify that documents are in proper form, contain full information, and are notarized.
 - .5 Co-execute submittals when required.
 - .6 Retain warranties and bonds until time specified for submittal.
- .7 Except for items put into use with CoSJ Project Manager's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .8 Conduct joint one year warranty inspection, measured from time of acceptance, by CoSJ Project Manager.

- .9 Include information contained in warranty management plan as follows:
 - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
 - .2 Listing and status of delivery of Certificates
 - .3 Contractor's plans for attendance at one year post-construction warranty inspections.
- .10 Respond in a timely manner to oral or written notification of required construction warranty repair work.
- .11 Written verification will follow oral instructions. Failure to respond will be cause for the CoSJ Project Manager to proceed with action against Contractor.

1.7 - PRE-WARRANTY CONFERENCE

- .1 Meet with CoSJ Project Manager to develop understanding of requirements of this section. Schedule meeting prior to contract completion, and at time designated by CoSJ Project Manager.
- .2 CoSJ Project Manager will establish communication procedures for:
 - .1 Notification of construction warranty defects.
 - .2 Determine priorities for type of defect.
 - .3 Determine reasonable time for response.
- .3 Provide name, telephone number and address of licensed and bonded company that is authorized to initiate and pursue construction warranty work action.
- .4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

PART 2 - PRODUCTS

2.1 - NOT USED

PART 3 - EXECUTION

3.1 - NOT USED

END OF SECTION

1 GENERAL

1.1 SUMMARY

- .1 Section Includes:
 - .1 This section is limited to portions of the Building Management Manual (BMM) provided to Architect by Contractor.
- .2 Related Sections:
 - .1 Section 01 33 00 - Submittal Procedures.
 - .2 Section 01 77 00 – Closeout Procedures.
- .3 Acronyms:
 - .1 BMM - Building Management Manual.
 - .2 PI - Product Information.
 - .3 PV – Performance Verification.
 - .4 WHMIS - Workplace Hazardous Materials Information System.

1.2 GENERAL REQUIREMENTS

- .1 Standard letter size paper 216 mm x 279 mm.
- .2 Methodology used to facilitate updating.
- .3 Drawings, diagrams and schematics to be professionally developed.
- .4 Electronic copy of data to be in a format accepted and approved by Architect.

1.3 APPROVALS

- .1 Prior to commencement, co-ordinate requirements for preparation, submission and approval with Architect.

1.4 GENERAL INFORMATION

- .1 One week prior to Substantial Performance of the Work, submit to Architect, one copy of operating and maintenance manual for review. Modify operating maintenance manuals as required by review.
- .2 Operating Maintenance Manuals
 - .1 Manuals to contain the following.
 - .1 Date submitted.
 - .2 Project title, location and project number.
 - .3 Table of Contents.
 - .4 Guaranties and Warranties.
 - .5 Operational information on products. Cleaning and, storing, and similar maintenance information.
 - .6 Complete set of reviewed and stamped shop drawings.
 - .7 Complete set of project specification.
- .3 Bind contents in a three-ring, hard covered, plastic jacketed binder. Organize contents into applicable categories of work, parallel to specifications Sections.
- .4 On completion of Work and prior to Interim Inspection, submit three (3) copies of modified Operating Maintenance Manuals.

.5 Record Drawings

- .1 After award of Contract, CoSJ Project Manager will provide 2 sets of white print drawings for purpose of maintaining record drawings. Using RED INK, accurately and neatly record deviations from Contract Documents caused by site conditions and changes ordered by Architect.
- .2 Record locations of concealed components of this contracts electrical services.
- .3 Identify drawings as "Project Record Copy". Maintain in new condition and make available for inspection on site, and at all job meetings, by Architect.
- .4 On completion of Work and prior to Interim inspection, submit record documents to Architect for preparation of "AS BUILT" transparencies.
- .5 Operating Maintenance manuals need not be submitted prior to the scheduled Interim occupancy inspection of the library addition.
- .6 No additional cost is to be applied to the contract relative to the preparation of record drawings and specifications. This service is considered part of the contractor's overhead.

END OF SECTION

1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 04 03 05.13 Period Masonry Mortaring
- .2 Section 04 03 05.21 Period Masonry Repointing
- .3 Section 04 03 43.13 Period Stone Repairing
- .4 Section 04 03 43.19 Period Stone Dismantling

1.2 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 [CAN/CSA-Z94.4-11\(R2016\)](#), Selection, Use, and Care of Respirators.
- .2 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Assessment Act (CEAA), 2012.
 - .2 Canadian Environmental Protection Act (CEPA), 1999.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Safety Data Sheets (SDS).

1.3 DEFINITIONS

- .1 Low-pressure water soaking: less than 350 kPa (50 psi), measured at nozzle tip.

1.4 ADMINISTRATIVE REQUIREMENTS

- .1 Provide time and allow attendance of relevant employees at environmental briefing session arranged by CoSJ Project Manager and Architect prior to beginning work of this Section.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide proposed cleaning method and type of protection from cleaning residue for in-place conditions.
- .3 Product Data:
 - .1 Provide technical data on cleaning materials, equipment, machinery, compressors, tools and nozzles.
 - .2 Submit 2 copies of WHMIS SDS in accordance with Section 01 35 29.06 - Health and Safety Requirements and 01 35 43 - Environmental Procedures.
- .4 Samples:
 - .1 Provide samples of cleaning materials for approval of CoSJ Project Manager and Architect.
- .5 Test and Evaluation Reports:
 - .1 Provide test results.
 - .1 Provide 3 copies of test results describing cleaning method, compressor equipment, water pressure at compressor, tools, nozzle size and distance from masonry surface used for cleaning of test patches.
 - .2 Proceed with cleaning upon receiving written approval by CoSJ Project Manager and Architect concerning tested cleaning methods.

- .6 Sustainable Design Submittals:
 - .1 Construction Waste Management:
 - .1 Submit project Waste Management Plan, Waste Reduction Workplan highlighting recycling and salvage requirements.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: ensure work is performed in compliance with CEPA, TDGA and applicable Provincial regulations.
- .2 Comply with requirements of Workplace Hazardous Materials Information Sheet (WHMIS).
- .3 Mock-ups:
 - .1 Do mock-up tests in accordance with Section 01 45 00 - Quality Control.
 - .2 Notify CoSJ Project Manager and Architect 48 hours before commencing cleaning of each test patch.
 - .1 Obtain approval CoSJ Project Manager and Architect before commencing.
 - .3 Before proceeding with mock up:
 - .1 Ensure area of testing is water tight and decorative elements are protected.
 - .2 Ensure contaminated water is kept in containers and their disposal respects environmental regulations.
 - .4 Conduct tests on building to determine effectiveness of scrubbing with neutral pH detergent in warm water, low pressure wash, moderate pressure wash cleaning methods.
 - .5 Conduct tests to determine effectiveness of 100 – 350 kPa water pressures, variable time periods, continuous flow rates and 10 degrees C water temperatures, types of nozzles, spraying distances from wall surface.
 - .6 Start with lowest impact tests and stop testing when desired level of cleaning is achieved, stop testing immediately when damage is caused.
 - .7 Test pressure at each storey height to determine effect of "line drop" on effectiveness of water jets.
 - .8 Test brushing and spraying as alternative to pressure washing. Consult CoSJ Project Manager and Architect to review test results. Use method approved by CoSJ Project Manager and Architect.
 - .9 Add increasing amount of ammonium sulfamate to address organic materials until cleaning can be done efficiently.
 - .10 Areas to be test cleaned to include sandstone masonry at both field and at decorative elements.
 - .11 Locate test patches in inconspicuous places directed by CoSJ Project Manager and Architect.
 - .12 Test patches: approximately 1 m².
 - .13 Conduct tests to determine best methods of protecting surrounding historic material, openings and plants during test cleaning procedure, and monitor for detrimental effects.
 - .14 Proceeding with work without approval of mock-up is prohibited.
 - .15 Allow 24 hours for CoSJ Project Manager and Architect inspection of mock-up.
 - .16 Accepted mock-up will demonstrate minimum standard for work. Mock-up may not remain as part of finished work.

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.

1.8 SITE CONDITIONS

- .1 Ambient conditions:
 - .1 Avoid the use of wet cleaning methods when there is threat of frost.
 - .2 Avoid the use chemical cleaners when temperature is below 10 degrees C.
 - .3 Follow manufacturer's written instructions on use of chemical cleaners in accordance with product's temperature range application.
 - .4 Provide shading to wall to avoid cleaning in full, hot sunlight.
 - .5 Avoid clean if there is risk of chemical spray being blown onto surrounding historic material, publicly accessible areas or plants.
 - .6 Protect work in the event of high winds.

2 PRODUCTS

2.1 MATERIALS

- .1 Use clean potable water free from contaminants.
- .2 Treat water which has high metal content before use in cleaning.
- .3 Use air free from oil or other contaminants.
- .4 Use masking material polyethylene, strippable masking (butyl rubber spray) to approval of CoSJ Project Manager and Architect.
- .5 Use non-ionic surfactant (detergent) in concentration less than 2% by volume.
- .6 Use ammonium hydroxide (ammonium) based cleaner for calcareous stone.
- .7 Use sodium hexametaphosphate (Calgon or NaHMP) to dissolve gypsum-bound soiling.
- .8 Use 60 degrees C Flash Point solvent in gel poultice to remove graffiti and other stains.
- .9 Use 2-5% ammonium carbonate solution in water in poultice pack to treat copper stains.
- .10 Use Fuller's Earth, Kaolin Clay, Diatomaceous Earth, talc, chalk, clean acid free cotton waste, paper pulp as poultice medium.
- .11 Use non-ferrous or plastic mesh as support mechanism for poultice.
- .12 Use glycerin as thickener to slow evaporation.
- .13 Use Aluminum Oxide, Organic grits for fine work.
- .14 Prepare poultices to treat iron stains on sandstone and granite using:
 - .1 10% solution by weight of orthophosphoric acid or oxalic acid and 2% sodium salt of EDTA.

