

Registrar of Regulations	Date/Time filed with Registrar of Regulations
<i>AUTHORIZATION TO FILE DOCUMENTS INCORPORATED BY REFERENCE BY DESCRIPTION</i>	

① Agency: <u>Virginia Department of Transportation</u>	
② Regulation Numbers: <u>N/A</u> <u>24 VAC 30-72</u> Title of Regulation: <u>Access Management Regulations: Principal Arterials</u>	
③ Effective Date of Regulation: <u>December 2011</u>	
④ Name of Document Incorporated by Reference: <u>VDOT's Road & Bridge Standards, 2008, revised 2011</u>	
⑤ Attach a summary of the document incorporated by reference, including publication date and a copy of the cover page. <u>See attachments</u>	
⑥ Document available for inspection at the following location: <u>Va. Dept. of Transportation</u> <u>Location & Design Division</u> <u>1401 E. Broad St.</u> <u>Richmond, Va. 23219</u> <u>http://www.virginiadot.org/business/locdes/road-and-bridge-standards.asp</u>	⑦ Copy of referenced document may be procured from: <u>Va. Dept. of Transportation</u> <u>Location & Design Engineer</u> <u>1401 E. Broad St.</u> <u>Richmond, Va. 23219</u> <u>http://www.virginiadot.org/business/locdes/2008 road and bridge standards.asp</u>
⑧ Exemptions Claimed (Specific Reference): Administrative Process Act <u>N/A -see 8/10/93 OAG letter</u> Virginia Register Act <u>N/A -see 8/10/93 OAG letter</u> Virginia Code Commission Regulations <u>§ 3.3 (B) (1) - exceeds 500 pages in length; generally available to the public</u>	
Request submitted by: <u>Jo Anne P. Maxwell</u> <u>Agency Regulatory Coordinator</u> <u>11/28/11</u> <u>Title</u> <u>Date</u>	
Approved: <u>Jane D. Chaffin, Registrar of Regulations</u> <u>Date</u>	



COMMONWEALTH of VIRGINIA

Stephen D. Rosenthal
Attorney General

Office of the Attorney General
Richmond 23219

Supreme Court Building
101 North Eighth Street
Richmond, Virginia 23219
804 - 786 - 2071

August 10, 1993

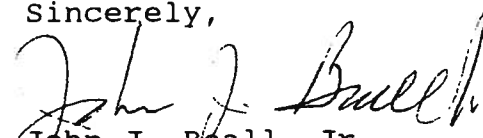
Mr. David L. Roberts
Management Services
Virginia Department of Transportation
1401 East Broad Street
Richmond, Virginia 23219

Dear Mr. Roberts:

Here is my analysis of the filing requirement with the Registrar. The exemptions noted, in some instances, might not survive a strong challenge, but are defensible. I recognize the Registrar may allow only a listing, in lieu of filing. That might work for Speed limits and Weight limits reductions.

With respect to the Department of Rail and Public Transportation, the Rail Corridor Preservation and Industrial Rail Access both need to be filed, but are exempt from APA public hearing process per § 9-6.14:4.1B(4). I imagine that the Transit side have some documents, too, but have not been called upon to review them.

Sincerely,


John J. Beall, Jr.
Senior Assistant Attorney General

56/157

Attachment

Location and Design

1. Road Design Manual, Vols. 1 & 2
2. Location & Design Instructional & Information Memoranda
3. Drainage Manual
4. Post-construction Manual
5. Public Involvement Policy & Procedures Manual
6. Road and Bridge Standards, Vols. 1 & 2*
7. CADD Users' Manual
8. Survey Manual
9. Consultant's Guide for Fee Proposal
10. ~~Procedures Manual for Procurement of Professional Services~~

~~All documents except Chapters 2, 3, 4, 9, 10 and 11 of the Procedures Manual for Procurement of Professional Services (Document 10) are internal, instructional documents.~~ The noted chapters, however, are close to having the "effect of law" and should be filed with the Registrar. The chapters, however, are exempt from APA per § 9-6.14:4.1B(2). See Chapters 2-4, 9-11.

SUMMARY OF DOCUMENT INCORPORATED BY REFERENCE

VDOT'S *ROAD & BRIDGE STANDARDS*

VDOT'S *Road & Bridge Standards*, Volumes I and II, contain technical civil engineering drawings, charts, and tables for use by road designers, contractors, and others involved in highway construction and maintenance operations. Although the cover page shows a publication date of 2008, both volumes are assessed for updates periodically, with individual plan sheets and errata memos issued as needed. Volume I contains drawings and data referring to topics such as drainage item details, curb, median, and entrance gutters, guardrail markers, and miscellaneous design tables. Volume II contains drawings and data referring to topics such as box culverts, bridge construction, landscaping, traffic control devices, and utilities. Tables of Contents and sample pages are attached for each volume. The total number of pages for both volumes is approximately 770 pages.

COMMONWEALTH OF VIRGINIA



2008

ROAD AND BRIDGE STANDARDS VOLUME I

STANDARD	TITLE	PAGE
EW-1, 1A	STANDARD ENDWALL FOR PIPE CULVERTS 12" - 36" CIRCULAR AND 23" X 14" - 53" X 34" ELLIPTICAL PIPES	101.01
EW-1PC, 1APC	PRECAST ENDWALL FOR PIPE CULVERTS 12" - 36" CIRCULAR AND 23" X 14" - 53" X 34" ELLIPTICAL PIPES	101.02
EW-2, 2A	STANDARD ENDWALL FOR PIPE CULVERTS 42" - 96" CIRCULAR AND 60" X 38" - 106" X 68" ELLIPTICAL PIPES	101.03
	STANDARD ENDWALL FOR PIPE CULVERTS 42" - 96" CIRCULAR	101.04
	STANDARD ENDWALL FOR PIPE CULVERTS 60" X 38" - 106" X 68" ELLIPTICAL PIPES	101.05
EW-2PC	PRECAST ENDWALL FOR 42" - 96" CIRCULAR PIPE CULVERTS	101.06
EW-2APC	PRECAST ENDWALL FOR 60" X 38" - 106" X 68" ELLIPTICAL PIPE CULVERTS	101.07
EW-2S	STANDARD ENDWALLS FOR 42" - 96" PIPE CULVERTS 30 AND 45 DEGREE SKEWS	101.08
	STANDARD ENDWALLS FOR 42" - 96" PIPE CULVERTS 30 AND 45 DEGREE SKEWS	101.09
EW-2SPC	PRECAST ENDWALLS FOR PIPE CULVERTS 42" - 96" PIPE 30 AND 45 DEGREE SKEW	101.10
EW-6	ENDWALL FOR MULTIPLE PIPE CULVERTS 12" - 36" PIPES	101.11
EW-6PC	PRECAST ENDWALLS FOR MULTIPLE PIPE CULVERTS 12" - 36" PIPE	101.12
EW-6S	ENDWALLS FOR MULTIPLE PIPE CULVERTS 12" - 36" PIPE 30 DEGREE SKEW	101.13
	ENDWALLS FOR MULTIPLE PIPE CULVERTS 12" - 36" PIPE 45 DEGREE SKEW	101.14
EW-6SPC	PRECAST ENDWALLS FOR MULTIPLE PIPE CULVERTS 12" - 36" PIPE 30 DEGREE SKEW	101.15
	PRECAST ENDWALLS FOR MULTIPLE PIPE CULVERTS 12" - 36" PIPE 45 DEGREE SKEW	101.16
EW-7	ENDWALLS FOR MULTIPLE PIPE CULVERTS 42" - 96" PIPE	101.17
EW-7PC	PRECAST ENDWALLS FOR MULTIPLE PIPE CULVERTS 42" - 96" PIPE	101.18
EW-7S	ENDWALLS FOR MULTIPLE PIPE CULVERTS 42" - 96" PIPE 30 DEGREE SKEW	101.19
	ENDWALLS FOR MULTIPLE PIPE CULVERTS 42" - 96" PIPE 45 DEGREE SKEW	101.20
EW-7S PC	PRECAST ENDWALLS FOR MULTIPLE PIPE CULVERTS 42" - 96" PIPE 45 DEGREE SKEW	101.21
EW-9	ENDWALLS FOR PIPE ARCHES 13" - 38" RISE	101.22
EW-9PC	PRECAST ENDWALLS FOR PIPE ARCHES 13" - 38" RISE	101.23
EW-10	ENDWALLS FOR MULTIPLE PIPE ARCHES 13" - 38" RISE	101.24
EW-10PC	PRECAST ENDWALLS FOR MULTIPLE PIPE ARCHES 13" - 38" RISE	101.25
EW-11	PIPE ENDWALL WITH LOAD-CARRYING GRATE FOR 12" - 60" PIPES	101.26
	PIPE ENDWALL WITH LOAD-CARRYING GRATE FOR 12" - 60" PIPES	101.27
	PIPE ENDWALL WITH LOAD-CARRYING GRATE FOR 12" - 60" PIPES	101.28
EW-11A	PIPE ENDWALL WITH LOAD-CARRYING GRATE FOR 12" - 24" PIPES	101.29
	PIPE ENDWALL WITH LOAD-CARRYING GRATE FOR 12" - 24" PIPES	101.30
EW-11APC	PRECAST PIPE ENDWALL WITH LOAD-CARRYING GRATE FOR 12" - 24" PIPES	101.31
EW-12	ENDWALL FOR PIPE UNDERDRAIN	101.32

