City of Saint John

T E N D E R

Tender # 2022-082705T
Roof Replacement - Municipal Operations 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 # 2022-082705T – Roof Replacement - Municipal Operations Building"

will be received until 2:30:00 pm, Tuesday, May 31st, 2022 for the supply of all materials, labor and equipment necessary to replace the roof at the Municipal Operations Building, 175 Rothesay Ave, Saint John, NB 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: Tuesday, May 17th, 2022

T E N D E R
Tender # 2022-082705T
Roof Replacement - Municipal Operations Building

SCOPE OF WORK:

The City of Saint John is soliciting tenders from qualified bidders to supply all materials, labor and equipment necessary to replace the roof at the Municipal Operations Building, 175 Rothesay Ave, Saint John, NB, as per the specifications, drawings, terms and conditions outlined in this document.

A pre-bid site visit will be held on Monday, May 23rd, 2022 at 10:00:00 AM. All bidders are strongly urged to attend. Meeting at the front entrance of 175 Rothesay Ave.

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:

"Tender # 2022-082705T - Roof Replacement - Municipal Operations Building"

will be received until 2:30:00 pm, Tuesday, May 31st, 2022 for the supply of all materials, labor and equipment necessary to replace the roof at the Municipal Operations Building, 175 Rothesay Ave, Saint John, NB in accordance with the enclosed specifications, drawings, terms and conditions.

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	Tuesday, May 17th, 2022
Pre-Bid Site Visit	Monday, May 23rd, 2022 at 10:00:00 AM Atlantic Time
Deadline for Enquiries	Monday, May 23rd, 2022 at 4:00:00 PM Atlantic Time
Deadline for Issuing Addenda	Tuesday, May 24th, 2022 at 4:00:00 PM Atlantic Time
Submission Deadline	Tuesday, May 31st, 2022 at 2:30:00 PM, Atlantic Time
Date of Award	Monday, June 13th, 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 (accountspayable@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. 2022-082705T
Roof Replacement - Municipal Operations Building

Project Title:

City of Saint John
Municipal Operations Building
Roof Replacement
Saint John, NB

RICHARD & CO.
ARCHITECTURE INC.

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

DRAWING NO.	DESCRIPTION
ARCHITECTURAL:	
A-1	KEY PLAN, NOTES, ROOF PLANS – ROOF 1, 2, AND 3
A-2	DETAIL SHEET # 1
A-3	DETAIL SHEET # 2

PART 1 - GENERAL

1.1 SUMMARY OF WORK

.1 This contract includes the supply of all plant, labour, materials and equipment necessary to complete the following project as per drawings and specifications.

.1 General Contractor to survey existing conditions and details of existing construction, and to undertake site dimensioning of all areas and aspects of the Work prior to Shop Drawing submittal.

.2 The successful bidder shall be a Contractor experienced in the delivery of similar type projects.

.3 Substantial Completion is required prior to December 15, 2022.

.4 The scope of work is such that the Contractor will be recapping the existing roof.

.2 Work at the Municipal Operations Building at 175 Rothesay Avenue includes, but is not necessarily limited to the following:

.1 Re-capping of Roofs 1, 2, and 3 u.n.o.: Existing modified roofing to remain in place. Prepare existing cap sheet by sweeping clean, priming, and embedding granules as per specification. Provide new roofing membrane cap sheet and install over existing.

.2 Removal of new roof edge metal flashing at specific locations only, as noted in details and on roof plans.

.3 Removal/reinstallation of existing roof edge flashing at specific locations only, as noted in details and on roof plans.

.4 Recapping of existing vent-stacks as noted in details.

.5 Where roofing is being recapped, replace clamping rings from drains raising height if necessary.

.6 Recap existing curb units as noted in details.

.7 Recap curb for hatch as noted in details.

.8 Recap existing RTU curbs as noted in details.

.9 Provision of new roof area divider prefinished metal cap flashings between Roof 1 and Roof 2 and between Roof 2 and Roof 3.

.10 Wet area identified on Roof #2 is to be removed and replaced with new roofing materials to match existing. Removal/provision of new roof drain c/w accessories as per details.

.11 Modify Hatch Ladder and provide new Telescopic Handle/Ladder Extension.

.12 Clean all areas of building affected by work of this contract on a daily basis.

.13 Building is to remain fully operational and secure throughout the duration of the Work of this Contract. Protect existing finishes to remain and protect building personnel, users and visitors from exposure to construction processes and materials as well as from odours, dust and debris. The presence of fumes from work procedures during normal office hours will not be permitted.

.14 Fully coordinate the work of all Sub-Contractors involved in the fulfilment of the work of this contract including the coordination of work to be accomplished by others.

.15 Complete all specified administrative requirements.

1.2 CONTRACTOR'S 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. Do not unreasonably encumber premises 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 The Contractor is to provide Sanitary Facilities.

.4 Water Supply
- .1 Existing potable water supply as designated may be used during construction period, if permission is granted by CoSJ Project Manager.

.5 Temporary Power
- .1 CoSJ Project Manager/Owner will provide for temporary power required during construction for temporary lighting and operating of power tools.

1.3 USER OCCUPANCY

.1 User will occupy premises during entire construction period for execution of normal working hours.

.2 This Contractor will schedule all work causing noise, dust or odours after normal working hours unless otherwise permitted by the CoSJ Project Manager.

1.4 DOCUMENTS REQUIRED

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

1.5 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.

1.6 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 Integrity of weather-exposed or moisture-resistant elements.
  - .3 Efficiency, maintenance, or safety of any operational element.
  - .4 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 all 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 so as to avoid damage to other work.
- .4 Prepare proper surfaces to receive patching and finishing.
- .5 Cut rigid materials using power saw or core drill. Pneumatic or impact tools not allowed.
- .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.

1.7 SCHEDULE

.1 Schedules Required.
- .1 Construction Schedule. See Section 01 32 16.16 Construction Progress Schedule – Critical Path method
- .2 Submittal Schedule for Shop Drawings, Product Data and Samples.

.2 Format.
- .1 Prepare schedule as per Specification Section 01 32 16.16 Construction Progress Schedule.

.3 Submission
- .1 Submit initial schedules within 7 days after award of Contract.
- .2 Submit both electronically and printed, with 8 printed copies to Standard Drawing B1 Size provided for review by Architect and CoSJ Project Manager.
- .3 CoSJ Project Manager will summarize comments and return reviewed schedule within 7 days of receipt.
- .4 Contractor to resubmit finalized schedule within 5 days after return of reviewed copy.

1.8 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 CoSJ Project Manager will issue a Site Instruction.

.2 Upon receipt of a Site Instruction, the Contractor to proceed promptly with the Work.

1.9 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/o CoSJ Project Manager:
- .1 Lump Sum: An agreement between the CoSJ Project Manager and the Contractor on a fixed price.
- .2 Unit Price: Refer to the Tender Form for unit prices agreed upon or as listed in the Contract.
- .3 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 COSJ Project Manager.

.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/CoSJ Project Manager will not be held responsible for costs of delays associated with this Work.

1.10 QUALITY CONTROL

.1 Inspection
- .1 CoSJ Project Manager and Architect shall have unrestricted access to the Work.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections, or approvals by CoSJ Project Manager, or 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.

1.11 DISPOSAL OF DEMOLITION DEBRIS

.1 Submit certified weigh bills, bills of lading and/or receipts from authorized disposal sites and/or reuse and recycling facilities for all materials removed from site upon request of CoSJ Project Manager.

1.12 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

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

1.13 PROJECT CLOSEOUT

.1 Final Cleaning
- .1 When the Work is Substantially Performed, 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 or dispose of as directed by CoSJ Project Manager.
- .3 Leave work broom clean before inspection process commences.

.2 Documents
- .1 Collect reviewed submittals and assemble documents executed by suppliers, and manufacturers.
- .2 Submit material to Architect and CoSJ PM prior to final Application for Payment.
- .3 Submit operation and maintenance data, record (project record copies) drawings.
- .4 Provide warranties fully executed and notarized.
- .5 Submit a final statement of accounting to Architect and CoSJ PM giving total adjusted Contract Price, previous payments, and monies remaining due.
- .6 CoSJ Project Manager will issue a final change order reflecting approved adjustments to Contract Price not previously made.

1.14 INSPECTION AND DECLARATION PROCEDURES

.1 Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of the Work, identify deficiencies and defects; repair as required to conform to Contract Documents. Notify CoSJ Project Manager in writing of satisfactory completion of Contractor's Inspection and that corrections have been made. The Contractor may then request the Architect/CoSJ Project Manager to perform an interim completion inspection.

.2 Interim Completion Inspection: CoSJ Project Manager, Architect, 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 Contractor and CoSJ Project Manager/Architect after all deficiencies are completed the Contractor may call for a final inspection.

.3 Interim Certificate of Completion: Upon completion of the interim inspection, if CoSJ Project Manager/Architect is satisfied that work is substantially completed and acceptable for use, he may issue an Interim Certificate of Completion, describing portions of work not completed to his satisfaction.

.4 Final Completion is when Architect and CoSJ Project Manager consider final deficiencies and defects have been corrected and it appears requirements of contract have been totally performed. CoSJ Project Manager/Architect may issue to Contractor a final certificate of completion.

.5 Interim/Final Certificates of Completion: If the CoSJ Project Manager/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.

.6 Commencement of Lien and Warranty periods: all lien and warranty periods shall commence at date of Interim 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 of finished surfaces and in accordance with relevant municipal 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/Architect 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 and occupants, public and normal use of premises. Arrange with CoSJ Project Manager to facilitate execution of work.

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 in accordance with Specification Section 01 32 16.16 Construction Progress Schedule – Critical Path Method.

.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 Ingress and egress of Contractor vehicles at site shall not conflict with normal user parking and access requirements. Limited on-site parking is available as assigned by CoSJ PM.

1.6 SECURITY

.1 Where security is reduced by Work of Contract; provide temporary means to maintain security.

1. 7 BUILDING SMOKING ENVIRONMENT

.1 Comply with smoking restrictions. Smoking is not allowed in this building.

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 ADMINISTRATIVE

.1 Attend project meetings throughout the progress of the work at the call of Architect/CoSJ Project Manager.

.2 CoSJ Project Manager and Contractor to review agenda for meetings.

.3 CoSJ Project Manager to distribute written notice of each meeting a minimum of four days in advance of meeting date to Architect, Contractor and all other participants.

.4. CoSJ Project Manager to preside at meetings.

.5 CoSJ Project Manager/Richard & Co. Architecture (RCA) to record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.

.6 CoSJ Project Manager to reproduce and distribute electronic copy of minutes within five days after meetings and distribution to meeting participants and, affected parties not in attendance.

.7 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 Architect and Consultants/Inspectors together with representatives of CoSJ and Owner, Contractor, major Subcontractors, 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: in accordance with Section 01 32 16.16 - Construction Progress Schedule - Critical Path Method (CPM).
- .3 Schedule of submission of shop drawings, samples, and 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 in accordance with Section 01 32 16.16 - Construction Progress Schedule - Critical Path Method (CPM).
- .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/introduction of inspection and testing agencies or firms.
.14 Insurances, transcript of policies.

1.3 PROGRESS MEETINGS

.1 During course of Work and 2 weeks prior to project completion, schedule progress meetings bi-weekly.

.2 Contractor, major Subcontractors involved in Work, CoSJ Project Manager and as requested by CoSJ, the 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.

.6 Field observations, problems, conflicts.
.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 effect on construction schedule and on completion date.
.12 Other business.

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 Sections related to the provision and installations of products and materials.

1.2 ALLOWANCES

.1 n/a

1.3 REFERENCE STANDARDS

.1 Project Management Institute (PMI Standards)
- .1 A Guide to the Project Management Body of Knowledge (PMBOK Guide) - Fifth Edition.
- .2 Practice Standard for Scheduling - 2011.

1.4 DEFINITIONS

.1 Activity: Distinct, scheduled portion of work performed during course of a project.

.2 Activity Duration: time in calendar units between start and finish of a scheduled activity. See also Duration.

.3 Assumption: factor in planning process that is considered true, real, or certain without proof or demonstration.

.4 Bar Chart (Gantt Chart): graphic display of schedule-related information.
- .1 In typical bar chart, schedule activities or work breakdown structure components are listed down left side of chart, dates are shown across the top, and activity durations are shown as date-placed horizontal bars.

.5 Baseline: approved version of a work product that can be changed only through formal change control procedures and is used as a basis for comparison.

.6 Budget: approved estimate for a project or work breakdown structure component or schedule activity.

.7 Cash Flow: projection of progress payment requests based on cash loaded construction schedule.

.8 Change Control: process whereby modifications to documents, deliverables, or baselines associated with a project are identified, documented, approved, or rejected.

.9 Completion Milestones: they are firstly Interim Certificate, Substantial Completion and secondly Final Certificate.

.10 Constraint: scheduled limiting factor that effects execution of a project, program, portfolio, or process.

.11 Contract: mutually binding agreement that obligates a seller to provide a specified product or service or result and obligates a buyer to pay for it.

.12 Control: comparing actual performance with planned performance, analyzing variance, assessing trends, to effect process improvements, evaluating possible alternatives, and recommending appropriate corrective action as needed.

.13 Corrective Action: intentional activity that realigns performance of project work with project management plan.

.14 Critical Path: sequence of activities that represents longest path through a project, which

determines shortest possible duration.

.15 Critical Path Activity: activity on critical path in a project schedule.

.16 Critical Path Method (CPM): method used to estimate minimum project duration and determine amount of scheduling flexibility on logical network of paths within schedule model.

.17 Data Date: point in time when the status of the project is recorded.

.18 Decomposition: technique used for dividing and subdividing project scope and project deliverables into smaller, more manageable parts.

.19 Deliverable: unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or project.

.20 Duration: total number of work periods (not including holidays or other non-working periods) required to complete a schedule activity or work breakdown structure component.

.1 Usually expressed as workdays or work weeks.

.21 Early Finish Date (EF): in Critical Path Method, earliest possible point in time when uncompleted portions of schedule activity can finish based on schedule network logic, data date, and schedule constraints.

.1 Early finish dates can change as Project progresses and changes are made to Project plan.

.22 Early Start Date (ES): in Critical Path Method, earliest possible point in time when uncompleted portions of a schedule activity can start based on schedule network logic, data date, and schedule constraints.

.1 Early start dates can change as Project progresses and changes are made to Project Plan.

.23 Execute: directing, managing, performing, and accomplishing project work; providing deliverables, and providing work performance information.

.24 Finish Date: point in time associated with a schedule activity's completion.

.1 Usually qualified by one of following: actual, planned, estimated, scheduled, early, late, baseline, target, or current.

.25 Float: (also known as slack) amount of time a schedule activity can be delayed without delaying early start date of a successor or violating a schedule constraint.

.1 This resource is available to both CoSJ Project Manager and Contractor.

.26 Forecast: estimate or prediction of conditions and events in project future based on information and knowledge available at time of forecast.

.1 Information is based on projects past performance and expected future performance, and includes information that could impact project in future, such as estimate at completion and estimate to complete.

.27 Gantt Chart: see Bar Chart.

.28 Impact Analysis: schedule analysis technique that adds a modeled delay to an accepted construction schedule to determined possible outcome of that delay on project completion.

.29 Imposed Date: a fixed date imposed on a schedule activity or schedule milestone, usually in form of a "start no earlier than" and "finish no later than" date.

.30 Lag: amount of time whereby a successor activity is required to be delayed with respect

to a predecessor activity.

.31 Late Finish Date (LF): in critical path method, latest possible point in time when uncompleted portions of a schedule activity can finish based on schedule network logic, project completion date, and schedule constraints.

.32 Late Start Date (LS): in critical path method, latest possible point in time when uncompleted portions of a schedule activity can start based on schedule network logic, project completion date, and schedule constraints.

.33 Lead: amount of time whereby a successor activity can be advanced with respect to a predecessor activity.

.34 Logic Diagram: see Project network diagram.

.35 Logical Relationship: dependency between two activities or between an activity and a milestone.

.36 Master Schedule: summary-level schedule that identifies major deliverable; work breakdowns structure components, and key schedule milestones.

.37 Milestone: significant point or event in a project, program, or portfolio.

.38 Monitor: collect project performance data with respect to a plan, procedure performance measures, and report and disseminate performance.

.39 Network: see Project Schedule Network Diagram.

.40 Non-Critical Activities: activities which when delayed, do not affect specified Contract duration.

.41 Project Control System: fully computerized system utilizing commercially available software packages.

.42 Project Management: application of knowledge, skills, tools, and techniques, to project activities to meet project requirements.

.43 Project Management Plan: approved document that describes how project will be executed, monitored, and controlled.

.1 Primary uses of Project management plan are to document planning assumptions and decisions, facilitate communication among stakeholders, and document approved scope, cost, and schedule baselines.

.2 Project management plan may be summary or detailed.

.44 Project Management Planning: development and maintenance of Project Management Plan.

.45 Project Management Planning, Monitoring and Control System: overall system operated to enable monitoring of Project Work in relation to established milestones.

.46 Project Schedule: planned dates for performing activities and planned dates for meeting milestones.

.47 Project Schedule Network Diagram: graphical representation of logical relationships among project schedule activities.

.1 Always drawn from left to right to reflect Project chronology.

.48 Project Scope: work performed to deliver a product, service, or result with specified features and functions.

.49 Quantified days duration: working days based on 5 day work week, discounting statutory

holidays.

.50 Risk: uncertain event or condition that, if it occurs, has positive or negative effect on one or more project objectives.

.51 Schedule: see Project Schedule.

.52 Schedule Data: collection of information for describing and controlling schedule.

.53 Scope: see Project Scope.

.54 Start Date: point in time associated with activity's start, usually qualified by one of following: actual, planned, estimated, scheduled, early, late, target, baseline, or current.

.55 Work Breakdown Structure (WBS): hierarchical decomposition of total scope of work to be carried out by project team to accomplish project objectives and create the required deliverables.

