SECTION 13 47 15

BULLET RESISTANT PRODUCTS

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\*\* NOTE TO SPECIFIER \*\* Total Security Solutions; Bullet Resistant and physical security products.
This section is based on the products of Total Security Solutions, which is located at:
935 Garden Ln.
Fowlerville, MI 48836
Toll Free Tel: 866-304-5070
Fax: 517-223-0805
Email: [request info (arcat@tssbulletproof.com)](https://arcat.com/rfi?action=email&company=Total%252BSecurity%252BSolutions&message=RE%253A%2520Spec%2520Question%2520(13065tss)%253A%2520&coid=43676&spec=13065tss&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
		1. Bullet resistant products of the following types:

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

* + - 1. Transaction windows.
			2. Hollow metal windows.
			3. Aluminum windows.
			4. Hollow metal doors and frames.
			5. Wood doors and hollow metal frames.
			6. Storefronts and curtain walls.
			7. Transaction equipment.
			8. Speakers.
			9. Detention glazing.
			10. Composite panels.
			11. Insulated glass.
		1. 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 04 40 00 - Stone Assemblies.
		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.
	1. REFERENCES

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

* + 1. American National Standards Institute (ANSI): 1. ANSI Z97.1 - Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.
		2. ASTM International (ASTM):
			1. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
			2. ASTM C1036 - Standard Specification for Flat Glass.
			3. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass.
			4. ASTM C1349 - Standard Specification for Architectural Flat Glass Clad Polycarbonate.
			5. ASTM D2000 - Standard Classification System for Rubber Products in Automotive Applications.
			6. ASTM E84 - Test method for the Surface Burning Characteristics of Building Materials.
			7. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
		3. American Welding Society (AWS): AWS D1.1 - Structural Welding Code - Steel.
		4. National Institute of Justice (NIJ): NIJ Standard 0108.01 - Standard for Ballistic Resistant Protective Materials.
		5. Underwriters Laboratories (UL):
			1. UL 752 - Standard for Bullet Resisting Equipment. (September 5th, 2005)
			2. UL 972 - Standard for Burglary Resisting Glazing Material.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. 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. Design Data: Bullet resistance analysis design calculations for specific project conditions, certifying system conformance to specified performance requirements.
		5. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.
		6. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
		7. Closeout submittals: Warranty documents, issued and executed by manufacturer of systems, countersigned by Contractor.
	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 is 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 supported by, or penetrating through, ceilings, including light fixtures, HVAC equipment, fire-suppression system, and partitions.
		4. Coordination: Bullet resistant protection shall be provided in the sizes and in the configuration indicated on the Drawings. Furnish hardware necessary for the joining of the components specified. Provide components complete with adhesives, fasteners, and other devices required for complete assembly.
	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 doors and frames upon delivery at the building site. Clean and touch-up scratches or disfigurement caused by shipping or handling promptly.
		3. Store products in manufacturer's unopened packaging until ready for installation. Store assemblies, off the ground and on end, to prevent damage to face corners and edges. 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.
	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.

\*\* NOTE TO SPECIFIER \*\* The following 5 year warranty is available with Defender Ballistic Insulated Glass. Delete if not required.

* 1. WARRANTY
		1. Manufacturer's Standard Warranty: 5 years from date of manufacture.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Total Security Solutions, which is located at: 935 Garden Ln.; Fowlerville, MI 48836; ASD Toll Free Tel: 866-304-5070; Fax: 517-223-0805; Email: [request info](http://admin.arcat.com/users.pl?action=UserEmail&company=Total+Security+Solutions&coid=43676&rep=&fax=517-223-0805&message=RE:%2520Spec%2520Question%2520(13065tss):%2520%2520&mf=); 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.

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

* 1. BULLET RESISTANT TRANSACTION WINDOWS

\*\* NOTE TO SPECIFIER \*\* Delete transaction window type paragraphs not required.

* + 1. Baffle Design Transaction Barrier Window with Natural Voice Communication:
			1. Model TSSBDT-60 as manufactured by Total Security Solutions.
			2. Baffle Window Assembly: Two-way 'natural voice' communication permitted by design of vision panels and offset vertical side baffles and acrylic spacers.
			3. Fabrication: Components factory cut to size with holes factory drilled and tapped where required.
			4. Edges of Glazing: Polished.
			5. Anchor Supports: Aluminum.
			6. Fasteners: Stainless steel.

\*\* NOTE TO SPECIFIER \*\* Delete height and width option not required.

* + - 1. Height and Width: As indicated on the Drawings.
			2. Height and Width (in/mm): \_\_\_\_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single or multiple configurations. Indicate unit configurations and sizes on the Drawings.

* + - 1. Configuration: As indicated on the Drawings.
			2. Head and Sill Anchor Supports: Extruded anodized aluminum angles and channels.
			3. Side Jamb Anchor Supports: Extruded anodized aluminum angles, 1-1/4 by 1-1/4 by 1/8 inch (32 by 32 by 6 mm).
			4. Baffles: To match glazing type.

\*\* NOTE TO SPECIFIER \*\* Delete glazing protection level options not required.

* + - 1. Glazing Protection Level (UL 752): Level 1.
			2. Glazing Protection Level (UL 752): Level 2.
			3. Glazing Protection Level (UL 752): Level 3.
			4. Glazing Protection Level (UL 752): Level 4.
			5. Glazing Protection Level (UL 752): Level 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing type options not required.

Uncoated Acrylic glazing type applies only to protection levels 1 and 2.

Coated Acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2, and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - 1. Glazing Type: Uncoated Acrylic.
			2. Glazing Type: Coated Acrylic.
			3. Glazing Type: Polycarbonate.
			4. Glazing Type: Polycarbonate/Acrylic combination.
			5. Glazing Type: Glass/polycarbonate composite.
			6. Deal Tray:
				1. Product: Model TSSDT1610 as manufactured by Total Security Solutions.
				2. Dimensions: 16 inches by 10 inches (406 mm by 254 mm) from the outside edge of flanges.
				3. Clear Open Depth Under Glazing: Greater than 1-1/2 inches (38 mm).
				4. Construction: Minimum 16 gauge (1.5 mm) stainless steel, with a No. 4 finish.
		1. Natural Voice Transmission Window:
			1. Model NVRTW as manufactured by Total Security Solutions. Preassembled with two way "natural voice" communication permitted by the design of the vertical side frames and neoprene spacer glazing technique.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single NVRTW or multiple NVRTW-02 configurations. Indicate unit configurations and sizes on the Drawings.

* + - 1. Overall Size and Configuration: As indicated on the Drawings.
			2. Frame: Stainless steel, 12 gauge (2.66 mm) with a No. 4 finish. Vertical jambs are fabricated with a minimum of 3 predrilled holes on each jamb to permit anchoring to structural backing. Hole located to prohibit access from the opposite site of the frame.
			3. Frame conforms to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

* + - * 1. Protection Level: 1.
				2. Protection Level: 2.
				3. Protection Level: 3.
				4. Protection Level: 4.
				5. Protection Level: 5.
			1. Glazing: Top and bottom edge of the glazing to be capped with a minimum 20 gauge (0.912 mm) with a No. 4 finish.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing options not required.

Uncoated Acrylic glazing type applies only to protection levels 1 and 2.

Coated Acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2, and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/ Polycarbonate composite.

\*\* NOTE TO SPECIFIER \*\* Shelf is optional delete if not required.

* + - 1. Shelf: Full width of window and a minimum of 12 inches (305 mm) deep centered under the glazing:

\*\* NOTE TO SPECIFIER \*\* Delete shelf type option not required.

