

**Revisions  
Roadway And Traffic Design Standards  
2000**

**COMPREHENSIVE CHANGES (These changes are not listed in the index tabulations below)**

**Speeds:**

Where posted speeds in miles per hour (mph) are effective in determining the application of certain features in the standard drawings of this booklet (indexes), and the relationship between metric speed in kilometers per hour (km/h) and (mph) needs to be correlated, both values are given; e.g.,  $\leq 70$  km/h ( $\leq 45$  mph) and  $\geq 80$  km/h ( $\geq 50$  mph). Speed designations shown in the indexes are not to be used for establishing project design speed, nor used to override any criteria for project design speed set forth in the Department's 'Plans Preparation Manual' or other Department approved source documents.

**Reinforcing Steel For Concrete:**

Bar sizes conform to the designations of ASTM A615M-96, using the prefix symbol '\*'; e.g. the previous designations 10M, 15M and 20M bars are now \*10, \*16 and \*22 bars respectively.

Welded wire fabric is now designated smooth or deformed identification, wire spacing in millimeters and wire area in square millimeters; e.g., 75 x 75-MW22 x MW22 and 100 x 100-MD29 x MD29.

**Signs:**

Sign shields with the legend 'SPEEDING FINES DOUBLED WHEN WORKERS PRESENT' have been posted on all Series 600 indexes where signs applicable.

**TABULATED CHANGES**

The changes tabulated below principally address functional changes in the standard drawings (indexes) since publication of the 1998 metric 'Roadway and Traffic Design Standards' booklet. The items below are keyed to what is shown on the index sheets of this 2000 booklet, and do not necessarily correlate directly by cross reference between this booklet and the 1998 booklet. This approach is taken to diminish complexities that can arise when trying to compare line items of the two booklets and those of the multiple issues of special provisions and interim indexes that were produced to update the 1998 booklet.

Where a change has been applied to a feature that is common on more than one of the sheets within the same index, or within a series of indexes with a common function, the change will not be repeated in most cases; however, such sheets will indicate a 2000 revision date.

