

JOSEPH A. GHIZ BUILDING

275 Pope Road, Summerside
Prince Edward Island

Roof Remediation Project

CONSTRUCTION SPECIFICATION

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PART 1 – GENERAL

1. DESCRIPTION OF WORK

- .1 Work of this Contract comprises of repairs to the roof at the Joseph A. Ghiz Building located at 275 Pope Road, Summerside, Prince Edward Island ; and further identified as The Site. The sections of the roof to be repaired are indicated on the attached roof plan. More specifically, the work will involve:
 - .1 Remove and dispose of the existing roofing materials as indicated in the specifications and on the attached contract drawings.
 - .2 Install new EPDM roof system as indicated in the specifications and on the attached contract drawings, complete with all components necessary to ensure continued water tightness of all penetrations and protrusions.
 - .3 Where indicated on contract drawings, temporarily remove existing steel handrails and re-attach once new roof has been completed.
 - .4 Provide sealant at all locations to achieve watertight seals.
 - .5 Perform daily and final clean-up of work areas and surrounding areas and site.
 - .6 All materials removed become the property of the contractor unless otherwise notified by the Owner.
 - .7 No additional compensation will be provided for work methods or materials or labour or heating required because of cold outdoor temperatures or snow.
 - .8 No additional compensation will be provided for any delays associated with weather for example – snow; cold outdoor temperatures.
 - .9 Any snow removal for the areas for the designated roof remediation will be paid for by, and be included in, the contractor's price.
 - .10 Contractor to include all winter weather work as part of their bid.
- .2 Contract Method:
 - .1 This will be a Lump Sum Contract.
- .3 Standards, Building Codes
 - .1 The most recent editions of the following standards and codes at the time of tender shall apply:
 - Prince Edward Island Occupational Health and Safety Act.
 - All applicable Municipal, Provincial and Federal Bylaws.

- National Building Code of Canada (2010 Edition).
- Canadian Standards Association (CSA).

2. DOCUMENTS

- .1 Maintain at jobsite, one copy of each of the following:
 - .1 Contract drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Site-Specific Environmental Protection Plan.
 - .5 Reviewed shop drawings.
 - .6 Change order(s).
 - .7 Other contract modifications.
 - .8 Field test reports.
 - .9 Copy of approved work schedule.
 - .10 Health & Safety Plan.
 - .11 Hot Work Permit, if required.
 - .12 Manufacturers' installation and application specifications.

3. SITE EXAMINATION

- .1 All bidders submitting tenders for this Work shall first examine the site for the Work prior to submission of tenders and make themselves acquainted with site conditions and all information necessary for the proper execution of the Work covered by the tender documents. All tenders shall take into consideration all such conditions as may affect the Work under this Contract.
- .2 Before visiting the site the bidders must apply for and receive permission to visit the site from the Departmental Representative.
- .3 No extra payment will be made to the Contractor, above the Contract Price, for costs resultant from failure to determine the conditions that affect the work.

4. SECURITY CLEARANCE

- .1 The Contractor shall submit his/her name and the names of all employees, including new employees engaged during the Contract who will be working under this Contract and therefore required to have the necessary security clearance to the Departmental Representative immediately following notification of Contract award.
- .2 The security clearance level for this Contract is Reliability Status. The process of obtaining this security clearance is through the Canadian Industrial Security Directorate (CISD) as referenced below:

Website: <http://ssi-iss.tpsgc-pwgsc.gc.ca/>

Toll Free Phone: 1-866-368-4646

- .3 Only those employees who receive the required clearance level will be allowed on-site.

- .4 During the Security Clearance application process, Commissionaire services shall be utilized in order to proceed with the work under the Contract. The Departmental Representative will coordinate and provide the required Commissionaire services as needed.

5. CONTRACTOR USE OF PREMISES

- .1 Contractor has restricted use of site during construction period. Normal use of the building shall not be interrupted and all works to be coordinated under direction of Departmental Representative to ensure minimal conflict.
- .2 Contractor is responsible for the layout of the work.
- .3 The Contractor will have an area provided by the Departmental Representative for the use and storage of construction materials. The location of this area(s) is to be coordinated with Departmental Representative prior to start of work.
- .4 Contractor is to obtain and pay for use of additional storage or work areas needed for operations under this Contract.
- .5 The Contractor may request information from the Departmental Representative regarding site access for other systems (electrical, heating, plumbing, etc.).
- .6 Security Measures: The Contractor is responsible for security of roofing products and Contractor equipment and tools during the work.

6. WORK SCHEDULE

- .1 Provide, within 10 working days after contract award, a schedule showing the anticipated progress stages and final completion of work within the time period required by contract documents.
- .2 Interim reviews of work progress based on the work schedule will be conducted as decided by the Departmental Representative and updated by the Contractor in conjunction with, and to approval of, the Departmental Representative.

7. PROJECT MEETINGS

- .1 Hold project meetings at times and locations approved by the Departmental Representative.
- .2 Notify participants of meetings.
- .3 Contractor to record minutes of meetings and distribute to participants within 7 days of meeting for review and acceptance.

8. COST BREAKDOWN

- .1 Before submitting first Progress Claim, submit breakdown of Contract price in detail aggregating the total contract price. After approval by Departmental Representative cost breakdown will be used as basis for progress payments.

9. FIELD DIMENSIONS

- .1 Take all field measurements required to verify or supplement drawing dimensions. The Departmental Representative's review of shop drawings and erection diagrams does not relieve the Contractor of this responsibility.

10. LOCATIONS OF EQUIPMENT & FIXTURES

- .1 Unless dimensioned, locations of equipment and systems as indicated or specified are to be considered as approximate.
- .2 Inform Departmental Representative of impending installations and obtain Departmental Representative's approval of actual locations.
- .3 When required by the Departmental Representative, submit field drawings to indicate the relative positions of various services and equipment.

Part 2 Products

2.1 Products Supply

- .1 The contractor is to provide all materials required to complete the project as specified and/or indicated.

Part 3 Execution

3.1 Not used.

End of Section 01 10 10

Part 1 General

1.1 USE OF SITE AND FACILITIES

- .1 The building will be occupied during the entire construction period for execution of normal operations. Co-operate with the Departmental Representative in scheduling operations to minimize conflict and to facilitate occupant usage.
- .2 Maintain existing services to building and provide for personnel and vehicle access.

1.2 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

- .1 Execute work with least possible interference or disturbance to building operations, occupants, and normal use of premises. Arrange with Departmental Representative to facilitate execution of work.
- .2 No grass areas are to be accessed with heavy equipment or vehicles without prior approval from Departmental Representative. Any damages to grassed areas will have to be reinstated/ re-sodded to return the area to its condition prior to the damages.
- .3 And damage to paved areas as a result of the Work conducted under this contract will have to be reinstated to return the damaged area to its condition prior to the damages.

1.3 EXISTING SERVICES

- .1 Notify the Departmental Representative and utility companies of intended interruption of services and obtain required permission.

1.4 SPECIAL REQUIREMENTS

- .1 Ensure that Contractor personnel employed on site become familiar with, and obey regulations including safety, fire, traffic and security regulations.
- .2 Keep within limits of work and paths of ingress and egress during project.

1.5 BUILDING SMOKING REVIROMENT

- .1 Comply with smoking restrictions. Smoking is allowed only in areas indicated.

