

## **2014 Design Standards Update**



**John Mauthner, P.E.**

**State Design Standards Manager**

***John.Mauthner@dot.state.fl.us***

## **Agenda**

- ◆ *Virtual Implementation of Design Standards*
  - ✓ *John Mauthner*
- ◆ *Design Standards Update*
  - ✓ *Patrick Overton*
- ◆ *Structures Standards Update*
  - ✓ *Gevin McDaniel*

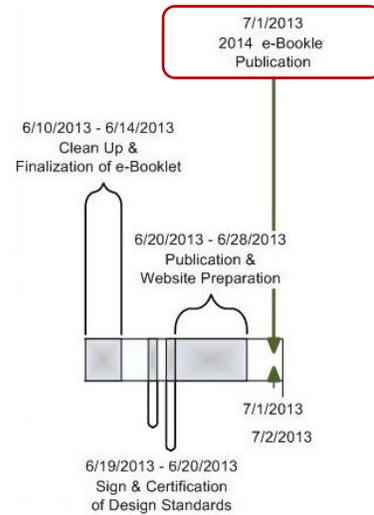


## Virtual Implementation of Design Standards

### 2014 Design Standards Time Line



## Virtual Implementation of Design Standards



## Virtual Implementation of Design Standards

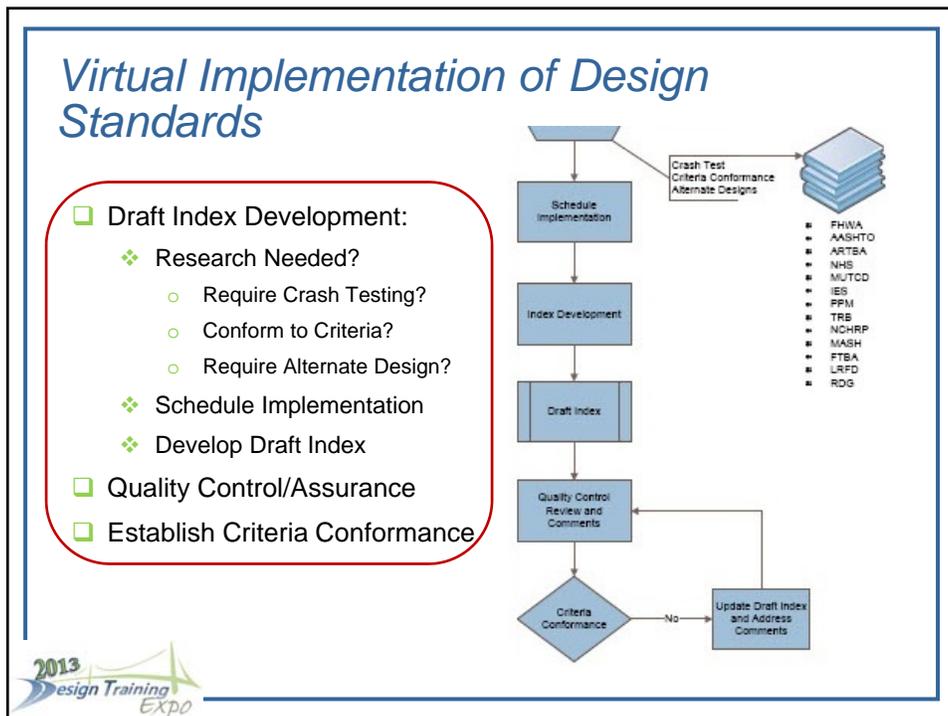
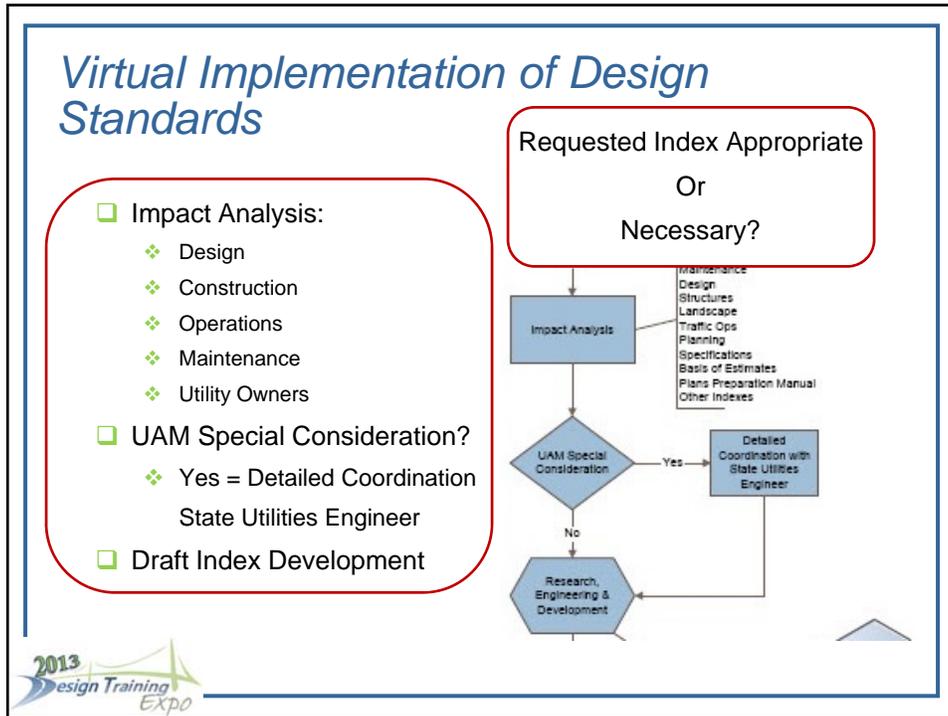
*Design Standards Time Line  
Closely Follows  
Design Standards Development Process*



## Virtual Implementation of Design Standards

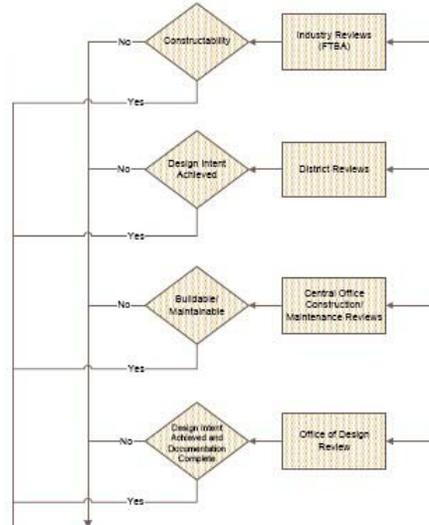
### Design Standards Development Process





## Virtual Implementation of Design Standards

- Central Office:
  - ❖ Construction - Buildable?
  - ❖ Maintenance - Maintainable?
- District Reviews:
  - ❖ Design Intent Achieved?
- Industry Reviews:
  - ❖ FICE – Design Conformance
  - ❖ FTBA - Constructability
- Office of Design:
  - ❖ Draft Index & Documentation Complete

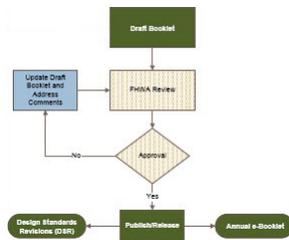


## Virtual Implementation of Design Standards

- Office of Design Approval includes:
  - ❖ Comments Addressed?
  - ❖ Draft Index Updated?
  - ❖ Notification of Comments Delivered
- Generate Final Draft e-Booklet, or
- Generate Final Draft Index for FHWA Review and Approval



## Virtual Implementation of Design Standards



- ◆ Draft Booklet or Draft Index
- ◆ FHWA Review & Approval
- ◆ Publish and Release
  - ✓ Annual eBooklet
  - ✓ Roadway Design Bulletin with Revised Index Drawing (RID) Attachments



## Virtual Implementation of Design Standards

*Let's Take a Quick Look at a Sample - Origination Form*



# Virtual Implementation of Design Standards

Origination Form Design Standards

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**DESIGN STANDARDS - ORIGATION FORM**

**CONTACT**  
 Date: April 20, 2012  
 Name: John Mauthner, P.E. – Design Standards Manager  
 Roadway Design Office, Criteria and Standards Section  
 Phone: (850) 414-4334  
 Email: [John.Mauthner@dot.state.fl.us](mailto:John.Mauthner@dot.state.fl.us)

**DESIGN STANDARDS**  
 Index No.: Index 304 (Redeveloped Index)  
 Title: Detectable Warnings and Sidewalk Curb Ramps  
 Sheet No.: Seven (7) New Sheets

**COMMENTARY**  
 This revision is based on the redevelopment of index 304.

**BACKGROUND**  
 Over the last 30 months calls and comments have been received in the Criteria and Standards Office with the following request: In Index 304 the curb ramp design details are not buildable and lack sufficient detail. The Construction Office received multiple requests from Contractors to generate a "Summary of Detectable Warnings" table which quantify the area of detectable warnings for typical curb ramp applications, in order to provide adequate resolve the Design Standards Office, Central Office ADA Coordinator, and the Construction Office hosted revisions to the redevelopment of Design Standard, Index 304.

