

Special Specification 4125

Wall with Metal Fence and Panels



1. DESCRIPTION.

Fabricate and install wall with metal fence and panels. This Item covers fabrication of the wall with metal fence and panels, transportation to the jobsite, footings, reinforcement, installation and finishing.

2. MATERIALS

Provide new materials that comply with the details shown on the plans, the requirements of this Item, and the pertinent requirements of the following Items:

- Item 402, "Trench Excavation Protection"
- Item 421, Hydraulic Cement Concrete
- Item 440, "Reinforcing Steel"
- Item 446, for the Painting
- Item AWS D1.1 for the Welding

- 2.1 **Steel Members.** Provide High Yield Carbon (HYC) structural steel specified for ornamental fence meeting the requirements of ASTM A36.

3. SUBMITTALS AND SHOP DRAWINGS

Provide the following:

- Product data for components and accessories.
- Shop drawings showing layout, dimensions, spacing of components, and anchorage and installation details. Include details for steel fabrication including structural field welding, finishing and fastening.
- Sample: 8 in. by 10 in. minimum size sample fence panel illustrating design, fabrication workmanship, and selected color coating.
- 10 year warranty for factory finish against cracking, peeling, and blistering under normal use.

4. MANUFACTURERS

- "Parasoleil": 6150 W. 91st Ave. Ste. 100, Westminster, CO, 88031, Phone: 1-303-589-4524, 1-303-963-9834, www.parasoleil.com
- "Blockade Design" AMETCO Manufacturing Corporation, 4326 Hamann Parkway, P.O. Box 1210, Willoughby, OH 44096, Phone: 1-800-321-7042; www.Ametco.com
- "Omega10 Orsogrill: Omega Fence Systems, 1735 St-Elzear Blvd. West, Laval (Quebec) Canada H7L3N7; 1-800-836-6342; www.omegafence.com or
- Approved Equal

5. FINISH

- 5.1 **Steel Fence Panels.** Provide fence panels and posts that are hot-dip galvanized with 1.25 oz. per square foot minimum zinc coating in accordance with ASTM A123. Provide standard sized components with polyester powder coating. Provide coating color as indicated on details.

- 5.3 **Polyester Powder Coating.** Provide an electrostatically applied colored polyester powder coating that is heat-cured to chemically bond the finish to the metal substrate, meeting the requirements:
- Minimum hardness measured in accordance with ASTM D3363: 2H.
 - Direct impact resistance tested in accordance with ASTM D2794. Able to with stand 160 in.-lb.
 - Flexibility tested in accordance with ASTM B522: 1/ 8 in. conical mandrel.
 - Adhesion tested in accordance with ASTM D3359: Applying and removing pressure sensitive tape over cuts.
 - Salt spray resistance tested in accordance with ASTM B117: No undercutting, rusting or blistering after undercutting
 - Weatherability tested in accordance with ASTM D822: No film failure and 88% gloss retention after 1 year exposure in South Florida with test panels tilted at 45 degrees.
- 5.4 **Fence will be Wrought Iron:** Should be level and plum. Grind, sand and smooth finish all welds, connections and cuts on the wrought iron. Apply two (2) coats epoxy intermediate with acrylic top coat exterior grade paint, color as indicated on the plans on all exposed parts. Contractor must adhere to requirements set forth under Item 446 for the painting. The final surface will be of even color without streaks, drips, bubbles, incomplete coverage or any other surface imperfection. Wrought Iron must comply with the plans and details, members must maintain a minimum clearance from surfaces, supports and the matching gate. All hardware must be tested and verify the hardware functions correctly and the gates will be able to remain closed and locked or open as necessary.
- 5.5 **Pre-fabricated Metal Panels:** Must be powder-coated in a controlled facility. No bumps, drips, streaks, bubbles, incomplete coverage or any other surface imperfection in the final surface will be allowed.
- 5.6 **Walls will be Rockwall:** Should be level and plum. Contractor will provide reinforcement as indicated on the plans and details. Mortar must be filled in and grout joints must be finished.
- 5.7 **Curing.**
- Wrought Iron: Cure the first coat of paint for a 24 hr. minimum prior to applying the second. Allows paint to dry completely (minimum 48 hr.) before applying "Anti-Graffiti Coating (Provide Permanent-type III)". Graffiti coating will be paid for under Item 740.
- Rockwall: Maintain curing for a minimum of 72 hr. for the mortar. After curing of mortar is complete, apply "Anti-Graffiti Coating (Provide Permanent-type III)". Graffiti coating must be paid for under Item 740.
- 5.8 **Transportation.**
- Transport wrought iron and pre-fabricated metal panels in such a manner as to not damage during transportation. Properly support and protect during transportation.
- 5.9 **Repairs.** Repairs of damage caused to the wrought iron during fabrication, lifting and handling, or transportation will be repaired prior to installation. Any damage to the surface finish of the pre-fabricated metal panel will be accepted only if damage is smaller than ¼" in size and repair is per manufacturer's written recommendations. No field repairs will be allowed without manufacturer's written recommendations and approval.
- 5.10 **Cleanup.** Upon completion of grouting, fill recesses between rocks (building stone) and on the surface of the rockwall with grout or an approved mortar and finish to the satisfaction of the Engineer. Immediately remove and point grout that flows onto the finished surface of the rock (building stone) during the grouting operation. Remove residual grout which hardens on the surface using an approved technique and point using an approved tool to the satisfaction of the Engineer at the expense of the Contractor.