Index Number	Sheet Number	Description	Index Number	Sheet Number	Description
002	1 of 3	'GENERAL NOTE' - Text revised.	252	1 of 2	'GENERAL NOTES' - Note 1 added.
	2 of 3	Updated to match most commonly used CADD cell library symbols.	253	1 of 2	'GENERAL NOTES' - Note 1 added.
101	1 of 1	'SECTION AA' - PVC outlet pipe size corrected from '50 mm' to '150 mm'.	255	1 of 1	'GENERAL NOTES' - Note 1 added.
102	1-3 of 3	Sheets replaced.	258	1 of 1	'GENERAL NOTES' added.
104	1 of 1	Table 'SEEDING RATE (kg/ha) FOR NEW SHOULDERS AND SLOPES*' - Seeding rates revised.	264	1 of 1	'GENERAL NOTES' - Note 1 added.
105	1 of 1	Table 'SEEDING RATE (kg/ha)' - Seeding rates revised.	266	1 of 1	'GENERAL NOTES' - Note 1 added.
106	1 of 1	'GENERAL NOTES' - Note 4 revised.	268	1 of 1	'GENERAL NOTES' added.
199	1 of 1	Table 'STANDARD CRITERIA' and 'Table 1' - Tables replaced.	272	6 of 6	'GENERAL NOTES' - Note 11 revised.
200	1 of 2	'TOP SLAB REINFORCING STEEL DIAGRAM' - Note added.	280	4 of 4	'EXTRA BASE FOR CROSS BOX CULVERTS UNDER FLEXIBLE PAVEMENT', 'FRIABLE BASE' - Changed words Frangible to Friable.
	2 of 2	'WALL DESIGNS-RECTANGULAR STRUCTURES' - Size '2134 (1200)' corrected to '2134 (2100)'.	281	1 of 2	Table 'DITCH PAVEMENT', 'Riprap (Ditch Lining)' - Revised unit of payment and estimate. 'GENERAL NOTES' - Note 8 added.
201	3 of 6	'UTILITY PIPES THRU STORM SEWER STRUCTURES' - Added 'SECTION AA'. 'MINIMUM DIMENSIONS FOR BOX AND RISER SEGMENTS' - Revised drawings and notes for clarification.	284	1 of 1	Spillway on old Sheet 1 of 2 deleted and spillway on old Sheet 2 of 2 moved to this sheet.
	4 of 6	'INDEX 231', 'DITCH BOTTOM INLET TYPE B' - Revised drawing to agree with Index 231. 'INDEX 221 & 234', 'GUTTER INLET TYPE J & V' - subheading revised to read 'GUTTER INLET TYPE V AND DITCH BOTTOM INLET TYPE J'.	286	1 of 2	'TYPE V' section transferred to new Sheet 2 of 2. 'GENERAL NOTES' - Notes 5, 7, 8, 9 and 10 revised. 'DESIGN NOTES' - Note 6 revised.
205	1 of 5	'MINIMUM COVER FOR CONCRETE, STEEL, ALUMINUM, POLYETHYLENE, AND POLYVINYL CHLORIDE PIPE', - Former table labeled 'UNPAVED W/O SELECT BEDDING' deleted. 'UNPAVED' table - Former table labeled 'UNPAVED WITH SELECT BEDDING' relabeled 'UNPAVED'; former sectional drawing with select bedding deleted. 'GENERAL NOTES' - Note 2 revised and Note 6 added. 'EXTRA BASE FOR CROSS CULVERTS UNDER FLEXIBLE PAVEMENTS', 'FRIABLE BASE' and 'ASPHALTIC CONCRETE BASE' - All tag notations removed and 'Note:' revised.	287	2 of 3	New Sheet. Type V underdrain sections transferred from old Sheet 1 of 1 to this sheet. 'CLEANOUT FOR TYPE V UNDERDRAIN' - New detail. Sections 'TYPE Va' and 'TYPE Vb' - Internal Filter Fabric added.
	2 of 5	'MAXIMUM COVER FOR REINFORCED CONCRETE PIPE ROUND AND ELLIPTICAL', 'ROUND PIPE INSTALLATIONS' - Table 'Note:' revised.	305	1 of 5	Table 'DOWELS (LENGTH 450 mm)' - Table expanded.
209	1 of 1	Index deleted.	310	1 of 2	'GENERAL NOTES' - Retitled to 'NOTES FOR CONCRETE SIDEWALK ON CURBED ROADWAYS', Note No. 5 Revised.
210	1 of 1	Identified 'Theoretical Gutter'.		2 of 2	New Sheet Titled 'CONCRETE SIDEWALKS FOR UNCURBED ROADWAYS'.
211	1 of 2	'SECTION AA' and 'SECTION QQ' - Identified 'Theoretical Gutter' and 'Theoretical Depression Elevation'.	400	1-31 of 31	All sheets are replacement sheets. The restructuring and expansion of this index was necessitate by the following imposing features: (a) Approach slabs on new construction that will typically be nine (9) meters in length (b) Bridge traffic railing ends that are integral with and equal in length to the approach slabs on new construction (c) bridge traffic railings ends on existing bridges with Test Level 4 railings, modified to accept three-beam guardrail anchorage (d) three-beam transitions for guardrail to bridge connections (e) elimination of standard steel offset blocks, and (f) the addition of new end terminal designs.
217	1 of 1	'INSET A' - Inset enlarged for clarity.	401	1 of 9	'ELEVATION' - Drawing added. 'GENERAL NOTES' - Note 2 revised.
220	1 of 1	'STEEL GRATE', - Out to out dimensions revised.		2 of 9	'CONCRETE SAFETY BARRIER', 'SCHEME 1' and 'CAST IN PLACE PANELS', 'SCHEME 2' - Bonding material notation revised.
229	1 of 1	Index deleted.		4 of 9	'CAST IN PLACE TRANSITION WALL', 'SCHEME 9' - Bonding material notation revised.
231	1 & 2 of 2	Sheets replaced; inlets top replaced with traversable design top.		6 of 9	'BRIDGE WITH APPROACHING ROADWAY CURB', 'CONCRETE ANCHOR POST', 'SCHEME 17' and 'STEEL ANCHOR POST AT RADIAL WING WALL', 'SCHEME 15' - Bonding material notation revised.
232	1 of 5	Combination structure bottom and riser drawing transferred to sheet 5 of 5. 'INLETS', 'TYPE C', 'TYPE D', 'TYPE E' and 'TYPE H' all sectional views - Structure depth notation revised.		9 of 9	'CONCRETE BRIDGE ANCHORAGE TRANSITION WALL', 'SCHEME 29', 'Note (Scheme 29)' - Bonding material notation revised. 'END POST WITH SPECIAL END SHOE RECESS', 'SCHEME 30' - Rubrail requirement added by notation and sketch.
	5 of 5	New sheet for round bottom with opening centered in top.			
240	1 & 2 of 2	New index for skimmers on outlet control structures.			
249	1 of 1	Index deleted.			
251	1 of 2	'GENERAL NOTES' - Note 1 added.			