- .15 Use ammonium hydroxide, solution of 20% petroleum, 10% chlorinated hydrocarbon solvent, 2% non-ionic surfactant, water to 100% in poultices to remove grease stains.
- .16 Use non-siliceous mesh grit free from iron oxide.
- .17 The above listed materials are identified for the cleaning of masonry at the Carnegie Building with the sole purpose of protecting this heritage building to the greatest extent possible. The Contractor is to fully cooperate with the CoSJ Project Manager and Architect in the selection of products which best address the restoration/remediation of the sandstone.

2.2 HOT WATER

- .1 Use water heated to degrees C as recommended by cleaning product manufacturer.
- .2 Generate hot water in flash boilers or other suitable appliance.

2.3 TOOLS AND EQUIPMENT

- .1 Use brushes with natural or soft plastic bristles.
- .2 Use scrapers of wood or plastic.
- .3 Use water pumps fitted with accurate pressure regulators and gauges capable of being preset and locked at maximum specified levels.
 - .1 Water pumps to have rating of 500 kPa. Minimum
- .4 Use air compressors equipped with on-line oil filters to avoid spraying oil onto masonry.
- .5 Use gun equipped with pressure gauge at nozzle end.
- .6 Use plastic or non-ferrous metal piping and fittings.
- .7 Use nozzles that give nebulized droplet spray. Use nozzles with 12 mm opening and 375 mm spread.

3 EXECUTION

3.1 SITE VERIFICATION OF CONDITIONS

- .1 Record existing conditions, by means of photographs, before and after cleaning. CoSJ Project Manager and Architect of potential complications.
- .2 Report to CoSJ Project Manager and Architect conditions of deteriorated masonry or pointing not noted on Contract Drawings found before and during cleaning.
- .3 Obtain written approval of CoSJ Project Manager and Architect before cleaning areas of deteriorated masonry.

3.2 PREPARATION

- .1 Protect operatives and other site personnel from hazards.
 - .1 Ensure good ventilation in work area.
 - .2 Ensure workers wear eye, head, and face protection, and protective gloves, coveralls, boots and respirator to [CAN/CSA-Z94.4](#)
- .2 Place safety devices and signs near work areas as indicated and directed.
- .3 Repair openings and joints prior to cleaning where there is potential risk of

water/chemical infiltration in accordance with Section 04 03 05.21 Period Masonry Repointing.

- .4 Provide a shelter around work area as directed by CoSJ Project Manager and Architect.
 - .1 Obtain approval of sheltering method from CoSJ Project Manager and Architect before commencing cleaning procedure.

3.3 PROTECTION OF IN-PLACE CONDITIONS

- .1 Cover and protect surfaces and non-masonry finishes not to be cleaned.
 - .1 Obtain approval of protection method from CoSJ Project Manager and Architect before commencing cleaning procedure.
- .2 Protect vents, windows, and other openings, to prevent water entry.
 - .1 Protect masonry openings from water/chemical infiltration with polyethylene during cleaning.
- .3 Protect wood, glass, and metal adjacent to masonry.
- .4 Protect plants, gardens, shrubs from watering and chemicals.
- .5 Hang sheeting material, tarpaulins from scaffolding to enclose water spray.
- .6 Protect rainwater leaders, eaves troughs and gutters from being blocked by residue.
- .7 Protect adjacent Work from spread of dust and dirt beyond work areas.
- .8 Protect building envelope from water infiltration.

3.4 EXECUTION OF CLEANING

- .1 Proceed with cleaning in accordance with written instructions of methods, systems, tools and equipment approved by CoSJ Project Manager and Architect.
- .2 Dry brush or scrape accumulations from walls, ledges and cornices.
- .3 Pre-wet masonry surface when necessary. Work from bottom of wall upwards.
- .4 Avoid exceeding maximum pressure at nozzle or having nozzle closer to masonry than approved by CoSJ Project Manager and Architect at tests.
- .5 Keep nozzle minimum 450 mm distance away from masonry surface as approved by CoSJ Project Manager and Architect.
- .6 Stop work when cleaning has detrimental effect on surrounding material and plants.
- .7 Avoid prolonged wetting and excessive water penetration.
- .8 Apply chemical cleaners approved by CoSJ Project Manager and Architect based on tests and mock-ups.
- .9 Brush and scrape only to supplement water washing.
- .10 Undertake prolonged water spray to soften and loosen heavy deposits, then brush. Remove thick incrustations with wooden or plastic scrapers.
- .11 Apply poultices as approved by based on tests and mock-ups.
- .12 Removal of vegetation or organic growth growing in or on masonry.
 - .1 Soak masonry with low-pressure water.
 - .2 Follow soaking by gentle scrubbing with natural bristle brushes and scraping with soft plastic or wood spatulas.

- .13 Low-Pressure Water Soaking:
 - .1 Remove stains and accumulated dirt with low-pressure maximum 350 kPa (50 psi) wash-down at flow rate of 0.25 L/s. Compressed air is not to be used in the cleaning of the masonry at the Carnegie Building.
 - .2 Hold nozzle minimum 450 mm from masonry surface.
 - .3 Use 12 mm nozzle and lower pressure on cut stone, tooled stone and carved work.
 - .4 Follow soaking by gentle scrubbing with natural bristle brushes.
- .14 Heated Water Cleaning:
 - .1 Use previously tested heated water approved by CoSJ Project Manager and Architect.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Rinse off masonry in accordance with CoSJ Project Manager and Architect instructions until no indications of chemicals are present.
- .3 Rinse from bottom to top and from top to bottom.
- .4 Clean up work area as work progresses. At end of each work day remove debris and waste from site.
- .5 Upon completion, clean and restore areas used for work to condition equal to that previously existing.
- .6 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21- Construction Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.
 - .2 Collect, neutralize and dispose of water and chemicals in accordance with contract requirements, applicable regulations and Canadian Environmental Protection Act, (CEPA).
- .7 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.

3.6 PROTECTION OF WORK

- .1 Protect finished Work from damage until take-over.

END OF SECTION

1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 04 03 01.13 Period Masonry Cleaning
- .2 Section 04 03 05.21 Period Masonry Repointing
- .3 Section 04 03 43.13 Period Stone Repairing
- .4 Section 04 03 43.19 Period Stone Dismantling

1.2 ALTERNATIVES

- .1 Obtain CoSJ Project Manager and Architect approval before changing manufacturer's brands or sources of supply of mortar materials during entire contract or other methods of mixing mortar specified elsewhere in this specification.

1.3 REFERENCE STANDARDS

- .1 ASTM International (ASTM)
 - .1 [ASTM C 5-10](#), Standard Specification for Quicklime for Structural Purposes.
 - .2 [ASTM C 144-11](#), Standard Specification for Aggregate for Masonry Mortar.
 - .3 [ASTM C 207-06\(2011\)](#), Standard Specification for Hydrated Lime for Masonry Purposes.
 - .4 [ASTM C 270-14a](#), Standard Specification for Mortar for Unit Masonry.
 - .5 [ASTM C 780-15a](#), Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
 - .6 [ASTM C 1072-13e1](#), Standard Test Method for Measurement of Masonry Flexural Bond Strength.
- .2 CSA Group (CSA)
 - .1 [CAN/CSA-A179-14](#), Mortar and Grout for Unit Masonry.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for mortar and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Prior to mixing or preparation of mortars submit for review to CoSJ Project Manager and Architect confirmation of source or product data sheet of:
 - .1 Aggregate.
 - .2 Cement.
 - .3 Lime.
 - .4 Premixed products.
 - .5 Pigments.
- .3 Samples:
 - .1 Provide samples in quantity and size in accordance with [CAN/CSA-A179](#).
- .4 Test reports:
 - .1 Submit test results during site work as directed by CoSJ Project Manager and Architect as follows:
 - .1 Sieve analysis: sand.

- .2 Bulking analysis: sand.
- .3 Air content: mortar mix in plastic state.
- .4 Vicat cone penetration: mortar mix.
- .5 Mortar compressive strength: at 7 and 28 days or otherwise required.

1.5 QUALITY ASSURANCE

- .1 Masonry Contractor:
 - .1 Use single Masonry Contractor for masonry work.
 - .2 Masonry Contractor to have experience in historic stone masonry repair and conservation work on projects of similar size and complexity to Work of this Contract.
 - .1 Qualifications:
 - .1 Mechanics to have minimum of 5 years experience in lime mortar preparation.
 - .2 Mix mortar by same mechanics throughout project.
 - .3 Masonry Contractor to have good level of understanding of structural behavior of masonry walls when masonry work involves replacing or repairing stones which are part of structural masonry work.
 - .4 Masonry Contractor will be responsible for all aspects of masonry work for duration of project.
 - .5 Masonry Contractor, as an identified responsibility within the scope of work of this contract is to include the following:
 - .1 A sufficient time allotment ensuring effective dialogue with the Architect leading to a comprehensive identification of mortar and grouting mixes required for the identified improvements. The objective is to better inform the selection of a mortar mix as suitable and specific to location and task;
 - .1 sandstone to brick,
 - .2 sandstone to sandstone,
 - .3 sandstone to granite,
 - .4 input on mixes based on variable loading conditions,
 - .5 grouting mixes,
 - .6 pointing and grouting treatments at fine, decorative elements.
- .2 Mock-ups:
 - .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control.
 - .2 Submit methods of reproducing existing mortar colour, texture and pointing types, and samples.
 - .3 Construct mock-up to clearly illustrate the standard and quality of work.
 - .4 Mock-up will be used:
 - .1 To judge quality of work, substrate preparation, and material application.
 - .2 For testing to determine compliance with performance requirements.
 - .5 Locate as directed by CoSJ Project Manager and Architect.
 - .6 Notify CoSJ Project Manager and Architect 24 hours before commencing mock-up.
 - .1 Obtain approval from CoSJ Project Manager and Architect before commencing mock-up.
 - .7 Allow 24 hours for inspection of mock-up before proceeding with work.
 - .8 When accepted, mock-up will demonstrate minimum standard for this Work.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store cementitious materials and aggregates in accordance with [CSA A23.1/A23.2](#).
 - .3 Store lime putty in plastic lined sealed drums.
 - .4 Protect from weather, freezing and contamination.
 - .5 Remove rejected or contaminated material from site.
 - .6 Store and protect mortar materials from nicks, scratches, and blemishes.
 - .7 Replace defective or damaged materials with new.
- .4 Develop Construction Waste Management Plan, Waste Reduction Workplan related to Work of this Section.

