SECTION 13 47 17

BULLET RESISTANT STOREFRONT

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\*\* NOTE TO SPECIFIER \*\* Total Security Solutions; Bullet resistant products.  
This section is based on the products of Total Security Solutions, which is located at:935 Garden Ln.Fowlerville, MI 48836Toll Free Tel: 866-304-5070Fax: 517-223-0805Email: [request info (arcat@tssbulletproof.com)](https://arcat.com/rfi?action=email&company=Total%252BSecurity%252BSolutions&message=RE%253A%2520Spec%2520Question%2520(13066tss)%253A%2520&coid=43676&spec=13066tss&rep=&fax=517-223-0805)  
Web: [https://tssbulletproof.com/?utm\_source=arcat&amp;utm\_medium=referral&amp;utm\_campaign=digital-outbound](https://tssbulletproof.com/?utm_source=arcat&utm_medium=referral&utm_campaign=digital-outbound)   
 [ [Click Here](https://arcat.com/company/total-security-solutions-43676) ] for additional information.  
Three decades of experience have made us an industry leader in bullet-resistant barrier systems, and we bring that expertise to bear on your security challenges. Everything we've learned in thousands of installations has been invested in how we assess security risks, how we select materials, how we craft those materials into bullet-resistant systems, and how we install those systems in the business environments of our customers. And while we've grown significantly over 30 years, we've never lost touch with our foundation - highly responsive customer service.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Bullet Resistant Storefront System.
    2. Bullet Resistant Fixed Sash.
    3. Bullet Resistant Doors.
    4. Virus guards.
       1. Fixed barrier system.
       2. Mobile barrier system.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section - - Masonry Assemblies: Masonry walls.
    2. Section 05 10 00 - Structural Metal Framing
    3. Section 05 50 00 - Metal Fabrications.
    4. Section 06 10 00 - Rough Carpentry.
    5. Section 08 71 00 - Door Hardware.
    6. Section 08 83 13 - Mirrored Glass Glazing.
    7. Section 09 30 00 - Tiling.
    8. Section 09 90 00 - Painting and Coating.
    9. Section 13 10 00 - Special Facility Components.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM International (ASTM):
       1. ASTM A36/A36 M - Standard Specification for Carbon Structural Steel.
       2. ASTM A924/A924M - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
       3. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
       4. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
       5. ASTM C509 - Standard Specification for Elastomeric Cellular Preformed Gasket and Sealing Material.
       6. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
       7. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
       8. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass.
       9. ASTM D2000 - Standard Classification System for Rubber Products in Automotive Applications.
       10. ASTM E1986 - Standard Test method for performance of exterior windows, curtain walls, doors and storm shutters impacted by missiles and exposed to cyclic pressure differentials.
    2. Aluminum Association Standard AA DAF-45 - Designation System for Aluminum Finishes.
    3. GANA - Glass Association of North America - Glazing Manual.
    4. NIJ Standard 0108.01 - (National Institute of Justice) Standard for Ballistic Resistant Protective Materials (September, 1985).
    5. UL 752 - Standard for Bullet Resisting Equipment (January 27, 1995)
    6. GSA TS01 - US General Services Administration Standard Test Method for Glazing and Window Systems Subject to Dynamic Overpressure Loadings; 2003.
    7. DOD UFC 4-010-01 - United Facilities Criteria (UFC) DOD Minimum Antiterrorism Standards for Buildings.
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: 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. Submit shop drawings prepared by the manufacturer showing plans, sections, elevations, layouts, profiles and product component locations, including anchorage, bracing, fasteners, accessories and finishes.
        2. Include dimensioned elevation of each type opening assembly in project; indicate sizes and locations of hardware, and lites if specified.
        3. Schedule: Indicate each opening assembly in project; cross-referenced to plans, elevations, and details.
     4. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
     5. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
  2. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified with a minimum documented experience of five years.
     2. Installer Qualifications: Company specializing in installation of products specified with minimum three years documented experience.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
       1. Finish areas designated by Architect.
       2. Do not proceed with remaining work until workmanship, color and finish are approved by Architect.
       3. Refinish mock-up area as required to produce acceptable work.
       4. Accepted mock-ups shall be comparison standard for remaining Work
    2. Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, and manufacturer's installation instructions.
    3. Coordination of Work: Coordinate layout and installation of components with other construction.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Deliver materials in manufacturer's unopened, undamaged packaging, with manufacturer's labels intact.
     2. Remove wraps or covers from windows and frames upon delivery at the building site; clean and touch-up scratches or disfigurement caused by shipping or handling promptly.
     3. Store assemblies covered to protect them from damage but permitting air circulation.
  2. SEQUENCING
     1. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
     2. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
  3. 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. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Total Security Solutions, which is located at:935 Garden Ln.Fowlerville, MI 48836Toll Free Tel: 866-304-5070Fax: 517-223-0805Email: [request info (arcat@tssbulletproof.com)](https://arcat.com/rfi?action=email&company=Total%252BSecurity%252BSolutions&message=RE%253A%2520Spec%2520Question%2520(13066tss)%253A%2520&coid=43676&spec=13066tss&rep=&fax=517-223-0805);Web: [https://tssbulletproof.com/?utm\_source=arcat&amp;utm\_medium=referral&amp;utm\_campaign=digital-outbound](https://tssbulletproof.com/?utm_source=arcat&utm_medium=referral&utm_campaign=digital-outbound)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
  1. COMPONENTS
     1. Extruded Aluminum: ASTM B221; 6061 alloy, T5 temper typical, 6061 alloy, T6 temper for extruded structural members.
     2. Sheet Aluminum: ASTM B209, 5005 alloy, H15 or H34 temper.
     3. Sheet Steel: ASTM A924/A924M; galvanized to minimum G90.
     4. Steel Sections: ASTM A36/A36M; shaped to suit mullion sections, galvanized.
     5. Internal framing fasteners Type Zinc Coated.
     6. Neoprene Glazing Gaskets:
        1. Interior Glazing gaskets closed cell cellular neoprene conforming to ASTM C 509 Type II Option 1 with a 40-50 Shore A Durometer.
        2. Exterior Glazing gaskets solid neoprene conforming to ASTM C 864 with a 65-75 Shore A Durometer.
     7. Weatherstripping: Entrance manufacturer's standard types to suit application.
     8. Fasteners: Stainless steel or corrosion resistant steel.