* + - * 1. Shelf Type: Solid core covered with a black high pressure laminate.
				2. Shelf Type: Stainless steel 18 gauge (1.214 mm) minimum with a No. 4 finish.
				3. Deal Tray: Model TSSDT1610. 16 by 10 inches (406 by 254 mm) from the outside edge of flanges with a clear open depth under the glazing no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 4 finish.
		1. Natural Voice Transmission Window with Voice Communication:
			1. Model NVRTW-05 as manufactured by Total Security Solutions. Preassembled with two way "natural voice" communication permitted by the design of the vertical side frames and neoprene spacer glazing technique.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single or multiple configurations. Indicate unit configurations and sizes on the Drawings.

* + - 1. Overall Size and Configuration: As indicated on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete the frame option not required.

* + - 1. Frame: Carbon steel, 16 gauge (1.5 mm) adjustable wrap frame with a prime finish. Exterior faced with bullet resistant composite. Frame conforms to UL 752 Rating Level 1 to Level 3.
			2. Frame: Stainless steel, 16 gauge (1.5 mm) adjustable wrap frame with a No. 4 finish. Exterior faced with bullet resistant composite. Frame conforms to UL 752 Rating Level 1 to Level 3.
			3. Glazing: Top and bottom edge of the glazing to be capped with a minimum 20 gauge (0.912 mm) with a No. 4 finish.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing type options not required.

Uncoated Acrylic glazing type applies only to protection levels 1 and 2.

Coated Acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2, and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/polycarbonate composite.

\*\* NOTE TO SPECIFIER \*\* Shelf is optional delete if not required.

* + - 1. Shelf: Full width of window and a minimum of 12 inches (305 mm) deep centered under the glazing:

\*\* NOTE TO SPECIFIER \*\* Delete shelf type option not required.

* + - * 1. Shelf Type: Solid core covered with a black high pressure laminate.
				2. Shelf Type: Stainless steel 18 gauge (1.214 mm) minimum with a No. 4 finish.
				3. Deal Tray: Model TSSDT 1610, 16 inches by 10 inches (406 mm by 254 mm) from the outside edge of flanges with a clear open depth under the glazing no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 4 finish.
		1. Natural Voice Transmission Window with Transparent Package Receiver and Voice Communication:
			1. Model NVRTW-07 as manufactured by Total Security Solutions. Preassembled with transparent PE package passer and two way "natural voice" communication permitted by the design of the vertical side frames and neoprene spacer glazing technique.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single configurations. Indicate unit configuration and sizes on the Drawings.

* + - 1. Overall Size and Configuration: As indicated on the Drawings.
			2. Frame: Stainless steel, 12 gauge (2.657 mm) with a No. 4 finish. Vertical jambs are fabricated with a minimum of 3 predrilled hole on each jamb to permit anchoring to structural backing. Hole located to prohibit access from the opposite site of the frame.
			3. Frame conforms to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

* + - * 1. Protection Level: 1.
				2. Protection Level: 2.
				3. Protection Level: 3.
				4. Protection Level: 4.
				5. Protection Level: 5.
			1. Glazing: Top and bottom edge of the glazing to be capped with a minimum 20 gauge (0.912 mm) with a No. 4 finish.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing options not required.

Uncoated Acrylic glazing type applies only to protection levels 1 and 2.

Coated Acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2, and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/ Polycarbonate composite.
			1. Shelf: Full width of window and a minimum of 12 inches (305 mm) deep centered under the glazing:

\*\* NOTE TO SPECIFIER \*\* Delete shelf type option not required.

* + - * 1. Shelf Type: Solid core covered with a black high pressure laminate.
				2. Shelf Type: Stainless steel 18 gauge (1.214 mm) minimum with a No. 4 finish.
				3. Deal Tray: Model TSSDT1610, 16 inches by 10 inches (406 mm by 254 mm) from the outside edge of flanges with a clear open depth under the glazing no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 3 finish.
			1. PE Package Passer: Acrylic with polished edges, 14 inches deep, 14 inches wide and 14 inches high (356 mm by 356 mm by 356 mm) with access door on both the front and rear.
		1. Natural Voice Transmission Window with Hinged Panel and Voice Communication: Model NVRTW-10 as manufactured by Total Security Solutions. Preassembled with two way "natural voice" communication permitted by the design of the vertical side frames and neoprene spacer glazing technique.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single or multiple configurations. Indicate unit configurations and sizes on the Drawings.

* + - 1. Overall Size and Configuration: As indicated on the Drawings.
			2. Frame: Stainless steel, 12 gauge (2.657 mm) with a No. 4 finish. Vertical jambs are fabricated with a minimum of 3 predrilled holes on each jamb to permit anchoring to structural backing. Hole located to prohibit access from the opposite site of the frame.
			3. Frame conforms to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

* + - * 1. Protection Level: 1.
				2. Protection Level: 2.
				3. Protection Level: 3.
				4. Protection Level: 4.
				5. Protection Level: 5.
			1. Glazing: Top and bottom edge of the glazing to be capped with a minimum 20 gauge (0.912 mm) with a No. 4 finish.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing options not required.

Uncoated Acrylic glazing type applies only to protection levels 1 and 2.

Coated Acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2, and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/ Polycarbonate composite.
			1. Hinged Panel: Polycarbonate to match glazing with stainless steel hinge, pull knob and security latch.

\*\* NOTE TO SPECIFIER \*\* Shelf is optional delete if not required.

* + - 1. Shelf: Full width of window and a minimum of 12 inches (305 mm) deep centered under the glazing:

\*\* NOTE TO SPECIFIER \*\* Delete shelf type option not required.

* + - * 1. Shelf Type: Solid core covered with a black high pressure laminate.
				2. Shelf Type: Stainless steel 18 gauge (1.214 mm) minimum with a No. 4 finish.
				3. Deal Tray: Model TSSDT1610, 16 inches by 10 inches (406 mm by 254 mm) from the outside edge of flanges with a clear open depth under the glazing no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 4 finish.
		1. Three Sided HM Transaction Window with Speaker:
			1. Model HMTTW-01 as manufactured by Total Security Solutions. Preassembled with speaker and non-ricochet type frame design.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single or multiple configurations. Indicate unit configurations and sizes on the Drawings.

* + - 1. Overall Size and Configuration: As indicated on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete frame option not required.

* + - 1. Frame: Carbon steel, 16 gauge (1.5 mm) adjustable wrap frame with a prime finish. Interior of exterior face lined with bullet resistant composite. Frame conforms to UL 752 Rating Level 5. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
			2. Frame: Stainless steel, 16 gauge (1.5 mm) adjustable wrap frame with a No. 4 finish. Interior of exterior face lined with bullet resistant composite. Frame conforms to UL 752 Rating Level 5. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
			3. Glazing: Top and bottom edge of the glazing to be capped with a minimum 20 gauge (0.912 mm) with a No. 4 finish.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing options not required.

Uncoated Acrylic glazing type applies only to protection levels 1 and 2.

Coated Acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2, and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/ Polycarbonate composite.

\*\* NOTE TO SPECIFIER \*\* Hinged panel is optional delete if not required.

* + - 1. Hinged Panel: Polycarbonate to match glazing with stainless steel hinge, pull knob and security latch.

\*\* NOTE TO SPECIFIER \*\* Shelf is optional delete if not required.

* + - 1. Shelf: Full width of window and a minimum of 12 inches (305 mm) deep centered under the glazing:

\*\* NOTE TO SPECIFIER \*\* Delete shelf type option not required.