1.7 SITE CONDITIONS

- .1 Ambient Conditions:
 - .1 Provide weather-tight enclosure to store materials and mix mortars, maintain air temperature above 10 degrees C at all times.
 - .2 Maintain maximum/minimum thermometers and relative humidity gauges on site and in enclosures.
 - .1 Maintain a daily record of temperature and humidity.
- .2 Install relative humidity and temperature equipment, record temperature and relative humidity and submit report to CoSJ Project Manager and Architect.

2 PRODUCTS

2.1 MATERIALS

- .1 Water: potable, clean and free from contaminants.
- .2 Sand: to [CAN/CSA-A179](#).
 - .1 Sharp, screened and washed pit sand, free of organic material, with final grading and colour to review of CoSJ Project Manager and Architect.
 - .2 Custom blend sands where necessary to provide appropriate colour match and gradation to review of CoSJ Project Manager and Architect.
- .3 Portland cement: to [CAN/CSA-A3000](#).
- .4 Lime:
 - .1 Processed Lime (Quicklime): to [ASTM C 5](#), fresh, finely ground and crushed; high calcium, 3/16" fines, dry bagged.
- .5 Colour:
 - .1 Ground coloured natural aggregates. Use minimum amount necessary.
 - .2 Maximum colour: 2% of total volume of aggregate.
 - .3 Match core of freshly broken sample of original mortar.

- .4 Coloured admixtures: maximum 15% of binder content by mass.
- .6 Additives:
 - .1 Obtain written approval of Architect before using additives.
- .7 Air entrainment:
 - .1 Vinsol resin type: to [ASTM C 260/C 260M](#).
- .8 Mortar mill:
 - .1 Mortar mill comprising mortar pan with adjustable cast iron sprung rollers on cranked roller shaft, steel scrapers and blades for lime putty mixing.

2.2 MORTAR MIXES

- .1 See Quality Assurance - Article 1.5 regarding proportion requirements:
- .2 Property requirements:
 - .1 Mixes: as required to achieve specified performance criteria, functionally compatible with adjacent materials and components.
 - .2 Obtain written approval of CoSJ Project Manager and Architect before changing mix proportions. Change mix proportions only as directed by CoSJ Project Manager and Architect.

2.3 COLOURED MORTAR

- .1 Use sand as colouring agent.
- .2 Maintain one mortar mixer exclusively for coloured mortar.

2.4 ALLOWABLE TOLERANCES

- .1 Mortar compression strength approximate minimum 101.8 MPa, cured for 7 to 28 days.
- .2 If mortar fails to meet 7 day compressive strength requirements, but meets 28 day compressive strength requirement, it is acceptable. If mortar fails to meet 7 day compressive strength requirement, but its strength at 7 days exceeds two thirds of value required for 7 day strength, contractor may elect to continue work at his own risk while awaiting results of 28 day tests, or to take down work affected.

3 EXECUTION

3.1 GENERAL PREPARATIONS

- .1 Traditional Mortar:
 - .1 Prepare measuring boxes to ensure accurate proportioning of materials.
 - .2 Maintain separate measuring boxes for each component.
 - .3 Ensure sand is tested and volume corrected for bulking.
 - .4 Ensure air entraining agent is available together with a graduated container for accurate volume measurements.
 - .5 Ensure testing equipment is ready and in working order.
 - .6 Apply Vicat cone test to ensure desirable performance of mortar and record results.
 - .7 CoSJ Project Manager Representative to apply Vicat cone test to ensure desirable performance of mortar and record results.

3.2 BULKING OF SAND

- .1 Test sand for bulking:
 - .1 At start of work.
 - .2 After each new delivery of sand.
 - .3 After severe change in weather.
- .2 Test and adjust sand quantities for bulking:
 - .1 Obtain sample of sand which accurately reflects average condition of pile of damp sand, as follows:
 - .1 Take 4 shovels full of sand, each from a different level of pile, and mix thoroughly.
 - .2 Place sand in a conical pile and divide into 4 quarters with a board. Remove 2 opposite quarters from pile, and combine remaining 2 quarters and mix thoroughly.
 - .3 Repeat quartering and mixing procedure until a sample of size required for testing remains.
 - .2 Fill a 1-litre capacity jar, about two-thirds full with damp sand to be tested. Drop sand in loosely. Do not pack it in. Level off surface, measure depth of damp sand (D).
 - .1 Carefully empty sand into another container, and half fill first container with water.
 - .2 Pour back about half of test sample of sand slowly into water so it is entirely saturated. Rod it thoroughly to remove air.
 - .3 Add rest of sand, rodding again to remove air and level off surface. Measure depth of saturated sand (S), which will be less than depth of damp sand.
 - .4 Calculate percentage bulking using formula: $[(D-S) \times 100\%] / S =$ percentage bulking; where D = depth of damp sand, and S = depth of saturated sand.
 - .3 Increase volume of sand by percentage bulking shown in test.

3.3 PREPARATION OF MORTAR

- .1 Lime Mortar:
 - .1 Prepare measuring boxes to ensure accurate proportioning of dry lime putty and sand.
 - .2 Mix dry lime and sand thoroughly in mortar mill, or spiral-blade mechanical mixer for minimum 3 and maximum 10 minutes. Do not add water. No spots or streaks of lime to remain upon completion of mixing.
 - .3 Add water as required.

3.4 PREPARATION OF LIME-SAND ROUGHAGE (COARSE STUFF)

- .1 Store lime sand roughage in air-tight plastic bins.
- .2 Keep prepared material from freezing. Discard frozen material.
- .3 Maintain measuring containers for correct quantity of materials for use in batches.
- .4 Thoroughly clean mortar boards, measuring boxes and mixers between batches.

3.5 MIXING

- .1 General:
 - .1 Use batching box.
 - .2 Follow proper batching procedure.
 - .3 Monitor mixing time.
- .2 Mortar:
 - .1 Mix Characteristics:
 - .1 Pointing mortar: slightly stiffer than bedding mortar with a consistency such that mortar can be hand-formed into a stiff ball.
 - .2 Record amount of water required to reach this consistency and use for subsequent mixes.
 - .2 Prepare only enough mortar to be used within two hours. Do not retemper mortar beyond this time.
- .3 Follow manufacturer instructions when premixed mortar is used.
- .4 Contractor to appoint 1 individual to mix mortar for duration of project. If this individual is changed, mortar mixing to cease until new individual is trained, and mortar mix tested.

3.6 CONSTRUCTION

- .1 Do masonry mortar and grout work in accordance with [CAN/CSA-A179](#) except where specified otherwise.

3.7 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
- .3 Remove droppings and splashings using clean sponge and water.
- .4 Clean masonry with low pressure 1 to 3 bar, 15 to 45 psi clean water and soft natural bristle brush.
- .5 Obtain approval of CoSJ Project Manager and Architect prior to using other cleaning methods for persistent stains.
- .6 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Waste Management and Disposal.

3.8 PROTECTION OF COMPLETED WORK

- .1 Cover completed and partially completed work not enclosed or sheltered at end of each work day.
- .2 Enclose and protect work using wetted burlap.
- .3 Cover with waterproof tarps to prevent weather from eroding recently laid material.
 - .1 Maintain tarps in place for minimum of 3 days after laying.
 - .2 Ensure that bottoms of tarps permit airflow to reach mortar in joints.
- .4 Anchor coverings securely in position.

END OF SECTION

1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 04 03 01.13 Period Masonry Cleaning
- .2 Section 04 03 05.13 Period Masonry Mortaring
- .3 Section 04 03 43.13 Period Stone Repairing
- .4 Section 04 03 43.19 Period Stone Dismantling

1.2 PRICE AND PAYMENT PROCEDURES

- .1 Work necessary for completion of work of this Section will not be paid for separately but will be considered as incidental to work of this Section.

1.3 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 [CAN/CSA-A179-04](#), Mortar and Grout for Unit Masonry.
- .2 ASTM International
 - .1 [ASTM C 1713-15](#) Standard Specification, Mortars for the Repair of Historic Masonry

1.4 DEFINITIONS

- .1 Raking: removal of loose/deteriorated mortar to a depth suitable for repointing until sound mortar, and/or 4x joint thickness and/or a specified mm depth is reached.
- .2 Repointing: filling and finishing of masonry joints from which mortar is missing, has been raked out or has been omitted.
- .3 Back Pointing: repointing to depths greater than minimum raked depths specified, to bring mortar face to specified depth for raked joints.
- .4 Finish Pointing: repointing face of joint, to depth specified for raked joints.
- .5 Tooling: finishing of masonry joints using tool to provide final contour.
- .6 Low-pressure water cleaning: water soaking of masonry using less than 350 kPa (50 psi) water pressure, measured at nozzle tip of hose.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for identified materials and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 Provide labelled samples of materials to be used on project for approval before work commences.
- .4 Test and Evaluation Reports:
 - .1 Provide, upon request of Architect, certified test reports showing compliance with specified performance characteristics and physical properties.

