MICHIGAN

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FOR

**STRUCTURAL STEEL, FURNISH AND FABRICATE, GALVANIZED**

BRG:APZ 1 of 2 APPR:MJF:JAB:07-20-21

**a. Description.** This work consists of furnishing, fabricating, surface preparation, and hot dip galvanizing of all structural steel designated as primary and secondary members as specified on the plans in accordance with sections 707 and 716 of the Standard Specifications for Construction, except as modified by this special provision.

**b. Materials.** Furnish materials in accordance with subsection 707.02 of the Standard Specification for Construction. Coat all structural steel with hot-dipped galvanization as specified on the plans. Ensure the hot-dipped galvanized surface is the finished surface of the material. Ensure galvanized coating properties are in accordance with *ASTM A123/A123M* for galvanizing of steel members and section 716 of the Standard Specifications for Construction.

The structural steel will be accepted based on fabrication inspection per the *MQAP Manual*. High strength bolts will be accepted based on test per the *MQAP Manual*.

**c. Submittals.** Submit the following to the Engineer a minimum of 21 days prior to galvanization of the structural steel. Do not begin galvanization of the structural steel until the Engineer provides approval of each submittal:

• Coating Plan per *AISC 420-10/SSPC-QP 3*;

• Provide an Inspection Test Plan (ITP), which includes all mandatory hold points and includes acceptance criteria;

• Welding Distortion Plan per *AASHTO/AWS D1.5* as modified by the contract; and

• Shrinkage Plan per *AASHTO/AWS D1.5* as modified by the contract.

Submit the following to the Engineer within 48 hours after galvanizing, but prior to shipping:

• Zinc DFT reading sheet for each specific item galvanized; and

• Certificates of conformance for zinc and chemical analysis with a written statement from the zinc producer that the product supplied meets the purity requirements of *ASTM B6*.

**d. Process Audits.** The Engineer or a designated representative may audit the galvanizer’s processes before, during, or after production to assure conformance to project requirements and to the galvanizer’s own quality management system.

Audit dates and plans will be communicated to the galvanizer at least 24 hours in advance of the audit. Results of audits performed before production and based on coated products not required to meet MDOT specification will be evaluated in accordance with the requirements for those products and the galvanizer’s own quality requirements.

Nonconformances identified during the audit will require formal resolution using documented corrective actions prior to payment.

Audit scope will include key galvanizing processes essential to final product quality, including the following:

• Management and review of project requirements

• Material control (both raw coating materials and products to be coated)

• Establishing and tracking lots

• Racking/fixturing

• Caustic cleaning/rinse

• Pickling/rinse

• Fluxing/dripping/draining/spinning

• Curing/unloading

• Inspection (sampling plans for lots, inspection records and certification, and thickness, finish, appearance, and adhesion measurements)

• Inspection equipment control (including calibration and accuracy traceability)

• Nonconformance control

• Training

Specifics of the audit including administrative rules, methodology, and audit criteria for each process is found in the program document MDOT Supplier Process Control Assessment - Hot Dipped Galvanizing.

**e. Construction.** Provide construction methods in accordance with subsection 707.03 of the Standard Specification for Construction. Attach shear developers to rolled shapes prior to galvanizing. Galvanize the structural steel in accordance with subsection 716.03.B.4 of the Standard Specifications for Construction and this special provision.

Provide dry storage of galvanized elements.

Repair damage of galvanized surfaces in accordance with 716.03.E of the Standard Specifications for Construction.

**f. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay items:

**Pay Item Pay Unit**

Structural Steel, Mixed, Furn and Fab, Galvanized Pound

Structural Steel, Rolled Shape, Furn and Fab, Galvanized Pound

Shear Developers, Galvanized (B02 of 11072) Lump Sum

Erection of the steel will be paid per the standard pay items Structural Steel, Mixed, Erect and Structural Steel, Rolled Shape, Erect.

Repair of damaged galvanized surfaces is included in the pay item for furnishing the galvanized steel.