

SECTION 13120 - 1

CLIMBING WALL BOULDERS

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes the following:
  - 1. Custom Freestanding Climbing Boulder.
- B. Related Sections
  - 1. Section "Structural Steel"
  - 2. Section "Rough Carpentry"
  - 3. Finishes

1.2 REFERENCES

- A. CEN/AFNOR – Standards for Artificial Climbing Walls
- B. International Building Code (IBC) 2000 Edition or code of local conformance.
- C. Manual of Steel Construction, Allowable Stress Design, 9<sup>th</sup> Edition, AISC

1.3 SYSTEM DESCRIPTION

- A. Sculpted artificial climbing boulder designed to look and climb like real rock. Required system is to be in the upgraded classification of climbing walls and no wood or foam based systems will be accepted. System shall be hand sculpted, no castings will be permitted. System shall be fabricated off-site in a controlled manufacturing facility. Climbing boulder system shall be manufactured in large sections with an integrated steel supporting frame capable of transport on a flat-bed truck, and to be erected and installed utilizing an on-site Forklift or crane (provided by customer) to minimize on-site time.

1.4 QUALITY ASSURANCE

- A. Climbing boulder manufacturer shall be as specified and shall have a minimum of 10 years experience in the manufacturing of artificial climbing walls. No substitutions will be permitted.
- B. Fabricator/Installer shall be acceptable to the climbing boulder manufacturer.
- C. Installer shall have a minimum of two years experience with manufacturer's materials or be supervised by manufacturer's representative.
- D. Fabrication shop visit: Notify Architect at on-set of fabrication.

1.5 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of the Contract and General Conditions.
- B. Product data including climbing boulder manufacturer's specifications, standard details and installation drawings.
- C. Submit 2 samples of climbing boulder material, minimum 12 inches by 12 inches, showing color and finish.

- D. Shop drawings indicating layout of climbing boulder, dimensions of materials and parts, fastening and anchoring methods, and detail and location of joints.

#### 1.6 DELIVERY, STORAGE AND HANDLING

- A. Protect products during transit, delivery, storage and handling to prevent damage, soiling and deterioration.
- B. Protect climbing wall boulder finish and edges in accordance with manufacture's recommendations.
- C. Store climbing wall boulder components in accordance with manufacture's recommendations

#### 1.7 WARRANTY

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

#### 1.8 COORDINATION

- A. Coordinate installation of climbing boulder so large boulder sections can be fork lifted or craned into place without obstructions.
- B. The Owner shall have direct contact with the Climbing boulder manufacturer in the design phase of the climbing boulder to achieve specific programmatic requirements set forth by the Owner.

#### 1.9 PROJECT CONDITIONS

- A. Unless wall to be located outdoors, building shall be enclosed and capable of maintaining a minimum temperature of 55 degrees F. Climbing boulder area shall be supplied with an artificial light source by the General Contractor for duration of climbing boulder installation. Lighting shall be of sufficient quantity and brightness to perform detailed work.
- B. General Contractor shall provide multiple temporary power outlets (110V) , at various locations around climbing boulder area for operation of power tools.

### PART 2 - PRODUCTS

#### 2.1 CLIMBING BOULDER MANUFACTURER

- A. Entre Prises USA 20512 Nels Anderson Place, Bend, Oregon 97701 (541) 388-5463, (541) 388-3248 fax, or others as approved by Owner.

#### 2.2 ARTIFICIAL CLIMBING BOULDER MATERIALS

- A. Hand sculpted climbing system. Climbing Boulder to be sculpted and created specifically to the needs as required by the Owner for this project.

#### 2.3 CLIMBING BOULDER COMPONENTS

- A. Hand sculpted climbing system.
  - 1. Climbing system shall be made of fiber reinforced polymer concrete using a hand sculpted lay-up process only.