INDEX OF SHEETS SECTION 100-DRAINAGE

VIRGINIA DEPARTMENT OF TRANSPORTATION



ROAD AND BRIDGE STANDARDS

REVISION DATE

SHEET 1 OF 6

100.01

STANDARD

TITLE

PAGE

ES-1	FLARED END-SECTION FOR 12" TO 60" CONCRETE PIPE CULVERTS	102.01
ES-1A	FLARED END-SECTION FOR 23" X 14" TO 53" X 34" ELLIPTICAL CONCRETE PIPE CULVERTS	102.02
ES-2	FLARED END-SECTION FOR 12" - 60" CORRUGATED PIPE CULVERTS	102.03
ES-3	FLARED END-SECTION FOR METAL PIPE ARCHES 13" - 47" RISE	102.04
	PRECAST UNIT ASSEMBLY DIAGRAM	103.01
	LEGEND AND GENERAL NOTES - PRECAST	103.02
T-DI-1	STANDARD PRECAST TOP UNITS	103.03
T-DI-2	STANDARD PRECAST TOP UNITS	103.04
T-DI-3, 4	STANDARD PRECAST TOP UNITS	103.05
T-DI-5	STANDARD PRECAST TOP UNITS	103.06
T-DI-7	STANDARD PRECAST TOP UNITS	103.07
T-MH-2	STANDARD PRECAST MANHOLE TOP UNITS	103.08
R-1, 2, 3	STANDARD PRECAST REDUCER AND RISER UNITS	103.09
B-1, 2	STANDARD PRECAST BASE UNITS	103.10
B-3	STANDARD PRECAST BASE UNITS MAX. DEPTH (H) 25'	103.11
B-4	CORRUGATED METAL TEE SECTION MAX. DEPTH (H) 25'	103.12
DI-1	STANDARD DROP INLET 12" - 24" PIPE: MAXIMUM DEPTH (H) -10'	103.13
DI-1A	STANDARD DROP INLET 12" - 24" PIPE: MAXIMUM DEPTH (H) 10' TO 20'	104.01
DI-2A, 2B, 2C	STANDARD CURB DROP INLET 12" - 24" PIPE: MAXIMUM DEPTH (H) -8'	104.02
	DIMENSIONS, NOTES, AND QUANTITIES	104.03
DI-2AA, 2BB, 2CC	STANDARD CURB DROP INLET 12" - 24" PIPE: DEPTH (H) 9' TO 20'	104.04
DI-2D, 2E, 2F	STANDARD CURB DROP INLET 30" - 48" PIPE: MAXIMUM DEPTH (H) -9'	104.05
	DIMENSIONS, NOTES, AND QUANTITIES	104.06
DI-2DD, 2EE, 2FF	STANDARD CURB DROP INLET 30" - 48" PIPE: DEPTH (H) -9' TO 20'	104.07
DI-3A, 3B, 3C	STANDARD CURB DROP INLET 12" - 30" PIPE: MAXIMUM DEPTH (H) -8'	104.08
	DIMENSIONS, NOTES, AND QUANTITIES	104.09
DI-3AA, 3BB, 3CC	STANDARD DROP INLET 12" - 30" PIPE: MAXIMUM DEPTH (H) 8' TO 20'	104.10
DI-3D, 3E, 3F	STANDARD DROP INLET (WITH UTILITY SPACE) 12" - 30" PIPE: MAXIMUM DEPTH (H) -8'	104.11
	DIMENSIONS, NOTES, AND QUANTITIES	104.12
DI-3DD, 3EE, 3FF	STANDARD CURB DROP INLET (WITH UTILITY SPACE) 12" - 30" PIPE: DEPTH (H) -8' TO 20'	104.13
		104.14



ROAD AND BRIDGE STANDARDS

SHEET 2 OF 6

REVISION DATE

100.02

INDEX OF SHEETS SECTION 100-DRAINAGE

VIRGINIA DEPARTMENT OF TRANSPORTATION

STANDARD	TITLE	PAGE
DI-4A, 4B, 4C	STANDARD CURB DROP INLET 36" - 48" PIPE: MAXIMUM DEPTH (H) = 8'	104.15
	DIMENSIONS, NOTES, AND QUANTITIES	104.16
DI-4AA, 4BB, 4CC	STANDARD CURB DROP INLET 36" - 48" PIPE: DEPTH (H) 8' TO 20'	104.17
DI-4D, 4E, 4F	STANDARD CURB DROP INLET (WITH UTILITY SPACE) 36" - 48" PIPE: MAXIMUM DEPTH (H) 8'	104.18
	DIMENSIONS, NOTES, AND QUANTITIES	104.19
DI-4DD, 4EE, 4FF	STANDARD CURB DROP INLET (WITH UTILITY SPACE) 36" - 48" PIPE: DEPTH (H) 8' TO 16'	104.20
DI-5	STANDARD DITCH DROP INLET	104.21
DI-7, 7A, 7B	STANDARD MEDIAN DROP INLET 12" - 42" PIPE	104.22
	COVER AND GUTTER DETAILS	104.23
DI-7, 7A, 7B	STANDARD DI-7, 7A OR 7B WITH FLUME CONNECTION 12" TO 36" PIPE	104.24
DI-9	15" PIPE TEE SECTION DROP INLET	104.25
DI-10G, 10H, 10I	CONCRETE MEDIAN BARRIER DROP INLET (WITH MB-7D) 12" TO 36" PIPE: DEPTH (H) = 20' MAX.	104.26
	DIMENSIONS, NOTES, AND QUANTITIES	104.27
DI-10J, 10K, 10L	CONCRETE MEDIAN BARRIER DROP INLET (WITH MB-8A) 12" TO 24" PIPE: DEPTH (H) = 20' MAX.	104.28
	DIMENSIONS, NOTES, AND QUANTITIES	104.29
DI-12, 12A	MULTIGRATE DROP INLET FOR PIPE SIZES 12" - 72"	104.30
	GRATE DETAILS	104.31
	DIMENSIONS, NOTES, AND QUANTITIES	104.32
DI-12B, 12C	MULTIGRATE DROP INLET FOR PIPE SIZES 12" - 36"	104.33
	GRATE DETAILS AND QUANTITIES	104.34
DI-13	SHOULDER SLOT INLET	104.35
	SHOULDER SLOT INLET	104.36
DI-1	METHOD OF OUTLET PIPE INSTALLATION FOR DI-13	104.37
DI-14A, 14B, 14C	CONCRETE MEDIAN BARRIER DROP INLET (TALL WALL WITH MB-12) 12" - 36" PIPE: DEPTH (H) = 20'-0" MAX.	104.38
	DIMENSIONS, NOTES, AND QUANTITIES	104.39
DI-14D, 14E, 14F	CONCRETE MEDIAN BARRIER DROP INLET (TALL WALL WITH MB-13) 12" - 24" PIPE: DEPTH (H) = 20'-0" MAX.	104.40
	CONCRETE MEDIAN BARRIER DROP INLET (TALL WALL WITH MB-13) 12" - 24" PIPE: DEPTH (H) = 20'-0" MAX.	104.41
DI-MB	CONSTRUCTION METHOD FOR CONCRETE MASONRY BLOCK CURB DROP INLET	104.42
IC-2	STANDARD INLET FRAME AND COVER	105.01
	STANDARD INLET FRAME AND COVER	105.02
	PRECAST INLET FRAME AND COVER	105.03

