



Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

STEPHANIE C. KOPELOUS
SECRETARY

May 21, 2008

This Memo Has Expired

DCE MEMORANDUM NO.: 15-08
(FHWA Approved: 5/21/08)

TO: DISTRICT CONSTRUCTION ENGINEERS

FROM: *For* Brian Blanchard, Director, Office of Construction

A handwritten signature in black ink, appearing to read "David A. Haddad".

COPIES: Robert Robertson, Duane F Brautigam, District Design Engineers, District Structures Design Engineers, District Maintenance Engineers, District Structures and Facility Engineers, Bob Burlison, Greg Williams (FHWA)

**SUBJECT: CHANGE IN BOLTING CRITERIA FOR STRUCTURES
GOVERNED BY SPECIFICATION SECTIONS 649 AND 700**

Effective immediately, the field bolting installation specification criteria for Structures governed by Specification Sections 649 (Steel Strain Poles, Steel Mast Arm and Monotube Assemblies) and 700 (Highway Signing), shall be modified as presented herein. These changes eliminate the requirements of specification 460 that call for "Rotational Capacity" testing and "Daily Snug Tight Torque" testing currently required in specifications 649 and 700 by reference. There are also changes to specification 649 that clarify anchor bolt installation procedures.

This memorandum serves as blanket approval to process a \$0.00 specification change using the specification language contained in this memorandum for on-going projects and should be attached to the Work Order or Supplemental Agreement accomplishing this task. The final specification changes will be processed as soon as possible and should be included in new projects beginning January 2009.

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ARTICLE 649-5, Installation, the third paragraph is replaced with the following two paragraphs:

Install ASTM A325 bolt, nut and washer assemblies in accordance with the following. Use bolt, nut and washer assemblies that are free of rust and corrosion and that are lubricated properly. Tighten nuts, as necessary, to the full effort of an ironworker using an ordinary spud wrench in order to bring the faying surfaces of the assembly into full contact which is referred to as "snug tight." Maintain uniform contact pressure on the faying surfaces during snugging and turn-of-nut 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. After bringing the faying surfaces to a snug tight condition, tighten nuts in accordance with the turn-of-nut method in Table 460-7 of Specification 460-5.

Use anchor bolt 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. Install nuts on anchor bolts in accordance with the following sequence. Ensure that the base plate is level by incrementally adjusting the leveling nuts all of which must be in direct contact with the bottom surface of the base plate at the conclusion of the leveling process. Tighten all the anchor bolt nuts so they are in direct contact with the top surface of the base plate and are "snug tight." Snug tight is attained by applying a few impacts of a power wrench or with the full tightening effort of an ironworker using an ordinary spud wrench. If the top surface of the base plate has a slope that exceeds 1:40, use a beveled washer under the anchor bolt nut. Tighten the leveling nuts until they are snug tight. Match mark the anchor bolt nut relative to the anchor bolt to ensure that the anchor bolt nut is rotated by the fraction of a turn specified in Table A and apply the turn to the nut. Do not exceed the Table A value by more than 20 degrees. Tighten each "retainer" or "jam" nut until it is in firm contact with the top surface of the anchor bolt nut then while preventing the anchor bolt nut from rotating, tighten the jam nut until it is snug tight. During each stage of leveling nut, anchor bolt nut and jam nut tightening, use a pattern of tightening that, as nearly as possible, produces a balanced distribution of clamping forces on the base plate as tightening progresses.

Anchor Rod Diameter (in.)	Nut Rotation from snug Tight Condition
$\leq 1 \frac{1}{2}$	1/3 turn
$> 1 \frac{1}{2}$	1/6 turn

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SUBARTICLE 700-2.5.3, Installation, is revised as follows:

700-2.5.3 Installation: Install nuts on anchor bolts in accordance with 649-5. Use ASTM A325 bolt, nut and washer assemblies for all installations as follows. Use bolt, nut and washer assemblies that are free of rust and corrosion and that are lubricated properly. Tighten nuts, as necessary, to the full effort of an ironworker using an ordinary spud wrench in order to bring the faying surfaces of the assembly into full contact which is referred to as "snug tight." 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. 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 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 460-5. 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; however, do not perform this check on alternate splice connections of Span Sign Structures.

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

Any questions pertaining to this matter should be directed to Rafiq Darji, (850) 414-4195, rafiq.darji@dot.state.fl.us or Steven Plotkin, (904) 360-5501, steven.plotkin@dot.state.fl.us.

BB/pw



Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

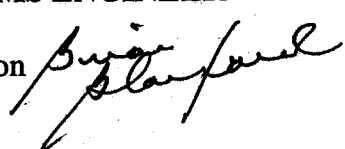
605 Suwannee Street MS #31
Tallahassee, FL 32399-0450

STEPHANIE C. KOPELOUSOS
SECRETARY

August 13, 2007

MEMORANDUM

TO: DAVID SADLER, CONSTRUCTION ENGINEER
JIM JOHNSON, CONSTRUCTION SYSTEMS ENGINEER

FROM: Brian Blanchard, Director, Office of Construction 

COPIES: Wynette Williams, Administrative Assistant

SUBJECT: DELEGATION OF SIGNATURE AUTHORITY

This is to delegate signature authority for documents (excluding personnel actions) to you for when I am out of the office or on travel status from this date through July 1, 2008.

Ms. Williams is also delegated signature authority for administrative type actions.

Please insure that my office receives a copy of all correspondence signed by you for these dates.

BB/ww