**IMPLEMENTATION**  
 1. Pick implementation Method:  
 • Deployment of index 304 will be accomplished for the 2014 Design Standards e-Booklet, allowing use on projects with lettings beginning January 1, 2014. A *Standard Change Subject* will be required to release the 2014 Design Standards.

**OTHER AFFECTED DOCUMENTS**  
 1. Other Design Standards – (Index 310, Index 515 and Index 17346).  
 2. Utility Accommodation Manual – (UAM).  
 3. Plans Preparation Manual – (PPM).  
 4. Basis of Estimates Manual – (Pay Item 522 and Pay Item 527).  
 5. Standard Specifications – (Section 500, 522 and 527).

**REVISIONS PACKAGE**  
 • This origination package includes:  
 o Design Standards - Origination Form,  
 o Proposed Index Drawing(s).

Page 1 of 1



# Virtual Implementation of Design Standards

Origination Form Design Standards

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 Title: Detectable Warnings and Sidewalk Curb Ramps  
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## Virtual Implementation of Design Standards

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### **IMPLEMENTATION**

1. Pick Implementation Method:

- Deployment of Index 304 will be accomplished for the 2014 Design Standards e-Booklet, allowing use on projects with lettings beginning January 1, 2014. A [Roadway Design Bulletin](#) will be required to release the 2014 Design Standards.

### **OTHER AFFECTED DOCUMENTS**

1. Other Design Standards – (*Index 310, Index 515 and Index 17346*),
2. Utility Accommodation Manual – (*No*),
3. Plans Preparation Manual – (*N/A*),
4. Basis of Estimates Manual – (*Pay Item 522 and Pay Item 527*),
5. Standard Specifications – (*Section 520, 522 and 527*).

### **REVISIONS PACKAGE**

- This origination package includes:
  - Design Standards - Origination Form,
  - Proposed Index Drawing(s).



## *Virtual Implementation of Design Standards*

*When the Origination Form is Complete and a Drawing has been Generated, then we will Conduct all Reviews prior to*

*The Design Standards Industry Review*



## *Virtual Implementation of Design Standards*

**Please review and provide comments as necessary on the subject proposed Design Standards, Revised Index Drawing(s) which may be viewed at the following URL:**

0041000 Concrete Barrier Wall

<http://www2.dot.state.fl.us/rddesign/DesignStandards/IndustryReview.aspx>

If the link above does not work, please copy and paste the URL above into your Internet browser address box.

Please do not "REPLY" to the sender of this email. Send all comments to [John.Mauthner@dot.state.fl.us](mailto:John.Mauthner@dot.state.fl.us).



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### Design Standard Review

The following files are in the developmental process and are posted for Review. If you have comments, please use the comments section below. To track the History of proposed revisions go to [Track the Status of Proposed Revisions](#)

**Note:** Files on this page are in Adobe Acrobat (PDF) format.  
File sizes range from 23 to 30 kb.

Design Standard	Description	Origination	Review End

Select the Design Standard you want to comment on.  
(Select Design Standard 2.2)

Enter your comments in the space provided below:  
**Note:** Time will expire in 20 minutes. If you are unsure of the length of time to enter your comment(s), please type your comment(s) in another application, then copy and paste below.

Tell us how to get in touch with you (Optional)

Name:   
Phone:   
E-mail:   
Confirm E-Mail:

2013 Design Training Expo

## Virtual Implementation of Design Standards

### Design Standards – Review Document

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## Virtual Implementation of Design Standards

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Design Standard
-
-

Select the Design Standard you want to comment on.

Select Design Standard ▾

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## Virtual Implementation of Design Standards

### MEMORANDUM

**DATE:** June 12

**TO:** Design Standards Review Distribution List

**FROM:** John Mauthner, P.E., State Design Standards Engineer *John Mauthner*

**SUBJECT:** Design Standards, Index 410  
 Revised Index Drawing: Concrete Barrier Wall, Sheet 3 of 27

In accordance with the Design Standards Development Process, we are submitting, for your review and comment, electronic copies of the above referenced Revised Index Drawing (RID) submittal.

This revision was proposed by Structures Office to the Criteria and Standards Office. Please share this revision proposal with others within your area of responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at [John.Mauthner@dot.state.fl.us](mailto:John.Mauthner@dot.state.fl.us). Comments received after June 26, 2013 may not be considered. Your input is encouraged.

JM/dm  
 Attachment





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-	-	-	-

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Confirm E-Mail:



## *Virtual Implementation of Design Standards*

*If you would like to  
Track the Status of Proposed Revisions*



## Virtual Implementation of Design Standards

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please use the comments section below. To track the History of proposed revisions go to [Track the Status of Proposed Revisions](#)

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	-	
	-	



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### Design Standards Review History



For Developmental Design Standards Process <--Click Here

Index	Comments	Response	Other	Implemented

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- Performance
- Statement of Agency
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## Virtual Implementation of Design Standards

Once the Review is Complete  
Revised Index Drawings are Released via Contact  
Mailer Database

Receive a Roadway Design Bulletin  
With an Implementation Date

Go to the Roadway Design Website and Click on  
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Tallahassee, FL 32399

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**Additional Contacts**  
State Districts

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**Welcome**

Thank you for visiting our site. The Roadway Design Office is comprised of four sections: Criteria and Standards, Quality Assurance, Pavement Management, and Hydraulics Design. We develop and disseminate policies, procedures, training, criteria and standards for the design of Florida roadways. We also provide support to other central office units and FDOT's Districts in these areas of practice.

**News**

**Design Bulletin 13-07**  
Posted: May 28, 2013  
District Mandatory Specifications Revisions Process

**Design Bulletin 13-06**  
Posted: May 2, 2013  
Thermoplastic Pavement Markings in Construction Contracts



## Virtual Implementation of Design Standards

Florida Department of TRANSPORTATION

Office of Design

Design Standards

Design Standards Procedure (Topic Number: 625-010-003)

**Current Design Standards**

Year	Design Standards eBooklet	Revised Index Drawings	Developmental Design Standards	Select the desired Current Design Standards eBooklet (DS&I), Revised Index Drawings (RID) or Developmental Design Standards (DDS) by clicking on their underlined symbol.
2013	<u>DS&amp;I</u>	<u>RID</u>	<u>DDS</u>	

**Historical Design Standards**

Fiscal Year	Design Standards eBooklet	Design Standards Revisions	Design Standards Modifications
2012/13	<u>DS&amp;I</u>	<u>DSR</u>	

**Design Standards Modifications**

Year	Design Standards Booklet	Design Interim Standards	...	Design Standards Modifications
Select the desired Historical Standard Booklet, Interim Standards or Standards Modification by clicking on their underlined symbol.				The dates shown under Standards Modifications are the effective dates of the Modifications.
2010	<u>S</u>	<u>I</u>	N/A	1-Jan-12, 1-Jul-11, 1-Jan-11, 1-Jul-10
2008	<u>S</u>	<u>I</u>	N/A	1-Jan-10, 1-Jul-09, 1-Jan-09, 1-Jul-08
2006	<u>S</u>	<u>I</u>	N/A	1-Jan-06 Eng, 1-Jul-07 Eng, 1-Jan-07 Eng, 1-Jul-06 Eng
2004	<u>S</u>	<u>I</u>	N/A	1-Jan-05 English, 1-Jul-05 English
2002	<u>S</u>	<u>I</u>	N/A	N/A
2000	<u>S</u>	<u>I</u>	N/A	1-Jan-06 Metric, 1-Jul-05 Metric