INDEX OF SHEETS SECTION 100-DRAINAGE

VIRGINIA DEPARTMENT OF TRANSPORTATION



ROAD AND BRIDGE STANDARDS

REVISION DATE

SHEET 3 OF 6

100.03

STANDARD	TITLE	PAGE
MH-1	MANHOLE FOR 12" TO 48" PIPE CULVERT	106.01
	STANDARD MANHOLE FRAME AND COVER	106.02
	STANDARD MANHOLE FRAME AND COVER	106.03
	STANDARD MANHOLE FRAME AND COVER	106.04
MH-1A	STANDARD MANHOLE FRAME AND COVER	106.05
	STANDARD MANHOLE FRAME AND COVER	106.06
MH-2	PRECAST MANHOLE	106.07
IS-1	METHOD OF SHAPING MANHOLE AND INLET CULVERTS	106.08
ST-1	STANDARD STEP	106.09
JB-1	JUNCTION BOX CHAMBER DETAILS FOR 48" - 72" PIPE CULVERTS	106.10
	JUNCTION BOX DETAILS FOR ANGULAR CONNECTIONS OF 48" - 72" PIPE CULVERTS	106.11
	JUNCTION BOX TOWER DETAILS FOR 48" - 72" PIPE CULVERTS	106.12
	JUNCTION BOX DISPLACEMENT QUANTITIES FOR 48" - 72" PIPE CULVERTS	106.13
SL-1	TYPICAL CONCRETE SAFETY SLAB FOR DROP INLETS, MANHOLES, AND JUNCTION BOXES	106.14
DSB-1	DRAINAGE STRUCTURE BEDDING FOR DROP INLETS, MANHOLES, AND JUNCTION BOXES	106.15
PB-1	INSTALLATION OF PIPE CULVERTS AND STORM SEWERS	107.00
	INSTALLATION OF PIPE CULVERTS AND STORM SEWERS CIRCULAR PIPE BEDDING AND BACKFILL - METHOD "A"	107.01
	INSTALLATION OF PIPE CULVERTS AND STORM SEWERS ELLIPTICAL PIPE BEDDING AND BACKFILL - METHOD "A"	107.02
	INSTALLATION OF PIPE CULVERTS AND STORM SEWERS PIPE ARCH BEDDING AND BACKFILL	107.03
PC-1	INSTALLATION OF BOX CULVERTS BEDDING AND BACKFILL	107.04
	CONCRETE PIPE - CLASS TABLE FOR H-20 LIVE LOAD	107.05
	ELLIPTICAL CONCRETE PIPE - TABLE FOR H-20 LIVE LOAD	107.06
	CORRUGATED STEEL PIPE - HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD	107.07
	CORRUGATED ALUMINUM ALLOY PIPE - HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD	107.08
	CORRUGATED ALUMINUM ALLOY PIPE - HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD	107.09
	CORRUGATED STEEL PIPE ARCH - HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD	107.10
	CORRUGATED ALUMINUM ALLOY PIPE ARCH - HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD	107.11
	STRUCTURAL PLATE STEEL PIPE - HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD	107.12
	STRUCTURAL PLATE ALUMINUM ALLOY PIPE - HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD	107.13
	STRUCTURAL PLATE STEEL PIPE ARCH - HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD	107.14
	STRUCTURAL PLATE STEEL PIPE ARCH - HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD	107.15
	STRUCTURAL PLATE ALUMINUM ALLOY PIPE ARCH - HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD	107.16
	ALUMINUM SPIRAL RIB PIPE - HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD	107.17
	STEEL SPIRAL RIB PIPE - HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD	107.18
	CAST IRON PIPE - STRENGTH TABLE FOR H-20 LIVE LOAD	107.19
	VITRIFIED CLAY AND PLASTIC PIPE - MAXIMUM COVER TABLE FOR H-20 LIVE LOAD	107.20
	ALLOWABLE PIPE CRITERIA FOR CULVERTS AND STORM SEWERS	107.21 & 107.22
ROAD AND BRIDGE STANDARDS SHEET 4 OF 6 100.04 REVISION DATE INDEX OF SHEETS SECTION 100-DRAINAGE VIRGINIA DEPARTMENT OF TRANSPORTATION VDOT		

STANDARD	TITLE	PAGE
PP-1	DETAILS FOR BACKFILLING ABANDONED CULVERTS	107.23
UD-1	STANDARD GROUNDWATER UNDERDRAIN	108.01
UD-2	PIPE UNDERDRAIN FOR USE WITH RAISED GRASS MEDIAN STRIPS	108.02
UD-3	STANDARD SIDEWALK UNDERDRAIN	108.03
CD-1	STANDARD COMBINATION UNDERDRAINS (AT LOWER END OF CUTS)	108.04
CD-2	STANDARD COMBINATION UNDERDRAINS (AT GRADE SAGS AND BRIDGE APPROACHES)	108.05
UD-4	STANDARD PAVEMENT EDGEDRAIN	108.06
UD-5	PREFABRICATED GEOCOMPOSITE RETROFIT PAVEMENT EDGEDRAIN	108.07
UD-7	STANDARD RETROFIT EDGEDRAIN	108.08
PG-2A	STANDARD PAVED DITCHES	108.09
PG-3	STANDARD RIPRAP AND SLOPE PROTECTION	109.01
PG-4	STANDARD PAVED FLUME FOR 12" - 24" PIPE CULVERTS	109.02
PG-5	STANDARD PAVED DITCHES	109.03
PG-6A, 6B	STANDARD PRECAST PAVED DITCHES	109.04
PG-7	DITCH FLUME CONNECTOR	109.05
SB-1	STANDARD SPRING BOX	109.06
SB-1 PC	PRECAST SPRING BOX	110.01
EG-1, 1A	STANDARD ENERGY DISSIPATOR FOR USE WITH PAVED FLUME	110.02
EG-1, 1A PC	PRECAST ENERGY DISSIPATOR	111.01
PS-2	STANDARD PIPE SPILLOUT FOR 12" - 18" PIPE CULVERTS	111.02
PS-3	STANDARD PIPE SPILLOUT FOR 21" - 30" PIPE CULVERTS	112.01
EC-1	CULVERT OUTLET PROTECTION	112.02
EC-2	PROTECTIVE COVERING INSTALLATION CRITERIA	113.01
EC-3	SOIL STABILIZATION MAT DITCH INSTALLATION TYPE A OR B	113.02
	SOIL STABILIZATION CULVERT OUTLET PROTECTION INSTALLATION	113.03
	SOIL STABILIZATION MAT SLOPE INSTALLATION TYPE C	113.04
EC-4	ROCK CHECK DAMS TYPE I AND II	113.05
EC-5	TEMPORARY SILT BARRIERS	113.06
	TEMPORARY SILT BARRIERS	113.07
EC-6	INLET PROTECTION (TYPE A AND B)	113.08
	INLET PROTECTION (TYPE C)	113.09
		113.10

INDEX OF SHEETS SECTION 100-DRAINAGE

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT	
ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 5 OF 6
100.05	

	TYPICAL SECTION TRAP	PAGE
EC-7	DEWATERING BASIN	113.11
EC-8	TEMPORARY DIVERSION DIKE	113.12
EC-9	TEMPORARY BERM AND SLOPE DRAIN	113.13
EC-10	STABILIZED CONSTRUCTION ENTRANCE	113.14
EC-11	TEMPORARY DIVERSION CHANNEL	113.15
EC-12	RIPRAP WEIRS: LOW FLOW DIVERSION FOR MULTIPLE LINE CULVERTS	113.16
EC-13	TEMPORARY VEHICULAR WATERCOURSE CROSSING	113.17
EC-14	STORMWATER MANAGEMENT DRAINAGE STRUCTURE	113.18
SWM-1	PRECAST STORMWATER MANAGEMENT DRAINAGE STRUCTURE	114.01
	STORMWATER MANAGEMENT DRAINAGE STRUCTURE - GRATE DETAILS	114.02
	STORMWATER MANAGEMENT (SWM) DETAILS	114.03
	STORMWATER MANAGEMENT (SWM) DETAILS	114.04
	STORMWATER MANAGEMENT (SWM) DETAILS	114.05
	STORMWATER MANAGEMENT (SWM) DETAILS	114.06
	STORMWATER MANAGEMENT (SWM) DETAILS	114.07
	STORMWATER MANAGEMENT (SWM) DETAILS	114.08



