



## SECTION 131200 - CLIMBING WALLS

### PART 1 – GENERAL

#### 1.1 SUMMARY

- A. This section includes the following:
  - 1. GFRC Rock Realistic Climbing Wall System
  
- B. Related Sections
  - 1. Division 04 Unit Masonry
  - 2. Division 05 Structural Steel Framing for steel framework requirements

#### 1.2 REFERENCES

- A. CWA – Standards for Artificial Climbing Walls
  
- B. (IBC) International Building Code – 2003 edition
  
- C. Manual of Steel Construction, Allowable Stress Design, 9<sup>th</sup> Edition AISC

#### 1.3 SYSTEM DESCRIPTION

- A. Work of this section is a complete climbing wall system utilizing custom fiber-reinforced casting simulating natural rock profiles, colors and textures that are welded to a fully engineered steel super structure. The outcome is a seamless product that simulates real outdoor natural rock formations, with molded rock topography designed for rock climbing and hardware specific to rock climbing.
  
- B. The steel support structure may rely on a component of the facility as its primary structure, or it may be self-supporting, as indicated. The climbing wall shall be designed and installed to CWA standards. Climbing wall shall include all supporting structure necessary to create the wall profiles, the climbing surface, belay and handhold fastening systems, and specific equipment as defined below. No systems that contain wood as a support structure will be permitted.



#### 1.4 QUALITY ASSURANCE

- A. Provide climbing wall systems by a single manufacturer.
- B. Substitutions of climbing wall systems and equipment shall conform to Division 01 requirements for substitutions.
- C. U.S. owned and based manufacturer shall have a minimum of 10 years of experience with the manufacturing and installation of the climbing wall system specified herein. Installers shall have five years of experience installing the specified product.
- D. Welding: All welding shall conform to the AISC and the American Welding Society (AWS) Standard Code for Arc and Gas Welding in Building Construction. All welding shall be performed by AWS certified welders. The technique of welding, the workmanship, appearance and quality of welds and the methods used in correcting nonconforming work shall be in accordance with "Section 3-Workmanship" and "Section 4-Technique" of the AWS Structural Welding Code-Steel, D1.1. Minimum size of welds shall be  $\frac{1}{8}$ ". Minimum return shall be 1". All welds shall be executed using E70XX electrodes unless specified otherwise in the shop drawings.
  - 1. Surfaces Adjacent to Field Welds: Surfaces within 2" of any field weld location shall be free of materials that would prevent proper welding or produce toxic fumes during welding.
- E. All structural steel and structural steel work shall conform to the specifications for design, fabrication and erection of structural steel for buildings for the American Institute of Steel Construction (AISC) Code of Standard Practice, and to the requirements of local building codes.
  - 1. Material: Steel shall consist of A36, A500B for tube steel and Schedule 40, A53, Type S, Grade B for Standard weight structural pipe unless noted otherwise.

#### 1.5 SUBMITTALS

- A. Product data including manufacturer's specifications, standard details, details particular to this project, and installation drawings.
- B. Submit one sample of climbing wall substrate with the applied surface, minimum 12" by 12" showing substrate, handhold fastener density, and color and finish.
- C. Shop drawings indicating layout of wall system, descriptions of materials and components, fastening and anchoring methods, and primary and secondary structural systems to be utilized.

#### 1.6 DESIGN



- A. Climbing boulder shall meet the following design requirements:
  - 1. Handhold Fastener Density: Supply two (2) handhold fastener per every sq ft of climbing wall surface area.
  - 2. Dimensions of the boulder shall be approximately 11' tall x 7' wide x 9' long

## 1.7 ENGINEERING

- A. Climbing boulder shall be engineered to meet CWA standards for climbing wall construction.
- B. Installation drawings to be delivered for review prior to start of on-site installation.

## 1.8 DELIVERY, STORAGE AND HANDLING

- A. Protect products during transit, delivery, storage and handling to prevent damage and maintain integrity of components.
- B. Owner, unless installation by manufacturer is contracted, is to unload and handle shipped component deliveries.
- C. Products shall be stored in accordance with manufacturer's recommendations in an area adjacent to the climbing boulder installation.

## 1.9 WARRANTY

- A. Manufacturer shall warrant to the original purchaser for one year from the date of substantial completion that its products are free from defects in materials and workmanship.