1.5 ADMINISTRATIVE REQUIREMENTS

.1 Project Meeting:
- .1 Meet with Architect/CoSJ Project Manager within 5 working days of Award of Contract date, to establish Work requirements and approach to project construction operations.
- .2 Participate in regular project progress meetings with Architect/CoSJ Project Manager specifically intended to discuss update of detailed schedule and contract changes.

.2 Scheduling:
- .1 Ensure that planning process is iterative and results in generally top-down processing with more detail being developed as planning progresses, and decisions concerning options and alternatives are made.
- .2 Ensure project schedule efficiencies through monitoring of project in detail to ensure integrity of Critical Path, by comparing actual completions of individual activities with their scheduled completions, and review progress of activities that has started but are not yet completed.
- .3 Monitor sufficiently often so that causes of delays can immediately be identified and mitigated.

.3 Project monitoring and reporting:
- .1 Keep team aware of changes to schedule, and potential consequences as project progresses.
- .2 Use narrative reports to provide advice on seriousness of challenges and measures to overcome them.
- .3 Begin narrative reporting with statement on general status of project followed by summarization of delays, potential problems, corrective measures and project status criticality.

.4 Critical Path Method (CPM) Requirements:
- .1 Ensure Master Plan and Detail Schedule are practical and remain within specified contract duration.
- .2 Revise Master Schedule and Detail Schedule deemed impractical Architect/COSJ Project Manager and resubmit for approval.
- .3 Change to Contract Duration:
  - .1 Acceptance of Master Schedule and Detail Schedule showing scheduled

Contract duration shorter than specified Contract duration does not constitute change to Contract.

.2 Duration of Contract may only be changed through bilateral Agreement.

.4 Consider Master Schedule and Detail Schedule deemed practical by Architect/CoSJ Project Manager, showing Work completed in less than specified Contract duration, to have float.

.5 First Milestone on Master Schedule and Detail Schedule will identify start Milestone with an Early Start, "ES", constraint date equal to Award of Contract date.

.6 Calculate dates for completion of milestones from Plan and Schedule using specified time periods for Contract.

.7 Interim Certificate, Substantial Completion with Late Finish, "LF", constraint equal to calculated date.

.8 Calculations on updates such that if early finish of Interim Certificate falls later than specified Contract duration then float calculation to reflect negative float.

.9 Delays to non-critical activities with float may not be basis for time extension.

.10 Do not use float suppression techniques such as software constraints, preferential sequencing, special lead/lag logic restraints, extended activity times or imposed dates other than required by Contract.

.11 Allow for adverse weather conditions normally anticipated and show in Master Plan and Detail Schedule.

.1 Specified Contract duration has been predicated assuming normal amount of adverse weather conditions.

.12 Provide necessary crews and manpower to meet schedule requirements for performing Work within specified Contract duration.

.1 Simultaneous use of multiple crews on multiple fronts on multiple critical paths may be required.

.13 Arrange participation on and off site of subcontractors and suppliers, as required by Architect/CoSJ Project Manager, for purpose of network planning, scheduling, updating and progress monitoring.

.1 Approvals by Architect/CoSJ Project Manager of original networks and revisions do not relieve Contractor from duties and responsibilities required by Contract.

.14 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.

1.6 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Submit to Architect/CoSJ Project Manager Project Control System for planning, scheduling, monitoring and reporting of project progress.

.3 Submit Project Control System to Architect/CoSJ Project Manager for approval.

.1 Failure to comply with each required submission, may result in progress payment being withheld in accordance with Federal Government's GC 5 Terms of Payment.

.4 Include costs for execution, preparation and reproduction of schedule submittals in bid documents.

.5 Submit letter ensuring schedule has been prepared in co-ordination with major sub-contractors.

.6 Refer to article "PROGRESS MONITORING AND REPORTING" of this specification Section for frequency of Project control system submittals.

.7 Submit impact analysis of schedule for changes that result in extension of contract duration.
- .1 Include draft schedule update and report as outlined in article "PROGRESS MONITORING AND REPORTING".

.8 Submit Project planning, monitoring and control system data [as part of initial schedule submission and monthly status reporting, as required Architect/CoSJ PM in following form.
- .1 D or USB Drive files in original scheduling software containing schedule and cash flow information, labelled with data date, specific update, and person responsible for update.
- .2 Master Schedule Bar Chart.
- .3 Construction Detail Schedule Bar Chart.
- .4 Listing of project activities including milestones and logical connectors, networks (sub-networks) from Project start to end. Sort activities by activity identification number and accompany with descriptions. List early and late start and finish dates together with durations, codes and float.
- .5 Criticality report listing activities and milestones with negative, zero and up to 5 days total float used as first sort for ready identification of critical or near critical paths through entire project. List early and late starts and finishes dates, together with durations, codes and float for critical activities.
- .6 Progress report in early start sequence, listing for each trade, activities due to start, underway, or finished within 2 months from monthly update date. List activity identification number, description and duration. Provide columns for entry of actual start and finish dates, duration remaining and remarks concerning action required.

1.7 QUALITY ASSURANCE

.1 Use experienced personnel, fully qualified in planning and scheduling to provide services from start of construction to Final Certificate, including Commissioning.

1.8 WORK BREAKDOWN STRUCTURE (WBS)

.1 Prepare construction Work Breakdown Structure (WBS) within 5 working days of Contract Award
- .1 Develop WBS through at least five levels: project, stage, element, sub-element and work package.

1.9 PROJECT MILESTONES

.1 Mandatory and recommended project milestones form targets for both Master Schedule and Detail Schedule of CPM construction network system.
- .1 Mandatory: interim Certificate (substantial completion) 12 15 2022.

1.10 MASTER SCHEDULE

.1 Structure and base CPM construction networks system on WBS coding in order to ensure consistency throughout Project.

.2 Prepare comprehensive construction Master Schedule (CPM logic diagram) and dependent Cash Flow Projection within 5 working days of finalizing Agreement to

confirm validity or alternates of identified milestones.

.1 Master Schedule will be used as baseline.
  .1 Revise baseline as conditions dictate and as required Architect/CoSJ PM.
  .2 Architect/CoSJ Project Manager as Project progresses will review and return revised baseline within 5 work days.

.3 Reconcile revisions to Master Schedule and Cash Flow Projections with previous baseline to provide continuous audit trail.

.4 Initial and subsequent Master Schedule will include:
  .1 CD or USB Drive containing schedule and cash flow information, clearly labelled with data date, specific update, and person responsible for update.
  .2 Bar chart identifying coding, activity durations, early/late and start/finish dates, total float, completion as percentile, current status and budget amounts.
  .3 Network diagram showing coding, activity sequencing (logic), total float, early/late dates, current status and durations.
  .4 Actual/projected monthly cash flow: expressed monthly and shown in both graphical and numerical form.

1.11 DETAIL SCHEDULE

.1 Provide detailed project schedule (CPM logic diagram) within 5 working days of Award of Contract date showing activity sequencing, interdependencies and duration estimates. Include listed activities as follows:
  .1 Shop drawings.
  .2 Samples.
  .3 Approvals.
  .4 Procurement.
  .5 Construction.
  .6 Installation.
  .7 Site works.
  .8 Acceptance.

.2 Detail CPM schedule to cover in detail minimum period of 2 months beginning from Award of Contract date with duration of each activity approximately 2 days.
  .1 Show remaining activities for CPM construction network system up to Final Certificate and develop complete detail as project progresses.
  .2 Detail activities completely and comprehensively throughout duration of project.

.3 Relate Detail Schedule activities to basic activities and milestones developed and approved in Master Schedule.

.4 Clearly show sequence and interdependence of construction activities and indicate:
  .1 Start and completion of all items of Work, their major components, and interim milestone completion dates.
  .2 Activities for procurement, delivery, installation and completion of each major piece of equipment, materials and other supplies, including:
    .1 Time for submittals, resubmittals and review.
    .2 Time for fabrication and delivery of manufactured products for Work.
    .3 Interdependence of procurement and construction activities.
  .3 Include sufficient detail to assure adequate planning and execution of Work. Activities generally range in duration from 3 to 15 workdays each.

.5 Provide level of detail for project activities such that sequence and interdependency of Contract tasks are demonstrated and allow co-ordination and control of project activities.

Show continuous flow from left to right.

.6 Ensure activities with no float are calculated and clearly indicated on logical CPM construction network system as being, whenever possible, continuous series of activities throughout length of Project to form "Critical Path". Increased number of critical activities is seen as indication of increased risk.

.7 Insert Change Orders in appropriate and logical location of Detail Schedule. After analysis, clearly state and report to Architect/CoSJ Project Manager for review effects created by insertion of new Change Order.

1.12 REVIEW OF CONSTRUCTION DETAIL SCHEDULE

.1 Allow minimum 5 work days for review by Architect/CoSJ Project Manager of proposed construction Detail Schedule unless otherwise specified.

.2 Upon receipt of reviewed Detail Schedule make necessary revisions and resubmit to Architect/ CoSJ Project Manager for review within maximum 5 work days unless otherwise specified.

.3 Promptly provide additional information to validate practicability of Detail Schedule as required by Architect/CoSJ Project Manager.

.4 Submittal of Detail Schedule indicates that it meets Contract requirements and will be executed generally in sequence.

1.13 COMPLIANCE WITH DETAIL SCHEDULE

.1 Comply with reviewed Detail Schedule.

.2 Proceed with significant changes and deviations from scheduled sequence of activities that cause delay, only after written receipt of approval by Architect/CoSJ Project Manager.

.3 Identify activities that are behind schedule and causing delay. Provide measures to regain slippage.

.1 Corrective measures may include:

.1 Increase of personnel with more experience/qualifications on site for effected activities or work package.

.2 Increase in materials and equipment.

.3 Overtime work, Additional work shifts.

.4 Submit to Architect/CoSJ Project Manager, justification, project schedule data and supporting evidence for approval of extension to Contract completion date or interim milestone date when required. As part of supporting evidence, include:

.1 Written submission of proof of delay based on revised activity logic, duration and costs, showing time impact analysis illustrating influence of each change or delay relative to approved contract schedule.

.2 Prepared schedule indicating how change will be incorporated into overall logic diagram. Demonstrate perceived impact based on date of occurrence of change and include status of construction at that time.

.3 Other supporting evidence requested by Architect/CoSJ Project Manager.

.4 Do not assume approval of Contract extension prior to receipt of written approval from Architect/CoSJ Project Manager.

.5 In event of Contract extension, display in Detail Schedule that scheduled float time available for work involved has been used in full without jeopardizing earned float.

.1 Architect/CoSJ Project Manager will determine and advise Contractor number of allowable days for extension of Contract based on project schedule updates for period in question, and other factual information.

.2 Construction delays affecting project schedule will not constitute justification for extension of contract completion date.

1.14 PROGRESS AND REPORTING

.1 On an ongoing basis, Detail Schedule on job site to show "Progress to Date". Arrange participation on and off site of subcontractors and suppliers, as, and when necessary, for purpose of network planning, scheduling, updating and progress monitoring. Inspect Work with Architect/CoSJ Project Manager at least twice monthly to establish progress on each current activity shown on applicable networks.

.2 Update and reissue project Work Breakdown Structure and relevant coding structures as project develops and changes.

.3 Perform Detail Schedule update bi-weekly with status dated (Data Date) on last working day of month. Update to reflect activities completed to date, activities in progress, logic and duration changes.

.4 Do not automatically update actual start and finish dates by using default mechanisms found in project management software.

.5 Submit to Architect/CoSJ Project Manager copies of updated Detail Schedule.

.6 Requirements for monthly progress monitoring and reporting are basis for progress payment request.

.7 Submit monthly written report based on Detail Schedule, showing Work to date performed, comparing Work progress to planned, and presenting current forecasts. Report summarize progress, defining problem areas and anticipated delays with respect to Work schedule, and critical paths. Explain alternatives for possible schedule recovery to mitigate potential delay. Include in report:

.1 Description of progress made.

.2 Pending items and status of: permits, shop drawings, change orders, possible time extensions.

.3 Status of Contract completion date and milestones.

.4 Current and anticipated problem areas, potential delays and corrective measures.

.5 Review of progress and status of Critical Path activities.

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 05 50 00 Metal Fabrications

.2 Section 07 52 00 Modified Bituminous Membrane Adhesive

.3 Section 07 92 00 Joint Sealants

1.2 ADMINISTRATIVE

.1 Submit to 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 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 co-ordinated 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 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 co-ordinated.

.8 Contractor's responsibility for errors and omissions in submission is not relieved by CoSJ Project Manager nor Architect’s review of submittals.

.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by CoSJ Project Manager nor Architect’s review.

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

1.3 SHOP DRAWINGS AND PRODUCT DATA

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

.2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.3 Allow 7 days for CoSJ Project Manager nor Architect’s review of each submission.

.4 Adjustments made on shop drawings by CoSJ Project Manager or Architect are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to CoSJ Project Manager prior to proceeding with Work.

.5 Make changes in shop drawings as CoSJ Project Manager or Architect may require, consistent with Contract Documents. When resubmitting, notify CoSJ Project Manager and Architect in writing of revisions other than those requested.

.6 Accompany submissions with transmittal 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.

.7 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.

.8 After CoSJ Project Manager and Architect’s review, distribute copies.

.9 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as CoSJ Project Manager and Architect may reasonably request.

.10 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by CoSJ Project Manager and Architect where shop drawings will not be prepared due to standardized manufacture of product.

.11 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by CoSJ Project Manager and Architect.
- .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.

.12 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by CoSJ Project Manager and Architect.
- .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.

.13 Submit electronic copies of manufacturer's instructions for requirements requested in specification Sections and as requested by CoSJ Project Manager and Architect.
- .1 Pre-printed material describing installation of product, system or material, including special notices and Safety Data Sheets concerning impedances, hazards and safety precautions.

.14 Submit electronic copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by CoSJ Project Manager and Architect.

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

.16 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections as follows:
- .1 **Two weeks prior to Substantial Performance of the Work or Training**, submit to Architect/CoSJ Project Manager, one electronic copy of operating and maintenance manual for review. Modify operating maintenance manuals as required by review. On approval, submit 1 hard copy and an electronic copy on a Memory Stick.

.17 Delete information not applicable to project.

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

.19 If upon review by COSJ Project Manager and Architect, 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.

.20 The review of shop drawings by CoSJ Project Manager and Architect is for sole purpose of ascertaining conformance with general concept.
- .1 This review shall not mean that CoSJ Project Manager and Architect approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
- .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.4 SAMPLES

.1 Submit for review samples in triplicate 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 E2L2A5.

.3 Notify CoSJ Project Manager and Architect 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 CoSJ Project Manager and Architect are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to

CoSJ Project Manager and Architect prior to proceeding with Work.

.6 Make changes in samples which CoSJ Project Manager and Architect may require, consistent with Contract Documents.

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

1.5 MOCK-UPS

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

1.6 PHOTOGRAPHIC DOCUMENTATION

.1 Submit electronic copy of digital photography in jpg format, fine resolution, weekly and with monthly with progress statement and as directed by CoSJ Project Manager and Architect.

.2 Project identification: name and number of project and date of exposure indicated.

.3 Number of viewpoints: 4 of each work location.

.1 Viewpoints and their location as determined by CoSJ Project Manager and Architect in cooperation with Contractor.

1.7 CERTIFICATES AND TRANSCRIPTS

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

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

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 05 50 00 Metal Fabrications

.2 Section 07 52 00 Modified Bituminous Membrane Adhesive

.3 Section 07 92 00 Joint Sealants

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.

.3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
- .1 Safety Data Sheets (SDS).

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 found in work plan.

.3 Submit copy of Contractor's authorized representative's work site health and safety inspection reports to CoSJ Project Manager and authority having jurisdiction, weekly.

.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 both official languages.

.7 CoSJ Project Manager will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 5 days after receipt of plan. Revise plan as appropriate and resubmit plan to CoSJ Project Manager within 2 days after receipt of comments from CoSJ Project Manager.

.8 CoSJ Project Manager 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.

.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 prior to commencement of Work.

1.7 PROJECT/SITE CONDITIONS

.1 Work at site will involve working at heights, working in areas with loading restrictions, areas where overhead electrical is a consideration.

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

1.9 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.

1.10 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.

1.11 UNFORSEEN HAZARDS

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

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

1.12 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 WHIMIS Health and Safety Standards.
  .2 Have working knowledge of occupational safety and health regulations.
  .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
  .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
  .5 Be on site during execution of Work and report directly to and be under direction of site supervisor.

1.13 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.

1.14 CORRECTION OF NON-COMPLIANCE

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

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

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

1.15 BLASTING

.1 Blasting or other use of explosives is not permitted.

1.16 POWDER ACTUATED DEVICES

.1 Use powder actuated devices only after receipt of written permission from CoSJ Project Manager.

1.17 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

2.1 NOT USED

.1 Not used.

3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

1 GENERAL

1.1 REPORTING FIRES

.1 Inform CoSJ Project Manager of fire incidents at construction site, regardless of size.

.2 Know location of nearest fire alarm pull station/ telephone, including emergency phone number.

.3 Report immediately fire incidents to Fire Department as follows:
- .1 Activate nearest fire alarm pull station.
- .2 Telephone.

.4 Person activating fire alarm pull station will remain at main entrance of site to direct Fire Department to scene of fire.

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

1.2 FIRE SAFETY PLAN

.1 Prepare a fire safety plan for construction site prior to commencement of on-site work.

.2 Submit fire safety plan to CoSJ Project Manager for review by local fire department. Implement changes or recommendations made by local fire department into fire safety plan.

.3 Limit scope of fire safety plan to area of construction only. Existing fire safety plans covering existing buildings are not responsibility of this construction contract.

.4 Post fire safety plan at entrance to construction site and/or near construction site's health and safety board.