**Revisions  
Roadway And Traffic Design Standards  
2000**

Index Number	Sheet Number	Description	Index Number	Sheet Number	Description
410	2 of 22	Former 'DETAIL I' transferred to other sheet. 'SHOULDER TREATMENT WHEN CRASH CUSHION SHIELDING CONCRETE BARRIER WALL APPROACH ENDS LOCATED INSIDE CLEAR ZONE OR INSIDE HORIZONTAL CLEARANCE' - Drawing added to 'DETAIL A'.	520	2 of 2	'CONCRETE STEPS NOTES' - Note 1 revised. 'ALUMINUM PIPE HANDRAIL ON GRAVITY WALLS FOR DROPOFFS, DROPOFFS >250mm AND ≤760 mm' - Subheading revised; 'TYPICAL SECTIONS AT POST', adhesive anchor notation - Epoxy bonding deleted and Adhesive Material System bonding substituted, and former drop off notation deleted.
	3 of 22	'BRIDGE PIERS' - Former 'DETAIL I' moved to this sheet. 'COMBINATION BARRIER AND SIGN PEDESTAL' and 'INDEPENDENT BARRIER AND SIGN PEDESTAL' - New drawings.	540	1 of 1	'STEM AND PLATE OPTIONS', 'STEEL PLATES' - Plate dimension corrected.
	4 of 22	'PICTORIAL' view - Revised to include pole recess.	560	1 of 5	'RURAL' - Shoulder pavement revised. 'TYPICAL FLEXIBLE PAVEMENT AT RR CROSSINGS' - Notations revised.
	7 of 22	Subscripts '*' and 'Ø' - Reference to Detail E deleted.	600	2 of 11	'INTERSECTING ROAD SIGNING' - Note revised
	20 of 22	All details - Thrie-beam transitions substituted for W-beam transitions. Steel offset block option deleted.		3 of 11	'CHANNELIZING AND LIGHTING DEVICES' - Note revised. 'WARNING LIGHTS' - Note revised.
	21 of 22	'LIGHT POLE MOUNTING IN TRAPEZOIDAL SECTIONS' - Chamfer dimension added.		4 of 11	'CLEAR ZONE WIDTHS' - Note revised.
	22 of 22	All details - Thrie-beam transitions substituted for W-beam transitions.		5 of 11	'MANHOLES' - deleted; 'MANHOLES/CROSSWALK TREATMENT' - added. 'SPEEDING FINES DOUBLE SIGN' - deleted; 'SPEEDING FINES DOUBLED WHEN WORKERS PRESENT' - added.
415	1 of 4	'BRIDGE DECK AND APPROACH INSTALLATIONS' - Footnote revised to substitute 'Adhesive Material System' bonding for chemical bonding. 'WALL UNIT', 'SECTION (F-SHAPE)' and 'SECTION (N.J. SHAPE)' - Single section for both wall types replaced by individual sections.		6 of 11	'TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING', note 3 - Text deleted and the following text substituted: 'If D is 40 mm or less, no treatment is required.'
	2 of 4	'FDOT SNAKE PIN' - Added. 'CONNECTING PIN ASSEMBLY' - Added (Former 'STEEL PIPE KEEPER' discontinued).		8 of 11	'CHANNELIZING AND LIGHTING DEVICE NOTES' - Note 4 & 9 revised.
	3 of 4	Original drawings - Inertial crash cushion removed (transferred to new Index 417); other drawings transferred to Sheet 4 of 4. This sheet is the lead sheet for applications of optional redirective crash cushions detailed on Sheet 4 of 4.	602	1 of 1	Sign MOT 14 & 15 replaced former sign FTP 56 & 57. Sign MOT 16 added.
	4 of 4	Replacement sheet - All current optional redirective crash cushions included on this sheet; (GREAT <sub>cz</sub> ) discontinued and new TRACC added.	603	2 of 2	'GENERAL NOTES' - Notes revised.
417	1 of 1	New Index - Temporary inertial crash cushions (formerly two arrays on Index No. 415)	609	1 of 1	New sheet.
