



To: SUPERSEDED BY EFFECTIVE 7/11/02 EBOZ-024		New York State Department of Transportation ENGINEERING INSTRUCTION	EI 99-031
Title: REVISIONS TO THE STANDARD SPECIFICATIONS - SECTION 644 - SIGN STRUCTURES			
Distribution: <input type="checkbox"/> Manufacturers (18) <input type="checkbox"/> Surveyors (33) <input checked="" type="checkbox"/> Main Office (30) <input checked="" type="checkbox"/> Consultants (34) <input type="checkbox"/> Local Govt. (31) <input type="checkbox"/> Contractors (39) <input checked="" type="checkbox"/> Regions/Agencies (32) <input type="checkbox"/> ()	Approved:  J. M. O'Connell Deputy Chief Engineer (Structures) 10.1.99 Date 		

EFFECTIVE DATE:

This Engineering Instruction is effective with Department contracts let on or after January 13, 2000.

PURPOSE:

The purpose of this Engineering Instruction is to issue the attached shelf note to revise the sign structure specification to have fabrication inspection and testing (Quality Assurance) by the Department's representatives be standard. Currently the sign fabricators are responsible for providing Quality Control and Quality Assurance.

BACKGROUND:

In the past few years the Department has mounted a number of variable message signs on sign structures that spanned travel lanes. Some of these installations resulted in structural failure (but not collapse) of the sign structures. Upon investigation of the cause of the failures it was found that poor welds contributed to a number of the failures. Further investigation of other sign structures, both those with and without variable message signs, found poor welds to be a widespread problem.

Sign structures spanning travel lanes are widely used over the most heavily traveled of the states highways. A sign structure failure could result in collapse on or in front of a vehicle, resulting in serious injury or death. This is an unacceptable risk.

The Department has a Consultant investigating new and modified designs for sign structures. The results of these investigations and the issuance of revised standard details will not be completed until the year 2000. For the interim, improving the quality of the welding will reduce the risk of sign structure failures. To accomplish this the Department will be assigning qualified inspectors to oversee the fabrication of sign structures.

COST IMPLICATIONS:

Based on the number of sign structures in contracts let in fiscal 1998-1999, this change will add \$150,000 to the contract inspection costs of the Department.

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ACTIONS:

The Design Quality Assurance Bureau shall insert the attached shelf note in all contracts including Items with a base number of 644, starting with the January 13, 2000, letting.

CONTACT PERSON:

Any questions regarding this Engineering Instruction should be directed to The Sign Structures Management Unit in the Structures Division at 518-485-2768.

SIGN STRUCTURES

Make the following changes to the Standard Specifications of January 2, 1995:

On page 6-136 delete lines 11-14 and replace with the following:

C. Acceptance. All aluminum furnished shall be documented in accordance with the following:

A certified copy of test results of chemical analyses and physical (mechanical) tests required shall be furnished for all aluminum. These test data shall be given to the shop inspector for submittal to the Deputy Chief Engineer (Structures) with his/her final inspection report.

A manufacturer's certification of the results of chemical and physical (mechanical) tests conducted as required by the specifications will be interpreted to mean that the manufacturer has tested the product as required by the specifications, and has found both materials and workmanship to conform to the specification designation listed on the report of physical and chemical test results that are certified to be accurate. Workmanship as defined herein shall include dimensional accuracy, surface finish, temper and any other physical and/or mechanical property which may be affected by manufacturing procedures.

On page 6-137, delete lines 25-27, and replace with the following:

F. Acceptance. All steel furnished shall be documented in accordance with the requirements of §715-01 Basis of Acceptance.

On page 6-138, after line 16, add the following:

If shop drawings will not be submitted for approval, the Contractor (or fabricator) shall provide notification of this fact to all persons and agencies that would have received approved shop drawings in accordance with the New York State Steel Construction Manual. No fabrication shall commence until 14 days after delivery of said notice to the designated Shop Inspection Agency.

Also on page 6-138, delete lines 28 and 29, replace with the following:

4. Quality. The fabricator shall have a Quality Control plan in place, utilizing certified inspectors, prior to the fabrication of any sign structure element.

Finally, on page 6-138, delete lines 36-41 and replace with the following:

7. Acceptance For Shipping. Each section of a sign structure shall bear the Inspector's mark of acceptance prior to shipping.

On page 6-140, at the end of line 16, add the following:

except that slope layback shall not be allowed for bored foundations.

On page 6-141 delete lines 6 and 7 and replace with the following:

C. Setting Anchor Bolts. Anchor bolts shall be carefully set to proper location, alignment, and elevation by using templates. Templates cast into the footing concrete shall have minimum 50 mm diameter perforations or be made of bar sock to prevent honeycombing. Templates exposed in the end product shall be galvanized. Elevations shall be determined by the Engineer.

Anchor bolts shall not be realigned by bending to fit the base plate. Anchor bolts that do not fit the sign base plates will be rejected. The Contractor may propose a remediation method for rejected anchor bolts subject to approval of the Regional Director. Rejected anchor bolts, and the concrete they are embedded in shall be replaced by new materials at no cost to the Department.