* + - * 1. Shelf Type: Solid core covered with a black high pressure laminate.
				2. Shelf Type: Stainless steel 18 gauge (1.214 mm) minimum with a No. 4 finish.
				3. Deal Tray: Model TSSDT1610, 16 inches by 10 inches (406 mm by 254 mm) from the outside edge of flanges with a clear open depth under the glazing no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 4 finish.

\*\* NOTE TO SPECIFIER \*\* Delete speaker port options not required.

* + - 1. Speaker Port: TSS-NATT.
			2. Speaker Port: MK-1.
			3. Speaker Port: MK-2.
			4. Bullet Resistant Sidelights: Provide fixed sidelights with frames, glazing and protection level matching the transaction window specified.
		1. Three Sided HM Transaction Window with Voice Communication:
			1. Model HMTTW-03 as manufactured by Total Security Solutions. Preassembled with non-ricochet type frame design and two way "natural voice" communication permitted by the design of the vertical side frames and neoprene spacer glazing technique.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single or multiple configurations. Indicate configurations and sizes on the Drawings.

* + - 1. Overall Size and Configuration: As indicated on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete frame option not required.

* + - 1. Frame: Carbon steel, 16 gauge (1.5 mm) adjustable wrap frame with a prime finish. Interior of exterior face lined with bullet resistant composite. Frame conforms to UL 752 Rating Level 5. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
			2. Frame: Stainless steel, 16 gauge (1.5 mm) adjustable wrap frame with a No. 4 finish. Interior of exterior face lined with bullet resistant composite. Frame conforms to UL 752 Rating Level 5. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
			3. Glazing: Top and bottom edge of the glazing to be capped with a minimum 20 gauge (0.912 mm) with a No. 4 finish.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing type options not required.

Uncoated Acrylic glazing type applies only to protection levels 1 and 2.

Coated Acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2, and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/ Polycarbonate composite.

\*\* NOTE TO SPECIFIER \*\* Hinged panel is optional delete if not required.

* + - 1. Hinged Panel: Match glazing with stainless steel hinge, pull knob and security latch.

\*\* NOTE TO SPECIFIER \*\* Shelf is optional delete if not required.

* + - 1. Shelf: Full width of window and a minimum of 12 inches (305 mm) deep centered under the glazing:

\*\* NOTE TO SPECIFIER \*\* Delete shelf type option not required.

* + - * 1. Shelf Type: Solid core covered with a black high pressure laminate.
				2. Shelf Type: Stainless steel 18 gauge (1.214 mm) minimum with a No. 4 finish.
				3. Deal Tray: Model TSSDT1610, 16 inches by 10 inches (406 mm by 254 mm) from the outside edge of flanges with a clear open depth under the glazing no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 4 finish.

\*\* NOTE TO SPECIFIER \*\* Sidelights are optional delete if not required.

* + - 1. Bullet Resistant Sidelights: Provide fixed sidelights with frames, glazing and protection level matching the transaction window specified but without communication feature.
		1. Split Frame Three Sided HM Transaction Window with Voice Communication:
			1. Model HMTTW-04 as manufactured by Total Security Solutions. Preassembled with non-ricochet type frame design and two way "natural voice" communication permitted by the design of the vertical side frames and neoprene spacer glazing technique.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single or multiple configurations. Indicate configurations and sizes on the Drawings.

* + - 1. Overall Size and Configuration: As indicated on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete adjustable split frame option not required.

* + - 1. Adjustable Split Frame: Carbon steel, 16 gauge (1.5 mm) adjustable wrap frame with a prime finish. Interior of exterior face lined with bullet resistant composite. Frame conforms to UL 752 Rating Level 5. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
			2. Adjustable Split Frame: Stainless steel, 16 gauge (1.5 mm) adjustable wrap frame with a No. 4 finish. Interior of exterior face lined with bullet resistant composite. Frame conforms to UL 752 Rating Level 5. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
			3. Glazing: Top and bottom edge of the glazing to be capped with a minimum 20 gauge (0.912 mm) with a No. 4 finish.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing options not required.

Uncoated Acrylic glazing type applies only to protection levels 1 and 2.

Coated Acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2, and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/ Polycarbonate composite.

\*\* NOTE TO SPECIFIER \*\* Hinged panel is optional delete if not required.

* + - 1. Hinged Panel: Match glazing with stainless steel hinge, pull knob and security latch.

\*\* NOTE TO SPECIFIER \*\* Shelf is optional delete if not required.

* + - 1. Shelf: Full width of window and a minimum of 12 inches (305 mm) deep centered under the glazing:

\*\* NOTE TO SPECIFIER \*\* Delete shelf type option not required.

* + - * 1. Shelf Type: Solid core covered with a black high pressure laminate.
				2. Shelf Type: Stainless steel 18 gauge (1.214 mm) minimum with a No. 4 finish.
				3. Deal Tray: Model TSSDT1610, 16 inches by 10 inches (406 mm by 254 mm) from the outside edge of flanges with a clear open depth under the glazing no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 3 finish.

\*\* NOTE TO SPECIFIER \*\* Sidelights are optional delete if not required.

* + - 1. Bullet Resistant Sidelights: Provide fixed sidelights with frames, glazing and protection level matching the transaction window specified but without communication feature.
		1. Three Sided HM Transaction Sliding Window:
			1. Manufactured by Total Security Solutions. Preassembled with speaker and non-ricochet type frame design.

\*\* NOTE TO SPECIFIER \*\* Delete model and window size options not required.

* + - 1. Model HMTSTW-23 Single Slide
				1. Window Size: \_\_ inches wide by \_\_ inches high.
				2. Window Size: As indicated on the Drawings.
			2. Model HMTSTW-25 Double Slide
				1. Window Size: \_\_ inches wide by \_\_ inches high.
				2. Window Size: As indicated on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete frame option not required.

* + - 1. Frame: Carbon steel, 16 gauge (1.5 mm) adjustable wrap frame with a prime finish. Interior of exterior face lined with bullet resistant composite. Frame conforms to UL 752 Rating Level 5. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
			2. Frame: Stainless steel, 16 gauge (1.5 mm) adjustable wrap frame with a No. 4 finish. Interior of exterior face lined with bullet resistant composite. Frame conforms to UL 752 Rating Level 5. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
			3. Glazing: Top and bottom edge of the glazing to be capped with aluminum.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing type option not required.

Uncoated Acrylic glazing type applies only to protection levels 1 and 2.

Coated Acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2, and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/ Polycarbonate composite.
			1. Hardware:
				1. Box Track.
				2. Hand pull.
				3. Plunger Lock.

\*\* NOTE TO SPECIFIER \*\* Shelf is optional delete if not required.

* + - 1. Shelf: Full width of window and a minimum of 12 inches (305 mm) deep centered under the glazing:

\*\* NOTE TO SPECIFIER \*\* Delete shelf type option not required.

* + - * 1. Shelf Type: Solid core covered with a black high pressure laminate.
				2. Shelf Type: Stainless steel 18 gauge (1.214 mm) minimum with a No. 4 finish.
				3. Deal Tray: Model TSSDT1610, 16 inches by 10 inches (406 mm by 254 mm) from the outside edge of flanges with a clear open depth under the glazing no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 4 finish.

\*\* NOTE TO SPECIFIER \*\* Sidelights are optional delete if not required.

* + - 1. Bullet Resistant Sidelights: Provide fixed sidelights with frames, glazing and protection level matching the transaction window specified.
		1. Fixed Aluminum Transaction Window: Total Security Solutions Model preassembled. Frame conforms to UL 752 Rating Level 3.