.5 Prepare fire safety plan in conformance with National Fire Code of Canada. Include:
- .1 Emergency procedures in case of fire, including:
  - .1 Sounding fire alarm.
  - .2 Notifying fire department.
  - .3 Instructing occupants on procedures followed when fire alarm sounds.
  - .4 Evacuating occupants, including special provisions for persons requiring assistance.
  - .5 Confining, controlling and extinguishing fires.
- .2 Appointment and organization of designated supervisory staff to carry out fire safety duties.
- .3 Training of supervisory staff and other occupants in their responsibilities for fire safety.
- .4 Documents including diagrams, showing type, location and operation of building fire emergency systems.
- .5 Holding of fire drills (where applicable).
- .6 Control of fire hazards in the building.
- .7 Inspection and maintenance of building facilities provided for the safety of occupants.

1.3 FIRE WARNING SYSTEM

.1 Provide a fire warning system for entire construction site, capable of notifying construction personnel of a fire emergency in construction area.

.2 Provide system with sufficient coverage so that alarms are capable of being heard throughout building and anywhere on site.

1.4 FIRE PROTECTION SYSTEM IMPAIRMENT

.1 Maintain existing systems in an operational state at all times during construction.

.2 Use of fire hydrants, standpipes or hose systems for purposes other than firefighting prohibited.

.3 Existing fire protection and alarm systems will not be obstructed, shut off, disabled or left inactive at end of each working day or shift without written authorization from Fire Department Chief.

.4 Submit written notification to CoSJ Project Manager and CoSJ Fire Department Chief 48 hours in advance of planned interruption of services. Submit written notification for operation including shutting down active fire protection system, including water supply, fire suppression, fire detection and life safety systems.

.5 Where a fire protection system that provides fire alarm monitoring is impaired in an existing building, provide a fire watch as directed by CoSJ Fire Department Chief.

.6 Conduct work on fire protection system where systems are affected or impaired in accordance with National Fire Code of Canada.

1.5 FIRE EXTINGUISHERS

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

.2 Provide supplemental fire extinguishers to these areas and otherwise as directed by COSJ Project Manager:

- .1 Adjacent to hot works.
- .2 Areas where combustibles materials are stored.
- .3 Adjacent to areas where flammable liquids or gases are stored or handled.
- .4 Near or on internal combustion engines.
- .5 Adjacent to temporary oil fired or gas fired equipment.
- .6 Adjacent to bitumen heating equipment.

.3 Provide extinguishers rated as follows: 4A:40BC. Minimum 20 pounds unless otherwise directed by CoSJ Fire Department Chief.

.4 Provide dry chemical type extinguishers unless otherwise required by hazard being protected.

.5 Provide sufficient numbers of extinguishers based on a maximum travel distance between extinguishers of 23.0 meters (75 feet).

1.6 ACCESS FOR FIRE FIGHTING

.1 Provide and maintain access for firefighting in accordance with National Fire Code of Canada.

.2 Provide written notification to CoSJ Fire Department Chief a minimum of 5 working days in advance of operation that would impede fire apparatus response including:

- .1 Violation of minimum horizontal and overhead clearances.
- .2 Other operations as directed by CoSJ Fire Department Chief.
- .3 Erecting of barricades and digging of trenches.

.3 Maintain a minimum clear horizontal width on access routes of 5.0 meters or otherwise as defined by Senior Fire Fighter.

.4 Maintain a minimum vertical clearance of 6.0 meters or otherwise as defined by CoSJ Fire Department Chief.

1.7 SMOKING PRECAUTIONS

.1 Smoking is prohibited in buildings including buildings under construction.

1.8 RUBBISH AND WASTE MATERIALS

.1 Keep rubbish and waste materials to a minimum.

.2 Burning of rubbish is prohibited.

.3 Remove rubbish from work site at end of each work day or shift or more frequently as directed by CoSJ Project Manager.

.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 at end of each work day.

1.9 FLAMMABLE AND COMBUSTIBLE LIQUIDS

.1 Handle, store and use flammable and combustible liquids in accordance with National Fire Code of Canada and as otherwise directed by the Senior Fire Fighter.

.2 Store flammable and combustible liquids such as gasoline, kerosene and naphtha in quantities not exceeding 45 litres. Store in approved safety cans bearing Underwriters' Laboratory of Canada or Factory Mutual seal of approval. Obtain written authorization from Senior Fire Fighter for storage of quantities of flammable and combustible liquids exceeding 45 litres.

.3 Transfer of flammable or combustible liquids within buildings or on jetties is prohibited.

.4 Transfer of flammable or combustible liquids in vicinity of open flames or any type of heat-producing devices is prohibited.

.5 Use of flammable liquids having flash point below 38 degrees C such as naphtha or gasoline as solvents or cleaning agents is prohibited.

.6 Storing flammable and combustible waste liquids on site is prohibited. Remove daily or more frequently as directed by Senior Fire Fighter.

1.10 HOT WORKS

.1 Implement a hot works program in accordance with National Fire Code of Canada and NFPA 51B Standard for Fire Prevention. Apply hot works program to processes involving welding, cutting, roofing and other hot works as defined by CoSJ Project Manager and CoSJ Fire Department Chief.

.2 Obtain a "Hot Works" permit from CoSJ Project Manager for hot works in construction area. Frequency of renewal for hot works permits is at discretion of the CoSJ Project Manager.

.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 level of protection necessary for Fire Watch is at discretion of the CoSJ Project Manager.

.4 Provide fire watch service for work as directed by CoSJ Project Manager and as defined in Fire Department Briefing. Provide fire watchers trained in use of fire extinguishing equipment.

.5 Carry out hot works processes in areas free of combustible and flammable content.

.6 Where hot works must be carried out in areas where combustibles are present:
- .1 Protect flammable and combustible materials within 15.0 meters of hot works in accordance with National Fire Code of Canada.
- .2 Provide a fire watch during hot work and for a minimum of 60 minutes after work is complete unless otherwise directed by CoSJ Fire Department Chief.
- .3 Conduct a final inspection of area not less than 4 hours after completion of hot works.

7 Where there is a possibility of sparks leaking onto combustible materials in areas adjacent to areas where the hot work is carried out:
- .1 Cover or close openings in walls, floors or ceilings to prevent passage of sparks to such adjacent areas.
- .2 Provide fire watch during hot works and a minimum of 60 minutes after work complete.
- .3 Conduct a final inspection not less than 4 hours after completion of hot works unless otherwise directed by Senior Fire Fighter.

.8 Protection of flammable or combustible materials:
- .1 Remove flammable and combustible materials including combustible or flammable dust or residue from area where hot works is carried out.
- .2 When removal is not possible, protect materials with a non -combustible covering.

.9 Provide a fire extinguisher within 3.0 meters of hot works. Provide a minimum size of 20 lbs Type ABC extinguisher unless otherwise directed by Senior Fire Fighter.

1.11 HAZARDOUS SUBSTANCES

.1 Perform work involving the use of toxic or hazardous materials, chemicals or explosives, or otherwise creating hazard to life, safety or health, in accordance National Fire Code of Canada (NFC).

.2 Provide ventilation where flammable liquids, such as lacquers or urethanes are used. Eliminate sources of ignition. Provide written notification to the COSJ Project Manager a minimum of 5 days prior to starting work and immediately at completion of work.

1.12 PARTIAL OCCUPANCY

.1 Implement partial occupancy procedures as defined in General Conditions of the Contract. Partial occupancy is defined as when construction occurs adjacent to work occupied areas. This includes:
- .1 Phased new construction.
- .2 Early or partial occupancy of new construction.
- .3 New construction being added onto an existing building.
- .4 Renovation or recapitalization of an existing building.
- .5 Phased renovation or recapitalization of an existing building.

.2 Where partial occupancy occurs, implement requirements as indicated in drawings and specifications. This may include construction of a rated fire separation between occupied and construction areas as required by National Fire Code.

.3 If work is carried out in an occupied building, provide regular inspections every hour, throughout entire period of demolition.

.4 If work is carried out in an occupied building and where building does not have a Fire

Alarm system or similar automatic monitoring or protection equipment, provide regular inspections every hour for entire period of construction.

1.13 QUESTIONS OR CLARIFICATION

.1 Direct questions or clarification on Fire Safety to CoSJ Project Manager.

.2 CoSJ Project Manager will obtain clarifications from CoSJ Fire Department Chief. Do not contact directly with CoSJ Fire Department Chief for notification, authorization or any requests unless situation constitutes an immediate emergency.

1.14 FIRE INSPECTION

.1 Co-ordinate site inspections by CoSJ Fire Department Chief through CoSJ Project Manager.

.2 Allow CoSJ Fire Department Chief unrestricted access to work site.

.3 Co-operate with CoSJ Fire Department Chief during routine fire safety inspection of work site.

.4 Immediately remedy unsafe fire situations observed by CoSJ Fire Department Chief.

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 05 50 00 Metal Fabrications

.2 Section 07 52 00 Modified Bituminous Membrane Adhesive

.3 Section 07 92 00 Joint Sealants

1.2 DEFINITIONS

.1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.

.2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.

1.3 REFERENCE STANDARDS

.1 Canadian Environmental Protection Act 1999

1.4 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit WHMIS Safety Data Sheets (SDS) in accordance with Section 01 33 00 - Submittal Procedures.

.3 Submit Environmental Protection Plan (EPP) for review and approval by CoSJ Project Manager before delivering materials to site or commencing construction activities.

.4 EPP shall include comprehensive overview of known or potential environmental issues to be addressed on site during construction.

.5 Address topics at level of detail commensurate with environmental issue and required construction tasks.

.6 Include in Environmental Protection Plan (EPP):

.1 Name of person responsible for ensuring adherence to EPP.

.2 Name and qualifications of person responsible for manifesting hazardous waste to be removed from site.

.3 Name and qualifications of person responsible for training site personnel.

.4 Descriptions of environmental protection personnel training program.

.5 Submit a Site Work Plan (SWP) showing work areas for proposed activities in each portion of area and identifying areas of limited use or non-use.

.1 SWP to include measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.

.6 Submit a Spill Control Plan (SCP) including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.

.7 Submit a Solid Waste Disposal Plan (SWDP) for non-hazardous solid wastes identifying methods and locations for solid waste disposal including clearing debris.

.8 Submit an Air Pollution Control Plan (APCP) detailing provisions to ensure that dust, debris, materials, and trash, are contained within the project site.

.9 Submit a Wastewater Management Plan (WMP) identifying methods and procedures for management and or discharge of waste waters which are directly derived from construction activities, such as water testing of windows, clean-up water, hydrostatic test water.

1.5 FIRES

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

1.6 HISTORICAL/ ARCHAEOLOGICAL CONTROL

.1 Refer to the site-specific IPP for procedures in identifying and protecting historical and archaeological resources previously known to be on project site or discovered during construction.

.1 Plan to include methods to ensure protection of known or discovered resources and identify lines of communication between Contractor personnel and CoSJ Project Manager.

1.7 NOTIFICATION

.1 CoSJ Project Manager will notify Contractor in writing of observed noncompliance with Federal, Provincial environmental laws and regulations or Municipal environmental bylaws, permits, and other elements of site-specific plans as applicable.

.2 Contractor after receipt of such notice, shall inform CoSJ Project Manager of proposed corrective action and take such action to obtain the approval of CoSJ Project Manager.

.1 Take action only after receipt of written approval by CoSJ Project Manager.

.3 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.

2 PRODUCTS

2.1 NOT USED

.1 Not Used.

3 EXECUTION

3.1 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
  .1 Leave Work area clean at end of each day.

.2 Bury rubbish and waste materials on site is not permitted.

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

.4 Proceed with final cleaning upon completion and removal of surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.

.5 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.
  .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION

1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 05 50 00 Metal Fabrications

.2 Section 07 52 00 Modified Bituminous Membrane Adhesive

.3 Section 07 92 00 Joint Sealants

1.2 REFERENCE STANDARDS

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

1.3 DEFINITIONS

.1 Application Specialist: An individual who performs surface preparation and application of protective coatings and linings to steel and concrete surfaces of complex industrial structures.

1.4 INSPECTION

.1 Refer to CCDC 2, GC 2.3.

.2 Allow CoSJ Project Manager, Consultant and Architect access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.

.3 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by CoSJ Project Manager, Consultant and Architect instructions.

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

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

1.5 INDEPENDENT INSPECTION AGENCIES

.1 Independent Inspection/Testing Agencies have been engaged by CoSJ Project Manager for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by CoSJ Project Manager.

.2 Provide staging equipment, lifts, etc. required for executing inspection and testing by appointed agencies.

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

.4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Consultant through CoSJ Project Manager, at no cost to CoSJ Project Manager. Pay costs for retesting and re-inspection.

1.6 ACCESS TO WORK

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

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

1.7 PROCEDURES

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

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

1.8 REJECTED WORK

.1 Refer to CCDC, GC 2.4.

.2 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 CoSJ Project Manager as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

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

.4 If in opinion of 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 CoSJ Project Manager.

1.9 REPORTS

.1 Submit 4 copies of inspection and test reports to CoSJ Project Manager.

.2 Provide copies to subcontractor of work being inspected or tested, manufacturer or fabricator of material being inspected or tested.

1.10 CERTIFICATES

.1 Submit certifications for Application Specialists to demonstrate compliance to the requirements of ANSI/NACE No.13.

1.11 QUALIFICATIONS

.1 Maintain a current and valid ACS certification during project period.
  .1 Application specialists who perform surface preparation and coating application work on this project must have a current ACS.

.2 Notify CoSJ Project Manager of any change in application specialist certification status.
  .1 Any delays to the completion of the Project due to invalid certifications will not be considered, and liquidated damages shall not be waived for any non-performance by Contractor.

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 ACTION AND INFORMATIONAL 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 WATER SUPPLY

.1 CoSJ Project Manager will provide continuous supply of potable water for construction use.

1.4 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.

1.5 TEMPORARY COMMUNICATION FACILITIES

.1 Provide and pay for temporary telephone, fax, data, hook up, lines and equipment necessary for own use.

1.6 FIRE PROTECTION

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

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

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 05 50 00 Metal Fabrications

.2 Section 07 52 00 Modified Bituminous Membrane Adhesive

.3 Section 07 92 00 Joint Sealants

1.2 REFERENCE STANDARDS

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

.2 Canadian General Standards Board (CGSB)
- .1 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.
- .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.

.3 CSA Group (CSA)
- .1 CSA-0121-M1978(R2003), Douglas Fir Plywood.
- .2 CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.
- .3 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.

1 3 ACTION AND INFORMATIONAL SUBMITTALS

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

1.4 INSTALLATION AND REMOVAL

.1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.

.2 Identify areas which have to be gravelled to prevent tracking of mud.

.3 Indicate use of supplemental or other staging area.

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

.5 Remove from site all such work after use.

1.5 SCAFFOLDING

.1 Scaffolding in accordance with CAN/CSA-S269.2.

.2 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms, temporary stairs and other means of construction access.

1.6 HOISTING

.1 Provide, operate and maintain hoists, cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists by CoSJ Project Manager and Architect.

.2 Hoists, cranes to be operated by qualified operator.

1.7 SITE STORAGE/LOADING

.1 Refer to CCDC 2, GC 3.12.

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

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

1.8 CONSTRUCTION PARKING

.1 Parking will be as directed by CoSJ Project Manager. Deliveries to be coordinated with CoSJ Project Manager.

.2 Provide and maintain adequate access to project site.

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

1.9 SECURITY

.1 As necessary, provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

1.10 OFFICES

.1 Provide office heated to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table N/A.

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

.3 Subcontractors to provide their own offices as necessary. N/A.

1.11 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.

1.12 SANITARY FACILITIES

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

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

1.13 CONSTRUCTION SIGNAGE

.1 Provide and erect project sign, within three weeks of signing Contract, in a location designated by CoSJ Project Manager.

.2 Construction sign 1500 x 3000 m, of wood frame and plywood construction painted with exhibit lettering produced by a professional sign painter.

.3 Indicate on sign, name of Owner, Architect, Contractor and Subcontractor, of design style established by CoSJ Project Manager.

.4 No other signs or advertisements, other than warning signs, are permitted on site.

.5 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN/CSA-Z321.

.6 Maintain approved signs and notices in good condition for duration of project, and dispose of ‘off site’ on completion of project or earlier if directed by CoSJ Project Manager.

1.14 PROTECTION AND MAINTENANCE OF TRAFFIC

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

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

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

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

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

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

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

1.15 CLEAN-UP

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

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

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

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

2 PRODUCTS

2.1 NOT USED

.1 Not Used.

3 EXECUTION

.1 Not Used.

END OF SECTION

1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 05 50 00 Metal Fabrications

.2 Section 07 52 00 Modified Bituminous Membrane Adhesive

.3 Section 07 92 00 Joint Sealants

1.2 REFERENCE STANDARDS

.1 Canadian General Standards Board (CGSB)
- .1 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
- .2 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.

.2 CSA Group (CSA)
- .1 CSA-O121-M1978 (R2003), Douglas Fir Plywood.

1.3 INSTALLATION AND REMOVAL

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

.2 Coordinate with the defined phases of the work.

.3 Remove from site all such work after use.

1.4 GUARD RAILS AND BARRICADES

.1 Provide secure, rigid guard rails and barricades at roof edges and openings.

1.5 ACCESS TO SITE

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

1.6 FIRE ROUTES

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

1.7 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

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

.2 Be responsible for damage incurred.

1.8 PROTECTION OF BUILDING FINISHES

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

.2 Provide necessary screens, covers, and hoardings.

.3 Confirm with COSJ Project Manager locations and installation schedule 3 days prior to installation.

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

1.9 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

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 05 50 00 Metal Fabrications

.2 Section 07 52 00 Modified Bituminous Membrane Adhesive

.3 Section 07 92 00 Joint Sealants

1.2 REFERENCE STANDARDS

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

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

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

.4 Cost for such testing will be borne by CoSJ Project Manager in event of conformance with Contract Documents or by Contractor in event of non-conformance.

1.3 QUALITY

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

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

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

.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.

