



## Florida Department of Transportation

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### **TEMPORARY DESIGN BULLETIN C08-03**

DATE: July 17, 2008

TO: District Directors of Production, District Design Engineers, District Structures Design Engineers

FROM: Robert Robertson, State Structures Design Engineer 

COPIES: Lora Hollingsworth, David O'Hagan, Andre Pavlov, Jeffrey Ger (FHWA)

SUBJECT: Implementation of Structures sheet borders released with MR6 Structures menu and CADD Production Criteria Handbook Update.

### **REQUIREMENTS**

1. Use the updated sheet border '*Border*' [Sheet-Border.cel] for contract plans sheets in the Structures Plans component.
2. Use the new sheet border '*Border Roadway w/Initials*' [Sheet-Rdwy.cel] for Structures design sheets that reside within other discipline components of the contract plan set (Roadway, Lighting, etc.).
3. Update the FDOT CADD Production Criteria Handbook as follows:
  1. Chapter 18 (Structures Standards) - Replace page 18-1 with Attachment A.
  2. Chapter 18 (Structures Standards) - Replace Section 18.6.1 with Attachment B.

### **COMMENTARY**

Sheet border cells can be accessed using the MR6 (Maintenance Release 6) Structures menu. Three sheet borders updated with MR6 are referenced in this bulletin by their '*menu name*' [cell name]. The three sheet borders are shown in Attachment C.

The revised Structures plans sheet border cell '*Border*' [Sheet-Border.cel] resembles the Roadway plans sheet border, but they differ in operation. The required plot scale functions of the borders are incompatible.

The new Structures plans sheet border cell '*Border Roadway w/Initials*' [Sheet-Rdwy.cel] is intended to be used within other discipline components (Roadway, Lighting, etc.) of a plan set if they require

Structures details and symbology. This sheet border matches the Roadway border in appearance, but it allows for the correct setting of plot scales for Structures symbology standards.

## **BACKGROUND**

A revised Structures cell '*Border*' [Sheet-Border.cel] was developed to better resemble its roadway counterpart, add longer spaces to the project name and Engineer of Record blocks, and allow an automated function of the Engineer of Record block.

The new Structures cell '*Border Roadway w/Initials*' [Sheet-Rdwy.cel] was created to appear visually consistent with the standard Roadway sheet border when placed in other discipline components of a plan set.

## **IMPLEMENTATION**

For all new projects where Structures sheet production has not started as of July 1, 2008, the Requirements of this bulletin shall be implemented. The District Design Engineers may direct earlier implementation if it will not adversely affect the production schedule.

For projects already in production as of July 1, 2008, the FDOT2004 (pre-MR6) Structures Plans sheet border may continue to be used. The FDOT2004 (pre-MR6) Structures sheet border has been renamed '*Border 2004 Legacy*' [Sheet-Border2004.cel].

## **CONTACT**

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RR/rms  
Attachments

## **Attachment A**

### **CADD Production Criteria Handbook- Sheet 18-1**

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## **Attachment B**

### **CADD Production Criteria Handbook- Section 18.6.1**

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## 18.6.1 Borders, Scales, Text Sizes and Weights

Draw all elements at "Full Size" completely before placing text or dimensions. After drawing all elements, determine the "Overall" Border scale required. Scale any details up or down as required at this time. Select the appropriate Border scale from the Structures **menu** and place the Border Cell. Sheets that reside in the Structures Component of the plan set shall use the Structures *Border* cell "Sheet-Border". **Sheets requiring Structures design that reside within other discipline components of the plan set (Roadway, Lighting, etc.) shall use the *Border Roadway w/Initials* cell "Sheet-Rdwy".** For FDOT2004 files, once the border scale is set, the Annotation Scale should be set via Structures **menu** at the matching scale.

Select the text style from the Structures **menu**, then place text and Dimensions. It is helpful to show the scale of the drawing and related details inside the display area of the file, but outside of the Sheet Border area. This is helpful to all users who work on the file.

### Scales

The following chart is intended to aid the user in determining the appropriate scale for placing the border and text on a drawing based on the actual size of the drawing. Calculations are based on a 9.72" x 15.36 drawing area inside the border.