\*\* NOTE TO SPECIFIER \*\* Select the storefront system and/or components required from the following paragraphs as required for the project and delete those not required.

* 1. BULLET RESISTANT STOREFRONT SYSTEMS
     1. Bullet Resistant Fixed Sash System: Total Security Solutions Bullet Resistant Aluminum Sash TSS-BL3-1.75 Window Framing System. Head and sill are one piece extrusions with no integral weep system at the sill. Jambs are two piece extrusion with removable faces to allow for reglazing. Mullions are three piece extrusion with removable faces to allow for glazing and individual lite replacement. All joints and connections shall be tight, providing hairline joints and true alignment of adjacent members. Glazing must not be removable from the threat side of the sash. Provide to dimension heights and widths indicated on the Drawings.
        1. System shall be designed to defeat ballistic assaults from a 44 magnum handgun in accordance with UL 752, Level 3.
        2. Aluminum Frames: Size 1-3/4 inches by 4 inches.
        3. Glazing:

\*\* NOTE TO SPECIFIER \*\* Glazing members can accommodate glazing transparencies or opaque panels ranging in thickness from 3/4 inch to 1-3/8 inch.

* + - * 1. Glazing to conform to UL 752 of the following protection level.

Level 1

Level 2

Level 3

* + - * 1. Glazing Type:

Acrylic

Polycarbonate/Acrylic Laminate

Glass/Polycarbonate Composite

* + 1. Bullet Resistant Fixed Sash System: Total Security Solutions Bullet Resistant Aluminum Sash TSS-BL3-2.5 Window Framing System. Head and sill are one piece extrusions with no integral weep system at the sill. Jambs are two piece extrusion with removable faces to allow for reglazing. Mullions are three piece extrusion with removable faces to allow for glazing and individual lite replacement. All joints and connections shall be tight, providing hairline joints and true alignment of adjacent members. Glazing must not be removable from the threat side of the sash. Provide to dimension heights and widths indicated on the Drawings.
       1. System shall be designed to defeat ballistic assaults from a 44 magnum handgun in accordance with UL 752, Level 3.
       2. Aluminum Frames:
          1. Head, Sill and Jamb Size: 1-1/2 inches by 2 1/2 inches.
          2. Mullion Size: 3 inches by 2 1/2 inches.
       3. Glazing:

\*\* NOTE TO SPECIFIER \*\* Glazing members can accommodate glazing transparencies or opaque panels ranging in thickness from 1 1/4 inch to 1-3/8 inch.