Part 2 Products

2.1 Not used.

Part 3 Execution

3.1 Not used.

END OF SECTION 01 14 00

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 45 00 – Quality Control
- .2 Section 01 78 11 – Closeout Submittals

1.2 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be accepted.
- .2 Work affected by submittal shall not proceed until review is completed.
- .3 Present shop drawings, product data, samples and mock-ups when requested, in 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 Departmental Representative. This review represents that necessary requirements have been determined and verified, or are pending, 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 shall be considered rejected.
- .6 Notify Departmental Representative, in writing as time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviation.
- .7 Verify field measurements and affected adjacent work are coordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review of submittals.
- .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 reference to design drawings and specifications.
- .3 Allow fourteen (14) days for Departmental Representative review of each submission.
- .4 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .5 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.
- .6 Accompany submissions with transmittal letter, in a PDF copy, 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 Submission shall include:
 - .1 Date and revision dates
 - .2 Project title and number
 - .3 Name and address of a) subcontractor, b) Supplier c)Manufacturer
 - .4 Contractor’s stamp, signed by Contractor’s authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract.
 - .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 weights
 - .8 Single line and schematic diagrams
 - .9 Relationship to adjacent work.

- .8 After Departmental Representative's review, distribute copies.
- .9 Submit two (2) prints of shop drawings and one PDF copy for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
- .10 Submit two (2) paper copies plus one (1) electronic copy in PDF format of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .11 Delete information not applicable to product.
- .12 Supplement standard information to provide details applicable to project.
- .13 If upon review by Departmental Representative, 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.
- .14 The review of shop drawings by Departmental Representative is for sole purpose of ascertaining conformance with general concept. This review shall not mean that Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve Contractor or responsibility for errors and omissions in shop drawings or of responsibility for meeting all requirements of construction and Contract documents. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for coordination or Work of all subtrades.

1.4 SAMPLES

- .1 Samples of EPDM roof material for demonstration to Departmental Representative and consultant is a requirement for this project.

1.5 MOCK-UPS

- .1 Not Required

1.6 PROJECT PHOTOGRAPHS

- .1 Departmental Representative will take photographs of project progress.

1.7 CERTIFICATES and TRANSCRIPTS

- .1 Immediately after award of Contract, submit transcription of applicable insurance policies.
- .2 Immediately after award of Contract, submit Worker's Compensation Board Status.

Part 2 Products

2.1 Not used.

Part 3 Execution

3.1 Not used.

END OF SECTION 01 33 00

Part 1 General

1.1 REFERENCES

- .1 Fire Protection Standards issued by Fire Protection Services, Labour Program Division of Service Canada:
 - .1 FCC No. 301-June 1982 Standard for Construction Operations.
 - .2 FCC No. 302-June 1982 Standard for Welding and Cutting.
- .2 FCC standards may be obtained at:
 - .1 Fire Protection Services - Atlantic Region office, Halifax, N.S, Tel. (902)426- 6053.

1.2 SUBMITTALS

- .1 Submit copy of Hot Work Procedures and sample of Hot Work permit to Departmental Representative for review, within 7 calendar days or less for acceptance of bid.
- .2 Submit in accordance with section 01 33 00.

1.3 HOT WORK AUTHORIZATION

- .1 Obtain Departmental Representative's written "Authorization to Proceed" before conducting any form of Hot Work on site.
- .2 To obtain authorization submit to Departmental Representative:
 - .1 Contractor's typewritten Procedures to be followed on site as specified below.
 - .2 Description of the type and frequency of Hot Work required.
 - .3 Sample Hot Work Permit to be used.
- .3 Upon review and confirmation that effective fire safety measures will be implemented and followed during performance of hot work, Departmental Representative will give authorization to proceed as follows:
 - .1 Issue one written "Authorization to Proceed" covering the duration of work or;
 - .2 Subdivide the work into pre-determined, individual activities, each activity requiring a separately written authorization to proceed.
- .4 Requirement for individual authorization will be based on:
 - .1 Nature or phasing of work;
 - .2 Risk to Facility operations;
 - .3 Quantity of various trades needing to perform hot work on project or;
 - .4 Other situation deemed necessary by Departmental Representative to ensure fire safety on premises.

- .5 Do not perform any Hot Work until receipt of Departmental Representative's written "Authorization to Proceed" for that portion of work.
- .6 In tenant occupied Facility, coordinate performance of Hot Work with Facility Manager through the Departmental Representative. When directed, perform Hot Work only during non-operative hours of the Facility. Follow Departmental Representative's directives in this regard.

1.4 HOT WORK PROCEDURES

- .1 Develop and implement safety procedures and work practices to be followed during the performance of the Hot Work.
- .2 Hot Work Procedures to include:
 - .1 Requirement to perform hazard assessment of site beforehand for each hot work in accordance with Safety Plan specified in section 01 35 29.
 - .2 Use of a Hot Work Permit system with individually written permit issued by Contractor's Superintendent to specific worker or subcontractor granting permission to proceed with Hot Work.
 - .3 Permit required for each Hot Work event.
 - .4 Designation of a person on site as a Fire Safety Watcher responsible to conduct a fire safety watch for a minimum duration of 60 minutes immediately following the completion of the Hot Work.
 - .5 Compliance with fire safety codes, standards and occupational health and safety regulations specified.
 - .6 Site specific rules and procedures in force at the site as provided by the Facility Manager.
- .3 Generic procedures, if used, must be edited and supplemented with pertinent information tailored to reflect specific project conditions. Label document as being the Work Procedures for this contract.
- .4 Procedures shall clearly establish responsibilities of:
 - .1 Worker performing hot work,
 - .2 Person issuing the Hot Work Permit,
 - .3 Fire Safety Watcher
 - .4 Subcontractor(s) and Contractor.
- .5 Brief all workers and subcontractors on Hot Work Procedures and of Permit system. Stringently enforce compliance.
- .6 Failure to comply with fire safety procedures may result in the issue of a Non-Compliance notification as specified in Section 01 35 29.

1.5 HOT WORK PERMIT

- .1 Hot Work Permit to include the following:
 - .1 Project name and project number;
 - .2 Building name and specific room or area where hot work will be performed;
 - .3 Date of Issue;
 - .4 Description of hot work type needed;
 - .5 Special precautions to be followed, including type of fire extinguisher needed;
 - .6 Name and signature of permit issuer;
 - .7 Name of worker to which the permit is issued;
 - .8 Permit validity period not to exceed 8 hours. Indicate start time/date and termination time/date;
 - .9 Worker's signature with time/date of hot work completion;
 - .10 Stipulated time period of safety watch;
 - .11 Fire Safety Watcher's signature with time/date.
- .2 Permit to be typewritten form. Industry Standard forms shall only be used if all data specified above is included on form.
- .3 Each Hot Work Permit to be completed in full, signed and returned to Contractor's Superintendent for safe keeping on site.

1.6 REPORTING FIRES

- .1 Know location of nearest fire alarm box and telephone, including emergency phone number.
- .2 Report immediately fire incidents to Fire Department as follows:
 - .1 Activate nearest fire alarm box; or
 - .2 Telephone "911".
- .3 Person activating fire alarm box will remain at box to direct Fire Department to scene of fire.
- .4 When reporting fire by telephone, give location of fire, name or number of building and be prepared to verify location.

1.7 INTERIOR and EXTERIOR FIRE PROTECTION and ALARM SYSTEMS

- .1 Fire protection and alarm system will not be:
 - .1 Obstructed
 - .2 Shut-off; and
 - .3 Left inactive at end of working day or shift without authorization from Departmental Representative.
- .2 Fire hydrants, standpipes and hose systems will not be used for other than fire-fighting purposes unless authorized by Departmental Representative.

1.8 FIRE EXTINGUISHERS

- .1 Supply fire extinguishers necessary to protect work in progress and contractor's physical plant on site.