\*\* NOTE TO SPECIFIER \*\* Delete frame design paragraph not required.

* + - 1. Frame Design: Two way "natural voice" communication permitted by the design of the vertical side frames and neoprene spacer glazing technique.
			2. Frame Design: Fixed frame with Speaker Model TSS-NATT in glazing.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single or multiple configurations. Windows are available in custom sizes. Select one of the following paragraphs and delete the one not required. Complete sizes below or show sizes on the Drawings. Consult with manufacturer with size limitations.

* + - 1. Window Size: \_\_ inches wide by \_\_ inches high.
			2. Overall Size and Configuration: As indicated on the Drawings.
			3. Frame: Anodized 6063-T6 extruded aluminum with internal bullet resistant composite. Provide with matching secure side removable glazing stop.
			4. Glazing: Top and bottom edge of the glazing to be capped with aluminum.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing option not required.

Uncoated Acrylic glazing type applies only to protection levels 1 and 2.

Coated Acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2, and 3

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/ Polycarbonate composite.

\*\* NOTE TO SPECIFIER \*\* Hinged panel is optional delete if not required.

* + - 1. Hinged Panel: Match glazing with stainless steel hinge, pull knob and security latch.

\*\* NOTE TO SPECIFIER \*\* Shelf is optional delete if not required.

* + - 1. Shelf:

\*\* NOTE TO SPECIFIER \*\* Delete shelf design options not required.

* + - * 1. Shelf Design: Full width of window and a minimum of 12 inches (305 mm) deep centered under the glazing.
				2. Shelf Design: Full width of window centered under the glazing and of depth indicated on the Drawings.
				3. Shelf Design: Provided as specified in Section \_\_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* Delete shelf type option not required.

* + - * 1. Shelf Type: Solid core covered with a black high pressure laminate.
				2. Shelf Type: Stainless steel 18 gauge (1.214 mm) minimum with a No. 4 finish.
				3. Deal Tray: Model TSSDT1610, 16 inches by 10 inches (406 mm by 254 mm) from the outside edge of flanges with a clear open depth under the glazing no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 4 finish.

\*\* NOTE TO SPECIFIER \*\* Sidelights are optional delete if not required.

* + - 1. Bullet Resistant Sidelights: Provide fixed sidelights with frames, glazing and protection level matching the transaction window specified but without communication feature.
		1. Fixed Aluminum Transaction Sliding Window: Total Security Solutions Model preassembled.
			1. Conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

* + - * 1. Protection Level: 1.
				2. Protection Level: 2.
				3. Protection Level: 3.
				4. Protection Level: 4.
				5. Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single or multiple configurations. Windows are available in custom sizes. Select one of the following paragraphs and delete the one not required. Complete sizes below or show sizes on the Drawings. Consult with manufacturer with size limitations.

* + - 1. Window Size: \_\_ inches wide by \_\_ inches high.
			2. Overall Size and Configuration: As indicated on the Drawings.
			3. Frame: Anodized 6063-T6 extruded aluminum with internal bullet resistant composite. Provide with matching secure side removable glazing stop.
			4. Glazing: Top and bottom edge of the glazing to be capped with a minimum 20 gauge (0.912 mm) with a No. 4 finish.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing type option not required.

Uncoated Acrylic glazing type applies only to protection levels 1 and 2.

Coated Acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2, and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/ Polycarbonate composite.
			1. Hardware:
				1. Aluminum Box Track.
				2. Hand pull.
				3. Plunger Lock.

\*\* NOTE TO SPECIFIER \*\* Shelf is optional delete if not required.

* + - 1. Shelf: Full width of window and a minimum of 12 inches (305 mm) deep centered under the glazing:

\*\* NOTE TO SPECIFIER \*\* Delete shelf type option not required.

* + - * 1. Shelf Type: Solid core covered with a black high pressure laminate.
				2. Shelf Type: Stainless steel 18 gauge (1.214 mm) minimum with a No. 4 finish.
				3. Deal Tray: Model TSSDT1610, 16 inches by 10 inches (406 mm by 254 mm) from the outside edge of flanges with a clear open depth under the glazing no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 4 finish.

\*\* NOTE TO SPECIFIER \*\* Sidelights are optional delete if not required.

* + - 1. Bullet Resistant Sidelights: Provide fixed sidelights with frames, glazing and protection level matching the transaction window specified.

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

* 1. BULLET RESISTANT HOLLOW METAL WINDOWS
		1. Fixed HM Window: Model HMT-FW preassembled with speaker port.

\*\* NOTE TO SPECIFIER \*\* Delete Frame design option not required.

* + - 1. Frame Design: Two way "natural voice" communication permitted by the design of the vertical side frames and neoprene spacer glazing technique.
			2. Frame Design: Fixed frame with Speaker Port in glazing.

\*\* NOTE TO SPECIFIER \*\* Delete speaker port options not required.

* + - * 1. Speaker Port: TSS-NATT.
				2. Speaker Port: MK-1.
				3. Speaker Port: MK-2.
			1. Frame Design: Fixed frame.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single or multiple configurations. Windows are available in custom sizes. Select one of the following paragraphs and delete the one not required. Complete sizes below or show sizes on the Drawings. Consult with manufacturer with size limitations.

* + - 1. Window Size: \_\_ inches wide by \_\_ inches high.
			2. Overall Size and Configuration: As indicated on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete frame type options not required.

* + - 1. Frame Type: Fixed. Carbon steel, 16 gauge (1.5 mm) frame with a prime finish. Interior of exterior face lined with bullet resistant composite as required for protection level specified. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
				1. Frame to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1. Plus .30 caliber and .44 mag.

Protection Level: 2. Plus .30 caliber and .44 mag.

Protection Level: 3. Plus .30 caliber and .44 mag.

Protection Level: 4. Plus .30 caliber and .44 mag.

Protection Level: 5. Plus .30 caliber and .44 mag.

* + - 1. Frame Type: Fixed. Stainless steel, 16 gauge (1.5 mm) frame with a No. 4 finish. Interior of exterior face lined with bullet resistant composite as required for protection level specified. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
				1. Frame to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1. Plus .30 caliber and .44 mag.

Protection Level: 2. Plus .30 caliber and .44 mag.

Protection Level: 3. Plus .30 caliber and .44 mag.

Protection Level: 4. Plus .30 caliber and .44 mag.

Protection Level: 5. Plus .30 caliber and .44 mag.

* + - 1. Frame Type: Adjustable split frame. Carbon steel, 16 gauge (1.5 mm) adjustable wrap frame with a prime finish. Interior of exterior face lined with bullet resistant composite as required for protection level specified. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
				1. Frame to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1. Plus .30 caliber and .44 mag.

Protection Level: 2. Plus .30 caliber and .44 mag.

Protection Level: 3. Plus .30 caliber and .44 mag.

Protection Level: 4. Plus .30 caliber and .44 mag.

Protection Level: 5. Plus .30 caliber and .44 mag.

* + - 1. Frame Type: Adjustable split frame. Stainless steel, 16 gauge (1.5 mm) adjustable wrap frame with a No. 3 finish. Interior of exterior face lined with bullet resistant composite as required for protection level specified. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
				1. Frame to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

* + - 1. Glazing: Top and bottom edge of the glazing to be capped with a minimum 20 gauge (0.912 mm) with a No. 3 finish.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing type options not required.

Uncoated acrylic glazing type applies only to protection levels 1 and 2.

