

**SPECIFICATIONS FOR THE PURCHASE OF EIGHTEEN (18) 4' X 12' SHED STYLE  
BUS PASSENGER SHELTERS-REVISED 08/26/19**

**PART I GENERAL**

**1.1 SECTION INCLUDES**

- A. Bus Stop Shelter – 4' x 12' – Shed Style – Exhibit A

**1.2 QUANTITY**

- A. Eighteen (18) each – Bus Stop Shelter – 4' x 12' – Shed Style

**1.3 REFERENCES**

- A. Federal Specifications (Fed. Spec.):
  - 1. QQ-A-200/9C(1)...Extruded aluminum members 6063-T5
  - 2. HH-I-521B...Insulation board, Thermal, Semi-Rigid Polyurethane.
  - 3. TT-S-001657...Sealants, Type 1.
- B. American Society for Testing Materials (ASTM):
  - 1. C-920-79...Elastomeric Joint Sealants Type S, Class 12, Grade NS
  - 2. C-518...Insulation Board, Semi-Rigid Polyurethane.
  - 3. E-84...Standards method of test for surface burning characteristics of building materials.
- C. American National Standards Institute (ANSI): ANSI A58.1... Gravity and Lateral Loads Design.
- D. Uniform Federal Accessibility Standards: FED-STD-795, 4/1/88....4.13 Door Accessibility.
- E. The Aluminum Association (AA): Designation System for Aluminum Finishes (March 1973)
- F. International Conference of Building Officials, Uniform Building Code.
- G. Public Law 101-336: Current Standards of the Americans with Disabilities Act (ADA).

**1.4 DESIGN REQUIREMENTS**

- A. Basic Wind Speed: 90 mph.
- B. Exposure Category: \_B\_

- C. Basic Snow Load: 40 psf.

## **1.5 SUBMITTALS**

- A. Specified Manufacturer: Product shall be as manufactured by Brasco International, Inc., or an approved equal as outlined in Section 1, Item 36 – Qualifying of Approved Equal.
- B. Shop Drawings: Submittal of manufacturer's shop drawings, including plans, elevations, sections and details, dimensions, anchorage, fasteners and locations, flashing and seal details if applicable, finish, and options by contractor after award.
- C. Erection Drawings: Submittal of manufacturer's instructions and drawings, and develop erection procedures to enable field installation and repair by contractor after award.

## **1.6 QUALITY ASSURANCE**

- A. Manufacturer's Qualifications:
  - 1. Continuously engaged in Shelter manufacturing with a minimum of 10 years successful experience.
  - 2. Able to demonstrate successful performance on comparable projects.
  - 3. Responsible for all components, including structural design.

## **1.7 DELIVERY, STORAGE, AND HANDLING**

- A. Delivery: Shelter assemblies shall be delivered to the COTA facility located at 1325 Essex Avenue, Columbus, Ohio 43201 (FOB – Destination) within seventy-five (75) calendar days (excluding nationally recognized holidays from the contract execution. Deliveries shall be between the hours of 6 A.M. and 2 P.M., Monday through Friday.

## **1.8 WARRANTY**

- A. Warranty Period: One (1) year from the date of acceptance, or the date of completion and use by COTA.

## **PART II PRODUCTS**

### **2.1 MANUFACTURER**

- A. Brasco International, Inc., 32400 Industrial Drive, Madison Heights, Michigan 48071. Phone (800) 893-3665. The web site for Brasco is [www.brasco.com](http://www.brasco.com). Requests for approved equal must be submitted to [kochdm@cota.com](mailto:kochdm@cota.com) **as outlined in Section 1, Item 36 – Qualifying of Approved Equal.**

### **2.2 GLAZING**

- A. Window panels shall be: 3/8” thick clear laminated safety glass. Panels shall be gasketed with wrap-around pvc extrusion, and secured to the framing structure with special extrusions to provide a safe weather-protective enclosure.

All glazing shall be shipped in metal frames with predrilled holes for easily installation. Supports shall be such that they will permit simple field installation of glazing and future re-glazing as may be required. **Glass size for the back panels shall be 71-3/4" x 41-3/4" and the side panels shall be 71-3/4" x 41-3/4.** Window color shall be: clear.

- B. Wall and roof panels shall be sealed as required to provide a water-proof barrier in compliance with Fed. Spec. II-S-001657 using ASTM C-920-79 sealants.