ROAD AND BRIDGE STANDARDS

SHEET 6 OF 6 REVISION DATE

100.06 04/09

INDEX OF SHEETS
SECTION 100-DRAINAGE
VIRGINIA DEPARTMENT OF TRANSPORTATION

STANDARD	TITLE	PAGE
CG-2	STANDARD 6" CURB	201.01
CG-3	STANDARD 4" CURB	201.02
CG-6	COMBINATION 6" CURB AND GUTTER	201.03
CG-7	COMBINATION 4" CURB AND GUTTER	201.04
MC-3, 3A	ASPHALT CONCRETE CURB AND MEDIAN (FOR TEMPORARY OR PERMANENT INSTALLATION)	201.05
MC-3B, 3C	ASPHALT CONCRETE CURB AND MEDIAN (FOR TEMPORARY OR PERMANENT INSTALLATION)	201.06
MC-4	ASPHALT CURB AND GUTTER (ASPHALT PAVING UNDER GUARDRAIL)	201.07
	ASPHALT CURB AND GUTTER (ASPHALT PAVING UNDER GUARDRAIL)	201.08
MC-1	CONCRETE MEDIAN CURB	202.01
MS-1	STANDARD SOLID CONCRETE RAISED MEDIAN STRIP	202.02
MS-1A	STANDARD SOLID CONCRETE RAISED MEDIAN STRIP	202.03
MS-2	STANDARD RAISED GRASS MEDIAN STRIP	202.04
MS-4	STANDARD RAISED ASPHALT MEDIAN (WITH P.C. CONCRETE CURB)	202.05
CG-9A	STANDARD ENTRANCE GUTTER WITH FLARED OPENING (FOR USE ACROSS SIDEWALK)	203.01
CG-9B	STANDARD ENTRANCE GUTTER (FOR USE WITH UNPAVED SPACE BETWEEN CURB AND GUTTER)	203.02
CG-9D	STANDARD ENTRANCE GUTTER	203.03
CG-11	METHOD OF TREATMENT (CONNECTION FOR STREET INTERSECTIONS)	203.04
CG-12	CG-12 DETECTABLE WARNING SURFACE (GENERAL NOTES)	203.05
	CG-12 DETECTABLE WARNING SURFACE (TYPE A PERPENDICULAR APPLICATION)	203.06
	CG-12 DETECTABLE WARNING SURFACE (TYPE B PARALLEL APPLICATION)	203.07
	CG-12 DETECTABLE WARNING SURFACE (TYPE C PARALLEL & PERPENDICULAR APPLICATION)	203.08
	CG-12 DETECTABLE WARNING SURFACE (TYPE M)	203.08A
CG-13	COMMERCIAL ENTRANCE (HEAVY TRUCK TRAFFIC ANTICIPATED)	203.09

INDEX OF SHEETS SECTION 200-CURBS AND ENTRANCES

VIRGINIA DEPARTMENT OF TRANSPORTATION

STANDARD	TITLE	PAGE
PR-2	PLAIN AND REINFORCED CONCRETE PAVEMENT SHOWING REINFORCEMENT, LONGITUDINAL AND TRANSVERSE JOINTS	301.01
	PLAIN AND REINFORCED CONCRETE PAVEMENT SHOWING REINFORCEMENT, LONGITUDINAL AND TRANSVERSE JOINTS	301.02
	PLAIN AND REINFORCED CONCRETE PAVEMENT SHOWING REINFORCEMENT, LONGITUDINAL AND TRANSVERSE JOINTS	301.03
	STANDARD LOAD TRANSFER ASSEMBLY CONTRACTION JOINT	301.04
	STANDARD LOAD TRANSFER ASSEMBLY EXPANSION JOINT	301.05
PR-3	8" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT (WIRE MESH REINFORCEMENT)	301.06
	8" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT (STEEL BAR REINFORCEMENT)	301.07
	8" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT (FOR USE WITH BAR OR WIRE MESH REINFORCEMENT)	301.08
	8" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT (LEAVE OUT JOINT DETAIL)	301.09
PR-4	9" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT (STEEL BAR REINFORCEMENT)	301.10
	9" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT (FOR USE WITH BAR REINFORCEMENT ONLY)	301.11
	9" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT (LEAVE OUT JOINT DETAIL)	301.12
PR-5	9" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.13
	9" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.14
	9" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.15
PR-6	10" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.16
	10" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.17
	10" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.18
PR-7	11" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.19
	11" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.20
	11" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.21
PR-8	12" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.22
	12" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.23
	12" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.24
PR-9	13" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.25
	13" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.26
	13" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE	301.27
XJ-1	BRIDGE APPROACH EXPANSION JOINT (FOR WIDENING OR MAINTENANCE OR EXISTING XJ-1 ONLY)	302.01
	BRIDGE APPROACH EXPANSION JOINT (INSTALLATION CRITERIA)	302.02
WP-1	METHOD OF WIDENING BRIDGE APPROACH PAVEMENT	303.01
WP-2	PAVEMENT WIDENING	303.02
RS-1	CONTINUOUS SHOULDER RUBBLE STRIPS	304.01
RS-3	CENTERLINE RUBBLE STRIPS	304.02
RS-4	CONTINUOUS SHOULDER RUBBLE STRIPS	304.03
RS-5	INTERMITTENT SHOULDER RUBBLE STRIPS	304.04
TPT-1	TRANSVERSE PAVEMENT TIE-IN	305.01

INDEX OF SHEETS SECTION 300-PAVEMENT ITEMS

VIRGINIA DEPARTMENT OF TRANSPORTATION

STANDARD	TITLE	PAGE
RW-2	CONCRETE GRAVITY RETAINING WALLS - LEVEL BACKFILL	401.01
RW-3	CONCRETE GRAVITY RETAINING WALLS INFINITE SURCHARGE AND DECK SURCHARGE - LOADED	401.02
RW-2, 3	SUGGESTED RUSTICATION TREATMENTS FOR RETAINING WALLS	401.03
CW-1	STANDARD REINFORCED CONCRETE CRIB WALL	402.01
	STANDARD REINFORCED CONCRETE CRIB WALL	402.02
INDEX OF SHEETS SECTION 400-RETAINING WALLS VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS REVISION DATE SHEET 1 OF 1		

STANDARD	TITLE	PAGE
GR-H0W	STANDARD W-BEAM GUARDRAIL HARDWARE	501.01
	STANDARD W-BEAM GUARDRAIL HARDWARE	501.02
	STANDARD THREE BEAM GUARDRAIL HARDWARE	501.03
GR-2, 2A	STANDARD BLOCKED-OUT W-BEAM GUARDRAIL (STRONG POST SYSTEM)	501.04
	STANDARD BLOCKED-OUT W-BEAM GUARDRAIL (STRONG POST SYSTEM) POST AND BLOCKOUT DETAILS	501.05
GR-3	CABLE GUARDRAILS	501.06
	CABLE GUARDRAILS	501.07
	CABLE GUARDRAILS	501.08
GR-6	TERMINAL TREATMENT FOR W-BEAM GUARDRAIL	501.09
	TERMINAL TREATMENT FOR W-BEAM GUARDRAIL	501.10
GR-7	BREAKAWAY CABLE TERMINAL - 4' FLARE	501.11
	BREAKAWAY CABLE TERMINAL - 4' FLARE	501.12
	BREAKAWAY CABLE TERMINAL - 4' FLARE (SITE PREPARATION)	501.13
GR-8, 8A, 8B, 8C	STANDARD W-BEAM GUARDRAIL (WEAK POST SYSTEM)	501.14
	STANDARD W-BEAM GUARDRAIL (WEAK POST SYSTEM)	501.15
GR-9	ALTERNATE BREAKAWAY CABLE TERMINAL - NO FLARE	501.16
	ALTERNATE BREAKAWAY CABLE TERMINAL - NO FLARE (SITE PREPARATION)	501.17
GR-10	GUARDRAIL AT LOW-FILL CULVERT	501.18
	GUARDRAIL AT LOW-FILL CULVERT	501.19
GR-11	TRAILING END TERMINAL TREATMENT	501.20
BGR-01	STANDARD BOX CULVERT GUARDRAIL (TEXAS T6)	501.22
	STANDARD BOX CULVERT GUARDRAIL (TEXAS T6)	501.23
	STANDARD BOX CULVERT GUARDRAIL (TEXAS T6)	501.24
GR-FOA-1	W BEAM GUARDRAIL-FIXED OBJECT ATTACHMENT FOR USE WITH VERTICAL FIXED OBJECTS AND GUARDRAIL (WOOD POSTS)	501.25
	W BEAM GUARDRAIL-FIXED OBJECT ATTACHMENT FOR USE WITH VERTICAL FIXED OBJECTS AND GUARDRAIL (STEEL POSTS)	501.26
	W BEAM GUARDRAIL-FIXED OBJECT ATTACHMENT RUBRAIL AND HARDWARE DETAILS	501.27
GR-FOA-2	W BEAM GUARDRAIL-FIXED OBJECT ATTACHMENT FOR USE BETWEEN SAFETY SHAPE AND AND GUARDRAIL (WOOD POSTS)	501.28
	W BEAM GUARDRAIL-FIXED OBJECT ATTACHMENT FOR USE BETWEEN SAFETY SHAPE AND AND GUARDRAIL (STEEL POSTS)	501.29
GR-FOA-2, & 4	W BEAM GUARDRAIL-FIXED OBJECT ATTACHMENT RUBRAIL AND HARDWARE DETAILS	501.30
GR-FOA-4	BLOCKED-OUT W-BEAM MEDIAN BARRIER - FIXED OBJECT ATTACHMENT FOR USE BETWEEN MB-7 AND MB-3	501.31
	BLOCKED-OUT W-BEAM MEDIAN BARRIER - FIXED OBJECT ATTACHMENT RUBRAIL AND HARDWARE DETAILS	501.32
FOA-CZ	W-BEAM GUARDRAIL INSTALLATION CRITERIA (FIXED OBJECT ATTACHMENT METHODS FOR CONSTRUCTION ZONES)	501.33
GR-INS	W-BEAM GUARDRAIL INSTALLATION CRITERIA	501.34
	W-BEAM GUARDRAIL INSTALLATION CRITERIA	501.35
	W-BEAM GUARDRAIL INSTALLATION CRITERIA	501.36
	W-BEAM GUARDRAIL INSTALLATION CRITERIA	501.37