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

1.4 AVAILABILITY

.1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify 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 CoSJ Project Manager at commencement of Work and should it subsequently appear that Work may be delayed for such reason, CoSJ Project Manager reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.5 STORAGE, HANDLING AND PROTECTION

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

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

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

.4 Store cementitious products clear of earth or concrete floors, and away from walls.

.5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

.6 Store sheet materials, lumber and specified materials as recommended by manufacturer on flat, solid supports and keep clear of ground. Slope to shed moisture.

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

.8 Remove and replace damaged products at own expense and to satisfaction of COSJ Project Manager.

.9 Touch-up damaged factory finished surfaces to CoSJ Project Manager’s satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.6 TRANSPORTATION

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

.2 Transportation cost of products supplied by Owner will be paid for by CoSJ Project Manager. Unload, handle and store such products.

1.7 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 CoSJ Project Manager in writing, of conflicts between specifications and manufacturer's instructions, so that 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.

1.8 QUALITY OF WORK

.1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify 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 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.

1.9 CO-ORDINATION

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

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

1.10 CONCEALMENT

.1 Before installation inform COSJ Project Manager if there is interference. Install as directed by CoSJ Project Manager.

1.11 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.

1.12 LOCATION OF FIXTURES

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

.2 Inform CoSJ Project Manager of conflicting installation. Install as directed.

1.13 FASTENINGS

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

.2 Prevent electrolytic action between dissimilar metals and materials.

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

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

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

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

1.14 FASTENINGS - EQUIPMENT

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

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

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

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

1.15 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.

1.16 EXISTING UTILITIES

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

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

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 05 50 00 Metal Fabrications

.2 Section 07 52 00 Modified Bituminous Membrane Adhesive

.3 Section 07 92 00 Joint Sealants

1.2 REFERENCE STANDARDS

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

1.3 EXISTING SERVICES

.1 Before commencing work, establish location and extent of mechanical equipment, louvers and vents and electrical power and data service lines in area of Work and fully incorporate findings into the scope of work, identifying same in Shop Drawing submittals. Cost of modifications to mechanical and electrical services are to be included within the Tender Price as submitted by the General Contractor. No additional cost based on the presence of mechanical or electrical services will be considered applicable to the established Contract Price.

1.4 LOCATION OF EQUIPMENT AND FIXTURES

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

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

.3 Inform CoSJ PM of impending installation. Obtain approval of actual location.

1.5 RECORDS

.1 Maintain a complete, accurate log of control and survey work as it progresses.

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

1.6 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit documentation to verify accuracy of field engineering work.

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 05 50 00 Metal Fabrications

.2 Section 07 52 00 Modified Bituminous Membrane Adhesive

.3 Section 07 92 00 Joint Sealants

1.2 REFERENCE STANDARDS

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

1.3 PROJECT CLEANLINESS

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

.2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by CoSJ Project Manager. Do not burn waste materials on site.

.3 Clear snow and ice from access to building, remove from site.

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

.5 Provide on-site containers for collection of waste materials and debris only as permitted by CoSJ Project Manager.

.6 Provide and use marked separate bins for recycling. Refer to Section 01 74 19 - Waste Management and Disposal.

.7 Dispose of waste materials and debris at designated municipal land fill or as otherwise required by Provincial authority.

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

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

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

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

1.4 FINAL CLEANING

.1 Refer to CCDC 2, GC 3.14.

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

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

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

.5 Remove waste products and debris including that caused by Owner or other Contractors.

.6 Remove waste materials from site at regularly scheduled times or dispose of as directed by CoSJ Project Manager. Do not burn waste materials on site.

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

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

.9 Remove dirt and other disfiguration from exterior surfaces.

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

.11 Sweep and wash clean paved areas.

.12 Clean equipment and fixtures to sanitary condition; if compromised by the Work of the Contract, clean or replace filters of mechanical equipment as directed by CoSJ Project Manager.

.13 Clean roofs, downspouts, and drainage systems.

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

.15 Remove snow and ice from access to building.

1.5 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

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 SUMMARY

.1 This Section includes requirements for management of construction waste and disposal, which forms the Contractor's commitment to reduce and divert waste materials from landfill and includes the following:

- .1 Preparation of a Draft Construction Waste Management Plan that will be used to track the success of the Construction Waste Management Plan against actual waste diversion from landfill.
- .2 Preparation of a Construction Waste Management Plan that provides guidance on a logical progression of tasks and procedures to be followed in a pollution prevention program to reduce or eliminate the generation of waste, the loss of natural resources, and process emissions through source reduction, reuse, recycling, and reclamation.
- .3 Preparation of monthly progress reports indicating cumulative totals representing progress towards achieving diversion and reduction goals of waste materials away from landfill and identifying any special programs, landfill options or alternatives to landfill used during construction.
- .4 Preparation of a Construction Waste Management Report containing detailed information indicating total waste produced by the project, types of waste material and quantity of each material, and total waste diverted and diversion rates indicated as a percentage of the total waste produced.

.2 CoSJ has established that this project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors be employed by the Contractor.

1.2 RELATED REQUIREMENTS

.1	Section 05 50 00	Metal Fabrications
.2	Section 07 52 00	Modified Bituminous Membrane Adhesive
.3	Section 07 92 00	Joint Sealants

1.3 REFERENCE STANDARDS

.1 ASTM International (ASTM)

- .1 ASTM E 1609 01, Standard Guide for Development and Implementation of a Pollution Prevention Program

.2 Recycling Certification Institute (RCI):

- .1 RCI Certification Construction and Demolition Materials Recycling.

1.4 DEFINITIONS

.1 Clean Waste: Untreated and unpainted; not contaminated with oils, solvents, sealants or similar materials.

.2 Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, re modeling],repair and demolition operations.

.3 Hazardous: Exhibiting the characteristics of hazardous substances including properties such as ignitability, corrosiveness, toxicity or reactivity.

.4 Non hazardous: Exhibiting none of the characteristics of hazardous substances, including properties such as ignitability, corrosiveness, toxicity, or reactivity.

.5 Non toxic: Not poisonous to humans either immediately or after a long period of exposure.

.6 Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

.7 Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

.8 Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form; recycling does not include burning, incinerating, or thermally destroying waste.

.9 Return: To give back reusable items or unused products to vendors for credit.

.10 Reuse: To reuse a construction waste material in some manner on the project site.

.11 Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

.12 Sediment: Soil and other debris that has been eroded and transported by storm or well production run off water.

.13 Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

.14 Toxic: Poisonous to humans either immediately or after a long period of exposure.

.15 Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

.16 Volatile Organic Compounds (VOC's): Chemical compounds common in and emitted by many building products over time through outgassing:

.1 Solvents in paints and other coatings;

.2 Wood preservatives; strippers and household cleaners;

.3 Adhesives in particleboard, fiberboard, and some plywood; and foam insulation.

.4 When released, VOC's can contribute to the formation of smog and can cause respiratory tract problems, headaches, eye irritations, nausea, damage to the liver, kidneys, and central nervous system, and possibly cancer.

.17 Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

.18 Construction Waste Management Plan: A project related plan for the collection, transportation, and disposal of the waste generated at the construction site; the purpose of the plan is to ultimately reduce the amount of material being landfilled.

1.5 ADMINISTRATIVE REQUIREMENTS

.1 Coordination: Coordinate waste management requirements with all Divisions of the Work for the project, and ensure that requirements of the Construction Waste Management Plan are followed.

.2 Preconstruction Meeting: Arrange a pre-construction meeting in accordance with Section 01 31 19 - Project Meetings before starting any Work of the Contract attended by the Owner, Contractor, affected Subcontractor's and CoSJ Project Manager to discuss the Contractor's Construction Waste Management Plan and to develop mutual understanding of the requirements for a consistent policy towards waste reduction and

recycling.

1.6 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Action Submittals: Provide the following submittals before starting any work of this Section:

.1 Draft Construction Waste Management Plan (Draft CWM Plan): Submit to CoSJ Project Manager a preliminary analysis of anticipated site generated waste by listing minimum of five (5) construction or demolition waste streams that have potential to generate the most volume of material indicating methods that will be used to divert construction waste from landfill and source reduction strategies; CoSJ Project Manager will provide commentary before development of Contractor's Construction Waste Management Plan.

.2 Construction Waste Management Plan (CWM Plan): Submit a CWM Plan for this project prior to any waste removal from site and that includes the following information:

.1 Material Streams: Analysis of the proposed jobsite waste being generated, including material types and quantities forming a part of identified material streams in the Draft CWM Plan, Proposed Material Conservation Audit; materials removed from site destined for alternative daily cover at landfill sites and land clearing debris cannot be considered as contributing to waste diversion and will be included as a component of the total waste generated for the site.

.2 Recycling Haulers and Markets: Investigate local haulers and markets for recyclable materials, and incorporate into CWM Plan.

.3 Alternative Waste Disposal: Prepare a listing of each material proposed to be3salvaged, reused, recycled or composted during the course of the project, and the proposed local market for each material.

.4 Landfill Materials: Identify materials that cannot be recycled, reused or composted and provide explanation or justification; energy will be considered as a viable alternative diversion strategy for these materials where facilities exist.

.5 Landfill Options: The name of the landfill where trash will be disposed of; landfill materials will form a part of the total waste generated by the project.

.6 Materials Handling Procedures: A description of the means by which any recycled waste materials will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities.

.7 Transportation: A description of the means of transportation of the recyclable materials, whether materials will be site separated and self - hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site, and destination of materials.

1.7 PROJECT CLOSEOUT SUBMISSIONS

.1 Record Documentation and Diversion Documentation: Submit as constructed information in accordance with Section 01 78 00 - Closeout Submittals as follows:

.1 Construction Waste Management Report (CWM Report): Submit a CWM Report

for this project in a format acceptable to submittal requirements and that includes the following information:

.1 Accounting: Submit information indicating total waste produced by the project.

.2 Composition: Submit information indicating types of waste material and quantity of each material.

.3 Diversion Rate: Submit information indicating total waste diverted from landfill as a percentage of the total waste produced by the project.

.4 Transportation Documentation and Diversion Documentation: Submit copies of transportation documents or shipping manifests indicating weights of materials, and other evidence of disposal indicating final location of waste diverted from landfill and waste sent to landfill.

.5 Alternative Daily Cover (ADC): Submit quantities of material that were used as ADC at landfill sites, and that form a part of the total waste generated by the project.

.6 Multiple Waste Hauling: Compile all information into a single CWM Report where multiple waste hauling and diversion strategies were used for the project.

1.8 QUALITY ASSURANCE

.1 Resources for Development of Construction Waste Management Report (CWM Report): The following sources may be useful in developing the Draft Construction Waste Management Plan:

.1 Recycling Haulers and Markets: Investigate local haulers and markets for recyclable materials, and incorporate into CWM Plan.

.2 Waste-to-Energy Systems: Investigate local waste-to-energy incentives where systems for diverting materials from landfill for reuse or recycling are not available.

.2 Certifications: Provide proof of the following during the course of the Work:

.1 Compliance Certification: Provide proof that recycling center is third party verified and is listed as a Certified Facility through the registration and certification requirements of the Recycling Certification Institute.

1.9 DELIVERY, STORAGE AND HANDLING

.1 Storage Requirements: Implement a recycling/reuse program that includes separate collection of waste materials as appropriate to the project waste and the available recycling and reuse programs in the project area.

.2 Handling Requirements: Clean materials that are contaminated before placing in collection containers and ensure that waste destined for landfill does not get mixed in with recycled materials:

.1 Deliver materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to recycling process.

.2 Arrange for collection by or delivery to the appropriate recycling or reuse facility.

.3 Hazardous Waste and Hazardous Materials: Handle in accordance with applicable regulations.

2 PRODUCTS

2.1 NOT USED

.1 Not Used.

3 EXECUTION

3.1 (CWM PLAN) IMPLEMENTATION

.1 Manager: Contractor is responsible for designating an on-site party or parties responsible for instructing workers and overseeing and documenting results of the CWM Plan for the project.

.2 Distribution: Distribute copies of the CWM Plan to the job site foreman, each Subcontractor, the Owner, the CoSJ Project Manager and other site personnel as required to maintain CWM Plan.

.3 Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, composting and return methods being used for the project to Subcontractor's at appropriate stages of the project.

.4 Separation Facilities: Lay out and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, composting and return:

- .1 Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.
- .2 Hazardous wastes shall be separated, stored, and disposed of in accordance with local regulations.

.5 Progressive Documentation: Submit a monthly summary of waste generated by the project to ensure that waste diversion goals are on track with project requirements:

- .1 Submission of waste summary can coincide with application for progress payment, or similar milestone event as agreed upon between the Owner, Contractor and CoSJ Project Manager.
- .2 Monthly waste summary shall contain the following information:
  - .1 The amount in tonnes or m^3 and location of material landfilled,
  - .2 The amount in tonnes or m^3 and location of materials diverted from landfill, and
  - .3 Indication of progress based on total waste generated by the project with materials diverted from landfill as a percentage.

3.2 SUBCONTRACTOR'S RESPONSIBILITY

.1 Subcontractor's shall cooperate fully with the Contractor to implement the CWM Plan.

.2 Failure to cooperate may result in the Owner not achieving their environmental goals, and may result in penalties being assessed by the Contractor to the responsible Subcontractor's.

END OF SECTION

1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 01 32 16.16 Construction Progress Schedule – Critical Path Method.

1.2 REFERENCE STANDARDS

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

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Acceptance of Work Procedures:
- .1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
  - .1 Notify CoSJ Project Manager in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
  - .2 Request CoSJ Project Manager and Architect’s inspection.
- .2 CoSJ Project Manager and Architect’s Inspection:
  - .1 CoSJ Project Manager and Architect together with the Contractor to inspect Work and identify defects and deficiencies.
  - .2 Contractor to correct Work as directed.
- .3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
  - .1 Work: completed and inspected for compliance with Contract Documents.
  - .2 Defects: corrected and deficiencies completed.
  - .3 Equipment and systems: tested, adjusted and fully operational.
  - .4 Certificates required by Commissioning: submitted.
  - .5 Operation of systems: demonstrated to Owner's personnel.
  - .6 Commissioning, Decommissioning: completed in accordance with 01 91 13 - GENERAL COMMISSIONING REQUIREMENTS and including CMMS Data Sheet document together with copies of final Commissioning Report submitted to CoSJ Project Manager.
  - .7 Work: complete and ready for final inspection.
- .4 Final Inspection:
  - .1 When completion tasks are done, request final inspection of Work by CoSJ Project Manager and Architect together with Contractor.
  - .2 When Work incomplete according to Owner, Project Manager and Architect, complete outstanding items and request re-inspection.
- .5 Declaration of Substantial Performance: when Project Manager and Architect considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.
- .6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.

.7 Final Payment:
.1 When Project Manager and Architect considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.
.2 Refer to CCDC 2: when Work deemed incomplete by CoSJ Project Manager and Architect, complete outstanding items and request re-inspection.

.8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

1.4 FINAL CLEANING

.1 Clean in accordance with Section 01 74 00 - Cleaning.
.1 Remove surplus materials, excess materials, rubbish, tools and equipment.

.2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

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 05 50 00 Metal Fabrications

.2 Section 07 52 00 Modified Bituminous Membrane Adhesive

.3 Section 07 92 00 Joint Sealants

1.2 ADMINISTRATIVE REQUIREMENTS

.1 Pre-warranty Meeting:

.1 Convene meeting one week prior to contract completion with contractor's representative and CoSJ Project Manager, in accordance with Section 01 31 19 - Project Meetings to:

.1 Verify Project requirements.

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

.2 CoSJ Project Manager to establish communication procedures for:

.1 Notifying construction warranty defects.

.2 Determine priorities for type of defects.

.3 Determine reasonable response time.

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

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

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

.1 **Two weeks prior to Substantial Performance of the Work or Training**, submit to Architect/CoSJ Project Manager, one electronic copy of operating and maintenance manual for review. Modify operating maintenance manuals as required by review. On approval, submit 1 hard copy and an electronic copy on a Memory Stick.

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

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

1.4 FORMAT

.1 Reference CoSJ Division 1 for Maintenance Manual Requirements.

2 PRODUCTS

1 Not Used.

3 EXECUTION

.1 Not Used.

END OF SECTION

1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Specification Section 07 72 00 Modified Bituminous Membrane Adhesive.

1.2 REFERENCE STANDARDS

.1 ASTM International (ASTM)
- .1 ASTM A 53/A 53M-12, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
- .2 ASTM A 307-14, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

.2 CSA Group (CSA)
- .1 CSA G40.20-[13] /G40.21-[13], General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
- .2 CAN/CSA G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
- .3 CSA S16-14, Design of Steel Structures.
- .4 CSA W48-14, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
- .5 CSA W59-13, Welded Steel Construction (Metal Arc Welding) Metric

.3 The Master Painters Institute (MPI)
- .1 Architectural Painting Specification Manual - current edition

.4 Underwriters Laboratories (UL)
- .1 UL 2768-11, Architectural Surface Coatings

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 Submittal Requirements.

.2 Product Data:
- .1 Submit manufacturer's instructions, printed product literature and data sheets for sections, plates, pipe, tubing, bolts and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Submit two copies of WHMIS SDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.
  - .1 For finishes, coatings, primers, and paints applied on site: indicate VOC concentration in g/L.

.3 Shop Drawings:
- .1 Submit drawings stamped and signed by professional engineer registered or licensed in New Brunswick, Canada.
- .2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

1.4 QUALITY ASSURANCE

.1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.

.2 Certifications: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

.3 Qualifications:
- .1 Ensure that 50% of industrial coating specialists, who perform concrete and steel surfaces preparation and coating applications, are certified by a recognized Applicator Certification Agency, in accordance with NACE 13 /SSPC ACS-I, Applicator Certification Standard (ACS).
- .2 Maintain a current and valid ACS certification during project period.
  - .1 Application specialists who perform surface preparation and coating application work on this project must have a current ACS.
- .3 Notify CoSJ Project Manager of any change in application specialist certification status.
  - .1 Any delays to the completion of the Project due to invalid certifications will not be considered, and liquidated damages shall not be waived for any non-performance by Contractor.

