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Chapter 5 – Technical Construction and  
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## 129300 - A - Site Furnishings

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## SECTION 12 9300 - SITE FURNISHINGS

### 1.1 SUMMARY

- A. Section includes the following, see Attachments A – J for details:
  - 1. Stone benches.
  - 2. Bicycle racks.
  - 3. Waste receptacles.
  - 4. No Smoking Signs:
  - 5. Ash receptacles.
  - 6. Stone posts and chains.
  - 7. Materials and Fabrication of Site Railings and Other Custom Made Elements.

### 1.2 ACTION SUBMITTALS

- A. LEED Submittals:
  - 1. Product Data for Credit MR 4.1 and Credit MR 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.

### 1.3 STONE BENCHES

- A. General: University has three styles of granite benches to be used as appropriate for a specific application and location. Refer to attached bench type details.
- B. Regional Materials: Provide concrete pavers that have been manufactured within 500 miles (800 km) of Project site from aggregates and cement that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles (800 km) of Project site.
  - 1. Material: Granite.
  - 2. Quarries:
    - a. Chelmsford; Westford, MA.
    - b. Swenson; Concord, NH.

### 1.4 NON STONE BENCHES AND TABLES

- A. Materials: Units similar in size, material and appearance to those shown in Attachment E.
- B. Suppliers: Barco, KirbyBuilt, Max-R or others of comparable durability and maintainability, as approved.

1.5 BICYCLE RACKS

- A. General: Two types of bicycle racks are used on campus: Continuous loop ribbon rack that is fixed and free standing sled rack.
  - 1. Overall Height: 36 inches (914 mm).
  - 2. Installation of fixed ribbon rack: Ends of rack shall extend 1'-6" (457 mm) below grade, minimum.
    - a. Racks shall be installed with sleeves and removable pins for removal during the winter months.
- B. Manufacturers:
  - 1. Custom Welding & Fabrication; West Nottingham, NH, or other manufacturers as approved by the University.
- C. Bicycle Rack Construction: See Attachment F and G for construction of free standing sled racks.
  - 1. Frame: Galvanized steel unpainted finish is standard, black paint is allowed only with University approval.
    - a. Tubing OD: Not less than 1-3/4 inches (45 mm).
    - b. Flat Bars: Not less than 3/8 inch by 3 inch (9.5 by 75 mm).
  - 2. Installation Method for fixed ribbon rack:
    - a. Galvanized steel sleeves, extending 2'-0" (600 mm) below grade and 3" (75 mm) shall be provided for end of rack. Sleeves shall be embedded in concrete.
    - b. Sleeves and rack shall be factory-drilled prior to galvanizing to accept a 3' by 3/8" (914 by 9.5 mm) carriage bolt 1-1/2 inches (38 mm) above grade. Bike Racks shall be removable.

1.6 WASTE RECEPTACLES

- A. General: Free-standing round trash receptacles.
- B. Basis-of-Design Products: Subject to compliance with requirements, provide the following:
  - 1. Exterior Landfill Receptacles: 32 gallon Rubbermaid Weatherguard Black Container with funnel top;
  - 2. Exterior Recycling Receptacles: 20 gallon Rubbermaid Weatherguard Black Container with funnel top;
- C. Available Supplier: Central Paper; Manchester, NH.

- D. Waste Receptacle Graphics: Surface-applied content, layout and text font as indicated in Attachment H. The funnel top of receptacle comes black from the manufacturer and must be locally painted blue on Recycling Receptacle to match Sherwin Williams SW6797 Joy Blue, glossy finish. Text on sides of receptacle to be 1.75" tall.

#### 1.7 ASH RECEPTACLES

- A. Materials: In the vicinity of residence halls only, provide free standing ash receptacles manufactured by "No Butts Bin," 15" x 8" x 3" (H x W x D). Locations as described in Chapter 3, Section 2 titled "Site Design." Units to be mounted on a grey recycled plastic post with the top cut at a slope, 48" high to the top of the unit. See Attachment I.
- B. Finish: Stainless-Steel, Dull satin No. 6.
- C. Graphics and Copy: Surface-applied clear vinyl sheet mounted to post directly below the receptacle. Refer to Attachment J.

#### 1.8 STONE POSTS AND CHAINS

- A. Material: Granite.
  - 1. Thermal finish.
  - 2. Provide radius corners.
  - 3. Provide pedestal and top.
    - a. Top: Hipped (sloped in four directions).
- B. Size: 6 foot high by 8 inches by 8 inches (3 foot exposed).
- C. Bolt: Bolt shall be threaded through the post and finish shall be darker to match chain on the bolt.
  - 1. Eyebolt: 1/2 inch diameter, 5 inches long (hot-dipped galvanized), sand blast.
  - 2. Chain: 7 inch - 8 inch sag, posts approximately 8'-10" apart.
    - a. Chain: 3/8 inch hot-dipped galvanized.
    - b. All chain sections shall have a consistent sag.