Coated acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2 and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/ Polycarbonate composite.

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

* 1. BULLET RESISTANT ALUMINUM WINDOWS

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

* + 1. Fixed Aluminum Windows: Total Security Solutions Model preassembled design.

\*\* NOTE TO SPECIFIER \*\* Delete frame design options not required.

* + - 1. Frame Design: Two way "natural voice" communication permitted by the design of the vertical side frames and neoprene spacer glazing technique.
			2. Frame Design: Fixed frame design with Speaker Model TSS-NATT in glazing.
			3. Frame Design: Fixed frame design.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single or multiple configurations. Windows are available in custom sizes. Select one of the following paragraphs and delete the one not required. Complete sizes below or show sizes on the Drawings. Consult with manufacturer with size limitations.

* + - 1. Window Size: \_\_ inches wide by \_\_ inches high.
			2. Overall Size and Configuration: As indicated on the Drawings.
			3. Adjustable Split Frame: Anodized 6063-T6 extruded aluminum with internal bullet resistant composite as required for protection level specified. Provide with matching 1 inch by 1 inch (25 mm by 25 mm) removable glazing stop.
				1. Frame to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1. Plus .30 caliber and .44 mag.

Protection Level: 2. Plus .30 caliber and .44 mag.

Protection Level: 3. Plus .30 caliber and .44 mag.

Protection Level: 4. Plus .30 caliber and .44 mag.

Protection Level: 5. Plus .30 caliber and .44 mag.

* + - 1. Glazing: Top and bottom edge of the glazing to be capped with a minimum 20 gauge (0.912 mm) with a No. 4 finish.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing type options not required.

Uncoated acrylic glazing type applies only to protection levels 1 and 2.

Coated acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2 and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/ Polycarbonate composite.

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

* + 1. Aluminum Voice Around Frame Transaction Window: Total Security Solutions Model preassembled design.

\*\* NOTE TO SPECIFIER \*\* Delete frame design option not required.

* + - 1. Frame Design: Two way "natural voice" communication permitted by the design of the vertical side frames.
			2. Frame Design: Fixed frame.

\*\* NOTE TO SPECIFIER \*\* Windows are available in single or multiple configurations. Windows are available in custom sizes. Select one of the following paragraphs and delete the one not required. Complete sizes below or show sizes on the Drawings. Consult with manufacturer with size limitations.

* + - 1. Window Size: \_\_ inches wide by \_\_ inches high.
			2. Overall Size and Configuration: As indicated on the Drawings.
			3. Glazing: Top and bottom edge of the glazing to be capped with aluminum.
				1. Glazing to conform to UL 752 of the following protection level.

\*\* NOTE TO SPECIFIER \*\* Delete protection level options not required.

Protection Level: 1.

Protection Level: 2.

Protection Level: 3.

Protection Level: 4.

Protection Level: 5.

\*\* NOTE TO SPECIFIER \*\* Delete glazing type options not required.

Uncoated acrylic glazing type applies only to protection levels 1 and 2.

Coated acrylic glazing type applies only to protection levels 1 and 2.

Polycarbonate glazing type applies only to protection levels 1, 2 and 3.

Polycarbonate/Acrylic combination glazing type applies only to protection levels 1, 2 and 3.

Glass/polycarbonate composite glazing type applies to protection levels 1, 2, 3, 4, and 5.

* + - * 1. Glazing Type: Uncoated Acrylic.
				2. Glazing Type: Coated Acrylic.
				3. Glazing Type: Polycarbonate.
				4. Glazing Type: Polycarbonate/Acrylic combination.
				5. Glazing Type: Glass/ Polycarbonate composite.

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

* 1. BULLET RESISTANT HOLLOW METAL DOORS AND FRAMES
		1. Bullet Resistant Hollow Metal Steel Doors and Frames: Provide door and frame prehung with factory primed finish. Doors and frames of a "non-ricochet type" design with a Total Security Solutions Bullet Resistant Fiberglass.
			1. Steel Doors:

\*\* NOTE TO SPECIFIER \*\* Steel doors are available in single door, double door and door with sidelight configurations. Consult with manufacturer with size limitations.

* + - * 1. Door, Sizes and Configurations: As indicated on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete door type options not required.

Door Type: Flush Unglazed Door Type NL.

Door Type: Flush Glazed Door Type VL with a 12 inches by 12 inches (305 mm by 305 mm) glazed opening.

Door Type: Flush Glazed Door Type SL with a 4 inches by 22 inches (102 mm by 559 mm) glazed opening.

Door Type: Flush Glazed Door Type VL-2 with a 12 inches by 18 inches (305 mm by 457 mm) glazed opening.

Door Type: Flush Glazed Door Type HL with a 20 inches by 30 inches (508 mm by 762 mm) glazed opening.

Door Type: Flush Glazed Door Type FL with a 20 inches by 60 inches (508 mm by 1524 mm) glazed opening.

* + - * 1. Thickness: 1-3/4 inches (44 mm) minimum.
				2. Face Sheets:

Doors for interior use: Steel sheet, 16 gauge (1.5 mm), factory primed.

Doors for exterior use: Galvanized steel sheet, 16 gauge (1.5 mm), factory primed.

Visible seams on face sheets not permitted.

* + - * 1. Core: Fill spaces between face sheets with foamed in place rigid urethane foam and fiberglass core
				2. Vertical Edges:

Join face sheets by continuous welding. Grind and fill, dress welds to smooth flush surface.

Visible seams on vertical edges not permitted.

* + - * 1. Horizontal Edges:

Close top and bottom edges of doors with inverted continuous recessed steel channels, 12 gauge (2.657 mm) minimum; spot-weld channels to both door faces.

Additional flush closing channel at top and bottom edges of exterior doors; spot-weld channel to both door faces.

Openings in bottom closure of exterior doors to permit escape of entrapped moisture.

* + - * 1. Hardware preparation:

Mortise, reinforce, drill, and tap doors at factory for fully templated mortised hardware only, in accordance with approved hardware schedule and supplied templates.

Cylindrical hardware, in accordance with approved hardware schedule and supplied templates.

Exit devices, in accordance with approved hardware schedule and supplied templates.

Reinforcing plates at surface-mounted or non-templated hardware locations.

* + - * 1. Glazing Moldings and stops:

Weld fixed moldings to door on security side.

Loose stops, countersunk for fasteners.

Form moldings with mitered corner joints.

* + - * 1. Glazed lites: Factory-assemble lites in doors indicated to have lites, using glazing materials of the same ballistic level specified for the door and frame.

\*\* NOTE TO SPECIFIER \*\* HM frames are suitable for UL 752 Levels 1 to 3. Contact manufacturer for requirements for openings with higher levels.

* + - 1. HM Door Frames: Welded units with integral trim, of sizes and profiles indicated and as follows:

\*\* NOTE TO SPECIFIER \*\* Steel frames are available in multiple configurations including Wrap Frame, Split Frame, Butt Frame (for existing masonry/concrete openings), and Butt Frame for masonry built-in.

* + - * 1. Frame Sizes and Configuration: As indicated on the Drawings.
				2. Frames for Interior Use: Steel sheet, minimum 16 gauge (1.5 mm) thickness, factory primed.
				3. Frames for Exterior Use: Galvanized steel sheet, minimum 16 gauge (1.5 mm) thickness, factory primed.
				4. Stops: Minimum 5/8 inch (15.8 mm) in depth.
				5. Contact edges of joints and mitered perimeter trim faces, continuously welded.
				6. Hardware Preparation:

Mortise, reinforce, drill, and tap frames at factory for fully templated mortised hardware, in accordance with approved hardware schedule.

