**AMERISTAR® PERIMETER SECURITY USA INC.**

**GridLock® - Rapid Deploy Fence Barrier**

**Construction Specification – SECTION 32 31 00**

**PART 1 - GENERAL**

**1.01 WORK INCLUDED**

The contractor shall provide all labor, materials, and appurtenances necessary for installation of the commercial welded wire architectural fence 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 rapid-deploy fence barrier of the Ameristar® GridLock® design. The system shall include all components (i.e., panels, brackets, posts, gates, and hardware) required.

**1.04 QUALITY ASSURANCE**

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 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 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 D6695 – Standard Practice for Xenon-Arc Exposures of Paint and Related Coatings
* ASTM F2453/F 2453M – Standard Specification for Welded Wire Mesh Fence Fabric

**1.06 SUBMITTAL**

The manufacturer's submittal package shall be provided prior to installation.

**1.07 PRODUCT HANDLING AND STORAGE**

Upon receipt at the job site, all materials shall be checked to ensure that no damages 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**

The barrier fence system shall conform to Ameristar® GridLock® design by Ameristar Perimeter Security USA, Inc. in Tulsa, Oklahoma.

**2.02 MATERIAL**

**A.** Steel material for fence posts and frame shall be galvanized prior to forming in accordance with the requirements of ASTM A653/A653M, with minimum yield strength of 45,000 psi (310 MPa). 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, Coating Designation G-90.

**B.** Steel wire mesh fence panels shall be manufactured to meet ASTM F2453. Fence panels shall be pre-galvanized steel wire, welded at each crossing to form rectangles. Standard panel offering shall be 10.5ga. (0.128 inches) vertical wires spaced at 3 inches; horizontal 10.5ga. (0.128 inches) wires shall be spaced at .5 inches. Cold rolled wire shall have a tensile strength of at least 74,000 psi and 68,000 psi shear strength. Wire strand shall be galvanized before welded (GBW), .50 ounces per square foot zinc coating conforming to ASTM A641.

**C.** Panel frame shall conform to the manufacturer's GridLock channel design, a nominal .75” x .5” x 13 Ga. Channel shall engage vertical sides of panel, welded at 6” intervals.

**D.** Posts shall conform to the manufacturer's GridLock plated-post design, 2-7/8” OD x PC20 x 9’ post with 22” x 13”x .375” baseplate. Baseplate shall be designed for interlocking storage and optional baseplate extension. Post assembly shall have ability to lock into baseplate extension. Baseplate extension shall be 13” x 45” x ¼” thick.

**E.** Ground anchors shall conform to a minimum of 18” L x 1” neck diameter, 1-3/4” flight diameter and 2” flange diameter, capable of meeting a load capacity of 2,500 lbs. for soil class 1, 1,700 lbs. for soil class 2, 600 lbs. for soil class 3, and 350 lbs. for soil class 4 (pullout strength with flight fully embedded) in accordance with soil classifications per ASTM D-2487/2488.

**F.** Talon bracket shall interlock with mesh panels using a minimum of 6 brackets per panel, installed at the top, middle and bottom of the mesh panel, to be secured with standard impact driver.

**2.03 FABRICATION**

**A.** Wire mesh panels and posts shall be precut to specified lengths. Panel width shall be no greater than 96”, with nominal .75” x .5” x 13 Ga. GridLock U-channel shall be welded at 6” intervals along vertical sides of panel. Panels shall have 3 structural folds located at top, middle, and bottom for increased rigidity.

**B**. Post and post base shall be 2-7/8” OD x 9’ L x PC20 with a 22” x 13” x .375” steel baseplate with a ¼” fillet weld connecting the post and baseplate. Baseplate design shall have access to receive 18” x 1” neck diameter x 1-3/4” flight diameter ground anchor screw. Baseplate shall be designed for interlocking storage and shall have ability to lock into optional baseplate extension.

**C.** Optional baseplate extension shall be 45” L x 13” W x ¼” galvanized steel and shall interlock for storage.

**D.** The manufactured fence system (i.e., panels, brackets, posts, gates, and hardware) 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 (with zinc phosphate), 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, Desert Sand, Green, or Brown). The stratification-coated framework shall be capable of meeting the performance requirements for each quality characteristic shown in Table 1.

**E.**  GridLock gate jamb shall be fabricated to a nominal 8’ H x 3-1/2’ W utilizing 2-7/8” x PC20 x 9’ steel tube with 2.5” sq. x 12ga tube header and integrated baseplate. Jamb shall be fabricated to receive GridLock quick-connect Talon brackets for ease of affixing GridLock fence panels. GridLock gate leaf shall be fabricated from 1-3/4” SQ x 14GA steel tube. Infill shall be manufactured utilizing 3” x 1/2” x 10.5ga welded wire mesh and shall meet ASTM F2453.

**PART 3 - EXECUTION**

**3.01 PREPARATION**

All new installation shall be laid out by the contractor in accordance with the construction plans.

**3.02 FENCE INSTALLATION**

**A.** Fence post shall be spaced according to Table 2, not to exceed a nominal 8’ W. GridLock panels are fixed and are not intended to follow grade, however mesh panels may stair-step to follow minor grade changes up to 18”.

**B.** Fence panels shall be attached to posts with Gridlock quick-connect talon brackets supplied by the manufacturer. Posts shall be surface-mounted to grade using specified ground anchors, installed using an impact wrench or T-Handle with a ½” square drive. Optional baseplate extension shall be installed via post base interlocking mechanism with baseplate extension and secured with ballast material.

**3.03 FENCE INSTALLATION MAINTENANCE**

When cutting/drilling rails or posts, 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 GATE INSTALLATION**

Gate posts shall be spaced according to the manufacturers’ gate drawings for GridLock gate jamb, to be attached with GridLock quick-connect talon brackets. Gate leaf shall be installed by securing gate frame hinge tube to gate jamb hinge pin. Gate leaf can be secured via a standard padlock attached to gate leaf latch mount.

**3.05 CLEANING**

The contractor shall clean the jobsite of excess materials; excavation materials shall be scattered uniformly away from fence.

**3.06 FENCE REMOVAL AND STORAGE**

The contractor shall remove ground anchors using an impact driver or T-Handle with ½” square drive. Where baseplate extensions are used, contractor shall unlock baseplate extension from post baseplate. Contractor shall stack posts according to the following storage specifications for transport to multiple deployment sites; maximum weight per pallet not to exceed 3500 lbs. Static storage not to exceed 80 posts and 35 panels per pallet.

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| **Table 1 – Coating Performance Requirements** |
| Quality Characteristics | ASTM Test Method | Performance Requirements |
| 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). |

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| **Table 2 – GridLock – Post Spacing** |
| Span | 8’ Nominal |
| Post Size | 2-7/8” OD x PC20 |
| Bracket Type | GridLock Quick-Connect Talon Bracket |
| Post Settings | 8’ Nominal |