INDEX OF SHEETS SECTION 500-GUARDRAIL, BARRIER AND FENCE

VIRGINIA DEPARTMENT OF TRANSPORTATION



ROAD AND BRIDGE STANDARDS

REVISION DATE

SHEET 1 OF 2

500.01

STANDARD	TITLE	PAGE
GR-INS	W BEAM GUARDRAIL INSTALLATION CRITERIA	501.38
	W BEAM GUARDRAIL INSTALLATION CRITERIA	501.39
	W BEAM GUARDRAIL INSTALLATION CRITERIA	501.40
	W BEAM GUARDRAIL AND MEDIAN BARRIER INSTALLATION CRITERIA	501.41
MB-3	BLOCKED-OUT W BEAM MEDIAN BARRIER	502.01
MB-5	STANDARD W BEAM MEDIAN BARRIER (WEAK POST SYSTEM)	502.02
	STANDARD W BEAM MEDIAN BARRIER (WEAK POST SYSTEM)	502.03
MB-7D, 7E, 7F	CONCRETE MEDIAN BARRIER	502.04
MB-7D PC	PRECAST TRAFFIC BARRIER CONCRETE SERVICE	502.05
	PRECAST TRAFFIC BARRIER CONCRETE SERVICE	502.06
MB-8A	CONCRETE MEDIAN BARRIER TYPE I, II OR III	502.07
	CONCRETE MEDIAN BARRIER TYPE I, II OR III	502.08
MB-9A	CAST IN PLACE CONCRETE MEDIAN BARRIER 12 FOOT TERMINAL SECTION	502.09
MB-9A, PC	PRECAST CONCRETE MEDIAN BARRIER 12 FOOT TERMINAL SECTION	502.10
MB-10A	TRAFFIC BARRIER SERVICE CONCRETE PARAPET (SINGLE FACE) (FOR TEMPORARY INSTALLATION ON BRIDGE DECK EXTERIOR)	502.11
	TRAFFIC BARRIER SERVICE CONCRETE PARAPET (SINGLE FACE) (FOR TEMPORARY INSTALLATION ON BRIDGE DECK EXTERIOR)	502.12
MB-11A	TRAFFIC BARRIER SERVICE CONCRETE PARAPET (DOUBLE FACE) (FOR TEMPORARY INSTALLATION ON BRIDGE DECK EXTERIOR)	502.13
	TRAFFIC BARRIER SERVICE CONCRETE PARAPET (DOUBLE FACE) (FOR TEMPORARY INSTALLATION ON BRIDGE DECK EXTERIOR)	502.14
	TRAFFIC BARRIER SERVICE CONCRETE PARAPET (DOUBLE FACE) (FOR TEMPORARY INSTALLATION ON BRIDGE DECK EXTERIOR)	502.15
MB-12A, B, C	CONCRETE MEDIAN BARRIER (TALL WALL)	502.16
	CONCRETE MEDIAN BARRIER (TALL WALL)	502.17
MB-13	CONCRETE MEDIAN BARRIER TYPE I, II OR III	502.18
	CONCRETE MEDIAN BARRIER TYPE I, II OR III	502.19
MB-INS	PRECAST CONCRETE MEDIAN BARRIER POSITIVE CONNECTION OPTIONS	502.20
	PRECAST CONCRETE MEDIAN BARRIER POSITIVE CONNECTION OPTIONS	502.21
	PRECAST CONCRETE MEDIAN BARRIER POSITIVE CONNECTION OPTIONS	502.22
	BUTTING TRAFFIC BARRIER SERVICE TO SINGLE FACE PARAPET SERVICE	502.23
	BUTTING TRAFFIC BARRIER SERVICE TO SINGLE FACE PARAPET SERVICE	502.24
	STANDARD FENCE GENERAL NOTES	503.01
FE-W1, W2	STANDARD FENCE WOVEN WIRE FABRIC	503.02
FE-B	STANDARD FENCE BARBED WIRE	503.03
FE-CL	STANDARD FENCE CHAIN LINK	503.04
FE-G	STANDARD FENCE GATES	503.05
FE-4	WATER GATES IN FENCE LINES	503.06
FE-6	STANDARD METHOD OF FENCE AND HANDRAIL GROUNDING	503.07
RM-1	STANDARD PLAN AND METHOD OF SETTING RIGHT-OF-WAY MONUMENTS	504.01
RM-2	STANDARD PLAN AND METHOD OF SETTING RIGHT-OF-WAY MONUMENTS	504.02

VDOT

ROAD AND BRIDGE STANDARDS

SHEET 2 OF 2 REVISION DATE

500.02

INDEX OF SHEETS

SECTION 500-GUARDRAIL, BARRIER AND FENCE

VIRGINIA DEPARTMENT OF TRANSPORTATION

STANDARD	TITLE	PAGE
S-1	STANDARD CONCRETE STEPS FOR 1½:1 SLOPES	601.01
	STANDARD CONCRETE STEPS FOR 1½:1 SLOPES	601.02
	STANDARD CONCRETE STEPS FOR 2:1 SLOPES	601.03
S-2	STANDARD CONCRETE STEPS FOR 2:1 SLOPES	601.04
	STANDARD CONCRETE STEPS FOR 2:1 SLOPES	601.05
HR-1	STANDARD HANDRAILS (METHOD OF LOCATING AND ERECTING)	601.06
LR-1	MINIMUM DESIGN FOR SMALL BOAT LAUNCHING RAMPS AT PUBLIC LANDINGS	601.07
SP-1	SETTLEMENT PLATE	602.01
SI-1,2,3	STANDARD PLAN FOR SIGN ISLANDS	602.02
PE-1	STANDARD PRIVATE ENTRANCES	602.03
CR-1	STANDARD MAINTENANCE CROSSOVER FOR USE ON FREEWAYS	603.01
RD-1	TURN OUT DETAIL	604.01
G-3	PRECAST CONCRETE CATTLE GUARD	604.02
G-3A	PRECAST CONCRETE CATTLE GUARD	605.01
NG-1	STORAGE FACILITY FOR NUCLEAR GAUGE	606.01
RU-1	METHODS OF UNDERCUTTING ROCK	607.01
SS-1	STANDARD METHOD OF SETTING AND MARKING SLOPE STAKES	608.01
SD-1	SIGHT DISTANCES ON HORIZONTAL CURVES HEIGHT OF EYE 3.5 FEET; HEIGHT OF OBJECT 2.0 AND 3.5 FEET	608.02
SD-2	SIGHT DISTANCE ON HORIZONTAL CURVES HEIGHT OF EYE 3.5 FEET; HEIGHT OF OBJECT 0.5	608.03
	SIGHT DISTANCE ON HORIZONTAL CURVES HEIGHT OF EYE 3.5 FEET; HEIGHT OF OBJECT 0.5	608.04
SD-3	SIGHT DISTANCES ON HORIZONTAL CURVES HEIGHT OF EYE 3.5 FEET; HEIGHT OF OBJECT 4.25 FEET	608.05
	SIGHT DISTANCES ON HORIZONTAL CURVES HEIGHT OF EYE 3.5 FEET; HEIGHT OF OBJECT 4.25 FEET	608.06
SD-4	SIGHT DISTANCES ON CREST VERTICAL CURVES HEIGHT OF EYE 3.5 FEET; HEIGHT OF OBJECT 2.00 FEET	608.07
	SIGHT DISTANCES ON CREST VERTICAL CURVES HEIGHT OF EYE 3.5 FEET; HEIGHT OF OBJECT 2.00 FEET	608.08
SD-5	SIGHT DISTANCES ON CREST VERTICAL CURVES HEIGHT OF EYE 3.5 FEET; HEIGHT OF OBJECT 3.50 FEET	608.09
	SIGHT DISTANCES ON CREST VERTICAL CURVES HEIGHT OF EYE 3.5 FEET; HEIGHT OF OBJECT 3.50 FEET	