1.6 QUALITY ASSURANCE

- .1 Masonry Contractor:
 - .1 Use single Masonry Contractor for masonry work.
 - .2 Masonry Contractor to have experience in historic stone masonry repair and conservation work on projects of similar size and complexity to Work of this Contract.
 - .3 Masonry Contractor to have good level of understanding of structural behavior of masonry walls when masonry work involves replacing or repairing stones which are part of structural masonry work.
 - .4 Masonry Contractor will be responsible for all aspects of masonry work for duration of project.
 - .5 Masonry Contractor, as an identified responsibility within the scope of work of this contract is to include the following:
 - .1 a sufficient time allotment ensuring effective dialogue with the Architect leading to a comprehensive identification of mortar and grouting mixes required for the identified improvements. The objective is to better inform the selection of a mortar mix as suitable and specific to location and task;
 - .1 sandstone to brick,
 - .2 sandstone to sandstone,
 - .3 sandstone to granite,
 - .4 input on mixes based on variable loading conditions,
 - .5 grouting mixes,
 - .6 pointing and grouting treatments at fine, decorative elements.
- .2 Project Supervisor:
 - .1 Masonry Contractor to employ a Project Supervisor with documented successful experience of historic masonry repair and conservation work as a requirement of this Contract. Project Supervisor to be present on site full-time for work duration.
 - .2 Demonstrate competence to satisfaction of CoSJ Project Manager and Architect.
- .3 Masons:
 - .1 Masons to have certificate of qualification with experience in historic stone masonry repair and conservation work required for this Contract.
 - .2 Masons to have proof of license certification for proprietary restoration mortars.
- .4 Grouting: grouting activities shall be undertaken by workers experienced in manipulation and grouting methods.
- .5 CoSJ Project Manager and Architect reserves the right to reject Masonry Contractor or proposed Project Supervisor, mason or apprentice if, documentation provided does not demonstrate level of experience or skill required for successful completion of the Work.
- .6 Obtain written approval from CoSJ Project Manager and Architect for changes to qualified personnel.
- .7 Mock-ups:
 - .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control.
 - .2 Construct mock-up 1 m x 1 m to demonstrate raking and repointing procedures for each type of above grade exterior material specified in locations designated by CoSJ Project Manager and Architect.
 - .3 Notify CoSJ Project Manager and Architect minimum of 3 business days prior to construction of the mock-up.
 - .4 Perform mock-up of masonry cleaning with low pressure 100 to 310 kPa clean water and soft natural bristle brush.

- .5 Construct mock-up under supervision of CoSJ Project Manager and Architect to demonstrate a full understanding of specified procedures, techniques and formulations is achieved before work commences.
- .6 Construct mock-up where directed by CoSJ Project Manager and Architect.
- .7 Work not to proceed prior to approval of mock-up. Allow 24 hours for inspection of mock-up by CoSJ Project Manager and Architect before proceeding with masonry repointing work.
- .8 Repeat mock-up until results obtained are to satisfaction of CoSJ Project Manager and Architect.
- .9 Mock-up will be used to:
 - .1 Judge quality of work, substrate preparation, operation of equipment, material preparation and application, and curing methods.
 - .2 Determine joint finish required.
 - .3 Test to determine compliance with property requirements.
- .10 Accepted mock-up will demonstrate minimum standard for this work. Mock-up will remain as part of finished work.

- .8 Laboratory tests for mortar:
 - .1 Contractor to include costs for provision of laboratory testing of pointing mortars during mock-ups and on a continuing weekly basis.
 - .2 The specification of the mortar mix is to be as selected by the Architect from above 1.6 Quality Assurance Article 1.5.1.
 - .3 Test following properties, at a minimum, will be tested:
 - .1 Compressive strength: 7 day and 28 day.
 - .2 Air entrainment percentage.
 - .4 Sample mortar for testing purposes directly on site.
 - .5 Testing laboratory to be approved in writing by CoSJ Project Manager and Architect.

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store cementitious materials and aggregates in accordance with [CSA A23.1/A23.2](#).
 - .3 Store lime putty in plastic lined sealed drums.
 - .4 Keep material dry. Protect from weather, freezing and contamination.
 - .5 Remove rejected or contaminated material from site.
 - .6 Replace defective or damaged materials with new.
- .4 Develop Construction Waste Management Plan, Waste Reduction Work Plan related to Work of this Section.

1.8 SITE CONDITIONS

- .1 Ambient conditions:
 - .1 Maintain masonry temperature between 10 and 27 degrees C for duration of work.
 - .2 When ambient temperature is below 10 degrees C or is forecast to fall below 10 degrees C within 24 hours:
 - .1 Maintain temperature of lime at or above 10 degrees C at all times.
 - .2 Store mortar materials for immediate use within heated enclosure with nature of enclosure acceptable to CoSJ Project Manager and Architect. Allow mortar materials to reach minimum temperature of 10 degrees C before use.
 - .3 Heat and maintain sand aggregate temperature to minimum 10 degrees C and maximum 30 degrees C.
 - .1 Heat and maintain water temperature to minimum of 20 degrees C and maximum of 30 degrees C:
 - .4 Provide hot water to a maximum 30 degrees C on site during cold weather.
 - .5 Provide enclosure system around curing area to ensure that stated conditions are maintained for curing period.
 - .6 Use heated temporary enclosures to maintain temperatures above 10 degrees C in cold weather only with written approval of material manufacturer and CoSJ Project Manager and Architect.
 - .7 Submit enclosure system for review by CoSJ PM and Architect.
 - .2 Remove work exposed to temperatures lower than 10 degrees C as directed by CoSJ Project Manager and Architect.
 - .3 When ambient temperature is above 21 degrees C:
 - .1 Protect repointed areas from direct sunlight and wind.
 - .2 Use protective methods acceptable to the CoSJ Project Manager and Architect.
 - .4 Provide humid cure for a minimum of 7 days.
 - .5 Use and prepare mortar when the ambient air temperature is between 10 and 27 degrees C at the location of the work.
 - .6 Maintain sand, aggregate temperature between 10 and 30 degrees C.
 - .7 Mix cement with water or with aggregate or with water-aggregate mixtures when ambient air temperature is between 10 and 30 degrees C.
 - .8 Maintain mortar mix temperature between 10 and 30 degrees C.

2 PRODUCTS

2.1 MORTAR

- .1 Mortar: in accordance with [CAN/CSA-A179](#) and Section 04 03 05.13.
- .2 Proportion Specification:
 - .1 In accordance with [CAN/CSA-A179](#) and Section 04 03 05.13.

3 EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify masonry, staging and storage areas and notify CoSJ Project Manager and Architect in writing of conditions detrimental to acceptable and timely completion of Work.
 - .1 Visually inspect substrate in presence of Project Manager and Architect.
 - .2 Inform in writing Project Manager and Architect areas of deteriorated masonry not previously identified.

3.2 PROTECTION OF IN-PLACE CONDITIONS

- .1 Protection requirements: reference Section 04 05 00 - Common Work Results Masonry.

3.3 SPECIAL TECHNIQUES

- .1 Examine mortar joints.
 - .1 Examine horizontal and vertical joints to determine which were struck first and whether they are the same style, as well as aspects of quality of work which establish authenticity of original work.
 - .2 Replicate the style selected by Project Manager and Architect.
- .2 Test mortar joints.
 - .1 Procedure of testing: examine joints visually for signs of deteriorated masonry such as voids, spalled surfaces, loose or missing mortar, cracking or micro-cracking at edges of joints or across joints and dense cement-rich mortar.
 - .2 Test joints not visually deteriorated as follows:
 - .1 Test for voids and weakness by using hammers or other approved means.
 - .2 Perform examination and testing in co-operation with Project Manager and Architect so that unsound joints can be marked and recorded.

3.4 RAKING JOINTS

- .1 Use manual raking tool to obtain clean masonry surfaces.
 - .1 Remove deteriorated and adhered mortar from masonry surfaces to sound mortar, full depth of deteriorated mortar but in no case less than the greater of 20 mm and 4x joint thickness leaving square corners and flat surface at back of cut.
 - .2 Clean out voids and cavities encountered.
- .2 Remove mortar without chipping, altering or damaging masonry units.
- .3 Where use of power tools to remove mortar is deemed appropriate by Project Manager and Architect:
 - .1 Rake out using maximum 86 mm diameter blades to centre of joint only, to a maximum depth that is equal to half of joint width. Mortar must remain on each side of saw cut. Raking must not touch masonry units.
 - .2 Stop saw cut 50 to 75 mm from end of vertical and discontinuous horizontal joints. Do not cut into masonry units.
 - .3 Notify Project Manager and Architect to inspect raking, prior to removing remaining mortar with hand tools.
 - .4 Remove remaining mortar with hand tools.
 - .5 If an existing sandstone unit is cut through the use of a power tool, the stone cut is to be replaced with a matching stone at the Contractor's expense.

- .4 Clean surfaces of joints by compressed air and/or with non-ferrous brush without damaging texture of exposed joints or masonry units.
- .5 Flush open joints and voids; clean open joints and voids with low pressure water and if not free draining blow clean with compressed air.
- .6 Leave no standing water.
- .7 Saw cutting is not permitted as a means of raking out joints. Replace stone, brick damaged by saw cutting, at no cost to Owner.
- .8 Remove mortar from top, bottom and side joints, with back surface of joint square and of an even depth.

3.5 REPOINTING

- .1 When required repair and replacement work is complete carry out repointing.
- .2 Before repointing, wash down wall to be repointed and allow to dry to damp, but not wet. Ensure that dust and debris are removed from joints and wall surfaces prior to repointing.
- .3 Keep masonry damp while pointing is being performed.
- .4 Completely fill joint with mortar.
 - .1 If surface of masonry units has worn rounded edges keep pointing back 1 mm from surface to maintain same width of joint
 - .2 Avoid feathered edges.
 - .3 Pack mortar firmly into voids and joints, ensuring full contact with back and sides of joint and leaving no voids.
- .5 Build-up pointing in layers not exceeding 12 mm in depth.
 - .1 Allow each layer to set before applying subsequent layers.
 - .2 Maintain joint width.
- .6 Finish, Tool joints to match existing profile and as directed by CoSJ Project Manager and Architect.
 - .1 Tool, compact and finish using jointing tool to force mortar into joint. Ensure jointing tool fits within width of joint. Use tools of varying widths to meet this requirement.
 - .2 Provide final exposed aggregate texture when mortar has dried to thumb-print hardness by striking surface of joint with a stiff bristle brush or as appropriate, with a lightly moistened sponge.
- .7 Remove excess mortar from masonry face before it sets.

3.6 PROTECTION DURING CURING PROCESS

- .1 Cover completed and partially completed work not enclosed or sheltered at end of each work day.
 - .1 Membranes should extend to 0.5 m over surface area of work and be tightly installed to prevent finished work from drying out too rapidly.
- .2 Cover with waterproof tarps to protect newly laid mortar from frost, rainfall and rapid drying conditions such as wind.
 - .1 Maintain tarps in place for minimum of 2 weeks after repointing.
 - .2 Ensure that bottoms of tarps permit airflow to reach mortar in joints.
- .3 Anchor coverings securely in position.

