TO: All Bidders

FROM: City of Cambridge

DATE: June 3, 2022

RE: File No. 10318 – River Street - Addendum No. 4

This addendum is comprised of:
1. Section 08450 – Aluminum Framed Glazed Canopy Specifications was inadvertently omitted. Please see attached.

All other details remain the same.

Elizabeth Unger
Purchasing Agent

Addendum No. 4
Section 08450

ALUMINUM FRAME GLAZED CANOPY SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

A. The design and manufacture of an aluminum framed canopy system, glazed with tempered safety laminated glass, or UV resistant monolithic polycarbonate glazing panels.

B. All anchors, brackets, and hardware attachments necessary to complete the specified assembly, when included within the project scope.

C. Weatherability and water-tightness performance as specified.

D. All flashings up to adjoining work are also required as part of the system and shall be included unless specifically noted as being supplied by others.

E. Installation of the system.

1.2 RELATED SECTIONS

A. Section 05100: Structural Steel
B. Section 05550: Miscellaneous Metals
C. Section 05100: Structural Steel
D. Section 07600: Flashing and Sheet Metal
E. Section 08801: Glass and Glazing

1.3 SYSTEM DESCRIPTION

A. Aluminum canopy frame glazed with flat tempered safety laminated glass, or UV resistant monolithic polycarbonate glazing panels.

B. Design Requirements:

1. Support structure, constructed of materials of adequate load bearing capacity and to maintain visual design concepts, and for attachment to and support of the specified system, supplied by other trades.

2. Glazing panels supplied in flat sheet sizes as needed to accommodate system framing.

3. Whenever possible, fasteners shall be concealed.

4. System shall be dry glazed.

5. Air permeable tape shall be applied to the top and bottom edges of the glazing panels.

6. Unrestricted thermal movement of the glazing panels shall be allowed to occur within the framing system without compromising its weather-tightness.

7. The rabbet depth of all framing members shall, at a minimum, be based on a ¾” (.75”) engagement of the glazing panel, plus 1/8” (.125”) cutting tolerance, plus .005 x the glazing dimension (in inches) that affects that rabbet. For example, a glazing panel that
is 100” long will require a minimum rabbet depth of 
\[ .75” + .125” + (.005 \times 100”) = 1.375”. \]

C. Performance Requirements:

1. Air Infiltration: ASTM E-283: Air infiltration shall not exceed 0.03 cubic feet per minute per square foot of panel area when tested at a pressure of 12.0 psf.

2. Water Penetration: None when tested at a pressure of 12 psf in accordance with ASTM E-331.

3. Structural Performance: The system shall be capable of supporting the design loading for this project as listed below:
   a. Positive (downward) Wind Load: 8.07 psf
   b. Negative (uplift) Wind Load: -33.63 psf
   c. Snow Load (downward): 30.24 psf

4. Testing by a certified independent testing laboratory, in accordance with ASTM E-330, shall evidence this. In addition, the deflection of all framing members oriented normal to the glazing plane shall not exceed L/175.

1.4 SUBMITTALS

A. Product Data Sheets: Submit manufacturer's product data, including details of construction and installation, materials and finish, and installation instructions applicable to the configuration.

B. Shop Drawings:
   1. Shall include Plans and/or elevations and details of the system and its installation. Flashing sealants and anchorage shall be clearly indicated.
   2. Shall note gauges of brake metal, the finish on the framing, and any other information required to properly describe and install the system.

C. Samples: Submit manufacturer’s samples for each of the following:
   1. Each type of glazing panel (6” x 6” minimum)
   2. Each type of framing section (6” long minimum), showing finish, and color specified, including gaskets and fasteners.

D. Manufacturer’s Certification: Submit manufacturer’s certification that materials comply with specified requirements and are suitable for the intended application.

E. Manufacturer’s Project References: Submit a list of completed projects including project name and location, name of architect, and type of daylighting manufactured.

F. Warranty: Submit the manufacturer's standard warranty.

G. Test Reports:

5. ASTM D 2843 – Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics.


1.5 QUALITY ASSURANCE

A. Materials and Products shall be manufactured by a company continuously and regularly employed in the manufacture of glazing systems using cellular polycarbonate panel systems for a period of at least ten (10) years. Manufacturers shall provide a list of at least ten (10) projects having been in place for a minimum of five (5) years.