1.9 INSTALLATION and/or REPAIR OF ROOF TO INCLUDE CONTRACTORS PHYSICAL PLANT ON SITE

- .1 Notify Departmental Representative of location of asphalt kettles and dates that kettles will be in use. Ensure personnel use and take precautions as follows:
 - .1 Use kettles equipped with thermometers or gauges in good working order.
 - .2 Locate kettles in safe place outside of building or, if approved by Departmental Representative, on non-combustible roof. Locate to avoid danger of igniting combustible material below.
 - .3 Maintain continuous supervision while kettles are in operation and provide metal covers for kettles to smother flames in case of fire. Provide fire extinguishers as required in 1.3.
 - .4 Prior to start of work, demonstrate container capacities to Departmental Representative.
 - .5 Use only glass fibre roofing mops.
 - .6 Do not leave used roofing mops unattended on roof. Store mops away from building and combustible materials.
 - .7 Store roofing materials no closer than 3 m to structures.

1.10 BLOCKAGE OF ROADWAYS

- .1 Advise Departmental Representatives of work that would impede fire apparatus response.

1.11 SMOKING PRECAUTIONS

- .1 Observe smoking regulations.

1.12 RUBBISH AND WASTE MATERIALS

- .1 Keep rubbish and waste materials at minimum quantities.
- .2 Burning of rubbish is prohibited
- .3 Removal:
 - .1 Remove rubbish from work site at end of work day or shift or as directed.
- .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 specified.

1.13 FLAMMABLE AND COMPUSTABLE LIQUIDS

- .1 Handling, storage and use of flammable and combustible liquids governed by current National Fire Code of Canada.
- .2 Keep flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing Underwriters' Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires permission of Departmental Representative.
- .3 Transfer of flammable and combustible liquids is prohibited within buildings.
- .4 Transfer of flammable and combustible liquids will not be carried out in vicinity of open flames or any type of heat-producing devices.
- .5 Do not use flammable liquids having flash point below 38 degrees C such as naphtha or gasoline as solvents or cleaning agents.
- .6 Store flammable and combustible waste liquids, for disposal, in approved containers located in safe ventilated area. Keep quantities minimum and Fire Department is to be notified when disposal is required.

1.14 HARZARDOUS SUBSTANCES

- .1 Work entailing use of toxic or hazardous materials, chemicals and/or explosives, or otherwise creating hazard to life, safety or health, in accordance with National Fire Code of Canada.
- .2 Obtain from Departmental Representative a "Hot Work" permit for work involving welding, burning or use of blowtorches and salamanders, in buildings or facilities.
- .3 When Work is carried out in dangerous or hazardous areas involving use of heat, provide fire watchers equipped with sufficient fire extinguishers. Determination of dangerous or hazardous areas along with level of protection necessary for Fire Watch is at discretion of Departmental Representative.
- .4 Provide ventilation where flammable liquids, such as lacquers or urethanes are used, eliminate sources of ignition. Inform Departmental Representative prior to and at cessation of such work.

1.15 QUESTIONS and/or CLARIFICATIONS

Direct questions or clarifications on Fire Safety in addition to above requirements to Departmental Representative.

Part 2 Products

2.1 Not used.

Part 3 Execution

3.1 Not used.

END OF SECTION 01 35 24

Part 1 General

1.1 SUBMITTALS

- .1 Submit to the Departmental Representative copies of the following documents, including updates issued:
 - .1 Site-specific Health and Safety Plan prior to commencement of work on the work site.
 - .2 Reports of directions issued by authorities having jurisdiction, immediately upon issuance from that authority.
 - .3 Accident or Incident Reports, within 24 hours of occurrence.
- .2 If contractor has received a Certificate of Recognition from a recognized occupational health and safety organization, a letter of good standing" is to be forwarded to the Departmental Representative.
- .3 Submit other data, information and documentation upon request by the Departmental Representative as stipulated elsewhere in this section.

1.2 COMPLIANCE REQUIREMENTS

- .1 Comply with the latest edition of the Prince Edward Island Occupational Health and Safety Act, and the Regulations made pursuant to the Act.
- .2 As a minimum, comply with the Canada Labour Code Part II Part 125(1)(1) and 125(1)(w), and the Canada Occupational Safety and Health Regulations made under Part II of the Canada Labour Code
- .3 A copy of the Canada Labour Code Part II may be obtained by contacting: Canadian Government Publishing Communication Canada Ottawa, Ontario, K1A OS9 Telephone: (613) 941-5995 or 1-800-635-7943) Catalogue No. L31-85-2003 (E or F) ISBN 0-660-18897-X. A condensed version can be viewed on-line at:
<http://laws.justice.gc.ca/en/index.html>
- .4 Observe and enforce construction safety measures required by:
 - .1 National Building Code of Canada (latest edition).
 - .2 Provincial Worker's Compensation Board.
 - .3 Municipal statutes and ordinances.
- .5 In event of conflict between any provisions of above authorities the most stringent provision shall apply. Should a dispute arise in determining the most stringent requirement, the Departmental Representative shall advise on the course of action to be followed. In the case of direct conflict between the federal and provincial/territorial

regulatory Health and Safety instruments noted above in paragraphs 1.2.1 and 1.2.2, the Canada Labour Code shall be the default regulatory instrument.

- .6 Provide and maintain Worker's Compensation Board coverage for all employees for the duration of the contract. Prior to commencement of the work, at the time of Interim Completion and prior to final payment, provide to the Departmental Representative a letter of Clearance from the Workers' Compensation Board indicating that the Contractor's account is in good standing.
 - .1 Should the Contractor be a sole proprietor, provide documented proof in a form acceptable to the Departmental Representative, of an alternative means of personal coverage that meets or exceeds the requirements set out above for Worker's Compensation Board coverage.

1.3 RESPONSIBILITY

- .1 In accordance with the Canada Labour Code Part II, the obligations and responsibilities for safety reside with the contractor. The Departmental Representative on behalf of the Public Works & Government Services Canada will monitor safety on the Work Site in accordance with the Canada Labour Code Part II and the Canada Occupational Safety and Health Regulations made under Part II of the Canada Labour Code.
- .2 Carry out work placing emphasis on health and safety of the public, building occupants, site personnel and protection of the environment.
- .3 The Contractor is responsible to enforce compliance by workers and other persons granted access to work site with safety requirements of Contract Documents, applicable federal, provincial, and local statues, regulations, and ordinances, and with site-specific Health and Safety Plan.
- .4 The contractor is responsible to manage safety of the work site to ensure that any person, including but not limited to, building occupants and the general public circulating adjacent to the work operations are protected against harm due to the extent that they may be affected by conduct of the work.
- .5 Conduct site specific occupational health and safety meetings during the entire work as follows:
 - .1 Formal meetings on a minimum weekly basis.
 - .2 Informal tool box meetings on a daily basis.
- .6 Record and post minutes of meetings in plain view. Make copies available to the Departmental Representative upon request.
- .7 The Contractor is responsible to ensure Contractor employees and sub-contractors accessing the work site are in possession of and wear appropriate personnel protective equipment (PPE).
- .8 Should an unforeseen or peculiar safety related hazard or condition become evident during performance of work, the Contractor is responsible to immediately take measures to rectify

the situation and prevent damage or harm and to advise the Departmental Representative verbally and in writing of the hazard or condition.

1.4 SITE CONTROL and ACCESS

- .1 The Contractor shall be responsible after consultation with the Departmental Representative to control all work site access points and worksite activities.
- .2 Delineate and isolate construction areas from other areas of site by use of appropriate means to ensure the protection of tenants.