432	1 and 2 of 2	'C-A-T 350' - Former C-A-T upgraded to NCHRP 350 criteria. Steel offset blocks deleted. 'GENERAL NOTES' - Note 5 added. Old Notes 5 and 6 combined. 'PLAN', 'Departure Line' - Speed notation revised.	614	1 of 2	Signs added. 'GENERAL NOTES' - Note added.
433	1 of 4	'GENERAL NOTES' - Note 5 added. Old Notes 5 and 6 combined.	615	1 of 1	'GENERAL NOTE' - Note added.
	2 of 4	'BIDIRECTIONAL SYSTEM' - Steel offset blocks deleted. 'PLAN', 'Departure Line' - Speed notation changed.	616	1 of 2	Signs changed.
	3 of 4	'UNIDIRECTIONAL SYSTEM' - Steel offset blocks deleted. 'PLAN', 'Departure Line' - Speed notation changed.	622	2 of 2	Sign added.
434	1 of 1	'GENERAL NOTES' - Note 6 added. Note 8 revised. 'PICTORIAL VIEW', 'Departure Line' - Speed notation changed.	623	1 of 1	Signs added.
435	1 of 6	'GENERAL NOTES' - Notes 10 and 11 revised. 'BAY SELECTION TABLE' - Cartridge combination revised. 'QuadGuard SYSTEM 1755/2285 FOR WIDE HAZARDS' and 'QuadGuard SYSTEM 610/760/915 FOR NARROW HAZARDS', 'Departure Line' both - Speed notations revised.	628	2 of 2	Note changed.
	4 of 6	'SECTION AA (POSTS #1 AND #2)', 'SPECIAL STEEL POST Δ WITH TIMBER OFFSET BLOCKS' and 'SECTION BB (POSTS #3 THRU #9)', 'SPECIAL STEEL POSTS Δ WITH TIMBER OFFSET BLOCKS', '760 mm SYSTEM WIDTHS' - Single post configuration substituted for double post configuration. ≥915 mm SYSTEM WIDTH' - Double post configuration retained.	623	1 of 1	Barricades and sign added.
	6 of 6	'*Transition Flare Rates' - Speed notations revised.	628	1 of 1	New Index.
436	1 of 1	'GENERAL NOTES' - Notes 6 added. Notes 11 and 13 revised. 'Departure Line' - Speed notation revised. 'DESIGN AND MAINTENANCE NOTES AND GUIDELINES' - Note 2 revised.	631	1 & 2 of 2	New Index.
439	1-6 of 6	Index deleted.	640	2 of 2	Signs added.
440	1-2 of 2	New Index.	650	1 of 2	Signs added.
451	1 of 2	'GENERAL NOTES' - Note 15 corrected.	651	1 of 2	Signs added.
452	1 of 2	'GENERAL NOTES' - Notes 4.A.(6) and (7), 4.B.(4) and 4.C.(4) specification reference 'ASTM F1234' deleted and 'ASTM F1043' substituted. Elevations - Tension bars and tension straps revised.	665	1 of 1	New Index.
	2 of 2	'BASE PLATE AND ANCHOR NOTES' - Note 3 anchor epoxy bonding deleted and Adhesive Material System bonding substituted.	5000	1 of 1	New index.
505	1 of 3	'GENERAL NOTES', Note 5, 2nd paragraph - Word 'topsoil' replaced with words 'finished soil layer'.	5005	1-12 of 12	New index.
513	1 of 1	Index deleted.	5010	1-20 of 20	New index.
517	1 of 1	'GENERAL NOTES' - Note 4 added.	5011	1-21 of 21	New index.
518	1 of 2	'GENERAL NOTES' - Note 4 revised. 'SECTION AA • FOR THERMOPLASTIC AND ASPHALT RUMBLE STRIP SETS', 'THERMOPLASTIC SET' - Footnote added. 'STRUCTURES WITH LESS THAN FULL WIDTH SHOULDERS', 'INSET B' added; 'PLAN • TWO-WAY' - Rumble strips on trailing side deleted; and, 'PLAN • ONE-WAY' - 'Inset B' tag added. 'INTERSECTIONS', 'PLAN', 'INSET C' and 'Inset C' tag - Inset designation changed from 'B' to 'C'.	5012	1-20 of 20	New index.
			5015	1-9 of 9	New index.
			5016	1-8 of 8	New index.
			5021	1-13 of 13	New index.
			5025	1-8 of 8	New index.
			5105	1-3 of 3	New index.
			5115	1-3 of 3	New index.
			5120	1-4 of 4	New index.
			5130	1-4 of 4	New index.