Reinforcing plates at surface-mounted hardware locations.

* + - * 1. Floor anchors:

Minimum 18 gauge (1.214 mm) steel.

Weld anchors inside each jamb for floor anchorage.

* + - * 1. Jamb anchors:

Weld anchors inside each jamb for wall anchorage.

Anchors of types suitable for adjacent wall construction.

* + - * 1. Plaster guards: Minimum 26 gauge (0.455 mm) galvanized steel; welded in place at hardware mortises on frames to be set in masonry or concrete openings.
				2. Temporary steel spreader welded to jamb feet for bracing during shipping and handling.
			1. Opening Security Level: Withstand bullet resistance level as follows, in accordance with UL 752.

\*\* NOTE TO SPECIFIER \*\* Delete the security levels not required.

* + - * 1. UL 752 Level 1.
				2. UL 752 Level 2.
				3. UL 752 Level 3.
				4. UL 752 Level 4.
				5. UL 752 Level 5.
				6. UL 752 Level 6.
				7. UL 752 Level 7.
				8. UL 752 Level 8.

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

* 1. BULLET RESISTANT WOOD DOORS AND STEEL FRAMES
		1. Bullet Resistant Wood Doors and Steel Frames: Provide door and frame prehung. Doors and frames of a "non-ricochet type" design with a Total Security Solutions Bullet Resistant Fiberglass ballistic encapturing barrier.

\*\* NOTE TO SPECIFIER \*\* Steel doors a are available in single door, double door and door with sidelight configurations. Consult with manufacturer with size limitations.

* + - 1. Door, Sizes and Configurations: As indicated on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete door type options not required.

* + - * 1. Door Type: Flush Unglazed Door Type NL.
				2. Door Type: Flush Glazed Door Type VL with a 12 inches by 12 inches (305 mm by 305 mm) glazed opening.
				3. Door Type: Flush Glazed Door Type SL with a 4 inches by 22 inches (102 mm by 559 mm) glazed opening.
				4. Door Type: Flush Glazed Door Type VL-2 with a 12 inches by 18 inches (305 mm by 457 mm) glazed opening.
				5. Door Type: Flush Glazed Door Type HL with a 20 inches by 30 inches (508 mm by 762 mm) glazed opening.
				6. Door Type: Flush Glazed Door Type FL with a 20 inches by 60 inches (508 mm by 1524 mm) glazed opening.
			1. Wood Doors:
				1. Thickness: 1-3/4 inches (44 mm) minimum.

\*\* NOTE TO SPECIFIER \*\* Delete face sheet option not required.

Face Sheet: Plain sliced birch veneer.

Face Sheet: Custom veneer as selected by the Architect.

* + - * 1. Core: Fill spaces between face sheets with foamed in place rigid urethane foam and fiberglass core
				2. Hardware preparation:

Mortise, reinforce, drill, and tap doors at factory for fully templated mortised hardware only, in accordance with approved hardware schedule and supplied templates.

Cylindrical hardware, in accordance with approved hardware schedule and supplied templates.

Exit devices, in accordance with approved hardware schedule and supplied templates.

Provide reinforcing plates at surface-mounted or non-templated hardware locations.

* + - * 1. Glazing Moldings and stops:

Wood moldings fastened to door on security side.

Loose stops, countersunk for fasteners.

Form moldings with mitered corner joints.

* + - * 1. Glazed Lites: Factory-assemble lites in doors indicated to have lites, using glazing materials of the same ballistic level specified for the door and frame.

\*\* NOTE TO SPECIFIER \*\* Delete door scope option not required.

* + - * 1. Door Scope: Clear.
				2. Door Scope: Bronze.

\*\* NOTE TO SPECIFIER \*\* HM frames are suitable for UL 752 Levels 1 to 3.

* + - 1. HM Door Frames: Welded units with integral trim, of sizes and profiles indicated and as follows:

\*\* NOTE TO SPECIFIER \*\* Steel frames are available in multiple configurations including Wrap Frame, Split Frame, Butt Frame (for existing masonry/concrete openings), and Butt Frame for masonry built-in.

* + - * 1. Frame Sizes and Configuration: As indicated on the Drawings.
				2. Frames for interior use: Steel sheet, minimum 16 gauge (1.5 mm) thickness, factory primed.
				3. Stops: Minimum 5/8 inch (15.8 mm) in depth.
				4. Contact edges of joints and mitered perimeter trim faces, continuously welded.
				5. Hardware Preparation:

Mortise, reinforce, drill, and tap frames at factory for fully templated mortised hardware, in accordance with approved hardware schedule.

Cylindrical hardware, in accordance with approved hardware schedule and supplied templates.

Exit devices, in accordance with approved hardware schedule and supplied templates.

Provide reinforcing plates at surface-mounted hardware locations.

* + - * 1. Floor Anchors:

Minimum 18 gauge (1.214 mm) steel.

Weld anchors inside each jamb for floor anchorage.

* + - * 1. Jamb Anchors:

Weld anchors inside each jamb for wall anchorage.

Anchors of types suitable for adjacent wall construction.

* + - * 1. Plaster Guards: Minimum 26 gauge (0.455 mm) galvanized steel; welded in place at hardware mortises on frames to be set in masonry or concrete openings.
				2. Temporary steel spreader welded to jamb feet for bracing during shipping and handling.
			1. Opening Security Level: Withstand bullet resistance level as follows, in accordance with UL 752.

\*\* NOTE TO SPECIFIER \*\* Delete security level options not required.

* + - * 1. UL 752 Level 1.
				2. UL 752 Level 2.
				3. UL 752 Level 3.
				4. UL 752 Level 4.
				5. UL 752 Level 5.
				6. UL 752 Level 6.
				7. UL 752 Level 7.
				8. UL 752 Level 8.

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

* 1. BULLET RESISTANT TRANSACTION EQUIPMENT

\*\* NOTE TO SPECIFIER \*\* Delete transaction equipment paragrpahs not required.

* + 1. Steel Package Receiver: 12 gauge steel, prime with UL Listed non-ricochet bullet resistant fiberglass in the doors offering the specified level of protection. Doors provided with interlocking mechanism, automatic door closer on the threat side door, threat side door lockout controlled from safe side, key locking on safe side door, and installation flanges as standard features.

\*\* NOTE TO SPECIFIER \*\* Delete square type size option not required.

* + - 1. Square Type Size: 18 inches deep, 18 inches wide and 18 inches (457 mm by 457 mm by 457 mm) high.
			2. Square Type Size: 18 inches deep, 24 inches wide and 24 inches (457 mm by 610 mm by 610 mm) high.
			3. Door:

\*\* NOTE TO SPECIFIER \*\* Delete material option not required.

* + - * 1. Material: Steel sheet, 16 gauge (1.5 mm), factory primed.
				2. Material: Stainless steel sheet, 18 gauge (1.214 mm). No. 3 finish.

\*\* NOTE TO SPECIFIER \*\* The following paragraph is optional. Delete if not required.

* + - * 1. Door Vision Panel: Safe side vision panel 6 inches by 6 inches. Laminated polycarbonate, minimum 1-1/4 inch thick with polished edges, conforms to offering the specified level of protection.
			1. Opening Security Level: Withstand bullet resistance level as follows, in accordance with UL 752.

\*\* NOTE TO SPECIFIER \*\* Delete UL security levels not required.