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## Virtual Implementation of Design Standards

*Revised Index Drawings*



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Office of Design

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**Design Standards**

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Office of Design / Design Standards / Revised Index Drawings 2013

**Revised Index Drawings 2013**

REVISION	Index No. (ZIP)	Sheet Number	Description	IDS	Effective Date	Design Bulletin Number
R2013-05	430	1	Revised Design Lengths for Guardrail Applications Table		8/1/13	RDB13-05
R2013-03	17727	1-2	Removed Single Point Attachment and Revised Two Point Attachment		11/2/13	RDB12-19
R2013-02	17345	1-4	Removed Chevrons in Interstate Gore Areas and at Raised Urban Islands		3/1/13	RDB12-18
	17346	4				
R2013-01	11871	1	Updated Adhesive Bonding Material Requirements	IDS-11871	7/31/12	RDB12-11R



## *Virtual Implementation of Design Standards*

REVISION	Index No. (ZIP)	Sheet Number	Description	IDS	Effective Date	Design Bulletin Number
R2013-05	430	1	Revised Design Lengths for Guardrail Applications Table		8/1/13	RDB13-05



## *Virtual Implementation of Design Standards*

*Completes my Presentation on Virtual Implementation*

*John Mauthner, P.E.  
State Design Standards Manager  
(850) 414-4334  
[John.Mauthner@dot.state.fl.us](mailto:John.Mauthner@dot.state.fl.us)*



## *Roadway Design Standards Update*



**Patrick Overton, P.E.**

**Design Standards Engineer**

**Patrick.Overton@dot.state.fl.us**

## *2014 eBooklet Release*

- ◆ Index 200 Series (Drainage)
- ◆ Index 304 – Detectable Warnings and Sidewalk Curb Ramps
- ◆ Index 410 – Concrete Barrier Wall
- ◆ Index 700 – Roadside Offsets



## *Index 200 Series (Drainage)*

- ◆ Removed all Proprietary Product references throughout the Indexes.
- ◆ The removal of the references is due largely to policy.



## *Index 205 – Pipe Backfill*

- ◆ All tables were removed and placed in the Drainage Manual.
- ◆ The Index now serves as a visual aide for Standard Specification 125.



# Index 205 - Previous Sheet 1

**RIGID PAVEMENT**

**FLEXIBLE PAVEMENT**

**UNGRADED**

PIPE TYPE/SIZE & DATE	MINIMUM COVER	CONCRETE (See Note 1)	STEEL & ALUMINUM	POLYETHYLENE	POLYVINYL CHLORIDE
CONCRETE (See Note 1)	12"	12"	12"	12"	12"
STEEL & ALUMINUM	12"	12"	12"	12"	12"
POLYETHYLENE	12"	12"	12"	12"	12"
POLYVINYL CHLORIDE	12"	12"	12"	12"	12"

**MINIMUM COVER FOR CONCRETE, STEEL, ALUMINUM, POLYETHYLENE AND POLYVINYL CHLORIDE PIPE**

**ASPHALTIC CONCRETE BASE**

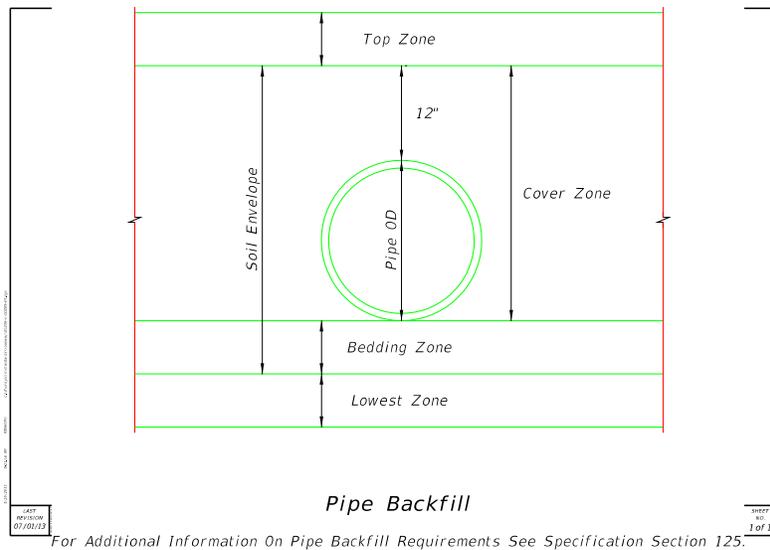
**EXTRA MATERIAL FOR CROSS CULVERTS UNDER FLEXIBLE PAVEMENTS**

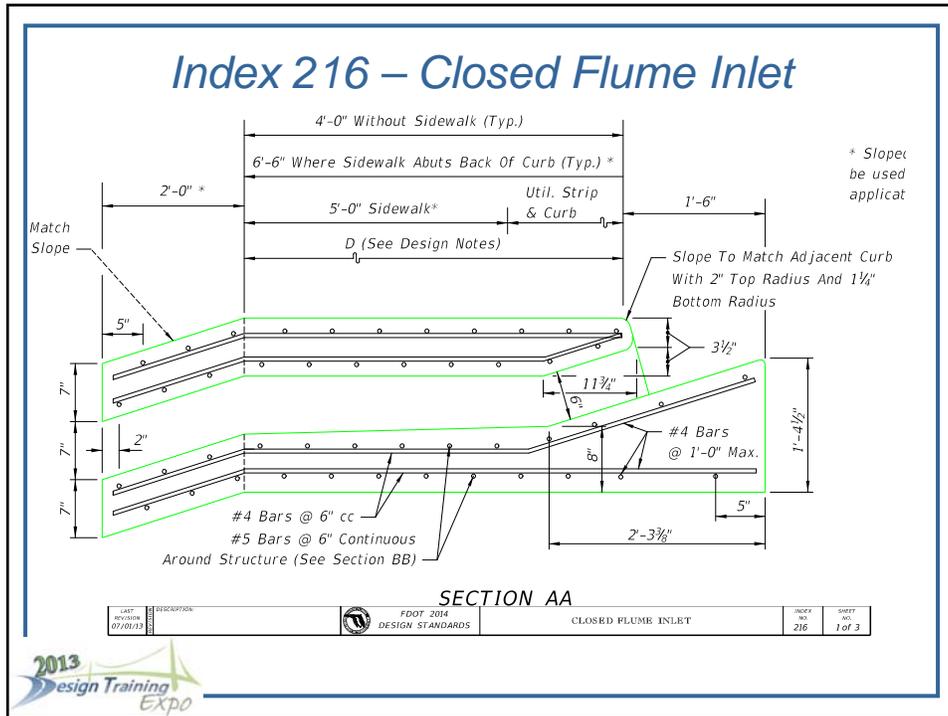
**GENERAL NOTES**

- The minimum cover is measured between the top of the pipe and the bottom of the concrete or asphalt base.
- For pipe sizes 30" and larger, the minimum cover shall be 18" unless otherwise specified.
- For pipe sizes 18" and 24", the minimum cover shall be 12" unless otherwise specified.
- For pipe sizes 12" and 15", the minimum cover shall be 6" unless otherwise specified.
- For pipe sizes 6" and 8", the minimum cover shall be 4" unless otherwise specified.



# Index 205 Con't





## *Index 304 – Con't*

- ◆ An RFI(Request for Information) was sent to Central Office, requesting a Summary Table with all areas for the Detectable Warnings Pads.
- ◆ Prior to revising the Index, Central Office sent a Survey Monkey to Industry.

The Survey Monkey consisted of 36 questions ranging from the General Notes to the Constructability of each Curb Ramp.



## *Index 304 – Con't*

- ◆ The Survey Monkey aided in identifying the problem of non complaint curb ramps.
- ◆ During the calculations of the areas, the Design Standards Team identified errors in some curb ramp details.



