

2016 Design Standards eBooklet Update



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Design Standards eBooklet Page



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Status of Proposed Revisions

Effective January 1, 2016

Year	Design Standards eBooklet	Design Standards Revisions	Developmental Design Standards	Contact Information Drainage Intelligent Transportation Systems Roadway Design Structures Design
2016	DSeB	DSR	DDS	

[http://www.dot.state.fl.us/rddesign/
DesignStandards/Standards.shtm](http://www.dot.state.fl.us/rddesign/DesignStandards/Standards.shtm)

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The 2016 eBooklet:



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Design Standards eBooklet Page

Index Number	Design Standards Revision (DSR)	Index Title	Design Information		
			Instructions for Design Stds (IDS)	Data Table Cell Library	Borderless DGNs
(PDF)			(PDF)	(ZIP)	(ZIP) Terms of Use
Complete eBooklet <i>(252mb)</i> 2016 Design Standards eBooklet			Combined Available IDS <i>(11mb)</i>	Combined Available CEL <i>(1mb)</i>	Combined DGN <i>(129mb)</i>
COVER, TABLE OF CONTENTS AND REVISIONS					
Cover		Booklet Cover	Cover		
Content		Table of Contents	Content		
Revisions		Revision History	Introduction		
			Revisions		

	DRAINAGE (200-295)	(200-288, 293-295) Drainage Contact	
		(289-292) Structures Contact	
200	Structure Bottoms - Type J & P		DGN-00200
201	Supplementary Details for Manholes & Inlets		DGN-00201
206	Trench Drain		DGN-00206
210	Curb Inlet Tops - Types 1, 2, 3 & 4		DGN-00210
211	Curb Inlet Tops - Types 5 & 6		DGN-00211
212	Curb Inlet - Type 7		DGN-00212
213	Curb Inlet - Type 8		DGN-00213
214	Curb Inlet Top - Type 9		DGN-00214
215	Curb Inlet Top - Type 10		DGN-00215
216	Closed Flume Inlet		DGN-00216
217	Median Barrier Inlets Types 1, 2, 3, 4 and 5		DGN-00217

Design Standards Revisions



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2015 Design Standard Revisions



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Design Standards Revisions 2015



n/a = Non Applicable

n/c = No Change

Index Number	Revised Sheets	Index Title	Design Information			
			Instructions for Design Standards (IDS)	Data Table Cell Library	Borderless DGNs	Associated Design Bulletin
	(PDF)		(ZIP)	(ZIP) Terms of Use	(PDF)	
412	1 of 5	Low Profile Barriers	N/A	N/A	N/A	RDB14-18
501	N/A	Geosynthetic Reinforced Soils	IDS-00501	N/A	N/A	RDB14-15
519	1 of 1	Rumble Striping	IDS-00519	N/A	N/A	RDB15-03
600	1-12 of 12	General Information for Traffic Control Through Zones	N/A	N/A	N/A	RDB14-18
603	1-2 of 2	Two-Lane Two-Way Work Within the Travel Way	N/A	N/A	N/A	
607	1 of 1	Two-Lane, Two-Way Mobile Operation, Work on Shoulder and Work within the Travel Way	N/A	N/A	N/A	RDB15-06
619	1-2 of 2	Multilane, Mobile Operations, Work on Shoulder, Work Within the Travel Way	N/A	N/A	N/A	

