

AMERISTAR® PERIMETER SECURITY USA INC.
Stalwart IS® Anti-Ram Barrier | M40/P2 Cable System
Construction Specification 32 30 00.11

PART 1 – GENERAL

1.01 WORK INCLUDED

The contractor shall provide all labor, materials and appurtenances necessary for installation of the anti-ram barrier system defined herein at (specify project site).

1.02 RELATED WORK

Section ____ - Earthwork

Section ____ - Concrete

1.03 SYSTEM DESCRIPTION

The manufacturer shall supply a total anti-ram cable barrier system of the Ameristar® Stalwart IS® (*specify* Trident, Stronghold, or Gauntlet) M40/P2 design. The system shall include all components (i.e., cables, supports, panels, I-beam posts, bollards and hardware) required. The barrier shall comply with Ameristar's System Drawing Number (*specify* Trident / SIT- M402-SS, Stronghold / SIS- M402- SS, or Gauntlet / SIG- M402- SS).

1.04 QUALITY ASSURANCE

The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

1.05 REFERENCES

- ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process
- ASTM A500/A500M – Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus
- ASTM D523 - Test Method for Specular Gloss
- ASTM D714 - Test Method for Evaluating Degree of Blistering in Paint
- ASTM D822 - Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus
- ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
- ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates
- ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- ASTM D3359 - Test Method for Measuring Adhesion by Tape Test
- ASTM F2656 – Standard Test Method for Vehicle Crash Testing of Perimeter Barriers
- Federal Specification RR-W-410E / Wire Rope and Strand
- ASTM F2408 – Ornamental Fences Employing Galvanized Steel Tubular Pickets

1.06 SUBMITTAL

The manufacturer's literature shall be submitted prior to installation.

1.07 PRODUCT HANDLING AND STORAGE

Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.

PART 2 – MATERIALS

2.01 MANUFACTURER

A. The anti-ram cable barrier system shall conform to the Stalwart IS (*specify* Trident, Stronghold, or Gauntlet) M40/P2 design, manufactured by Ameristar Perimeter Security USA Inc., in Tulsa, Oklahoma. This system shall be tested and certified to meet ASTM F2656, Impact Condition Designation M40, Penetration Rating P2, with capability of stopping a 15,000 lb vehicle traveling at speeds up to 40mph.

B. The integrated steel ornamental pale high security fence panel shall conform to Ameristar Stalwart IS (Impasse Security) (*specify* 5-Rail or 6-Rail) (total number of rails includes three blank rails for housing anti-ram cabling) style manufactured by Ameristar Perimeter Security USA Inc., in Tulsa, Oklahoma.

C. The entire anti-ram barrier system, and all associated panels, I-beam posts, bollards, gates, accessories, fittings, and fasteners shall be obtained from a single source.

2.02 MATERIAL

A. Steel material for cable-supporting framework (i.e., corrugated pales, rails and I-beam posts) shall be galvanized prior to forming and shall conform to the requirements of ASTM A653/A653M, with a minimum yield strength of 45,000 psi (310 MPa). The steel shall be hot-dip galvanized to meet the requirements of ASTM A653/A653M with a minimum zinc coating weight of 0.90 oz/ft² (276 g/m²), Coating Designation G-90.

B. Steel material for cable-anchoring bollard posts shall conform to the requirements of ASTM A500/A500M, with a minimum yield strength of 46,000 psi (315 MPa).

C. Material for corrugated pales shall be a nominal 2.75" x .75" x 14 Ga. The cross-sectional shape of the rails shall conform to the manufacturer's Stalwart IS rail design a nominal 2" x 2" x 11 Ga. Pre-drilled holes in the Stalwart IS rail shall be spaced 6" on center, providing a pale airspace of no greater than 3.25". Tamperproof fasteners shall be used to fasten each pale to panel rail at every intersection (cable rails do not require pale to rail fasteners). Posts shall conform to the manufacturer's Stalwart IS I-Beam design with a nominal 3" x 2.75" x 12 Ga.

