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Supplemental Specifications - Section 600

of the

Standard Specifications for Road and Bridge Construction

March 1, 2006

**Subsection 602.05 (d)** Paragraph one, **Change** 1125°F to 1100°F, **Change** 600°C to 593°C, **Change** the acronym, **ASSHTO** to **AASHTO**

**Subsection 602.05 (d)** Paragraph one, eighth sentence, and in the table below paragraph one, **Delete** the following  
Grades 70W, 100 and 100W, and **Replace** with Grades HPS70W, and HPS100W

**Subsection 602.05 (d)** Paragraph one, eighth sentence **Delete** “only under rigidly controlled procedures” and **Replace** with the following:

“as set forth in the **AASHTO** Guide Specification for Highway Bridge Fabrication with High Performance Steel”, current edition and the **AASHTO** “Bridge Welding Code”, current edition.

**Subsection 602.05 (d)** Paragraph two, first sentence, **Add** “or either”

“temperature indicating crayons, liquids, or either contact or non-contact...”

**Subsection 602.05 (e) 3** First paragraph, **Delete** the first sentence and **Replace** with the following

“The heat-curving operation shall be conducted in such a manner that the temperature of the steel does not exceed 1200°F (649°C) for Grades 36, 50, 50W and HPS50W; and 1100°F (593°C) for Grades HPS70W and HPS100W as measured by temperature-indicating crayons or other suitable means.”

**Section 602.17** **Delete** all references to **AASHTO M 253 (ASTM A 490)** bolts unless otherwise noted on the plans.

**Subsection 602.17 (D)** **Delete** the first sentence and replace with the following

“The following provisions apply when high strength bolts are installed in the field or shop.”

**Table 602.17 A-BOLT TENSION, page 352 Delete** the table conversion values for kilograms  
**Replace** with (N) values

**TABLE 602.17A-BOLT TENSION**  
Minimum Bolt Tension (1)  
in Pounds(N)

Bolt Size in inches(mm)	AASHTO M 164 (ASTM A 325) Bolts	AASHTO M 253 (ASTM A 490) Bolts
1/2(13 mm)	12,000(53,379)	15,000(66,723)
5/8(16 mm)	19,000(84,516)	24,000(106,757)
3/4(19 mm)	28,000(124,550)	35,000(155,688)
7/8(22 mm)	39,000(173,481)	49,000(217,963)
1(25 mm)	51,000(226,859)	64,000(284,686)
1-1/8(28 mm)	56,000(249,100)	80,000(355,858)
1-1/4(32 mm)	71,000(315,824)	102,000(453,719)
1-3/8(35 mm)	85,000(378,099)	121,000(538,235)
1-1/2(38 mm)	103,000(458,167)	148,000(658,337)

**Subsection 602.17(E) 1 b7 Change** “bolt diameter”, and “(kips) number”, in the table

“(in) 1-1/6 to 1-1/2”, “(kips) 42 to 45”

**Subsection 602.17(E) 2 a2 Change** “16mm” to “1.6mm”

**Subsection 602.17(E) 2 b5 Change** some information in table

1/2 rotation: **Change** “ $\geq 8$  x” to, “ $\leq 8$  x bolt dia.”

2/3 rotation: **Change** “ $\geq 8$  x” to, “ $> 8$  x but  $< 12$  x bolt dia.”

**Subsection 602.17(E) 2 b6 (Change** some information in table)

Bolt Length (measured in Step 1)	4 x bolt dia. or less	$> 4$ bolt $\leq 8$ x bolt dia.	$> 8$ x bolt dia.
Required Rotation	2/3	1	1-1/3

**Subsection 602.19-Welds.** Include the following as revisions to the AASHTO/AWS “Bridge Welding Code”

Delete 6.1.3.4(1) and 6.1.3.4(2)

**Subsection 602.19-Welds.** First paragraph, page 363; **Add** the word “joint”; “Complete joint penetration groove welds...”