**Revisions  
Roadway And Traffic Design Standards  
2000**

Index Number	Sheet Number	Description	Index Number	Sheet Number	Description
9535	1 of 3	'GENERAL NOTES', 'STRUCTURAL STEEL' and 'ALTERNATE MATERIAL' - Note revised. 'BACKING STRIP DETAIL', 'Notes:' - Note revised.	17890	2 of 3	Clearance above roadway '5.1 Min.' revised to '5.35 Min.'
11037	1 of 1	Sheet replaced.	17900	1-8 of 8	New index.
11860	1-3 of 3	All sheets are replacement sheets.			
11861	1-2 of 2	All sheets are replacement sheets.			
11862	1-2 of 2	All sheets are replacement sheets.			
11863	1-2 of 2	All sheets are replacement sheets.			
11864	1-2 of 2	All sheets are replacement sheets.			
17328	1 of 1	Sheet replaced.			
17344	5 of 6	'FRONT VIEW' and 'REAR VIEW' - Clearance above roadway '5.1 Min.' revised to '5.35 Min.'			
17346	4 of 9	'ONE-WAY SIGNS ON DIVIDED HIGHWAY INTERSECTIONS', 'FIGURE 1' and 'FIGURE 2' - R6-3 signs added; and 'FIGURE 1' - Notation of R6-1 signs added.			
	6 of 9	'NOTES:' - Speed table revised to include 65 mph data.			
	9 of 9	'PAVEMENT MARKING FOR PUBLIC SIDEWALK CURB RAMPS IN REST AREAS' - Chevron color notations revised.			
117349	1 of 1	R6-3a sign added to intersection detail for 'median greater than 9 m' and notation added to intersection detail for 'median less than 9 m'.			
117352	1 of 2	'MULTI-LANE' - New detail. 'SKIP LINE WITH TWO WAY LEFT TURN LANE' and 'ALTERNATING SKIP LINE WITH TWO WAY LEFT TURN LANE', 'Bi-Directional Colorless/Red pavement markers' - Replaced former 'Mono- Directional Colorless' pavement markers.			
17355	1-12 of 12	Signs dimensional sizes corrected.			
	3 of 12	'FTP-30' - Legend and border color revised to black.			
	4 of 12	'FTP-28' and 'FTP-29' - Sign dimensions "A" and "B" corrected and tables revised.			
	8 of 12	'FTP-62' - Sign added.			
	10 of 12	'MOT 14' and 'MOT 15' - Signs added.			
17356	1-2 of 2	'TYPICAL SPAN WIRE INSTALLATION' - Clearance above roadway '5.1 Min.' revised to '5.35 Min.'			
17359	1 of 1	Sheet replaced.			
17500	2 of 3	Size of welded wire changed and 'NOTES:' - Note 5 added.			
	3 of 3	Size of welded wire changed and 'NOTES:' - Note 7 added.			
17501	1 of 1	Note 1 revised.			
17502	3 of 4	Surge arrester moved inside pole and ground rod notations added.			
	4 of 4	Welded wire size changed and 'NOTES:' - Note 7 added.			
17503	1 of 1	Diameter of foundation corrected and table, 'BOLT CIRCLE (m)' - Units corrected.			
17600	1 & 2, of 2	New index.			
17721	1 of 2	Trench width dimensions revised, backfill notations revised and conduit notation revised.			
17725	1 of 1	New Index.			
17727	1 & 2 of 2	All ground wire notations revised and clearance above roadway '5.1 Min.' revised to '5.35 Min.'. 'Notes:' - Note 4 revised.			
17733	1 of 1	All ground wire notations revised. 'Notes:' - Note 6 added.			
17736	1 of 1	'NOTES' - Note 4 added.			
17764	1 of 1	Ground rod notations revised. Pedestrian signal head height - '2.4 Min.' revised to '2.5 Min.'			
17784	1 of 2	Mounting height dimension of push button revised. Horizontal dimension from the pole to the sidewalk revised. 'NOTES:' - Notes 3 and 4 revised.			
17841	1 of 1	All cabinet mounting height dimension revised. 'Notes:' - Notes 2 and 3 revised.			
17882	1 & 2 of 4	Clearance above roadway '5.1 Min.' revised to '5.35 Min.'. 'SIGNAL PLACEMENT AT RAILROAD CROSSING (2-LANE DESIGN)' and 'SIGNAL PLACEMENT AT RAILROAD CROSSINGS (4-LANE DESIGN)' - Shoulder Pavement revised.			