- .4 Damp cure:
 - .1 Provide damp cure for back pointing and finish pointing mortars, at a minimum temperature of 10 degrees C.
 - .2 Install and maintain wetted burlap protection during the curing process, using heavy and tight-woven burlap:
 - .1 Minimum 3 days.
 - .3 Wet mist burlap only - ensure no direct spray reaches surface of curing mortar.
 - .4 Ensure burlap is not in contact with masonry. Leave air space of minimum 50 mm between burlap and masonry.
 - .5 Shade areas of work from direct sunlight and maintain constant dampness of burlap.
 - .6 Provide for off-hours and week-end work as required to maintain specified curing conditions.
- .5 Protect from drying winds. Pay particular attention at corners of structure.
- .6 Maintain ambient temperature of minimum 10 degrees C after repointing masonry for:
 - .1 Minimum 7 days in summer.
 - .2 Minimum 30 days in cold weather conditions using dry heated enclosures.

3.7 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Clean surfaces thoroughly of mortar droppings, stains and other blemishes resulting from work of this contract on a daily basis, as work progresses.
- .3 Remove droppings and splashings using clean water and thick cotton rags.
- .4 Clean masonry with stiff natural bristle brushes and plain water only if mortar has fully cured.
- .5 Clean masonry with low pressure 103 to 310 kPa, clean water and soft natural bristle brush.
- .6 Obtain approval of Project Manager and Architect prior to using other cleaning methods for persistent stains.
- .7 Divert 50% of construction waste from landfill.
- .8 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
- .9 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 -Construction Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.8 PROTECTION OF COMPLETED WORK

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

END OF SECTION

1.1 RELATED REQUIREMENTS

- .1 Section 04 03 01.13 Period Masonry Cleaning
- .2 Section 04 03 05.13 Period Masonry Mortaring
- .3 Section 04 03 05.21 Period Masonry Repointing
- .4 Section 04 03 43.19 Period Stone Dismantling

1.2 REFERENCE STANDARDS

- .1 ASTM International (ASTM)
 - .1 [ASTM C 144-11](#), Standard Specification for Aggregate for Masonry Mortar.
- .2 CSA Group (CSA)
 - .1 [CAN/CSA-A179-14](#), Mortar and Grout for Unit Masonry.
 - .2 [CSA-A3000-13](#), Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).

1.3 DEFINITIONS

- .1 Repair of Stone: mechanical or plastic repair, done to restore original appearance and function of partly deteriorated stones.
- .2 Filling: material used to rebuild broken or deteriorated part of stone.
- .3 Adhesive: material used to fasten broken/fractured stone elements by direct application at fracture interface and/or by application to added reinforcing elements such as dowels.
- .4 Mortar: material used to re-bed the stone element being repaired and to repoint adjacent mortar joints.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for stones and include product characteristics, performance criteria, physical size, finish and limitations.
 - .1 Application/installation instructions.
 - .2 Laboratory test reports certifying compliance of products with specification requirements.
 - .3 Manufacturer's Safety Data Sheets (SDS) for safe handling of specified materials and products, in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.
- .3 Samples:
 - .1 Submit adhesive, mortar, filling samples for testing.
 - .2 Submit 3 full-size stone units, representative of proposed units for work.
 - .1 New Stone:
 - .1 CoSJ Project Manager and Architect reserve the right to request results from tests by an independent testing agency to verify mechanical, physical and aesthetic properties of stone, at no additional cost to Contract.

- .4 Certificates:
 - .1 Submit upon request by CoSJ Project Manager and Architect purchase orders, invoices, suppliers test certificates and documents to prove materials used in contract meet requirements of specification. Allow free access to sources where materials were procured.

1.5 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Record Documentation:
 - .1 Provide marked up set of drawings to provide referencing system identifying locations of stone repairs.
 - .2 Provide photographically record of dismantle and rebuilt stonework in accordance with Section 01 33 00 - Submittal Procedures.

1.6 QUALITY ASSURANCE

- .1 Qualifications:
 - .1 Manufacturers:
 - .1 Filling mortar: manufactured by company specializing in production of cementitious restoration materials with experience in production of filling mortar products and with a record of satisfactory in-service performance.
 - .2 Masonry Contractor:
 - .1 Work of this Section: executed by contractor specializing in historic stone conservation work of this nature, using similar stone repair techniques.
 - .3 Foreperson:
 - .1 Provide competent trade foreperson specializing in type of work required.
 - .2 Experience: experience in conservation work similar to work of this Section. Must be present on site throughout Work.
 - .4 Installers:
 - .1 Plastic repairs: executed by skilled trades people who have successfully completed a course of instruction provided by filling mortar manufacturer and hold a Training Workshop Certificate from said manufacturer. Maintain proof of credential for each installer at site.
- .2 Mock-ups:
 - .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control.
 - .2 Construct mock-up of a representative sample of each type of repair specified, with specified materials and methods.
 - .3 Use existing stonework when constructing job mock-up.
 - .4 Select locations of mock-ups in consultation with CoSJ Project Manager and Architect.
 - .5 Notify CoSJ Project Manager and Architect 48 hours before commencing each mock-up.
 - .1 Obtain approval from CoSJ Project Manager and Architect before commencing mock-up.
 - .6 Allow mock-ups of plastic repairs to cure at least 3 days.
 - .1 Obtain CoSJ Project Manager and Architect approval for colour match.
 - .7 Allow 48 hours for inspection of mock-up by CoSJ Project Manager and Architect before proceeding with stone repair work.
 - .8 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work

- .9 Clean mock-up in accordance with Section 04 03 01.13 - Period Masonry Cleaning to demonstrate cleaning operations to CoSJ Project Manager and Architect before starting cleaning work.

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
 - .1 Identification with grade, batch and production date shown on container or packaging.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground and in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Maintain a minimum ambient temperature of 10 degrees C in storage area.
 - .3 Replace defective or damaged materials with new.

1.8 SITE CONDITIONS

- .1 Ambient conditions:
 - .1 Maintain a minimum temperature of 10 degrees C during and 48 hours after repair, throughout thickness of stone.
 - .2 Allow materials to reach minimum temperature of 10 degrees C prior to use.
 - .3 Maintain temperature between 21 and 24 degrees C during repair and 48 hours after, throughout thickness of stone.
 - .4 Provide temporary enclosures and heating equipment to maintain specified temperatures. Take precautions to avoid overheating masonry.
 - .5 Remove work exposed to lower temperatures as directed by CoSJ Project Manager and Architect.
 - .6 Refer to manufacturer's instructions for environmental requirements of products.
 - .7 Hot weather requirement:
 - .1 Shade stones from direct sunlight with temporary cover.

2 PRODUCTS

2.1 MATERIALS

- .1 Use materials from same manufacturer throughout the Work.
- .2 Portland cement: to [CSA-A3000](#).
- .3 Sand: cleaned and graded in accordance to [ASTM C 144](#).
- .4 Water: clean and free of deleterious materials such as acid, alkali and organic material in accordance to [CAN/CSA-A179](#).
- .5 Dowels: threaded, stainless steel to [ASTM A 276](#), Type 304.
 - .1 Diameter: +/-10mm dependent on size and weight of each new stone insert.
- .6 Deformed wire: stainless steel Type 304.

- .7 New stone:
 - .1 Similar mechanical, physical and aesthetic properties to existing stone.
 - .2 To approval of CoSJ Project Manager and Architect.

2.2 MORTAR MIXES

- .1 Mortar: in accordance with [CAN/CSA-A179](#) and Section 04 03 05.13 - Period Masonry Mortaring.
- .2 Proportion Specification: In accordance with [CAN/CSA-A179](#) and Section 04 03 05.13 - Period Masonry Mortaring.

2.3 FILLING MIXES

- .1 Proprietary premixed stone patching material.
 - .1 Formulated to closely match colour, texture and physical properties of stone to be patched.
 - .1 Ensure formulated material only requires mixing with potable water at site.
 - .2 Mix characteristics: vapour-permeable, frost, salt and shrink resistant.
 - .3 Physical compatibility with substrate: porosity, tensile strength and compressive strength.
- .2 Filling mix: Portland cement, lime putty, sand, crushed stone to match surrounding stones in texture, strength, porosity and colour.
- .3 Mix proportions: in accordance with Section 04 03 05.13.

2.4 ADHESIVE MIXES

- .1 Proprietary stone adhesive:
 - .1 Specially formulated for repair of broken stone units.
 - .2 Mix proportions as recommended by manufacturer to obtain specified results.
- .2 Adhesive mix: epoxy and sand. Mix proportions: in accordance with Section 04 03 05.13.
- .3 Epoxy mixture for adhesive:
 - .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 To approval of CoSJ Project Manager and Architect based on submittals.

3 EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify masonry, staging and storage areas and notify CoSJ Project Manager and Architect in writing of conditions detrimental to acceptable and timely completion of Work.
 - .1 Visually inspect substrate in presence of CoSJ Project Manager and Architect.
 - .2 Inform in writing CoSJ Project Manager and Architect areas of deteriorated masonry not previously identified.
- .2 Obtain CoSJ Project Manager and Architect approval and instructions for repair and replacement of masonry units before proceeding with repair work.
- .3 Stop work in that area and report to CoSJ Project Manager and Architect immediately any evidence of hazardous materials.

3.2 PREPARATION

- .1 Obtain CoSJ Project Manager and Architect approval for tools to be employed prior to commencing work.
- .2 Obtain CoSJ Project Manager and Architect approval for alternative repair methodology and tools to be employed prior to commencing work.

3.3 SPECIAL TECHNIQUES

- .1 Temporary Marking and Recording:
 - .1 Mark stone, on face, before removal using marking product which can be completely erased when required without damaging masonry unit:
 - .1 Ball-point pen on diachylon, attached to stone.
 - .2 Waxless chalk directly on stone.
 - .2 Ensure that temporary marking will remain in use: resistant to weather, handling and cleaning until final marking of stones.
 - .3 Remove markings and adhesive without damaging units:
 - .1 Brush with vegetable fibre brush: either dry or with water.
 - .2 Use no solvent, acid or other chemical product.

3.4 PROTECTION

- .1 Prevent damage to stone surfaces, mortar joints, building, landscaping, natural features which are to remain. Make good damage incurred.
- .2 Protect surrounding components from damage during work.
- .3 Ensure historic fabric is undamaged. Make good damage incurred.
- .4 Obtain CoSJ Project Manager and Architect approval for repair methodology.

