SECTION 085653

BULLET RESISTANT WINDOW

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Bullet resistant vertical baffle window system.

1.2 REFERENCES

A. Underwriters Laboratory UL 752-Standard for Bullet Resisting Equipment.

B. ASTM E119-98- Standard Test Methods for Fire Tests of Building Construction and Materials,

C. ASTM B 209/B 209M- Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate,

D. ASTM A 666-Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar.

1.3 ACTION SUBMITTALS

A. Refer to Section 01 33 00 Submittal Procedures.

B. Product Data: For each type of frame and glass including manufacturer recommended installation instructions.

C. Shop Drawings: Include plans, elevations, sections, details, attachment to other work, cuts and anchor locations, reinforcements and locations, and product specifications.

D. Samples: For each exposed finish.

1.4 INFORMATION SUBMITTALS

A. Product Test Reports: Indicating compliance with requirements

B. Warranty: Sample of finish warranty

1.5 CLOSEOUT SUBMITTALS

A. Refer to Section **01 77 00 Closeout Submittals.**

B. Maintenance data.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the project site with the manufacturer's UL Listed Labels intact and legible. Handle the materials with care to prevent damage. Store materials inside and under cover, stack flat and off floor. Project conditions (temperature, humidity, and ventilation) shall be within the maximum limit recommendations provided by manufacturer. Do not install products stored in conditions outside manufacturer's recommended limits.

1.7 WARRANTY

A. Workmanship Warranty: All materials shall be warranted against defects for a period of 1 year for the date of receipt at the project site. Provide certificates of manufacturer's standard limited warranty with closeout documents.

B. Finish Warranty: Manufacturer's warranty against deterioration of factory finishes for the period of 5 years from the date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

A. Basis of Design:

1. Subject to compliance with requirements, provide products by the following:

a. Total Security Solutions, Inc., 935 Garden Lane, Fowlerville, MI 48836, 866 734-6277. Attn: Sales Department, sales@tssbulletproof.com. Web: www.tssbulletproof.com.

2. Subject to compliance with requirements, manufacturers of products of equivalent design may be acceptable if approved in accordance with Section 01 33 00 Submittal Procedures.

B. Design Performance:

1. Through the design, manufacturing techniques and material application, the TSS Bullet Resistant Vertical Baffle Window shall be of the non-ricochet type. This design is intended to permit the capture and retention of an attacking projectile lessening the potential of a random injury or lateral penetration.

2. The assembly shall provide for single or multiple transaction positions utilizing the natural voice baffle configuration.

3. This assembly shall employ offset vertical standing vision panels and 5/8" vertical baffles to complete the natural voice design and protect against angled ballistic penetrations.

4. Each transaction position may have a stainless-steel dip tray as shown on the drawings.

5. Panels shall not be removable from threat side.

6. Provide anchor screws as required to install equipment.

C. Field alterations to the construction of the assembly fabricated under the acceptable standards are not allowed unless approved in writing by the manufacturer and the Architect.

D. Standard manufacturing tolerances +/- 1/16" shall be maintained.

E. Materials shall meet or exceed UL 752 requirements.

2.2 PERFORMANCE CRITERIA

(**Specifier Note**: DELETE Ballistic and Blast resistance requirements that are not project specific.)

A. Ballistic Resistant:

1. Level **3** in accordance with UL 752 – Testing for Ballistic Resistance for the complete assembly including framing, glazing and panels.

2.3 FABRICATION

A. Aluminum sections to be manufactured in accordance with ASTM B209, Extruded aluminum alloy 6063 T5 Anodized to match the existing décor and be free of sharp edges or burrs when in place.

B. Glazing Channel: U-Channel specifically designed for securing transparencies tightly in place. Angles and stops are only acceptable for top attachment. All exposed aluminum edges shall be clean cut and have no burrs. Exposed corners shall be rounded and sanded.

C. Tolerances: All joints and connections shall be tight, providing hairline joints and true alignment of adjacent members

2.4 FRAME FINISH

A. Factory-applied finish:

1. **Color Anodic Finish**: Architectural Class I, color coating AA-M10C22A42/A44 Mechanical Finish Chemical Finish: etched, medium matte; 0.70 mils minimum complying with AAMA 611 "Voluntary Specification for Anodized Architectural Aluminum".

a. Color: Dark Bronze.

B. Cap the bottom of glazing with the corresponding finish material selected for frame.

2.5 GLAZING

A. Glazing shall meet UL Standard 752 Bullet Resistant Level 3.
   1. Material: Total Security Solutions – TSS Polycarbonate LP All Poly 1250
   2. Thickness: 1 1/4 inches
   3. Light Transmission: 77%

B. Acrylic: All acrylic pieces shall meet or exceed UL 752 testing for ballistic integrity. All edges of acrylic shall be filed, sanded after cutting to remove rough edges and then polished until "water clear" transparent. All through holes for fasteners shall be 3/8" in diameter and be drilled clean. Chipped edges at through-hole exit points are not acceptable. All acrylic pieces shall be supported in the proper glazing channel designed for this purpose (see aluminum, Section D).

C. Glazing gaskets:

   1. Interior: Closed cell neoprene.

2.6 ACCESSORIES

A. Anchors: Fully concealed manufacturer recommended.

B. Mounting plates and connecting clips shall be fabricated from 1/8" thick clear polycarbonate.

C. Cash Tray:

   1. Location: None

PART 3 - EXECUTION

3.1 PREPARATION

A. Prior to beginning installation, verify that all supports have been installed as required by the Contract Documents and architectural drawings, and Shop Drawings have been approved.

B. Notify Architect of any unsatisfactory preparation that is responsibility of others.

C. Clean and prepare all surfaces per manufacturers recommendations as required for achieving the best results for the substrate under the project conditions.

D. Verify field dimensions of openings prior to fabrication of framing.

E. Coordinate structural requirements to ensure proper attachment and support.

F. Do not begin installation of material until all unsatisfactory conditions have been resolved and approved by Architect.

3.2 INSTALLATION

A. Do not begin installation until openings have been verified and surfaces properly prepared in accordance with Drawings.

B. Install in accordance with manufacturer’s instructions and UL 752. Set all equipment plumb.

C. All products shall be installed per installation instructions provided by manufacturer.

D. Security window units shall arrive on site completely pre-fabricated to field dimensions approved by Shop Drawings.

E. Install framing and secure to structure in accordance with manufacturer's recommendations and approved shop drawings.

F. Provide required support and securely fasten and set windows plumb, square, and level without twist or bow.

G. Apply sealant in accordance with window and sealant manufacturer's recommendations as indicated in installation instructions.

H. Remove excess sealant and leave exposed surfaces clean and smooth

3.3 PROTECTION

A. Clean and protect windows from damage during ongoing construction operations. If damage occurs, remove and replace as required to provide windows in their original, undamaged condition.

B. Inspection and Cleaning: Verify installation is complete and complies with manufacturer’s requirements.

C. Provide final cleaning of product and accessories, removing excess sealant, labels and protective covers.

D. Touch-up, repair or replace damaged products prior to Substantial Completion.

END OF SECTION