1.5 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, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
- .2 Replace defective or damaged materials with new.

2 PRODUCTS

2.1 MATERIALS

.1 Steel sections and plates: to CSA G40.20/G40.21, Grade 300W and 350W.

.2 Steel pipe: to ASTM A 53/A 53M

.3 Welding materials: to CSA W59.

.4 Welding electrodes: to CSA W48 Series.

.5 Bolts and anchor bolts: to ASTM A 307.

.6 Stainless steel tubing: to ASTM A 269, Type 302, commercial grade, seamless welded with AISI No. 4 finish.

.7 Grout: non-shrink, non-metallic, flowable, 15 MPa at 24 hours.

2.2 FABRICATION

.1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.

.2 Use self-tapping shake-proof flat headed screws on items requiring assembly by screws or as indicated.

.3 Where possible, fit and shop assemble work, ready for erection.

.4 Exposed welds continuous for length of each joint. File or grind exposed welds smooth and flush.

2.3 FINISHES

.1 Galvanizing: hot dipped galvanizing with zinc coating 600 g/m² to CAN/CSA-G164.

.2 Shop coat primer: MPI-EXT 5.1A and in accordance with chemical component limits and restrictions requirements and VOC limits of UL 2768 CCD-048 GS-11.

.3 Zinc primer: zinc rich, ready mix to MPI-EXT 5.2C and in accordance with chemical component limits and restrictions requirements and VOC limits of UL 2768 CCD-048 GS-11.

2.4 ISOLATION COATING

.1 Isolate aluminum from following components, by means of bituminous paint:
- .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
- .2 Concrete, mortar and masonry.
- .3 Wood.

2.5 SHOP PAINTING

.1 Primer: VOC limit 250 g/L maximum to GS-11 UL 2768 CCD-048.

.2 Apply one shop coat of primer to metal items, with exception of galvanized or concrete encased items.

.3 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Paint when temperature minimum 7 degrees C.

.4 Clean surfaces to be field welded; do not paint.

2.6 ACCESS LADDERS

.1 Metal to match existing ladder.

.2 Steel Rungs: to match existing ladder rungs, welded to stringers. See drawings. Site dimensions required. Submit shop drawings.

.3 Brackets: sizes and shapes to match existing, weld to stringers, complete with fixing anchors.

.4 Galvanize finish for exterior.

.5 Galvanize exterior ladders after fabrication.

.6 Telescopic ladder extension

3 EXECUTION

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts acceptable for metal fabrications installation in accordance with manufacturer's written instructions.
- .1 Visually inspect substrate in presence of CoSJ Project Manager.
- .2 Inform CoSJ Project Manager of unacceptable conditions immediately upon discovery.
- .3 Proceed with installation only after unacceptable conditions.

3.2 ERECTION - GENERAL

.1 Do welding work in accordance with CSA W59 unless specified otherwise.

.2 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.

.3 Provide suitable means of anchorage acceptable to CoSJ Project Manager such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.

.4 Exposed fastening devices to match finish and be compatible with material through which they pass.

.5 Supply components for work by other trades in accordance with shop drawings and schedule.

.6 Make field connections with bolts to CSA S16 or Weld field connection.

.7 Deliver items over for casting into concrete and building into masonry together with setting templates to appropriate location and construction personnel.

.8 Touch-up rivets, field welds, bolts and burnt or scratched surfaces with primer after completion of:
- .1 Primer: maximum VOC limit 250 g/L to GS-11.

.9 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.
- .1 Primer: maximum VOC limit 250 g/L to GS-11.

3.3 ACCESS LADDERS

.1 Install access ladder brackets and telescopic extension in location as indicated.

.2 Erect ladder extension (dimension to match existing) clear of wall on bracket supports.

3.4 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 77 00 – Closeout Procedures.

3.5 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by metal fabrications installation.

END OF SECTION

Part 1 GENERAL

1.1 SECTION INCLUDES

.1 Materials and installation for modified bituminous roofing for conventional build up roofing (BUR) system. This Section includes materials and installation for carpentry, roof drains and metal flashing.

1.2 RELATED SECTIONS

.1 Section 05 50 00 Metal Fabrications.

.2 Section 07 92 00 Joint Sealants.

1.3 REFERENCES

.1 ASTM International Inc

- .1 ASTM C 1177/C 1177M-17, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
- .2 ASTM D 41-11, Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.

.2 Canadian Standards Association (CSA International)

- .1 CSA A123.21:20 Standard test method for the dynamic wind uplift resistance of membrane-roofing systems
- .2 CSA A123.23-15 (2020) Product Specification for Polymer-Modified Bitumen Sheet, Prefabricated and Reinforced
- .3 CSA O121-17, Douglas Fir Plywood.
- .4 CSA O151-17, Canadian Softwood Plywood.

.3 Canadian General Standards Board (CGSB)

- .1 CGSB 37-GP-9Ma-83 Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing.
- .2 CGSB 37-GP-56M-80b(A1985) Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing.
- .3 CAN/CGSB-51.33-[M89], Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction.

.4 Canadian Roofing Contractors Association (CRCA)

- .1 CRCA Roofing Specifications Manual 2011.

.5 Underwriter's Laboratories of Canada (CAN/ULC)

- .1 CAN/ULC-S702.1-14 R2019 Thermal Insulation, Mineral Fibre, Boards for Buildings.
- .2 CAN/ULC-S704.1:2017, Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.

.6 Master Roofers Guarantee of New Brunswick (MRGNB)

.1 MRGNB Roofing Specifications 2010, Latest Revision.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Convene pre-installation meeting no later than one week prior to beginning waterproofing Work, with roofing contractor's representative, City of Saint John Project Manager and Architect.

.1 Verify project requirements.
.2 Review installation and substrate conditions.
.3 Co-ordination with other building sub trades if required.
.4 Review manufacturer's installation instructions and requirements.
.5 Review Time/Work Schedule

1.5 QUALITY ASSURANCE

.1 Roofing Work to be done in accordance with applicable standard in Master Roofers Guarantee of New Brunswick (MRGNB) and Canadian Roofing Contractors Association (CRCA) Roofing Specifications Manual.

1.6 SCHEDULING OF WORK

.1 Work Hours

.1 Work may be scheduled during normal hours of operations and must be approved by building and City of Saint John Project Manager. Provide information to the City of Saint John Project Manager indicating how the Contractor will keep emissions to a minimum.

.2 Demolition work is not to commence until all material has been ordered and date of arrival of products has been verified. Contractor to provide copy of order to City of Saint John Project Manager.

1.7 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures, 01 77 00 Closeout Procedures and 01 78 00 Closeout Submitals.

.2 Shop Drawings:

.1 Indicate flashing, control joint, mechanical fasteners and pattern and all related details.

.3 Product Data:

.1 Provide copies of most recent technical roofing components data sheets describing materials' physical properties and include product characteristics, performance criteria, physical size, finish and limitations
.2 Submit product data for roof membranes, asphalt, sealants, vent stack covers, and roof drains.

.3 Provide copies of WHMIS SDS in accordance with Section 01 35 29.06 -Health and Safety Requirements and indicate VOC content for Primer, Asphalt, Sealers, Adhesives.

.4 Submit laboratory test reports certifying compliance of bitumens, fiberboard, membrane, and insulation with specification requirements.

.5 Submit copy of work order indicating materials have been ordered and delivery dates.

1.8 FIRE PROTECTION

.1 Fire Extinguishers: maintain one cartridge operated type or stored pressure rechargeable type with hose and shut-off nozzle, ULC labeled for A, B and C class protection. Size 9 kg on roof per torch applicator, within 10 m of torch applicator.

.2 A continuous fire watch shall be provided as per the Hot Works requirement of the National Fire Code of Canada (latest edition):

.1 Perform the fire watch during roofing operations and for a period of not less than 2 hours after operations cease for breaks and at end of day.

.2 The fire watch is to consist of visual inspection and monitoring using an infrared thermal imaging camera.

.3 Include a final inspection of the hot work area and adjacent exposed areas, conducted after completion of the fire watch.

1.9 DELIVERY STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.2 Storage and Handling Requirements:

.1 Safety: comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of asphalt, sealing compounds, primers and caulking materials.

.2 Provide and maintain dry, off-ground weatherproof storage.

.3 Store rolls of felt and membrane in upright position. Store membrane rolls with selvage edge up.

.4 Remove only in quantities required for same day use.

.5 Place plywood runways over completed work and existing roofs not under construction to enable movement of material and other traffic.

.6 Store caulking at +5°C minimum.

.7 Store insulation protected from daylight and weather and deleterious materials.

.8 Handle roofing materials in accordance with manufacturer's written directives, to prevent damage or loss of performance.

1.10 ENVIRONMENTAL REQUIREMENTS

.1 Do not install roofing when temperature remains below -18°C for torch application, or -5°C and to manufacturers' recommendations for adhesive application.

.2 Minimum temperature for solvent-based adhesive is -5°C.

.3 Install roofing on dry deck, free of snow and ice, use only dry materials and apply only during weather that will not introduce moisture into roofing system.

.4 Demolished materials are to be removed from site and disposed of in an approved disposal site as authorized by authority having jurisdiction. Contractors may be requested to provide certified weigh bills or receipts from authorized disposal sites.

1.11 GUARANTEE

.1 Contractor shall guarantee all workmanship related to the installation of the Roofing System and that the roof membrane will remain leak-proof for a period of three (3) years from the date of Interim Certificate of Completion. At the Substantial Completion the Contractor is to provide the guarantee from the Issuing Guarantor that provided written documentation at the time of Tender. A three year guarantee provided through an issuing bonding agency must be valued at a minimum of forty percent (40%) of the roofing component of the tender price.

.2 Provide membrane manufacture's standard material warranty.

Part 2 PRODUCTS

2.1 PERFORMANCE CRITERIA

.1 Compatibility between components of roofing system is essential. Provide written declaration to City of Saint John Project Manager stating that materials and components, as assembled in system, meet this requirement.

2.2 VAPOUR BARRIER (STEEL DECK)

.1 Self-adhesive vapour retarder: Self-adhesive membrane, top surface with a polyethylene facer, bottom surfaced with a release sheet, thickness 0.8mm (30mil) minimum. Surface primer as per manufacturer.

.1 Acceptable Products:

.1 System 1:

.1 "M.V.P. Sand" by IKO

.2 "Armourbond Flash Sand" by IKO

.2 System 2:

.1 "Sopra Vap'r" by Soprema

.2 "Sopraply Stick Duo" by Soprema

2.3 DECK PRIMER

.1 Asphalt primer: Manufacturers recommended primer in adherence to CGSB 37-GP-9Ma and ASTM D 41.

2.4 CARPENTRY

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

.1 CAN/CSA-O141.

.2 NLGA Standard Grading Rules for Canadian Lumber.

.2 Blocking, nailing strips, grounds, curbs, fascia backing and sleepers:

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

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

.3 Canadian softwood plywood (CSP): to CSA O151, standard construction.

.4 Batt and blanket mineral fibre: to ASTM C 665, Type 1.

.5 Fasteners for wood:

.1 Nails, spikes and staples: to CSA B111.

.2 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.

.3 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, recommended for purpose by manufacturer.

2.5 MEMBRANE

.1 Base sheet: To CSA123.23-15 Type B-Grade 3 (Polyester reinforcement-non exposed), or CGSB 37-GP-56M Type 2-Class C-Grade 2 (Covered Application – Plain Surfaced - Heavy Duty Service). Styrene-Butadiene-Styrene (SBS) elastomeric polymer prefabricated sheet, weighing 180 g/m², minimum thickness of 2 mm ± 0.2 mm. Top and Bottom surface: Polyethylene/Sanded

.2 Fire Seal Membrane: To CSA123.23-15 Type C-Grade 3 (Polyester reinforcement-non exposed), or CGSB 37-GP-56M Type 2-Class C (Covered Application – Plain Surfaced). SBS modified bitumen membrane, Top and Bottom surface: Polyethylene/Pressure-Sensitive. Provide primer as recommended by manufacturer.

.3 Base Flashing: To CSA123.23-15 Type B-Grade 3 (Polyester reinforcement-non exposed), or CGSB 37-GP-56M Type 2-Class C-Grade 2 (Covered Application – Plain Surfaced - Heavy Duty Service). Styrene-Butadiene-Styrene (SBS) elastomeric polymer prefabricated sheet, weighing 180 g/m², minimum thickness of 3 mm ± 0.2 mm. Top and Bottom surface: Polyethylene/Polyethylene.

.4 Cap sheet: To CSA123.23-15 Type B-Grade 1 (Polyester reinforcement-exposed granule surface), or CGSB 37-GP-56M Type 1-Class A-Grade 2 (Exposed Application - Granule Surfaced - Heavy Duty Service). Styrene-Butadiene-Styrene (SBS) elastomeric polymer prefabricated sheet, weighing 250 g/m², minimum thickness of 4 mm ± 0.2 mm at selvage edge. Bottom surface: Polyethylene

.5 Cap flashing: same as Cap sheet, 1000 mm wide, unless noted otherwise.

.6 Acceptable products:

.1 System 1:

.1 Cap Sheet: "Torchflex TP-250-Cap" by IKO

.2 Cap Flashing: Same as Cap Sheet

.3 Base Flashing: "Torchflex TP-180-FF" by IKO

.4 Fire Seal: "Armourbond Flash" by IKO

.2 System 2:

.1 Cap Sheet: "Sopralene Flam 250 GR" by Soprema

.2 Cap Flashing: Same as Cap Sheet

.3 Base Flashing: "Sopralene Flam 180" by Soprema

.4 Fire Seal: "Sopraply Flam Stick" by Soprema

.3 System 3: (recap sections only)

.1 Cap Sheet: “Vanguard 250 TC” by Lexcor

.2 Cap Flashing: Same as Cap Sheet

.3 Base Flashing: “Vanguard 180 FF” by Lexcor

.4 Fire Seal: “Vanguard Flash SA” by Lexcor

2.6 FLAME FREE MEMBRANE FLASHING

.1 Approved equivalent to the torched base and cap flashing base design: Pressure sensitive or cold adhered base and cap flashing.

.2 Base Flashing: SBS modified bitumen membrane, composite reinforcement, sanded top surface, pressure sensitive or sanded bottom surface.

.3 Cap Sheet Flashing: SBS modified bitumen membrane, composite reinforcement, granuled top surface, pressure sensitive or sanded bottom surface.

.4 Acceptable products:

.1 System 1:

.1 Primer: “SAM Adhesive” by IKO

.2 Adhesive: “Cold Gold Flashing Adhesive” by IKO

.3 Pressure Sensitive

.1 Cap Flashing: “Armourstick HD Cap” by IKO

.2 Base Flashing: "Armourbond 180" by IKO

.4 Cold Adhered

.1 Cap Flashing: “Armourstick HD Cap” by IKO

.2 Base Flashing: "MP-180-SS-Base" by IKO

.2 System 2:

.1 Primer: “Elastocol Stick Primer” by Soprema

.2 Adhesive: “Colply Adhesive Trowel Grade” By Soprema

.3 Pressure Sensitive

.1 Cap Flashing: "Sopraply Stick Traffic Cap" by Soprema

.2 Base Flashing: "Sopraply Stick Duo" by Soprema

.4 Cold Adhered

.1 Cap Flashing: "Colply Traffic Cap" by Soprema

.2 Base Flashing: "Colply Base 410" by Soprema

.3 System 3 (recap only)

.1 Primer: “Multigrip” by Lexcor

.2 Adhesive: “Lexplast Trowel Grade” by Lexcor

.3 Pressure Sensitive

.1 Cap Flashing: “Vanguard SA Cap” by Lexcor

.2 Base Flashing: “Vanguard Flash SA” by Lexcor

.4 Cold Adhered

.1 Cap Flashing: “Vanguard 250 MC” by Lexcor

.2 Base Flashing: “Vanguard 180 SS” by Lexcor

2.7 COLD APPLIED ADHESIVE

.1 Adhesive (for adhering rigid and fiberboard insulation): A two component, 100% solids, solvent free, asphalt extended, flexible vulcanizing adhesive. Primer as recommended by membrane manufacturer.

.1 Acceptable material:

.1 System 1: “Millenium Adhesive” by IKO

.2 System 2: “Duotack Adhesive” by Soprema

2.8 ISOCYANURATE (URETHANE) INSULATION

.1 Isocyanurate (Urethane) insulation to CAN/ULC-S704-01, CFC free, reinforced paper bottom facer.

.1 Shape:

.1 Infill area on roof#2:

.1 flat, 75+/- mm total thickness to match existing

.2 tapered, 50mm minimum thickness at the drain and 75mm at drain sump, and 1% slope throughout.

.3 Boards are to be a maximum of 1220mm wide X 1220mm length. Install insulation in at least two field applied layers. Minimum thickness per layer of 50mm.

.2 RSI: LTTR of 1 / 25 mm thickness minimum

.3 Acceptable products:

.1 System 1:

.1 "IKOtherm" by IKO

.2 Acceptable alternate to the field zone top layer of insulation: ”Composite “I”” by ISOX.

.2 System 2:

.1 "ACFoam II" by Atlas

.2 "ENRGY 3" by Johns Manville

.3 "Sopra-ISO" by Soprema

2.9 INTEGRATED COVER BOARD AND BASE SHEET

.1 For Option I insulation: Panel is 12.5mm Insulating Fiberboard to CAN/ULC-S706-02 with integrated Base Sheet to CGSB 37-GP-56M, Styrene-Butadiene-Styrene (SBS) elastomeric polymer prefabricated sheet, polyester reinforcement, weighing 180 g/m², minimum thickness of 2.2 mm ± 0.2 mm.

.1 Acceptable products:

.1 “Roofcrafter” by IKO

.2 “2-1 SopraSmart FB” by Soprema

.3 “Franbase FR180” by Fransyl

.4 “Lexbase FR” by Lexcor

.5 or approved equivalent.

