

NC State University Design and Construction Guidelines

Division 10 Specialties

1.0 Purpose

- A. This section addresses specialties including flagpoles, bollards, bus shelters and toilet accessories.

2.0 General Requirements

- A. Flagpoles
 1. Not more than one American Flag per open space (Courtyard, Green, pedestrian mall/street, etc).
 2. Flagpoles shall be accessible.
- B. Bollards
 1. Use of bollards shall be minimized. Preferred methods of restricting traffic are site walls, trees, and planting beds.
 2. Lighted bollards are not permitted.
- C. Bus shelters shall be accessible, and have site amenities such as trashcans, benches, lighting, signage, and bike racks where appropriate.

3.0 Materials & Standards

- A. Flag poles
 1. Poles shall not exceed 35' in height.
 2. Color and materials: clear satin finish aluminum pole, gold ball on top.
 3. Cleat lock box with halyard cover: satin finish.
 4. Flag pole base on pavement, contiguous with a walk or plaza surface.
 5. Ensure proper flag display etiquette is accomplished with the pole siting and flag display according to United States Code Title 4, Chapter 1.
- B. Decorative Bollards shall comply with those specified in the preferred manufacturers list.
- C. Non-decorative Bollards shall be constructed with unpainted steel pipe, 1/4" in thickness.
 1. On campus walks and paths:
 - a) Use 4" diameter pipe.
 - b) Top of bollard shall be capped with a steel plate to create a smooth top.
 - c) Height above grade shall be 36"
 - d) Fixed bollards shall extend 24" below grade.

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- e) Drop bollards shall have a trough 37" in length from the base of the standing bollard, and be 4-1/2" wide and 2-1/2" deep. The trough shall be concrete, and be concave in shape to cradle the bollard when dropped.
- f) Paint color for bollards on walks shall be architectural bronze.
- g) On multipurpose paths, paint the bollard architectural bronze except for the top 6 inches which shall be painted Safety yellow.

2. In service areas:

- a) Use 6" diameter pipe.
- b) Fixed bollard shall extend 24" below grade.
- c) Fill and cap bollard with concrete.
- d) Paint color for bollards in service areas shall be Safety yellow.

D. Bus Shelters

- 1. Shelter Type: Peak roof with approximate pitch of 1' rise to 2' run. Aluminum construction, architectural bronze all surfaces. Nominal dimensions - 8' deep x 16' wide.
- 2. Frame: Aluminum construction, adjustable, galvanized steel, mounting feet for easy on-site leveling. Mounting method to accommodate brick paving. Long lasting 3-mil powder coated finish, architectural bronze. Minimum wind load - 75mph. Minimum live load - 40 lbs./square foot. Structural and framing members - extruded aluminum, not less than 1/8" thick.
- 3. Metal Roof: All aluminum, one piece construction, standing seam gable roof with fascia and integral gutter across opening. Powder coated finish to match shelter.
- 4. Walls: End walls - (2) panels 44" x 82", 3/8" tempered glass with white visibility safety dots. Rear walls -(4) panels as above with center post. Provide ventilation space at top and bottom of all panels. Adjustable glass clips. Open front.
- 5. Support Posts: Minimum post size - 3" X 3". Detail the posts, footings and adjustable supports for use with brick paving.
- 6. Map Frame: Ground mounted frame with integral tamperproof hardware. Provide visible copy area of 30" x 48". Stainless steel hinges with security screw locks. Map frame and supports to be powder coated to match shelter finish.
- 7. Lighting: Three (3) fluorescent fixtures shall be provided, including one (1) fixture for rear wall and one (1) fixture for each end wall. Conduit and wiring shall be internal to the structure. Shelter electrical system shall be designed to accept single point of external power connection. All electrical work shall meet the requirements of the latest edition of the National Electrical Code (NEC). Light fixtures shall be listed for damp location use by Underwriters Laboratory

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(UL), or approved testing agency. Fluorescent ballasts shall be cold weather rated electronic type to accept multi-tap input of 120 volts, 240 volts, or 277 volts. Lamps shall be 4' length, 32 watt, T8 fluorescent. Each fixture shall contain two (2) lamps. Lights shall have photocell control with approved main power disconnect switch. Minimum wiring size shall be #12 THHN/THWN solid copper. Separate copper ground wire shall be provided for all conduit. All conduit, junction boxes, wiring, fittings, and connections shall be installed to meet NEC requirements.

8. Shop drawings: Upon award of the contract, the vendor shall submit shop drawings, complete with footing detail and electrical drawings, and sealed by a Registered Professional Engineer, licensed in the State of North Carolina.

E. Toilet and Bath Accessories

1. The general contractor will provide and install all public toilet accessories for new construction and major renovations.
2. Comply with NC State's Preferred Manufacturer List for the following items:
 - a) Toilet Tissue Dispensers
 - b) Paper Towel Dispensers
 - c) Semi-Recessed Waste Receptacle
 - d) Sanitary Napkin Disposal
 - e) Sanitary Napkin Dispenser
 - f) ADA Toilet Paper Dispenser
3. Toilet room partitions – Toilet room partitions and stall doors shall be constructed from high density polyethylene resin. Partitions shall be ceiling mounted.