1.5 FILING OF NOTICE

- .1 File notice of Project and any other required Notices with the Provincial/ Territorial Authorities prior to commencement of work. Provide the Departmental Representative with a copy of the filed Notice(s) prior to commencement of work

1.6 PERMITS

- .1 Obtain permits, licenses and compliance certificates at appropriate times and frequencies as required by the authorities having jurisdiction.
- .2 Post all permits, licenses and compliance certificates on work site and provide copies to the Departmental Representative.

1.7 PROJECT / SITE CONDITIONS

- .1 The following are the known hazardous substances and/or hazardous conditions at the work site which shall be considered as health or environmental hazards and shall be properly managed should they be encountered as part of the work:
 - .1 No known hazardous materials have been identified for this project however sampling for hazardous materials has not been completed.
- .2 The above lists shall not be construed as being complete and inclusive of all safety and health hazards encountered as a result of Contractor's operations during the course of work. Include above items into the hazard assessment program specified herein

1.8 MEETINGS

- .1 Prior to commencement of work attend a pre-commencement meeting conducted by the Departmental Representative. Have contractor's site superintendent and designated site health and safety supervisor in attendance. The Departmental Representative will advise of time and location.
- .2 The Contractor is responsible to conduct safety meetings as required by paragraph 1.3 above.

1.9 HEALTH and SAFETY PLAN

- .1 For the purpose of this contract, the Contractor shall perform a hazard assessment of the work site in order to acknowledge, assess and address the hazardous substances and/or

hazardous conditions including hazards known and identified in paragraph 1.7, and to develop a written site-specific Health and Safety Plan as related to these hazards. The Contractor shall be required to write the site-specific Health and Safety Plan for review by the Departmental Representative, on behalf of Public Works & Government Services Canada. The site-specific Health and Safety Plan shall include provisions for an on-going hazard assessments performed during the progress of work identifying and documenting new or potential health risks and safety hazards not previously known and identified.

- .2 The format of the site-specific Health and Safety Plan shall at a minimum for the purpose of this contract contain the following three (3) parts:

.1 Part 1: Detailed description of the project and a list of individual health risks and safety hazards identified by the contractor's detailed site specific hazard assessment(s).

- .1 List of critical construction activities to be communicated with the Departmental Representative which could pose a risk to the health and safety of the occupants, Contractor employees and to the general public.

.2 Part 2: List of specific measures to control or mitigate each hazard and risk identified in part one of the Plan. Describe the engineering controls, personnel protective equipment, safe work practices and any other applicable means to be implemented and followed when performing work related to each identified hazard or risk. Part 2 of the Plan must also include:

- .1 In the management of safety responsibility, provide the name of the competent employee(s) assigned as site safety representative(s) who is (are) to be present on site at all times during work.
- .2 A written statement, where applicable, that the Contractor has been made aware of known hazards and hazardous substances referred to under paragraph 1.7, and that the Contractor will inform all Contractor employees, sub-contractor employees and any persons affected or potentially affected by the work of this contract of the known hazards.
- .3 A written statement confirming that Contractor employees, sub-contractors and other authorized persons accessing the work site are trained and have been fully instructed in:
- a) Safe operation of tools and equipment.
 - b) Proper wearing and use of personnel protect equipment (PPE) as applicable to the purpose and activities to be conducted on site.
 - c) Safe work practices and procedures to be followed during the performance of their given work tasks or function on the work site.
 - .d) Work site conditions and minimum site safety rules provided through safety orientation sessions.
- .4 A copy of the Contractor's health and safety policy and disciplinary policy that will be followed to enforce compliance by Contractor employees and sub-

contractors with safety requirements of contract documents, applicable regulations and the Contractor's site-specific Health and Safety Plan.

.3 Part 3: Emergency Measures and Communications Procedures as follows:

- .1 Emergency Measures: On-site operating procedures, evacuation measures and emergency response to be implemented in the occurrence of an accident or incident. Procedures to be specific and relevant to identified hazards. Measures to complement and be integrated with the Facility Emergency Response Plan(s) in place at site.
 - .2 Confirmation of the location of nearest fire alarm activation box and telephone.
 - .3 A map depicting the location of the nearest emergency medical facility.
 - .4 The location of emergency equipment and supplies including but not limited to first aid kits, emergency eye wash stations, spill kits/equipment and fire extinguishers. Including confirmation that equipment and supplies have been verified/certified for use.
 - .5 The names of all persons assigned responsibility by the Contractor as a first aid attendant at the project.
 - .6 An inventory listing the common name of all controlled products (WHMIS Products) that the Contractor knows or intends to bring to the project site. List to be updated as necessary as project proceeds.
 - .7 A copy of the Contractor's accident/incident investigation policy and incident and accident report form(s) to be used by the Contractor to document any incident or accident that might occur during the course of project work.
 - .8 Communication procedures:
 - .1 List of names and telephone numbers of designated official(s), to be contacted should an incident or emergency situation occur, including the following:
 - .1 Contractor and all sub-contractors.
 - .2 Federal and Provincial departments and local emergency resources organizations, as applicable to the hazards identified and type of accident or incident which might occur, in accordance with applicable laws and regulations.
 - .2 Procedures implemented at site to communicate and share information between Contractor employees, sub-contractors, and the Contractor on work site activities, and in particular those which might endanger employees and facility occupants.
 - .3 The procedure to be followed by contract personnel to initiate emergency response by fire, police and medical personnel.
 - .4 Post a copy, including all updates, of the Health and Safety Plan in a common visible location at work site.
- .3 Provide one copy of the site-specific Health and Safety Plan to the Departmental representative prior to commencement of work on the work site. The copy provided to the Departmental Representative is for the purpose of review against both Canada Labour Code Part II and the Canada Occupational Safety and Health Regulations made under Part II of the Canada Labour Code and the contract requirements related to the known hazardous substances and/or hazardous conditions.

- .4 Provide and maintain one copy of the site specific Health and Safety Plan at the work site, in a location that is easily accessible by all Contractor employees, sub-contractor employees and any persons affected or potentially affected by the work of this nature.

1.10 MINIMUM SITE SAFETY RULES

- .1 Notwithstanding the requirement to abide by provincial health and safety regulations and where required by federal health and safety regulations, the following safety rules shall be considered minimum requirements at the work site and obeyed by all persons granted access:
 - (1) Wear PPE appropriate to function and task on site (with adequate foot, head, eye, hearing and respiratory protective devices readily available as required)
 - (2) Immediately report unsafe activities, condition, near-miss accidents, injuries and damages.
 - (3) Maintain site in tidy condition.

1.11 ACCIDENT REPORTING

- .1 Investigate and report incidents and accidents as required by Canada Labour Code Part II and Prince Edward Island Occupational Health and Safety Act, and the Regulations made pursuant to the Act.
- .2 For the purpose of this contract immediately investigate and provide a report to the Departmental Representative on incidents and accidents that involve:
 - (1) A resulting injury that may or may not require medical aid but involves lost time at work by the injured person(s).
 - (2) Exposure to toxic chemicals or substances.
 - (3) Property damage.
 - (4) Interruption to adjacent and/or integral infrastructure operations with potential loss implications.

1.12 RECORDS on SITE

- .1 Maintain on site copy of safety documentation as specified in this section and other safety related reports and documents including:
 - (a) Site Specific Health and Safety Plan.
 - (b) Emergency contact numbers.
 - (c) Hot Work Permit, if applicable.
 - (d) Safety meeting/tool box meeting minutes.
 - (e) Site inspection records.
 - (f) Employee site orientation records
 - (g) Material Safety Data Sheets and chemical inventory list.

- .2 Upon request, make available to Departmental Representative.

Part 2 Products

2.1 Not used.

Part 3 Execution

3.1 Not used.

END OF SECTION 01 35 29

Part 1 General

1.1 FIRES

- .1 Fires and burning of rubbish on site is NOT permitted.

1.2 DISPOSAL of WASTES

- .1 Do not bury rubbish and waste materials on site.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner, roofing cleaners, into waterways, storm or sanitary sewers or ditches.

1.3 DRAINAGE

- .1 Do not pump water containing suspended materials into waterways or ditches.
- .2 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities.

Part 2 Products

- 2.1 Not used.**

Part 3 Execution

- 3.1 Not used.**

END OF SECTION 01 35 43

Part 1 General

1.1 INSPECTION

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for tests, inspections or approvals by Departmental Representative.
- .3 If Contractor covers, or permits to be covered, Work that has been designated for tests, inspections or approvals before such is made, uncover such Work, at contractor's expense.
- .4 Departmental Representative may order any part of Work to be examined if work is suspected to be not in accordance with Contract Documents. If upon examination such work is not found in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found to be in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.

1.2 INDEPENDENT INSPECTION AGENCIES

- .1 Independent Inspection/Testing Agencies may be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be paid by Departmental Representative.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does NOT relax responsibilities 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 defeat and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Contractor to pay costs for retesting and re-inspection.

1.3 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
Co-operate to provide reasonable facilities for such access.

1.4 PROCEDURES

- .1 Samples of EPDM roof material samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .2 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.5 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage, whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good, other Contractor's work damaged by such removals or replacements promptly.
- .3 If, in the opinion of the Departmental Representative, it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Departmental Representative may deduct from Contract Price difference in value Work performed and that called for by Contract, amount of which shall be determined by Departmental Representative.

Part 2 Products

- 2.1 Not used.

Part 3 Execution

- 3.1 Not used.

END OF SECTION 01 45 00

Part 1 General

1.1 INSTALLATION and REMOVAL

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

1.2 WATER SUPPLY

- .1 Departmental Representative will provide continuous supply of potable water for construction use, if required.

1.3 TEMPORARY HEATING

- .1 Provide temporary heating required during construction period, if required, including attendance, maintenance and fuel.
- .2 Contractor is responsible for paying costs for maintaining temporary heat, if required during construction period.
- .3 Maintain strict supervision of operation of temporary heating equipment during life of project.
- .4 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

1.4 TEMPORARY POWER and LIGHT

- .1 Departmental Representative will provide access to electrical outlets during construction for temporary lighting and operating power tools, to a maximum supply of 240 volts and 30 amps. This must be verified by the building's facilities management.
- .2 Temporary power for electrical cranes and other lifting devices and/or equipment requiring in excess of above is responsibility of Contractor.

Part 2 Products

- 2.1 Not used.

Part 3 Execution

3.1 Not used.

END OF SECTION 01 51 00

Part 1 General

1.1 REFERENCES

Canadian Standards Association (CSA International)

- .1 CAB/CSA-Z321 latest version – Signs and Symbols for Occupational Environment.

1.2 INSTALLATION and REMOVAL

- .1 Provide temporary construction facilities in order to execute Work quickly and efficiently. controls in order to execute work expeditiously.
- .2 Remove from site all such facilities after use.

1.3 CONSTRUCTION PARKING/ACCESS

- .1 Parking will be permitted on site provided it does NOT disrupt performance of work or interfere with daily business of building.
- .2 Provide and maintain adequate access to project site.

1.4 SANITARY FACILITIES

- .1 Provide sanitary facilities for the work force during construction period, in accordance with governing regulations and ordinance.
- .2 Post notices and take such precautions as required by local health authorities. Maintain area and premises in sanitary condition.

1.5 CONSTRUCTION SIGNAGE

- .1 Provide and erect adequate signage in a location designated by Departmental Representative.
- .2 No other signs or advertisements, other than warning signs, will be permitted on site.
- .3 Signs and notices for safety and instructions shall be in both official languages. Graphic symbols shall conform to CAN/CSA- Z321 latest version.
- .4 Maintain approved signs and notices in good condition for duration of the project, and remove off site on completion of project or earlier as directed by Departmental Representative.

Part 2 Products

2.1 Not used.

Part 3 Execution

3.1 Not used.

END OF SECTION 01 52 00

Part 1 General

1.1 GENERAL

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

1.2 RELATED SECTION

- .1 Not used.

1.3 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than caused by building occupant or other Contractors.
- .2 Remove waste materials and debris from site at the end of each working day. Do NOT burn waste materials on site.
- .3 Make arrangements with and, if required, obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site metal bins or containers for collection of waste materials and debris.
- .5 Provide and use clearly marked separate bins for any recycling objects.
- .6 Dispose of recycled construction and demolition debris and waste materials in accordance with provincial regulations.
- .7 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .8 Use only cleaning materials recommended by manufacturer of roof materials for all surfaces to be cleaned, and as recommended by cleaning material manufacturer.

1.4 FINAL CLEANING

- .1 Refer to General Conditions.
- .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 area clean.
- .4 When the Work is Totally Performed, remove surplus products, tools, construction equipment from site.
- .5 Remove waste products and debris other than that caused by the Owner or other Contractors.
- .6 Remove waste materials from the site as regularly scheduled times or dispose of as directed by the Departmental Representative.
- .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.
- .9 Remove dirt and other disfigurements from the exterior surfaces.
- .10 Clean and sweep roof surfaces after Work is completed.

Part 2 Products

- 2.1 Not used.

Part 3 Execution

- 3.1 Not used.

END OF SECTION 01 74 11

Part 1 General

1.1 RELATED SECTION

- .1 Section 01 45 00 – Quality Control
- .2 Section 07 53 23 – EPDM Roof System

1.2 SUBMISSION

- .1 Prepare instructions and data using personnel experienced in maintenance and operation of described products.
- .2 Copy will be returned after final inspection, with Departmental Representative's comments.
- .3 Revise content of documents as required prior to final submittal.
- .4 Two weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, one hard copy and 3 CD versions of the final copies of operating and maintenance manuals in English.
- .5 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of the same quality and manufacture as products provided in Work.
- .6 If requested, furnish evidence as to type, source and quality of products provided.
- .7 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .8 Pay costs of transportation

1.3 FORMAT

- .1 Organize data in the form of an instruction manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.

- .4 Cover: Identify each binder with type or printed title ‘Project Record Documents’; list title of project and identify subject matter of contents.
- .5 Arrange content by systems, under Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment
- .7 Text: Manufacturer’s printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold large drawings to size of text pages

1.4 AS BUILTS

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

1.5 RECORDING ACTUAL SITE CONDITIONS

- .1 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Departmental Representative.
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
 - .1 Field changes of dimension and detail.
 - .2 Changes made by change orders.
 - .3 Details not on original Contract Drawings.
 - .4 References to related shop drawings and modifications
- .5 Specifications: legibly mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
- .6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections

1.6 MATERIALS

- .1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional Requirements: as specified in individual specifications sections

1.7 MAINTENANCE MATERIALS

- .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
- .2 Provide items of same manufacture and quality as items in Work.
- .3 Deliver to location as directed; place and store.
- .4 Receive and catalogue all items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.

1.8 STORAGE HANDLING AND PROTECTION

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components to damage from weather in weatherproof enclosures.
- .4 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

1.9 FINAL SURVEY and INSPECTION

- .1 Submit final site survey certificate, certifying that completed work is in conformance with Contract Documents.
- .2 Final Inspection: When work has been completed, request final joint inspection of work by Departmental Representative and Contractor. If work is deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection until all work is accepted by Departmental Representative.

1.10 WARRANTIES and BONDS

- .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principle.
- .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers and manufacturers, are submitted within ten days after completion of the applicable item of work.

- .4 Except for items put into use with Departmental Representative's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.
- .5 Verify that documents are in proper form, contain full information, and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time specified for submittal.

Part 2 Products

- 2.1 Not used.

Part 3 Execution

- 3.1 Not used.

END OF SECTION 01 78 11

Part 1 General

1.1 REFERENCES

- .1 Ensure that all work being carried out is in accordance with all relevant federal regulations and provincial regulations.
- .2 Canadian Construction Safety Code.

1.2 DELIVERY, STORAGE and HANDLING

- .1 Storage and Protection.
 - .1 Protect existing items designated to remain and items designated for salvage. In the event of damage to such items, immediately replace or make repairs to approval of Department Representative and at no cost to Department Representative.
 - .2 Remove and store materials to be salvaged, in a manner to prevent damage.
 - .3 Store and protect in accordance with requirements for maximum preservation of material.
 - .4 Handle salvaged materials as new materials.
- .2 Waste Management and Disposal
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 11 – Cleaning.
 - .2 Divert excess materials from landfill to site as per provincial regulations.
 - .3 Place materials defined as hazardous or toxic in designated containers.
 - .4 Label location of salvaged materials storage areas and provide barriers and security devices.
 - .5 Ensure emptied containers are sealed and stored safely.
 - .6 Source separate for recycling materials that cannot be salvaged for reuse.
 - .7 Remove materials that cannot be salvaged for reuse or recycling and dispose as per provincial regulations.

1.3 SITE CONDITIONS

.1 Site Environmental Requirements:

- .1 Ensure that selective demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
- .2 Do not dispose of waste of volatile materials including , but not limited to, mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.
 - .1 Ensure proper disposal procedures are maintained throughout the project.
- .3 Do not pump water containing suspended materials into watercourses, storms or sanitary sewers or onto adjacent properties.
- .4 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities.
- .5 Protect trees, plants and foliage on site and adjacent properties where indicated.

.2 Existing Conditions:

- .1 The demolition work must be based on the state where they were in during the site inspection, prior to submitting the bid.
- .2 A site visit by the contractor during the bidding period is recommended. No claim for additional payments shall be paid.

1.4 SCHEDULING

- .1 Employ necessary means to meet project time lines without compromising specified minimum rates of material diversion.
 - .1 Notify Department Representative in writing when unforeseen delays occur.

Part 2 Products

2.1 EQUIPMENT

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

2.2 MATERIALS

- .1 The contractor shall submit and seek approval by the Department Representative before undertaking the work, the sequence and methods of work, tools, machinery , he intends to use. Make this submission in a reasonable period of time to enable those concerned to study the proposals and to make any changes deemed necessary.

Part 3 Execution

3.1 PREPARTION

- .1 Inspect site with Department Representative and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
- .2 The schedule of the work must be coordinated with the Department Representative.
- .3 Locate and protect utilities. Preserve active utilities traversing site in operating condition.

3.2 REMOVAL of HARZARDOUS WASTE

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

3.3 REMOVAL OPERATION

- .1 Remove items as indicated in specification sections and contract drawings.
- .2 Do not disturb items designated to remain in place.
- .3 Disposal of Materials:
 - .1 Dispose of materials not designated for salvage off site, in compliance with provincial regulations.

3.4 STOCKPILING

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

3.5 REMOVAL from SITE

- .1 Remove stockpiled material as directed by Department Representative, when it interferes with operations of project.
- .2 Provide receipts issued by certified landfills and recycling centers for all materials disposed of off site.
- .3 Obtain written permission by the Department Representative prior to delivering materials.

3.6 CLEANING

- .1 Remove debris, trim surfaces and leave work site clean, upon completion of the work.
- .2 Use cleaning solutions and procedures which are not harmful to health.

END OF SECTION 02 41 23

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittals

1.2 REFERENCES

- .1 American Society for Testing and Materials International (ASTM).
 - .1 ASTM A53/A53M-02, Specification for Pipe, Steel, Black and Hot Dipped, Zinc-coated welded and Seamless.
 - .2 ASTM A935, Test Methods for Performance of Permanent Metal Railing Systems and Temporary Rails for Buildings.
- .2 Canadian Standards Association (CSA)
 - .1 CAS W59-03, Welded Steel Construction .
- .3 The Society for Protective Coatings (SSPC)
 - .1 SSPC Painting Manual – Volume 2.

1.3 SUBMITTALS

- .1 Submit WHMIS MSDS – Material Safety Data Sheets in accordance with Section 01 33 00.
- .2 Submit Shop Drawings in accordance with Section 01 33 00. Indicate profiles, elevations, details, sizes, connections, anchorage, size and type of fasteners, adhesives and accessories.

1.4 QUALITY ASSURANCE

- .1 Perform welding to CSA W59.

Part 2 Products

2.1 STEEL RAILING

- .1 Rails and Posts: Any displaced or moving of conflicting existing steel guardrail and posts will be included in contractors responsibilities, based on direction from Department Representative. Rails and post to be saved and reinstated at end of Work.

Part 3 Execution

3.1 Not Used.

END OF SECTION 05 51 16

Part 1 General

1.1 DESCRIPTION

- .1 The EPDM Roof Remediation Project – Joseph A. Ghiz Building is located at 275 Pope Road in Summerside, Prince Edward Island.
- .2 The project consists of installing a white and/or Tan EPDM membrane adhered to the Lower Roof Level:
 - .1 Apply the EPDM Adhered Roofing System in conjunction with 2 layers of 70mm (2.7”) HP-H Polyiso Insulation over the existing 2 Ply Vapor Barrier roof. The contractor is to ensure that the existing 2 Ply Vapor Barrier is dry. Where the vapor barrier has been damaged the contractor shall repair with the same materials.
 - .2 The project also consists of installing and repairing the caulking under the existing flashing for the Atrium sections located on the Upper Roof Level.

1.2 EXTENT OF WORK

- .1 Provide all labor, materials, tools, equipment, and supervision necessary to complete the installation of the EPDM Adhered Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.
- .2 The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.
- .3 The roofing contractor shall confirm all given information and advise the Departmental Representative, prior to bid, of any conflicts that will affect their cost proposal.
- .4 Any contractor who intends to submit a bid using a roofing system other than the approved manufacturer must submit for pre-qualification in writing fourteen (14) days prior to the bid date. Any contractor who fails to submit all information as requested will be subject to rejection. Bids stating "as per plans and specs" will be unacceptable.

1.3 SUBMITTALS

- .1 Prior to starting work, the roofing contractor must submit the following:
 1. Shop drawings showing layout, details of construction and identification of materials.
 2. A sample of the manufacturer's Membrane System Warranty.
 3. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system and lists foremen who have received training from the manufacturer along with the dates training was received.

4. Certification from the membrane manufacturer indicating the membrane thickness over the reinforcing scrim (top ply membrane thickness) is nominal .015-mil or thicker.
5. Certification of the manufacturer's warranty reserve.
- .2 Upon completion of the installed work, submit copies of the manufacturer's final inspection to the specifier prior to the issuance of the manufacturer's warranty.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- .1 Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with the manufacturer's name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.
- .2 Comply with the manufacturer's written instructions for proper material storage.
 1. Store Sure-Weld membrane in a dry, cool, shaded area in the original undisturbed plastic. Sure-Weld membrane that has been exposed to the elements for approximately 7 days must be prepared with Weathered Membrane Cleaner prior to hot air welding.
 2. Store curable materials (adhesives and sealants) between 15°C (60°F) and 25°C (80°F) in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 15°C minimum temperature before using.
 3. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.
- .3 Insulation must be on pallets, off the ground and tightly covered with waterproof materials.
- .4 Any materials which are found to be damaged shall be removed and replaced at the applicator's expense.

1.5 WORK SEQUENCE

- .1 Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath or wick into any completed sections of the membrane system.
- .2 Do not disrupt activities in occupied spaces.

1.6 USE OF THE PREMISES

- .1 Before beginning work, the roofing contractor must secure approval from the Departmental Representative for the following:

1. Areas permitted for personnel parking.
 2. Access to the site.
 3. Areas permitted for storage of materials and debris.
 4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials to and from the roof.
- .2 Interior stairs or elevators may not be used for removing debris or delivering materials, except as authorized by the Departmental Representative.

1.7 EXISTING CONDITIONS

- .1 If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the Departmental Representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

1.8 PRECONSTRUCTION CONFERENCE

- .1 A pre-bid meeting will be held at the job site prior to the tender closing and will be conducted by PWGSC Real Property Contracting.

1.9 TEMPORARY FACILITIES AND CONTROLS

- .1 Temporary Utilities:
1. Water, sanitary, and power for construction purposes and lighting are not available at the site and will not be made available to the roofing contractor.
 2. Provide all hoses, valves and connections for water from a source designated by the owner when made available.
 3. When available, electrical power should be extended as required from the source. Provide all trailers, connections and fused disconnects.
 4. If heating is required for the project, this shall be under the responsibility of the contractor to supply after consulting with the Departmental Representative.
- .2 Temporary, Sanitary Facilities:
- Sanitary facilities will not be available at the job site. The roofing contractor shall be responsible for the provision and maintenance of portable toilets or their equal.
- .3 Building Site:
1. The roofing contractor shall use reasonable care and responsibility to protect the building and site

against damages. The contractor shall be responsible for the correction of any damage incurred as a result of the performance of the contract.

2. The roofing contractor shall remove all debris from the job site in a timely and legally acceptable manner into a metal waste bin, so as to not detract from the aesthetics or the functions of the building.
- .4 Security:

Obey the building occupants requirements for personnel identification, inspection and other security measures.

1.10 JOB SITE PROTECTION

- .1 The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards and sheet metal (properly secured) as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.
- .2 During the roofing contractor's performance of the work, the building occupants will continue to conduct business in the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary, temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.
- .3 Do not overload any portion of the building, by either use of or placement of equipment, storage of debris, or storage of materials.
- .4 Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.
- .5 Take precautions to prevent drains from clogging during the roofing application. Remove debris at the completion of each day's work and clean drains, if required. At completion, test drains to ensure the system is free running and drains are watertight. Remove strainers and plug drains in areas where work is in progress. Install flags or other telltales on plugs. Remove plugs each night and screen drain.
- .6 Store moisture susceptible materials above ground and protect with waterproof coverings.
- .7 Remove all traces of piled bulk material and return the job site to its original condition upon completion of the work.

1.11 SAFETY

- .1 Refer to Section 01 35 29
- .2 The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, provincial and federal requirements that are safety related. **Safety shall be the responsibility of the roofing contractor.** All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers and the occurrence of the general public on or near the site.

1.12 WORKMANSHIP

- .1 Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.
- .2 All work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.
- .3 There shall be a supervisor on the job site at all times while work is in progress.

1.13 QUALITY ASSURANCE

- .1 The Sure-Weld Membrane Roofing System must achieve a UL Class C.
- .2 The membrane must be manufactured by the material supplier. Manufacturer's supplying membrane made by others are not acceptable.
- .3 Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.
- .4 The roofing system must be installed by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall be thoroughly experienced and upon request be able to provide evidence of having at least five (5) years successful experience installing single-ply roofing systems and having installed at least one (1) roofing application or several similar systems of equal or greater size within one year.
- .5 Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and an experienced superintendent on the job at all times roofing work is in progress.
- .6 There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the specifier. Any deviation from the manufacturer's installation procedures must be supported by written certification on manufacturer's letterhead and presented for the specifier's consideration.
- .7 The Sure-Weld TPO White membrane meets CRRC (Cool Roof Rating Council) for reflectance and emittance. When tested in accordance with ASTM C1549, the Sure-Weld White material has an initial solar reflectance of 0.79 and a 3-year aged reflectance of 0.70. The material has also been tested for emittance in accordance with ASTM C1371; an initial emittance of .90 and a 3-year aged emittance of 0.86 were achieved.
- .8 The Sure-Weld TPO Tan membrane meets CRRC (Cool Roof Rating Council) for reflectance and emittance. When tested in accordance with ASTM C1549, the Sure-Weld Tan material has an initial solar reflectance of 0.71. The material has also been tested for emittance in accordance with ASTM C1371; an initial emittance of 0.86 was achieved.
- .9 Upon completion of the installation, the applicator shall arrange for an inspection to be made by a technical representative of the membrane manufacturer in order to determine whether or not corrective work will be required before the warranty will be issued. Notify the building owner seventy-two (72) hours prior to the manufacturer's final inspection.

1.14 JOB CONDITIONS, CAUTIONS AND WARNINGS

Refer to Carlisle's FleeceBACK Adhered Roofing System specification for General Job Site Considerations.

- .1 Material Safety Data Sheets (MSDS) must be on location at all times during the transportation, storage and application of materials.
- .2 **Do not apply FAST Adhesive** when surface and/or ambient temperatures are **below 10°C** .
- .3 **Drums of FAST Adhesive must be a minimum of 21°C (70°F) at the time of use.** Use drum band heaters when necessary.
- .4 The addition of **FAST Adhesive Catalyst (to Part B side) is recommended** to speed up reaction time **when temperatures are below 10°C (50°F).**
- .5 The contractor must exercise caution during adhesive spraying to avoid overspray.
 - .1 Use a non-atomizing spray tip such as the Graco Spatter Tip and reduce spray pressure to 35 – 56 kg/cm² (500 – 800 psi) to increase adhesive droplet size and reduce airborne mist. Maintain hand held wind screens on-site for use as necessary.
 - .2 Extruding FAST Adhesive method may be used to eliminate overspray concerns.
- .6 When positioning membrane sheets, exercise care to locate all field splices away from low spots and out of drain sumps. All field splices should be shingled to prevent bucking of water.
- .7 When loading materials onto the roof, the EPDM Authorized Roofing Applicator must comply with the building requirements and possible disturbance to the building structure.
- .8 Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.
- .9 Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage. Provide protection, such as 19mm (3/4 inch) thick plywood, for all roof areas exposed to traffic during construction. Plywood must be smooth and free of fasteners and splinters.
- .10 The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.
- .11 New roofing shall be complete and weather tight at the end of the work day. Care must be taken to avoid wicking water through the fleece by properly sealing exposed edges of the membrane
- .12 Contaminants such as grease, fats and oils shall not be allowed to come in direct contact with the roofing membrane.

1.15 WARRANTY

- .1 Provide manufacturer's **20 year** Total System Warranty covering both labor and material with no dollar limitation.
- .2 Warranty shall also cover leaks caused by accidental punctures:
 1. 20 man-hours per year for 115-mil FleeceBACK
- .3 Pro-rated System Warranties shall not be accepted.
- .4 Evidence of the manufacturer's warranty reserve shall be included as part of the project submittals for the specifier's approval.

PART 2 PRODUCTS

2.1 GENERAL

- .1 All components of the specified roofing system shall be products for an EPDM type roof membrane system.
- .2 Unless otherwise approved by the specifier and accepted by the membrane manufacturer, all products (including adhesives, insulation, fasteners, fastening plates and edgings) must be **manufactured and supplied** by the roofing system manufacturer and covered by the warranty.

2.2 MEMBRANE

- .1 Furnish an EPDM **White and/or Tan** 115-mil reinforced TPO (Thermoplastic Polyolefin) membrane. Membrane thickness over the reinforcing scrim (top-ply thickness) shall be nominal .015-mil or thicker.
- .2 Membrane Color: White top surface with SRI (solar reflectance index) not less than 110, tested in accordance with ASTM E 1980 and Tan top surface with similar SRI.
- .3 Membrane Weathering Performance: The TPO membrane shall be formulated with OCTAGUARD XT Weathering Package to withstand 60 days of exposure at a **135°C** (275° F) temperature and a minimum of 17,000 kj/m xenon arc resistance at **27°C** (80°F) without cracking or showing signs of material failure, exceeding ASTM 6878.
- .4 White and Tan TPO Membrane Sheets are 2m (6') wide by 30.5m (100') long, and 4m (12') wide by 15m or 30.5m (50' or 100') long.

2.3 INSULATION/UNDERLAYMENT

- .1 When applicable, insulation shall be installed in multiple layers and mechanically fastened or secured with the EPDM Adhesive to the substrate in accordance with manufacturer's published specifications.

- .2 Insulation shall be HP-H as supplied by the EPDM manufacturer. Minimum NBCC R-value required is 30 for commercial buildings.

2.4 ADHESIVES, CLEANERS AND SEALANTS

All products shall be furnished by the EPDM installer and specifically formulated for the intended purpose.

- .1 Membrane and Insulation Adhesive:
- .2 EPDM Bonding Adhesive: A high-strength, synthetic rubber adhesive used for bonding membrane to various surfaces. The adhesive is applied to both the membrane and the substrate at a coverage rate of approximately 5.56m² per 3.8 liters (60 square feet per US gallon) per finished surface (includes coverage on both surfaces).
- .3 Cut-Edge Sealant: A white or clear colored sealant used to seal cut edges of reinforced membrane. A coverage rate of approximately 68 – 84 linear meters (225 - 275 linear feet) per squeeze bottle can be achieved when a 3mm (1/8") diameter bead is applied.
- .4 Water Cut-Off Mastic: Used as a mastic to prevent moisture migration at drains, compression terminations and beneath conventional metal edging [at a coverage rate of approximately 3m (10') per tube or 30.5m (100') per US gallon].
- .5 Universal Single-Ply Sealant: A 100% solids, solvent free, voc free, one part polyether sealant that provides a weather tight seal to a variety of building materials. It is white in color and is used for general caulking such as above termination bars and metal counter flashings and at scuppers.
- .6 Thermoplastic One-Part Pourable Sealer: A one-part, moisture curing, elastomeric polyether sealant used to fill Molded Pourable Sealant Pockets. Packaged in 4, 2-liter foil pouches inside a reusable plastic bucket. 1 pouch will fill 2 Molded Pourable Sealant Pockets.
- .7 Weathered Membrane Cleaner: Used to prepare membrane for heat welding that has been exposed to the elements or to remove general construction dirt at an approximate coverage rate of 37m² (400 square feet) per 3.8 liters (1 US gallon) for one surface.
- .8 Primer: A solvent-based primer used to prepare the surface of EPDM Membrane prior to application of Pressure-Sensitive Coverstrip.
- .9 Grip Primer: a low VOC contact adhesive used to prime the 2 ply vapor barrier for the application of the first layer of polyiso insulation

2.5 METAL EDGING AND MEMBRANE TERMINATIONS

- 1 Refer to detailed drawings
- 2 Termination Bar: a 25mm (1") wide extruded aluminum bar pre-punched 150mm (6") on center; incorporates a sealant ledge to support Lap Sealant and provide increased stability for membrane terminations.

PART 3 EXECUTION

3.1 GENERAL

- .1 Comply with the manufacturer's published instructions for the installation of the membrane roofing system including proper substrate preparation, job site considerations and weather restrictions.
- .2 Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

a. VAPOUR RETARDERS

- .1 General:
 - .1 The existing Vapor Barrier & drywall is to remain. The contractor shall indicate to the Departmental Representative any damaged Vapor and/or dry wall substrate.
 - .2 The contractor is to remove & replace any damaged dry wall & replace with new to match existing.
- .3 The contractor shall then install a new 2 ply peel and stick patch to match existing vapour barrier characteristics of the existing 2 ply vapor barrier.
- .4 The two ply vapor barrier shall then be glaze coated at a rate of 11kg (25lbs) per square & let cool prior to the installation of Grip Primer and/or any Adhesive.
- .5 The insulation is to be adhered to the vapor retarder with Adhesive, the vapor retarder must be compatible and shall be fully adhered to the substrate. The vapor barrier shall be primed with the primer prior to the installation of the first layer of insulation.

3.3 INSULATION PLACEMENT

- .1 The insulation is to be adhered to the vapor retarder with the EPDM Adhesive, the vapor retarder must be compatible and shall be fully adhered to the substrate. The vapor barrier shall be primed with primer prior to the installation of the first layer of insulation. The second layer is adhered ensuring that all insulation joints are staggered, utilizing the adhesive with a 100mm (4") O.C. bead pattern.

3.4 MEMBRANE PLACEMENT AND BONDING

- .1 Position and unroll successive sheets and align to provide a minimum 50mm (2 inch) overlap (use pre-marked overlap line) along the selvage edge. At end laps (along the width of the sheet), membrane shall be butted together which will be overlaid with 150mm (6 inch) wide membrane and hot air welded on all edges.
- .2 The EPDM membrane shall be fully adhered to an acceptable substrate with an adhesive. The adhesive is extruded in a bead pattern at 100mm (4") O.C. to the substrate only and the membrane is rolled into the wet adhesive once it has foamed up and reached string/gel time (approximately 2 minutes). Roll the membrane

with a weighted 45kg – 68kg (100 - 150 pounds) steel roller to set the membrane into the adhesive.

- .3 Position adjoining sheets to allow a minimum overlap of 50mm (2 inches) to provide a minimum 38mm (1-1/2”) hot air weld.
- .4 Continue to install adjoining membrane sheets in the same manner, overlapping edges a minimum of 50mm (2 inches) and complete the bonding procedures as stated previously.

3.5 MEMBRANE HOT AIR WELDING PROCEDURES

1. General

The EPDM membrane has a selvage edge (the backing is discontinued) along the length of the sheet for membrane splicing. Selvage edges are not provided along the width of the membrane; adjoining membrane sheets must be butted together and overlaid with 150mm (6 inch) wide reinforced membrane heat welded on all sides.

.2 Hot Air Welding Procedures

1. Hot air weld the EPDM membrane using an Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's specifications. At all splice intersections, roll the seam with a silicone roller to ensure a continuous hot air welded seam.

When using 115-mil thick or thicker membrane, all splice intersections shall be overlaid with T-Joint covers or non-reinforced flashing

2. Probe all seams once the hot air welds have thoroughly cooled (approximately 30 minutes).
3. Repair all seam deficiencies the same day they are discovered.
4. Apply Cut Edge Sealant on all cut edges of reinforced membrane (where the scrim reinforcement is exposed) after seam probing is complete. Cut Edge Sealant is not required on vertical splices.

3.6 FLASHING

- .1 Flashing of parapets, curbs, expansion joints and other parts of the roof must be performed using EPDM membrane or a reinforced membrane. A non-reinforced membrane can be used for flashing pipe penetrations, Sealant Pockets, and scuppers, as well as inside and outside corners, when the use of pre-molded accessories is not feasible.
- .2 Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

3.7 DAILY SEAL

- .1 On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed to temporarily close the membrane to prevent water infiltration.
- .2 Use an adhesive or other similar material in accordance with the manufacturer's requirements.

3.09 CLEAN UP

- .1 Perform daily clean up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a manner acceptable to the building owner.
- .2 Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

END OF SECTION 07 53 23