

SECTION 32 1723.13

PAINTED PAVEMENT MARKINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Parking lot markings, including parking bays and handicapped symbols.

1.02 RELATED REQUIREMENTS

- A. Section 32 1216 - Asphalt Paving.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.05 FIELD CONDITIONS

- A. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Line and Zone Marking Paint: MPI No. 97 Latex Traffic Marking Paint; white.
 - 1. Parking Lots: White.
 - 2. Handicapped Symbols: Blue.
- B. Line and Zone Marking Paint: Refer to Section 09 9000.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- B. Establish survey control points to determine locations and dimensions of markings; provide templates to control paint application by type and color at necessary intervals.

3.03 INSTALLATION

- A. Begin pavement marking as soon as practicable after surface has been cleaned and dried.

- B. Do not apply paint if temperature of surface to be painted or the atmosphere is less than 50 degrees F (10 degrees C) or more than 95 degrees F (35 degrees C).
- C. Apply in accordance with manufacturer's instructions using an experienced technician that is thoroughly familiar with equipment, materials, and marking layouts.
- D. Apply uniformly painted markings of color(s), lengths, and widths as indicated on the drawings true, sharp edges and ends.
 - 1. Apply paint in one coat only.
 - 2. Wet Film Thickness: 0.015 inch (0.4 mm), minimum.
 - 3. Width Tolerance: Plus or minus 1/8 inch (3 mm).
- E. Parking Lots: Apply parking space lines and other markings indicated on drawings.
 - 1. Mark the International Handicapped Symbol at indicated parking spaces.
 - 2. Hand application by pneumatic spray is acceptable.
- F. Symbols: Use a suitable template that will provide a pavement marking with true, sharp edges and ends, of the design and size indicated.

3.04 DRYING, PROTECTION, AND REPLACEMENT

- A. Protect newly painted markings so that paint is not picked up by tires, smeared, or tracked.
- B. Provide barricades, warning signs, and flags as necessary to prevent traffic crossing newly painted markings.
- C. Allow paint to dry at least the minimum time specified by the applicable paint standard and not less than that recommended by the manufacturer.
- D. Remove and replace markings that are applied at less than minimum material rates; deviate from true alignment; exceed length and width tolerances; or show light spots, smears, or other deficiencies or irregularities.
- E. Remove markings in manner to avoid damage to the surface to which the marking was applied, using carefully controlled sand blasting, approved grinding equipment, or other approved method.
- F. Replace removed markings at no additional cost to Owner.

END OF SECTION

SECTION 32 3113

CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fence framework, fabric, and accessories.
- B. Manual gates and related hardware.
- C. Installation

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete anchorage for posts.

1.03 PRICE AND PAYMENT PROCEDURES

- A. See Section 01 2000 Price and Payment Procedures.

1.04 REFERENCE STANDARDS

- A. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2009.
- B. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM A 392 - Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric; 2007.
- D. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2009a.
- E. ASTM C 94/C 94M - Standard Specification for Ready-Mixed Concrete; 2009a.
- F. ASTM F 1043 - Standard Specification for Strength and Protective Coatings on Steel Industrial Chain Link Fence Framework; 2008.
- G. ASTM F 1083 - Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures; 2008.
- H. CLFMI CLF 2445 - Product Manual; Chain Link Fence Manufacturers Institute; 1997.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on fabric, posts, accessories, fittings and hardware.
- C. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, and schedule of components.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- B. Like items of materials provided hereafter shall be the end products of one manufacturer in order to achieve standardization for appearance, maintenance and replacement.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Chain Link Fences and Gates:
 - 1. Allied Tube & Conduit. www.alliedtube.com or approved equal
 - 2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 MATERIALS AND COMPONENTS

- A. Materials and Components: Conform to CLFMI Product Manual.
- B. Framework: Steel pipe conforming to Standard Specification ASTM F1043 Group IA (Schedule 40); external coatings per F1043 Type A; internal coatings Type A, or high strength steel pipe triple coated per Standard Specification ASTM F1043 Group IC (SS40 as manufactured by Allied Tube & Conduit or approved equal); external coatings per F1043 Type B; internal coatings per F1043 Type D.
- C. Pipe shall be straight, true to section and conform to the following weights:
 - 1. Size: outside diameter 1-5/8", Weight: Group IA 2.27 Lbs./Ft., Group IC 1.84 Lbs./Ft
 - 2. Size: outside diameter 1-7/8", Weight: Group IA 2.72 Lbs./Ft., Group IC 2.28 Lbs./Ft
 - 3. Size: outside diameter 2-3/8", Weight: Group IA 3.65 Lbs./Ft., Group IC 3.12 Lbs./Ft
 - 4. Size: outside diameter 2-7/8", Weight: Group IA 5.79 Lbs./Ft., Group IC 4.64 Lbs./Ft
 - 5. Size: outside diameter 3-1/2", Weight: Group IA 7.58 Lbs./Ft., Group IC 5.71 Lbs./Ft
 - 6. Size: outside diameter 4", Weight: Group IA 9.11 Lbs./Ft., Group IC 6.56 Lbs./Ft
- D. Fabric: Zinc-coated fabric shall be galvanized after weaving with a minimum 1.2 ounces of zinc per square foot of surface area and conform to ASTM A392, Class 1. Fabric to be 9 gauge wire woven in a 2" diamond mesh. Top selvage to be twisted and barbed, bottom selvage to be knuckled unless otherwise specified.
- E. Fence Posts:
 - 1. Line Post: 2-3/8" outside diameter
 - 2. Terminal Post: 2-7/8" outside diameter
- F. Swing Gate Posts: 2-7/8" outside diameter
- G. Rails and Braces: 1-5/8" outside diameter
- H. Gates: Frame assembly of 1-7/8" O.D. pipe Group IA or IC with welded joints. Weld areas repaired with zinc-rich coating applied per manufacturer's directions. Fabric to match fence. Gate accessories, hinges, latches, center stops, keepers and necessary hardware of quality required for industrial and commercial application. Latches shall permit padlocking.
- I. Fittings:
 - 1. Post Caps: Pressed steel, cast iron or cast aluminum alloy designed to fit snugly over posts to exclude moisture. Supply dome style caps for terminal posts and loop type for line posts. All fittings to conform to ASTM F626.
 - 2. Rail and Brace Ends: Pressed steel, cast iron or cast aluminum alloy, cup-shaped to receive rail and brace ends
 - 3. Top Rail Sleeves: Tubular steel, 0.051 thickness x 7" long, expansion type.
 - 4. Tension Bars: Steel strip, 5/8" wide x 3/16" thick.
 - 5. Tension Bands: Pressed steel, 14 gauge thickness x 3/4" wide.
 - 6. Brace Bands: Pressed steel, 12 gauge thickness x 3/4" wide.
 - 7. Truss Rods: Steel rod, 3/8" diameter merchant quality with turnbuckle (take up).
- J. Tension Wire: Marcellled 7 gauge steel wire with minimum coating of 0.80 ounces of zinc or 0.40 ounces of aluminum per square foot of wire surface and conforming to ASTM A824.
- K. Tie Wires: Aluminum, 9 gauge, alloy 1100-H4 or equal.
- L. Hog Rings: Steel wire, 11 gauge, with a minimum zinc coating of 0.80 ounces per square foot of wire surface.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Set intermediate posts plumb , in concrete footings with top of footing 1 inch above finish grade. Slope top of concrete for water runoff.
- B. Line Post Footing Depth Below Finish Grade: 3'-6" feet (1.0668 m).
- C. Corner, Gate and Terminal Post Footing Depth Below Finish Grade: 3'-6" feet (1.0668 m).
- D. Brace each gate and corner post to adjacent line post with horizontal center brace rail and diagonal truss rods. Install brace rail one bay from end and gate posts.
- E. Provide top rail through line loop caps and splice with 6 inch (150 mm) long rail sleeves to form a continuous rail between terminal posts.
- F. Do not stretch fabric until concrete foundation has cured 28 days.
- G. Position bottom of fabric 2 inches (50 mm) above finished grade.
- H. Fasten fabric to top rail, line posts, braces, and bottom tension wire with tie wire at maximum 15 inches (380 mm) on centers.
- I. Attach fabric to end, corner, and gate posts with tension bars and tension bar clips.
- J. Install bottom tension wire stretched taut between terminal posts.
- K. Install gate with fabric to match fence. Install hardware.
- L. Provide concrete center drop to footing depth and drop rod retainers at center of double gate openings.

3.02 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch (6 mm).
- B. Maximum Offset From True Position: 1 inch (25 mm).

END OF SECTION