INDEX OF SHEETS SECTION 600-MISC AND TABLES

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT	
ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 1 OF 1
	600.01

STANDARD	TITLE	PAGE
CS-1, 1A	TYPICAL METHODS OF GRADING SIDE SLOPES	701.01
CS-2	SUGGESTED DRAINAGE TREATMENT AT BEGINNING OF FILLS	701.02
CS-2A	TYPICAL METHODS OF GRADING SIDE SLOPES	701.03
CS-3	TYPICAL METHODS OF GRADING SIDE SLOPES	701.04
CS-3A	TYPICAL METHODS OF GRADING SIDE SLOPES	701.05
CS-3B	TYPICAL METHODS OF GRADING SIDE SLOPES	701.06
CS-4	TYPICAL METHODS OF GRADING SIDE SLOPES	701.07
CS-4A	TYPICAL METHODS OF GRADING SIDE SLOPES	701.08
CS-4B	TYPICAL METHODS OF GRADING SIDE SLOPES	701.09
CS-4C	TYPICAL METHODS OF GRADING SIDE SLOPES	701.10
CS-4E	TYPICAL METHODS OF GRADING SIDE SLOPES	701.11
CS-10	MINIMUM DESIGN CRITERIA FOR TEMPORARY DETOURS (MOT)	702.01
CS-11	STANDARD SHOULDER DESIGN FOR ALL SYSTEMS EXCEPT LOCAL ROADS AND STREETS	702.02
CS-12	STANDARD SHOULDER DESIGN FOR LOCAL ROADS AND STREETS	702.03
CS-13	STANDARD GRADED MEDIAN DESIGNS	702.04

INDEX OF SHEETS
SECTION 700-GEOMETRIC DESIGN
VIRGINIA DEPARTMENT OF TRANSPORTATION

ROAD AND BRIDGE STANDARDS
REVISION DATE

SHEET 1 OF 1
700.01

COMMONWEALTH OF VIRGINIA



2008

ROAD AND BRIDGE STANDARDS

VOLUME II

STANDARD	TITLE	PAGE
TC-5.01, 5.04	EXPLANATION OF TABLES AND INSTRUCTIONS FOR USE (GENERAL CONDITIONS)	802.01
TC-5.01, 5.04	TRANSITION CURVES FOR RURAL AND URBAN HIGHWAYS AND STREET CONDITIONS	802.02
TC-5.01	EXPLANATION OF TABLES AND INSTRUCTIONS FOR USE (RURAL CONDITIONS)	802.03
TC-5.01, 5.04	EXPLANATION OF TABLES AND INSTRUCTIONS FOR USE (URBAN CONDITIONS)	802.04
TC-5.01, 5.04	DETAIL FOR TRANSITIONED & RURAL CONDITION WITH PAVEMENT WIDENING	802.05
	DETAIL FOR NON-TRANSITION & URBAN AND RURAL CONDITIONS W/OUT PAVEMENT WIDENING	802.06
	DETAIL OF SUPERELEVATION ABOUT BASELINE	802.07
	DETAIL OF SUPERELEVATION ABOUT BASELINE	802.08
	EXAMPLE FOR FOUR LANE ROADWAYS	802.09
	CROSS SECTION - FOUR LANE ROADWAY	802.10
	METHOD OF APPLYING TC-5.01 ON COMPOUND CURVES RURAL CONDITIONS WITH PAVEMENT WIDENING	802.11
	METHOD OF APPLYING TC-5.01 ON REVERSE CURVES RURAL CONDITION WITH PAVEMENT WIDENING	802.12
	METHOD OF APPLYING TC-5.01 ON COMPOUND CURVES URBAN AND RURAL CONDITIONS WITHOUT PAVEMENT WIDENING	802.13
	METHOD OF APPLYING TC-5.01 ON REVERSE CURVES URBAN AND RURAL CONDITIONS WITHOUT PAVEMENT WIDENING	802.14
	CROWN TRANSITION / TANGENT RUNOUT (L) TABLE	802.15
	SUPERELEVATION RUNOFF (L) TABLE I (URBAN AND RURAL CONDITIONS WITHOUT PAVEMENT WIDENING)	802.16
	SUPERELEVATION RUNOFF (L) TABLE II (RURAL CONDITIONS WITH PAVEMENT WIDENING)	802.17
	DESIGN SUPERELEVATION RATES URBAN CONDITIONS	802.18
	DESIGN SUPERELEVATION RATES RURAL CONDITIONS	802.19
	SHEET INTENTIONALLY LEFT BLANK	802.20
	METHODOLOGIES FOR CALCULATING TC-5.01 VALUES	802.21
	CALCULATED TC-5.01 EXAMPLES	802.22
	SUMMARY OF STANDARD TC-5.04 U.S. URBAN LOW SPEED DESIGN FACTORS	802.23
	TRANSITION CURVES - URBAN 20 MPH DESIGN SPEED	802.24
	TRANSITION CURVES - URBAN 25 MPH DESIGN SPEED	802.25
	TRANSITION CURVES - URBAN 30 MPH DESIGN SPEED	802.26
	TRANSITION CURVES - URBAN 35 MPH DESIGN SPEED	802.27
	TRANSITION CURVES - URBAN 40 MPH DESIGN SPEED	802.28
	TRANSITION CURVES - URBAN 45 MPH DESIGN SPEED	802.29
	TRANSITION CURVES - URBAN 50 MPH DESIGN SPEED	802.30
	TRANSITION CURVES - URBAN 55 MPH DESIGN SPEED	802.31
	TRANSITION CURVES - RURAL 20 MPH DESIGN SPEED	802.32
	TRANSITION CURVES - RURAL 25 MPH DESIGN SPEED	802.33
	TRANSITION CURVES - RURAL 30 MPH DESIGN SPEED	802.34
	TRANSITION CURVES - RURAL 35 MPH DESIGN SPEED	802.35
	TRANSITION CURVES - RURAL 40 MPH DESIGN SPEED	802.36

INDEX OF SHEETS SECTION 800-TRANSITION CURVES

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

REVISION DATE SHEET 1 OF 2

800.01

STANDARD

TITLE

PAGE

TC-5.01

TRANSITION CURVES - RURAL 45 MPH DESIGN SPEED
 TRANSITION CURVES - RURAL 50 MPH DESIGN SPEED
 TRANSITION CURVES - RURAL 55 MPH DESIGN SPEED
 TRANSITION CURVES - RURAL 60 MPH DESIGN SPEED
 TRANSITION CURVES - RURAL 65 MPH DESIGN SPEED
 TRANSITION CURVES - RURAL 70 MPH DESIGN SPEED