B. Erection shall be by the manufacturer, or an installer experienced in the erection of systems of the type specified.

C. The manufacturer shall be responsible for the configuration and fabrication of the complete system and will ensure that it fully meets all requirements of this specification.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the jobsite in the manufacturer’s original and unopened containers and bearing labels as to the type of material and manufacturer’s name. Delivered materials shall be identical to approved samples.

B. Store materials under cover in a dry, clean location, off the ground. Remove from the jobsite any materials that are damaged or otherwise not suitable for installation and replace with acceptable materials.

C. Protective coverings containing PVC shall not be used in contact with polycarbonate.

1.7 WARRANTY

A. Manufacturer Warranty: The Manufacturer shall provide a written warranty certifying that if within one (1) year from the shipment date of the system, the system experiences water leakage owing to defects in fabrication or materials, the Manufacturer will, in a timely manner, furnish (only) new components to replace all of those found to be defective.

a. The above warranty does not apply in the cases of structural movement of the building(s), the negative air pressure inside the building(s), acts of God, alteration or abuse of the products, or unreasonable use.
b. The liability of the Warrantor shall be limited to the above and shall not include incidental or consequential damages of any kind.

c. The polycarbonate or glass glazing materials or any other materials or system (example… finishes on metals) furnished and warranted by others, shall be covered by only those warranties.

B. Polycarbonate Warranty: Provide written warranty from manufacturer agreeing to repair or replace work that has or develops defects in the polycarbonate panels. “Defects” is defined as abnormal aging or deterioration.

   a. Warranty period for polycarbonate: [10] years from the date of shipment from the manufacturer against:
      i. Yellowing – The changes of yellowing index established in accordance with ASTM D 1925 standard should be less than 10 delta after 10 years, in relation to the original value.
      ii. Change in light transmission of no more than 6% per ASTM D-1003 in relation to the original value.
      iii. No delamination of panel affecting appearance, performance, or structural integrity of the cellular polycarbonate glazing panel.
      iv. No breakage due to direct effect from weather conditions and hail impact as defined by the manufacturer’s written warranty submitted as part of section [1.4/F] in this specification.

C. Glass Warranty: See section 08801.

D. Finish Warranty: The framing finish applicator’s warranty is specified below:

   a. Anodized Finish: Ten (10) years from the date of application against chalking, fading, cracking, crazing, and blistering.

PART 2 PRODUCTS

2.1 MANUFACTURER AND PRODUCT

A. EXTECH/Exterior Technologies, Inc., 200 Bridge Street, Pittsburgh, PA 15223; Phone (800) 500-8083, Fax (800) 500-8012, website www.extechinc.com.
   a. Series #3300 Surface Mounted Canopy System.

   a. Series 3900 Sleekline Canopy System

C. DeaMor, 6210 S. 11th Street, Ridgefield, WA 98642; Phone (888) 284-6799, website http://www.deamor.com
   a. Skin System

D. Approved Equal
2.2 MATERIALS

A. Framing:

1. Shall be extruded aluminum of 6063-T5, 6005-T5, or 6105-T5 alloy and temper. All sections shall be formed true to detail and free from defects impairing appearance, strength, or durability.

B. Glazing Gaskets:

1. Shall be elastomeric, having low friction surfaces where they contact the glazing.

2. Shall be tested for chemical compatibility with the glazing, and test reports evidencing same shall be presented to the Architect.

C. Fasteners:

1. Where exposed, shall be stainless steel, 300 Series, with stainless steel backed neoprene washers.

2. Concealed fasteners they may be stainless or zinc-plated steel in accordance with ASTM Specifications A165-55 or A164-55.

3. Bolts, anchors and other fastening devices shall be as required for the strength of the connections and shall be suitable for conditions encountered. Washers shall be of the same metals as fasteners.

D. Flashing:

1. Minimum 0.040 thick Aluminum [painted finish: 3105-H14] [anodized finish: 5005-H34].

2. Factory formed to required profile(s) in 10-ft lengths, whenever practical, to allow for field trimming to suit as-built conditions.

3. The finish on this metal shall match as closely as possible that which is on the extruded aluminum framing members.

E. Glazing:

1. Tempered safety laminated glass: see section 08801.

2. Polycarbonate

   A. Monolithic Polycarbonate:
      a. The solid polycarbonate panels shall be uniform in color.
      b. Solid panels shall consist of a polycarbonate resin with a permanent co-formulated ultraviolet (UV) protective additive.
c. Panels shall be 10mm (3/8”)
d. Panel width shall vary to suit the needs of the project.
e. Color (Panel): White
f. Light Transmission (LT %): 24% (minimum)
g. Flammability:
   i. Approved light transmitting plastic with CC1 classification per ASTM D-635 and IBC 2606.4.
   ii. Smoke density no greater than 75 per ASTM D2843.
   iii. Self-ignition temperature, per ASTM-1929 no less than 550 degrees Celsius.

F. Attachment:

1. System shall be fastened to substrate with fasteners that are designed and installed by the installer.

2. Fasteners to penetrate through one-piece perimeter extrusions, and through base extrusions of intermediate mullions.

3. Any shims or appurtenances required to facilitate system mounting and isolation shall be provided and installed by the installer.

2.3 FABRICATION AND WORKMANSHIP

A. Construct canopy(s) using extruded aluminum members.

B. Carefully and accurately design, fabricate and assemble work with proper provision for thermal contraction and expansion. Work shall conform to profiles and sections noted on the shop drawings. Work shall be assembled with joints in a neat and finished manner.

C. All framing members shall be factory fabricated and assembled to the greatest degree possible, including the following:

   a. Cutting members to length.
   b. Installation of glazing gaskets, to be glued within extruded gasket tracks.
   c. Drilling straight and countersunk mounting holes, fastener access holes, and weep holes.
   d. Fabricating miter joints with concealed joint reinforcements and joint gaskets.
   e. Installation of non-metallic thermal isolation spacers.
   f. Removal of extrusion portions to accommodate tight over-lapping joinery and connections, including coped ends, mid-span notches, etc.
   g. Fabrication and installation of splice plates at jointed connections.

2.4 FINISHES

A. Exposed surfaces of the aluminum framing members shall be finished as follows:

   1. Anodized Coatings:
a. Architectural Class I Color Anodized type AA-M10C22A44 electrolytically deposited complying with AAMA 611, 0.7 mil thick minimum
b. Color as noted on drawings.

PART 3 – EXECUTION

3.1 EXAMINATION

A. All submitted opening sizes, dimensions, and tolerances are to be field verified by the installer unless otherwise stipulated.

B. Installer to examine site conditions to verify readiness. Notify general contractor or owner about any defects requiring correction, including but not limited to improperly sloping sill substrates and uneven planar substrates. Do not work until conditions are satisfactory.

3.2 INSTALLATION

A. Install components in strict accordance with manufacturer’s instructions and approved shop drawings. Use proper fasteners and hardware for material attachments as specified.

B. Use methods of attachment to the structure which include provisions for thermal movement.

C. Glazing shall be installed in accordance with panel and system manufacturer’s guidelines.

D. Remove all protective coverings on polycarbonate and glass panels during or immediately after installation.

E. Installation shall be performed by a company with ten (10) years of continuous experience in commercial construction.

F. Protect contact points between unprotected dissimilar metals (except stainless steel) using continuous separators of FRP, PVC tape (or approved equal)

3.3 CLEANING AND PROTECTION

A. During installation, protect exposed surfaces against the accumulation of paint, caulking, disfiguration, and damage.

B. Interior glazing surfaces shall be cleaned as the panels are being installed. The exterior shall be cleaned as each phase of the work is completed.

C. Follow panel manufacturer instructions when cleaning exposed panel surfaces. Clean polycarbonate or glass panels and frame at time of installation.

D. Follow panel manufacturer’s guidelines when removing foreign substances from panel surfaces. Use only solvents that are deemed acceptable for use.

E. Before final acceptance, repair and/or replace any defective materials or work.
PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Separate Measurement will not be made for the work of this Section. Work in this section shall be measured by a lump sum for all work necessary to complete Transit Shelters in accordance with section 10730.

4.2 PAYMENT

A. Separate Payment will not be made for the work of this Section, complete in place. Payment for work covered in this section shall be made at the Contract Unit Price Lump Sum in accordance with section 10730 – Transit Shelters. All costs, therefore, shall be included in the Contract Lump Sum Price for the work as indicated herein. All preparation and incidental work necessary to accomplish the installation will be considered incidental to the Lump Sum price.

4.3 PAYMENT ITEMS

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<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
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<tbody>
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<td>10730.1</td>
<td>SHELTER 1 – RIVER ST. SHELTER</td>
<td>(LS)</td>
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<td>10730.2</td>
<td>SHELTER 2 – MAGAZING ST. SHELTER</td>
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<tr>
<td>10730.3</td>
<td>SHELTER 3 – GREEN ST. SHELTER</td>
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END OF SECTION