## *Index 304 – Con't*

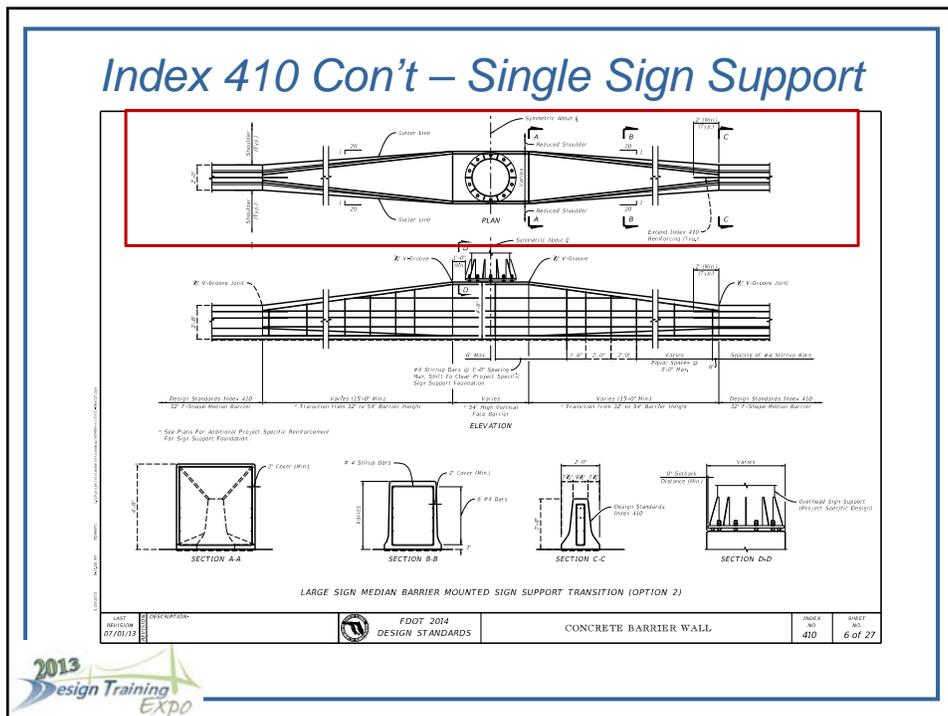
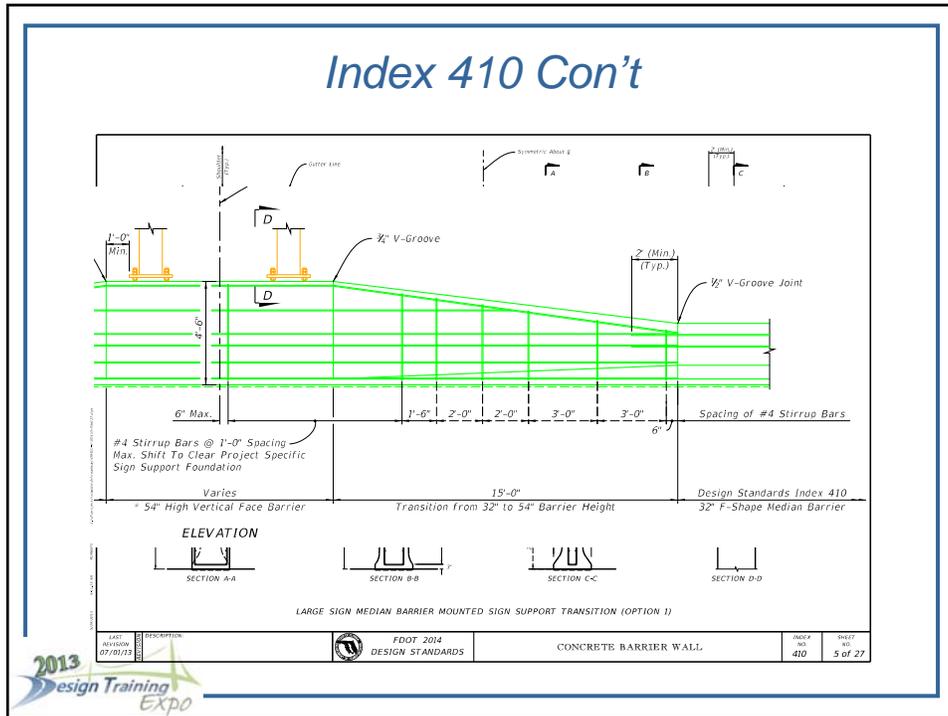
- ◆ The 15 curb ramps that were eliminated is due to ADA non-compliance, constructability, or rarely used.
- ◆ The number of curb ramps were reduced from 25 to 10.
- ◆ The 10 curb ramps and 2 flush shoulder applications that remain in the Index were reviewed to ensure constructability and that they met all ADA Requirements.



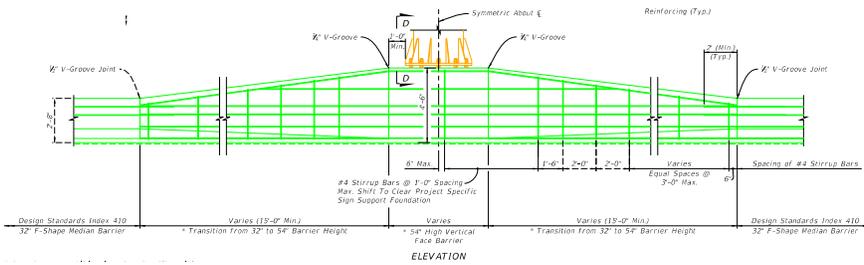
## *Index 410 – Concrete Barrier Wall*

- ◆ Structures Bulletin 13-02 and Roadway Bulletin 13-01 (Median Barrier Mounted Overhead Sign Structures) was released in last March
- ◆ The index was revised to include the drawings from the bulletin.

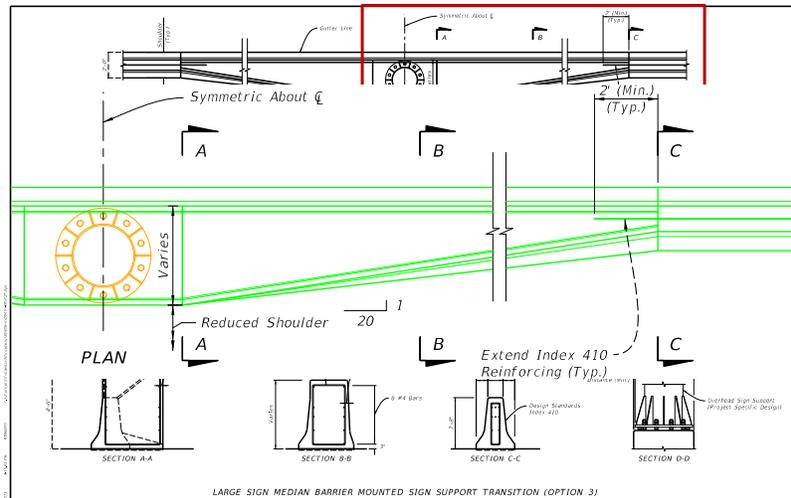




## Index 410 Con't – Single Sign Support



## Index 410 Con't – Single Sign Support



LAST REVISION 07/01/13	DESCRIPTION	FDOT 2014 DESIGN STANDARDS	INDEX 410	SHEET 611 7 of 27
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## Index 700

**ROADSIDE TERRAIN**  
FIGURE 1

\* Roadside Slopes shown in Figure 1 are for Maintenance and Permitting purposes when establishing Clear Zone Requirements. For FDOT Standard Roadside Slopes, refer to Volume 1, Chapter 2 of the Plans Preparation Manual.

**TABLE A**  
MINIMUM RECOVERABLE TERRAIN (ft)

Design Speed (mph)	Travel Lane Width (ft)	Availing Lane Width (ft)
≤45	10	10
45	24	24
50	24	24
55	30	24
60	36	24

**DEFINITIONS**

**Recoverable** - A slope is recoverable if a substructure over it is to be placed at 10 ft from the edge of the road, and there is clear enough to that the substructure is supported by the ground surface. A slope is recoverable if the slope is steeper than 1v:3h and there is a minimum of 10 feet of clear zone on the nonrecoverable side of the slope. A slope is recoverable if the slope is 1v:3h or flatter.

**Traversable Nonrecoverable** - A slope is traversable nonrecoverable if it is safe to traverse and on a slope that is 1v:4h or steeper.