2. Climbing system shall be manufactured in the largest possible sections directly on steel support frames for forklift or crane-in installation, minimizing time on-site. Size of sections to only be limited by transport regulations, forklift or crane capacity, or site specific constraints.
3. Climbing system must be capable of achieving various configurations including overhangs, vertical faces, below vertical slabs, arêtes and dihedrals.
4. Climbing system shall incorporate the ability to achieve monolithic three-dimensional curvature of the finished surface.
5. Climbing system shall provide integral molded climbing holds as well as modular climbing hold attachment locations compatible with 3/8"-16 threaded fasteners for surface mount.
6. Thickness approx. 5/8"

B. Integrated Primary Support structure - Steel Support Frames (supplied by Climbing boulder Manufacturer)

1. The support structure shall be pre-fabricated steel support frames, capable of transferring all applied design loads back to the slab or building attachment(s).
2. Major components of the steel support structure are as follows:
  - a. ASTM A36 Steel
3. Finish on above steel shall be the following:
  - a. Steel primer paint – 2 coats.
4. Primary Steel support frames will be sized and detailed by engineering calculations carried out by an engineering consultant to the climbing boulder manufacturer. The engineering calculations will outline the reactions generated by the climbing boulder.
5. Anchorage details for the primary steel support frames attaching to the slab will be provided by the Customer's consulting Engineer.

C. Concrete Slab Base (supplied and installed by owner's Concrete Subcontractor)

1. Concrete Slab Base will be sized and detailed by an engineering consultant to the Customer. The Climbing Boulder Manufacturer will have their own consulting engineer provide reaction forces at the base of the boulder where it attaches to the concrete slab. The actual attachment method shall be designed by customer's engineering consultant.

## 2.4 CLIMBING BOULDER FABRICATION

A. Composition

1. Hand sculpted shop fabricated composite system

B. Resins: Iso polyester resins / UV stabilized.

C. Aggregate:

1. Natural washed sands
2. Colored sands
3. Expanded silicates
4. Other fillers

D. Reinforcing:

1. 2 layers minimum of mat fiberglass.

- E. Average surface material weight = 9 lbs./sq. ft.

## 2.5 PRIMARY SUPPORT STRUCTURE FABRICATION

- B. Dimensions: Dimensions given in Drawings prepared by the climbing boulder manufacturer are final fabricated dimensions.
- C. Quality Control
  - 1. Rejections: Material or workmanship not in reasonable conformance with the provisions of this Specification may be rejected at any time during the progress of work.

## 2.6 FASTENERS

- A. Freeform:
  - 1. Concealed; shall be 1/2" –13, Grade 5 hex head bolts with 1/2" flat washers under head, lock washers and hardened Grade C nut.
- B. Modular Hand Hold:
  - 1. Shall be 3/8" – 16 socket head cap screws or flat head cap screws of appropriate length as suggested by the manufacturer.
- C. Modular Hand Hold attachment backer plates:
  - 1. Shall be made of stainless steel nut welded to a 16 gauge (min.) stainless steel plate.

## PART 3 - EXECUTION

### 3.1 PRE-INSTALLATION INSPECTION-OPTIONAL

- A. Verify that all surfaces are ready to receive work and are within specified tolerances.
- B. Beginning of installation means installer accepts conditions of existing surfaces.
- C. Verify that layout of the materials or equipment will not interfere with installed climbing boulder.

### 3.2 INSTALLATION

- A. Erection of the climbing boulder system shall be in accordance with manufacturer's recommendations.
- B. Erection shall be accomplished by a fully trained, factory authorized erector in accordance with Section 1.4.
- C. Complete wall shall comply with specified tolerances and shop drawing requirements.

### 3.4 CLEAN-UP

- A. Clean area of debris from installation of climbing panels.

3.5 INSPECTION

- A. The completed climbing boulder shall undergo a full complete final inspection by a duly trained representative of the manufacturer and shall be certified by the manufacturer that the finish product has been manufactured and erected 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 Owners representative at the completion of climbing boulder installation.

3.6 PROTECTION

- A. Protect climbing boulder from damage during erection.
- B. General Contractor to provide final protection in a manner acceptable to the Owner or Owners representative that insures the climbing boulder will be without damage or deterioration at time of substantial completion.

END OF SECTION