GIBRALTAR
Gibraltar High Security Palisade Fence
Construction Specification - SECTION 32 31 19

PART 1 - GENERAL
1.01 WORK INCLUDED
The contractor shall provide all labor, materials and appurtenances necessary for installation of the steel corrugated pale security fence system defined herein at (*Insert Site Location Here*).

1.02 SYSTEM DESCRIPTION
The manufacturer shall supply a total steel ornamental pale fence system of the Gibraltar High Security Palisade Fence design. The system shall include all components (i.e., pales, rails, posts, and hardware) required.

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

1.04 REFERENCES

- ASTM A36 - Standard Specification for Carbon Structural Steel
- ASTM A992 - Standard Specification for Structural Steel Shapes
- ASTM A653 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- ASTM D7803- Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Powder Coating.

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

1.06 PRODUCT HANDLING AND STORAGE
A. All Gibraltar products shall be packaged to protect the materials from damage during shipment.

B. Upon receipt at the job site, all materials shall be checked to ensure that no damage occurs during shipping or handling.

C. For material handling, Gibraltar recommends the following:

(1) For palletized materials, a 5,000lb (2,250 kg) capacity forklift shall be used. No palletized product shall exceed 3,500lb (1,600 kg).

(2) For non-palletized materials, a 10,000lb (4,500 Kg) minimum load capacity telehandler with proper rated rigging shall be used to ensure proper handling of products during storage or installation.

Ignoring these recommendations may cause damage to material coatings or compromise the structural integrity of the product.

D. All Gibraltar barrier products are coated to protect materials from the effects of exposure to all outdoor elements; however, when site storage is required Gibraltar recommends the following guidelines:

(1) Short term storage (0-12 months): Store in such a manner to ensure proper ventilation and drainage. The storage location shall protect against damage, vandalism and theft.

(2) Long term storage (more than 12 months): In addition to the recommendations for short term storage, Gibraltar products shall also be covered to prevent exposure to the elements prior to installation. The purpose of this recommendation is to preserve the aesthetic appearance of the coating finish. Long term exposure to the elements naturally degrade coating appearances; therefore, proper storage is essential for ensuring preservation of the material.

1.07 PRODUCT WARRANTY
All structural fence components (i.e. rails, pickets, and posts) shall be warranted within specified limitations, by the manufacturer for a period of 1 years from date of original purchase. Warranty shall cover any defects in material finish, including cracking, peeling, chipping, blistering or corroding.

PART 2 - MATERIALS

2.01 MANUFACTURER

A. The steel ornamental pale fence system shall conform to Gibraltar High Security Palisade Fence manufactured by Gibraltar Perimeter Security, L.P. in Marble Falls, TX.

B. Gibraltar shall supply two standard ornamental pale configurations as a standard:

(1) Straight, 8'-0" finish height pale with three rails.

(2) Curved, 8'-0" finish height pale with three rails.

Configuration shall be specified at time of order. Other heights may be custom ordered.

2.02 MATERIAL

A. Steel material for fence framework shall conform to the ASTM requirements shown in Table 1.

B. Gibraltar will provide material certifications with each order upon request.

Table 1 – Steel Material Requirements	
Material	Specification
Corrugated pales	ASTM A36, Min 50,000 psi (345 MPa)
Rails	ASTM A36
Posts	ASTM A992

B. Material for corrugated pales shall be a nominal 2.6" x .57" x 13 Ga. The cross-sectional shape of the rails shall conform to the manufacturer's rail design, a nominal 2" x 2" x 3/16". Pre-drilled holes in the rail shall be spaced 6" on center, providing a pale airspace of no greater than 3.4". Tamperproof fasteners shall be used to fasten each pale to rail at every intersection. Posts shall conform to the manufacturer's S4 x 7.7 I-Beam.

2.03 FABRICATION

A. Pales, rails and posts shall be pre-cut to specified lengths. Rails shall be pre-punched to accept tamperproof security fasteners. Post flange shall be pre-punched to accept rail to post attachment.

B. Fabrication of the members shall be in accordance to manufacturer's instructions, the plan details, and this specification.

C. Shop drawings will be provided for site specific locations of each fence system.

D. The Gibraltar High Security Palisade Fence coating system shall protect against the long term effects of corrosion. The corrugated pales shall be galvanized to meet the requirements of ASTM A653/A653M with a minimum zinc coating weight of 0.90 oz/ft^2 (276 g/m^2), Coating Designation G-90. The buyer shall specify custom color to the manufacturer at the time of ordering. For solid color coating, the powder coating will consist of a multi-step, two coat powder coating process. The bottom coat is a zinc rich primer followed by a standard semi-gloss top coat.

E. All Gibraltar products are coated to the customer specification.

PART 3 - EXECUTION

3.01 PREPARATION

A. The purchaser shall indicate the location of the Gibraltar High Security Palisade Fence line with suitable stakes.

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

C. Before installing the Gibraltar High Security Palisade Fence, all necessary site clearing and grading shall be performed by the purchaser. An adequate clearance on both sides of the anti-ram vehicle barrier line is required.

3.02 FENCE INSTALLATION

A. Fence post shall be spaced according to plans, plus or minus ¼". Fence panels shall be attached to the line and end posts with fasteners supplied by the manufacturer. Attachment to corner post shall be made using brackets and fasteners

supplied by the manufacturer. Posts shall be set in concrete footers having a minimum depth of 48" (Note: In some cases, local restrictions of freezing weather conditions may require a greater depth). Follow manufacturer's plans for further dimensional and installation details.

B. The fence shall be installed per Gibraltar's System Drawing Number *(Insert Drawing Number Here)*. Construct concrete foundations to the dimensions specified by the plans. Excavate a properly sized area for post foundations and install reinforcing steel in accordance with the plans. Place the concrete, install the posts and plumb. Refer to the Gibraltar High Security Palisade Fence installation manual for more details on the system installation.

C. Gibraltar's High Security Palisade Fence is warranted against defects in material and workmanship on mechanical components for fifteen years when installed by a factory-trained installer. The warranty is void if the product has been modified from its original configuration, installed in a previous location, or suffered abnormal abuse.

D. Gibraltar provides training for all installers of our products.

3.03 MAINTENANCE

General maintenance of the Gibraltar High Security Palisade Fence shall consist of typical fence maintenance per the project specific facility's normal standards. This may consist of removal of vegetation, and visual inspection for evidence of tampering. If major damage occurs to the system, it is recommended that the owner and/or maintainer of the facility contact Gibraltar to purchase replacement parts for the repairs needed in order to keep the Gibraltar warranty active.

3.04 CLEANING

The contractor shall clean the jobsite of excess materials; post-hole excavations shall be scattered uniformly away from posts.