3.5 REPAIR OF A FRACTURED STONE

- .1 Remove deteriorated portions of stones using low impact removal methods until sound surface is reached.
- .2 Rake out mortar joints of stones which are split through, have failed in compression and been crushed, are spalling, have eroded to less than 3/4 their original depth or are indicated on Contract Drawings.
- .3 Remove elements which require minor repair. Do not damage existing Work.
- .4 Drill +/-10 mm diameter holes, +/-100 mm long in each section at fracture.
 - .1 Fractures over 305 mm in length: require additional dowels per 200 mm length.
- .5 For new stone inserts of undetermined size and weight.
 - .1 Determine diameter and length of dowels based on size and weight of new stone insert.
 - .2 Drill holes of diameter and depth as determined by dowel size.
- .6 Align holes on each side of fracture.
- .7 Use minimum 2 dowels per fracture.
- .8 Cut dowels slightly shorter than full depth of hole.
 - .1 Minimum depth of holes: 25 mm.
- .9 Ensure humidity, temperature, cleanliness and finish condition of stone is in accordance with epoxy resin manufacturer's instructions.

- .10 Insert dowels of suitable diameter and length, and apply specified adhesive to holes and interface. Let adhesive cure in accordance with manufacturer's instructions.
- .11 Reinstate consolidated element into work and repoint in accordance with Section 04 03 05.21 - Period Masonry Repointing. Joint profiles to match existing.

3.6 REFACING PARTLY DETERIORATED STONE WITH STONE SLAB

- .1 Drill holes sized to receive dowels, +/-200 mm long at interface of existing and new stone slabs.
- .2 Insert +/-10 mm diameter dowels, +/-200 mm long into existing stone and apply specified adhesive to holes and interface.
- .3 Cut new stone insert to exactly fit the cut in existing stone.
 - .1 Allow for thickness of stone adhesive.
 - .2 Allow for finished surface slightly projecting from existing masonry face.
- .4 Drill holes of diameter and depth as determined by size of pieces being jointed and calculated diameter of dowels.
- .5 Align holes on each side of fracture.
- .6 Use minimum 2 dowels per fracture.
- .7 Cut dowels slightly shorter than full depth of hole.
 - .1 Minimum depth of holes: 25 mm.
- .8 Where possible, make horizontal dovetailed grooves at interface of existing and new stone slabs.
- .9 Apply specified adhesive to dovetailed grooves and interface of existing stone.
- .10 Fill holes on one side of joint with specified adhesive. Insert and rotate dowels in new adhesive.
- .11 Fill dowel holes, dovetailed grooves of new stone slab with specified adhesive. Erect new stone slab into position. Secure stone temporarily to allow adhesive to set for 72 hours.
- .12 Tool new stone slab face flush with existing masonry face. Resurface new slab insert as required to make patch unobtrusive.
- .13 Repoint with specified mortar. Joints to match existing.

3.7 REFACING PARTLY DETERIORATED STONE WITH FILLING

- .1 Remove dust from cavity and wet surfaces.
- .2 Undercut sound existing stone to provide keyed edge by drilling. Drill 10 mm holes into sound stone, roughen stone surfaces to provide keys, form grooves in back of cavity.
- .3 At large and deep repairs, install metal wire mesh, bars, stirrups to suit. Obtain CoSJ Project Manager and Architect approval for repair methodology.
 - .1 Ensure metal elements are rust-free.
- .4 Drill grooves into sound stone, insert tiles and apply specified adhesive, as directed by CoSJ Project Manager and Architect.
- .5 Build up gradually new filling section in layers not exceeding 15 mm thickness. Allow each layer to set 24 hours before proceeding with next.

- .6 Use wood float and avoid excessive troweling to prevent crazing.
- .7 Clean filling mortar residue from area surrounding patch: sponge as many times as necessary with clean water. Do this before patching material sets.
- .8 Remove laitance with stiff, near-dry fibre brush.
- .9 Form mortar to match profile of surrounding stone.
- .10 Finish patch to match adjacent stone surface.
- .11 Cover repairs with damp cloths. Keep covering moist during curing period. Occasionally spray covering with water for several days unless determined otherwise with CoSJ Project manager and Architect.
- .12 Refacing mouldings:
 - .1 Form face roughly to required shape with wood float.
 - .2 Chisel finish to final shape when mortar has set.
- .13 Repoint with specified mortar. Joints to match existing.

3.8 MORTAR JOINT REPAIR

- .1 Do repointing work in accordance with Section 04 03 05.21 - Period Masonry Repointing.
- .2 Make good damage incurred to mortar joints.

3.9 CLEANING

- .1 Obtain CoSJ Project manager and Architect approval of cleaning operations before starting cleaning work.
- .2 Protect plants, grass vegetation and adjacent grounds from excessive water accumulation
- .3 Clean stone work surfaces after repairs have been completed and mortar has set.
- .4 Clean stone surfaces of adhesive or mortar residue resulting from work performed without damage to stone or joints.
- .5 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .6 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
- .7 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.10 PROTECTION OF COMPLETED WORK

- .1 Protect finished work from impact damage for period of 2 weeks.

END OF SECTION

1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 04 03 01.13 Period Masonry Cleaning
- .2 Section 04 03 05.13 Period Masonry Mortaring
- .3 Section 04 03 05.21 Period Masonry Repointing
- .4 Section 04 03 43.13 Period Stone Repairing

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Conduct a pre-dismantling meeting with CoSJ Project Manager and Architect to verify project requirements, equipment, procedures and assigned storage areas.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit method of reference numbering for dismantling stone prior to start of stone removal to CoSJ Project Manager and Architect for approval.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer with experience in rehabilitating historic structures and licensed in Province of New Brunswick.
 - .2 Submit drawings for shoring and bracing and temporary framing work.
- .4 Site Quality Control Submittals:
 - .1 Provide up-to-date copies of stone location recording system chart or card index, as well as chronological information concerning each numbered unit (individual cards of units), when requested.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for incorporation into manual. Include:
 - .1 Photographically record stonework to be dismantled and rebuilt.
 - .2 Record drawings of layout of stored stones.

1.5 QUALITY ASSURANCE

- .1 Qualifications:
 - .1 Masonry Contractor:
 - .1 Work of this Section: executed by contractor specializing in historic stone conservation work, using similar stone dismantling techniques.
 - .2 Foreperson:
 - .1 Provide competent trade foreperson specializing in type of work required.
 - .2 Experience: experience in deconstruction of historic stone masonry. Must be present on site throughout Work.
 - .3 Dismantlers:
 - .1 Experience: record of successful masonry dismantling.
- .2 Mock-ups:
 - .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control.

- .2 Perform mock-up approximately 1m x 1m to demonstrate dismantling procedures for masonry condition specified in locations designated by CoSJ Project Manager and Architect.
- .3 Notify CoSJ Project Manager and Architect minimum of 24 hours prior to construction of mock-up.
- .4 Perform mock-up under supervision of CoSJ Project Manager and Architect to demonstrate a full understanding of specified procedures and techniques is achieved before work commences.
- .5 Perform mock-up where directed by CoSJ Project Manager and Architect.
- .6 Work not to proceed prior to approval of mock-up. Allow 24 hours for inspection of mock-up by CoSJ Project Manager and Architect before proceeding with masonry dismantling work.
- .7 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Protect and store stones to facilitate their resetting.
 - .1 Store dismantled masonry units on wood platforms, protected from exposure to water, elements, and potential mechanical damage.
 - .2 Submit storage and identification system to CoSJ Project Manager and Architect for review.
- .3 Develop Construction Waste Management Plan and Waste Reduction Workplan related to Work of this Section.

1.7 AMBIENT CONDITIONS

- .1 Loosen wet masonry only when temperature is above 5 degrees C.
- .2 In temperature 5 degrees C and below:
 - .1 Keep stones dry.
 - .2 Protect wet stones from freezing.

2 PRODUCTS

2.1 NOT USED

- .1 Not Used.

3 EXECUTION

3.1 EXAMINATION

- .1 Examine masonry, staging and storage areas and notify CoSJ PM and Architect in writing of conditions detrimental to acceptable and timely completion of Work.
 - .1 Visually inspect substrate in presence of CoSJ Project Manager and Architect.
 - .2 Inform CoSJ Project Manager and Architect of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from CoSJ Project Manager and Architect
 - .4 Report in writing, to CoSJ Project Manager and Architect areas of deteriorated stone not identified in the documents. Obtain CoSJ Project Manager and Architect approval and instructions for repair of stone before proceeding.
 - .5 Stop work in that area and report to CoSJ Project Manager and Architect immediately evidence of hazardous materials.

3.2 PREPARATION

- .1 Remove deteriorated portions of stones using low impact removal methods until sound surface is reached.
- .2 Remove deteriorated portions of stones by cutting, scraping, chiseling.
- .3 Obtain CoSJ Project Manager and Architect approval for alternative methodology and tools to be employed before commencing the work.
- .4 Clean stone surface of dust and stone chips.

3.3 PROTECTION

- .1 Prevent damage to building, trees, landscaping, natural features, bench marks, pavement, utility lines, etc. which are to remain.
- .2 Make good damage incurred.
- .3 Protect surrounding components from damage during work.
- .4 Make good damage to historic fabric.
- .5 Obtain CoSJ Project Manager and Architect approval for repair methodology.

3.4 SPECIAL TECHNIQUES

- .1 Number and identify stones and other elements on a photographic record.
- .2 Before dismantling stones, indicate dimensions of each numbered stone in removal area on a drawing, chart or index card.
- .3 Temporary Marking and Recording:
 - .1 Mark stone, on face, before removal using marking product which can be completely erased when required without damaging masonry unit:
 - .1 Ball-point pen on diachylon, attached to stone.
 - .2 Waxless chalk directly on stone.
 - .2 Tracking relocated stones and other masonry units:
 - .1 Use numbering, marking, and positioning system.