.2 2 layers of 12.7mm required to match existing thickness

.2 For Option II insulation: High Density Polyisocyanurate Panels with factory applied base sheet: Panels composed of high-density closed-cell polyisocyanurate foam core with fiberglass facers and factory applied base sheet with a minimum thickness of 2.0 mm ± 0.2 mm.

.1 Shape: flat, 12.5 mm thickness.

.2 Compressive Strength: 620kPa to ASTM D1621.

.3 LTTR RSI: 0.44 / 12.5 mm thickness.

.4 Acceptable products

.1 “Soprasmart ISO HD 180” by Soprema

.2 “Shieldbase” by IKO

.3 “Lexbase R+” by Lexcor

.4 or an approved equivalent

.5 2 layers of 12.7mm required to match existing thickness

2.10 CRICKETS AND SUMPS

.1 Provide sump at all drains. Sump panel to have a minimum size of 1200x1200 and reduce insulation thickness from edge to centre by 25mm. Sump material to be by same manufacturer supplying insulation for field of roof.

.2 Provide tapered shapes as indicated.

.3 Form shapes using tapered insulation from the same manufacturer supplying insulation for field of roof.

2.11 SEALERS

.1 Modified bitumen mastic: as recommended by roofing membrane manufacturer.

.2 Sealing compound: rubber asphalt type.

.3 Sealants: to CAN/CGSB-19.24-M80.

2.12 PREFINISHED STEEL FLASHING

.1 Prefinished steel with factory applied silicone modified polyester of flashings, copings and fascias. Form to profiles indicated from 0.65 mm thick (24 gauge) steel. Flashing to be a maximum of 200 mm without a bend in metal. The length of flashing on the cant face is to be a maximum of 75 mm and cant to be at 45 degrees.

.1 Class: F2S

.2 Colour: charcoal to match existing roof edge flashing being removed and reinstalled.

.3 Specular gloss: 30 units +/- 5 in accordance with ASTM D 523.

.4 Coating thickness: thickness: not less than 25 micrometres.

.5 Resistance to accelerated weathering for chalk rating of 8, colour fade 5 units or less and erosion rate less than 20 % to ASTM D 822 as follows:

.1 Outdoor exposure period 1000 hours.

.2 Humidity resistance exposure period 1000 hours.

.2 Fasteners: #10 x 1" hex head screws, cadmium plated carbon steel, self-drilling, with steel and neoprene washers, pre-painted head to match flashing colour.

2.13 ACCESSORIES

.1 Polyethylene back-up rope: extruded closed cell foam, Shore A hardness 20, tensile strength 140 to 200 kPa, compatible with primers and sealants, oversized 30 to 50%.

.2 Vent stack covers: telescoping cap and pre-insulated flange sleeve of aluminum, sized to suit vents. Height to be 300mm with piping extended to suit.

.1 Acceptable manufacturers: ”Flash-Tite Insulated” by Lexcor; “SJ-26” by Thaler; or approved equivalent.

.3 Roof Drain: Aluminum dome, coated cast iron body, clamp collar with integral gravel guard, Roof sump receiver, and an elevating body plate or Underdeck clamp. Size to suit existing rain water leader system.

.1 Acceptable products: “Z-100” by Zurn, “Cast Iron Drain Kit” by TruFast, or an approved equivalent.

.4 Termination Bars: 25 mm wide pre-punched aluminum with sealant ledge. Fasten with Self-tapping high load screw or masonry nail-in anchor as required to suit substrate.

.5 Torchable cants: Premanufactured cant strip with 45 degree angle, torch safe, 101mm face.

.1 Acceptable products: "T.R. Cant Strip" by Isox, "CantRSS" by ModulR TS, “Versalex” by Lexcor, “sopraRock” by Soprema, or approved equivalent.

.6 Ladder Safety post(Telescopic Handle): Spring loaded, painted or powder coated steel, extendable, safety post designed to be attached to ladder rungs.

.1 Acceptable products: “Ladderup Safety Post” by Bilco, “Spring Balanced Safety post” by Maxam Metal Products, or approved Equivalent.

Part 3 EXECUTION

3.1 WORKMANSHIP

.1 Do examination, preparation, and roofing work in accordance with applicable, standard in Master Roofers Guarantee of New Brunswick (MRGNB) Roofing Specifications Manual, except where specified otherwise.

.2 Do priming for asphalt roofing in accordance with manufacturers written instructions.

.3 The interface of the walls and roof assemblies will be fitted with durable rigid material, plywood, providing connection point for continuity of air barrier.

.4 All panels adhered in place with bead applied adhesives are to be restrained against uplift by the adhesive until the expansion of the adhesive foam is complete.

3.2 PROTECTION

.1 Cover walls and adjacent work where materials hoisted or used.

.2 Use warning signs and barriers. Maintain in good order until completion of work.

.3 Clean off drips and smears of bituminous material immediately.

.4 Dispose of rain water off roof and away from face of building until roof drains installed and connected.

.5 Protect all roof areas from traffic and damage. Comply with precautions deemed necessary by City of Saint John Project Manager.

.6 At end of each day's work or when stoppage occurs due to inclement weather, provide protection for completed work and materials out of storage.

.7 Metal connectors and decking will be treated with rust proofing or galvanization.

3.3 DEMOLITION

.1 Remove existing identified area of wet insulation on roof#2 to expose existing vapour barrier over gypsum board/steel deck.

.2 Exposed deck or deck cover on roof replacement projects is to be waterproofed by end of day.

.3 Dispose of materials off site.

.4 Verify that items scheduled to remain in place are not damaged during the work. Replace, where damaged, to satisfaction of City of Saint John Project Manager and Architect.

3.4 EXAMINATION OF ROOF DECKS AND SURFACES

.1 The City of Saint John Project Manager and Architect are to be notified 24 hours prior to exposure of existing roof deck and/or removal of roof materials to existing that is to remain.

.2 Inspect with City of Saint John Project Manager and Architect roof deck conditions including parapets, construction joints, roof drains, plumbing vents and ventilation outlets to determine readiness to proceed. Report in writing any defects in structure or differences from details

.3 Inspect with City of Saint John Project Manager and Architect to identify areas of fire risk or concern that may need to be addressed by alternate detail construction or assemblies.

.4 Prior to commencement of work ensure:

.1 Decks are firm, straight, smooth, dry, free of snow or ice or frost, and swept clean of dust and debris.

.2 Provide cants, curbs, dividers, and blocking as required and secure using galvanized fasteners.

.3 Roof drains have been installed at proper elevations relative to finished roof surface. Verify that existing roof drains are at low point of roof elevation. Notify Engineer - Architect if drains are not at proper elevation to allow water drainage.

.4 Plywood and lumber nailer plates have been installed to deck, walls and parapets as indicated.

.5 Install members square and plumb and true to line, levels, and elevations.

.6 Frame, anchor, fasten, tie, and brace members to provide necessary strength and rigidity.

.7 Countersink bolts where necessary to provide clearance for other work.

.5 Do not install roofing materials during rain or snowfall.

3.5 VAPOUR RETARDER (STEEL DECK)

.1 Self Adhesive

.1 All surfaces are to be primed in accordance with manufacturer's instructions. Surfaces must be free of dust, or any residue that may hinder adhesion of the vapour retarder.

.2 Beginning at the bottom of the slope and without adhering the membrane, unroll onto the substrate for alignment. Do not immediately remove the release sheet.

.3 Overlap each preceding sheet by 75 mm at the side laps and 150 mm at end laps. Stagger end laps by a minimum of 300mm.

.4 Once aligned peel back one end of the release sheet and adhere the exposed membrane to the substrate. Peel back the remaining release sheet at a 45 angle to avoid wrinkles in the membrane.

.5 If the membrane is not properly aligned, do not adjust it. Instead, cut the roll and start again, making sure that it is properly aligned and that it overlaps the end of the misaligned piece by 150 mm.

.6 Roll the self-adhesive vapour retarder onto the substrate. Finish by aligning the edge of the roller with the lower end of the side laps and rolling up the membrane. Do not cut the membrane to remove air bubbles trapped under the laps. Squeeze out air bubbles by pushing the roller to the edge of the lap.

.7 If applicable, heat seal remainder side laps.

.8 Ensure continuity by extending vapour retarder to perimeter and deck penetrations.

.9 Seal vapour retarder membrane at all perimeters, transitions and around each penetration to ensure continuity.

.10 Seal the vapour retarder to the vertical surfaces at all roof penetrations, curbs, and parapets.

3.6 WOOD BLOCKING

.1 Curbs and projections are to be built up to 300mm above roof membrane or as indicated on drawings.

.2 New curbs over steel decks require the installation of minimum 300mm wide plywood matching the thickness of the deck cover.

.3 Install wood cants by anchoring into fascia supporting blocking as indicated on drawings. Wood blocking to be bolted to wall structure and ensure proper anchorage of roof edge from wind uplift.

3.7 FIRE SEAL MEMBRANE

.1 A self-adhering fire seal membrane is to be installed at all exposed wood and combustibles to provide a continuous fire seal.

.1 Prime wood surface with primer as recommended by manufacturer

.2 Install self-adhered fire seal membrane 100mm onto the vapour barrier and to cover all exposed wood and combustibles. Press into place with rollers.

.3 Round top nails may be used to ensure good adherence.

3.8 EXPOSED MEMBRANE ROOFING APPLICATION

.1 Isocyanurate Insulation Application.

.1 Adhere insulation to vapour barrier in beads of cold applied adhesive and in strict accordance with CSA A123.21 and adhesive manufacturer's recommendations.

.2 Field and perimeter zones: Embed insulation in beads of adhesive evenly spaced at 305mm. Place insulation panels immediately and apply pressure to ensure maximum contact.

.3 Corner zones:

.1 System 1: Loose lay or pre-secure insulation in preparation for a mechanically fastened cover board. See Integrated Coverboard and Base Sheet Application section.

.2 System 2: 102mm ribbons

.4 Install additional layers of insulation in same manner as indicated above. Tapered insulation to be installed in accordance with shop drawings. Stagger joints between layers 150 mm minimum.

.5 Place boards in parallel rows and length parallel with slope, with ends staggered, and in firm contact with one another. Ensure that top surface of insulation is smooth, even, and without steps.

.6 Cut end pieces to suit.

.7 All installed insulation is to be waterproofed with roof membrane by end of day.

.2 Integrated Coverboard and Base Sheet Application.

.1 Adhere Integrated Coverboard and Base Sheet panels to insulation in beads of cold applied adhesive and in strict accordance with CSA A123.21 and adhesive manufacturer's recommendations.

.2 Field and perimeter zones: Embed panels in beads of adhesive evenly spaced at 305mm. Place insulation panels immediately and apply pressure to ensure maximum contact.

.3 Corner zones:

.1 System 1: Mechanically fastened cover board with fasteners 305mm o.c. in seam and two mid seam rows 102mm either side of centre.

.2 System 2: 102mm ribbons

.4 Joints to be staggered a minimum of 150 mm from insulation joints.

.5 Butt coverboard tight without gaps.

.6 Remove release tape from the side lap self adhering strip and roll into contact with adjacent board.

.7 Heat seal remainder side laps. Apply end lap cover strips and fastener cover patches as recommended by the membrane manufacturer.

.3 Cap sheet application.

.1 Starting at low point on roof, perpendicular to slope, unroll cap sheet, align, and reroll from both ends.

.2 Unroll and torch cap sheet onto base sheet taking care not to burn membrane or its reinforcement.

.3 Lap sheets 75 mm minimum for side laps and 150 mm minimum for end laps. Offset joints in cap sheet 300 mm minimum from those in base sheet.

.4 Application to be free of blisters, fishmouths and wrinkles.

.5 Do membrane application in accordance with manufacturer's recommendations.

.4 Flashings.

.1 Complete installation of flashing base sheet stripping prior to installing membrane cap sheet.

.2 Nail and torch flashing base sheet and torch flashing cap sheet onto substrate in 1-meter wide strips.

.3 Lap flashing base sheet to membrane base sheet minimum 200 mm and seal by torch welding.

.4 Lap flashing cap sheet to membrane cap sheet 150 mm minimum and torch weld.

.5 Provide 75 mm minimum side lap and seal.

.6 Properly secure flashings to their support, without sags, blisters, fishmouths or wrinkles.

.7 Do work in accordance with manufacturer's recommendations.

3.9 FLAME FREE FLASHINGS

.1 Ambient temperature to be 4 degrees Celsius and rising or as per manufacturer's recommendations. Material to be stored at 21 degrees Celsius until ready to use.

.2 Install sanded fire seal in accordance with base design execution. Install roof insulation, cover board, membrane base sheet, and membrane cap sheet as specified. Flash film from field base sheet adjacent to the detail prior to installation.

.3 Flashing sheet application

.1 Pressure Sensitive: Remove release protection film and install membrane onto primed surface.

.2 Cold Adhesive: Install membrane onto adhesive coated surface.

.3 Use weighted roller or hand roller on entire surface of sheet to ensure full adherence.

.4 Lap flashing base sheet to membrane base sheet minimum 200 mm and seal edges by hot air welding where required. Install gussets at all inside and outside corners.

.5 Lap flashing cap sheet to membrane cap sheet 150 mm minimum and seal edges by hot air welding. Where embedding of granules is required use flashing adhesive as per manufacturer's instructions.

.6 Provide 75 mm minimum side lap and seal by hot air welding where required.

.7 Properly secure flashings to their support, without sags, blisters, fishmouths or wrinkles.

.8 Do work in accordance with manufacturer's recommendations.

3.10 CANTS

.1 Interior Cants.

.1 Install prefabricated torchable cants over Insulating Fiberboard and Base Sheet panel and fasten to vertical with 50 mm plate and fasteners spaced a minimum of 400 mm oc.

.2 Angle cut cants to fit tightly on back and bottom where roof to wall angle varies from 90 degrees.

.3 Cover cant strips with torch applied base sheet flashing to act as an extension of field base sheet. Extend 100mm onto field base sheet and 50mm onto fire seal membrane on curb. Install base sheet flashing and cap sheet flashing as indicated.

.2 Exterior cants (at roof edge) are to be fabricated out of wood and anchored into wood blocking supporting fascia.

3.11 ROOF PENETRATIONS

.1 Install roof drain pans, vent stack covers and other roof penetration flashings and seal to membrane in accordance with the manufacturer's recommendations and details.

.2 Extend vent stack to 300mm above roof membrane. Install vent stack sleeve 12 mm below stack and install sealant to vent stack, place cap onto bead of sealant to seal cap to vent stack over flange. Installation of cap to vent stack cover is to be done after ventstack insulation has been reviewed by the Engineer – Architect

.3 Insulate underside of drain body.

3.12 CAP SHEET APPLICATION (RECAPPING EXISTING SYSTEM)

.1 Inspect with Engineer-Architect conditions of existing roof system to determine readiness to proceed. Identify and repair any oil contaminated membrane, moisture contaminated or deteriorated materials, loose flashing flanges, blisters, and delaminated membrane.

.2 Reset and reseal with mastic the existing cap sheet membrane at roof drains prior to recapping.

.3 Thoroughly clean the existing membrane surface using a broom and blower to rid the surface of debris, loose granules and unbonded particles.

.4 Embed granules on the existing membrane, within a minimum 150 mm wide strip or radius around all areas of the roof perimeter, around all raised curbs and sleepers, and all vent stacks and other raised flashings.

.5 Embed granules on the existing membrane, in a minimum 500 mm wide radius around existing roof drains.

.6 Coat the remaining granulated surface with a full coat of modified bitumen primer at a minimum rate of 0.25 l/m2 and allow to dry thoroughly.

.7 At drains, install minimum 1,000mm x 2,000mm cap sheet target patch with drain at centre

.8 Starting at low point on roof, perpendicular to slope, unroll cap sheet, align and reroll from both ends.

.9 Unroll and torch cap sheet onto existing cap sheet taking care not to burn membrane or its reinforcement.

.10 Lap sheets 75 mm minimum for side laps and 150 mm minimum for end laps and target patch overlaps at drains. Offset joints in cap sheet 300 mm minimum from those in base sheet.

.11 Application to be free of blisters, fishmouths and wrinkles.

.12 Do membrane application in accordance with manufacturer's recommendations.

3.13 FLASHINGS (RECAPPING EXISTING SYSTEM)

.1 .1 Thoroughly clean the existing flashing surface using a broom and blower to rid the surface of debris, loose granules and unbonded particles.

.2 Embed granules on the new cap sheet membrane a minimum of 150 mm onto the field of the roof, on the cant strip, and on the vertical and horizontal surfaces of the existing flashings.

.3 Lap flashing cap sheet to membrane cap sheet 150 mm minimum and torch weld.

.4 Provide 75 mm minimum side lap and seal.

.5 Properly secure flashings to their support, without sags, blisters, fishmouths or wrinkles.

.6 Apply new sealant to ventstack flashings, gravel stop flashing, etc.

.7 Do work in accordance with manufacturer's recommendations.

3.14 METAL FLASHING

.1 Bend and install metal flashings as detailed and in minimum 2440 mm or longest practical lengths.

.2 Fasten face of Flashing to wood fascia with nylon headed hex screws, 400mm on centre for each row. For metal flashing widths over 150 mm install two rows a minimum of 50 mm from top and bottom edge. Maximum width of metal flashing to be 200 mm on fascia, otherwise install in multiple layers on with each width to have a drip edge.

.3 Lock end joints and caulk with sealant.

3.15 FIELD QUALITY ASSURANCE

.1 Inspection and testing of roofing application will be carried out by testing laboratory as designated by the owner.

.2 Costs of inspection and testing will be paid by Owner.

3.16 CLEANING

.1 Remove bituminous markings from finished surfaces

.2 In areas where finished surfaces are soiled caused by work of this section, consult manufacturer of surfaces for cleaning advice and complying with their documented instructions.

.3 Repair or replace defaced or disfigured finishes caused by work of this section

END OF SECTION

PART 1 - GENERAL

.1 To supply and install all sealants as required.
  .1 Provide caulking bead at all areas where different materials join to provide a smooth paintable joint.

