SECTION 1076
GALVANIZING

1076-1 GALVANIZING

Wherever galvanizing is required, perform the galvanizing in accordance with this section except where other requirements for galvanizing are included in other sections of the *Standard Specifications*.

Allow the Engineer to obtain samples of molten zinc directly from the galvanizing vat upon request.

1076-2 INSPECTION NOTIFICATION

Coordinate galvanizing inspection with the Materials and Tests Unit in accordance with Subarticle 1072-7(A). Before inspection, the galvanizer/supplier shall provide the Department's inspector with NCDOT approved drawing/purchase order, stating contract number, location of project, quantity/type of material being galvanized and mill test report(s) for respective material.

1076-3 FABRICATED PRODUCTS

Galvanize products fabricated from rolled, pressed and forged steel shapes, plates, bars and strips 1/8" thick and heavier in accordance with AASHTO M 111. Fabricate products into the largest unit that is practicable to galvanize before the galvanizing is done. Fabrication includes all operations necessary to complete the unit such as shearing, cutting, punching, forming, drilling, milling, bending, welding and riveting. Galvanize components of bolted or riveted assemblies separately before assembly. When it is necessary to straighten any sections after galvanizing, perform such work without damage to the zinc coating.

Completely seal all edges of tightly contacting surfaces by welding and commercial blast clean to SSPC-SP 6 before galvanizing.

Commercial blast clean components with partial surface finishes in accordance with Subarticle 442-7(A) before pickling.

1076-4 HARDWARE

Galvanize iron and steel hardware in accordance with AASHTO M 232.

1076-5 ASSEMBLED PRODUCTS

Completely seal all edges of tightly contacting surfaces by welding before galvanizing. Galvanize assembled steel products in accordance with AASHTO M 111.

1076-6 SHEETS

Galvanize iron or steel sheets in accordance with ASTM A653.

1076-7 REPAIR OF GALVANIZING

Repair galvanized surfaces that are abraded or damaged at any time after the application of zinc coating. Surfaces to be repaired shall be clean, dry and free of oil, grease, pre-existing paint, corrosion and rust. Surface to be repaired shall be blast-cleaned to SSPC-SP 10 (near white).

Where circumstances do not allow blast or power tool cleaning to be used, then hand tools may be used. Cleaning shall meet SSPC-SP 2, the removal of loose rust, mil scale or paint to the degree specified, by hand chipping, scrapping, sanding and wire-brushing. Surface preparation shall extend into the undamaged galvanized coating. Spray or brush-apply the paint to the cleaned areas with 2 coats of organic zinc repair paint meeting Article 1080-9. Ensure that the total thickness of the 2 coats is not less than 3 dry mils. Allow adequate curing time before subjecting repaired items to service conditions in accordance with the manufacturer's printed instructions.

Application conditions shall be 40°F Air/Steel temperature and rising, steel temperature shall be 5°F above the dew point and relative humidity shall be 85% or less. Follow paint manufacturers recommendation if more restrictive than above requirements.

Follow paint manufacturers written instructions on storage temperatures, mixing application, continuous agitation and pot life. No thinners are to be used when applying organic zinc repair paint by brush or roller.

Instead of repairing by painting with organic zinc repair paint, other methods of repairing galvanized surfaces that are abraded or damaged are allowed provided the proposed method is acceptable to the Engineer.

Excessive damage to galvanized surfaces as determined by the Engineer is cause for rejection. Replace or re-galvanize rejected galvanized material.

SECTION 1077
PRECAST CONCRETE UNITS

1077-1 GENERAL

Use precast concrete units from sources participating in the Department's Precast Concrete QC/QA Program. A list of participating sources is available from the Materials and Tests Unit. The Department will remove a manufacturer of precast concrete units from this program if the monitoring efforts indicated that non-specification material is being provided or test procedures are not being followed.

This section covers the materials for and the production of precast reinforced concrete units produced in accordance with the contract. Where precast reinforced concrete circular manhole sections are used, they shall meet AASHTO M 199.

1077-2 PLAN REQUIREMENTS

The plans for precast units will be furnished by the Department in the *Roadway Standard Drawings* or details shown in the project plans.

When the Department does not make precast plans available and the Contractor chooses to precast, submit drawings to the Engineer for the items proposed to precast. Submit one complete set of drawings for review, at least 40 calendar days before beginning production. After acceptance, submit 7 complete sets of drawings. Acceptance by the Engineer of contractor drawings will not be considered as relieving the Contractor of any responsibility for precast units. When precast units are load bearing and require structure design, have the plans prepared and certified by an engineer licensed by the State of North Carolina. Contractor furnished drawings shall show complete design, installation and construction information in such detail as to enable the Engineer to determine the adequacy of the proposed units for the intended use. Contractor drawings shall include details of steel reinforcement size and placement and a schedule that lists the size and type of precast units at each location where the precast units are to be used. Produce precast units in accordance with the approved drawings.

1077-3 MATERIALS

Refer to Division 10.

Item	Section
Air Entraining Agent	1024-3
Chemical Admixtures	1024-3
Coarse Aggregate	1014-2
Curing Agents	1026
Fine Aggregate	1014-1
Fly Ash	1024-5
Ground Granulated Blast Furnace Slag	1024-6