



*Florida Department of Transportation*

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JARED W. PERDUE, P.E.  
SECRETARY

August 21, 2023

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: **4600604 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 Joshua Turley from the Office of Roadway Design to change the non-standard welding phrase "full penetration weld" to the standard phrase "complete joint penetration weld" to be consistent with American Welding Society (AWS) terminology, to align with language in the Standard Plans.

Please review and transmit your comments, if any, within two weeks (10 business days). Comments should be sent via email [daniel.strickland@dot.state.fl.us](mailto:daniel.strickland@dot.state.fl.us).

If you have any questions relating to this specification change, please call me at (850) 414-4130.

Sincerely,

Daniel Strickland, P.E.  
State Specifications Engineer

DS/dh

Attachment

cc: Florida Transportation Builders' Assoc.  
State Construction Engineer

**STRUCTURAL STEEL AND MISCELLANEOUS METALS.****(REV 6-15-23)**

SUBARTICLE 460-6.4.1 is deleted and the following substituted:

**460-6.4.1 Highway Sign, Lighting and Traffic Signal Support Structures:** For structural steel supports for signs, lighting, and traffic signals, comply with the AWS D1.1 Structural Welding Code as amended by the following.

Unless otherwise shown in the Plans, perform ultrasonic testing (UT) or radiographic testing (RT) on ~~full penetration groove~~complete joint penetration welds at the following frequency (use the AWS D1.1 Tubular Connections Class R Criteria for UT and Cyclically Loaded Criteria for RT).

One hundred percent of each joint subject to tension or reversal of stress.

Twenty-five percent of each joint subject to only compression or shear. If discontinuities are found in the joint, the remainder of the joint shall be tested.

Perform Magnetic Particle Testing at the following frequencies:

A minimum of 25% of all fillet or partial penetration groove welds in main members (Use the AWS D1.1 Tubular Connections Criteria). If discontinuities are found, the remainder of the welds on the members shall be tested.

SUBARTICLE 460-6.4.2 is deleted and the following substituted:

**460-6.4.2 Tubular Bridge:** Comply with the requirements of the AWS D1.1 Structural Welding Code as amended by the following:

Unless otherwise shown in the Plans, perform ultrasonic testing (UT) or radiographic testing (RT) on ~~full penetration groove~~complete joint penetration welds at the following frequency (use the AWS D1.1 Tubular Connections Class R Criteria for UT and Cyclically Loaded Criteria for RT).

One hundred percent of each joint subject to tension or reversal of stress.

Twenty-five percent of each joint subject to only compression or shear. If unacceptable discontinuities are found in the joint, the remainder of the joint shall be tested.

Perform Magnetic Particle Testing at the following frequencies:

A minimum of 25% of all fillet or partial penetration groove welds in main members (Use the AWS D1.1 Tubular Connections Criteria). If unacceptable discontinuities are found, the remainder of the welds on the members shall be tested.

SUBARTICLE 460-6.4.3 is deleted and the following substituted:

**460-6.4.3 Overhead Sign Structures and Toll Gantries:** Comply with the requirements of the AWS D1.1 Structural Welding Code as amended by the following:

Associated Standard Plans Indices 649-010, 649-020, 649-031, 700-090, 715-002, 715-010

Unless otherwise shown in the Plans, perform 100 percent ultrasonic testing (UT) or radiographic testing (RT) on all complete joint penetration ~~full penetration groove~~ welds.

Prior to galvanizing, perform Magnetic Particle Testing (MT) at the following frequencies:

One hundred percent of all fillet or partial penetration groove welds in the upright columns. A minimum of 25% of all other fillet or partial penetration groove welds in main members other than upright columns. If unacceptable discontinuities are found, the remainder of the welds on the member shall be tested.

After members are galvanized, perform one hundred percent MT of all fillet welds in the upright columns.

For acceptance, use AWS D1.1 Tubular Connection Criteria for MT, Tubular Connection Class R Criteria for UT, and Cyclically Loaded Criteria for RT.

**STRUCTURAL STEEL AND MISCELLANEOUS METALS.****(REV 6-15-23)**

SUBARTICLE 460-6.4.1 is deleted and the following substituted:

**460-6.4.1 Highway Sign, Lighting and Traffic Signal Support Structures:** For structural steel supports for signs, lighting, and traffic signals, comply with the AWS D1.1 Structural Welding Code as amended by the following.

Unless otherwise shown in the Plans, perform ultrasonic testing (UT) or radiographic testing (RT) on complete joint penetration welds at the following frequency (use the AWS D1.1 Tubular Connections Class R Criteria for UT and Cyclically Loaded Criteria for RT).

One hundred percent of each joint subject to tension or reversal of stress.

Twenty-five percent of each joint subject to only compression or shear. If discontinuities are found in the joint, the remainder of the joint shall be tested.

Perform Magnetic Particle Testing at the following frequencies:

A minimum of 25% of all fillet or partial penetration groove welds in main members (Use the AWS D1.1 Tubular Connections Criteria). If discontinuities are found, the remainder of the welds on the members shall be tested.

SUBARTICLE 460-6.4.2 is deleted and the following substituted:

**460-6.4.2 Tubular Bridge:** Comply with the requirements of the AWS D1.1 Structural Welding Code as amended by the following:

Unless otherwise shown in the Plans, perform ultrasonic testing (UT) or radiographic testing (RT) on complete joint penetration welds at the following frequency (use the AWS D1.1 Tubular Connections Class R Criteria for UT and Cyclically Loaded Criteria for RT).

One hundred percent of each joint subject to tension or reversal of stress.

Twenty-five percent of each joint subject to only compression or shear. If unacceptable discontinuities are found in the joint, the remainder of the joint shall be tested.

Perform Magnetic Particle Testing at the following frequencies:

A minimum of 25% of all fillet or partial penetration groove welds in main members (Use the AWS D1.1 Tubular Connections Criteria). If unacceptable discontinuities are found, the remainder of the welds on the members shall be tested.

SUBARTICLE 460-6.4.3 is deleted and the following substituted:

**460-6.4.3 Overhead Sign Structures and Toll Gantries:** Comply with the requirements of the AWS D1.1 Structural Welding Code as amended by the following:

Unless otherwise shown in the Plans, perform 100 percent ultrasonic testing (UT) or radiographic testing (RT) on all complete joint penetration welds.

Prior to galvanizing, perform Magnetic Particle Testing (MT) at the following frequencies:

Associated Standard Plans Indices 649-010, 649-020, 649-031, 700-090, 715-002, 715-010

One hundred percent of all fillet or partial penetration groove welds in the upright columns. A minimum of 25% of all other fillet or partial penetration groove welds in main members other than upright columns. If unacceptable discontinuities are found, the remainder of the welds on the member shall be tested.

After members are galvanized, perform one hundred percent MT of all fillet welds in the upright columns.

For acceptance, use AWS D1.1 Tubular Connection Criteria for MT, Tubular Connection Class R Criteria for UT, and Cyclically Loaded Criteria for RT.