2015 Roadway/Structures Design Bulletins

Roadway
Design
Bulletin



Index Number	Revised Sheets	Index Title	Design Information			
	(PDF)		Instructions for Design Standards (IDS)	Data Table Cell Library	Borderless DGNs	Associated Design Bulletin
			(PDF)	(ZIP)	(ZIP) Terms of Use	(PDF)
412	1 of 5	Low Profile Barriers	N/A	N/A	N/A	RDB14-18
501	N/A	Geosynthetic Reinforced Soils	IDS-00501	N/A	N/A	RDB14-15
519	1 of 1	Rumble Striping	IDS-00519	N/A	N/A	RDB15-03
600	1-12 of 12	General Information for Traffic Control Through Zones	N/A	N/A	N/A	RDB14-18
603	1-2 of 2	Two-Lane Two-Way Work Within the Travel Way	N/A	N/A	N/A	
607	1 of 1	Two-Lane, Two-Way Mobile Operation, Work on Shoulder and Work within the Travel Way	N/A	N/A	N/A	RDB15-06
619	1-2 of 2	Multilane, Mobile Operations, Work on Shoulder, Work Within the Travel Way	N/A	N/A	N/A	

Roadway/Structures Design Bulletin



Florida Department of Transportation

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ANANTH PRASAD, P.E.
SECRETARY

ROADWAY DESIGN BULLETIN 14-13

(FHWA Approved: June 20, 2014)

DATE: June 20, 2014

TO: District Directors of Transportation Operations, District Directors of Transportation Development, District Design Engineers, District Construction Engineers, District Geotechnical Engineers, District Structures Design Engineers, and Program Management Engineers

FROM: Michael A. Shepard, P. E., State Roadway Design Engineer *Michael Shepard*

COPIES: Brian Blanchard, Tom Byron, Duane Brautigam, Robert Robertson, David Sadler, Tim Lattner, Mark Wilson, Bruce Dana, John Krause, Greg Schiess, Trey Tillander, Rudy Powell, Nick Finch (FHWA), Chad Thompson (FHWA) and Felix Delgado (FHWA)

SUBJECT: **Guardrail Systems**

This bulletin provides revisions and additional requirements for guardrail systems.

REQUIREMENTS

1. The following [Design Standards Revisions \(DSR\)](#) are released:
 - A. Revised Index 400 (Guardrail) is released.
 - B. The new IDS-400 (Guardrail) is released.
2. Delete Item 2 under "Shielding drop-off hazards for vehicle occupants;" in *Plans Preparation Manual*, Volume 1, Section 4.2.2 and replace it with the following:

When a drop-off is to be shielded with guardrail, a minimum of 62.5 feet of guardrail is required to develop proper ribbon strength. A minimum clear area 5'-0" wide from the face of the guardrail is to be provided behind the standard W-beam guardrail to allow for dynamic deflection when impacted. Alternates shown in Table 4.3.1 may be used to allow for a clear area less than 5'-0" wide. A minimum distance of 2'-0" shall be provided from the back face of the guardrail posts to the shoulder slope break in order to provide proper soil bearing resistance for the posts.

Instruction for Design Standards (IDS)

Instruction for Design Standards

		TRAFFIC RAILINGS	(400-403,410-415, 430 & 461) Roadway Contact (404,405,420-425, 470-484) Structures Contact		
400		Guardrail	IDS-400		
402		Guardrail Transitions and Connections for Existing Bridges	IDS-402		
403		Guardrail Transitions for Existing Bridge Traffic Railing Retrofits	IDS-403		
404		Guardrail Transitions - Existing Post & Beam Bridge Railings (Narrow & Recessed Curbs)	IDS-404		DGN-404
405		Guardrail Transitions - Existing Post & Beam Bridge Railings (Wide Curbs)	IDS-405		DGN-405
410		Concrete Barrier Wall			
411		Pier Protection Barrier	IDS-411		
412		Low Profile Barrier			
414		Type K Temporary Concrete Barrier System	IDS-414		

Instruction for Design Standards (IDS)

Instructions for Design Standards
Index 402 Guardrail Transitions and Connections for Existing Bridges

Topic No. 625-010-003-j
2015

Index 402 Guardrail Transitions and Connections for Existing Bridges

Design Criteria

NCHRP Report 350; AASHTO LRFD Bridge Design Specifications, 6th Edition, Section 13; Structures Design Guidelines (SDG)

Design Assumptions and Limitations

This standard contains details for attaching thrie beam guardrail approach transition retrofits to Index 470 and 480 Series bridge railing retrofits and also to existing safety shape bridge traffic railings. Use this standard with Indexes 410, 470, 471, 472, 473, 474, 475, 476, 480, 481, 482, 483 and 484.

