

BICYCLE RACK

**\*\*From Enosburg CMG PARK(20)**

- xx. DESCRIPTION. This work shall consist of furnishing and installing a bicycle rack in accordance with the Plans and as directed by the Engineer.
- xx. MATERIALS. The bicycle rack shall be a 'U' Rack system as specified in the Plans.
- xx. PAINTING BICYCLE RACK.

- (a) General Requirements. The bicycle rack shall be galvanized and powder coated with at least two coats of exterior grade powder coat paint suitable for a low speed traffic environment subject to high levels of salt. The color shall be black.

All steel components, except for stainless steel and anchor plates, shall be galvanized, pre-treated, and shop painted except as noted. Hardware need not be painted after galvanizing except for the portions exposed to view after installation, such as bolt heads, ends, nuts, and washers, which may be field painted. Touch-up and repairs shall be made using paint from the same batch run as used for the shop-applied coats and supplied by the shop applicator.

- (b) Fabrication Drawings and Samples. The following provisions shall be made for hot-dip galvanizing and shop-applied paint for bicycle rack as shown on the Plans or as directed.

The requirements for surface preparation shall conform to Subsection 506.14, except as required herein, or approved otherwise.

The Fabricator shall send the Fabrication Drawings to the galvanizer for review to note considerations particular to the galvanizing process and to coordinate any proposed modifications to the fabricated materials, prior to submission of Fabrication Drawings to the Engineer for approval.

One each 3 inch X 6 inch (approximate size) sample of material to be used in the work shall be galvanized and painted as specified herein and submitted to the Engineer for approval of surface texture and color prior to full production galvanizing and painting. The Fabricator of the material shall provide the galvanizer with samples taken from the same material to be used in the work.

The Fabricator shall notify the galvanizer if the chemical composition of the steel to be galvanized exceeds the following limits, in order to determine its suitability for processing: 0.26% carbon, 0.24% silicon, 0.05% phosphorous, and 1.35% manganese.

- (c) Coating System Process and Material. The galvanizing-paint duplex coating system shall consist of the following generic type at the minimum coating thickness shown:

Coating	Description	Thickness
Galvanized	Hot-dip Galvanizing	Per Subsection 506.15
Pre-Treatment	SP1 Solvent Cleaning  SP7 Brush-off Blast Cleaning  Phosphate Cleaning (required when painting is more than 12 hours after galvanizing)	
Intermediate (force-cured)	High Build Epoxy Polyamide	3 mils DFT
Finish(force-cured)	Aliphatic Polyurethane	3 mils DFT

- (d) Galvanizing. Surfaces to be galvanized shall be zinc coated in conformance with AASHTO M 111M/M 111 or AASHTO M 232M/M 232 utilizing the dry kettle process in a bath of molten zinc containing nickel (0.05% to 0.09% by weight). Hardware may be mechanically galvanized in conformance with AASHTO N 298 (ASTM B 695) Class 50.

The galvanized steel product shall be pre-treated and painted by one of the following methods:

- (1) Method 1 (Under 12 Hours). The galvanized steel shall be pre-treated. The first coat of paint shall be applied within twelve hours of galvanizing and within eight hours of blast cleaning (or surface abrasion by approved mechanical means).
  - (2) Method 2 (Over 12 Hours). When the galvanized steel is to be painted more than 12 hours after galvanizing, the steel shall be pre-treated followed by a treatment of zinc phosphate applied within eight hours of blast cleaning (or surface abrasion by approved mechanical means). The first coat of paint shall be applied within twelve hours of phosphating.
- (e) Pre-Treatment. Prior to painting, the galvanized surface shall receive pre-treatment consisting of SSPC-SP1, Solvent Cleaning, and SSPC-SP7, Brush-Off Blast Cleaning or abraded by approved mechanical means, to remove detrimental contaminants and to thoroughly roughen the entire surface

and produce a uniform anchor profile of 1-2 mils. The required thickness of the zinc coating shall be maintained and checked prior to painting. The pre-treatment shall meet the paint manufacturer's requirements.

An additional pre-treatment or tie coat may be considered if required by the paint manufacturer and approved by the Engineer.

Blast cleaning shall be performed prior to the formation of "white rust" on the galvanized surface. If any "white rust" is detected by visual means, the galvanizing shall be stripped off and the steel re-galvanized in conformance with these specifications. "White rust" shall be defined in the *Inspection of Products Hot Dip Galvanized After Fabrication*, Table IV, by the American Galvanizers Association.

Paint coating shall be shop applied to the galvanized product within 15 days of galvanizing. Painting shall be performed inside a controlled environment meeting applicable atmospheric requirements as recommended by the coating manufacturer. Prior to pre-treatment, rough areas of galvanizing shall be ground smooth to achieve a uniform galvanized surface to accept paint.

Phosphating, when required as described herein, shall conform to zinc phosphate coating (light) of galvanized steel, D.O.D. specification TT-C-49D, or approved equal, and shall be applied in accordance with the manufacturer's recommendations.

When phosphating is required, the phosphate applicator shall document in writing that the phosphating procedure is acceptable to the galvanizer and coating manufacturer prior to performing the work.

- (f) Painting. Each coat of paint shall be separately colored to contrast with other coats and to insure complete coverage. The previous coat shall be hidden by a single application of each coat. The final color of the painted product shall be flat black Federal Standard 595 Color #27038.

Intermediate and finish coats shall be shop applied under atmospheric conditions meeting the following minimum requirements: air and steel temperature of 50°F above the dew point. The finish coat shall be spray applied.

The intermediate and finish paint coats shall each be force cured in a heated booth maintained at a minimum temperature of 150°F for 2 to 4 hours.

The finished shop-coated material shall be handled with care using nylon slings, padded cables, etc. as required to protect the finished coating. The paint applicator shall

be responsible for the condition of the finished coating until the material arrives at the job site.

- (g) Field Touch-up and Repairs. Damaged galvanized surfaces shall be repaired by applying an organic zinc repair paint conforming to ASTM A 780 and recommended by the galvanizer. Galvanizing repair paint shall be 65 percent zinc by weight minimum, and shall be brush applied. The thickness of repair shall not be less than the coating thickness required by AASHTO M 111M/M 111 or M 232M/M 232 but not less than 3 mils DFT. Repair touch up shall not be permitted using aerosol spray, silver paint, bright paint, brite paint, or aluminum paints.

Damaged shop applied paint shall be repaired in conformance with the solvent cleaning and abrasion pre-treatment requirements specified above or the paint manufacturer's recommendations, to a minimum thickness of the original system. Touch-ups shall be such that the repair is not noticeable to the Engineer from a distance of six (6) feet.

- xx. INSTALLATION. The bicycle rack shall be installed at the location shown on the Plans and in accordance with the manufacturer's recommendations.
- xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Bicycle Rack) to be measured for payment will be the number of each bicycle rack system installed in the complete and accepted work.
- xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Bicycle Rack) will be paid for at the Contract unit price for each. Payment will be full compensation for installing a complete bicycle rack system in accordance with the Contract Documents, and for furnishing all labor, materials, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (Bicycle Rack)	Each