1.1 RELATED SECTIONS

.1 Section 05 50 00 Metal Fabrications

.2 Section 07 52 00 Modified Bituminous Membrane Adhesive

1.2 REFERENCES

.1 CAN/CGSB-19.13-M87 Sealing Compound, One component, Elastomeric, Chemical Curing.

.2 CAN/CGSB-19.24-M90 Multi-component, Chemical Curing Sealing Compound.

.3 Health Canada/Workplace Hazardous Materials Information System (WHMIS):
  .1 Material Safety Data Sheets (SDS).

1.3 DELIVERY, STORAGE, AND HANDLING

.1 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture, water and contact with ground or floor.

1.4 ENVIRONMENTAL AND SAFETY REQUIREMENTS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling & provision of material safety data sheets acceptable to Labour Canada.

.2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

PART 2 - PRODUCTS

2.1 SEALANT MATERIALS

.1 Sealants for interior joints: one component modified polyurethane joint sealant conforming to CAN/CGSB-19.13-M87.

.2 Sealants for exterior joints: Elastomeric joint sealant or Latex permanently flexible joint sealant complying to section 9.27.4 of the NBC latest edition.

.3 Colour of sealant: selected by Engineer-Architect from full and complete colour range.

2.2 BACK-UP MATERIALS

.1 Preformed compressible and non-compressible back-up materials:
  .1 Polyethylene, urethane, neoprene or vinyl foam:
    .1 Extruded closed cell foam backer rod, compatible with primers and sealants.
    .2 Oversize 30 to 50%.

.2 Neoprene or butyl rubber:

.1 Round solid rod, Shore A hardness 70.

.3 High density foam:

.1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200kPa, extruded polyolefin foam, 32 kg/cu. meter density, or neoprene backer, size as recommended by manufacturer.

.4 Bond breaker tape:

.1 Polyethylene bond breaker tape which will not bond to sealant.

.5 Vent tubing:

.1 6mm inside diameter extruded polyvinylchloride tubing.

2.3 JOINT CLEANER

.1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

.2 Primer: as recommended by manufacturer.

PART 3 - EXECUTION

3.1 PROTECTION

.1 Protect installed work of other trades from staining or contamination.

3.2 PREPARATION OF JOINT SURFACES

.1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of sealant.

.2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair work.

.3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.

.4 Ensure joint surfaces are dry and frost free.

.5 Prepare surfaces in accordance with manufacturer's directions.

3.3 PRIMING

.1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.

.2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

3.4 BACKUP MATERIAL

.1 Apply bond breaker tape where required to manufacturer's instructions.

.2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.5 MIXING

.1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.6 APPLICATION

.1 Sealant.
- .1 Apply sealant in accordance with manufacturer's written instructions.
- .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
- .3 Apply sealant in continuous beads.
- .4 Apply sealant using gun with proper size nozzle.
- .5 Use sufficient pressure to fill voids and joints solid.
- .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
- .7 Tool exposed surfaces before skinning begins to give slightly concave shape.
- .8 Remove excess compound promptly as work progresses and upon completion.

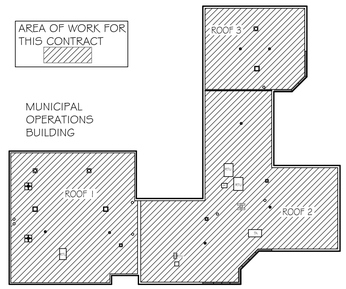
.2 Curing.
- .1 Cure sealants in accordance with sealant manufacturer's instructions.
- .2 Do not cover up sealants until proper curing has taken place.

.3 Cleanup.
- .1 Clean adjacent surfaces immediately and leave work neat and clean.
- .2 Remove excess and droppings, using recommended cleaners as work progresses.
- .3 Remove masking tape after initial set of sealant.

END OF SECTION

CONSTRUCTION NORTH

TRUE NORTH



I / A1 KEY PLAN

NTS

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 LIMITED PARKING OF CONTRACTOR 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 DAILY.

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

LOCATION OF ROOFING ITEMS IS APPROXIMATE, GENERAL CONTRACTOR IS TO VERIFY SITE DIMENSIONS PRIOR TO THE COMMENCING OF THE WORK.

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

SCOPE OF WORK INCLUDES, BUT IT NOT NECESSARILY LIMITED TO:

-RE-CAPPING OF ROOFS 1,2,&3 u.n.o.: EXISTING MODIFIED ROOFING TO REMAIN IN PLACE. PREPARE EXISTING CAP SHEET BY SWEEPING CLEAN, PRIMING, AND EMBEDDING GRANULES AS PER SPECIFICATION. PROVIDE NEW ROOFING MEMBRANE CAP SHEET AND INSTALL OVER EXISTING.

-REMOVAL/PROVISION OF NEW ROOF EDGE METAL FLASHING, AT SPECIFIC LOCATIONS ONLY, AS NOTED IN DETAILS AND ON ROOF PLANS.

-REMOVAL/REINSTALLATION OF EXISTING ROOF EDGE METAL FLASHING, AT SPECIFIC LOCATIONS ONLY, AS NOTED IN DETAILS AND ON ROOF PLANS.

-RECAPPING OF EXISTING VENTSTACKS AS NOTED IN DETAILS.

-WHERE ROOFING IS BEING RECAPPED, REPLACE CLAMPING RINGS FROM DRAINS RAISING HEIGHT IF NECESSARY.

-RECAP EXISTING CURB UNITS AS NOTED IN DETAILS.

-RECAP CURB FOR HATCH AS NOTED IN DETAILS.

-RECAP EXISTING RTU CURBS AS NOTED IN DETAILS.

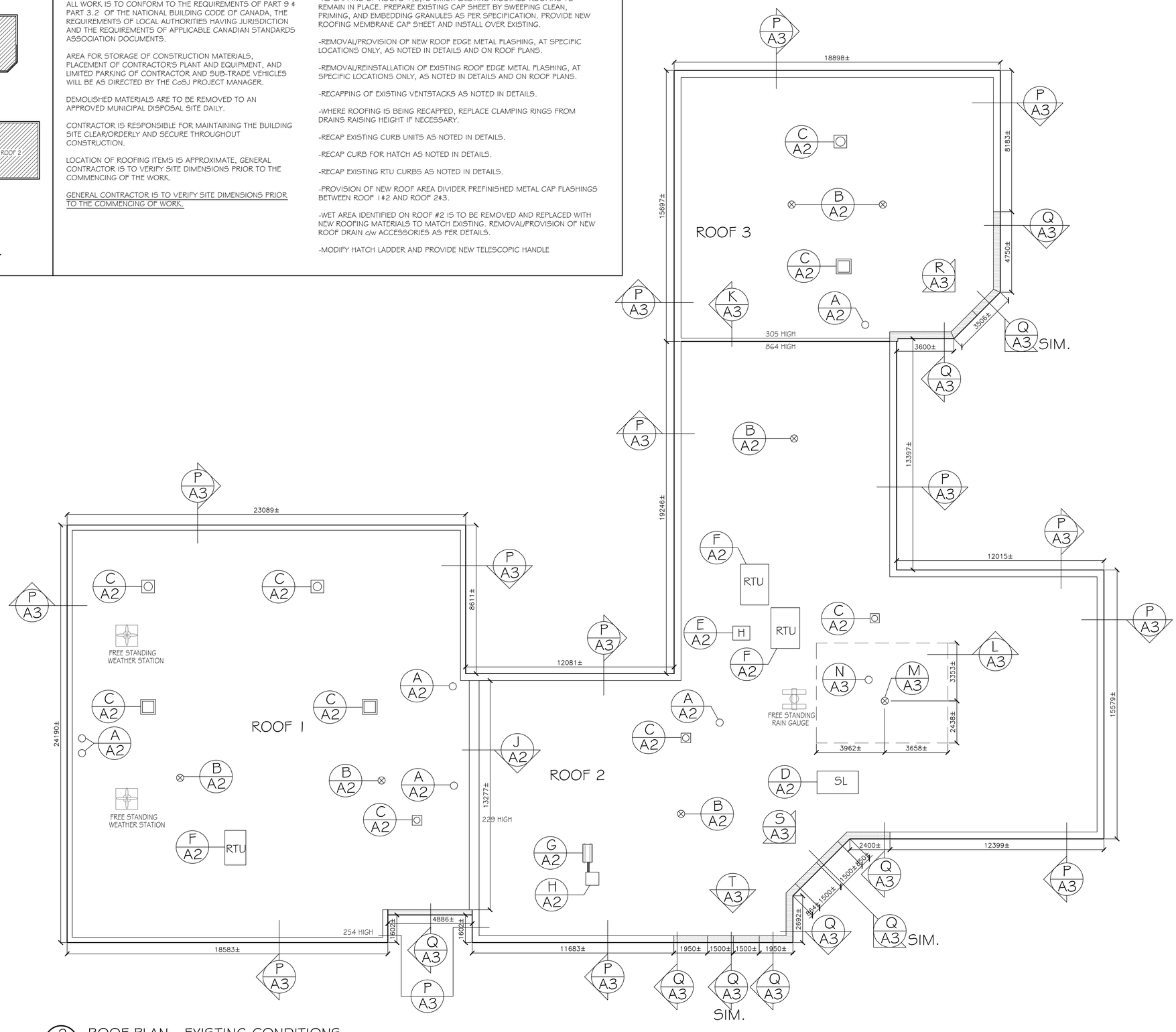
-PROVISION OF NEW ROOF AREA DIVIDER PREFINISHED METAL CAP FLASHINGS BETWEEN ROOF 1&2 AND ROOF 2&3.

-WET AREA IDENTIFIED ON ROOF #2 IS TO BE REMOVED AND REPLACED WITH NEW ROOFING MATERIALS TO MATCH EXISTING. REMOVAL/PROVISION OF NEW ROOF DRAIN c/w ACCESSORIES AS PER DETAILS.

-MODIFY HATCH LADDER AND PROVIDE NEW TELESCOPIC HANDLE

LEGEND:

- ROOF DRAIN
- MOTORIZED FAN
- VENT STACK
- LADDER
- H — ROOF HATCH
- LOUVRE CURB
- SL — SKYLIGHT
- RTU — MECHANICAL ROOF TOP UNIT
- U.N.O. — UNLESS NOTED OTHERWISE
- HEAT PUMP WITH SLEEPERS AND INTERCONNECTIONS BOX
- FREE STANDING WEATHER STATION
- FREE STANDING RAIN GAUGE



2 / A1 ROOF PLAN - EXISTING CONDITIONS

1:100

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96013 CERTIFICATE of PRACTICE — Michael R. Richard, RICHARD & CO. ARCHITECTURE INC., Reg. #97, Architects Association of New Brunswick

Mechanical Consultant:

Electrical Consultant:

No.	Revision	Date
0	ISSUED FOR TENDER	APR. 27, 2022

Project Title:

MUNICIPAL OPERATIONS BUILDING

ROOF REPLACEMENT

ROTHESAY AVE.
SAINT JOHN, NB

Drawing Title:

KEY PLAN, NOTES, ROOF PLANS - ROOF 1, 2, AND 3

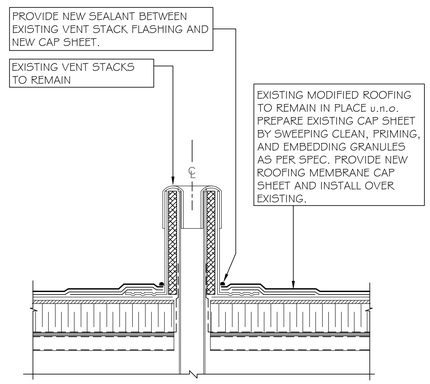
Designed By:	MRR	Revision No.	
Approved By:	MRR	Job No.:	22099
Drawn By:	LAG	Date:	APR. 2022
Scale:	AS NOTED		

Drawing No.:

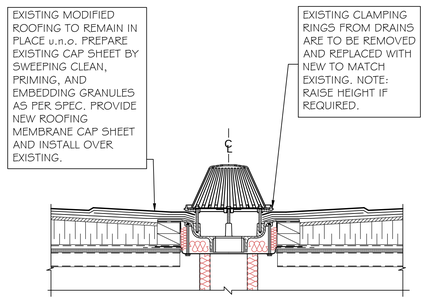
A-1

DEMOLITION & CONSTRUCTION NOTES:

1. SITE DIMENSIONS REQUIRED PRIOR TO COMMENCEMENT OF THE WORK.
2. ALL EXPOSED WOOD TO BE COVERED WITH FIRE SEAL PRIOR TO INSTALLATION OF NEW MODIFIED MEMBRANES.
3. ROOFS 1, 2, & 3: EXISTING MODIFIED ROOFING TO REMAIN IN PLACE u.n.o. PREPARE EXISTING CAP SHEET BY SWEEPING CLEAN, PRIMING, AND EMBEDDING GRANULES AS PER SPEC. PROVIDE NEW ROOFING MEMBRANE CAP SHEET AND INSTALL OVER EXISTING. SEE DETAILS ON DRAWING SHEETS A2&A3.
4. EXISTING VENT STACKS TO REMAIN IN PLACE. PROVIDE SEALANT BETWEEN VENT STACK FLASHING AND NEW CAP SHEET. REFERENCE DETAIL: A/A2
5. EXISTING CLAMPING RINGS FROM DRAINS ARE TO BE REMOVED AND REPLACED WITH NEW TO MATCH EXISTING. NOTE: RAISE HEIGHT IF REQUIRED. REFERENCE DETAIL: B/A2
6. EXISTING FAN AND LOUVER UNITS TO BE REMOVED AND STORED ON SITE. ASSOCIATED CURBS TO REMAIN. REMOVE EXISTING METAL FLASHINGS COMPLETE. PROVIDE NEW MODIFIED MEMBRANE FLASHINGS c/w NEW TRANSITION METAL FLASHING. REINSTALL UNITS GOOD TO EXISTING. ENSURE ALL ELECTRICAL HAS BEEN RECONNECTED AND UNITS ARE OPERATIONAL. REFERENCE DETAIL: C/A2
7. EXISTING SKYLIGHT TO BE CAREFULLY REMOVED, STORED ON SITE AND REINSTALLED FOLLOWING NEW ROOFING INSTALLATION. REMOVE EXISTING METAL FLASHINGS COMPLETE. PROVIDE NEW MODIFIED MEMBRANE FLASHINGS c/w NEW TRANSITION METAL FLASHING. REFERENCE DETAIL: D/A2
8. EXISTING HATCH TO BE REMOVED AND STORED ON SITE. HATCH CURB TO REMAIN. REMOVE EXISTING METAL FLASHINGS COMPLETE. PROVIDE NEW MODIFIED MEMBRANE FLASHINGS c/w NEW TRANSITION METAL FLASHING. REINSTALL HATCH GOOD TO EXISTING. REPLACE SEALS AND ADJUST FITTINGS TO BETTER USE OF UNIT. REFERENCE DETAIL: E/A2
9. EXISTING RTU'S TO BE REMOVED AND STORED ON SITE. EXISTING CURBS TO REMAIN. REMOVE EXISTING METAL FLASHINGS COMPLETE. PROVIDE NEW MODIFIED MEMBRANE FLASHINGS c/w NEW TRANSITION METAL FLASHING. REINSTALL RTU'S GOOD TO EXISTING. ENSURE ALL MECHANICAL AND ELECTRICAL CONNECTIONS ARE COMPLETE AND UNITS ARE FULLY OPERATIONAL. REFERENCE DETAIL: F/A2
10. EXISTING HEAT PUMP TO BE REMOVED AND STORED ON SITE. EXISTING SLEEPERS TO BE REMOVED COMPLETE. PROVIDE NEW SLEEPERS c/w MODIFIED ROOFING MEMBRANES AND REINSTALL HEAT PUMP GOOD TO EXISTING. ENSURE ALL MECHANICAL AND ELECTRICAL CONNECTIONS ARE COMPLETE AND UNIT IS FULLY OPERATIONAL. REFERENCE DETAIL: G/A2
11. INTERCONNECTIONS BOX FOR HEAT PUMP IS TO REMAIN. PROVIDE NEW MODIFIED ROOFING MATERIALS AS NOTED IN DETAIL: H/A2
12. EXISTING ROOF AREA DIVIDER BETWEEN ROOF 1&2 TO REMAIN. PROVIDE NEW MODIFIED MEMBRANES AND REPLACE EXISTING METAL FLASHING WITH NEW PREFINISHED METAL FLASHING TO MATCH ROOF EDGE FLASHING. REFERENCE DETAIL: J/A2
13. EXISTING PARAPET ROOF AREA DIVIDER BETWEEN ROOF 2&3 TO REMAIN. PROVIDE NEW MODIFIED ROOFING MATERIALS AND REPLACE EXISTING METAL FLASHING WITH NEW PREFINISHED METAL FLASHING TO MATCH ROOF EDGE FLASHING. REFERENCE DETAIL: K/A3
14. REMOVE IDENTIFIED PORTION OF ROOF AREA WITH WET INSULATION. REFERENCE ROOF PLAN ON DRAWING A1 FOR APPROXIMATE LOCATION. REMOVE EXISTING CAP SHEET, BASE SHEET, 2 LAYERS OF 12.7mm FIBERBOARD AND INSULATION TO REVEAL EXISTING VAPOUR BARRIER OVER 16mm GYPSUM BOARD/40mm STEEL DECK. INFILL WITH NEW MATERIALS: VAPOUR BARRIER, INSULATION TO MATCH THICKNESS OF EXISTING (APPROX. 75mm), 2 LAYERS OF 12.7mm FIBERBOARD, 180 BASE SHEET AND 250 CAP SHEET. ENSURE INFILL ALIGNS WITH EXISTING ROOF. REFERENCE DETAIL: L/A3
15. REMOVE EXISTING IDENTIFIED ROOF DRAIN COMPLETE WITH ALL ASSOCIATED FITTINGS. PROVIDE NEW ROOF DRAIN c/w ALL ASSOCIATED FITTINGS. MAKE NECESSARY MODIFICATIONS TO EXISTING PIPES TO ENSURE POSITIVE DRAINAGE AND NO LEAKAGE. REFERENCE DETAIL: M/A3
16. EXISTING IDENTIFIED VENT STACK ON ROOF #2 IN AREA OF WET INSULATION IS TO REMAIN. FOLLOWING INFILL OF NEW ROOFING MATERIALS, PROVIDE NEW MEMBRANE FLASHINGS. PROVIDE NEW COVER FOR INSULATED VENT STACK c/w ASSOCIATED FITTINGS AND FASTENERS. CAP TO BE ADHERED TO PIPE WITH SEALANT. REFERENCE DETAIL: N/A3
17. CAREFULLY REMOVE EXISTING IDENTIFIED ROOF EDGE METAL FLASHING (LOCATED ABOVE ALL SIDING AND PANELS) AND STORE ON SITE. REINSTALL GOOD TO EXISTING FOLLOWING INSTALLATION OF NEW MODIFIED ROOFING MATERIALS. REFERENCE ROOF PLAN FOR LOCATIONS. SEE DETAIL: P/A3
18. REMOVE EXISTING ROOF EDGE METAL FLASHING (LOCATED ABOVE ALL BRICK SURFACES) AT LOCATIONS IDENTIFIED ON THE ROOF PLAN. PROVIDE NEW PREFINISHED ROOF EDGE METAL FLASHING TO MATCH COLOUR (CHARCOAL) AND PROFILE OF FLASHING BEING REINSTALLED. REFERENCE DETAIL: Q/A3
19. REFERENCE ELEVATIONS FOR HEIGHTS OF NEW MODIFIED MEMBRANES AND NEW ROOF EDGE METAL FLASHING. SEE DETAILS: R/A3, S/A3, T/A3
20. PROVIDE NEW LADDER EXTENSION FOR EXISTING HATCH. REFERENCE DETAIL: U/A3
21. CAREFULLY REMOVE EXISTING FREE STANDING WEATHER STATIONS AND RAIN GAUGE AND STORE ON SITE. REINSTALL FOLLOWING INSTALLATION OF NEW ROOFING MATERIALS.