* + - * 1. UL 752 Level 1.
				2. UL 752 Level 2.
				3. UL 752 Level 3.
		1. Transparent Package Receiver: Acrylic, minimum 1-1/4 inches (32 mm) thick with polished edges, conforms to offering the specified level of protection. Doors provided with interlocking mechanism, automatic door closer on the threat side door, threat side door lockout controlled from safe side, key locking on safe side door, and installation flanges as standard features.

\*\* NOTE TO SPECIFIER \*\* Delete square type size option not required.

* + - 1. Square Type Size: 14 inched deep, 14 inches wide and 14 inches (356 mm by 356 mm by 356 mm) high.
			2. Square Type Size: 18 inches deep, 18 inches wide and 18 inches (457 mm by 457 mm by 457 mm) high.
			3. Opening Security Level: Withstand bullet resistance level as follows, in accordance with UL 752.

\*\* NOTE TO SPECIFIER \*\* Delete UL security levels not required.

* + - * 1. UL 752 Level 1.
				2. UL 752 Level 2.
				3. UL 752 Level 3.
		1. Rotary Package Receiver: High pressure laminated turntable and base with 12 gauge (2.657 mm) stainless steel outer body with UL Listed non-ricochet bullet resistant fiberglass offering the specified level of protection. Doors provided with night locking pin and rotating mechanism.
			1. Size: Turntable 14 inches in diameter on 14 inches by 20 inches base and 18 inches high (356 mm in diameter on a 356 mm by 508 mm base and 457 mm high).
			2. Opening Security Level: Withstand bullet resistance level as follows, in accordance with UL 752.

\*\* NOTE TO SPECIFIER \*\* Delete UL security levels not required.

* + - * 1. UL 752 Level 1.
				2. UL 752 Level 2.
				3. UL 752 Level 3.
		1. Bullet Resistant Sliding Transaction Drawer: Steel, 10 gauge (3.416 mm), stainless steel, UHMW sliding drawer and 14 gauge (1.897 mm) stainless steel flange frame. Stainless steel provided with a No. 3 finish. Drawer provided with sliding tracks and stainless steel push handle.
			1. Size: 24 inches wide by 10 inches high by 24 inches deep (610 mm wide by 254 mm high by 610 mm deep) with a 12 inches (305 mm) maximum travel drawer opening projection. Provided with key locking cash tray.
			2. Opening Security Level: Withstand bullet resistance level as follows, in accordance with UL 752.

\*\* NOTE TO SPECIFIER \*\* Delete UL security levels not required.

* + - * 1. UL 752 Level 1.
				2. UL 752 Level 2.
				3. UL 752 Level 3.
		1. Deal Tray:

\*\* NOTE TO SPECIFIER \*\* Delete tray types not required from the following paragraphs.

* + - 1. Deal Tray Recessed: Model TSS-DT1610, 16 inches by 10 inches (406 mm by 254 mm) from the outside edge of flanges with a clear open depth under of no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 3 finish.
			2. Deal Tray with Flip Lid: Model TSS-FL1610, 16 inches by 10 inches (406 mm by 254 mm) from the outside edge of flanges with a clear open depth under of no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 3 finish.
			3. Deal Tray Recessed: Model TSS-RT1208, 12 inches by 8 inches (305 mm by 203 mm) from the outside edge of flanges with a clear open depth under of no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 3 finish.
			4. Deal Tray Surface Mount: Model TSS-ST1208, 12 inches by 8 inches (305 mm by 203 mm) from the outside edge with a clear open depth under of no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 3 finish.
			5. Deal Tray Non-Ricochet: Model TSS-NR1210, 12 inches by 10 inches (305 mm by 254 mm) from the outside edge of flanges with a clear open depth under of no less than 1-3/4 inches. Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 3 finish.
			6. Sliding Deal Tray: Model TSS-SLDT, 14 inches by 14 inches (356 mm by 356 mm) from the outside edge of flanges with a clear open depth under of no less than 2-3/4 inches (70 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 3 finish.

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

* 1. BULLET RESISTANT SPEAKERS

\*\* NOTE TO SPECIFIER \*\* Delete speaker paragraphs not required.

* + 1. Bullet Resistant Speaker: Model TSS-NATT, 10 inches (254 mm) acrylic backer. Provided with offset dowels, mounting screws and finish caps.
			1. Size: 10 inch (254 mm) diameter available in UL Levels 1-3.
		2. Universal Bullet Resistant Speaker: Model TSS-MK1, stainless steel speaker face and clamp plate with a No. 3 finish. Provided with 1/4 inch diameter stainless steel screws and space nuts to maintain clearance.
			1. Size: 6 inch (152 mm) diameter.
		3. Universal Bullet Resistant Speaker: Model TSS-MK2, stainless steel speaker face and clamp plate with a No. 3 finish. Provided with 1/4 inch (6 mm) diameter stainless steel screws and space nuts to maintain clearance.
			1. Size: 6 inch (152 mm) diameter.

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

* 1. BULLET RESISTANT AND DETENTION GLAZING

\*\* NOTE TO SPECIFIER \*\* Delete detention glazing paragraphs not required.

* + 1. Bullet Resistant Glazing
			1. Performance: UL 752, UL-1 (MPSA) 9 mm 124 Gr., FMJ 1175-1295 fps:
				1. Level 1: Acrylic uncoated, nominal thickness 1-1/4 inch (32 mm), nominal weight 7.7 lbs/SF.
				2. AR Level 1: Acrylic coated, nominal thickness 1-1/4 inch (32mm), nominal weight 7.7 lbs/SF.
				3. LP 750: Polycarbonate/Acrylic Laminate, nominal thickness 3/4 inch (19 mm), nominal weight 4.6 lbs/SF.
				4. LTI-BR1: Glass/Polycarbonate Composite, nominal thickness 13/16 inch (20 mm), nominal weight 8.99 lbs/SF.
			2. Performance: UL 752, UL-2 (HPSA) .375 Mag. 158 Gr. Sp or Lead 1250-1375 fps:
				1. AR Level 2: Acrylic coated, nominal thickness 1 3/8 inch (35 mm), nominal weight 8.5 lbs/SF.
				2. LP-1000: Polycarbonate/Acrylic Laminate, nominal thickness 1 inch (25 mm), nominal weight 6.4 lbs/SF.
				3. LTI-BR2: Glass/Polycarbonate Composite, nominal thickness 1 1/16 inch (27 mm), nominal weight 11.6 lbs/SF.
			3. Performance: UL 752, UL-3 (SPSA) 44 Mag. 240 Gr. Sp 1350-1485 fps:
				1. LP-1250: Polycarbonate/Acrylic Laminate, nominal thickness 1 1/4 inch (32 mm), nominal weight 7.7 lbs/SF.
		2. Forced Entry and Detention Glazing:
			1. Performance: H.P. White Level-1 HPW-TP-0500-03:
				1. GCP0916: Glass/Polycarbonate Composite, nominal thickness 9/16 inch (20 mm), nominal weight 5.1 lbs/SF.
			2. Performance: H.P. White Level-1 HPW-TP-0500-03:
				1. GCPHG1616: Glass/Polycarbonate Composite, nominal thickness 1 inch (25 mm), nominal weight 8.3 lbs/SF.

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

* 1. BULLET RESISTANT COMPOSITE PANELS
		1. Composite Panels: Total Security Solutions-totalArmor Bullet Protection Composite Panels. FRP composite panel manufactured using multiple layers of starch-oil woven roving ballistic grade fiberglass cloth impregnated with a thermoset polyester resin and compressed into flat rigid sheets.
			1. Composite panels shall be of the "non ricochet type" intended to permit the encapture and retention of an attacking projectile lessening the potential of a random injury or lateral penetration.
			2. Material will meet ASTM E119 one hour fire resistance when installed in a non-bearing steel stud wall with 5/8 inch firecode gypsum on the exterior and with 5/8 inch (16 mm) firecode gypsum over the FRP panel on the inside.
			3. Panels conforming to UL 752 Rating level as follows:

\*\* NOTE TO SPECIFIER \*\* Delete UL security levels not required.

