ORIGINATION FORM

THE INFORMATION BELOW IS TO BE PROVIDED BY THE ORIGINATOR

☒ Modify Specification _____7000000SS_____.
Section/File number

☐ New Section _____.
Section number

Subject: Highway Signing – Overhead Sign Structures - Installation

Origination date: 02/14/06

Originator: Jeffrey A. Pouliotte
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CN982JP

Problem statement: Add Subsection 700-2.4.3 to Section 700 to specify bolt tightening and lubrication criteria for the ASTM A 307 bolts (or for ASTM A325 bolts when used as a substitute) used to construct Highway Signs. Reference proposed Subsection 649-5 for anchor bolt tightening and lubrication criteria, and reference Section 460 for bolt tightening and lubrication criteria for alternate bolt splice connections.

Information source: Andre Pavlov (State Structures Design Office) and Charlie Harvey (State Structures Design Office)

Background data: Section 700 has no bolt tightening or lubrication criteria for the ASTM A 307 bolts (or for ASTM A325 bolts when used as a substitute), which are used in conjunction with the FDOT Design Standards to construct Highway Signs. Section 700 has no bolt tightening or lubrication criteria for anchor bolts or for the ASTM A 325 bolts, which are used to construct the permitted alternate bolt splice connections.

Recommended Usage Note: The change to Specification Subsection 649-5 and the addition of Specification Subsection 700-2.4.3 is recommended for all future projects.

Expected fiscal impact, if implemented: The fiscal impact for adding Subsection 700-2.4.3 to provide bolt tightening and lubrication criteria for ASTM A 307 bolts, for anchor bolts, and for ASTM A 325 used to construct alternate bolt splice locations is negligible with respect to construction costs.

Implementation of these changes, if and when approved, will begin with the January 2007 letting.

Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

DENVER J. STUTLER, JR.
SECRETARY

M E M O R A N D U M

DATE: April 17 2006

TO: Specification Review Distribution List

FROM: Duane F. Brautigam, P.E., State Specifications Engineer

SUBJECT: Proposed Specifications Change: **7000243 Overhead Sign Structures - Installation**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification for Overhead Sign Structures - Installation.

This change was proposed by Jeffrey Pouliotte to specify bolt tightening and lubrication criteria for bolts used to construct Highway Signs.

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at SP965DB or duane.brautigam@dot.state.fl.us. Comments received after May 15, 2006 may not be considered. Your input is encouraged.

DFB/ft

Attachment

COMMENTS:

Submitted by: Phone #:

OVERHEAD SIGN STRUCTURES
(REV 4-7-06)

SUBARTICLE 700-2.4 (of the Supplemental Specifications) is expanded by the following new Subarticle:

700-2.4.3 Installation: *Install high strength ASTM A325 bolt, nut and washer assemblies for Span Sign Structure alternate splice connections in accordance with Section 460. Install nuts on anchor rod in accordance with Section 649-5. Install all other bolt (ASTM A307 or substitute ASTM A325), nut and washer assemblies in accordance with the following: Use bolt, nut and washer assemblies that are free of rust and corrosion, and lubricate these assemblies prior to installation so that the nut moves freely by hand through the full length of the thread. Tighten nuts, as necessary, to bring the faying surfaces of the assembly into full contact from the interior of the connection outwards in a symmetrical pattern. After bringing the faying surfaces of the assembly into full contact, tighten nuts to achieve the minimum torque as specified in Table A. Within 24 hours after final tightening, the Engineer will witness a check of the minimum torque using a calibrated torque wrench for no less than 3 bolts and a minimum of 10% of the fastener assemblies for each connection.*

Table A	
Bolt Diameter (in.)	*Minimum Torque (ft.-lbs.)*
3/8	*15*
1/2	*37*
5/8	*74*
3/4	*120*
7/8	*190*
1	*275*
1 1/8	*375*
1 1/4	*525*