A/A2 VENT STACK DETAIL
RE-CAP - NEW CONDITIONS 1:10



B/A2 ROOF DRAIN DETAIL
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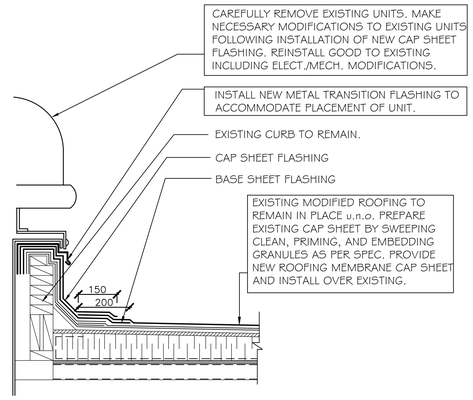
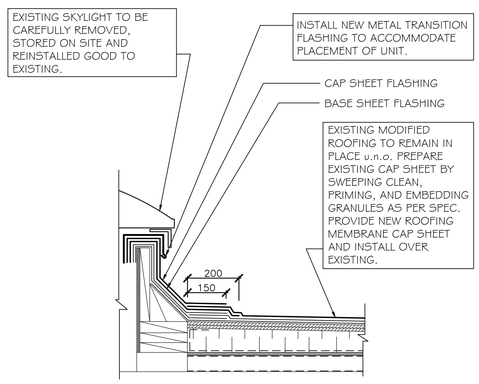
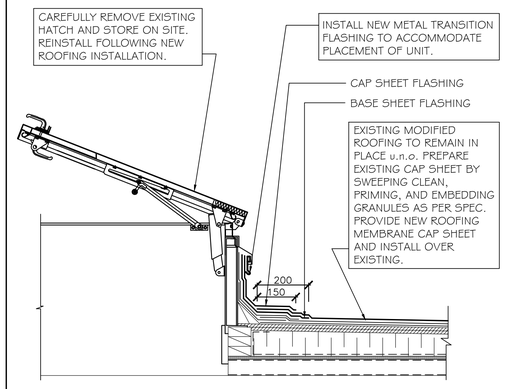


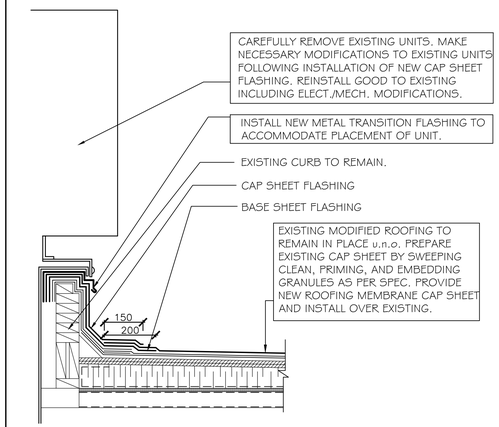
C/A2 FAN CURB DETAIL
RE-CAP - NEW CONDITIONS 1:10



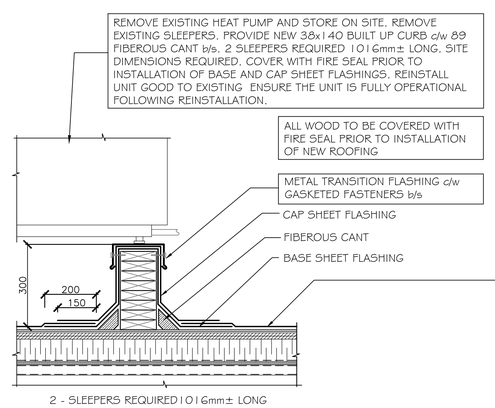
D/A2 SKYLIGHT CURB DETAIL
RE-CAP - NEW CONDITIONS 1:10



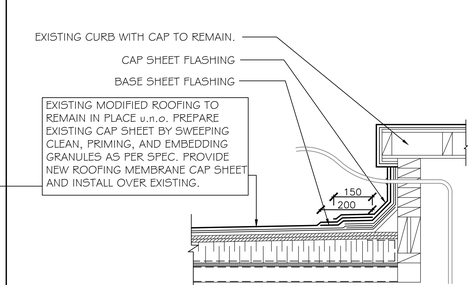
E/A2 HATCH CURB DETAIL
RE-CAP - NEW CONDITIONS 1:10



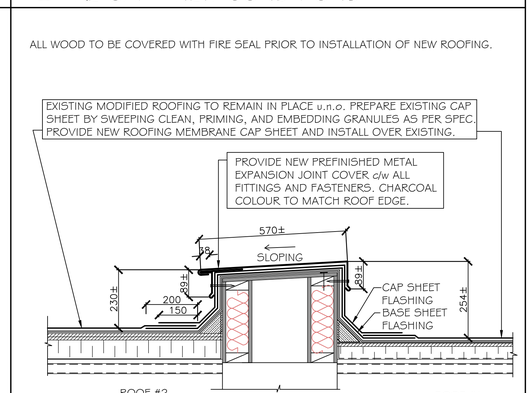
F/A2 RTU CURB DETAIL
RE-CAP - NEW CONDITIONS 1:10



G/A2 HEAT PUMP SLEEPER DETAIL
RE-CAP - NEW CONDITIONS 1:10



H/A2 INTERCONNECTIONS BOX DETAIL
RE-CAP - NEW CONDITIONS 1:10



J/A2 ROOF AREA DIVIDER DETAIL (ROOF 1&2)
RE-CAP - NEW CONDITIONS 1:10

RICHARD & CO. ARCHITECTURE INC.
38 WATER STREET, SAINT JOHN, N.B., E2L 2A5
TEL: 506 633-1361 CELL: 506 609-7047
EMAIL: mrichard@richardarchitecture.com
96013 CERTIFICATE of PRACTICE Michael R. Richard RICHARD & CO. ARCHITECTURE INC. ARCHITECTS ASSOCIATION of NEW BRUNSWICK

Mechanical Consultant:

Electrical Consultant:

No.	Revision	Date
0	ISSUED FOR TENDER	APR. 27, 2022

Project Title:

MUNICIPAL OPERATIONS BUILDING

ROOF REPLACEMENT

ROTHESAY AVE.
SAINT JOHN, NB

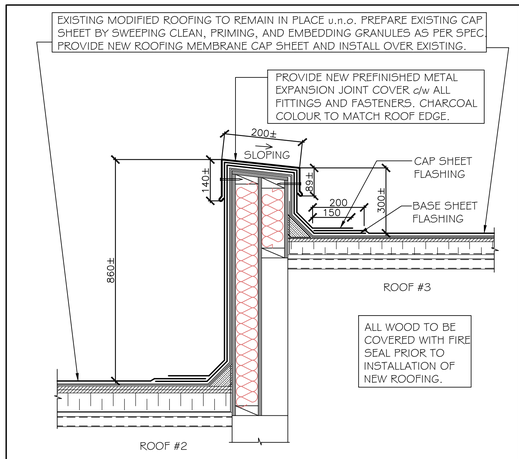
Drawing Title:

DETAILS
SHEET#1

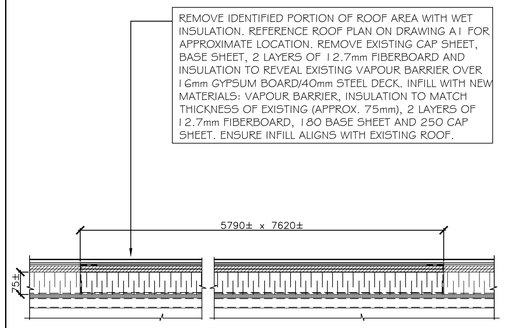
Designed By:	MRR	Revision No.	
Approved By:	MRR	Job No.:	22099
Drawn By:	LAG	Date:	APR. 2022
Scale:	AS NOTED		

Drawing No.:

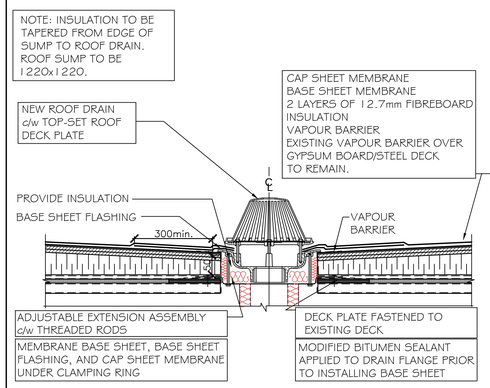
A-2



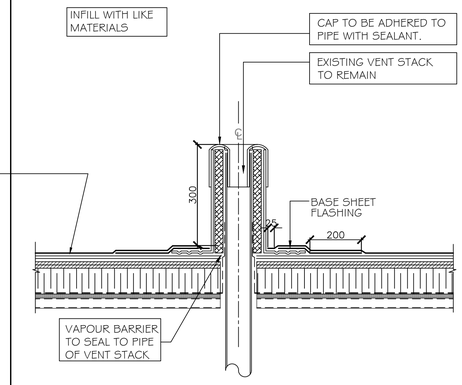
K A3 PARAPET DETAIL BETWEEN ROOF 2&3
RE-CAP - NEW CONDITIONS 1:10



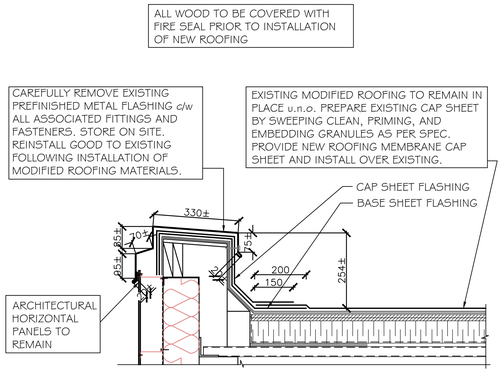
L A3 INFILL DETAIL
ROOF REPLACEMENT 1:10



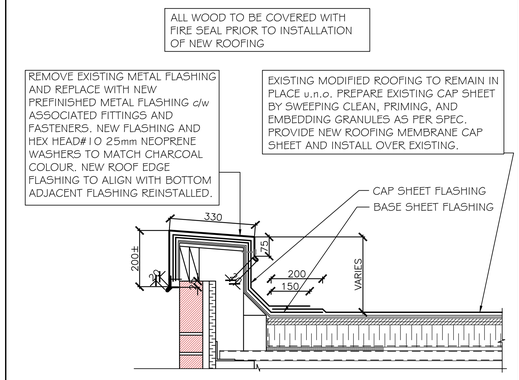
M A3 ROOF DRAIN DETAIL
ROOF REPLACEMENT 1:10



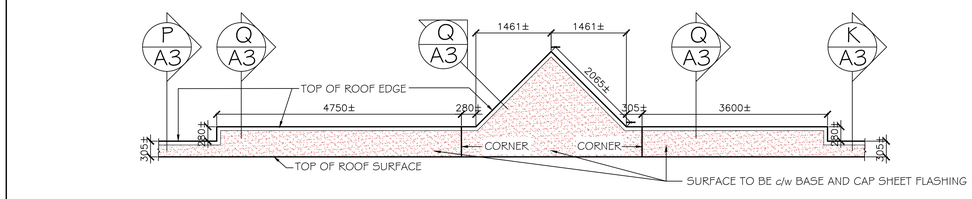
N A3 VENT STACK DETAIL
ROOF REPLACEMENT 1:10



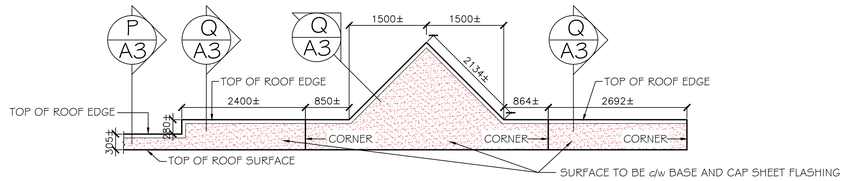
P A3 ROOF EDGE DETAIL# 1 -REMOVE/REINSTALL
RE-CAP - NEW CONDITIONS 1:10



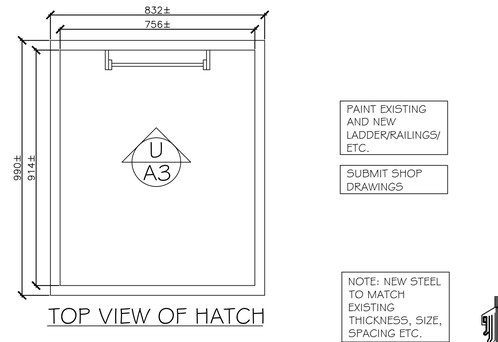
Q A3 ROOF EDGE DETAIL#2
ROOF EDGE FLASHING REPLACEMENT 1:10



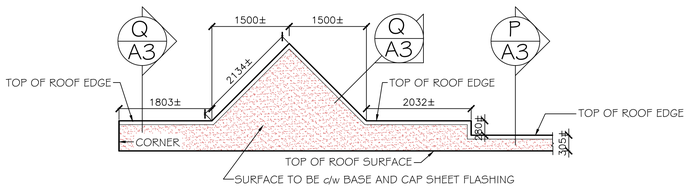
R A3 ROOF ELEVATION # 1
ROOF EDGE FLASHING REPLACEMENT 1:50



S A3 ROOF ELEVATION #2
ROOF EDGE FLASHING REPLACEMENT 1:50



U A3 LADDER EXTENSION DETAILS
NEW CONDITIONS 1:10



T A3 ROOF ELEVATION #3
ROOF EDGE FLASHING REPLACEMENT 1:50

RICHARD & CO. ARCHITECTURE INC.
38 WATER STREET, SAINT JOHN, N.B., E2L 2A5
TEL: 506 633-1361 CELL: 506 609-7047
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96013
CERTIFICATE of PRACTICE
Michael R. Richard
RICHARD & CO. ARCHITECTURE INC.
2022-01-01
ARCHITECTS ASSOCIATION OF NEW BRUNSWICK

Mechanical Consultant:

Electrical Consultant:

No.	Revision	Date
0	ISSUED FOR TENDER	APR. 27, 2022

Project Title:
MUNICIPAL OPERATIONS BUILDING

ROOF REPLACEMENT

ROTHESAY AVE.
SAINT JOHN, NB

Drawing Title:
DETAILS
SHEET#2

Designed By:	MRR	Revision No.	
Approved By:	MRR	Job No.:	22099
Drawn By:	LAG	Date:	APR. 2022
Scale:	AS NOTED		

Drawing No.:
A-3

APPENDIX B – FORM OF TENDER

TENDER No. 2022-082705T
Roof Replacement - Municipal Operations Building

FORM OF TENDER

2022-082705T
Roof Replacement - Municipal Operations 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: **E-MAIL:**	**SIGNATURE:_____** **NAME:_____** **(print)**
Date:	**Tel #** **Fax #**
H.S.T. Reg.#	**Remarks:**

APPENDIX C – FORM OF AGREEMENT

TENDER No. 2022-082705T
Roof Replacement - Municipal Operations 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.

EXECUTION OF AGREEMENT

In Witness Whereof the parties hereto have executed this Agreement.

	) SIGNED, SEALED AND DELIVERED
	)
	) this _____ day of _____, _____
	)
	) by _____
	) (Contractor)
	)
_____	) _____
(Witness)	) (Signature)
	)
_____	) _____
(Name and Title)	) (Name and Title)
	)
	) _____
	) (Signature)
	)
	) _____
	) (Name and Title)
	)
	)
	) *PLACE SEAL HERE*

	)
	)
	) SIGNED, SEALED AND DELIVERED
	)
	) this _____ day of _____, _____
	)
	) by THE CITY OF SAINT JOHN.
	)
	)
	) _____
	) MAYOR
	)
	) _____
	) COMMON CLERK
	)
	)
	)
	) *PLACE SEAL HERE*

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).