802.37
 802.38
 802.39
 802.40
 802.41
 802.42



ROAD AND BRIDGE STANDARDS

SHEET 2 OF 2

REVISION DATE

800.02

INDEX OF SHEETS
 SECTION 800-TRANSITION CURVES

VIRGINIA DEPARTMENT OF TRANSPORTATION

STANDARD	TITLE	PAGE
BCB-DT	OVERSIZE BOX CULVERT STANDARD DETAILS	1001.01
	OVERSIZE BOX CULVERT STANDARD DETAILS	1001.02
BCB-02	OVERSIZE BOX CULVERT (0 TO 2 FT. FILLS)	1001.03
BCB-05	OVERSIZE BOX CULVERT (2 TO 5 FT. FILLS)	1001.04
BCB-10	OVERSIZE BOX CULVERT (5 TO 10 FT. FILLS)	1001.05
BCB-15	OVERSIZE BOX CULVERT (10 TO 15 FT. FILLS)	1001.06
BCB-20	OVERSIZE BOX CULVERT (15 TO 20 FT. FILLS)	1001.07
BCB-25	OVERSIZE BOX CULVERT (20 TO 25 FT. FILLS)	1001.08
BCB-30	OVERSIZE BOX CULVERT (25 TO 30 FT. FILLS)	1001.09
BCB-35	OVERSIZE BOX CULVERT (30 TO 35 FT. FILLS)	1001.10
BCB-40	OVERSIZE BOX CULVERT (35 TO 40 FT. FILLS)	1001.11
BCB-45	OVERSIZE BOX CULVERT (40 TO 45 FT. FILLS)	1001.12
BCB-50	OVERSIZE BOX CULVERT (45 TO 50 FT. FILLS)	1001.13
BCS-DT	SINGLE BOX CULVERT STANDARD DETAILS	1002.01
	SINGLE BOX CULVERT STANDARD DETAILS	1002.02
BCS-02	SINGLE BOX CULVERT (0 TO 2 FT. FILLS)	1002.03
	SINGLE BOX CULVERT (0 TO 2 FT. FILLS)	1002.04
BCS-05	SINGLE BOX CULVERT (2 TO 5 FT. FILLS)	1002.05
	SINGLE BOX CULVERT (2 TO 5 FT. FILLS)	1002.06
BCS-10	SINGLE BOX CULVERT (5 TO 10 FT. FILLS)	1002.07
	SINGLE BOX CULVERT (5 TO 10 FT. FILLS)	1002.08
BCS-15	SINGLE BOX CULVERT (10 TO 15 FT. FILLS)	1002.09
	SINGLE BOX CULVERT (10 TO 15 FT. FILLS)	1002.10
BCS-20	SINGLE BOX CULVERT (15 TO 20 FT. FILLS)	1002.11
	SINGLE BOX CULVERT (15 TO 20 FT. FILLS)	1002.12
BCS-25	SINGLE BOX CULVERT (20 TO 25 FT. FILLS)	1002.13
	SINGLE BOX CULVERT (20 TO 25 FT. FILLS)	1002.14
BCS-30	SINGLE BOX CULVERT (25 TO 30 FT. FILLS)	1002.15
	SINGLE BOX CULVERT (25 TO 30 FT. FILLS)	1002.16
BCS-35	SINGLE BOX CULVERT (30 TO 35 FT. FILLS)	1002.17
	SINGLE BOX CULVERT (30 TO 35 FT. FILLS)	1002.18
BCS-40	SINGLE BOX CULVERT (35 TO 40 FT. FILLS)	1002.19
	SINGLE BOX CULVERT (35 TO 40 FT. FILLS)	1002.20
BCS-45	SINGLE BOX CULVERT (40 TO 45 FT. FILLS)	1002.21
	SINGLE BOX CULVERT (40 TO 45 FT. FILLS)	1002.22

INDEX OF SHEETS SECTION 1000-BOX CULVERTS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT	
ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 1 OF 4
	1000.01

STANDARD	TITLE	PAGE
BCS-50	SINGLE BOX CULVERT (45 TO 50 FT. FILLS)	1002.23
	SINGLE BOX CULVERT (45 TO 50 FT. FILLS)	1002.24
BCD-DT	DOUBLE BOX CULVERT STANDARD DETAILS	1003.01
	DOUBLE BOX CULVERT STANDARD DETAILS	1003.02
	DOUBLE BOX CULVERT STANDARD DETAILS	1003.03
BCD-02	DOUBLE BOX CULVERT (0 TO 2 FT. FILLS)	1003.04
	DOUBLE BOX CULVERT (0 TO 2 FT. FILLS)	1003.05
BCD-05	DOUBLE BOX CULVERT (2 TO 5 FT. FILLS)	1003.06
	DOUBLE BOX CULVERT (2 TO 5 FT. FILLS)	1003.07
BCD-10	DOUBLE BOX CULVERT (5 TO 10 FT. FILLS)	1003.08
	DOUBLE BOX CULVERT (5 TO 10 FT. FILLS)	1003.09
BCD-15	DOUBLE BOX CULVERT (10 TO 15 FT. FILLS)	1003.10
	DOUBLE BOX CULVERT (10 TO 15 FT. FILLS)	1003.11
BCD-20	DOUBLE BOX CULVERT (15 TO 20 FT. FILLS)	1003.12
	DOUBLE BOX CULVERT (15 TO 20 FT. FILLS)	1003.13
BCD-25	DOUBLE BOX CULVERT (20 TO 25 FT. FILLS)	1003.14
	DOUBLE BOX CULVERT (20 TO 25 FT. FILLS)	1003.15
BCD-30	DOUBLE BOX CULVERT (25 TO 30 FT. FILLS)	1003.16
	DOUBLE BOX CULVERT (25 TO 30 FT. FILLS)	1003.17
BCD-35	DOUBLE BOX CULVERT (30 TO 35 FT. FILLS)	1003.18
	DOUBLE BOX CULVERT (30 TO 35 FT. FILLS)	1003.19
BCD-40	DOUBLE BOX CULVERT (35 TO 40 FT. FILLS)	1003.20
	DOUBLE BOX CULVERT (35 TO 40 FT. FILLS)	1003.21
BCD-45	DOUBLE BOX CULVERT (40 TO 45 FT. FILLS)	1003.22
	DOUBLE BOX CULVERT (40 TO 45 FT. FILLS)	1003.23
BCD-50	DOUBLE BOX CULVERT (45 TO 50 FT. FILLS)	1003.24
	DOUBLE BOX CULVERT (45 TO 50 FT. FILLS)	1003.25
BCD-DT	TRIPLE BOX CULVERT STANDARD DETAILS	1004.01
	TRIPLE BOX CULVERT STANDARD DETAILS	1004.02
	TRIPLE BOX CULVERT STANDARD DETAILS	1004.03
BCD-02	TRIPLE BOX CULVERT (0 TO 2 FT. FILLS)	1004.04
	TRIPLE BOX CULVERT (0 TO 2 FT. FILLS)	1004.05
BCD-05	TRIPLE BOX CULVERT (2 TO 5 FT. FILLS)	1004.06
	TRIPLE BOX CULVERT (2 TO 5 FT. FILLS)	1004.07
BCD-10	TRIPLE BOX CULVERT (5 TO 10 FT. FILLS)	1004.08
	TRIPLE BOX CULVERT (5 TO 10 FT. FILLS)	1004.09

VDOT

ROAD AND BRIDGE STANDARDS

SHEET 2 OF 4 REVISION DATE

1000.02

INDEX OF SHEETS SECTION 1000-BOX CULVERTS VIRGINIA DEPARTMENT OF TRANSPORTATION

STANDARD	TITLE	PAGE
BDP-3	BRIDGE CONSTRUCTION AND WIDENING DATE PLATES BRIDGE CONSTRUCTION AND WIDENING DATE PLATES	1101.01 1101.02
INDEX OF SHEETS SECTION 1100-MISC. STRUCTURE & BRIDGE VIRGINIA DEPARTMENT OF TRANSPORTATION		VDOT ROAD AND BRIDGE STANDARDS REVISION DATE SHEET 1 OF 1 1100.01

STANDARD	TITLE	PAGE
CF-1	CONTROLLER CABINET FOUNDATION AND CONDUIT	1301.10
CF-2	CONTROLLER CENTER CABINET FOUNDATION AND CABINET	1301.20
CF-3	CONTROLLER CABINET FOUNDATION AND CABINET	1301.30
CP-1	SIGNAL POLE DETAILS	1302.10
CP-2	SIGNAL POLE DETAILS	1302.20
PF-2	PEDESTAL POLE AND FOUNDATION	1302.30
SW-1	SIGNAL HEAD MOUNTING DETAILS	1303.10
SW-2	SIGNAL HEAD MOUNTING DETAILS	1303.20
SW-3	SIGNAL HEAD MOUNTING DETAILS	1303.30
SWB-12.3	SIGNAL HEAD MOUNTING DETAILS	1303.40
TA-1	TETHER WIRE DETAILS	1304.10
SMD-12	SIGN MOUNTING DETAILS	1305.10
WD-1	STEEL SIGNAL POLE WIRING AND RIGGING	1306.10
WD-2	WOOD POLE WIRING AND RIGGING	1306.20
PA-12.3	PEDESTRIAN ACTUATION	1307.10
SPD-5,6,7,8,9	PEDESTRIAN SIGNAL INDICATION	1308.10
FB-2	FLASHING BEACON	1309.10
PF-1	SIGNAL POLE FOUNDATION	1310.10
LF-1	LIGHTING POLE FOUNDATION	1310.20
LP-12	LIGHTING POLE	1311.10
LP-3	HIGH MAST LIGHT POLE	1311.20
SE-1	ELECTRICAL SERVICE	1312.10
SE-2	ELECTRICAL SERVICE	1312.20
SE-3	ELECTRICAL SERVICE	1312.30
SE-4	ELECTRICAL SERVICE	1312.40
SE-5	ELECTRICAL SERVICE	1312.50
SE-6	ELECTRICAL SERVICE	1312.60
SE-7	ELECTRICAL SERVICE	1312.70
SE-8	ELECTRICAL SERVICE	1312.80
SE-9	ELECTRICAL SERVICE	1312.90
SE-10	ELECTRICAL SERVICE	1312.91
SE-11	ELECTRICAL SERVICE	1313.10
CCW-1	CONTROL CENTER WIRING	1313.20
TD-1A,B,C	LOOP DETECTOR	1314.10
TS-1	TYPICAL ONE-WAY BRIDGE SIGNAL	1315.10
		1316.10