**Subsection 602.26 (b);** Replace the “**THICKNESS IN INCHES (MILLIMETERS)**” Table with the following

<b>MINIMUM COLD-BENDING RADII</b>				
Thickness Inches (t)	Up to 3/4	Over 3/4 to 1, incl.	Over 1 to 2, incl.	Over 2
36	1.5t	1.5t	1.5t	2.0t
50	1.5t	1.5t	2.0t	2.5t
50W	1.5t	1.5t	2.0t	2.5t
HPS70W	1.5t	1.5t	2.5t	3.0t
100	1.75t	2.25t	4.5t	5.5t
100W	1.75t	2.25t	4.5t	5.5t

**Subsection 602.26 (b)** Second paragraph, after the Table, **Change** “HPS100W” to “HPS70W” and **Change** “1125°F” to “1100°C”, and “607°C” to “593°C”

**Subsection 602.29** First paragraph, last sentence, **Change** “56°C” to “38°C”

**Subsection 602.29** Third paragraph, last sentence, **Change** the last sentence to read as follows

“The holding temperature for stress relieving ASTM A709 Grade Hps70W Hps100W steels shall not exceed 1100°F (593°C).”

**Subsection 602.29** Fourth paragraph, first sentence, **Delete** “Section 4.4” after the wording; and **Replace** with “paragraph 3.9”, **Delete** AWS D 1.1 and **Replace** with AASHTO/AWS D1.5 “Bridge Welding Codes”

**Subsection 602.35** Fifth paragraph, **Delete** reference to “Table 602.35”

**Subsection 602.35 (b), Delete** this section

**Subsection 602.41** Last sentence, **Add** the wording “Plans and”  
“in accordance with **Subsection 105.02**, Plans and Working Drawings.”

**Subsection 602.43 (a)** **Change** the third sentence to read as follows:

“In no case shall the maximum temperature of the **ASTM A 709** Grade HPS100W, and the HPS70Wsteels exceed 1100°F (593°C).”

**Subsection 602.43 (a) Add** the following to the end of the first paragraph; “or infrared thermometers (conductor or non-conductor)

**Subsection 602.43 (b) Add** the wording “HPS70W, and HPS100W,” after the word “Grade”

**Subsection 602.47 (d) Delete** the second sentence of the second paragraph, and **replace** with the following

“When the contractor has approval to drill holes for setting anchor bolts, the bolts shall be set accurately, and fixed by completely filling the holes with grout meeting the requirements of **Subsection 918.21.**”

**Subsection 602.49 (d) Add** metric equivalents in (kg)

<b>Weight per 100 Bolts, pounds (kg)</b>
19.7 (8.9)
31.7 (14.4)
52.4 (23.8)
80.4 (36.5)
116.7 (52.9)
165.1 (74.9)
212.0 (96.2)
280.0 (127.0)
340.0 (154.2)

(e) (**Add** metric equivalents in (kg))

<b>Pounds per Linear Foot (kg/m)</b>
0.20 (0.30)
0.25 (0.37)
0.35 (0.52)
0.55 (0.82)
0.80 (1.19)
1.10 (1.64)
1.50 (2.23)
2.00 (2.98)

**Subsection 602.50 (a) Change** the name of section (a) to read as follows

(a) Structural Steel – Per Pound (Kilogram)

**Section 603**, Second paragraph, **Revise** the first sentence by adding the following:

“Effective Lettings after January 01, 2007,” All contractors or subcontractors...

**Section 604**, All sections, after **Subsection 604.11** referencing 604 Subsections are off by one subsection. Therefore **change** them by one, see the example below.

Example: **Change “Subsection 614.12(b)” to “Subsection 604.11(b)”**  
**“Subsection 604.23” to “Subsection 604.22”**

**Subsection 604.02** Last paragraph, **Delete** the first sentence and **replace** with the following

“Unless otherwise indicated on the plans, the Contractor may substitute precast reinforced box sections meeting the requirements of **Subsection 914.08, AASHTO** specifications for all fill heights for cast in place concrete box sections.”

**Subsection 604.03 (a)** **Change** the heading of the second column to read;

Min. lbs. (kg)  
Cement  
Per C.Y.  
(C.M.)