6. CONSTRUCTION

- 6.1. The workmanship will be prescribed by this special specification, in conformity with details shown on the plans and/or as directed/approved by the Engineer.
- Provide the necessary equipment for all work including but not limited to fabrication, handling and transport to the jobsite.
- 6.2. Landscape and Aesthetic details indicate aesthetic intent of fencing, but structural engineer's drawings indicate size of wrought iron members and footings for rock wall and wrought iron supports, location and size of construction and control joints and must be adhered to.
- 6.3. Before work commences in the area, the Contractor will inform and inspect the site with the Engineer for approval. After the construction is complete, the Contractor will again inspect the site with the Engineer for approval.
- 6.4. All materials for the rockwall, fence and gates must be first approved by the Engineer. The fence will include but not be limited to posts pickets, rails, post caps, and will be installed at locations shown on the plans and/or as directed by the Engineer.
- 6.5. Footing and rebar must be installed per details on Structural Engineer's sheets and adhere to Item 421 – Class A for the concrete. Wet cure any exposed cast concrete surfaces a minimum of 4 days, per Item 420.
- 6.6. Fabricate and store wrought iron fencing and pre-fabricated metal panels with all due caution before and during installation. Do not install bent, bowed, or otherwise damaged panels. Remove damaged components from the site and replace. Damaged fencing materials will not be accepted. Secure fence panels with standard stainless steel bolts to fence posts after the posts have been set on the bridge rail. Touch up damaged finish with paint supplied by the manufacturer and matching the original coating.
- 6.7. Install fence posts, fence components and panels plumb and level. Steel supports for wrought iron fence and gates will be as specified and be installed where indicated on details on Structural Engineering Sheets.
- 6.8. Furnish and install fences, loops, and elements to secure fence and panels. Prepare steel to SSPC SP-10 prior to painting.
- 6.9. Provide full welds at all joints. Contractor must adhere to requirements AWS D1.1 for the welding. Welding will be performed in a workman like manner with solid joints of minimum protrusion. The complete fence will be solid and have minimal flexure. Any excessive splatter of the weld will be ground off.
- 6.10. Fabricate rockwall on site. If materials are stored on-site, they should be protected from weather, vandalism and any other possible issue. The owner will not reimburse for spoiled or missing materials. Do not store more materials than can reasonable be accomplished in a reasonable period.
- 6.11. This item will consist of a stone or rock wall as indicated on the plans and details. Stone or rock wall should be 12 in. wide. Height and length will be as indicated on the plans and details. Stone for walls should be Hueco or Rainbow building stone and as nearly uniform in section as is practicable. The stone must be dense and resistant to air and water, no smooth or river run rock will be allowed for rock walls. Stone must be cleaned, free of dirt prior to use.
- 6.12. Rockwall mortar joints must be $\frac{3}{4}$ " minimum but not exceed $1\frac{1}{4}$ ".
- 6.13. Concrete cap must overhang over face of posts as indicated on the details.

7. MEASUREMENT

This Item will be measured by the linear foot of completed rockwall with wrought iron fence and metal panels complete and in-place. Completed rockwall with wrought iron fence and metal panels must indicate completed in place, with footing and 2 coats of paint as indicated in this Special Specification.

This is a plans quantity measurement item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 9.2, "Plans Quantity Measurement." Additional measurement or calculations will be made if adjustments of quantities are required.

8. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Rockwall with wrought iron fence and metal panels." This price will be full compensation for furnishing equipment, labor, materials, tools, fabricating, shipping, handling, installation fence, wall, rods, fence panels, posts, fasteners and other components and incidentals for footings, fence posts, and repairs to painted surfaces. Removal of and proper disposal of existing unclassified underground materials required to be removed to complete the installation will not be paid for separately and will be subsidiary to this bid item.