* + - * 1. Glazing to conform to UL 752 of the following protection level.

Level 1

Level 2

Level 3

* + - * 1. Glazing Type:

Acrylic

Polycarbonate/Acrylic Laminate

Glass/Polycarbonate Composite

* + 1. Bullet Resistant Fixed Sash System: Total Security Solutions Bullet Resistant Aluminum Sash TSS-B5.5 Window Framing System. Head and sill are one piece extrusions with no integral weep system at the sill. Jambs are two piece extrusion with removable faces to allow for reglazing. Mullions are three piece extrusion with removable faces to allow for glazing and individual lite replacement. All joints and connections shall be tight, providing hairline joints and true alignment of adjacent members. Glazing must not be removable from the threat side of the sash. Provide to dimension heights and widths indicated on the Drawings.
       1. System shall be designed to defeat ballistic assaults in accordance with UL 752, Level 4-8.
       2. Aluminum Frames:
          1. Head, Sill and Jamb Size: 1-1/2 inches by 5 1/2 inches.
          2. Mullion Size: 3 inches by 5 1/2 inches.
       3. Glazing:

\*\* NOTE TO SPECIFIER \*\* Glazing members can accommodate glazing transparencies or opaque panels ranging in thickness from 1 1/4 inch to 1-3/8 inch.

* + - * 1. Glazing to conform to UL 752 of the following protection level.

Level 4

Level 5

Level 6

Level 7

Level 8

* + - * 1. Glazing Type:

Glass/Polycarbonate Composite

* + 1. Bullet Resistant Door System: Total Security Solutions Bullet Resistant Aluminum TSS-BL3-DR Bullet Resistant Door System. All joints and connections shall be tight, providing hairline joints and true alignment of adjacent members. Corner joinery shall consist of heavy duty extruded and keyed aluminum corner splines with continuous 3/8 inch diameter tie rod construction. Glazing must not be removable from the threat side of the door. Provide to dimension heights and widths indicated on the Drawings.
       1. System shall be designed to defeat ballistic assaults from a 44 magnum handgun in accordance with UL 752, Level 3.
       2. Aluminum Doors:
          1. Top rail and stile 2-3/4 inches (70 mm).
          2. Bottom rail 8-1/2 inches (216 mm) including glass stops.
       3. Aluminum Door and Sidelight Frames and Extrusions:
          1. Size 1 3/4 inches (44 mm) by 4 inches (102 mm).
          2. Structural sections shall be .125 inches thickness.
       4. Glazing:

\*\* NOTE TO SPECIFIER \*\* Glazing members can accommodate glazing transparencies or opaque panels ranging in thickness from 3/4 inch to 1-3/8 inch.

* + - * 1. LP-1250: Polycarbonate/Acrylic Laminate, nominal thickness 1-1/4 inch (30 mm), nominal weight 7.7 lbs/SF. Performance: UL 752, UL-3 (SPSA) 44 Mag. 240 Gr. Sp 1350-1485 fps.
      1. Door Hardware:
         1. SELECT SL-11HD continuous aluminum gear hinge.
         2. Adams Rite MS1850 deadlock with Adams Rite 4510 Series mortise thumb turn and or Keyed mortise cylinder.
         3. 9 inch aluminum pull handle as selected by the Architect.
         4. Door width aluminum push bar as selected by the Architect.
         5. LCN 4000 series heavy duty door closer.

\*\* NOTE TO SPECIFIER \*\* Delete article not required.

* 1. BULLET RESISTANT STOREFRONT FRAMING LEVEL (TSS-BL1.75)
     1. Design Requirements:
        1. Through design, manufacturing techniques, and material application, bullet resistant aluminum door must be constructed of extruded 6061-T6 aluminum alloy/tempered with a UL Standard 752 Level 3 protection rating.
           1. Door and Frame: No exposed fasteners.
           2. Corner joints: Extruded and keyed aluminum spline with continuous 3/8 inch (9 mm) diameter steel tie rod at door top and bottom rails.
           3. Joints and Connections: Tight hairline joints and true alignment of adjacent members. Glazing must not be removable from threat side of sash.
           4. Door Systems: Available in right hand, left hand and reverse swings.