**Subsection 604.03 (a)** **Revise** the last sentence in the 1<sup>st</sup> paragraph to state the following:

“The fine aggregate shall not exceed 44% by volume calculation of the total aggregate with the exception of slip formed Class A concrete incorporated into parapets and median barriers. For slip formed parapet and median barriers exclusively, the percentages of fine and coarse aggregate in an approved concrete mix design may be adjusted  $\pm 2\%$ , such that the maximum percent by volume of fine aggregate does not exceed 46%. Mixture adjustments shall be documented in the field book and daily concrete report. Adjusted mix shall comply with all performance criteria specified in Section 604.”

**Subsection 604.03 page 398**, In the proposed concrete design, 28 day compressive strength **Change** “3x-6 in. 12 in to read “3-6 in. x 12in.”

**Subsection 604.03 page 399**, Table on maximum cement replacement rates, third column, **delete** the word “**Rates**” and **Replace** with “**Ratio**”

**Subsection 604.03 section (c)** First and second paragraph, **Delete** “Class P”

**Subsection 604.04 Page 404, Last paragraph, last sentence**

The fogger will be designed to provide a maximum VMD (volume mean diameter) of 15 (microns), and a throw distance of 60 ft. (18m).

**Subsection 604.08 (4)** Third sentence, **Change** “35mm” to, “#36”

**Subsection 604.08 page 412** Fifth paragraph, third sentence, **Change** the word “Uncoated” to “Coated”

**Subsection 604.15 Delete** the seventh paragraph, “If the acceptance cylinders...”

**Subsection 604.16 (a) Delete** the twelfth paragraph of this section, “If data collected during...”

**Subsection 604.16 page 420** Second and third paragraph, **Replace** with the following:

In hot weather mitigation it will be necessary to apply a certified dry fog with a maximum VMD of 15 (microns) with a throw distance of 60 (ft.) above the concrete surface during the placement and finishing operations. The contractor shall furnish a certification to the project supervisor verifying the VMD.

In addition, immediately before the concrete is placed, the forms and reinforcing steel shall be cooled to 90° F (32° C) or less by using a fine spray of water, leaving no puddles or pockets of water. Trucks shall be sprinkled or kept in the shade when not being unloaded so as to contribute to reducing the temperature of the concrete.

**Subsection 604.16 (d)** Last sentence, **Change** “m<sup>3</sup>” to “8m<sup>3</sup>”

**Subsection 604.16 (e)** Second paragraph, second sentence, **change** “8 m” to “6 m”,

**Subsection 604.21** Third paragraph, sentence next to last, **Change** “Federal Color Standard 594b”, to “Federal Color Standard 595b”

**Subsection 606.04 (c)** First sentence, **Change** “3(1)” to “1(3)”

**Subsection 606.21** Second sentence, **Change** “olne” to “one”

**Subsection 614.04** First sentence of the second paragraph. Shall read as follows:

The precast concrete deck units shall be cast in a Precast/Prestressed Concrete Institute, Category B-3 certified precast plant under plant control conditions, and in accordance with the TDOT procedure for the Manufacture and Acceptance of pre-cast concrete drainage structures, noise wall panels, and retaining wall panels”.

The precast concrete deck units shall be cast in a certified precast plant under plant control conditions, and in accordance with the TDOT procedure for the Manufacture and Acceptance of pre-cast concrete drainage structures, noise wall panels, and retaining wall panels”.

**Subsection 615.07** First paragraph, fourth sentence, **Change** “4 months” to “6 months”

**Subsection 619.14** Add as the second paragraph

PMC Variable Depth shall be measured by the cubic yard complete in place. The number of cubic yards will be determined by deducting the theoretical volume of Bridge Deck Overlay

(PMC) from the total volume of PMC required to obtain the finished grade shown on the Plans or established by the Engineer.

**Subsection 623.02 B 2** First sentence, **Add** after “grade 50” “50S, HPS50W,”

**Subsection 623.02 C 2** Last part of the paragraph, **Add** after “Category I” “Simple Steel Bridges”, SBR-1B.