- .3 Mark/Identify:
 - .1 Stones and other elements or components to show identity and position.
 - .2 Wood platforms or other equipment used to transport and store stones.
 - .3 Work and storage areas.
 - .4 Location from which stones are removed on drawings, photographs, chart and card-index.
- .4 Stone location recording system.
 - .1 Prepare chart or card index to:
 - .1 Help locate stones or units when necessary.
 - .2 To manage availability of platforms.
 - .3 To manage work and storage areas.
 - .2 Keep chart/card index up-to-date and, if required, produce copy every day.
 - .3 Prepare chart, card index or drawing to contain relevant information.
- .5 Ensure that temporary marking will remain in use resistant to weather, handling and cleaning until final marking of stones.
- .6 Remove markings and adhesive without damaging units:
 - .1 Brush with vegetable fibre brush: either dry or with water.
 - .2 Use no solvent, acid or other chemical product

3.5 TEMPORARY SHORING

- .1 Construct shoring and cradling, and other temporary framing work needed to support structure, or parts of it, during removal operations and in anticipation of resetting, if structure is not to be completely dismantled, according to approved shop drawings.

3.6 METHOD FOR LOOSENING STONES

- .1 Use approved methods to loosen stones which will cause no damage either to stones or to other architectural elements.
- .2 Prior to removing a stone approved for replacement or re-installation, rout out existing mortar joints around the stone.
- .3 Remove mortar from top, bottom and side joints, with the back surface of the joint square and of an even depth.
- .4 Use only hand held tools with mallet or pneumatic driven percussion at low stroke speed.
- .5 Obtain CoSJ Project Manager and Architect approval for use of power tools before commencing work.
- .6 Ensure that adjacent stones are not used as lever points in removal of stone.
- .7 Loosen wet masonry when temperature is above freezing.

3.7 DISMANTLING AND MOVING STONES

- .1 Avoid damaging arises of stone when removing mortar and freeing up.
- .2 Remove excess mortar using hand tools.
- .3 Use wood wedges where required to remove or dislocate stone.
 - .1 Use flat pry bars protected with impact absorbing protection (burlap, cardboard).
- .4 Use regularly inspected nylon hoisting belts. Use minimum 2 belts per stone.

- .5 Protect stone from damage when hoisting and lifting from position.
 - .1 Use separators or wood shims to isolate units from hoisting belts.
- .6 Where damage occurs to stone, report to CoSJ Project Manager and Architect and repair stone in accordance with Section 04 03 43.13 - Period Stone Repairing.
- .7 Make good damage incurred at no additional cost to Contract.
- .8 Obtain review and approval of repaired damage by CoSJ Project Manager and Architect.

3.8 HANDLING

- .1 Usage of Lewis bolts for handling stone is permitted.
- .2 Place detached stones on wood surfaces during handling. Prevent contact with metal.
- .3 When stones are lowered to ground, place directly on wooden platform used for transport or storage.
- .4 Transport and keep stones on wooden platforms.
- .5 Ensure that sharp edges of stones do not come into contact with hard objects.

3.9 TEMPORARY STORAGE STAGING AREA

- .1 Place stones in designated area of site for cleaning, detailed inspection and for final marking, before storage.
- .2 Make stones accessible and retrievable when required.

3.10 CLEANING

- .1 Clean stones in accordance with Section 04 03 01.13 - Period Masonry Cleaning.
- .2 Do cleaning operations at above freezing temperature.
 - .1 After cleaning, protect wet stones against freezing until dry.
- .3 Clean stones by wet scrubbing with vegetable fiber brush unless otherwise instructed by CoSJ Project Manager and Architect.
 - .1 Do not use high pressure water jet.
 - .2 Remove excess mortar with hand tools.
- .4 Provide chemical cleaning treatment in accordance with Section 04 03 01.13 - Period Masonry Cleaning.
- .5 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .6 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
- .7 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.11 FINAL MARKING

- .1 Do final marking after cleaning, on surface that supports good adhesion and legibility and will not be visible after resetting.
- .2 Do marking in colour. Dimensions: legible from distance of 2 m.
- .3 Ensure that marking product used will not affect mortar to stone adhesion when resetting.
- .4 Ensure marking product used will survive storage until resetting of stone.

3.12 PRELIMINARY WORK BEFORE RESETTING

- .1 Coordinate the work of this section with associated period masonry specification sections.

3.13 FINAL STORAGE

- .1 When stones are placed under shelter:
 - .1 Design and ventilate shelter to keep condensation from forming on internal surfaces.
- .2 Lay out storage so that each stone will have its numbered face visible, and be accessible or removable without having to move adjacent stones.
- .3 Show layout of stones to be stored on record drawing.

END OF SECTION



GENERAL NOTES:

ALL WORK IS TO CONFORM TO THE REQUIREMENTS OF PART 9 & PART 3.2 OF THE NATIONAL BUILDING CODE OF CANADA, THE REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION AND THE REQUIREMENTS OF APPLICABLE CANADIAN STANDARDS ASSOCIATION DOCUMENTS.

AREA FOR STORAGE OF CONSTRUCTION MATERIALS, PLACEMENT OF CONTRACTOR'S PLANT AND EQUIPMENT, AND PARKING OF THE CONTRACTOR, HIS EMPLOYEES, AND SUB-TRADE VEHICLES WILL BE AS DIRECTED BY THE COSJ PROJECT MANAGER.

DEMOLISHED MATERIALS ARE TO BE REMOVED TO AN APPROVED MUNICIPAL DISPOSAL SITE WITH BEST DELAYS.

CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE BUILDING SITE CLEAR/ORDERLY THROUGHOUT CONSTRUCTION.

GENERAL CONTRACTOR IS TO ENSURE THAT THE BUILDING SITE MAINTAINS SECURE.

GENERAL CONTRACTOR IS TO VERIFY SITE DIMENSIONS PRIOR TO THE COMMENCING OF WORK.

SCOPE OF WORK INCLUDES, BUT IT NOT NECESSARILY LIMITED TO: AS NECESSARY TO COMPLETE THE FULL AND COMPLETE RESTORATION OF FOUNDATION STONE AND SANDSTONE WITHIN THE IDENTIFIED AREA OF THE SCOPE OF WORK - SEE DASHED GREEN LINES.

- REPAIR OF FRACTURED STONES WITH S5 PINS
- PLASTIC TYPE SCULPTED MORTAR REPAIRS CW STAINLESS STEEL PINS AND EPOXY
- PLASTIC REPAIRS
- RAKING AND RE-POINTING OF IDENTIFIED AREAS
- DUTCHMAN INSTALLATION
- FRACTURED STONE REMEDIATION
- CAULKING REMOVAL AND REPLACEMENT WITH GROUT
- PROVISION OF STAGING AND HOARDING AS NECESSARY TO ENSURE SAFE ACCESS TO AREAS OF WORK AND TO SAFEGUARD THE PUBLIC AND PEDESTRIAN ACCESS TO THE BUILDING



WEST FACING ELEVATION

LIMIT OF SCHEDULED WORK IS TO THE MID-POINT OF ARC AT THE ENTRY, THE LEFT SIDE COLUMN AND ITS BASE, TOGETHER WITH THAT PART OF THE FOUNDATION DEFINED BY THE JOINT WHERE THE BRICK MEETS THE BELT COURSE COMPLETE TO 300MM +/- BELOW GRADE TO BOTH THE WEST AND NORTH FACING ELEVATIONS.

COMPLETE PLASTIC TYPE SCULPTED INJECTION CRACK REPAIR/MORTAR REPAIR TO TRANSITION STONE TO ADJOINING DUTCHMAN REPAIR AT SANDSTONE SURROUND.

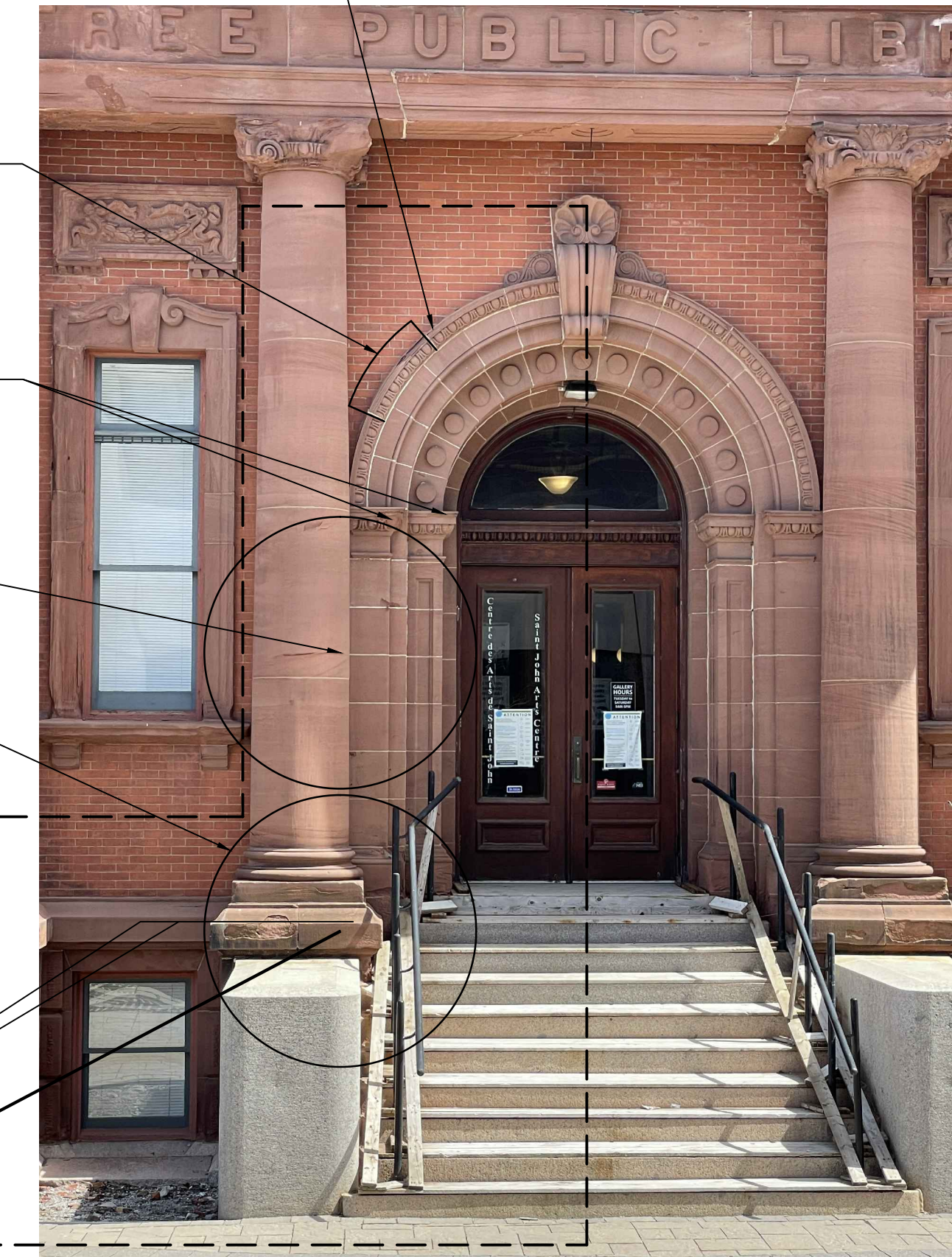
COMPLETE DUTCHMAN INSTALLATION AS REPAIR AT OUTER SURROUND OF SANDSTONE ARC. COMMENCE DUTCHMEN AT LOWER JOINT OF STONE AND CONTINUE UPWARDS TO JOINT ABOVE. DO NOT DISTURB EGG AND DART OR EXISTING BRICK TO REMAIN. PIN IN PLACE USING S5 PINS TO SUIT.