* + - * 1. UL Level I: totalArmor BB-1.
				2. UL Level 2: totalArmor BB-2.
				3. UL Level 3: totalArmor BB-3.
				4. UL Level 4: totalArmor BB-4.
				5. UL Level 5: totalArmor BB-5.
				6. UL Level 7: totalArmor BB-7.
				7. UL Level 8: totalArmor BB-8.
			1. Panels conforming to National Institute of Justice (N.I.J) 0108.01 Threat Level Rating as follows:

\*\* NOTE TO SPECIFIER \*\* Delete N.I.J. security levels not required.

* + - * 1. N.I.J Level I: totalArmor BB-A.
				2. N.I.J Level IA-A: totalArmor BB-1.
				3. N.I.J Level II: totalArmor BB-2.
				4. N.I.J Level III-A: totalArmor BB-3.

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

* 1. BULLET RESISTANT INSULATED GLASS

\*\* NOTE TO SPECIFIER \*\* Delete bullet resistant insulated glass paragraphs not required.

* + 1. Bullet Resistant Insulated Glass: As manufactured by Total Security Solutions.
			1. Series: Defender Ballistic Insulated Glass.
			2. Product: TSS IG-FE 15/16 inch.
			3. Compliance:
				1. Ballistic and Forced Entry Rating: UL 972 - burglary resistant.
				2. ANSI Z971: Pass.
				3. ASTM C1036.
				4. Dimensional Tolerance: ASTM C1349.
				5. CPSC 16 CFR 1201 - Category I and II.
			4. Construction:
				1. Threat Layer: Heat treated glass.
				2. Layer 2: Interlayer.
				3. Layer 3: Heat treated glass.
				4. Layer 4: Air gap.
				5. Secure Layer 5: Heat treated glass.

\*\* NOTE TO SPECIFIER \*\* Delete glass options not required.

* + - 1. Glass: Manufacturer's standard clear glass.
			2. Glass: Reflective glass.
			3. Glass: Tinted glass, gray.
			4. Glass: Tinted glass, bronze.
			5. Glass: Tinted glass, green.
			6. Glass: Tinted glass, blue.
			7. Glass: Translucent white interlayer (frosted).
			8. Glass: One-way mirror.
			9. Glass: Insulating units - low E.
			10. Glass: Suntuitive shading.
		1. Bullet Resistant Insulated Glass: As manufactured by Total Security Solutions.
			1. Series: Defender Ballistic Insulated Glass.
			2. Product: TSS IG 001 L/S 1-1/4 inches.
			3. Compliance:
				1. Ballistic and Forced Entry Rating:

UL 752: Level 1.

UL 972: Burglary resistant.

* + - * 1. ANSI Z971: Pass.
				2. ASTM C1036.
				3. Dimensional Tolerance: ASTM C1349.
				4. CPSC 16 CFR 1201 - Category I and II.
			1. Construction:
				1. Threat Layer: Heat treated glass.
				2. Layer 2: Interlayer.
				3. Layer 3: Heat treated glass.
				4. Layer 4: Air gap.
				5. Layer 5: Heat treated glass.
				6. Layer 6: Interlayer.
				7. Secure Layer 7: Heat treated glass.

\*\* NOTE TO SPECIFIER \*\* Delete glass options not required.

* + - 1. Glass: Manufacturer's standard clear glass.
			2. Glass: Tinted glass, gray.
			3. Glass: Tinted glass, bronze.
			4. Glass: Tinted glass, green.
			5. Glass: Tinted glass, blue.
			6. Glass: Translucent white interlayer (frosted).
			7. Glass: Insulating units - low E.
			8. Glass: Suntuitive shading.
		1. Bullet Resistant Insulated Glass: As manufactured by Total Security Solutions.
			1. Series: Defender Ballistic Insulated Glass.
			2. Product: TSS IG 001 L/S 1-1/8 inches.
			3. Compliance:
				1. Ballistic and Forced Entry Rating: UL 972 - burglary resistant.
				2. ANSI Z971: Pass.
				3. ASTM C1036.
				4. Dimensional Tolerance: ASTM C1349.
				5. CPSC 16 CFR 1201 - Category I and II.
			4. Construction:
				1. Threat Layer: Heat treated glass.
				2. Layer 2: Interlayer.
				3. Layer 3: Heat treated glass.
				4. Layer 4: Air gap.
				5. Secure Layer 5: Heat treated glass.

\*\* NOTE TO SPECIFIER \*\* Delete glass options not required.

* + - 1. Glass: Manufacturer's standard clear glass.
			2. Glass: Reflective glass.
			3. Glass: Tinted glass, gray.
			4. Glass: Tinted glass, bronze.
			5. Glass: Tinted glass, green.
			6. Glass: Tinted glass, blue.
			7. Glass: Translucent white interlayer (frosted).
			8. Glass: Wire glass.
			9. Glass: One-way mirror.
			10. Glass: Insulating units - low E.
			11. Glass: Suntuitive shading.
	1. FABRICATION
		1. Welds in accordance with requirements and standard practices of the American Welding Society. Exposed welds shall be ground flush and finished smooth.
		2. Joints and connections shall be tight, providing hairline joints and true alignment of adjacent members.
	2. VIRUS GUARDS

\*\* NOTE TO SPECIFIER \*\* The TSS VirusGuard(tm) - 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(tm) - 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 openings and installing surfaces have been properly prepared.
			1. Verify openings are in accordance with approved shop drawings.
			2. Verify that supports have been installed in accordance with the Drawings.
		2. If 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 products in accordance with approved submittals, manufacturer's instructions and requirements of UL 752.
			1. Install equipment plumb, level, rigid and in true alignment.
			2. Use proper anchoring devices. Exposed anchor holes shall be used for anchors.
			3. Install hardware as required for a complete installation.
			4. Where applicable, install fire-rated assemblies in accordance with NFPA 80.
			5. Adjust operating parts for proper operation, non-binding.

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

* + 1. Bullet Resistant Fiberglass Panels: Install using an industrial adhesive, mastic, screws or bolts. Method of application shall maintain the bullet resistive rating at junctures with the concrete floor slab, concrete roof slab, bullet resistive door frames, bullet resistive window frames, and required penetrations.
			1. Joints shall be reinforced by a back-up layer of bullet resistive material.
			2. Bullet resistance of the joint, as reinforced, shall be at least equal to that of the panel.
			3. Minimum width of reinforcing layer at joint shall be 4 inches (2 inches on each panel or a 2 inch minimum overlap).
		2. Installation Tolerances: Do not exceed the following installation tolerances:
			1. Squareness: Plus or minus 1/16 inch (1.6 mm) measured on a line, 90 degrees from one jamb, at the upper corner of the frame at the other jamb.
			2. Alignment: Plus or minus 1/16 inch (1.6 mm) measured on jambs on a horizontal line parallel to the plane of the wall.
			3. Twist: Plus or minus 1/16 inch (1.6 mm) measured at face corners of jambs on parallel lines perpendicular to the plane of the wall.
			4. Plumb: Plus or minus 1/16 inch (1.6 mm) measured on the jamb at the floor.
	1. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION