



Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JIM BOXOLD
SECRETARY

December 28, 2015

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section **460**
Proposed Specification: **4600402 Structural Steel and Miscellaneous Metals.**

Dear Mr. Nguyen:

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

The changes are proposed by Amy Tootle of the State Construction Office to require all construction-related documentation to be submitted by electronic means for consistency with the State Construction Office e-Construction initiative.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to daniel.scheer@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Daniel Scheer, P.E.
State Specifications Engineer

DS/dt

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

STRUCTURAL STEEL AND MISCELLANEOUS METALS.
(REV 10-28-15)

SUBARTICLES 460-4.2.1 and 460-4.2.2 are deleted and the following substituted:

460-4.2.1 General: All materials arriving at the shop shall be properly identified in accordance the requirements of ASTM A6. Document all main load-carrying member material, high-strength fastener assemblies, and weld materials incorporated into the work through the entire fabrication process. Document this material traceability in a report type format that correlates heat numbers to their respective locations in the completed members. Provide Submit diagrams and sketches as requested by the Engineer for clarity.

At the fabrication facility, maintain the records of the material testing and certification processes and component/part identification as part of the fabricator's permanent project records for a period of not less than two years as measured from the last shipment of materials from the fabricator's facility. Provide Submit a copy all such project-related records to the Engineer.

Mark the weight on members weighing more than three tons, in a visible location.

460-4.2.2 Match Marking of Members and Assemblies: Match mark all connecting members or parts that have been reamed or drilled while assembled. The fabricator shall provide submit a diagram showing all marks and clearly indicate the location of all the marks on the shop drawings.

Use painted marks, attached metal tags, other durable methods which do not degrade the finish of the piece, or low-stress type steel die stamps to identify and match mark pieces. If steel die stamps are used, they must be blunt nosed or interrupted dot dies, manufactured to produce impressions that are rounded at the bottom of the impression. Re-mark coated type markings as necessary to maintain continuity in traceability.

Mark splice plates and girders so that upon erection, the mark on the splice plate is located opposite a matching mark on the girder. Place the mark on web splice plates, midway down the long side of the plate, on either the right or left side, to correspond with the girder to which the splice plate will be temporarily attached for shipping to the erection site. Make a matching stamp on the girder web opposite the mark on the splice plate.

Place the mark on top or bottom flange splice plates, on the right or left end of the plate, corresponding to the girder to which the plate will be attached for shipment to the erection site. Place a corresponding mark on the girder flange opposite the mark in the splice plate.

As an alternate location for tub girder bottom flange splice plates, place the mark midway down the long side of the plate, on either the right or left side, to correspond with the girder to which the splice plate will be temporarily attached for shipping to the erection site. Make a matching mark on the girder flange opposite the mark on the splice plate.

Mark girders and beams on the left end, according to the orientation shown in the shop drawings, near the top flange. Mark diaphragms in the middle upper portion of the web. Mark cross-frames in the middle of the top or bottom horizontal member.

When heat numbers and other identification marking are applied by die stamping to fracture critical members, low stress dies shall be used.

Low-stress die stamp markings applied to fracture critical members shall be placed in locations or zones shown or described in the approved shop drawings. Low-stress or compression areas are preferred.

Ensure that during fabrication, the heat number is maintained on each primary load-carrying component by paint until the component is permanently joined into a piece marked member or assembly.

SUBARTICLE 460-4.6 is deleted and the following substituted:

460-4.6 Evaluation of Work: The Engineer will evaluate and accept materials and work conforming to the Contract Documents. These evaluations may take place prior to or following delivery of the materials to the site of the structure. Materials or work that fails to meet Contract requirements will be rejected.

The Engineer may, at his sole discretion, permit further inspections and testing of materials or work that fail to meet Contract requirements for acceptance. The cost of such inspections and tests shall be borne by the Contractor.

Bring to the attention of the Engineer, all nonconforming work and or materials that cannot be brought into conformance with the Contract Documents using pre-established procedures as outlined in the Department approved Producer QC Plan. Submit the following information to the Engineer:

A cover letter prepared on the Contractor's letterhead and addressed to the Engineer briefly describing the nonconforming work and the proposed credit to the Contract proportionate to the nonconformance. For each fabricating facility and for each project within that fabrication facility, submittals must be numbered consecutively beginning with the number 1, at the start of each project. Erectors will start with one for each individual project.

A completed Department Nonconforming Structural Steel and Miscellaneous Metal Component Data Sheet prepared by the Contractor and countersigned by the Engineer's designated representative to indicate agreement between the Contractor and the Department regarding the nonconformance, not any solution, resolution or credit. If the Contractor and the Engineer's designated representative are not in agreement regarding the nonconformance, the Engineer's designated representative will either reject the submittal indicating the reason(s) for the rejection or modify the submittal and forward to the Engineer. In the event of modification, the Contractor will initial the submittal before being forwarded to the Engineer, thereby indicating the Contractor's concurrence with the modification.