**Nonrecoverable** - A slope is nonrecoverable if it is not safe to traverse and on a slope that is steeper than 1v:4h.

**Clear Zone** - The distance of recovering clear zone with structural clearance requirements. Recoverable terrain is defined as the area of the roadway that is recoverable, nonrecoverable, and traversable as applicable.

**Minimum Recoverable Terrain** - The minimum clear zone width for a given design speed and travel lane width.

**RESTRICTIVE CONDITIONS**

- The slope is on a clear zone.
- The slope is steeper than 1v:3h and not steeper than 1v:4h.
- The slope is on the shoulder and is the 10 ft clear zone from the clear zone in STEP 2.

LAST REVISION: 07/01/13

DESCRIPTION: ROADSIDE OFFSETS

FDOT 2014 DESIGN STANDARDS

INDEX SHEET NO. 700 1 of 2

## Index 700 Con't

*K<sub>mp</sub>*

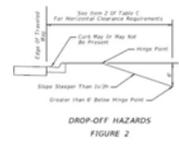
\* Roadside Slopes shown in Figure 1 are for Maintenance and Permitting purposes when establishing Clear Zone Requirements. For FDOT Standard Roadside Slopes, refer to Volume 1, Chapter 2 of the Plans Preparation Manual.

**Traversable Nonrecoverable** when it is safely traversable and on a slope that is steeper than 1v:4h but not steeper than 1v:3h.

**ROADSIDE TERRAIN**  
FIGURE 1

# Index 700 Con't

CATEGORY	Item No.	OBJECTS, OBSTRUCTIONS OR CONDITIONS	INDICATED CLEARANCE REQUIREMENTS		
			Restricted (See Table B)	Not Restricted	
GENERAL	1	Along posted travel lanes, all roadside objects that exceed 4 inches in height or width and are located within the clear zone shall be restricted as required in this table.	Locate as close to the Right Of Way as practical and not less than 4 feet from face of curb.	Locate outside the clear zone as close to the Right Of Way as practical.	
	2	Shoulder hazards, see also Table A. Locate as close to the Right Of Way as practical and not less than 4 feet from the edge of travel lane.	Locate the post that is 4 feet from the edge and no less than 20 feet from the edge of traveled way.	Treat as restriction signs in accordance with Design Standard, Index 500.	
	3	All FDOT approved guardrails, guardrail end terminals, crash cushions, and concrete barriers (temporary or permanent).	Locate in accordance with the Design Standards.	Locate in accordance with Design Standard, Index 532.	
ROADWAY	4	Hallboxes	Design Standard, Index 532 Not Shown in Design Standard, Index 532	Locate in accordance with Design Standard, Index 532. Not to be used.	
	6	Trees	Expected to become greater than 4 inches in diameter (measured 6 inches above the ground). Not expected to become greater than 4 inches in diameter (measured 6 inches above the ground).	Outside roadways: Locate no less than 4 feet from face of curb in accordance with Design Standard, Index 546. Inside medians: Locate no less than 6 feet from the edge of traffic lane and in accordance with Design Standard, Index 546.	Locate outside the clear zone as close to the Right Of Way as practical and in accordance with Design Standard, Index 546.
	7	Trees	Not expected to become greater than 4 inches in diameter (measured 6 inches above the ground).	Locate in accordance with Design Standard, Index 546.	
	8	Behind guardrail.	Locate no less than 5 feet from the back of the guardrail post.		
	9	Canals	Unshielded	Locate as close to the Right Of Way as practical and not less than 40 feet from the edge of traveled way.	Design Speeds of 50 mph and greater: Locate as close to the Right Of Way as practical and not less than 60 feet from the edge of traveled way. Design speeds less than 50mph: Locate as close to the Right Of Way as practical and not less than 50 feet from the edge of traveled way.
DRAINAGE	10	Collect wing walls, inlets, retaining walls and storm sewers.	Less than or equal 4 feet deep: Locate no less than 4 feet from face of curb. Greater than 4 feet deep: Treat as drop-off hazard. See Item No. 2.	Locate outside the clear zone.	
	12	Retained and sections.	Locate as shown in Design Standard, Index 273 and Index 275.		
TRAFFIC CONTROL DEVICES	13	Fragible or breakaway sign supports.	Locate in accordance with Design Standard, Index 1780.		
	14	Overhead sign supports and other non-fragile signs.	Locate no less than 4 feet from face of curb.	Locate outside the clear zone.	
LIGHTING	15	Traffic control devices, signal controller cabinets, signal poles, street poles and mast arms.	Locate no less than 4 feet from face of curb and not in medians.	Locate outside the clear zone and not in medians.	
	16	Conventional lighting (triangular and non-triangular).	Locate no less than 4 feet from face of curb and only on barrier walls in medians.	Locate 20 feet from travel lanes or 14 feet from auxiliary lanes. Not in medians. May be clear zone width when the clear zone is less than 20 feet.	
STRUCTURES	17	Highmast lighting.	Not applicable.	Locate outside the clear zone.	
	18	Bridge piers and abutments above ground vertical structures.	Locate not less than 10 feet from edge of traveled way.	Locate outside the clear zone.	
UTILITIES	19	Fire hydrants with bases no higher than 4 inches above ground.	Locate not less than 2 feet from face of curb.	Locate as close to the Right Of Way as practical.	
	20	Aboveground fiber optic (AFOS).	Now AFOS placed no closer than 4 feet from the face of curb and as close to the ROW as practical.	Now AFOS are to be outside the Clear Zone established using Table A Requirements and as close to the ROW as practical.	
RAILROADS	21	Railroad crossing traffic control devices.	Locate in accordance with Design Standard, Index 1780.		



# Index 700 Con't – Table C

CATEGORY	Item No.	OBJECTS, OBSTRUCTIONS OR CONDITIONS	INDICATED CLEARANCE REQUIREMENTS		
			Restricted (See Table B)	Not Restricted	
ROADWAY	3	All FDOT approved guardrails, guardrail end terminals, crash cushions, and concrete barriers (temporary or permanent).	Locate as shown in the Design Standards.		
	4	Design Standard, Index 532	Locate in accordance with Design Standard, Index 532.		
	5	Hallboxes	Not Shown in Design Standard, Index 532	Not to be used.	
	6	Trees	Expected to become greater than 4 inches in diameter (measured 6 inches above the ground). Not expected to become greater than 4 inches in diameter (measured 6 inches above the ground).	Outside roadways: Locate no less than 4 feet from face of curb in accordance with Design Standard, Index 546. Inside medians: Locate no less than 6 feet from the edge of traffic lane and in accordance with Design Standard, Index 546.	Locate outside the clear zone as close to the Right Of Way as practical and in accordance with Design Standard, Index 546.
	7	Trees	Not expected to become greater than 4 inches in diameter (measured 6 inches above the ground).	Locate in accordance with Design Standard, Index 546.	
ROADWAY	8	Behind guardrail.	Locate no less than 5 feet from the back of the guardrail post.		
	9	Canals	Unshielded	Locate as close to the Right Of Way as practical and not less than 40 feet from the edge of traveled way.	Design Speeds of 50 mph and greater: Locate as close to the Right Of Way as practical and not less than 60 feet from the edge of traveled way. Design speeds less than 50mph: Locate as close to the Right Of Way as practical and not less than 50 feet from the edge of traveled way.
TRAFFIC CONTROL DEVICES	13	Fragible or breakaway sign supports.	Locate in accordance with Design Standard, Index 1780.		
	14	Overhead sign supports and other non-fragile signs.	Locate no less than 4 feet from face of curb.	Locate outside the clear zone.	
LIGHTING	15	Traffic control devices, signal controller cabinets, signal poles, street poles and mast arms.	Locate no less than 4 feet from face of curb and not in medians.	Locate outside the clear zone and not in medians.	
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STRUCTURES	17	Highmast lighting.	Not applicable.		
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RAILROADS	21	Railroad crossing traffic control devices.	Locate in accordance with Design Standard, Index 1780.		



## *The End*

Patrick Overton, P.E

Design Standards Engineer

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## **2014 Structures Related Design Standards Updates**



**Gevin J. McDaniel, P.E.**  
State Structures Design Office  
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(850) 414-4284

## Introduction:

- ◆ *Guide to FDOT Publications*
- ◆ *Website navigation specific to structures related Design Standards and their support documents. (Emphasis on IDS)*
- ◆ *Developmental Design Standards (DDS) – No new DDSs*
- ◆ *Mobile Webpage*
- ◆ *General Revisions to structures related Design Standards*
- ◆ *Significant changes to structures related Design Standards*



2

## Guide to FDOT Publications

### Speaking to the Designer:

- Structures Manual
- Plans Preparations Manual
- Basis of Estimates
- Instructions for Design Standards
- Design Bulletins
- Other design manuals such as Traffic Engineering, Drainage, Pavement, Soils and Foundations, etc.

Speaking to the Contractor/Manufacturer's: Designers must be familiar with each of these components, but direction to, or information for designers are not (should not be) included in these documents.

- Design Standards
- Specifications
- Materials Manual
- Qualified Products

### Speaking to the CEI:

- Construction Project Administration Manual (CPAM)
- Construction Memos



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## Guide to FDOT Publications

**Instructions for Design Standards (IDS):**

*Provides specific instructions to assist the Design Engineer of Record in properly incorporating the associated Design Standards into the Contract Plans.*

**Design Standards:**

*Established to ensure uniform application of standard designs and details in the preparation of Contract Plans.*

**True or False?**

*When available, the **IDS** is a design contract document and must be followed to ensure proper use of the associated Design Standard.*



## Guide to FDOT Publications

**Instructions for Design Standards (IDS):**

*Provides specific instructions to assist the Design Engineer of Record in properly incorporating the associated Design Standards into the Contract Plans.*

**Design Standards:**

*Established to ensure uniform application of standard designs and details in the preparation of Contract Plans.*

**True or False?**

*When available, the **IDS** is a design contract document and must be followed to ensure proper use of the associated Design Standard.*

**TRUE:**

*The IDS is in the boilerplate language for all design standard scope of services. They are extremely important to ensure proper use of each associated Design Standard.*



## Website Navigation

Office of Design

Office of Design / Design Standards  
**Design Standards**

Design Standards Procedure (Topic Number: 625-010-003)

Current Design Standards				
Year	Design Standards eBooklet	Revised Index Drawings	Developmental Design Standards	Select the desired Current Design Standards eBooklet (DSeB), Revised Index Drawings (RID) or Developmental Design Standards (DDS) by clicking on their underlined symbol.
2013	<u>DSeB</u>	<u>RID</u>	<u>DDS</u>	

Historical Design Standards

Fiscal Year	Design Standards eBooklet	Design Standards Revisions		
2012/13	<u>DSeB</u>	<u>DSR</u>		

Design Standards Modifications

Year	Design Standards Booklet	Design Interim Standards	--	Design Standards Modifications				
Select the desired Historical Standard Booklet, Interim Standards or Standards Modification by clicking on their underlined symbol.					The dates shown under Standards Modifications are the effective dates of the Modifications.			
2010	<u>S</u>	<u>I</u>	N/A	1-Jan-12	1-Jul-11	1-Jan-11	1-Jul-10	
2008	<u>S</u>	<u>I</u>	N/A	1-Jan-10	1-Jul-09	1-Jan-09	1-Jul-08	
2006	<u>S</u>	<u>I</u>	N/A	1-Jan-08 Eng	1-Jul-07 Eng	1-Jan-07 Eng	1-Jul-06 Eng	
2004	<u>S</u>	<u>I</u>	N/A	1-Jan-06 English		1-Jul-05 English		
2002	<u>S</u>	<u>I</u>	N/A			N/A		
2000	<u>S</u>	<u>I</u>	N/A	1-Jan-06 Metric		1-Jul-05 Metric		

**Design Standards Website:**  
<http://www.dot.state.fl.us/rddesign/DesignStandards/Standards.shtm>

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## Support Documents for Structures Related Design Standards

Roadway Design / Design Standards / Design Standards eBooklet 2013  
**Design Standards eBooklet 2013**

You must have the free Adobe Acrobat Reader to view and/or print these files. Entire groups may be printed by selecting the group name. The default print size for the Design Standard drawing files is 11 X 17 inches. Any available Instructions for Design Standards (IDS) are listed with their related Index. For questions, please contact the person noted under the area of responsibility listed beside the group headings (click on link for contact information). For use concerning plans incorporation and effective dates for the Design Standards and for information on the Data Tables select the General Web Site Information link.

Design Standards eBooklet		Index Title	Revision	Design Information		
Index No	Total Sheets			Instructions for Design Stds (IDS)	Data Table Cell Library	Borderless DGNs
(PDF)			(PDF)	(ZIP)	(ZIP) Terms of Use	
Complete eBooklet (268mb)	932	* COVER, TABLE OF CONTENTS AND REVISIONS *	Combined Available IDS (70mb)	Combined Available CELLS (7mb)	Combined Available DGNs (55mb)	
Cover	3	Booklet Cover		Cover		
Content	2	Table of Contents		Content		
Revisions	2	Booklet Revisions		Introduction Revisions		
* ABBREVIATIONS AND SYMBOLS *			Roadway Contact			

**Support Documents include:**

- ❖ IDS
- ❖ Data Tables
- ❖ DGN's (see Terms Of Use)

TERMS OF USE

The Modification Drawings listed with their related Index List (IDL) files are provided for designers who desire to modify a Design Standard to suit project specific requirements. It should be clearly understood that if modifications to the Design Standards are required, the work shall be performed under the direct supervision of a Professional Engineer. If any portion of a Design Standard is modified, the Professional Engineer responsible for the modification to the drawings becomes the DR. For one of the following methods:

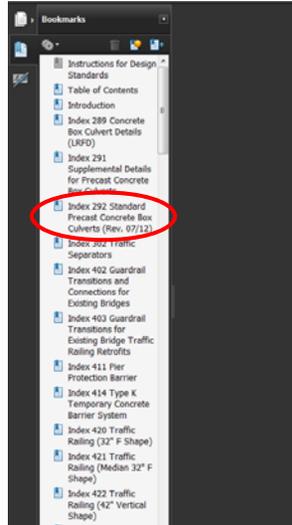
Method 1:  
Produce a new project specific drawing using the details within the Modification Drawing as a guide or template. In this event, no reference to the related Design Standard will be called out in the plans. The details in the plans which were created from the Modification Drawing cease to be a standard and the engineer responsible for the modifications to the drawings becomes the DR for the application of the entire system.

Method 2:  
Modify the details and notes within the Modification Drawing for the project specific requirements. In this event, no reference to the related Design Standard will be called out in the plans. It is important that the plans clearly depict evidence that modifications have been made by the original design engineer to avoid any confusion by the user. All plan notes including the details are based on modifications to the original Design Standard may be appropriate. The details in the plans which were created from the Modification Drawing cease to be a standard and the engineer responsible for the modifications to the drawings becomes the DR for the application of the entire system, including the applicability and correctness of the established portions of the Modification Drawing.

Method 3:  
If the required modifications are minor, use the Modification Drawing to create details showing the modifications to the Design Standard on a separate sheet to the plans. In this event, reference the related Design Standard in the plans. Place the modified details in the plans on a sheet entitled, "Modifications to Design Standards Index XXXX". The engineer responsible for the modifications to the Design Standard becomes the DR for the details on this sheet and for all effects the modifications has on other components within the Design Standard.

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### Support Documents for Structures Related Design Standards



FLORIDA DEPARTMENT OF TRANSPORTATION



### INSTRUCTIONS FOR DESIGN STANDARDS

2013

FOR USE WITH ALL INCLUDED INDEXES OF THE  
FDOT DESIGN STANDARDS 2013

**The Office of Design**  
Florida's Transportation Engineers



### Support Documents for Structures Related Design Standards

* PRESTRESSED CONCRETE BEAMS *			Structures Contact		
20005	1	Prestressed I-Beam Temporary Bracing	IDS-20005	CEL-20005	DGN-20005
20010	2	Typical Florida I-Beam Details and Notes			DGN-20010
20036	2	Florida I 36 Beam - Standard Details			DGN-20036
20045	2	Florida I 45 Beam - Standard Details			DGN-20045
20054	2	Florida I 54 Beam - Standard Details			DGN-20054
20063	2	Florida I 63 Beam - Standard Details	IDS-20010	CEL-20010	DGN-20063
20072	2	Florida I 72 Beam - Standard Details			DGN-20072
20078	2	Florida I 78 Beam - Standard Details			DGN-20078
20084	2	Florida I 84 Beam - Standard Details			DGN-20084
20096	2	Florida I 96 Beam - Standard Details			DGN-20096
20199	1	Build-Up & Deflection Data for Florida I Beams	IDS-20199	CEL-20199	DGN-20199
20210	2	Typical Florida U Beam Details and Notes			DGN-20210
20248	3	Florida U 48 Beam - Standard Details			DGN-20248
20254	3	Florida U 54 Beam - Standard Details	IDS-20210	CEL-20210	DGN-20254
20263	3	Florida U 63 Beam - Standard Details			DGN-20263
20272	3	Florida U 72 Beam - Standard Details			DGN-20272
20299	1	Build-up and Deflection Data for Florida U Beams	IDS-20299	CEL-20299	DGN-20299

Individual IDS

Individual MicroStation Cell (Data Table)

Index DGN (without the Border)



## Support Documents for Structures Related Design Standards

### Engineering/CADD System Office

**Office Manager**  
Bruce Dana, P.E.  
Statewide CADD  
Coordinator

1320 Executive Ctr. Dr.,  
Tallahassee, FL 32301

Tel: 850-245-1600  
Fax: 850-245-1601  
E-Mail: [bdana](mailto:bdana@fldot.com)

**Additional Contacts**  
Staff Directory



### Office Resources

- About us
- Divisions
- Documents & Publications
- Programs & Services
- Meetings & Events
- More...
- Most Requested**
- Downloads

### Welcome

The Engineering CADD Systems Offices (EC-SSO) mission is to coordinate and manage computer-based technology to provide the Department's engineering community with engineering / CADD oriented applications, support and training; to be used in the planning, design, construction, and maintenance of transportation facilities.

### News

**The CADD Production Criteria Handbook (CPCH) for FDOT2010 MR4 is now available!**  
Posted: May 08, 2013

**The FDOT 2012 Civil 3D CADD State Kit is now available!**  
Posted: April 30, 2013

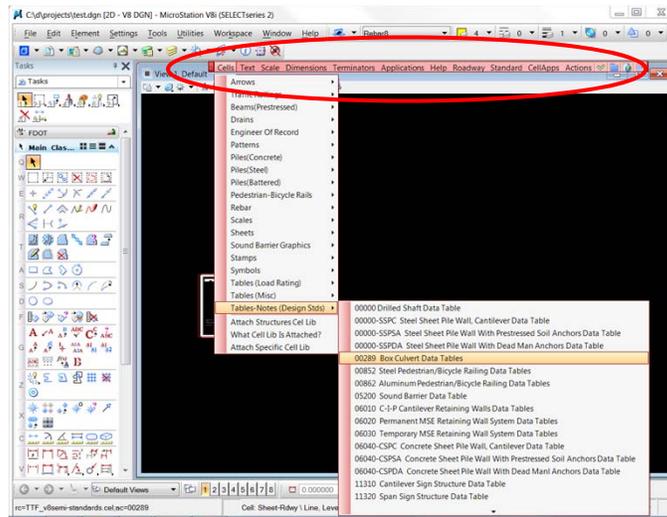
**The FDOT2010 MR4 CADD Software Suite (version 2010.04.00) is now available!**  
Posted: January 31, 2013



<http://www.dot.state.fl.us/ecso/>

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Must manually replace "cells.xml" with file from SDO website



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## Support Documents for Structures Related Design Standards

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## Support Documents for Structures Related Design Standards

Also available on the Structures Office website: MicroStation cell libraries; .pdfs of Load Rating Tables (since not associated with a particular Design Standard); and Structures Bar Menu **cells.xml** file (Data Tables pull-down menu update for FDOT2010 MR3 CADD Software download):

3.) FDOT Structures Menu Data Tables not included in the IDS: (available in MicroStation TTF\_v8semi-standards cell Cell Library)

- [Pulldown Data Tables \(last revision: Jan 2012\) - PDF](#) (1.1 MB)
- [Sheet Title Table Data Tables \(last revision: July 2012\) - PDF](#) (5.0 MB)
- [LRFD Summary Tables \(last revision: January 2012\) - PDF](#) (1.3 MB)

4.) FDOT Structures Menu v8 Structures Cell Library: (in Microstation or AutoCAD format on request) Includes Key Sheet cell updates based on RDB 12-16/5DB 12-13)

[TTF\\_v8structures.cel\FDOT2010.ppt.HRS](#) (1.5 MB zip)

5.) FDOT True Type Fonts: (Copy these files into the C:\Windows\Fontr directory to correctly display the .dgn's dated July 2011 or later. These files are automatically included in the FDOT2010 CADD Software download)

[FDOT True Type Fonts](#) (1.4 MB zip)

6.) FDOT Structures Menu UI: (Copy the cells and file into the \FDOT2010\MENUI\UI\Manual\Structures folder to correctly display the pull down menu for the Data Tables cells that were released in July 2012 for the 2013 Design Standards and the new Key Sheet text cell resulting from RDB 12-16/5DB 12-13. This file was not updated in the FDOT2010 MR3 CADD Software download)

[cells.xml](#) (4 KB zip)

PLEASE READ THE FOLLOWING BEFORE DOWNLOADING MICROSTATION

The official Design Standards are available at the Roadway Office website: [Training Presentations of Interim Changes](#): (links to the Roadway Design Office Training web sites)

[Design Standards webpage](#)

Design Standards depict common structural component Contract Plans to the official Design Standards as Special Design Standards require the designer to complete a Di available on the FDOT Structures bar menu within the T Structures bar menu, the latest cell library can be download the [Design Standards webpage](#) for FY2012/2013 and later.

1.) Structures Related Design Standards Details: (see Design Standards website for FY 2012/2013 and later Design Standards Details & Revisions)

(see [Archived Drawings](#) for 2010/2011 and earlier Design Standards Details & Interims)

2.) FDOT Structures Menu Data Table Cell Libraries: (in Microstation format. PDR examples are available in the [instructions for Design Standards](#) (DS).)

- [TTF\\_v8semi-standards.cel.v2013.1 \(July 2012\) - For use with 2013 Design Standards. Included in FDOT2010 MR3 CADD Software Release](#) (0.9 MB zip)
- [TTF\\_v8semi-standards.cel.v2012.1 \(January 2012\) - For use with FY2012/2013 Design Standards. Included in FDOT2010 MR3 CADD Software Release](#) (0.8 MB zip)

2007 Design Update Training (January 2008, July 2008 & January 2007 Interim)

2009 Design Update Training (January 2009, July 2009 & January 2009 Interim)

2010 Design Update Training (July 2009 & January 2010 Interim)

2011 Design Update Training (July 2010 & January 2011 Interim)

2012 Design Update Training (July 2011 & FY2012/2013 Design Standards)

2013 Design Update Training (2013 Design Standards)

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## Mobile Webpage – Simple, Direct Access

Florida Department of **TRANSPORTATION** E-Updates | FL511 | Site Map

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**Office of Design**

Office Manager  
Duane Graubgam, P.E.  
Director of Design

605 Suwannee Street  
Tallahassee, FL 32399

Tel: 850-414-4735  
Fax: 850-414-4731  
E-Mail Us

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**Mobile** (indicated by a red arrow)

**Welcome**  
The Office of Design leads, guides and supports the design community to deliver innovative transportation solutions.

**News**  
Design Training Expo 2013 - June 12-14 at the Omni at ChampionsGate  
Posted: April 22, 2012  
The 2013 Design Training Expo will be held on June 12-14 at the Omni at ChampionsGate. This comprehensive training event registration is free and the parking is complimentary.

2013 Design Training Expo

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## Mobile Webpage – Simple, Direct Access

- ◆ Collection of links to FDOT publications most commonly used in the field.
- ◆ We value feedback. Please take the quick 3 question survey and leave comments.

**Tips:**

- ◆ Download free Adobe Reader App for optimal viewing. It also saves files in "Recents" for quick future access.
- ◆ Use iBooks App to store PDF manuals on your "bookshelf" for quick future access.

AT&T 4G 3:22 PM 100%

This page is intended for quick access to current versions of the most often referenced FDOT Publications. Visit FDOT Home Page for access to all content. Adobe Reader must be installed for optimal viewing.