The appropriate Index 402 approach transition retrofit for Index 470 and 480 Series bridge railing retrofits must be selected and specified in the plans based on the shapes and designs of the existing bridge traffic railings, approach slabs and end bent wing walls. See the Instructions for [Index 470](#) and [Index 480](#) and [SDG 6.7](#) for more information.

The following three sections of instructions address the use of Index 402 with existing safety shape bridge traffic railings:

1. A Historical Compilation of Superseded Florida Department of Transportation "Structures Standard Drawings" for "F" and "New Jersey" Shape Structure Mounted Traffic Railings
2. Guardrail Approach Transition Retrofit Instructions for Existing Flat Slab Bridges
3. Guardrail Approach Transition Retrofit Instructions for Existing Beam/Girder Bridges

Index 402 Thrie-Beam Guardrail transition retrofits are bolted to existing safety shape bridge traffic railings through field drilled holes utilizing the pre-drilled Thrie-Beam Terminal Connector as a template. This method of attachment creates the potential for conflicts between the new attachment bolts and existing utilities and/or conduits. Compare the locations of the new attachment bolts with the positions of any existing utilities and/or conduits. Guidance is provided on Index 402 for selecting a bolt pattern for the Thrie-Beam Terminal Connector that may avoid existing utilities and/or conduits. Existing utilities and/or conduits that conflict with the possible bolt patterns shall be relocated if possible or placed out of service. Include all necessary utility adjustment information in the Roadway Plans.

Revision History

- *Over 75 revisions to the Design Standards for the 2016 eBooklet*
- *All revisions are listed on the Revisions History Sheets along with descriptions of the changes*

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Complete eBooklet (252mb)			Combined Available IDS (11mb)	Combined Available CELs (1mb)	Combined Available DGNs (57mb)
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Revision History