#### Architect's Scales

Drawing Scale	Active Scale (AS)	Height (FT.)	Width (FT.)
1/16" = 1'	192	155.52	245.76
3/32" = 1'	128	103.68	163.84
1/8" = 1'	96	77.76	122.88
3/16" = 1'	64	51.84	81.92
1/4" = 1'	48	38.88	61.44
3/8" = 1'	32	25.92	40.96
1/2" = 1'	24	19.44	30.72
3/4" = 1'	16	12.96	20.48
1" = 1'	12	9.72	15.36
1 1/2" = 1'	8	6.48	10.24
3" = 1'	4	3.24	5.12
6" = 1'	2	1.62	2.56
1 = 1	1	.810	1.28

#### Engineer's Scales

Drawing Scale	Active Scale (AS)	Height (FT.)	Width (FT.)
1" = 500'	6000	4860.0	7680.0
1" = 400'	4800	3888.0	6144.0
1" = 300'	3600	2916.0	4608.0
1" = 250'	3000	2430.0	3840.0
1" = 200'	2400	1944.0	3072.0
1" = 150'	1800	1458.0	2304.0
1" = 120'	1440	1166.4	1843.2
1" = 100'	1200	972.0	1536.0
1" = 80'	960	777.6	1228.8
1" = 60'	720	583.2	921.6
1" = 50'	600	486.0	768.0
1" = 40'	480	388.8	614.4
1" = 30'	360	291.6	460.8
1" = 20'	240	194.4	307.2
1" = 15'	180	145.8	230.4
1" = 10'	120	97.2	153.6

**FORMULAS:**

**Architect's Scale:**

AS = 12 / Drawing Scale,

Ex. 1/4" = .25 in., then 12 / .25 = 48, Therefore AS = 48.

W = Sheet Width (in.) / Drawing Scale

Ex. 1/4" = .25 in., then 15.36 / .25 = 61.44, Therefore W = 61.44.

H = Sheet Height (in.) / Drawing Scale

Ex. 1/4" = .25 in., then 9.72 / .25 = 38.88, Therefore H = 38.88.

**Engineer's Scale:**

AS = 12 x Drawing Scale,

Ex. 1"=500', then 12 x 500 = 6000, Therefore AS = 6000.

W = Sheet Width (in.) x Drawing Scale.

Ex. 1"=500', then 15.36 x 500 = 7680, Therefore W = 7680.

H = Sheet Height (in.) x Drawing Scale,

Ex. 1"=500', then 9.72 x 500 = 4860, Therefore H = 4860.

**Text Sizes and Weights**

**For FDOT2004 workspace:**

Annotation = 0.0063 x (Annotation Scale). The use of annotation scale allows the text and dimensioning to be rescaled easily via the Scale>Annotation Scale Structures **menu** items.

The SDO uses special, custom fonts in its drawings and CADD programs; specifically, Fonts 168 and 169. These fonts are stored in the StructureFont.rsc file supplied with the FDOT CADD software.

**For the FDOT2002\_v7 & FDOT2002\_v8 workspaces:**

Annotation = 0.0063 x (Active Scale)

The SDO uses special, custom fonts in its drawings and programs, specifically, Fonts 68 and 69. These fonts are stored in the zdotfont.rsc file supplied with the FDOT CADD software.

The Structures menu provides all needed text sizes. The minimum Annotation text size after plotting shall be .0063'.

All standard text sizes may be selected from the Structures **menu**.

TITLE	WEIGHT	SIZE (Ft)
Special Small/Revisions	0	.0050
Annotation	1	.0063
View/Sheet/Sect Titles	2	.0080
Large	3	.0084
Extra Large	3	.0100

NOTE: Sizes shown are at 1:1 ratio.

## Attachment C

### New & Revised Sheet Borders

1. *'Border'* [Sheet-Border.cel]
2. *'Border Roadway w/Initials'* [Sheet-Rdwy.cel]
3. *'Border 2004 Legacy'* [Sheet-Border2004.cel]

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1. [Sheet-Border.cel]

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REVISIONS						DRAWN BY: XXX MM-YY	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET TITLE:	REF. DWG. NO.
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2. [Sheet-Rdwy.cel]

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 Checked By : XXX MM-YY    Checked By : XXX MM-YY

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3. [Sheet-Border2004.cel]

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REVISIONS						DRAWN BY	NAMES	DATES	ENGINEER OF RECORD	FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET TITLE	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION					ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME	

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