#### 1.9 MATERIALS FOR SITE RAILINGS AND OTHER CUSTOM MADE ELEMENTS

- A. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated; free of surface blemishes and complying with the following:
  - 1. Rolled or Cold-Finished Bars, Rods, and Wire: ASTM B 211 (ASTM B 211M).
  - 2. Extruded Bars, Rods, Wire, Profiles, and Tubes: ASTM B 221 (ASTM B 221M).
  - 3. Structural Pipe and Tube: ASTM B 429/B 429M.
  - 4. Sheet and Plate: ASTM B 209 (ASTM B 209M).
  - 5. Castings: ASTM B 26/B 26M.

- B. Steel and Iron: Free of surface blemishes and complying with the following:
  - 1. Plates, Shapes, and Bars: ASTM A 36/A 36M.
  - 2. Steel Pipe: Standard-weight steel pipe complying with ASTM A 53/A 53M, or electric-resistance-welded pipe complying with ASTM A 135/A 135M.
  - 3. Tubing: Cold-formed steel tubing complying with ASTM A 500/A 500M.
  - 4. Mechanical Tubing: Cold-rolled, electric-resistance-welded carbon or alloy steel tubing complying with ASTM A 513, or steel tubing fabricated from steel complying with ASTM A 1011/A 1011M and complying with dimensional tolerances in ASTM A 500/A 500M; zinc coated internally and externally.
  - 5. Sheet: Commercial steel sheet complying with ASTM A 1011/A 1011M.
- C. Stainless Steel: Free of surface blemishes and complying with the following:
  - 1. Sheet, Strip, Plate, and Flat Bars: ASTM A 666.
  - 2. Pipe: Schedule 40 steel pipe complying with ASTM A 312/A 312M.
  - 3. Tubing: ASTM A 554.
- D. Plastic: Color impregnated, color and UV-light stabilized, and mold resistant.
  - 1. Polyethylene: Fabricated from virgin plastic HDPE resin.
  - 2. Recycled Content of Polyethylene: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- E. Anchors, Fasteners, Fittings, and Hardware: Manufacturer's standard, corrosion-resistant-coated or non-corrodible materials; Stainless steel or Galvanized steel; commercial quality, tamperproof, vandal and theft resistant.
- F. Galvanizing: Where indicated for steel and iron components, provide the following protective zinc coating applied to components after fabrication:
  - 1. Hot-Dip Galvanizing: According to ASTM A 123/A 123M, ASTM A 153/A 153M, or ASTM A 924/A 924M.

#### 1.10 FABRICATION OF SITE RAILINGS AND OTHER CUSTOM MADE ELEMENTS

- A. Metal Components: Form to required shapes and sizes with true, consistent curves, lines, and angles. Separate metals from dissimilar materials to prevent electrolytic action.
- B. Welded Connections: Weld connections continuously. Weld solid members with full-length, full-penetration welds and hollow members with full-circumference welds. At exposed connections, finish surfaces smooth and blended so no roughness or unevenness shows after finishing and welded surface matches contours of adjoining surfaces.
- C. Pipes and Tubes: Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.

- D. Exposed Surfaces: Polished, sanded, or otherwise finished; all surfaces smooth, free of burrs, barbs, splinters, and sharpness; all edges and ends rolled, rounded, or capped.
- E. Factory Assembly: Assemble components in the factory to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

#### 1.11 STEEL AND GALVANIZED-STEEL FINISHES

- A. Baked-Enamel, Powder-Coat Finish: Manufacturer's standard, baked, polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

#### 1.12 STAINLESS-STEEL FINISHES

- A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
- B. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.
  - 1. Run directional finishes with long dimension of each piece.
  - 2. Dull Satin Finish: No. 6.

END OF SECTION 12 9300

#### ATTACHMENTS:

Attachment A: BENCH TYPE 1  
Attachment B: BENCH TYPE 2  
Attachment C: BENCH TYPE 3  
Attachment D: BENCH TYPE 4  
Attachment E: NON STONE BENCHES AND TABLES  
Attachment F: BICYCLE RACK (Tubing)  
Attachment G: BICYCLE RACK (Steel Bars)  
Attachment H: WASTE RECEPTACLES  
Attachment I: ASH RECEPTACLE  
Attachment J: NO SMOKING SIGN TEXT