A list of supporting information such as sketches, documentation, calculations, pictures, etc., must be included in the appropriate space on the Nonconforming Component Data Sheet. Supporting information regarding Contract Document noncompliance in the form of separate documents is only necessary when space on the Department Nonconforming Structural Steel and Miscellaneous Metal Component Data Sheet is inadequate for the required data. All of the supporting information required for the form must be prepared by, or under the supervision of, the Specialty Engineer who will sign and seal ~~one (1) complete copy of~~ the supporting information.

If requested by the Engineer, submit a structural and durability evaluation of the proposed repair and/or remediation. This evaluation must be conducted under the supervision of a Specialty Engineer and the submittal is to bear the Specialty Engineer's signature and seal.

ARTICLE 460-5 is deleted and the following substituted:

460-5 Bolted Connections.

460-5.1 General: Use bolts as follows:

1. Use galvanized ASTM A325 Type 1 bolts in all field installed bolted structural steel connections for painted steel.
2. Use either black or galvanized ASTM A325 Type 1 bolts in all shop installed bolted structural steel connections that will be shop painted.
3. Use black ASTM A325 Type 3 bolts in all bolted structural steel connections for weathering steel that is to remain unpainted.
4. Use the bolts as specified for connected assemblies or parts that are designated as miscellaneous components where the fastener type is specified elsewhere in the Contract Documents.

Tighten ASTM A325 bolts in accordance with the procedures specified below for turn-of-nut or direct-tension-indicator (DTI) tightening.

Lubricate and maintain consistency in lubrication of fastener assembly during Rotational Capacity (RC) testing and installation. Assemblies that exhibit a loss of lubrication, as determined by the Engineer, may be re-lubricated and retested prior to installation.

Use ASTM A490 bolts only with the approval of the Engineer. ~~Provide-Submit~~ procedures in accordance with ASTM A490 for the handling, lubrication, installation, tightening and testing of ~~ASTM A490~~ such bolts. Do not install ASTM A490 bolts without prior approval of the procedures by the Engineer.

When the Engineer approves ASTM A307 bolts for use in miscellaneous components, tighten them such that the plies of the joint are in firm contact. Use three to five impacts of an impact wrench or the full effort of a person using an ordinary spud wrench to obtain a snug connection.

Fasten aluminum, other materials or assemblies of dissimilar materials in accordance with the Contract Documents.

Install ordinary rough or machine bolts and nuts in accordance with the Contract Documents.

SUBARTICLE 460-5.4.2 is deleted and the following substituted:

460-5.4.2 Preparation of Faying Surfaces: Provide coated and non-coated faying surfaces in accordance with the Contract Documents. Faying surfaces specified as blast-cleaned must satisfy SSPC SP-10 'Near-White Blast Cleaning.'

When painting of the slip-critical faying surface of bolted connections is required, use only the prime coat. Prepare and coat the faying surfaces prior to installation of the fasteners. Provide certification of the slip critical classification required in the Contract Documents.

~~Provide-Submit~~ certification to the Engineer that galvanized faying surfaces meet or exceed a Class C slip critical classification, unless a different classification is required elsewhere in the Contract Documents. Mechanically roughen galvanized faying surfaces in accordance with the galvanizer's recommendations.

SUBARTICLE 460-7.1 is deleted and the following substituted:

460-7.1 Pre-erection Requirements:

460-7.1.1 Erection QC Plan: ~~Develop~~ Submit an Erection QC Plan for review and approval of the Engineer.

460-7.1.2 Submittals: Meet the requirements of Sections 5 and 103 for any required submittals. Provide submittals to the Engineer for review by the Department in accordance with Section 5 and the Contract Documents.

460-7.1.3 Erection Plan: Submit, for the Engineer's review, an Erection Plan locating all primary members, lifting equipment and temporary supports or braces, and bolting pattern tightening procedures not considered routine. Ensure that the plan includes the Specialty Engineer's signature and stamp. Include supporting calculations indicating that the design unit stresses indicated in the Contract Documents have not been exceeded. ~~Provide~~ Submit this plan or plans to the Engineer three weeks before erecting the piece or pieces.

Include the following information in the Erection Plan:

1. A plan of the work area showing all substructure units and foundations; surface roads and railroads; all streams, creeks and rivers; all overhead utilities; and any underground utilities that could possibly impact, or be adversely affected by, erection operations as determined by the Specialty Engineer.

2. The erection sequence for all primary load-carrying members and all primary load-carrying member bracing. Note any and all permanent or temporary support and/or bracing locations, including crane-holding positions.

3. The center of gravity locations, pick weight and delivery orientation for all primary load-carrying members.

4. Identify any bolting requirements not considered routine.

5. Locate all pick crane work points.

6. Identify all temporary works and staging areas such as barges, mats and temporary excavation support.

7. ~~Provide~~ Include capacity charts on the drawings for each crane configuration and boom extension utilized.

8. Details of all temporary bracing, falsework, towers and shoring.

9. ~~Provide~~ Submit any procedures requested by the Engineer and not contained in the Erection Plan.

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