Door to defeat ballistic assaults from a .44 magnum superpower small arms handgun as tested with UL Standard 752, Level 3 at Underwriters Laboratories.

* + 1. Basis of Design: Total Security Solutions Bullet Resistant Aluminum Frame TSS-BL3-1.75 Window Framing System.
       1. Head and Sill: One piece extrusions with no integral weep system at sill.
       2. Jambs: Two piece extrusions with removable faces allowing re-glazing.
       3. Mullions: Three piece extrusion with removable faces allowing glazing and individual lite replacement.
       4. Dimensional Heights and Widths: As indicated on the Drawings.
       5. Designed to defeat ballistic assaults from a .44 magnum handgun in accordance with UL 752, Level 3.
       6. Extruded Aluminum Frame Size:
          1. Head, Sill, and Jamb: 1-3/4 x 4 inches (44 x 102 mm).
          2. Mullion: 3-1/2 x 4 inches (89 x 102 mm).
       7. Glazing: Conform to UL 752:

\*\* NOTE TO SPECIFIER \*\* Delete bullet resistant level options not required.

* + - * 1. Bullet Resistant Level 1:

3/4 inch (19 mm) LP 750 Laminated.

1-1/4 inch (32 mm) Uncoated Acrylic.

3/4 inch (19 mm) GCP 750.

* + - * 1. Bullet Resistant Level 2:

1 inch (25 mm) LP 1000 Laminated.

1-3/8 inch (35 mm)Uncoated Acrylic.

1 inch (25 mm) TSS 002 L/S.

* + - * 1. Bullet Resistant Level 3:

1-1/4 inch (32 mm) LP 1250 Laminated.

1-1/4 inch (32 mm) TSS 003 L/S.

* 1. BULLET RESISTANT STOREFRONT FRAMING LEVEL (TSS-BL5.5)
     1. Design Requirements:
        1. TSS Bullet Resistant Aluminum Door Construction: Extruded aluminum, 6061-T6 alloy/tempered with a UL Standard 752 Level 4-8 protection rating.
        2. Frame: No exposed fasteners.
        3. Corner Joints: Extruded and keyed aluminum spline.
        4. Joints and Connections: Tight, hairline points and true alignment of adjacent members. Panels are not be removable from threat side.
     2. Basis of Design: Total Security Solutions Bullet Resistant Aluminum Frame TSS-BL5.5 Window Framing System.
        1. Head and Sill: One piece extrusions with no integral weep system at the sill.
        2. Jambs: Two piece extrusions with removable faces allowing re-glazing.
        3. Mullions: Three piece extrusions with removable faces allowing glazing and individual lite replacement.
        4. Joints and Connections: Tight providing hairline joints and true alignment of adjacent members. Glazing must not be removable from the threat side of the sash.
        5. Dimensional Heights and Widths: As indicated on the Drawings.
        6. Designed to defeat ballistic assaults up to a UL Level 8.
        7. Extruded Aluminum Frames Size: 1-3/4 x 5-1/2 inches (44 x 140 mm).
        8. Steel Sections: Galvanized. Fasteners: Zinc coated.
        9. Glazing: Conform to UL 752. Glass Clad Polycarbonate

\*\* NOTE TO SPECIFIER \*\* Delete bullet resistant level options not required.