Click here to take a survey (indicated by a red arrow)

**Construction**

Construction Memos (Link to Webpage)  
CPAM (7.13 MB)

**Individual Chapters**  
(Link to Webpage)

Design Standards eBooklet  
2013 (Link to Webpage)  
FY 2012/2013 (Link to Webpage)

Materials Manual (Link to Webpage)  
2013 Standard Specifications eBook (6.3 MB)  
Additional Specifications (Link to Webpage)  
Additional Construction Office Manuals (Link to Webpage)

**Design**

Basis of Estimates Manual, Chapter 11-20 (3.82 MB)

Florida Greenbook (4 MB)

Instructions for Design Standards  
2013 (10 MB)  
FY 2012/2013 (11 MB)

Plans Preparation Manual  
Vol. 1 (8 MB)  
Vol. 2 (12 MB)

Soils and Foundations Handbook (6.84 MB)

Structures Manual  
Vol. 1 SDG (2.44 MB)  
Vol. 2 SDM (6.61 MB)  
Vol. 3 LTB-5 (0.2 MB)

Additional Office of Design Publications (Link to Webpage)

2013 Design Training Expo

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## General Revisions

- ◆ Survey Elevation Markers placed on bridge railings were no longer being used and not required on new construction. They need not be replaced for railing retrofits.
- ◆ Specifications for Welded Wire Reinforcement (WWR) are centrally located in Specification Section 931.
- ◆ Removed surface finish requirements for walls, railings, etc. Guidance is now provided in the Structures Manual to include project specific details in the plans. See Structures Design Bulletin 13-03 (Roadway Design Bulletin 13-04).
- ◆ Reorganized Index 501 and updated Approved Geosynthetic Product Tables.
- ◆ “Pull boxes” for utilities have been renamed to “Embedded Junction Box(es) (EJB)” to clarify usage and align with changes to Specification Section 630.
- ◆ Quantity Boxes have been removed from Data Tables. A summary of all quantities will be shown in a single location within the plans.



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## New Design Standards Indexes 404, 405 and 477

- ◆ Developed to compliment/support the policy of Practical Design
- ◆ Indexes 404 and 405 are solutions for bridge traffic railing approach and trailing end transition treatments for RRR Projects where the railing on the bridge structure will not be modified or improved.
- ◆ See the IDS for each Index to determine applicability.
- ◆ New: Indexes 404 (Narrow and Recessed Curbs) and 405 (Wide Curbs)
- ◆ Migrated: Index 477 is graduating from the DDS
- ◆ These Indexes may only be used with railings having structurally continuous top rails.



17

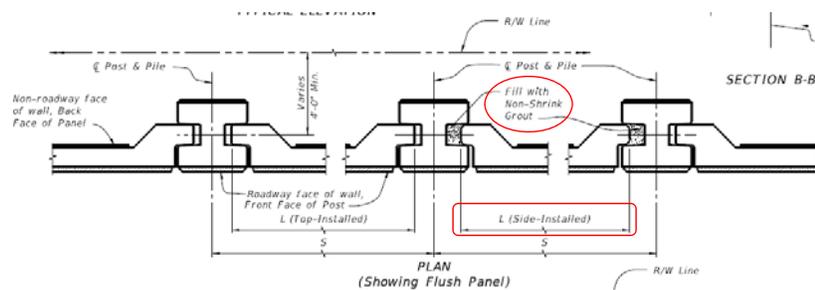
## New Design Standards Indexes 404, 405 and 477

When railings having discontinuous top rails, the bridge railings most likely need improvement for RRR Projects. Use Indexes 470-476 or Index 480 Series.



## Index 5200 Sound Barriers => Noise Walls

- ◆ Added Side-Installed Panels:

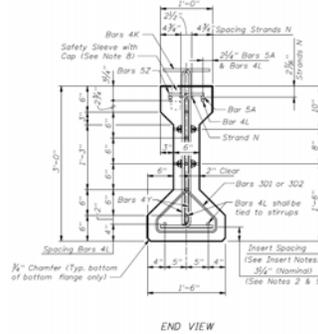


- ◆ Cheryl Hudson and Steve Nolan will be presenting more details during the next hour in Osceola E.



## AASHTO TYPE II BEAMS

- ◆ They're Back!!



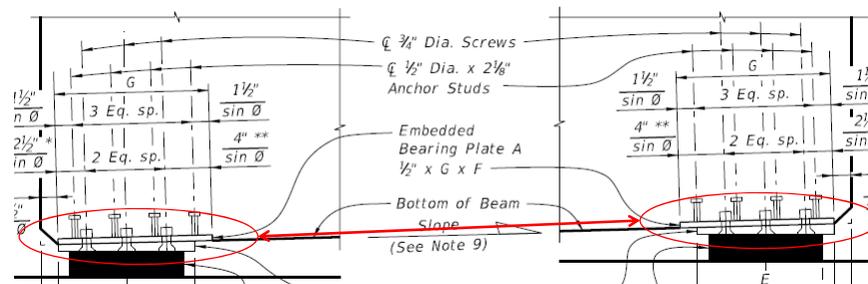
- ◆ For short-medium span (50'-85') bridges where efficiency of FIB-36 is not optimized.
- ◆ Steve Nolan and I will be presenting more details during the 11:00 hour on Friday in Osceola C.



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## Index 20511 & 20512

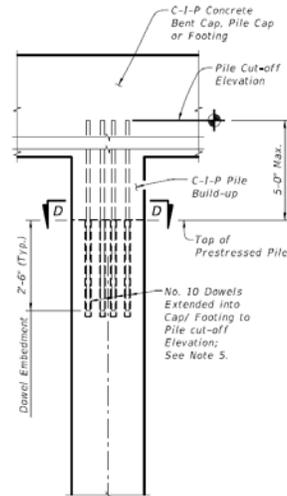
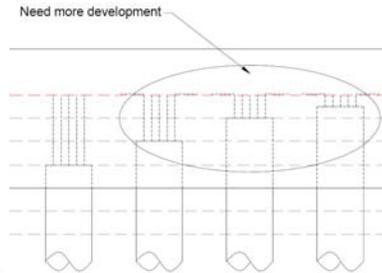
- ◆ Industry requested beveled bearing plates which could be used on either end of beam.



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## Index 20601

- ◆ Slightly increased the allowable length for pile build-up.
- ◆ Allow for overlap of 1'-0" where contractor has options for either CIP build-up or non-drivable splice.
- ◆ Considered pinned, fixed, tension and compression pile conditions.
- ◆ Added Note 5 to address requirements for tension piles terminating less than 3 feet from the cut-off elevation.



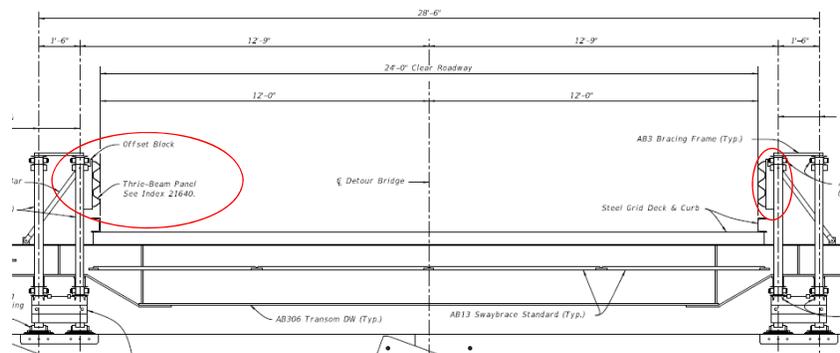
UNFORESEEN REINFORCED C-I-P PILE BUILD-UP DETAIL



23

## Index 21600 Series

- ◆ Added Thrie-Beam Panel; fully detailed in new Index 21640 with approach and trailing end transitions included.



- ◆ Thrie beam panels improve the crashworthiness of the temporary bridges and provide increased protection against impact to the main structural elements.



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**Questions?**  
**Please feel free to contact me anytime**  
**using my information below:**



**Gevin J. McDaniel, P.E.**  
**State Structures Design Office**  
**[gevin.mcdaniel@dot.state.fl.us](mailto:gevin.mcdaniel@dot.state.fl.us)**  
**(850) 414-4284**