D. If applicable - Material for steel Stalwart IS privacy screening shall be 18ga. preformed slats, providing complete screening coverage between pales and at pale to post connections. Stalwart IS privacy screening shall provide screening from top rail to bottom rail, and be capable of traversing terrain without impeding the raking capabilities of the fencing panel.

E. The cable material shall be 1-1/4" diameter structural wire strand conforming to ASTM A586, Grade 2, Class A coating throughout, with a breaking strength of 159 tons. Cables shall be equipped with threaded studs swaged to a holding strength equivalent to cable breaking strength.

2.03 FABRICATION

A. Pales, rails, I-beam posts and bollards shall be pre-cut to specified lengths. Stalwart IS panel rails shall be pre-punched to accept tamperproof security fasteners. I-beam post flange shall be pre-punched to accept rail to post attachment. I-beam post web shall be punched providing a clear opening for interior of rails to align throughout the entire system for affixing conduit, video cabling, IDS wiring, and other components for a complete systems integration. Stalwart IS rails shall be attached to post flange providing a bracket-less design at each intermediate post.

B. The manufactured framework, I-beam posts and bollards shall be subjected to the PermaCoat® thermal stratification coating process (high-temperature, in-line, multi-stage, multi-layer) including, as a minimum, a six-stage pretreatment/wash, an electrostatic spray application of an epoxy base, and a separate electrostatic spray application of a polyester finish. The base coat shall be a thermosetting epoxy powder coating (gray in color) with a minimum thickness of 2 mils (0.0508mm). The topcoat shall be a "no-mar" TGIC polyester powder coat finish with a minimum thickness of 2 mils (0.0508mm). The color shall be (*specify black, bronze, white or desert sand*). The stratification-coated framework and I-

beam posts shall be capable of meeting the performance requirements for each quality characteristic shown in Table 1.

Table 1 – Coating Performance Requirements		
<u>Quality Characteristics</u>	<u>ASTM Test Method</u>	<u>Performance Requirements</u>
Adhesion	D3359 – Method B	Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).
Corrosion Resistance	B117, D714 & D1654	Corrosion Resistance over 3,500 hours (Scribed per D1654; failure mode is accumulation of 1/8" coating loss from scribe or medium #8 blisters).
Impact Resistance	D2794	Impact Resistance over 60 inch lb. (Forward impact using 0.625" ball).
Weathering Resistance	D822 D2244, D523 (60° Method)	Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units).

PART 3 - EXECUTION

3.01 PREPARATION

A. The purchaser shall indicate the location of barrier line with suitable stakes. Stake intervals shall not exceed 500 ft or line of sight.

B. The purchaser shall indicate all underground utility locations, USC&G benchmarks, property monuments, and other underground structures.

C. Before installing the Stalwart IS Anti-Ram Cable System, all necessary site clearing and grading shall be performed by the purchaser. An adequate clearance on both sides of the cable barrier line is required.

3.02 INSTALLATION

The Stalwart IS barrier shall be installed per Ameristar's System Drawing Number (*specify* Trident / SIT-M402- SS, Stronghold / SIS- M402- SS, or Gauntlet / SIG- M402- SS). Fence panels, brackets, cabling, and fasteners shall be installed according to installation instructions and drawings. I-beam posts and bollards shall be installed per product drawings and installation instructions. The "Earthwork" and "Concrete" sections of this specification shall govern material requirements for the concrete footer unless otherwise specified by the product drawings or installation instructions.

3.03 FENCE INSTALLATION MAINTENANCE

When cutting/drilling fence system components adhere to the following steps to seal the exposed steel surfaces; 1) Remove all metal shavings from cut area. 2) Apply zinc-rich primer to thoroughly cover cut edge and/or drilled hole; let dry. 3) Apply 2 coats of custom finish paint matching fence color. Failure to seal exposed surfaces per steps 1-3 above will negate warranty. Ameristar spray cans or paint pens shall be used to prime and finish exposed surfaces; it is recommended that paint pens be used to prevent overspray. Use of non-Ameristar parts or components will negate the manufactures' warranty.

3.04 CLEANING

The contractor shall clean the jobsite thoroughly to ensure it is left neat and free of any debris caused by the installation of the cable system.