* + - * 1. Bullet Resistant Level 4: TSS 004 L/S.
        2. Bullet Resistant Level 5: TSS 005 L/S.
        3. Bullet Resistant Level 6: TSS BR6.
        4. Bullet Resistant Level 7: TSS 007 L/S.
        5. Bullet Resistant Level 8: TSS 008 L/S.
  1. PRESSURE PLATE THERMAL ALUMINUM STOREFRONT FRAME ASSEMBLY
     1. Basis of Design: Total Security Solutions Bullet Resistant Aluminum Pressure Plate Framing System.
        1. Head and Sill: One piece extrusions with no integral weep system at the sill. Jambs: Two piece extrusions with removable faces to allow for re-glazing.
        2. Mullions: Three piece extrusion with removable faces allowing glazing and individual lite replacement.
        3. Joints and Connections: Tight, hairline joints and true alignment of adjacent members. Glazing must not be removable from threat side of the sash.
        4. Dimensional Heights and Widths: As indicated on the Drawings.
        5. Designed to defeat ballistic assaults from ballistic projectiles in accordance with UL 752 Levels 1 to 8.
        6. Extruded Aluminum Frame Size: 2 x 5.1875 inches (51 x 132 mm).
        7. Glazing: Conform to UL 752 doe protection Levels 1 to 8.
        8. Glazing Type: Glass Clad Polycarbonate.
           1. Bullet Resistant Level 1: 3/4 inch (19 mm) GCP 750
           2. Bullet Resistant Level 2: 1 inch (25 mm) TSS 002 L/S
           3. Bullet Resistant Level 3: 1-1/4 inch (32 mm) TSS 003 L/S
           4. Bullet Resistant Level 4: TSS 004 L/S
           5. Bullet Resistant Level 5: TSS 005 L/S
           6. Bullet Resistant Level 6: TSS BR6
           7. Bullet Resistant Level 7: TSS 007 L/S
           8. Bullet Resistant Level 8: TSS 008 L/S
     2. Basis of Design: Total Security Solutions Bullet Resistant Aluminum Pressure Plate Framing System.
        1. Head and Sill: Multi piece extrusions with an integral weep system at the sill. Jambs : Multi piece extrusions with removable faces allowing for re-glazing. Mullions: Multi piece extrusions with removable faces to allow for glazing and lite replacement.
        2. Joints and Connections: Tight, hairline joints and true alignment of adjacent members. Glazing must not be removable from threat side of the sash.
        3. Dimensional Heights and Widths: As indicated on the Drawings.
        4. Designed to defeat ballistic assaults from ballistic projectiles in accordance with UL 752, Levels 1-8
        5. Extruded Aluminum Frames:
           1. Head, Sill and Jamb Size: 2 x 5.1875 inch (51 x 132 mm)
           2. Mullion: 2 x 5.1875 inch (51 x 132 mm).
        6. Glazing: Conform to UL 752 for protection Levels 1 to 8.
     3. Basis of Design: Total Security Solutions Bullet Resistant Aluminum TSS-BL3-DR Bullet Resistant Door System.
        1. Joints and Connections: Tight, providing hairline joints and true alignment of adjacent members.
        2. Corner Joinery: Heavy duty extruded and keyed aluminum corner splines with continuous 3/8 inch diameter tie rod construction.
        3. Glazing: Must not be removable from the threat side of the door.
           1. Dimensions: Heights and widths as indicated on the Drawings.
        4. Design to defeat ballistic assaults from a .44 magnum handgun in accordance with UL 752, Levels 1 to 5.
           1. Aluminum Doors:

Top Rail and Stile: 2-3/4 inch (70 mm)

Bottom Rail: 10 (216 mm) including glass stops.

Sidelight Frames and Extrusions: 1-3/4 x 4 inch (44 x 102 mm).

Structural Section: 0.125 inch (3 mm) thickness.

Glazing: Conform to UL 752 for protection Level's 1 to 55

* + - * 1. Hardware:

Hinge: Select SL-11HD continuous aluminum gear.

Deadlock: Adams Rite MS1850.

Mortise Thumb Turn: Adams Rite 4510 Series and or Keyed mortise cylinder.

Push/Pull Handle: 9 inch (229 mm).

Door Width Push Bar: As selected by architect.

Heavy Duty Door Closer: LCN 400 series

* + - * 1. Optional Hardware:

Exit devices.

Electric strike plate.

Custom security hardware.

* + - 1. Door Frame Construction: Shipped fabricated and ready for field installation.
         1. Frames: Provide equal UL protection level as a non-ricochet door type.

Material: Aluminum ballistic extruded aluminum in 6061-T6 alloy, aluminum finish.

Stile: 2-3/8 inch (60 mm)wide style door system

Stile: 5-1/2 inch (140 mm) wide style door system

* 1. FACTORY FINISH
     1. Provide aluminum finishes in accordance with Aluminum Association Standard AA DAF-45.

\*\* NOTE TO SPECIFIER \*\* Select one of the following 4 paragraphs for the finish required for the project and delete the finishes not required.

* + 1. Clear Anodized Aluminum Surfaces: 204-R1 Class-II anodized aluminum coating.
    2. Dark Bronze Color Anodized Aluminum Surfaces: 313-R1 Class-II Dark Bronze anodized aluminum coating.
    3. Other Anodized Color: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
    4. Painted Aluminum Surfaces: As fabricated mechanical finish, chemically cleaned, and prepared for applied coating; with organic coating.

\*\* NOTE TO SPECIFIER \*\* Select one of the following 2 paragraphs for the coating finish required and delete the finish not required.

* + - 1. Organic Coating:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs for the organic finish required and delete the one not required.

* + - * 1. Manufacturer's standard powder coat finish.
        2. Thermosetting modified acrylic enamel.
      1. High Performance Coating:
         1. Kynar coating system.
      2. Color:

\*\* NOTE TO SPECIFIER \*\* Select one of the following color paragraphs and delete those not required.

* + - * 1. As selected from manufacturer's standard range.
        2. Custom color as selected by the Architect.
  1. VIRUS GUARDS

\*\* NOTE TO SPECIFIER \*\* The TSS VirusGuard™ - Fixed Barrier System is designed to create a physical, yet optically clear barrier between individuals. The system offers a custom enclosure to fit most commercial uniform counter spaces. The system is fastened to existing counters with aluminum alloy u-channel, and additionally supported by translucent Buttress Shields. The fixed system typically stands 24 inches high from the counter and includes options for notched passer openings and acrylic translucent passers.

* + 1. Basis of Design: TSS VirusGuard Fixed Barrier System by Total Security Solutions.
       1. Counter Depth Required: 6 inches (152 mm).
       2. Height: 24 inches (610 mm).
       3. Material: 1/2 inch (13 mm) acrylic.
       4. Weight: 3.3 lbs per sq ft (16.1 kg per sq m).
       5. Lengths: As detailed on the Drawings.
       6. Passer Openings: As detailed on the Drawings.
       7. Light Transmission: Greater than 90 percent.
       8. Support Bases: Aluminum alloy U-channel.
       9. Buttress Shields: For end support.

\*\* NOTE TO SPECIFIER \*\* The TSS VirusGuard™ - Mobile Barrier is designed to create a physical, yet optically clear barrier between individuals and can be assembled in minutes using snap-lock clips and is designed to sit on counters.

* + 1. Basis of Design: TSS VirusGuard Mobile Barrier System by Total Security Solutions.
       1. When set in a 42 inch (1067 mm) high countertop, the mobile barrier offers complete coverage for individuals up to 6 ft-4 inches (1930 mm) tall.
       2. Self-stabilized.
       3. Assemble with provided snap-lock clips.
       4. Hand grips for carrying.
       5. Material: 1/2 inch (13 mm) acrylic.
       6. Weight: 25.6 lbs (11.6 kg).
       7. Dimensions (HxWxD): 34-1/2 x 23-1/2 x 8-3/16 inches (876 x 597 x 208 mm).
       8. Passer Opening (HxW): 1-5/8 x 12-1/2 inches (41 x 317 mm). At bottom of guard.
       9. Light Transmission: Greater than 90 percent.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required.

* + - 1. Two Sided Tape: To secure barrier to a countertop.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   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. INSTALLATION
      1. Install in accordance with manufacturer's instructions.
      2. Install plumb, level, square, true to line, and without warp or rack.
      3. Provide all fasteners required for installation.
      4. Anchor frames securely in place to supports. Use attachment methods permitting adjustment for construction tolerances, irregularities, alignment, and expansion and contraction.
      5. Separate aluminum from other metal surfaces with bituminous coatings or other means approved by Architect.
      6. Sheet Metal Flashing: Coordinate with sheet metal flashing as specified in Section 07 62 00 - Sheet Metal Flashing and Trim.
      7. Joint Sealants: Install joint sealants as specified in Section 07 91 26 - Joint Fillers.
      8. Adjust door equipment for correct function and smooth operation.
      9. Verify water and weather tight installation.
      10. Remove temporary protection.
   4. FIELD QUALITY CONTROL
      1. Manufacturer's representative to verify that installation is in conformance to the manufacturer's recommendations.
   5. CLEANING
      1. Clean interior and exterior glass surfaces promptly after installation in accordance with manufacturer's instructions.
      2. Remove excess joint sealant in accordance with sealant manufacturer's instructions.
      3. Do not use harsh cleaning materials or methods that would damage glazing or finish.
   6. PROTECTION
      1. Protect installed products until completion of project.
      2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION