

# **Replace Building Envelope – Summerside SAR**

## **ANNEX “A” – Composite Decking**

### **1 General SUMMERSIDE SAR STATION ONLY**

#### **1.1 REFERENCES**

- .1 ASTM International (ASTM):
  - .1 ASTM D1761: Mechanical Fasteners in Wood
  - .2 ASTM D7031: Standard Guide for Evaluating Mechanical and Physical Properties of Wood-Plastic Composite Products, ASTM International.

#### **1.2 SUBMITTALS**

- .1 .1 Submit in accordance with Conditions related to “2.5 Method and Source of Acceptance”, 2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements.
- .2 Product Data:
  - .1 Manufacturer's data sheets on each product to be used, including:
    - .1 Preparation instructions and recommendations.
    - .2 Storage and handling requirements and recommendations.
    - .3 Installation methods.
- .3 Shop Drawings:
  - .1 Provide plans and details which include layout, spacing, and sizes of decking and railings.
- .4 Samples:
  - .1 Selection Samples: For each finish product specified, one (1) complete set of color chips representing manufacturer's full range of available colors and patterns.
  - .2 Verification Samples: For each finish product specified, one (1) sample, representing actual product color, size, and finish.

#### **1.3 QUALITY ASSURANCE**

- .1 Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
- .2 Installer Qualifications: Minimum 2 year experience installing similar products.
- .3 Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  - .1 Finish areas designated by Departmental Representative.
  - .2 Do not proceed with remaining work until workmanship is approved by Departmental Representative.
  - .3 Refinish mock-up area as required to produce acceptable work.

#### **1.4 PRE-INSTALLATION MEETINGS**

- .1 Convene minimum two (2) weeks prior to starting work of this section.

#### **1.5 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, handle, store and protect materials in accordance with “3.2 DFO Obligations” and all related contract requirements.
- .2 Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- .3 Store products on a flat and level surface. Adjust support blocks accordingly.
- .4 Support bundles on supplied dunnage.
- .5 When stacking bundles, supports should start approximately 8 inches from each end and be spaced approximately 2 feet on center. Supports shall line up vertically/ perpendicular to the decking product.
- .6 Do not stack decking more than 14 bundles.
- .7 Keep material covered using the provided bundle cover until time of installation.

- .8 Handle materials to avoid damage.
- .9 Do not use any products or materials with defects.

## 1.6 PROJECT CONDITIONS

- .1 Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

## 1.7 SEQUENCING

- .1 Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

## 1.8 WARRANTY

- .1 Provide manufactures warranty against rot, decay, splitting, checking, splintering, fungal damage, and termite damage for a period of 25 years for a residential installation and 10 years for a commercial installation. In addition provide the Trex Fade and Stain Warranty against food staining and fading beyond 5 Delta E (CIE units) for a period of 25 years for a residential installation and 10 years for a commercial installation.

## 2 Products

### 2.1 BASIS OF DESIGN

- .1 Acceptable Manufacturer:
  - .1 Trex Company, Inc.
    - .1 Address: 160 Exeter Dr.; Winchester, VA 22603-8605;
    - .2 Toll Free Tel: 800-BUY-TREX;
    - .3 Tel: 540-542-6300;
    - .4 Fax: 540-542-6890;
    - .5 Email: marketing@trex.com;
    - .6 Website: <https://www.trex.com>
  - .2 Requests for substitutions will be considered in accordance with provisions of "Substitution of Material" under "2.2 Other Contractor Responsibilities" and contract requirements.

### 2.2 DESIGN / PERFORMANCE REQUIREMENTS

- .1 Structural Performance:
  - .1 Deck: Uniform Load - 100lbf/sq.ft.
  - .2 Tread of Stairs: Concentrated Load: 750 lbf/sq.ft., and 1/8 inch maximum deflection with a concentrated load of 300 lbf on area of 4 sq. in.

### 2.3 COMPOSITE DECKING

- .1 Wood-Plastic Composite Lumber:
  - .1 Product: Trex Transcend Decking Boards as manufactured by Trex Railing and Decking.
  - .2 Material Description: Composite Decking consisting of recycled Linear Low Density Polyethylene (LLDPE) and recycled wood. The product is extruded into shapes and sizes as follows:
    - .1 Width: 1 inch x 5.5 inches (25 mm x 140 mm).
    - .2 Lengths - 12 feet (3658 mm) 16 feet (4877 mm), and 20 feet (6096 mm); no joints on installed product.
    - .3 Color - To be specified by Departmental Representative from Manufacturer's standard list of colors.
  - .3 Physical and Mechanical Properties as follows:
    - .1 Flame Spread, ASTM E 84: 85.
    - .2 Thermal Expansion, ASTM D 1037: 1.9 x 10<sup>-5</sup> inch/inch/degree F.

- .3 Moisture Absorption, ASTM D 1037: Less than 1%.
  - .4 Screw Withdrawal, ASTM D1761: 588 lbs/in.
  - .5 Fungus Resistance, ASTM D1413: Rating - no decay.
- .2 Accessory Hardware:
    - .1 Fasteners:
      - .1 Manufacturer's universal hidden fasteners.

### **3 Execution**

#### **3.1 EXAMINATION**

- .1 Do not begin installation until substrates have been properly prepared and inspected by the RP PA; additional requirements in accordance with provisions of "2.5 Methods and Source of Acceptance" and contract requirements.
- .2 If substrate preparation is the responsibility of another installer, notify the RP PA of unsatisfactory preparation before proceeding; however this does not alleviate the contractor's responsibility for all contract requirements and works including sub-contractors, testing, inspection, and required exterior company service personnel to fulfill contract requirements.

#### **3.2 PREPARATION**

- .1 Clean surfaces thoroughly prior to installation.
- .2 Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

#### **3.3 INSTALLATION**

- .1 Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
- .2 Cut, drill, and rout using carbide tipped blades.
- .3 Do not use composite wood material for structural applications

#### **3.4 CLEANING**

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements.

#### **3.5 PROTECTION**

- .1 Protect installed products until completion of project.
- .2 Touch-up, repair or replace damaged products before Substantial Completion.

**END OF SECTION**

# **Replace Building Envelope – Summerside SAR**

## **ANNEX “B” – Waterproof Pedestrian Traffic Coating**

### **1 General**

#### **1.1 SECTION INCLUDES**

- .1 Traffic membrane, consisting of welded seam PVC roofing membrane, over the following surfaces as indicated on the Drawings, drawing details, contract documents, and contract requirements:
  - .1 Balconies and roof decks.
  - .2 Adjacent areas that require tie in or are affected by such works.

#### **1.2 RELATED SECTIONS**

- .1 ANNEX “F” – Sheet Metal Flashing and Trim.

#### **1.3 REFERENCES**

- .1 ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
- .2 CAN/ULC-S107 - Standard Methods of Fire Tests of Roof Coverings.
- .3 CCMC - Technical Guide for PVC Sheet Waterproofing (Exposed to Light Pedestrian Traffic).
- .4 CGSB 37.54-95 - Roofing and Waterproofing Membrane, Sheet Applied, Flexible, Polyvinyl Chloride.
- .5 CGSB 37-GP-55M - Application of Sheet Applied Flexible Polyvinyl Chloride Roofing Membrane.

#### **1.4 SUBMITTALS**

- .1 Submit shop drawings in accordance with Conditions related to “2.5 Method and Source of Acceptance”, 2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements.
- .2 Product Data:
  - .1 Manufacturer's data sheets on each product to be used, including:
    - .1 Preparation instructions and recommendations.
    - .2 Storage and handling requirements and recommendations.
    - .3 Installation methods.
- .3 Shop Drawings:
  - .1 Installation and seaming plan, showing joints, termination details, and interface with other materials.
- .4 Verification Samples:
  - .1 Two 8-1/2 by 11 inch (210 by 250 mm) pieces showing finish, pattern, color, and backing with label.
- .5 Manufacturer's Certificates:
  - .1 Certify products meet or exceed specified requirements.
- .6 Material Safety Data Sheets:
  - .1 Submit MSDS for inclusion in Operation and Maintenance Manual.

#### **1.5 QUALITY ASSURANCE**

- .1 Manufacturer Qualifications:
  - .1 Company specializing in providing products of the type specified in this section, with minimum of 10 years documented experience with products in use.
- .2 Installer Qualifications:
  - .1 Company specializing in installing products of the type specified with trained certified installer and currently authorized by manufacturer.
- .3 Pre-installation Meeting:
  - .1 Meeting to discuss waterproofing practices and precautions applicable to this project.

- .1 Convene minimum of seven (7) days prior to start of installation.
- .2 Require the attendance of:
  - .1 Contractor's field superintendent.
  - .2 Installation foreman.
  - .3 Other trades affected by this work.
  - .4 RP PA.

## 1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, handle, store and protect materials in accordance with "3.2 DFO Obligations" and all related contract requirements.
- .2 Deliver and store products in manufacturer's original containers, dry and undamaged, with seals and labels intact until ready for installation.
  - .1 Label uncured materials, both sheets and canned goods, with date of manufacturer and shelf life.
  - .2 Do not use creased or damaged sheets or defects.
  - .3 Do not use products after end of shelf life.
- .3 Store and handle materials to prevent damage.
  - .1 Place materials on pallets.
  - .2 Prevent creasing of rolled materials.
  - .3 Do not use polyethylene to cover stored materials (canvas tarpaulins are acceptable).
  - .4 Keep containers closed, except when removing materials from them.
- .3 Keep materials at temperature between 40 degrees F (4.4 degrees C) and 80 degrees F (26.6 degrees C); if adhesives are exposed to lower temperature, verify usability with manufacturer before using.

## 1.7 PROJECT CONDITIONS

- .1 Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

## 1.8 WARRANTY

- .1 Provide manufacturer's ten (10) year warranty for membrane leaks due to a manufacturing defect, covering materials, and/or repair and replacement labor

## 2 Products

### 2.1 BASIS OF DESIGN

- .1 Manufacturer:
  - .1 Provide products of Duradek/Durarail Canada Ltd.,
    - .1 Address: 8288 129th Street, Surrey, BC V3W 0A6 Canada.
    - .2 Toll Free Tel: 866-591-5594.
    - .3 Tel: 604-591-5594.
    - .4 Fax: 604-591-3100.
    - .5 Email: duradek@duradek.com;
    - .6 Website: www.duradek.com.
- .2 No substitutes.

### 2.2 MATERIALS

- .1 Traffic Membrane: Duradek Ultra; polyester reinforced PVC membrane with ultra-violet resistance, for fully-adhered installation with heat-welded seams and perimeter attachment.
  - .1 Sheet Width: 72 inches (1828.8mm).
  - .2 Overall Sheet Thickness: 0.060 inch (1.5 mm).
  - .3 PVC Film Thickness: 0.050 inch (1.3 mm).
  - .4 Weight: 55 oz/sq yd (1864 g/sq m).

- .5 Color: to be determined by Departmental Representative.
- .6 Slip Resistance: Tested to meet ADA requirements.
- .7 Flammability (CAN/ULC-S107): Class C, when installed over combustible plywood substrate.
- .8 Comply with CAN/CGSB-37.54.
- .9 National Building Code of Canada Compliance:
  - .1 Comply with National Building Code of Canada 2015, and CCMC Technical Guide for PVC Sheet Waterproofing (Exposed to Light Pedestrian Traffic), as evidenced by current Evaluation Report prepared by National Research Council, Canada Construction Materials Centre (CCMC).
- .2 Miscellaneous Accessories:
  - .1 Provide PVC Coated Metal, Scuppers, Overflow Drains, Roof Drains, and Trims as required for proper installation.
  - .2 Provide Surface Conditioners, Adhesives, Sealants, Fillers, and Cleaners as required for proper installation.
  - .3 Provide mechanical fastening devices color coordinated to membrane color.
- .3 Adjacent Flashings:
  - .1 Coordinate with flashing specified in ANNEX "F" – Sheet Metal Flashing and Trim.

### **3 Execution**

#### **3.1 EXAMINATION**

- .1 Do not begin installation until substrates have been properly prepared and inspected by the RP PA; additional requirements in accordance with provisions of "2.5 Methods and Source of Acceptance" and contract requirements.
- .2 Verify that deck is:
  - .1 Secure, well supported, solid, and in accordance with local code structural requirements.
  - .2 Properly sloped to drains, valleys, or eaves.
  - .3 Clean and smooth, free of depressions, waves, and projections.
  - .4 Dry and free of ice and snow.
- .3 If substrate preparation is the responsibility of another installer, notify the RP PA of unsatisfactory preparation before proceeding; however this does not alleviate the contractor's responsibility for all contract requirements and works including sub-contractors, testing, inspection, and required exterior company service personnel to fulfill contract requirements.

#### **3.2 PREPARATION**

- .1 Clean surfaces thoroughly prior to installation.
- .2 Coordinate timing of installation to avoid construction traffic over completed traffic membrane surfaces.
- .3 Wood Deck: Fill joints, knot holes, voids, and low areas with filler and sand smooth.
- .4 Wood Deck: Cover with cementitious board meeting requirements of Class A approved application. Fill joints, knot holes, voids, and low areas with filler and sand smooth.
- .5 Concrete Deck: Fill surface imperfections and variations with levelling compound. Test for and remove surface contaminants.
- .6 Coordinate installation with installation of drains and similar accessories.
- .7 Install flashings and accessories. Seal around all penetrations, drains, and edges.
- .8 Membrane shall not come in contact with bituminous materials or polystyrene insulations. Contact manufacturer for additional information.
- .9 Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

#### **3.3 INSTALLATION**

- .1 Install in accordance with manufacturer's instructions and applicable codes.
- .2 Install in accordance with CGSB-37-GP-55M.
- .3 Do not install when temperature is below 25 degrees F (minus 3.8 degrees C) or above 98

degrees F (36.6 degrees C). Do not install when winds are gusting over 30 mph (48.3 kph).

- .4 Do not dilute primers, adhesives, coatings, or sealants.
- .5 Install membrane with minimum number of seams possible. Overlap seams 3/4 inch (19 mm), to shed water; heat-weld all seams.
- .6 Adhere membrane to substrate.
- .7 Mechanically fasten all perimeter edges and penetrations.

**3.4 CLEANING**

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements.

**3.5 PROTECTION**

- .1 Protect installed products until completion of project.
- .2 Avoid construction traffic over completed traffic membrane surfaces.
- .3 Touch-up, repair or replace damaged products before Substantial Completion.

**END OF SECTION**

# **Replace Building Envelope – Summerside SAR**

## **ANNEX “C” – Board Insulation**

### **1 General**

#### **1.1 RELATED REQUIREMENTS**

1. ANNEX “O” – Rough Carpentry

#### **1.2 REFERENCES**

- .1 American Society for Testing and Materials International, (ASTM).
  - .1 ASTM E96-00e1, Test Methods for Water Vapor Transmission of Materials.
  - .2 ASTM C208-95(R2001), Specification for Cellulosic Fiber Insulating Board.
  - .3 ASTM C165 (2012), Standard Test Method for Measuring Compressive Properties of Thermal Insulations.
- .2 Underwriters Laboratories of Canada (ULC).
  - .1 CAN/ULC-S102 (2010), Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
  - .2 CAN/ULC-S702 (2012), Standard for Thermal Insulation Mineral Fibre for Buildings.

#### **1.3 QUALITY ASSURANCE**

- .1 Pre-Installation Meetings: attend pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

#### **1.4 WASTE MANAGEMENT AND DISPOSAL**

- .1 Collect and separate for disposal waste material generated by this Section; will be in accordance with the specification/SOW, “6.1 Applicable Documents”, and all contract requirements.
- .2 A clean worksite is mandatory at all times. Failure to maintain the site in a clean, safe condition shall result in the RP PA to halt site works until such failures are rectified as RP PA requirements; no additional claims will be entertained by the RP PA/Client and no adjustments to the work schedule.

### **2 Products**

#### **2.1 EXTERIOR WALL**

- .1 Semi-rigid mineral fibre boards CAN/ULC S702 R-4 per 25mm thickness, to thickness indicated.
- .2 Acceptable material:
  - .1 Rockwool Comfort Board 80; no substitutes.

#### **2.2 ADHESIVE**

- .1 Synthetic rubber base insulated Type A adhesive having a moisture permeability of 1.71 ng/Pa.s.m<sup>2</sup>.
- .2 Insulation clips: impale type, perforated 50 x 50 mm cold rolled carbon steel 0.8 mm thick, adhesive back, spindle of 2.5 mm diameter annealed steel, length to suit insulation, 25 mm diameter washers of self-locking type.

#### **2.3 ACCESSORIES**

- .1 Mechanical fasteners in accordance with insulation manufacturer's written recommendations.
  - .1 Foundation insulation board: 40mm concrete nails with 19mm washers.
- .2 Insulation clips: in accordance with curtain wall manufacturer's written recommendations.
- .3 Foundation sealing compound: Bitumen sealing compound.
- .4 Adhesive: All-purpose construction adhesive in accordance with insulation manufacturer's written recommendations.



### **3 Execution**

#### **3.1 EXAMINATION**

- .1 Examine substrates and immediately inform Departmental Representative in writing of defects. Do not begin installation until substrates have been properly prepared and inspected by the RP PA; additional requirements in accordance with provisions of "2.5 Methods and Source of Acceptance" and contract requirements.
- .2 Prior to commencement of work ensure: substrates are firm, straight, smooth, dry, free of snow, ice or frost, and clean of dust and debris.

#### **3.2 MANUFACTURER'S INSTRUCTIONS**

- .1 Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

#### **3.3 WORKMANSHIP**

- .1 Install insulation after building substrate materials are dry; will be inspected and approved by the RP PA.
- .2 Install insulation to maintain continuity of thermal protection to building elements and spaces.
- .3 Fit insulation tight around electrical boxes, electrical components/wiring cables, plumbing and heating pipes, ducts, exhausts, mechanical components, screens, around exterior doors, windows, any building components, and other protrusions. Will provide flashings for all exterior building penetrations.
- .4 Cut and trim insulation neatly to fit spaces. Butt joints tightly, offset vertical joints. Use only insulation boards free from chipped or broken edges. Use largest possible dimensions to reduce number of joints.
- .5 Offset both vertical and horizontal joints in multiple layer applications.
- .6 Do not enclose insulation until it has been inspected and approved by the RP PA; additional requirements in accordance with provisions of "2.5 Methods and Source of Acceptance" and contract requirements.

#### **3.4 CLEANING**

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements.

#### **3.5 PROTECTION**

- .1 Protect installed products until completion of project.
- .2 Touch-up, repair or replace damaged products before Substantial Completion.
- .3 Deliver, handle, store and protect materials in accordance with "3.2 DFO Obligations" and all related contract requirements.

**END OF SECTION**

# **Replace Building Envelope – Summerside SAR**

## **ANNEX “D” – Air & Weather Barriers**

### **1 General**

#### **1.1 SECTION INCLUDES**

- .1 Materials and installation methods providing primary air / weather barrier materials and assemblies including tie into vapor barriers and all other terminations.
- .2 Air/weather barrier materials to provide continuous seal between components of building envelope and building penetrations including all electrical boxes, electrical components/wiring cables, plumbing and heating pipes, ducts, exhausts, mechanical components, screens, around exterior doors, windows, any building components, and other protrusions. Will provide flashings for all exterior building penetrations.
- .3 Air/weather barrier self-adhered water-resistive membrane (Self-Adhering): vapour permeable, water-resistive, self- adhering sheet membrane complete with a reinforced polyolefin film such to provide continuous seal including Support Columns/Posts, between all dissimilar materials including areas to prevent wicking and rot, and areas as identified within contract requirements; it is the responsibility of the contractor to verify such areas with the RP PA.

#### **1.2 RELATED REQUIREMENTS**

- .1 ANNEX “H” – Joint Sealants.

#### **1.3 SUBMITTALS**

- .1 At least 4 weeks prior to commencing installation of air/weather barrier membrane submit sample of membrane for RP PA review and approval.
- .2 Submit in accordance with Conditions related to “2.5 Method and Source of Acceptance”, 2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements.

#### **1.4 QUALITY ASSURANCE**

- .1 Perform Work in accordance with National Air Barrier Association - Professional Contractor Quality Assurance Program and requirements for materials.
- .2 Manufacturer's Representative to visit the site during the installation of the preparation for and installation of the first two (2) mock-ups. RP PA to review mock-up and provide a written report confirming the installation is in accordance with Manufacturer's requirements.

#### **1.5 QUALITY ASSURANCE MOCK-UP**

- .1 Fabricate a mock-up that will demonstrate the various aspects of the air barrier / window connection / cladding installation and detailing.
- .2 The installation is to reflect the intent to have a full tie in of the air barrier to the entire perimeter of all wall openings, including windows, doors and louvers, providing a tight air and water seal and the relationship of the cladding installation to the openings.
- .3 The mock-up is to be reviewed by the Contractor, Membrane Installer, Window Installer and RP PA prior to the Contractor moving forward with the installation of all other windows.
- .4 Allow 48 hours to convene the review on site.
- .5 Mock-up to be approved prior to fabrication of additional openings.
- .6 Openings installed prior to review and approval will be removed at the Contractors expense and rebuilt.
- .7 The approved mock-up may remain on site as part of the work and it will form the standard of acceptance for the remainder of the work.

#### **1.6 QUALIFICATIONS**

- .1 Applicator: Company specializing in performing work of this section with minimum 5 years documented experience with installation of air/weather barrier systems.

## 1.7 PRE- INSTALLATION MEETINGS

- .1 Attend a pre installation meeting to verify project requirements, manufacturers installation instructions, tie ins & quality expectations.

## 1.8 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, handle, store and protect materials in accordance with “3.2 DFO Obligations” and all related contract requirements.
- .2 Deliver, store and handle materials in accordance with Common Product Requirements under “2.2 Other Contractor Responsibilities” and all related contract requirements.
- .2 Deliver, store and handle materials in accordance with manufacturer(s) written instructions.
- .3 Do not use any products or materials with defects.

## 1.9 SEQUENCING

- .1 Sequence work to permit installation of materials in conjunction with related materials and seals.

## 1.10 GUARANTEES

- .1 The product manufacturer shall issue a written and signed document, issued in the name of the Owner, certifying the product will meet all the physical characteristics published by the manufacturer, for a period of five (5) years, starting from the date of Substantial Completion.

## 1.11 WASTE MANAGEMENT AND DISPOSAL

- .1 Collect and separate for disposal waste material generated by this Section; will be in accordance with the specification/SOW, “6.1 Applicable Documents”, and all contract requirements.
- .2 Place in appropriate on-site bins in accordance with Waste Management Plan.
- .3 A clean worksite is mandatory at all times. Failure to maintain the site in a clean, safe condition shall result in the RP PA to halt site works until such failures are rectified as RP PA requirements; no additional claims will be entertained by the RP PA/Client and no adjustments to the work schedule.

## 2 Products

### 2.1 SHEET MATERIALS

- .1 Basis of Design:
  - .1 Henry Blueskin VP160 self-adhered water-resistive membrane.
- .2 Air/weather barrier membrane (Self-Adhering): vapour permeable, water-resistive, self-adhering sheet membrane complete with a reinforced polyolefin film, and having the following physical properties:
  - .1 Thickness: 0.6 mm;
  - .2 Air leakage (ASTM E2357) Pass;
  - .3 Vapor permeance: 1650 ng/Pa.m<sup>2</sup>.s (29 perms) to ASTM E96;
  - .4 Low temperature application: -7°C.
  - .5 Dry Tensile Strength (ASTM E84):
    - .1 182N MD.
    - .2 129N CD.
  - .6 Acceptable Materials:
    - .1 Henry Blueskin VP160.
    - .2 Soprema - Sopraseal Stick VP.
- .3 Through-wall flashing membrane (Self-Adhering): SBS modified bitumen, self-adhering sheet membrane complete with a cross-laminated polyethylene film, fully compatible with air/weather membrane, having the following physical properties:
  - .1 Thickness: 1 mm (40 mils) min.
  - .2 Film Thickness: 0.225mm (9.0 mils)
  - .3 Elongation: 200% to ASTM D412;
  - .4 Tensile Strength (film): 34500 kPa (5000 psi) ASTN D882
  - .5 Acceptable Materials:

- .1 Blueskin TWF, Through-wall self-adhered flashing.
- .2 Soprema – VP.

### **3 Execution**

#### **3.1 EXAMINATION**

- .1 Verify that surfaces and conditions are ready to accept the Work of this section.
- .2 Ensure all surfaces are clean, dry, sound, smooth, continuous and comply with air barrier manufacturer's requirements.
- .3 Report any unsatisfactory conditions to the RP PA in writing.
- .4 Do not start work until deficiencies have been corrected and approved by the RP PA. Commencement of Work implies acceptance of conditions.

#### **3.2 PREPARATION**

- .1 Remove loose or foreign matter which might impair adhesion of materials.
- .2 Ensure all substrates are clean of oil or excess dust; all masonry joints struck flush, and open joints filled; and all concrete surfaces free of large voids, spalled areas or sharp protrusions.
- .3 Ensure all substrates are free of surface moisture prior to application of self-adhesive membrane and primer.
- .4 Ensure metal closures are free of sharp edges and burrs.
- .5 Prime substrate surfaces to receive adhesive in accordance with manufacturer's instructions.

#### **3.3 INSTALLATION**

- .1 Apply primer to all surfaces to receive membrane in a manner and at a rate recommended by manufacturer. Primed surfaces not covered by membrane during the same working day must be re-primed.
- .2 Apply membrane starting at bottom of wall, lapping both ends and sides in accordance with manufacturer's instructions.
- .3 Seal end of membrane to substrate at end of days work and around any projections through membrane using only sealant recommended by membrane manufacturer.
- .4 Carry membrane around into all wall openings and seal at frames or other building components. Reinforce all corners with adhesive applied membrane using heated trowel to ensure joint tightness.
- .5 Coordinate with installation of roofing weather barrier to ensure continuity of air/weather barrier membrane at roof/wall intersections.
- .6 Where work of other trades is incomplete leave sufficient membrane to complete work of this Section to ensure continuity and integrity of air/weather barrier.
- .7 Repair damage to membrane at masonry connectors and ties and elsewhere as necessary.

#### **3.4 CLEANING**

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements.

#### **3.5 PROTECTION OF WORK**

- .1 Do not permit adjacent work to damage work of this section.
- .2 Ensure finished Work is protected from climatic conditions.
- .3 Touch-up, repair or replace damaged products before Substantial Completion.

### **END OF SECTION**

# Replace Building Envelope – Souris SAR

## ANNEX “E” – Wood Siding

### **1 General**

#### **1.1 RELATED REQUIREMENTS**

- .1 ANNEX “D” – Air & Weather Barriers.
- .2 ANNEX “F” – Sheet Metal Flashing and Trim.
- .3 ANNEX “H” – Joint Sealants.
- .4 ANNEX “O” – Rough Carpentry

#### **1.2 REFERENCES**

- .1 Canadian General Standards Board (CGSB).
  - .1 CAN/CGSB-11.6-M87, Installation of Exterior Hardboard Cladding.
- .2 Canadian Standards Association (CSA International).
  - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.

#### **1.3 SUBMITTALS**

- .1 Make submittals in accordance with conditions related to “2.5 Method and Source of Acceptance”, 2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements.
- .2 Product Data:
  - .1 Submit manufactures product data sheets.
- .3 Samples:
  - .1 Submit duplicate 600mm long size and profile specified.
- .4 Manufacturer's Instructions:
  - .1 \*Updated “Installation, Storage, and Wall Construction Details” are included in the SOW attached Applicable Documents.

#### **1.4 QUALITY ASSURANCE**

- .1 \*Kick Off Meeting: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

#### **1.5 QUALITY ASSURANCE MOCK-UP**

- .1 Fabricate a mock-up that will demonstrate the various aspects of the air barrier / window connection / cladding installation and detailing; clarify with RP PA.
- .2 The installation is to reflect the intent to have a full tie in of the air barrier to the entire perimeter of all wall openings, including windows, doors and louvers, providing a tight air and water seal and the relationship of the cladding installation to the openings.
- .3 The mock-up is to be reviewed by the Contractor, Membrane Installer, Window Installer, and RP PA prior to the Contractor moving forward with the installation of all other windows.
- .4 Allow 48 hours to convene the review on site.
- .5 Mock-up to be approved by the RP PA prior to fabrication of additional openings.
- .6 Openings installed prior to review and approval will be removed at the Contractors expense and rebuilt.
- .7 The approved mock-up may remain on site as part of the work and it will form the standard of acceptance for the remainder of the work.

#### **1.6 WARRANTY**

- .1 \*PT (Pressure Treatment) Cape Cod Wolman warranty against insect and fungal decay.
- .2 15 year finish warranty.
  - .1 \*First 5 years on materials and labour.
  - .2 \*The remaining 10 years on materials only.

#### **1.7 WASTE MANAGEMENT AND DISPOSAL**

- .1 Collect and separate for disposal waste material generated by this Section; will be in accordance with the specification/SOW, "6.1 Applicable Documents", and all contract requirements.
- .2 Place in appropriate on-site bins in accordance with Waste Management Plan.
- .3 A clean worksite is mandatory at all times. Failure to maintain the site in a clean, safe condition shall result in the RP PA to halt site works until such failures are rectified as RP PA requirements; no additional claims will be entertained by the RP PA/Client and no adjustments to the work schedule.
- .4 Do not dispose of unused caulking materials into the sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

## 2 Products

### 2.1 MATERIALS

- .1 Siding:
  - .1 \*Cape Cod Siding; no substitutes.
  - .2 \*Cape Cod siding profile shall be 6 (5-3/8) inch width Rabetted Bevel.
  - .3 \*Cape Cod siding color shall be Heritage Grey.
  - .4 \*Cape Cod siding shall be factory pressure treated prior to factory staining/painting; the contractor shall show manufacturer/factory sheet to confirm such factory pressure treatment prior to factory staining/painting and delivered materials shall show this on the bundling/packaging with corresponding delivery bills.
  - .5 \*Pressure Treated Softwood, No 1 Select or Better Grade; confirm with RP PA for clarification and approval in case of any conflict of contract requirements.
  - .6 Factory finished, saw texture, graded free from loose knots, splits and other structural defects, to ensure a 100% usable product.
  - .7 Wood to be kiln dried and steam conditioned to an average relative equilibrium moisture content of 12 to 14%.
- .2 Thermoplastic acrylic latex emulsion, factory coated under controlled environment conditions by a modified vacuum coat method, one prime coat and one finish coat, applied to all board surfaces, minimum 0.15mm dry film thickness.
- .3 Stain: Two coat, 100% acrylic latex stain. Each coat applied at 6 mils film thickness. Stain applied under factory controlled conditions. All six sides of board completely covered.
- .4 Color:
  - .1 One color from manufacturer's standard colors. To be determined by RP PA.
- .5 Color matched stainless steel nails:
  - .1 Manufacturers recommendation for siding and molding application, color to match siding.
- .6 Touch up stain:
  - .1 To match siding and molding color, sufficient to complete all necessary touch ups.
- .7 Touch up Paint:
  - .1 Thermoplastic acrylic latex emulsion, same type and colour as siding, as recommended by manufacturer.
- .8 Trim: PVC trim as indicated on drawings.
- .9 Acceptable Material:
  - .1 Cape Cod "Traditional Line" - Rabetted bevel; no substitutions..

## 3 Execution

### 3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets. \*Also refer to the "Installation, Storage, and Wall Construction Details" that are included in the SOW attached Applicable Documents.

### 3.2 PREPARATION

- .1 Verify that substrate surfaces wall openings are ready to receive work and immediately inform RP PA in

writing of defects. Do not begin installation until substrates surface wall openings have been properly prepared and inspected by the RP PA; additional requirements in accordance with provisions of "2.5 Methods and Source of Acceptance" and contract requirements.

- .2 Install metal flashings continuous at internal and external corners, siding bottom ledges, sills, and over window and other openings. Lap ends and seal with sealant. Secure in position tight to wall sheathing.
- .3 Install siding starter strips.
- .4 Apply sealant around window, door, and other opening frames.
- .5 Install siding and accessories to manufacturer's written instructions. Use largest possible dimensions to reduce number of joints.
- .6 Install siding for natural watershed.
- .7 Seal end cuts and other pressure-treated wood exposed during installation with pressure-treatment sealer.
- .8 Install siding in straight aligned lengths, set level with plumb ends and corners.
- .9 Cut butt joints as per manufactures instructions. Apply sealant to cut ends to minimize weather entry; will minimize number of butt end joints.
- .10 Achieve siding joints no less than 914.4mm/3 feet apart in adjoining boards and distribute evenly over wall surface.
- .11 Fasten siding securely to wood battens; ensure minimum 32mm nail penetration into solid substrate.
- .12 Face nail 25mm from bottom of siding board directly into solid substrate and studs wood strapping. Drive nail head just flush with siding surface; do not indent or penetrate painted coating.

### 3.3 CLEANING

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements.

### 3.4 PROTECTION

- .1 Protect installed products until completion of project.
- .2 Touch-up, repair or replace damaged products before Substantial Completion.
- .3 Deliver, handle, store and protect materials in accordance with "3.2 DFO Obligations" and all related contract requirements.

\* = revised from original document.

**END OF SECTION**

# **Replace Building Envelope – Summerside SAR**

## **ANNEX “F” – Sheet Metal Flashing and Trim**

### **1 General**

#### **1.1 REFERENCES**

- .1 The Aluminum Association Inc. (AA)
  - .1 Aluminum Sheet Metal Work in Building Construction-2000.
  - .2 AA DAF45-97, Designation System for Aluminum Finishes.
- .2 Canadian Roofing Contractors Association (CRCA)
  - .1 Roofing Specifications Manual 1997.
- .3 Canadian Standards Association (CSA International)
  - .1 CSA-A440-00/A440.1-00 - A440-00, Windows / Special Publication A440.1-00, User Selection Guide to CSA Standard A440-00, Windows.
  - .2 CSA B111-1974(R1998), Wire Nails, Spikes and Staples.

#### **1.2 WASTE MANAGEMENT AND DISPOSAL**

- .1 Collect and separate for disposal waste material generated by this Section; will be in accordance with the specification/SOW, “6.1 Applicable Documents”, and all contract requirements.
- .2 Place in appropriate on-site bins in accordance with Waste Management Plan.
- .3 A clean worksite is mandatory at all times. Failure to maintain the site in a clean, safe condition shall result in the RP PA to halt site works until such failures are rectified as RP PA requirements; no additional claims will be entertained by the RP PA/Client and no adjustments to the work schedule.

### **2 Products**

#### **2.1 SHEET METAL MATERIALS**

- .1 Prepainted Zinc coated steel sheet: 20ga and 24 ga. thickness, commercial quality to ASTM A653/A653M, with Z275 designation zinc coating.

#### **2.2 PREFINISHED STEEL SHEET**

- .1 Prefinished steel with factory applied polyvinylidene fluoride.
  - .1 Class F1S.
  - .2 Color selected by RP PA from manufacturer's standard range.
  - .3 Specular gloss: 30 units +/- in accordance with ASTM D523.
  - .4 Coating thickness: not less than 22 micrometers.
  - .5 Resistance to accelerated weathering for chalk rating of 8, color fade 5 units or less and erosion rate less than 20 % to ASTM D822 as follows:
    - .1 Outdoor exposure period 2500 hours.
    - .2 Humidity resistance exposure period 5000 hours.

#### **2.3 ACCESSORIES**

- .1 Isolation coating: alkali resistant bituminous paint.
- .2 Plastic cement: to CAN/CGSB 37.5.
- .3 Underlay for metal flashing: as per contract requirements and documents; RP PA has final approval.
- .4 Sealants: to CAN/CGSB 19.13, one component.  
Acceptable Material:
  - .1 Tremco A Spectrum 2"
  - .2 Pecora 895 NST.
- .5 Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness same as sheet metal being secured.
- .6 Fasteners: of same material as sheet metal, to CSA B111, ring thread flat head roofing nails of



- length and thickness suitable for metal flashing application.
- .7 Washers: of same material as sheet metal, 1 mm thick with rubber or neoprene packings.
- .8 Prefabricated flashing at pipes penetrating roofs: purpose-made, neoprene or spun aluminum to CRCA Specification FL/532, minimum 300mm above top of roof membrane.
- .9 Touch-up paint: as recommended by prefinished material manufacturer.

## 2.4 FABRICATION

- .1 Fabricate metal flashings and other sheet metal work in accordance with applicable CRCA 'FL' series details.
  - .1 Brake form to profiles indicated and required to suit parapet configurations.
  - .2 Form pieces in 2400 mm maximum lengths. Make allowance for expansion at joints.
  - .3 Hem exposed edges on underside 12 mm. Miter and seal corners with sealant.
  - .4 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
  - .5 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

## 2.5 METAL FLASHINGS

- .1 Form flashings, copings and fascias to profiles indicated of 26 ga thick galvanized steel.
- .2 Provide and fit flashings tight around electrical boxes, electrical components/wiring cables, plumbing and heating pipes, ducts, exhausts, mechanical components, screens, around exterior doors, windows, any building components, and other protrusions; will provide flashings for all exterior building penetrations.

## 2.6 PANS

- .1 Form pans to receive roofing plastic from 20 ga thick steel aluminum sheet metal with minimum 75 mm upstand above finished roof and 100 mm continuous flanges with no open corners. Solder joints. Make pans minimum 50 mm wider than member passing through roof membrane.

## 2.7 EAVES TROUGHS AND DOWNPIPES

- .1 Form eaves troughs and downpipes from 20 ga sheet metal.
- .2 Sizes and profiles as indicated, minimum 100 mm x 75mm.
- .3 Provide goosenecks, outlets, strainer baskets and all necessary fastenings.

## 2.8 SPLASHPADS

- .1 Precast concrete, purpose-made. Provide one at each downspout.
  - .1 Acceptable Material:
    - .1 Campbell's Concrete Model No. R4-001.

## 3 Execution

### 3.1 INSTALLATION

- .1 Install sheet metal work as detailed.
- .2 Use concealed fastenings except where approved before installation.
- .3 Provide underlay under sheet metal. Secure in place and lap joints 100 mm.
- .4 Counter flash bituminous flashings at intersections of roof with vertical surfaces and curbs. Flash joints using S-lock forming tight fit over hook strips, as detailed.
- .5 Lock end joints and caulk with sealant.
- .6 Install surface mounted reglets true and level, and caulk top of reglet with sealant.
- .7 Insert metal flashing into reglets to form weather tight junction.
- .8 Turn top edge of flashing into recessed reglet or mortar joint minimum of 25 mm. Lead wedge flashing securely into joint.
- .9 Caulk flashing at reglet with sealant.
- .10 Install pans, where shown and around items projecting through roof membrane.

### 3.2 EAVES TROUGHS AND DOWNPIPES

- .1 Install eaves troughs and secure to building at 750 mm on center with eaves trough spikes

through spacer ferrules. Slope eaves troughs to downpipes as indicated. Solder joints watertight.

- .2 Install downpipes and provide goosenecks back to wall. Secure downpipes to wall with straps at 1800 mm on center; minimum two straps per downpipe.
- .3 Install splash pads as indicated at base of downpipes.
- .4

**3.3 CLEANING**

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements.

**3.4 PROTECTION**

- .1 Protect installed products until completion of project.
- .2 Touch-up, repair or replace damaged products before Substantial Completion.
- .5 Deliver, handle, store and protect materials in accordance with "3.2 DFO Obligations" and all related contract requirements.

**END OF SECTION**

# **Replace Building Envelope – Summerside SAR**

## **ANNEX “G” – Manufactured Gutters and Downspouts**

### **1 General**

#### **1.1 RELATED SECTIONS**

- .1 ANNEX “F” – Sheet Metal Flashing and Trim.

#### **1.2 REFERENCES**

- .1 The Aluminum Association Inc. (AA)
  - .1 Aluminum Sheet Metal Work in Building Construction.
  - .2 AA DAF45, Designation System for Aluminum Finishes.
- .2 American Society for Testing and Materials (ASTM International)
  - .1 ASTM A653/A653M, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .2 ASTM A792/A792M, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.

#### **1.3 SUBMITTALS**

- .1 Submit shop drawings in accordance with conditions related to “2.5 Method and Source of Acceptance”, 2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements.
- .2 Manufacturer's Technical Data Guides and application procedures.
- .3 Samples:
  - .1 Submit duplicate 50 x 50 mm samples of each type of sheet metal material, colour and finish.
- .4 Clearly indicate bending, folding, jointing, fastening installation details.
- .5 Material Safety Data Sheets:
  - .1 Submit MSDS for inclusion in Operation and Maintenance Manual.

#### **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with “3.2 DFO Obligations” and all related contract requirements.
- .2 Deliver, store and handle materials in accordance with manufacturer(s) written instructions.
- .3 Store products off ground and under cover in a dry, well ventilated enclosure.
- .4 Stack pre formed material in manner to prevent twisting, bending and rubbing.
- .5 Provide protection for galvanized and pre coated surfaces.
- .6 Prevent contact of dissimilar metals during storage. Protect from acids, flux, and other corrosive materials and elements.
- .7 Do not use any products or materials with defects.

#### **1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Collect and separate for disposal waste material generated by this Section; will be in accordance with the specification/SOW, “6.1 Applicable Documents”, and all contract requirements.
- .2 A clean worksite is mandatory at all times. Failure to maintain the site in a clean, safe condition shall result in the RP PA to halt site works until such failures are rectified as RP PA requirements; no additional claims will be entertained by the RP PA/Client and no adjustments to the work schedule.

### **2 Products**

#### **2.1 MATERIALS**

- .1 Sheet aluminum 0.64 mm thick. Color as selected by RP PA.

- .2 Trough size: 125 mm wide.
- .3 Trough Supports: continuous aluminum with a perforated aluminum cover that covers the complete trough to prevent debris from getting stuck in the trough and downpipe.
- .4 Downpipes: 0.64 mm thick aluminum.
- .5 Downpipe straps: 0.72 mm thick aluminum.
- .6 Elbows and tees: aluminum same as trough.

## **2.2 FABRICATION**

- .1 Fabricate sheet aluminum work in accordance with Aluminum Association Aluminum Sheet Metal Work in Building Construction.
- .2 Fabricate eavestrough in continuous length up to a maximum length of 12 metres; all eavestrough within 12 metres will be seamless to avoid joints.
- .3 Form eavestrough to an Ogee profile, 125 mm wide and a 305 mm girth.

## **3 Execution**

### **3.1 INSTALLATION**

- .1 Install trough supports/debris catchers to provide a continuous slope to drain all water from the trough.
- .2 Cut opening in the trough to receive the downpipes.
- .3 Install the trough and snap in to the supports (no exposed screws or nails permitted). Install elbows and tees as required. Provide for expansion joints to prevent warping where required.
- .4 Install aluminum downpipes to a distance of 1.5 metres from the grade. Install aluminum straps 1200 mm o.c designed to match the pipe profile and fasten to building with aluminum or stainless steel screws.
- .5 Install sewer type downpiping from the aluminum downpiping to a point 300 mm above the grade. Install aluminum straps designed to suit the pipe profile and fasten to the wall with aluminum or stainless steel screws.
- .6 Install sealant as required to ensure all joints are watertight.
- .7 When work is completed, provide a water test to ensure there are no leaks and that all the water runs from the trough.

### **3.2 CLEANING**

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements.

### **3.3 PROTECTION**

- .1 Protect installed products until completion of project.
- .2 Replace damaged products before Substantial Completion.

**END OF SECTION**

# **Replace Building Envelope – Summerside SAR**

## **ANNEX “H” – Joint Sealants**

### **1 General**

#### **1.1 RELATED REQUIREMENTS**

- .1 ANNEX “F” – Sheet Metal Flashing and Trim.

#### **1.2 REFERENCES**

- .1 American Society for Testing and Materials International, (ASTM)
  - .1 ASTM C 834 - Standard Specification for Latex Sealants.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).

#### **1.3 SUBMITTALS**

- .1 Submit product data in accordance with conditions related to “2.5 Method and Source of Acceptance”, 2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements.
  - .1 Caulking Compound.
  - .2 Primers.
  - .3 Sealing compound, each type, including compatibility when different sealants are in contact with each other.
  - .4 Installation instructions, surface preparation and product limitations.
- .2 Manufacturer's Technical Data Guides and application procedures.
- .3 Submit cured samples illustrating colors selected.
- .4 Submit laboratory tests or data validating product compliance with performance criteria specified. Include SWRI validation certificate where required.
- .5 Upon completion of the project the sealant applicator must submit copies of the Manufacturer's Weather seal and the Warranty Applicator's Workmanship Warranty.
- .6 Before proceeding with work or ordering of material submit the following to the RP PA for review and acceptance:
  - .1 Manufacturer's product data for sealants to be used.
  - .2 Manufacturer's recommended installation procedures.
- .7 Material Safety Data Sheets:
  - .1 Submit MSDS for inclusion in Operation and Maintenance Manual.

#### **1.4 QUALITY ASSURANCE/MOCK-UP**

- .1 Construct mock-up for RP PA review and approval.
- .2 Manufacturer Qualifications: Company regularly engaged in manufacturing and marketing of products specified in this section.
- .3 Installer Qualifications: Qualified to perform work specified by reason of experience or training provided by the product manufacturer.
- .4 Mock-ups: Include a minimum of 3m of sealant to show compatibility with substrate, proper adhesion to substrate and chosen color.
  - .1 Apply mock-up with specified joint filler types and with other components noted. Installer must provide both primed and un-primed mock up to assess whether a primer is required for the project.
  - .2 Locate where directed by RP PA.
  - .3 Mock-up may remain as part of the work if acceptable to RP PA.
  - .4 Allow 48 hours for inspection of mock-up by RP PA before proceeding with sealant work.
  - .5 When accepted, mock-up will demonstrate minimum standard of quality required for this Work.

- .6 Adhesion pull tests: the number of adhesion pull tests is to be determined by the manufacturer's weather seal warranty. Adhesion pull tests are to be conducted by the contractor in the presence of the RP PA. The sealant installer is responsible for repairing areas where adhesion pull tests are conducted.

## 1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, handle, store and protect materials in accordance with "3.2 DFO Obligations" and all related contract requirements.
- .2 Deliver products in original factory packaging bearing identification of product, manufacturer, and batch number. Provide Material Safety Data Sheets (MSDS) for each product.
- .3 Store products in location protected from freezing, damage, construction activity, precipitation and direct sunlight in strict accordance with manufacturer's recommendations.
- .4 Condition products to approximately 16 to 21 degrees C, for use in accordance with manufacturer's recommendations.
- .5 Handle all product with appropriate precautions and care as stated on Material Safety Data Sheet (MSDS).

## 1.6 PROJECT CONDITIONS

- .1 Do not use products under conditions of precipitation or freezing weather. Use appropriate measures for protection and supplementary heating to ensure proper curing conditions in accordance with manufacturer's recommendations if application during inclement weather occurs.
- .2 Ensure substrate is dry.
- .3 Protect adjacent work from contamination due to mixing, handling and application.
- .4 Joint-Width Conditions:
  - .1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
- .5 Joint-Substrate Conditions:
  - .1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

## 1.7 ENVIRONMENTAL REQUIREMENTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of Material Safety Data Sheets (MSDS) acceptable to Labour Canada.

## 1.8 WARRANTY

- .1 Provide manufacturer's five (5) year standard material warranty.
- .2 Include coverage for replacement of sealant materials which fail to achieve water tight seal, exhibit loss of adhesion or cohesion, or do not cure.
- .3 Warranty Exclusions: Failure resulting from concrete shrinkage, structural cracks or defects, faulty construction, faulty design, faulty materials (other than sealant), misuse of structure, settlement or accident, fire or other casualty, or physical damage.

## 1.9 WASTE MANAGEMENT AND DISPOSAL

- .1 Collect and separate for disposal waste material generated by this Section; will be in accordance with the specification/SOW, "6.1 Applicable Documents", and all contract requirements.
- .2 Place in appropriate on-site bins in accordance with Waste Management Plan.
- .3 A clean worksite is mandatory at all times. Failure to maintain the site in a clean, safe condition shall result in the RP PA to halt site works until such failures are rectified as RP PA requirements; no additional claims will be entertained by the RP PA/Client and no adjustments to the work schedule.
- .4 Handle and dispose of hazardous materials in accordance with Federal, Provincial, and Municipal regulations; in case of discrepancies the most stringent will apply.

## 2 Products

## 2.1 MANUFACTURERS

- .1 Acceptable material:
  - .1 BASF Building Systems.
  - .2 Pecora Corporation.
  - .3 Tremco Sealant and Waterproofing.
  - .4 Dow Corning.
- .2 Provide all joint materials of the same type form a single manufacturer.

## 2.2 MATERIALS

- .1 Single component mildew resistant silicone sealant plus/minus 25% movement capability; ASTM C 920, Type S, Grade NS, Class 25, Use NT, G and A.
  - .1 Acceptable Materials:
    - .1 Pecora 898 by Pecora Corporation.
    - .2 Tremsil 200 by Tremco Sealant & Waterproofing.
    - .3 Dow Corning 786.

## 2.3 COLOR

- .1 Sealant Colors: Selected by RP PA.
  - .1 Manufacturer's standard color range.
  - .2 Custom color matching submittal of job site substrate samples.

## 3 Execution

### 3.1 PROTECTION

- .1 Protect installed Work of other trades from staining or contamination.

### 3.2 EXAMINATION

- .1 Inspect all areas involved in work to establish extent of work, access and need for protection of surrounding construction.
- .2 Conduct pre-application inspection of site verification with the RP PA.
- .3 Occupied areas: where high VOC materials are utilized, investigate occupants to determine the measures to be taken to accommodate them.

### 3.3 PREPARATION

- .1 Remove loose materials and foreign matter which could impair adhesion of the sealant.
- .2 Clean joint and saw cuts by grinding, sandblasting or wire brushing to expose a sound surface free of contamination and laitance.
- .3 Ensure structurally sound surfaces are dry, clean, free of dirt, moisture, loose particles, oil, grease, asphalt, tar, paint, wax, rust, waterproofing, curing and parting compounds, membrane materials and other foreign matter.
- .4 Where the possibility of sealants staining adjacent areas or materials exist, mask joints prior to application.
  - 1. Do not remove masking tape before joints have been tooled and initial cure of joint filler has taken place.
  - 2. Work stained due to failure of proper masking precautions will not be accepted.

### 3.4 INSTALLATION:

- .1 Priming:
  - .1 Prime all surfaces to receive sealant with recommended primer unless the mockup proves otherwise.
- .2 Back-Up Material:
  - .1 Install appropriate size backer rod, larger than joint where necessary according to manufacturer's recommendations.
  - .2 Install polyethylene joint filler in joints wider than 1/4 inch (6mm) to back-up material per manufacturer's recommendations.
- .3 Bond Breaker:

- .1 Install bond-breaker strip in joint to be sealed on top of back-up material to prevent adhesion of sealant to back-up material; install per manufacturer's recommendations.
- .4 Sealant:
  - .1 Prepare sealants that require mixing; follow manufacturer's recommended procedures, mixing thoroughly.
  - .2 Mix only as much material as can be applied within manufacturer's recommended procedures, mixing thoroughly.
  - .3 Apply materials in accordance with manufacturer's recommendations; take care to produce beads of proper width and depth, tool as recommended by manufacturer and immediately remove surplus sealant.
  - .4 Apply materials only within manufacturer's specified application life period. Discard sealant after application life is expired or if prescribed application period has elapsed.

**3.5 CLEANING**

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements
- .2 Remove uncured sealant with Reducer 990, xylene, toluene or MEK. Remove cured sealant by razor, scraping or mechanically.
- .3 Remove all debris related to application of sealants from job site in accordance with all applicable regulations for hazardous waste disposal.

**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**



# **Replace Building Envelope – Summerside SAR**

## **ANNEX “J” – Sectional Doors**

### **1 General**

#### **1.1 RELATED REQUIREMENTS**

- .1 ANNEX “H” – Joint Sealants.

#### **1.2 REFERENCES**

- .1 The Aluminum Association Inc. (AA).
  - .1 Aluminum Association Designation System for Aluminum Finishes-DAF 45-03.
- .2 American Society for Testing and Materials International, (ASTM).
  - .1 ASTM A1008/A1008M-02e1, Standard Specification for Steel, Sheet, Cold- Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low- Alloy with Improved Formability.
  - .2 ASTM D523-99(R1999), Test Method for Specular Gloss.
- .3 Canadian General Standards Board (CGSB).
  - .1 CAN/CGSB-1.105-M91, Quick-Drying Primer.
  - .2 CAN/CGSB-1.213-95, Etch Primer (Pretreatment Coating) for Steel and Aluminum.
  - .3 CGSB 1.181-99, Coating, Zinc-Rich, Organic, Ready Mixed.
- .4 Canadian Standards Association (CSA International).
  - .1 CSA G164-M92 (R1998), Hot Dip Galvanizing of Irregularly Shaped Articles.

#### **1.3 SYSTEM DESCRIPTION**

- .1 Design Requirements.
  - .1 Design exterior door assembly to withstand wind load of 1.55 kPa (32 psf) with a maximum horizontal deflection of 1/55 of opening width.
  - .2 Replacement doors for existing building.

#### **1.4 SUBMITTALS**

- .1 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and data sheets in accordance with conditions related to “2.5 Method and Source of Acceptance”, 2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements.
- .2 Shop Drawings
  - .1 Submit shop drawings in accordance with conditions related to “2.5 Method and Source of Acceptance”, 2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements.
  - .2 Indicate sizes, service rating, types, materials, operating mechanisms, glazing locations and details, hardware and accessories, required clearances and electrical connections.
- .3 Manufacturer's Instructions:
  - .1 Submit complete manufacturer's installation instructions.

#### **1.5 CLOSEOUT SUBMITTALS**

- .1 Provide operation and maintenance data for overhead door hardware for incorporation into manual specified in “Closeout Submittals” under “2.5 Method and Source of Acceptance” and conditions related to 2.6 Reporting Requirements”, “3.6 Special Requirements”, and contract requirements.

#### **1.6 QUALITY ASSURANCE**

- .1 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements,

- manufacturer's installation instructions and manufacturer's warranty requirements.
- .2 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .3 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .4 Pre-Installation Meetings: attend pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

## 1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Collect and separate for disposal waste material generated by this Section; will be in accordance with the specification/SOW, "6.1 Applicable Documents", and all contract requirements.
- .2 A clean worksite is mandatory at all times. Failure to maintain the site in a clean, safe condition shall result in the RP PA to halt site works until such failures are rectified as RP PA requirements; no additional claims will be entertained by the RP PA/Client and no adjustments to the work schedule.

## 2 Products

### 2.1 MATERIALS

- .1 Aluminum sheet: powdered-coated paint finish.
- .2 Aluminum extrusions: Aluminum Association alloy AA6063-T5.
- .3 Insulation: to meet design requirements.
- .4 Cable: multi-strand galvanized steel aircraft cable.

### 2.2 DOORS

- .1 76mm thick insulated tongue and groove sections with minimum requirements specified herein.  
Acceptable Material:
  - .1 Basis of Design: Richard Wilcox - T300 MR, 76mm R25.
  - .2 Garaga - G 3000, 44mm R16

### 2.3 STEEL SKINS

- .1 Steel and aluminum faced skins with polyurethane core sandwich type construction, thermal break and to incorporate the use of three continuous replaceable factory installed extruded seals. Sections shall have a minimum thermal insulating value of RSI 4.32.

### 2.4 EXTERIOR SKINS

- .1 Structural quality hot-dipped galvanized steel, 0.41 mm minimum embossing, factory applied baked on polyester paint finish, shall have non-repeating random stucco texture and Multi-Ribbed profile.

### 2.5 INTERIOR SKINS

- .1 Structural quality hot-dipped galvanized steel, 0.41 mm minimum, baked-on acrylic paint finish, non-repeating random stucco texture and rib pattern.

### 2.6 END CAPS

- .1 Ends of each door section shall be capped with 1.6 mm hot dipped galvanized steel full height end caps. Doors width 4953 mm and over shall all have double end caps.

### 2.7 INSULATION

- .1 Cavity shall be filled on continuous process, formed-in-place, CFC and HCFC free rigid polyurethane core, interior and exterior skins shall feature thermal break.

### 2.8 REINFORCEMENTS

- .1 Provide 0.9 mm minimum, continuous reinforcing strip, within core of door sections, for all hardware, accessories and mounting locations. Reinforcing strip must be of adequate width to enable the attachment of all fasteners and screws to penetrate both door interior skin and reinforcing strip. Fasteners or screws secured only to the door skin will not be acceptable.

## 2.9 WEATHER STRIPPING

- .1 Doors shall be equipped with a heavy duty, factory installed continuous top seal to seal against header, continuous replaceable seals between sections and vinyl bulb shaped astragal on the bottom edge of the bottom section. Dual Durometer vinyl jamb weather seal bolted to the continuous adjustable mounting angle for easy replacement.

## 2.10 GLAZING

- .1 Provide 864 x 406mm, clear thermal glass shown on the architectural drawings.

## 2.11 DOOR FINISH

- .1 Interior and exterior finish shall be door manufacturer's standard white colour.

## 2.12 TRUSSES

- .1 If required, provide adequate number of galvanized steel linear type reinforcing trusses to meet the wind loading.

## 2.13 HARDWARE

- .1 Acceptable material:
  - .1 Linear Hardware System as manufactured by Richard-Wilcox Canada. Doors shall be equipped with double end roller brackets and long stem rollers.
- .2 Finish:
  - .1 Door tracks and track mounting hardware and torsion assembly mounting brackets shall be hot-dip galvanized.
- .3 Track:
  - .1 2.7 mm (12ga), thick commercial galvanized track, formed track 80 mm overall outside dimension. Vertical track sloped for weather tight closing.
- .4 Track Angle:
  - .1 Continuous adjustable track angle, bolted type, field adjustable to ensure weather tight seal and serviceability, fabricated from 2.4 mm (13ga) commercially galvanized steel, designed to provide continuous support to the vertical track. Combination angle and clip mounting not acceptable.
- .5 Hinges
  - .1 Linear type, fabricated from 2.75 mm (12ga) thick galvanized steel with embossments designed to resist higher load and to provide greater stability and improved performance. Doors width 4953 mm and over shall have double end hinges featuring full width bushing for both the hinge pivot and roller carries to allow for ease installation and eliminating any possibility of misalignment of the hinges.
- .6 Track Hangers:
  - .1 Minimum 32 x 32 mm steel angles roll formed from 2.0 mm commercially galvanized steel.
- .7 Weather Stripping:
  - .1 Doors shall be equipped with a heavy duty, factory installed continuous top seal to seal against header, continuous low temperature astragal retained in an aluminum retainer on the bottom edge of the door. Dual Durometer vinyl jamb weather seal bolted to the continuous adjustable mounting angle for easy replacement.
- .8 Rollers:
  - .1 Steel rollers 73 mm diameter, with ten (10), 8 mm diameter ball bearings, 11mm diameter roller axles and both inner and outer ball races of hardened steel. Length of roller stem as required.
- .9 Roller Brackets:
  - .1 Fabricated from 2.7 mm (12 ga) galvanized steel.
- .10 Shaft and Counter Balance Springs:
  - .1 Helically wound torsion springs manufactured from oil tempered spring wire stress relieved, minimum 10,000 cycles. Aluminum die cast grooved drums and flexible galvanized aircraft cables, 7 x 19 construction, mounted on minimum 25 mm CRS solid steel shaft, keyed full length, rolling on flange bearings.
- .11 BUMPER SPRINGS:

- .1 To be installed at the end of each horizontal track to prevent door over travel.
- .12 Track Guards:
  - .1 Continuous 4.7 mm, thick x 1524 mm, high (3/16" x 5'-0") chamfered at top at 45 degrees, painted safety yellow finish.
- .13 Safety Beam Photo Eye Sensors:
  - .1 Will be in accordance with overhead door manufacturer specifications.
  - .2 Install as per manufacturer specifications.
- .14 Quantities:
  - .1 Doors quantity, size and the lift type as shown on door schedule and/or architectural drawings.

## 2.14 OPERATORS

- .1 Cable fail safe device.
  - .1 Able to stop door immediately if cable breaks on door free fall. Braking capacity 500 kg.

## 2.15 ELECTRICAL OPERATOR

- .1 Provide Jack shaft type 3/4 horsepower electric operators for door, having sufficient power to operate the door at an approximate speed of 200 mm per second.
- .2 Jack Shaft Operator: Manaras Opera industrial duty logic control type operator with on board radio receiver, model "OPERA-H" to NEMA 1, shall be equipped with an adjustable friction clutch, time delay on reverse, solenoid brake integral enclosure containing the controls and floor level disconnect and emergency manual chain hoist assembly with electrical interlock, motor as scheduled below:
  - .1 Provide one push button station "OPEN/CLOSE/STOP" to NEMA 1, for inside wall mounting near the door jamb on the operator side.
  - .2 Provide and install a Reversing Safety Edge along the bottom edge of door to reverse on contact with an object as supplied by Service Door Industries. Hose type pneumatic safety edges will not be accepted. Power to the safety edge shall be supplied by a reelite.
- .3 Power supply and fused disconnect near the opening on the operator side by electrical divisions. Wiring from the fused disconnect to the operator and to the controls by the door Contractor.
- .4 Provide all side latches with an electrical interlock switch to prevent use of the electric operator when the door is locked.

## 3 Execution

### 3.1 FABRICATION

- .1 Fabricate the work true to dimensions detailed and square, and to reviewed shop drawings, free from distortion and defects detrimental to the appearance and performance.
- .2 Ensure that Site dimensions are taken prior to the fabrication of the doors.
- .3 Door shall be 25 mm higher than finished opening height and extend 25 mm beyond jamb on either side of finished opening.
- .4 Use shop and field connections complying with CAN/CSA S16.1-M.
- .5 Accurately fit joints and intersecting members with adequate fastenings.

### 3.2 EXAMINATION

- .1 Prior to commencement of work of this Section, thoroughly examine location where door (s) and all other related components are to be installed. To ensure a satisfactory installation, the door installer must inspect the opening to ensure it is square and true, and that the floor is level to ensure proper seal at the floor. See 2.0 Requirements.
- .2 Report in writing, to the RP PA, any condition adversely affecting this work.
- .3 Proceed with work only when conditions are satisfactory for the installation.

### 3.3 INSTALLATION

- .1 Installation shall be by door manufacturer or by authorized manufacture's representative for the region, as specified herein.

- .2 Install doors, tracks and operating equipment complete with necessary hardware, weather-stripping, anchors, hangers, brackets and accessories, in accordance to manufacturer's printed instructions.
- .3 Assemble and erect work plumbs, true, square, straight, level and accurate as per Drawings and reviewed shop drawings.
- .4 Isolate metals where necessary to prevent corrosion due to contact with dissimilar metals and between metals, masonry and concrete. Use bituminous paint or butyl tape or as recommended by the door manufacturer.
- .5 Supply written instructions, drawings, and where necessary provide supervision for the installation of items to be built in by work of other Sections.
- .6 Steel member's etc. including jamb extensions and spring pads, by as per structural drawings. All other mounting brackets, angles etc., required for the proper installation of work of this Section, shall be the responsibility of the door manufacturer.
- .7 Complete installation must be to the satisfaction of the RP PA. Any and all aspects of installation adversely affecting appearance and/ or performance of such installation shall be deemed unacceptable and shall be fully replaced at no additional cost to the Owner.
- .8 Doors:
  - .1 Install sectional door in strict accordance with final reviewed shop drawings, manufacturer's instructions and as specified herein.
  - .2 Fit, align and adjust overhead door assemblies, level and plumb, to ensure smooth operation and to provide correct closure to the satisfaction of the RP PA.
  - .3 Ensure that complete installation includes tracks, operating equipment, necessary hardware, weather stripping, anchors, hangers, brackets and any other accessories deemed necessary. Include any other items, not specified herein, but is required for a complete installation.
- .9 Hardware:
  - .1 Install all necessary hardware, jamb and head mold strips, anchors, inserts, hangers and equipment supports in accordance with final reviewed shop drawings, manufacturer's instructions and as specified herein.
  - .2 Mount counterbalancing mechanism with brackets at each end of shaft and at maximum 2438 mm o/c. in between.
  - .3 Fasten vertical track assembly to opening frame at maximum 508 mm o/c. vertically. Install additional track anchors where deemed necessary by the RP PA.
  - .4 Support the horizontal track to transmit the door dead and operating loads to the building structure. Install sufficient supports, anchors, fasteners etc. so that the track assembly is rigid and free from undue movement as required by the door manufacturer and to the satisfaction of the RP PA. Install additional track anchors where deemed necessary by the RP PA.
  - .5 Provide bumper springs at the end of each track of manually operated doors.
  - .6 Ensure weather-stripping properly fastened and it forms a continuous weather-tight seal at perimeter.

**3.4 ADJUSTMENT AND DEMONSTRATION**

- .1 Lubrication:
  - .1 Upon completion of installation of doors and operating equipment, lubricate moving parts before operation.
  - .2 Grease sprockets, bearings, cables, link chains and guides. Lubricant shall be as recommended by the manufacturer.
- .2 Demonstration:
  - .1 Test the door operation and adjust it for smooth operation, free from warp, twist or distortion. Demonstrate the operation to the satisfaction of the RP PA at the same time of acceptance of the completed work.
  - .2 Submit to the Owner a copy of proposed preventative maintenance program for overhead doors and other related components requiring regular maintenance and check-ups.

**3.5 CLEANING**

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements.
- .2 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .3 Remove traces of primer, caulking; clean doors and frames.
- .4 Clean glass and glazing materials with approved non-abrasive cleaner.
- .5 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

**3.6 PROTECTION**

- .1 Protect installed products until completion of project.
- .2 Replace damaged products before Substantial Completion.
- .3 Deliver, handle, store and protect materials in accordance with "3.2 DFO Obligations" and all related contract requirements.

**END OF SECTION**

# Replace Building Envelope – Summerside SAR

## ANNEX “K” – Casement & Fixed Vinyl Windows

### 1 General

#### 1.1 RELATED REQUIREMENTS

- .1 ANNEX “H” - Joint Sealants.
- .2 ANNEX “D” - Air & Weather Barriers.
- .3 ANNEX “O” - Rough Carpentry.
- .4 Shall meet conditions/requirements of “3/002 Window Trim Detail”, “4/002 Window Trim Pocket Hole Joint Detail”, and “5/002 Window Trim Detail” on drawing “A002 Windows & Doors Summerside SAR Bldg Envelope” in “6.1 Applicable Document”; shall also meet all other related contract requirements.
- .5 Shall meet Drawings and Details.
- .6 Shall meet all contract requirements.

#### 1.2 REFERENCES

- .1 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-79.1-M91, Insect Screens.
- .2 Canadian Standards Association (CSA) International
  - .1 CSA-A440/A440.1, A440, Windows / Special Publication A440.1, User Selection Guide to CSA Standard A440, Windows.
  - .2 CAN/CSA-Z91-M90, Safety Code for Window Cleaning Operations.
- .3 .ASTM International.
  - .1 .ASTM E 1886; Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
  - .2 ASTM E 1996; Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.

#### 1.3 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with conditions related to “2.5 Method and Source of Acceptance”, “2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements.
- .2 Indicate materials and details in full size scale for head, jamb and sill, profiles of components, interior and exterior trim elevations of unit, anchorage details, location of isolation coating, description of related components and exposed finishes fasteners, and caulking. Indicate location of manufacturer's nameplates.
- .3 Shop drawings to include continuation of air barrier and vapor barrier between wall assembly and Vinyl window.
- .4 Submit one complete full size window sample of each type window; include conditions related to “2.5 Method and Source of Acceptance”, “2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements.
- .5 Include frame, sash, sill, glazing and weatherproofing method, insect screens, surface finish and hardware. Show location of manufacturer's nameplates.
- .6 Include 150 mm long samples of head, jamb, sill, meeting rail, mullions to indicate profile.

#### 1.4 QUALITY ASSURANCE MOCK-UP

- .1 Fabricate a mock-up that will demonstrate the various aspects of the air barrier / window connection / cladding (brick, steel, wood, EIFS and/or vinyl) installation and detailing.
- .2 The installation is to reflect the intent to have a full tie in of the air barrier to the entire perimeter of all wall openings, including windows, doors and louvers, providing a tight air and water seal and the relationship of the cladding installation to the openings.

- .3 The mock-up is to be reviewed by the Contractor, Membrane Installer, Window Installer, RP PA prior to the Contractor moving forward with the installation of all other windows.
- .4 Allow 48 hours to convene the review on site.
- .5 Mock-up to be approved by the RP PA prior to fabrication of additional openings.
- .6 Openings installed prior to review and approval will be removed at the Contractors expense and rebuilt.
- .7 The approved mock-up may remain on site as part of the work and it will form the standard of acceptance for the remainder of the work.

**1.5 WARRANTY**

- .1 Provide a written warranty for work under this Section from Manufacturer for failure due to defective materials and from Contractor for failure due to defective installation, workmanship for ten (10) years respectively from the date of Substantial Completion.

**1.6 CLOSEOUT SUBMITTALS**

- .1 Provide operation and maintenance data for windows for incorporation into manual specified in "Closeout Submittals" under "2.5 Method and Source of Acceptance" and conditions related to 2.6 Reporting Requirements", "3.6 Special Requirements", and contract requirements.

**1.7 WASTE MANAGEMENT AND DISPOSAL**

- .1 Collect and separate for disposal waste material generated by this Section; will be in accordance with the specification/SOW, "6.1 Applicable Documents", and all contract requirements.
- .2 Place in appropriate on-site bins in accordance with Waste Management Plan.
- .3 A clean worksite is mandatory at all times. Failure to maintain the site in a clean, safe condition shall result in the RP PA to halt site works until such failures are rectified as RP PA requirements; no additional claims will be entertained by the RP PA/Client and no adjustments to the work schedule.

**2 Products**

**2.1 MATERIALS**

- .1 Materials: to CSA-A440/A440.1 supplemented as follows:
  - .1 All Vinyl casement windows by same manufacturer.
  - .2 Sash: pultruded, vinyl, nominal wall thickness 2.3 mm.
  - .3 Main frame: pultruded, vinyl, nominal wall thickness 2.3 mm.
  - .4 Glass: in accordance with NBC latest edition for fire rating.
  - .5 Screens:
    - .1 Insect screening mesh: small insect screen for protection against entrance/penetration from tiny insects such as Ceratopogonidae/no-see-ums, gnats, and sand flies.  
Acceptable Product: Saint-Gobain Micro Mesh Small Insect Screen.
    - .2 Locking Systems/Fasteners: Stainless steel tamper proof.
    - .3 Screen frames: aluminum, color to match window frames
    - .4 Mount screen frames for interior replacement.
    - .5 Provide full insect screens to cover entire window.

**2.2 WINDOW TYPE AND CLASSIFICATION**

- .1 Types:
  - .1 Combination Casement Outswing & Fixed Units - Vinyl Windows with LOW-E Coating with Argon Gas double-glazed sealed insulating glass with screen over operating sash only. Windows will be NRCan Energy Efficiency for one Climate Zone above our current zone, due to the future climate change.
    - .1 U-Value = 1.13 W/m.k
    - .2 SHGC = 0.34
- .2 **NOTE:** The contractor will ensure the North Elevation front door with top fixed window and side light window shown on drawing "A302 North & East Elevations Summerside SAR Bldg Envelope" is as per D5



on drawing "A002 Windows & Doors - Summerside SAR Bldg Envelope"; both aluminum door and side light window will be purchased and framed as one unit; therefore contractor will include all framing requirements, modifications, and alterations to existing building envelope in their lump sum bid. Purchase D5 as one.

.3 Acceptable Material:

- .1 Basis of Design: Norwood Casement Outswing & Fixed Units - Vinyl Windows.-  
No Substitutes

**2.3 FABRICATION**

- .1 Fabricate in accordance manufacturer installation specifications:
- .1 Fabricate units square and true with maximum tolerance of plus or minus 1.5 mm for units with a diagonal measurement of 1800 mm or less and plus or minus 3 mm for units with a diagonal measurement over 1800 mm.
  - .2 Face dimensions detailed are maximum permissible sizes.
  - .3 Brace frames to maintain squareness and rigidity during shipment and installation.

**2.4 VINYL FINISHES**

- .1 Vinyl finish: durable isocyanate-free two part polymer enamel with minimum dry film thickness of 0.038 mm and medium gloss of 25-40, conforming to AAMA 613, Organic Coatings; complete with interior casing and trim.

**2.5 GLAZING**

- .1 Glaze windows in accordance with CSA-A440/A440.1 and LOW-E Coating with Argon Gas double-glazed sealed insulating glass.

**2.6 HARDWARE**

- .1 Hardware: for Casement Outswing & Fixed Units - Vinyl Windows.
- .1 Locking Systems/Fasteners: stainless steel tamper proof with folding handle for Vinyl application; will include wash ability hinge and stainless steel lock bar, and will meet NBC egress requirements.
  - .2 Operators: stainless steel Dual Arm Casement Operator.
  - .3 Locking System: stainless steel multi-point locking system for Vinyl applications.
  - .4 Hinge System: concealed 2-bar hinge that allows egress with wash ability; with stainless steel lock-bar.

**2.7 AIR BARRIER AND VAPOUR RETARDER**

- .1 Provide low expanding, single component polyurethane foam sealant installed at head, jamb and sill perimeter of window for sealing to building air barrier, vapour retarder and window frame. Foam sealant width to be adequate to provide required air tightness and vapour diffusion control to building air barrier and vapour retarder foam interior.

**3 Execution**

**3.1 WINDOW INSTALLATION**

- .1 Install in accordance with CSA-A440/A440.1 and in accordance with manufacturers written instructions.
- .2 Arrange components to prevent abrupt variation in colour.
- .3 Install shims between windows and building frame at each installation screw location. Shim and fasten windows in accordance with manufacturer's recommendations and CAN/CSA A440.4.

**3.2 CAULKING**

- .1 Seal joints between windows and window sills with sealant. Caulk between sill upstand and window-frame. Caulk butt joints in continuous sills.
- .2 Apply sealant in accordance with ANNEX "H" – Joint Sealants. Conceal sealant within window units except where exposed use is permitted by RP PA.

**3.3 CLEANING**

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements.
- .2 Clean window frames and glass.
- .3 Remove labels and visible markings; **only after inspection and approval to remove such labels by the RP PA.**

**END OF SECTION**

# Replace Building Envelope – Summerside SAR

## ANNEX “L” – Door Hardware

### 1 General

#### 1.1 RELATED DOCUMENTS

- .1 Drawings and general provisions of the Contract, including all contract documents, requirements, and attachments under “6.1 Applicable Documents”.
- .2 ANNEX “M” – Aluminum Doors.
- .3 Aluminum Door Hardware - Alumicor Ltd (requirements are highlighted in yellow).
- .4 400B Aluminum CANADIANA Entrance Door - Alumicor Ltd (requirements are highlighted in yellow).
- .5 Shall meet conditions/requirements of “3/002 Window Trim Detail”, “4/002 Window Trim Pocket Hole Joint Detail”, and “5/002 Window Trim Detail” on drawing “A002 Windows & Doors Summerside SAR Bldg Envelope” in “6.1 Applicable Document”; shall also meet all other related contract requirements.

#### 1.2 SUMMARY

- .1 Section includes:
  - .1 The intent of the hardware specification is to specify the hardware for exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier’s responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.
  - .2 Shall meet conditions and requirements of:
    - 1) Aluminum Door Hardware - Alumicor Ltd (requirements are highlighted in yellow).
    - 2) 400B Aluminum CANADIANA Entrance Door - Alumicor Ltd (requirements are highlighted in yellow).
    - 3) Drawings and details.
    - 4) All other related contract requirements.
- .3 Related Sections:
  - .1 Annex H - “Joint Sealants” for sealant requirements applicable to threshold installation specified in this section.

#### 1.3 SUBMITTALS

- .1 General:
  - .1 Submit in accordance with Conditions related to “2.5 Method and Source of Acceptance”, 2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements.
  - .2 Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work; all deviations must be approved by the RP PA and all such deviations are inclusive of the lump sum bid.
  - .3 Prior to forwarding submittal, comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, “EXAMINATION” article, herein.
- .2 Action Submittals:
  - .1 Product Data: Technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
- .3 Closeout Submittals:
  - .1 Operations and Maintenance Data: Provide in accordance with “Close Out Procedures and

Submittals” under “2.5 Method and Source of Acceptance”, and include:

- .1 Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
- .2 Catalog pages for each product.
- .3 Factory order acknowledgement numbers (for warranty and service)
- .4 Name, address, and phone number of local representative for each manufacturer.
- .5 Parts list for each product.
- .6 Final approved hardware schedule, edited to reflect conditions as-installed.
- .7 Final keying schedule
- .8 Copies of floor plans with keying nomenclature
- .9 Copy of warranties including appropriate reference numbers for manufacturers to identify project.

#### **1.4 QUALITY ASSURANCE**

- .1 Provide an experienced man door hardware installer for installation and to include, but not limited to:
  - .1 Door hardware subject matter expert.
  - .2 Provide installation and technical data to RP PA on an as required basis.
  - .3 Can inspect and verify components are in working order upon completion of installation; RP PA will receive 48 hours’ notice to ensure attendance; RP PA must be in attendance.

#### **1.5 DELIVERY, STORAGE, AND HANDLING**

- .1 Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
  - .1 Deliver each article of hardware in manufacturer’s original packaging.
- .2 Project Conditions:
  - .1 Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
- .3 Protection and Damage:
  - .1 Promptly replace products damaged during shipping.
  - .2 Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.
  - .3 Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.
- .4 Deliver keys to manufacturer of key control system for subsequent delivery to RP PA.
- .5 Deliver keys and permanent cores to RP PA by means identified by the RP PA.

#### **1.6 COORDINATION**

- .1 Installation Templates: Distribute for new aluminum doors with matching manufacturer matching door frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- .2 Security: Coordinate installation of door hardware, keying, and access control with RP PA.

#### **1.7 WARRANTY**

- .1 Provide the owner with manufacturer product and labour warranties.

### **2 Products**

#### **2.1 MANUFACTURERS**

- .1 Products listed in the hardware groups as per call up of this document and related contract requirements. Based on ALUMICOR Limited Door Hardware and associated contract requirements.

## 2.2 MATERIALS

- .1 Fasteners
  - .1 Install hardware with fasteners as per ALUMICOR Limited requirements/instructions and RP PA approval.
- .2 Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
  - .1 Where fasteners are exposed to view: Finish matching adjacent door hardware material.

## 2.3 LOCKS

- .1 Manufacturers and Products:
  - .1 As per Aluminum Door Hardware - Alumicor Ltd (requirements are highlighted in yellow) and contract requirements.
- .2 Requirements:
  - .1 As per manufacture instructions and requirements; and RP PA approval.

## 2.4 CYLINDERS

- .1 Manufacturers:
  - .1 As per Aluminum Door Hardware - Alumicor Ltd (requirements are highlighted in yellow) and contract requirements.
- .2 Requirements:
  - .1 As per manufacture instructions and requirements; and RP PA approval..

## 2.5 KEYING

- .1 Provide new mastered keyed cylinders/cores keyed.
- .2 Requirements:
  - .1 Keys to be non-duplicate.
  - .2 Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
    - .1 Master Keying system as directed by the RP PA. Master keyed cylinders for all exterior man doors for both the Ops/Main Bldg and the Garage/Warehouse/Shed Bldg; therefore each key will be mastered to open/access all keyed cylinders including keyed panic hardware cylinders if applicable.
  - .3 Quantity: Furnish in the following quantities to the RP PA.
    - .1 Master Keys: 12 to be handed over to the RP PA.

## 2.6 EXIT DEVICES

- .1 Manufacturers and Products:
  - .1 As per Aluminum Door Hardware - Alumicor Ltd (requirements are highlighted in yellow) and contract requirements.
- .2 Requirements:
  - .1 As per manufacture instructions and requirements; and RP PA approval.  
**NOTE:** Will ensure panic hardware is installed on all exterior man doors located in the Ops/Main Bldg and the Garage/Warehouse/Shed Bldg. In case of conflict, this will override the drawings.
  - .2 Cylinders: Refer to "KEYING" article, herein.
  - .3 Provide exit devices with dead latching feature for security.
  - .4 Provide exit devices with manufacturer's approved strikes.
  - .5 Provide cylinder or hex-key dogging as specified at non fire-rated openings; clarify with the RP PA.

## 2.7 DOOR CLOSERS

- .1 Manufacturers and Products:
  - .1 As per ALUMICOR Limited Door Hardware Components – Closers Dated May 2006 and contract requirements.
- .2 Requirements:
  - .1 As per manufacture instructions and requirements; and RP PA approval.

## 2.8 THRESHOLDS, SEALS, DOOR SWEEPS, AND GASKETING

- .1 Manufacturers:
  - .1 ALUMICOR Limited man door assembly supplies all such items including matching door frame with matching finish; all shall be included in aluminum door assembly and match ALUMICOR Limited products.
- .2 Requirements:
  - .1 As per manufacture instructions and requirements; and RP PA approval.

## 2.9 FINISHES

- .1 Finish: BHMA 626/652 (US26D); except:
  - .1 Hinges at Exterior Man Doors: will be full Mortise Continuous Hinge; acceptable product manufacturer will be of PEMKO with no substitutes.
  - .2 Push Plates, Pulls, and Push Bars: .As per ALUMICOR Limited Door Hardware sheets Dated May 2006.
  - .3 Door Closers: As per ALUMICOR Limited Door Hardware sheets Dated May 2006.
  - .4 Wall Stops: As per ALUMICOR Limited Door Hardware sheets Dated May 2006.
  - .5 Weather Stripping: As per ALUMICOR Limited Door Hardware sheets Dated May 2006.
  - .6 Thresholds: As per ALUMICOR Limited Door Hardware sheets Dated May 2006.

## 3 EXECUTION

### 3.1 EXAMINATION

- .1 Prior to installation of hardware, examine each new ALUMICOR Limited aluminum doors with matching frames, with Installer present, for compliance with requirements for installation tolerances, wall and floor construction, and other conditions affecting performance. All modifications/alterations to related areas are defined as part of the contract requirements that will be included in the lump sum bid with no additional claims being entertained to the owner.
- .2 Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- .1 Mount door hardware units at heights to comply with the manufacturer specifications and requirements.
- .2 Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- .3 Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
- .4 Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
- .5 Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
- .6 Hinges: will be full mortise continuous hinge for each man door and installed as per ALUMICOR Limited manufacturer installation instructions .
- .7 Key Control System: Tag keys and handover to the RP PA for any required distribution; see Keying here within.
- .8 Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors; clarify to RP PA for approval prior to installation.
- .9 Closer/holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors; clarify to RP PA for approval prior to installation.
- .10 Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Annex H - "Joint Sealants", if in accordance with manufacturers specifications/requirements.
- .11 Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard; confirm mounting type with the RP PA.
- .12 Perimeter Gasketing: as per ALUMICOR Limited installation specification/requirements/instructions.

- .13 Meeting Stile Gasketing: as per ALUMICOR Limited installation specification/requirements/instructions.
- .14 Door Bottoms: as per ALUMICOR Limited installation specification/requirements/instructions.

### **3.3 FIELD QUALITY CONTROL**

- .1 Inspection to be performed with RP PA and contractor; RP PA has final approval.

### **3.4 ADJUSTING**

- .1 Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
  - .1 Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of manufacturer instructions and requirements.

### **3.5 CLEANING AND PROTECTION**

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements
- .2 Clean adjacent surfaces soiled by door hardware installation.
- .3 Clean operating items as necessary to restore proper function and finish.
- .4 Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

### **3.6 DOOR HARDWARE SCHEDULE**

- .1 As per this document and contract requirements.

**END OF SECTION**

# Replace Building Envelope – Summerside SAR

## ANNEX “M” – Aluminum Doors

### 1 General

#### 1.1 RELATED REQUIREMENTS

- .1 ANNEX “O” - Rough Carpentry.
- .2 ANNEX “D” - Air & Weather Barriers.
- .3 ANNEX “H” - Joint Sealants.
- .4 ANNEX “L” - Door Hardware.
- .5 400B Aluminum CANADIANA Entrance Door - Alumicor Ltd (shall meet requirements are highlighted in yellow).
- .6 Aluminum Door Hardware - Alumicor Ltd (shall meet requirements are highlighted in yellow).
- .7 Shall meet conditions/requirements of “3/002 Window Trim Detail”, “4/002 Window Trim Pocket Hole Joint Detail”, and “5/002 Window Trim Detail” on drawing “A002 Windows & Doors Summerside SAR Bldg Envelope” in “6.1 Applicable Document”; shall also meet all other related contract requirements.

#### 1.2 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with conditions related to “2.5 Method and Source of Acceptance”, “2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements.
- .2 Product Data: Submit door manufacturer current product literature, including installation instructions.
- .3 Shop Drawings: Submit manufacturer's shop drawings, indicating dimensions, construction, component connections, anchorage methods and locations, accessories, hardware locations, and installation details.

#### 1.3 CLOSEOUT SUBMITTALS

- .1 Provide maintenance data for cleaning and maintenance of aluminum finishes and hardware for incorporation into manual specified in “Closeout Submittals” under “2.5 Method and Source of Acceptance” and conditions related to “2.6 Reporting Requirements”, “3.6 Special Requirements”, and contract requirements.

#### 1.4 QUALITY ASSURANCE

- .1 Provide a qualified installer who will perform installations and perform inspections with RP PA in attendance..

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations and industry standards.
- .2 Deliver and store assembly materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
  - .1 Protect doors from weather and exposure to direct sunlight prior to installation, exposure of machined doors may compromise the internal reinforced material of the door.
  - .2 Store in a dry, well-ventilated area off the floor, in a humidity and temperature-controlled facility. Recommended conditions: 30 to 50 percent relative humidity and 50 to 90 degrees F (10 to 32 degrees C).
  - .3 During storage, do not remove paper or cardboard placed between products for shipment.
- .3 Handling: Handle with clean hands and equipment. Lift and carry the products when moving them. Do not drag across one another.
- .4 For optimal performance, new primed or unfinished products should be finished or painted with an even number of coats on all six sides as soon as possible after installation. Finishing is



necessary because by nature, door construction materials are susceptible to the elements and changes in moisture levels can cause damage. Painting and finishing seals the surfaces, maintains, protects and enhances the beauty of the product by keeping it less susceptible to debris and easier to clean. Keeping doors properly finished is the first step in effective maintenance.

## 1.6 PROJECT CONDITIONS

- .1 Maintain environmental conditions; temperature, humidity, and ventilation, within limits recommended by manufacturer for optimum results. Install only in vertical walls and when conditions are dry. Do not install products under environmental conditions outside manufacturer's recommended limits.

## 1.7 WARRANTY

- .1 Provide owner with manufacturer warranty and labour warranty.

## 1.8 WASTE MANAGEMENT AND DISPOSAL

- .1 Collect and separate for disposal waste material generated by this Section; will be in accordance with the specification/SOW, "6.1 Applicable Documents", and all contract requirements.
- .2 Place in appropriate on-site bins in accordance with Waste Management Plan.
- .3 A clean worksite is mandatory at all times. Failure to maintain the site in a clean, safe condition shall result in the RP PA to halt site works until such failures are rectified as RP PA requirements; no additional claims will be entertained by the RP PA/Client and no adjustments to the work schedule.

## 2 Products

### 2.1 MANUFACTURERS

- .1 Acceptable material:
  - .1 ALUMICOR Limited.

### 2.2 ALUMINUM ENTRY DOORS

- .1 Basis of Design:
  - .1 ALUMICOR Limited; must meet conditions and requirements including, but not limited to:
    - 1) 400B Aluminum CANADIANA Entrance Door - Alumicor Ltd (requirements are highlighted in yellow); complete with matching aluminum door frame and all required installation components that include, but not limited to: Thresholds, Seals, Door Sweeps, Gasketing and all other related products/materials.
    - 2) Aluminum Door Hardware - Alumicor Ltd (requirements are highlighted in yellow).
    - 3) Drawings and details.
    - 4) All other related contract requirements.
- .2 **NOTE:** The contractor will ensure the North Elevation front door with top fixed window and side light window shown on drawing "A302 North & East Elevations Summerside SAR Bldg Envelope" is as per D5 on drawing "A002 Windows & Doors - Summerside SAR Bldg Envelope"; both aluminum door and side light window will be purchased and framed as one unit; therefore contractor will include all framing requirements, modifications, and alterations to existing building envelope in their lump sum bid. Purchase D5 as one.
- .3 Materials:
  - .1 400B Aluminum CANADIANA Entrance Door - Alumicor Ltd (requirements are highlighted in yellow); complete with matching aluminum door frame and all required installation components that include, but not limited to: Thresholds, Seals, Door Sweeps, Gasketing and all other related products/materials.
  - .2 Aluminum Door Hardware - Alumicor Ltd (requirements are highlighted in yellow).
  - .3 Top and Bottom Door Openings: aluminum doors that are specified in this document from ALUMICOR Limited come with top and bottom openings that can be filled with either glass, a solid panel, or a combination of each :
    - 1) Where the top or bottom openings require a solid panel, the solid panel shall be one (1) inch plywood exterior lamination with Aluminum on each side to match color and

finish of door. Clarify details with ALUMICOR Limited.

- 2) **Glass:** where top or bottom door opening requires glass is required, the glass shall be one (1) inch over all thickness to include:
  - i. 6mm (1/4 inch) clear tempered.
  - ii. 25mm (1 inch air space/gap).
  - iii. 6mm (1/4 inch) clear tempered.
  - iv. Laminated on inside of glass.

- .1 Hinge: Full Mortise Continuous Hinge as per manufacturer requirements; manufacturer shall be PEMKO with no substitutes. Clarify details with ALUMICOR Limited.

### 2.3 HARDWARE

- .1 Reference Hardware Schedule in accordance with conditions ANNEX "L" – Door Hardware.

## 3 Execution

### 3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

### 3.2 EXAMINATION

- .1 Inspect door prior to installation.
- .2 Inspect rough opening for compliance with door manufacturer recommendations. Verify rough opening conditions are within recommended tolerances. Will comply with conditions within. 2.0 Requirements and other related contract requirements.
- .3 Notify RP PA in writing of any unacceptable conditions that would adversely affect installation or subsequent performance of the product. Do not proceed with installation until unsatisfactory conditions are approved by the RP PA and then corrected by contractor.

### 3.3 INSTALLATION

- .1 Set frames plumb, square, level at correct elevation in alignment with adjacent work.
- .2 Anchor securely.
- .3 Install doors and hardware in accordance with hardware templates and manufacturer's Instructions.
- .4 Adjust operable parts for correct function.
- .5 Make allowances for deflection of structure to ensure that structural loads are not transmitted to frames.

### 3.4 INSTALLATION OF DOOR HARDWARE

- .1 Install all hardware in accordance with templates and manufacturer's instructions.
- .2 Check for proper installation of hardware. First inspection at mid-point of installation and final inspection when project is ready for occupancy. Provide detailed report of all deficiencies.
- .3 At final completion leave hardware free of a disfigurement. Installer shall make final adjustment to all hardware items and ensure they are working properly. Defective hardware shall be replaced. Damaged or abused hardware shall be replaced by the Contractor for this Contract at no additional cost to the Owner/Client.
- .4 Provide proper protection of all hardware items until the RP PA accepts project as complete.

### 3.5 CLEANING

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements.
- .2 Clean glass and glazing materials with approved non-abrasive cleaner.
- .3 Remove labels and visible markings; **only after inspection and approval to remove such labels by the RP PA.**
- .4 Clean aluminum with damp rag and approved non-abrasive cleaner.
- .5 Remove traces of primer, caulking, epoxy and filler materials; clean doors and frames.
- .6 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

**3.6 PROTECTION**

- .1 Protect installed products until completion of project.
- .2 Replace damaged products before Substantial Completion.

**END OF SECTION**

# Replace Building Envelope – Summerside SAR

## ANNEX “O” – Rough Carpentry

### **4 General**

#### **4.1 RELATED REQUIREMENTS**

- .1 All ANNEXES.

#### **4.2 REFERENCES**

- .4 ASTM International – always use latest edition and latest amendments.
  - .1 ASTM A123/A123M-15, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
  - .2 ASTM A153/A153M-16 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
  - .3 ASTM A653/A653M-15e1, Standard Specification for Steel Sheet, Zinc- Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot- Dip Process.
  - .4 ASTM D1761-12, Standard Test Methods for Mechanical Fasteners in Wood.
  - .5 ASTM D5055-13e1, Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists.
  - .6 ASTM D5456-14b, Standard Specification for Evaluation of Structural Composite Lumber Products.
- .5 Canadian General Standards Board (CGSB) - always use latest edition and latest amendments.
  - .1 CAN/CGSB-11.3-[M87], Hardboard.
  - .2 CAN/CGSB-71.26-[M88], Adhesive for Field-Gluing Plywood to Lumber Framing for Floor Systems.
- .6 CSA International - always use latest edition and latest amendments.
  - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
  - .2 CSA O86 Consolidation-14, Engineering Design in Wood.
  - .3 CSA O112.9-10(R2014), Evaluation of Adhesives for Structural Wood Products (Exterior Exposure).
  - .4 CSA O121-08(R2013), Douglas Fir Plywood.
  - .5 CSA O141-05(R2014), Softwood Lumber.
  - .6 CSA O151-09(R2014), Canadian Softwood Plywood.
  - .7 CSA O325-07(R2012), Construction Sheathing.
  - .8 CSA O437 Series-93(R2011), Standards on OSB and Waferboard.
- .7 National Lumber Grades Authority (NLGA) - always use latest edition and latest amendments.
  - .1 Standard Grading Rules for Canadian Lumber 2014.
- .8 Canadian Standards Association (CSA) International - always use latest edition and latest amendments.
  - .1 CSA-A440/A440.1, A440, Windows / Special Publication A440.1, User Selection Guide to CSA Standard A440, Windows.
  - .2 CAN/CSA-Z91-M90, Safety Code for Window Cleaning Operations.

#### **4.3 SHOP DRAWINGS**

- .7 Submit shop drawings in accordance with conditions related to “2.5 Method and Source of Acceptance”, 2.6 Reporting Requirements”, “3.6 Special Requirements”, and all other contract requirements. Also include product data of manufacturer's instructions, printed product literature and data sheets for wood products and accessories and include product characteristics, performance criteria, physical size, finish and limitations

#### **4.4 QUALITY ASSURANCE**

- .8 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .9 Plywood, particleboard, OSB and wood based composite panels in accordance with CSA and ANSI standards.
- .10 Sustainable Standards Certification:

- .1 Certified Wood: submit listing of wood products and materials used in accordance with CAN/CSA-Z809 or FSC or SFI.

#### **4.5 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with "3.2 DFO Obligations" and all related contract requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Deliver, store and handle materials in accordance with manufacturer(s) written instructions.
- .4 Store materials off ground in dry location in a clean, dry, well-ventilated area.
- .5 Stack material in manner to prevent twisting, bending and rubbing.
- .6 Store and protect [wood] from [nicks, scratches, and blemishes].
- .7 Replace defective or damaged materials with new.
- .8 .7 Do not use any products or materials with defects.

#### **4.6 COORDINATION AND COOPERATION**

- 1. Cut, trim, drill, frame and make good rough carpentry work for passage of work of other sections except where otherwise specified.
  - .1 Provide location, centering, bracketing, backing, squaring, trueness, and proper fit for all trades, wood rough-ins, and wood framing for contract requirements and other trades. Make good all defects and fully complete the rough carpentry.

#### **4.7 WARRANTY**

- .1 Provide a written warranty for work under this Section from Manufacturer for failure due to defective materials and from Contractor for failure due to defective installation, workmanship for ten (10) years respectively from the date of Substantial Completion.

#### **4.8 CLOSEOUT SUBMITTALS**

- .1 Provide operation and maintenance data for windows for incorporation into manual specified in "Closeout Submittals" under "2.5 Method and Source of Acceptance" and conditions related to 2.6 Reporting Requirements", "3.6 Special Requirements", and contract requirements.

#### **4.9 WASTE MANAGEMENT AND DISPOSAL**

- .4 Collect and separate for disposal waste material generated by this Section; will be in accordance with the specification/SOW, "6.1 Applicable Documents", and all contract requirements.
- .5 Place in appropriate on-site bins in accordance with Waste Management Plan.
- .6 A clean worksite is mandatory at all times. Failure to maintain the site in a clean, safe condition shall result in the RP PA to halt site works until such failures are rectified as RP PA requirements; no additional claims will be entertained by the RP PA/Client and no adjustments to the work schedule.

### **5 Products**

#### **5.1 FRAMING, STRUCTURAL AND PANEL MATERIALS**

- .2 Lumber: softwood, S4S, moisture content 19% (S-dry) or less in accordance with following standards:
  - .1 CSA O141.
  - .2 NLGA Standard Grading Rules for Canadian Lumber.
- .3 Glued end-jointed (finger-jointed) lumber [NLGA Special Products Standard] SPS, are not acceptable for exterior wall and shear wall framing.
- .4 Framing and board lumber: in accordance with National Building Code of Canada (NBCC) and CSA O86.
- .5 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:
  - .1 Board sizes: "Standard" or better grade.
  - .2 Dimension sizes: "Standard" light framing or better grade.
- .6 Plywood, OSB and wood based composite panels: to CSA O325.
- .7 Canadian softwood plywood (CSP): to CSA O151, standard construction.

- 5.2 ACCESSORIES:** to include, unless otherwise indicated by manufacturer specifications.
- .4 Air seal: closed cell polyurethane or polyethylene.
  - .5 Sealants: in accordance with ANNEX "H" – Joint Sealants.
    - .1 Sealants: VOC limit 250 g/L maximum to SCAQMD Rule 1168.
  - .6 Subflooring adhesive: to CAN/CGSB-71.26, cartridge loaded.
  - .7 General purpose adhesive: to CSA O112.9.
  - .8 Nails, spikes and staples: to CSA B111.
  - .9 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
  - .10 Self-tapping screws: Stainless steel, countersink head, of appropriate length.
  - .11 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, explosive actuated fastening devices, recommended for purpose by manufacturer.
  - .12 Fastener Finishes:
    - .1 Galvanizing: to ASTM A153/A153M, use galvanized fasteners for exterior work, and interior highly humid areas.

## **6 Execution**

### **6.1 EXAMINATION**

- .4 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts requirements are acceptable for product installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate.
  - .2 Will comply with conditions of "2.0 Requirements" and inform the RP PA of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied.

### **6.2 INSTALLATION**

- .3 As per drawings and contract requirements/documents specified for products.
- .4 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .5 Countersink bolts where necessary to provide clearance for other work.

### **6.3 CLEANING**

- .1 Will comply with "Project Cleanliness" within "2.2 Other Contractor Responsibilities" and all contract requirements in accordance manufacture requirements.

### **6.4 PROTECTION**

- .4 Protect installed products until completion of project.
- .5 Touch-up, repair or replace damaged products before Substantial Completion.

**END OF SECTION**