Revision History

2016 REVISIONS

INDEX No	SHEET No	DESCRIPTION	INDEX No	SHEET No	DESCRIPTION	INDEX No	SHEET No	DESCRIPTION			
STANDARD ABBREVIATIONS											
1	3 of 4	Deleted MSTCSD - Minimum Specifications For Traffic Control Signal Devices.		1 of 25	Added New Note #2 Longitudinal Reinforcement note; Renumbered Notes.	526	2 of 8	Deleted the Varies Dimension Line on all three details; Corrected Table "Minimum Under Restraints" changed to "Minimum Under Constraints".			
STANDARD SYMBOLS				3 of 25	Changed Note #5.						
2	3 of 4	Added back in the Existing Overhead Electric, Overhead Cable Television, Overhead Telephone, Overhead Fiber Optic line types.		4 of 25	Added construction joint and dowels; Added additional Notes for construction joint and dowels; Added Longitudinal Reinforcement Note and Vertical Reinforcement spacing Note.	546	1 of 6	Added "driveways" to Note #1; Added new note to provide definition of Minor Road, which includes "driveways"; Added "Design" to Tree spacing Table (i.e. Design Speed).			
DRAINAGE				5-7 of 25	Removed foundation lines within the ELEVATION view of the barrier.		2 of 6	Changed the Minor Road Under Stop Control (dL Dimension) from the center of the roadway to the centerline of the lane.			
200	5 of 5	Changed WWF to WWR.		11 of 25	Added Centerline callout to OPPOSING LANE APPROACH detail for clarification; Updated						
201	DRAINAGE							Deleted Index			
205	200	5 of 5	Changed WWF to WWR.					Deleted Index			
216	201		Added embedment length of dowel bars into slabs on OPTIONAL CONSTRUCTION JOINTS Detail and changed Note #4 to welded wire reinforcing.					Deleted Index			
251										Deleted Index	
252											Deleted Index
253											Deleted Index
261	201		Changed minimum size of deformed wire to D4.0 to meet ASTM A1064-8.3.1.					Deleted Index			
270										Deleted Index	
281	205	1 of 1	Deleted Index.					Deleted Index			
281	2 of 2	section SDD PLACEMENT AT PIPE/CULVERT END TREATMENTS; Added TABLE 2; to the title of the SDD QUANTITIES (SY) Table; Labeled the right side FILTER FABRIC PLACEMENT AT CONCRETE STRUCTURE; Changed callouts for clarification.	423	1 of 3	Changed bullet railing maximum height to 48" and rail splice/expansion joint location tolerance to 1'-0".	11 of 13		Renumbered to 10 of 12.			
289	1 of 8	Deleted Splice Length for #10 & #11 bars in TABLE 1.		2 of 3	Changed SHBR to 48" in TYPICAL SECTION and VIEW B-B. Changed Post callouts in NOTE.	12 of 13		Renumbered to 11 of 12; Deleted Note #4; Renumbered Notes #5- #12; Added new Note #12. Added Note #12; Added Barrier Delineators to the LONGITUDINAL CHANNELIZING DEVICES details.			
291	2 of 5	Added Option 2 for Top Slab Placement in SCHEMATIC "A".	461	1 of 1	Changed Note #2.	13 of 13		Renumbered to 12 of 12.			
292	2 of 14	Changed Note #5 minimum size of deformed wire to D4.0 (per ASTM A1064 - 8.3.1); Changed Note #4 cover requirements to 2" for slightly and moderately aggressive, and 3" for extremely aggressive. (to match SDG).	470	1 of 3	Corrected ASTM A449 reference designation in ANCHOR BOLT, NUTS AND WASHERS note.	603	All	Redeveloped Index; Deleted lights and flags from work zone signs and their references within the Index; Added Index 600 Sheet 4 to this Index.			
CURBS CONCRETE PAVEMENT AND SIDEWALKS			GENERAL								
304	1 of 7	Changed General Note #10.	500	1 of 2	Changed the notes for the HALF SECTIONS WITH AND WITHOUT OVERBURDEN.	604	1 of 1	Deleted lights and flags from work zone signs and their references within the Index; Clarified reference to, and use of, Temporary Raised Rumble Strips.			
310	1 of 2	Changed the Index references from 851 and 861 to indexes 852 and 862 for the SIDEWALK WITH EDGE BEAM FOR SURFACE MOUNTED RAILS detail.	501	All	Deleted Index. The remaining details moved to the P&M and Structures Manual.	605	1 of 1	Deleted lights and flags from work zone signs and their references within the Index; Clarified reference to, and use of, Temporary Raised Rumble Strips.			
TRAFFIC RAILINGS			514	1 of 2	Changed General Notes; Added new Base Options column, Changed "*" note and added "*" note.	606	All	Deleted lights and flags from work zone signs and their references within the Index.			
400	2 of 26	Changed Note #1 web address; Changed Note #8, QPL to APL.	515	6 of 7	Changed Note #2; Deleted S' dimension and added See Note #2; Added See Note #1 to the Auxiliary Lane Width callout.	1 of 4		Changed General Notes #2, #3, #4 and #8; Added Note #10.			
	18 of 26	Changed Note #3, QPL to APL.	518	2 of 3	Added back details for rigid pavement with rigid shoulders and showed Profiled Thermoplastic Markings.	607	1 of 1	Added Option 1 and 2 to the WORK IN TRAVEL WAY detail; Changed the Arrow Board in the WORK WITHIN TRAVEL LANE and WORK ON SHOULDER details.			
	24 of 26	Changed Notes #2 and #3, QPL to APL.	519	1 of 1	New Index; Changed Note #1; Deleted Notes #4-#7	608	1 of 1	Deleted lights and flags from work zone signs and their references within the Index.			
			521	1 of 1	Changed the mounting location to inside the cheekwall with minor adjustments to the widths.						