REMOVE LOOSE SANDSTONE WITH HAND RUBBING AND/OR SOFT BRUSH TECHNIQUE. REMOVE MOISTURE RETENTION VOIDS TO ENSURE POSITIVE FLOW OF WATER DRAINAGE.

COMPLETE PLASTIC TYPE SCULPTED INJECTION CRACK REPAIR/MORTAR REPAIR AT IDENTIFIED LOCATIONS.

COMPLETE PLASTIC TYPE SCULPTED INJECTION CRACK REPAIR/MORTAR REPAIR AT COLUMN BASE AND AT OTHER DETERIORATED LOCATIONS WITHIN REFERENCE CIRCLE.

COMPLETE PLASTIC TYPE SCULPTED INJECTION CRACK REPAIR/MORTAR REPAIR CW S5 PINS WHERE NECESSARY TO BETTER SECURE IN PLACE SCHEDULED REMEDIATION.



A IMAGES OF AREA SCHEDULED FOR SANDSTONE REMEDIATION



THE GRANITE FOUNDATION CAP OF THE FOUNDATION, THE SANDSTONE BETWEEN THE GRANITE AND THE LOWER SANDSTONE BELT COURSE AND THE SANDSTONE OF THE BELT COURSE ALL EXHIBIT VARYING DEGREES OF DETERIORATION. WITHIN THIS IDENTIFIED AREA, AS OUTLINED BY DASHED GREEN LINES IS TO BE THE OBJECT OF A VARIETY OF REPAIR PROCEDURES ARE REQUIRED. THESE PROCEDURES INCLUDE: REMOVAL OF ANY AND ALL CAULKING WITHIN OR ADJOINING THE STONES AND REPLACEMENT WITH MORTAR; THE REPAIR OF ANY AND ALL CRACKS AND FISSURES THROUGH PINNING AND EPOXY INJECTION AND/OR PLASTIC REPAIRS TO ALL VOIDS AND FRACTURED MATERIALS; AND, THE ADDRESSING OF LOOSE AND FLAKED SANDSTONE MATERIALS THROUGH A HAND RUBBING AND/OR LIGHT BRUSHING OF THE SURFACES TO CREATE A SOLID SURFACE WITH SURFACES SHAPED TO CREATE A POSITIVE FLOW ELIMINATING VOIDS WHERE MOISTURE COULD BE TRAPPED. RE-POINT BOTH HORIZONTAL AND VERTICAL JOINTS WITHIN THE AREA IDENTIFIED. RE-POINTING AS PER SPECIFICATION SECTION 04 03 05.2.1.

THE STONE FOUNDATIONS OF THE CARNEGIE BUILDING EXHIBIT A DEGREE OF DETERIORATION WITH LOOSE STONES AT THE SURFACE RESULTING FROM MORTAR DEFICIENCIES. THE OBJECTIVE IS TO STABILIZE THE STONES OF THE WALL THROUGH A SEQUENCED REMOVAL AND REINSTALLATION. REMOVE STONES FROM THE UNDERSIDE OF THE GRANITE SILL AS NECESSARY AND AS REQUIRED TO RE-STABILIZE THE STONE COMPLETE TO A BELOW GRADE DEPTH OF 300MM. REMOVE AND REINSTALL GRADING AND SURFACE LANDSCAPING MATERIALS TO FACILITATE THE FOUNDATION WALL RESTORATION. ASPHALT PAVING IS TO REMAIN IN PLACE AND UNDISTURBED. PLACE PURPOSE MADE SEALANT AT JOINT BETWEEN ASPHALT AND GRANITE. RE-MORTAR TO A DEPTH OF +/- 300MM AND REPOINT. SURFACES OF THE GRANITE TO BE FREE OF BLEMISHES. MORTAR AS PER SPECIFICATION SECTION 04 03 05.1.3.



NORTH FACING ELEVATION



B STONE FOUNDATION IMAGES SCHEDULED FOR REMEDIATION

Mechanical Consultant:

Electrical Consultant:

No.	Revision	Date
0	ISSUED FOR TENDER	MAY 12 2022

Project Title:

MASONRY RESTORATION

CARNEGIE BUILDING SAINT JOHN, NB

Drawing Title:

EXTERIOR ELEVATIONS

Designed By: MRR	Revision No.
Approved By: MRR	Job No.: 22098
Drawn By: LAG/MRR	Date: MAY 2022
Scale:	AS NOTED

Drawing No.:

A-1

APPENDIX B – FORM OF TENDER

TENDER No. 2022-082401T
Masonry Remediation – Carnegie Building

FORM OF TENDER

2022-082401T

Masonry Remediation – Carnegie Building

The undersigned bidder has carefully examined the specifications and scope of work, and also visited the premises to become familiar with the conditions, character and extent of work.

The undersigned bidder has determined the quality and quantity of labour, materials and equipment required, and has the capability to comply with the terms and conditions herein described.

The undersigned bidder further agrees to provide all necessary equipment, tools, labour and materials which are necessary to complete the work in accordance with the contract and agrees to accept, therefore, in payment in full, in accordance with the terms, conditions, specifications, and drawings, the sum of:

\$ _____

All Taxes Extra

*Pricing is to be bid in Canadian Funds and FOB Saint John, NB prepaid. The tender pricing shall include all installation wages, fringe benefits, insurance, transportation, delivery, duty, working tools, equipment costs, and any other charges incurred in order to provide required materials and/or services.

COMPANY:	SIGNATURE: _____
E-MAIL:	NAME: _____ (print)
Date:	Tel # Fax #
H.S.T. Reg.#	Remarks:

APPENDIX C – FORM OF AGREEMENT

**TENDER No. 2022-082401T
Masonry Remediation – Carnegie Building**

AGREEMENT BETWEEN OWNER AND CONTRACTOR

THIS AGREEMENT made in triplicate between **THE CITY OF SAINT JOHN** herein (and in the Specifications) called the "Owner" or the "City"

AND

_____ herein (and in the Specifications) called the "Contractor".

WITNESSETH: That the Owner and the Contractor agree as follows:

- (a) The Contractor shall provide all the materials and perform all the work shown on the drawings and described in the Contract Specifications titled:

Contract No: _____

Title: _____

- (b) The Contractor shall do and fulfill everything indicated by this Agreement; and
- (c) The Contractor shall Substantially Complete the Work no later than _____.

CONTRACT DOCUMENTS

General Specifications

General Specifications, City of Saint John, New Brunswick, with all applicable divisions, as updated and as listed in the Table of Contents of the Contract Specifications.

Contract Specifications

Contract specifications for

Contract No: _____

Title: _____

City of Saint John, New Brunswick,

Drawings

ADDENDA

The Contractor agrees that he has received addenda ___ to ___ inclusive, and that the tender price includes the provisions set out in the addenda.

CONTRACT PRICE

The Owner shall pay to the Contractor, in lawful money of Canada for the performance of the Contract, the amounts determined for each of the items of work completed at the unit prices as listed in the Schedule of Quantities and Unit Prices, plus applicable taxes, submitted with the tender, which is to be attached with this Agreement, for the total tender price of:

If the Engineer orders in writing the performance of any work not covered by the drawings or included in the specifications that cannot be classified as coming under any of the contract units and for which a unit price can be agreed upon, then such additional work shall be paid for as described under the General Administration of Contract, Division 6.

PAYMENT

The Owner shall pay on account of thereof upon the Engineer's Certificate, as invoiced by the Contractor and approved by the Engineer, in the manner described in the Specifications.

AGREEMENT DOCUMENTS

The General Administration of Contract, Division 6 and the aforesaid Specifications and Drawings are all to be read into and form part of this Agreement and the whole shall constitute the Contract between the parties and it shall inure to the benefit of and be binding upon them and their successors, executors, administrators, and subject to the General Administration of Contract, their assigns.

AFFIDAVIT OF CORPORATE EXECUTION

CANADA

PROVINCE OF NEW BRUNSWICK

CITY OF SAINT JOHN

I, _____, of the _____
in the County of _____, and Province of New Brunswick

MAKE OATH AND SAY:

- (1) THAT I am the _____ of _____, and _____ is the _____ of the said Company, as such I am/we are duly authorized officer(s) of the said Company to execute the foregoing instrument.
- (2) THAT the signature _____ subscribed to the within instrument is my signature and in my own proper handwriting and that the signature _____ so subscribed is his signature made thereto by him in my presence.
- (3) THAT the Seal affixed to the said instrument purporting to be the Corporate Seal of the said _____ is the Corporate Seal of the said Company and was affixed to the said instrument by me and by order of the Board of Directors of the Company.

SWORN TO BEFORE ME at the _____)
)
of _____)
)
in the Province of _____)
)
this ____ day of _____ A.D., _____.)
)
_____) _____)
COMMISSIONER OF OATHS) CONTRACTOR
)

Note: The blank spaces are to be filled in with the name or names of the signing officer(s).