## 1.10 SITE CONDITIONS

- A. If indoor installation is required, building shall be enclosed with permanent HVAC in operation and capable of maintaining a uniform temperature and humidity range. Acceptable ranges are 40 – 85 degrees F.
- B. Site shall have a 10'-0 x 10'0 x 10" concrete slab reinforced with #4 rebar 12" O.C. each way



- C. Climbing wall area shall be supplied with temporary or permanent work area lighting and multiple 110v and 220v electrical power outlets in accordance with the requirements of Division 01 "Temporary Facilities and Controls." Lighting shall be capable of 50 foot candles uniformly at work area, or additional work lights will be provided by the General Contractor. Alternatively, General Contractor shall connect (and later disconnect) a temporary power load center (provided by Climbing Wall Contractor) in the area of the installation.

## **PART 2 – PRODUCTS**

### **2.0 CLIMBING BOULDER MANUFACTURER**

- A. MEGA Rock™ by Eldorado Climbing Walls (303) 447-0512

### **2.1 CLIMBING BOULDER STRUCTURAL SYSTEM**

- A. All structural steel work performed by Climbing Wall Contractor in accordance with approved shop drawings.
- B. The structural frame of the climbing wall is to be all-welded steel frame construction in accordance with approved shop drawings. Attachment to the facility walls, floor, and ceilings to conform to specified loading limits of the existing facility. Climbing wall manufacturer to provide all additional steel to meet the required climbing wall loads.
- C. Quality Control:
  - 1. Quality control procedures, material and workmanship at all times may be subject to inspection by design engineers representing climbing wall manufacturer.

### **2.2 CLIMBING SURFACE**

- A. The surface shall be composed of GFRC cast panels, minimum of ¾" in thickness. Seams shall be reinforced and sculpted with concrete to blend in with GFRC panels.
  - 1. Surface coloration and characteristics chosen by Architect or Owner.
- B. Climbing boulder system shall provide integral sculpted climbing holds as well as modular climbing hold attachment locations compatible with 3/8"-16 thread fasteners for surface mount. Handhold Fasteners shall be securely anchored to the sub-surface with permanent adhesive. Handhold fasteners shall be placed at minimum of 2 per sq ft of climbing wall surface area.
- C. GFRC Panel Manufacturer:
  - 1. REALRock™ GFRC Rock Climbing Panels by Eldorado Climbing Walls (303) 447-0512



## 2.3 CLIMBING BOULDER FASTENERS

### A. Modular Handhold bolts:

1. Shall be 3/8", 16 TPI socket head cap screws or flat head cap screws of appropriate length as suggested by and provided by the manufacturer of the Climbing Boulder and handhold manufacturer.

### B. Handhold fasteners (T-nuts or Flange nuts)

1. Fasteners shall be accessible for repair and/or replacement behind the climbing wall.
2. Glue-on fastener shall be 3/8" - 16 tpi, 3" wide flange with perforations to increase glue bond.

## PART 3 – EXECUTION

### 3.1 PRE-INSTALLATION INSPECTION

- A. Verify that all surfaces are ready to receive work and are within specified tolerances.
- B. Verify that layout of the materials or equipment will not interfere with installed climbing boulder.

### 3.2 INSTALLATION

- A. Installation of the boulder will utilize an anchor to the concrete slab with eight 5/8" x 6" Hilti KWik Bolt 3-4" minimum embedded and one 5/8" x 7" wedge anchor.
- B. Complete boulder shall comply with specified tolerances and installation drawing requirements.

### 3.3 CLEAN-UP

- A. Clean area of debris from installation of climbing boulder.
- B. Separate waste materials in accordance with the construction waste management plan and place in designated areas.

### 3.4 INSPECTION

- A. The completed climbing boulder shall undergo a full complete final inspection by a duly trained supervisor of the manufacturer and shall be certified by the manufacturer that the finished product



has been built in accordance with the manufacturer's approved installation drawings and these contract documents.

- B. The completed climbing boulder shall undergo a full and complete final inspection by the Owner or Owner's representative at the completion of climbing boulder installation.

### **3.5 PROTECTION**

- A. Owner to provide final protection in a manner acceptable to the Owner or Owner's representative that insures the climbing boulder will be without damage or deterioration at time of substantial completion.

**END OF SECTION 131200**