## **2.3 STRUCTURAL FRAMING**

### A. Shelter Frame

1. The shelter framework (columns, sills and headers) shall be fabricated using 6063-T5 extruded aluminum members Fed. Spec. QQ-A-200/9C(1). 6061-T6 alloy/temper shall be used where required.
2. Extrusion shapes shall be engineered to provide a framework of adequate structural integrity to satisfy the Uniform Building Code (UBC), and to meet the requirements for snow, wind and seismic loading for the location(s) being considered.
3. Framing members shall be 2 1/2" x 2 1/2" x 1/8" thick square extruded aluminum tubes. Mullions shall be 1.5" x 2.5" x 1/8" thick extruded aluminum tubes. Other framing members to be used as required.
4. The framework shall be assembled with only stainless steel and aluminum fasteners to prevent rusting or electrolytic interaction with framing members.
5. Shelter framing components, and the method of fastening them to the supporting foundations, shall be capable of withstanding lateral loads per ANSI A58.1, the UBC, or applicable local building codes, whichever is more stringent.
6. Method of mounting shelter to concrete pad shall allow for up to 4" of slope adjustment. All vertical posts must be provided with an anchoring device at the bottom which allows the shelter frame to be set on sloping pavements without exposed shims or multiple base plates.
7. All structural frame connections must be concealed and no surface shall require finishing after assembly and erection of the superstructure.
8. Vertical members of shelter or glazing framework, other than comer posts, must have a fixed and uniform spacing, center to center, so as to produce a modular dimensional system of framing. Posts and intermediate vertical members must have a maximum width of 5" when viewed from any direction.
9. The framework shall be made up from the smallest possible number of standardized components for economy and ease of replacement. All components shall be manufactured in close tolerances, so as to permit interchangeability of parts.

The structure shall have weep holes, if necessary, to assure drainage of condensation.

10. Outside corners of corner posts and fascia members shall have a minimum of 1" radius with a maximum 3 1/2" radius.

11. All Shelter wall units shall be shipped pre-assembled without glass. **Glass shall be shipped in individual pre-assembled frames with pre-drilled holes for easy installation.** Such units to include, but are not limited to, Roof Assembly, Side Wall Assembly and Back Wall Assembly.

#### B. Fasteners and Connections

1. All fasteners such as pop rivets, drive rivets, allen-head screws, fittings and other miscellaneous parts must be made from corrosion resistant materials. Dissimilar metal connections must be provided with di-electric spacers to prevent corrosion due to galvanic actions. Fasteners must be of a type which cannot be loosened with readily available tools. No regular, Phillips, hexhead, 5 square-head screws or bolts shall be used where exposed in the finished shelter. Fasteners must be flush with the surface connected.

#### C. Roof

1. The shelter roof shall be as shown in the exhibit. Roof assembly shall be compatible with the environment as defined in Section 2.5, Environmental Conditions. All roof glazing shall be 1/4" clear structural polycarbonate.

### 2.4 MATERIALS

A. Roof configuration shall be shall be: 1/4" Clear structured polycarbonate single slope roof with integral 6" fascia/gutter. All supporting loads listed herein. Roof modules shall be shipped as completed modules and ready for immediate installation.

#### B. Joint Sealant:

1. Factory-Applied Sealant: Gunnable, nonhardening, elastomeric sealant. ASTM C 920, Type S, Class 12, Grade NS. Fed Spec TT-S-1657, Type 1.n.
2. Field-Applied Sealant: Approved by shelter manufacturer. As specified in Section 07920.

#### C. Field Fasteners:

1. Comply with shelter manufacturer's instructions for fastener types, quantities, and usage.

#### D. Interior Perimeter Rub Rail

1. All exposed surfaces of the Rub rail shall match exterior powder coat finish.
2. Rails will be fabricated in such a manner as to completely protect the glazing material on the back and both end panels of the shelter after installation.
3. All mounting and connecting hardware must be concealed and no surface shall require finishing after assembly and erection of the superstructure.

4. Rub rails will be designed to mount horizontally, 36" to center above grade and will be 4-1/2" wide x 1-3/4" deep.

A. **COLOR AND FINISH**

1. Extruded aluminum framework shall be powder coat painted RAL 9006 white powder coat aluminum or approved equal and meet AAMA 2605 specifications.
2. Color of Roof Panels to be clear

**2.5 ENVIRONMENTAL CONDITIONS**

Shelters must be capable of being stored and maintained without impairment resulting from the impact of the environment throughout the range of worst-case conditions as follows:

Ambient Temperature:	-30 to 100 degrees F
Relative Humidity Range:	0 to 100 percent

The environment shall be considered to be that of the Central Regional of the State of Ohio. It shall be considered to actively support all types of corrosive reactions on metals.

**2.6 REPLACEMENT PARTS**

Replacement parts must remain available for a period of seven (7) years from date of acceptance of the shelters by COTA.