



Florida Department of Transportation

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GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

STEPHANIE KOPELOUSOS
SECRETARY

August 11, 2008

Dr. Leslie McCarthy, PhD, P.E.
Program Operations Engineer
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section 700
Proposed Specification: 7000205-Highway Signing-Sign Assembly Design
Requirements-Overhead Sign Structures

Dear Dr. McCarthy:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

Please review and transmit your comments, if any, within four weeks. Comments should be sent via Email to ST986RP or rudy.powell@dot.state.fl.us.

If you have any questions relating to this specification change, please call Rudy Powell, State Specifications Engineer at 414-4110.

Sincerely,

Rudy Powell, Jr., P.E.
State Specifications Engineer

RP/dm
Attachment

cc: Gregory Jones, General Counsel
Florida Transportation Builders' Assoc.
State Construction Engineer

HIGHWAY SIGNING.**(REV 11-9-07-14-08) (FA 12-19-07) (7-08)**

SUBARTICLE 700-2.5 (Page 726) is deleted and the following substituted:

700-2.5 Overhead Sign Structures:

700-2.5.1 Department's Design: When the overhead sign structure is detailed in the plans, submit shop drawings to the Department for approval as specified in Section 5. Prior to the submittal of the shop drawings, determine the actual length of support columns for all sign structures on the basis of existing field conditions and include these lengths on the shop drawings.

700-2.5.2 Contractor's Design: When the overhead sign structure is not detailed in the plans, submit to the Department a foundation design and a sign structure design utilizing steel structural members. Meet the requirements of this Section and the FDOT Structures Manual.

Have designs and shop drawings prepared by a Specialty Engineer or the Contractor's Engineer of Record, and submit them to the Department for review and approval in accordance with Section 5.

Determine the actual length of support columns for all sign structures on the basis of existing field conditions, and include these lengths in the shop drawings and calculations.

700-2.5.3 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 bolts rod in accordance with 649-5 and 649-6. Install all other Use ASTM A325 bolt (ASTM A307 or substitute ASTM A325), nut and washer assemblies for all installations other than anchor bolts as follows. in accordance with the following:~~ Use bolt, nut and washer assemblies that are free of rust and corrosion *and that are lubricated properly as demonstrated by being able to easily hand turn the nut on the bolt thread for its entire length. Tighten nuts to the full effort of an ironworker using an ordinary spud wrench to bring the faying surfaces of the assembly into full contact which is referred to as "snug tight." Tsnug tight condition. 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 *and to a snug tight condition*, tighten nuts to achieve the minimum torque as specified in Table A-700-1 *unless the connection is an alternate splice connection of a span sign structure, in which case, tighten nuts in accordance with the turn-of-nut method of Table 460-7 of Specification Section 460. Maintain uniform contact pressure on the faying surfaces during snugging and the subsequent final tightening process, by using a bolt tightening pattern that balances the clamping force of each bolt, as closely as possible, with the equal clamping force of a companion bolt.* 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~~ *or* and a minimum of 10% of the ~~bolts fastener assemblies, whichever is greater~~, *whichever is greater*, for each connection; *however, do not perform this check on alternate splice connections of span sign structures.*

All Jobs with Overhead Sign and Traffic Signal Structures

Table 700-1A	
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

HIGHWAY SIGNING.**(REV 5-14-08)**

SUBARTICLE 700-2.5 (Page 726) is deleted and the following substituted:

700-2.5 Overhead Sign Structures:

700-2.5.1 Department's Design: When the overhead sign structure is detailed in the plans, submit shop drawings to the Department for approval as specified in Section 5. Prior to the submittal of the shop drawings, determine the actual length of support columns for all sign structures on the basis of existing field conditions and include these lengths on the shop drawings.

700-2.5.2 Contractor's Design: When the overhead sign structure is not detailed in the plans, submit to the Department a foundation design and a sign structure design utilizing steel structural members. Meet the requirements of this Section and the FDOT Structures Manual.

Have designs and shop drawings prepared by a Specialty Engineer or the Contractor's Engineer of Record, and submit them to the Department for review and approval in accordance with Section 5.

Determine the actual length of support columns for all sign structures on the basis of existing field conditions, and include these lengths in the shop drawings and calculations.

700-2.5.3 Installation: Install nuts on anchor bolts in accordance with 649-5 and 649-6. Use ASTM A325 bolt, nut and washer assemblies for all installations other than anchor bolts as follows. Use bolt, nut and washer assemblies that are free of rust and corrosion and that are lubricated properly as demonstrated by being able to easily hand turn the nut on the bolt thread for its entire length. Tighten nuts to the full effort of an ironworker using an ordinary spud wrench to bring the faying surfaces of the assembly into full contact which is referred to as snug tight condition. After bringing the faying surfaces of the assembly into full contact and to a snug tight condition, tighten nuts to achieve the minimum torque as specified in Table 700-1 unless the connection is an alternate splice connection of a span sign structure, in which case, tighten nuts in accordance with the turn-of-nut method of Table 460-7 of Section 460. Maintain uniform contact pressure on the faying surfaces during snugging and the subsequent final tightening process, by using a bolt tightening pattern that balances the clamping force of each bolt, as closely as possible, with the equal clamping force of a companion bolt. Within 24 hours after final tightening, the Engineer will witness a check of the minimum torque using a calibrated torque wrench for 3 bolts or a minimum of 10% of the bolts, whichever is greater, for each connection; however, do not perform this check on alternate splice connections of span sign structures.

Table 700-1	
Bolt Diameter (in.)	Minimum Torque (ft.-lbs.)

All Jobs with Overhead Sign and Traffic Signal Structures

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