



South Carolina  
Department of Transportation

## **BRIDGE DESIGN MEMORANDUM – DM0123**

**TO:** RPG Structural Engineers  
Alternative Delivery Structural Design Engineer  
Design Consultants

**Date:** August 30, 2023

**RE:** Switch from Metric to US Customary Reinforcing Bar Size Designations

### **Apply these requirements to all projects where design has not advanced beyond 95% plans submittal.**

Currently, SCDOT requires metric bar size designations for reinforcing bars in contract documents. After reaching out to contractors, reinforcing steel fabricators, and other state transportation agencies, it has been determined that current industry practice is to use US Customary reinforcing bar sizes as the standard reference in contract documents. Therefore for structures plans and all other contract documents, use US Customary reinforcing bar size designations in the bar marks and references. Cross reference tables for metric and US Customary bar sizes are provided in Figure 6.3-1, Figure 7.2-1, and Figure 15.3-1 of the Bridge Design Manual.

Make the following revisions in the *Bridge Design Manual*:

#### **Delete Section 6.3.4.2 and replace with:**

##### 6.3.4.2 US Customary Reinforcing Bars

SCDOT performs design work in US Customary units of measurement.

SCDOT policy is that all construction plans shall be detailed with US Customary reinforcing bar designations. Therefore, the bridge designer must use US Customary reinforcing bar designations for presentation in the plans. For cross reference of US Customary and Metric reinforcing bar designations, see Figure 6.3-1.

#### **Delete Item 1 in Section 6.3.11.5 and replace with:**

Mark. List the bars in the table beginning with the “TYPE” (e.g., A, S, V) in alphabetical order. With each “TYPE” of bar, place the “SIZE” (e.g., 05, 07, 08) of the bars in ascending order and with each “SIZE” of bar, place the “SERIES” (e.g., 01, 02, 03) in ascending order.



REINFORCING STEEL BAR MARK CODE			
TYPE	SIZE	SERIES	COUPLER
A	05	01	*

\*If a mechanical coupler is required, the reinforcing steel bar mark code includes a designation of “S” for a Service Level Coupler and a designation of “U” for an Ultimate Strength Coupler.

**Delete last line of Item 3 in Section 6.3.13.2 and replace with:**

A0506: 448 sp.@ 8” = 298’-8”(typ. top and bottom)

**Delete Figure 6.3-4 (SAMPLE REINFORCING STEEL SCHEDULE) and replace with:**

Mark	One End Bent						Length
	No. Required		Bending Dimensions				
	Stage 1	Stage 2	“a”	“b”	“c”	“d”	
A0501	2	4	37’-2”	—	—	—	37’-2”
A0801	8	20	1’-4”	—	—	—	1’-4”
A0802	2	8	37’-2”	—	—	—	37’-2”
S0501	16	36	2’-2”	2’-2”	6”	—	9’-11”
SA0501	7	10	2’-2”	2’-2”	6”	—	7’-6”
V0701	4	10	2’-2”	—	—	—	4’-4”
1½” Dia. Anchor Bolts	8	16	—	—	—	—	2’-1”



**Delete Figure 6.3-8 (SAMPLE SUPERSTRUCTURE REINFORCING DETAIL) and replace with:**

<b>Reinforcing Steel Schedule</b>							
Mark	No. Required		Dimension				Length
	Stage 1	Stage 2	"a"	"b"	"c"	"d"	
A0501	400	564	34'-8"	---	---	---	34'-8"
AV0501	242	---	31'-8½"	3'-8"	59'-9"	5⅝" *	Varies
AV0502	---	24	32'-7"	31'-4"	33'-10"	2¾"*	Varies
1¼ " Dia. Tie Bar	6	---	42'-1"	---	---	---	42'-1"
BB	1" Ht.			As Necessary			
BBU	2" Ht.			As Necessary			

*\*Two bars per incremental length.*

*Note: The sample shown is for a staged construction project.*

**Delete the first paragraph of Section 15.3.1.1 and replace with:**

Reinforcing bars are referred to in the bridge plans and specifications by number, and they vary in size from #3 to #18 in US Customary units. The designer should note that US Customary bar designations are shown in the bridge plans. See Section 6.3. Figure 15.3-1 presents the sizes and properties of the bars used in South Carolina.

As part of this policy change, SCDOT Bridge Drawing and Detail No. 703-01 (Reinforcing Bending Details) has been revised to reflect English bar designations. Other Bridge Drawings and Details will be updated at a later date. Until this occurs, the designer will be responsible for updating reinforcing steel labeling and reinforcing steel schedules within the Bridge Drawings used on individual projects to reflect English reinforcing bar designations.

Delete the asterisk and its associated reference note for Figure 15.3-1.



**Please note these revisions to your copy of the SCDOT Bridge Design Manual.**

TBK:hl

Terry B. Koon, P.E.  
Structural Design Support Engineer

cc:

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File: PC/TBK/HL