INDEX OF SHEETS SECTION 1300-TRAFFIC CONTROL

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

REVISION DATE

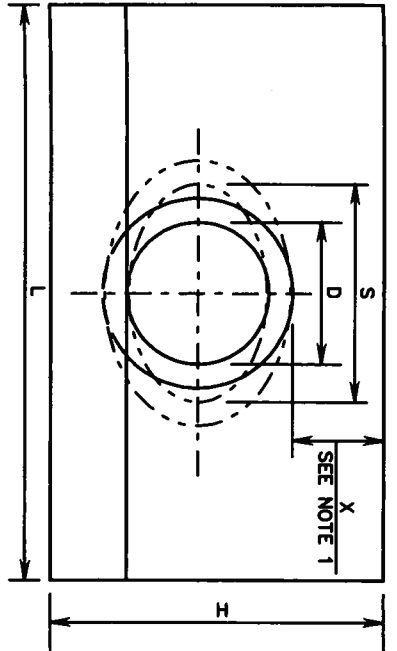
SHEET 1 OF 2

1300.01

STANDARD	TITLE	PAGE
UB-1	UTILITY BEDDING AND PROTECTION	1401.01
RB-1	REACTION BLOCKING	1402.01
	REACTION BLOCKING	1402.02
	REACTION BLOCK	1402.03
VOE-1	VERTICAL OFFSET	1403.01
EP-1	CONCRETE OR STEEL ENCASUREMENT PIPE	1404.01
LD-1	LEAK DETECTOR	1405.01
VB-1	VALVE BOX AND VALVE MANHOLE	1406.01
VA-1	VALVE BOX AND VALVE MANHOLE	1406.02
FH-1	FIRE HYDRANT	1407.01
WM-1	WATER METER AND BOX	1408.01
BOV-1	BLOW-OFF VALVE AND BOX	1409.01
ARV-1	AIR RELEASE VALVE AND BOX	1410.01
SMH-1	SANITARY SEWER MANHOLE	1411.01
SMH-1	SANITARY SEWER MANHOLE	1411.02
FWG-1	WATER AND SANITARY SEWER FACILITIES	1412.01
SGO-1	SEWER CLEANOUT	1413.01

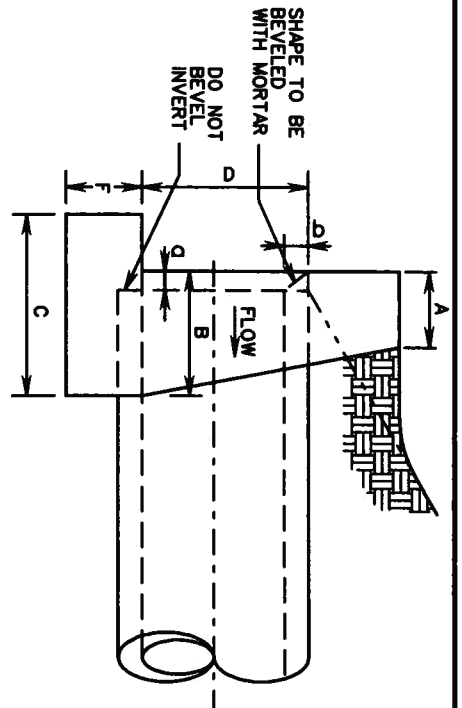
INDEX OF SHEETS SECTION 1400-UTILITIES

VIRGINIA DEPARTMENT OF TRANSPORTATION



NOTES:

1. "X" MAY BE REDUCED UNTIL "X" REACHES A MINIMUM OF 4" WHERE ENDWALL WOULD PROTRUDE ABOVE SHOULDER LINE. IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE, DITCH SLOPE, OR SHOULDER.
2. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
3. ALL CAST IN PLACE CONCRETE TO BE CLASS A3, FOR PRECAST SEE SHEET 101.02.
4. THIS STANDARD TO BE USED WITH STRAIGHT CROSSINGS AND ALL SKEWS TO 45°).
5. HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT OR WINGWALLS OCCUR



6. BEVEL EDGE IS REQUIRED ON THE HEADWALL AT THE INLET END OF THE CULVERT (WHERE THE FLOW ENTERS THE CULVERT).
7. HEADWALL AT THE OUTLET END OF THE CULVERT MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
8. ON SHALLOW FILLS WHERE ENDWALLS ARE 1' OR LESS BELOW SHOULDER LINE, THE TOP OF THE ENDWALL SHALL BE CONSTRUCTED PARALLEL TO THE GRADE OF THE ROAD.
9. 3/4" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.

ENDWALL FOR CIRCULAR PIPE

EW-1

DIAMETER OF PIPE CULVERT					
	12"	15"	18"	21" OR 24"	27" OR 30" 33" OR 36"
A	0'-6"	0'-8"	0'-9"	0'-11"	1'-0"
B	0'-11"	1'-1"	1'-3"	1'-6"	1'-9"
C	1'-4"	1'-7"	1'-9"	2'-2"	2'-6"
D	1'-0"	1'-3"	1'-6"	2'-0"	2'-6"
F	0'-6"	0'-8"	0'-9"	0'-9"	0'-9"
H	2'-3"	2'-11"	3'-2"	3'-9"	4'-3"
L	4'-0"	5'-0"	6'-0"	8'-0"	10'-0"
Q	0'-1/4"	0'-1/4"	0'-2"	0'-2 1/2"	0'-3 3/4"
b	0'-1"	0'-1 1/4"	0'-1 1/2"	0'-2"	0'-2 1/2"
CUBIC YARDS OF CONCRETE					
CONC. PIPE	0.241	0.492	0.697	1.319	2.067
C.M. PIPE	0.257	0.521	0.739	1.398	2.198
					3.145

ENDWALL FOR ELLIPTICAL PIPE

EW-1A

SIZE OF ELLIPTICAL PIPE CULVERT (SPAN x RISE)									
	23"x14"	30"x19"	34"x22"	38"x24"	42"x27"	45"x29"	49"x32"	53"x34"	
A	0'-8"	0'-9"	0'-10"	0'-11"	0'-11"	1'-0"	1'-0"	1'-0"	
B	1'-2"	1'-5"	1'-6"	1'-8"	1'-9"	1'-10"	1'-11"	1'-11"	
C	1'-8"	1'-11"	2'-1"	2'-4"	2'-5"	2'-7"	2'-8"	2'-9"	
D	1'-2"	1'-7"	1'-10"	2'-0"	2'-3"	2'-5"	2'-8"	2'-10"	
F	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	
H	2'-10"	3'-3"	3'-7"	3'-9"	4'-0"	4'-2"	4'-5"	4'-7"	
L	5'-5"	7'-2"	8'-6"	9'-2"	10'-2"	10'-11"	12'-1"	12'-11"	
S	1'-11"	2'-6"	2'-10"	3'-2"	3'-6"	3'-9"	4'-1"	4'-5"	
Q	0'-2 1/2"	0'-3 1/4"	0'-3 1/2"	0'-4"	0'-4 1/2"	0'-4 3/4"	0'-5"	0'-5 1/2"	
b	0'-2"	0'-2 1/2"	0'-2 3/4"	0'-3"	0'-3 1/2"	0'-3 3/4"	0'-4"	0'-4 1/2"	
CUBIC YARDS OF CONCRETE									
CONC. PIPE	0.502	0.855	1.236	1.500	1.811	2.101	2.512	2.801	

SPECIFICATION REFERENCE

105
302

STANDARD ENDWALL FOR PIPE CULVERTS 12" - 36" CIRCULAR AND 23" x 14" - 53" x 34" ELLIPTICAL PIPES

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

REVISION DATE

SHEET 1 OF 1

101.01