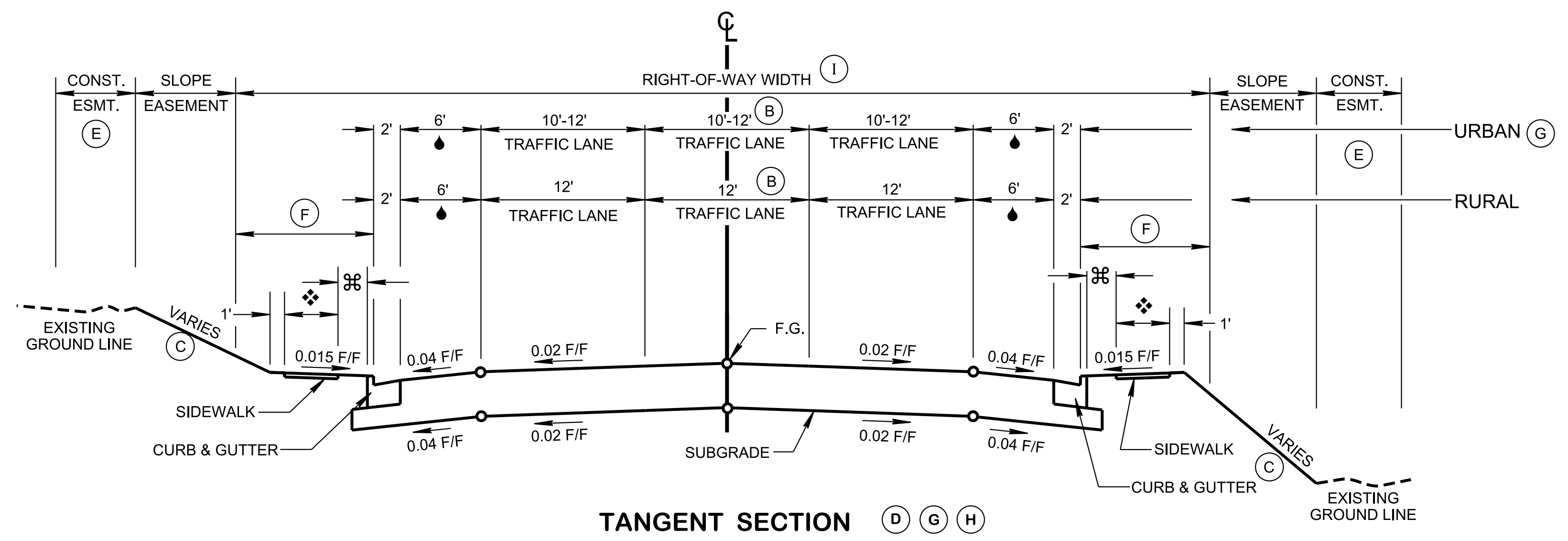
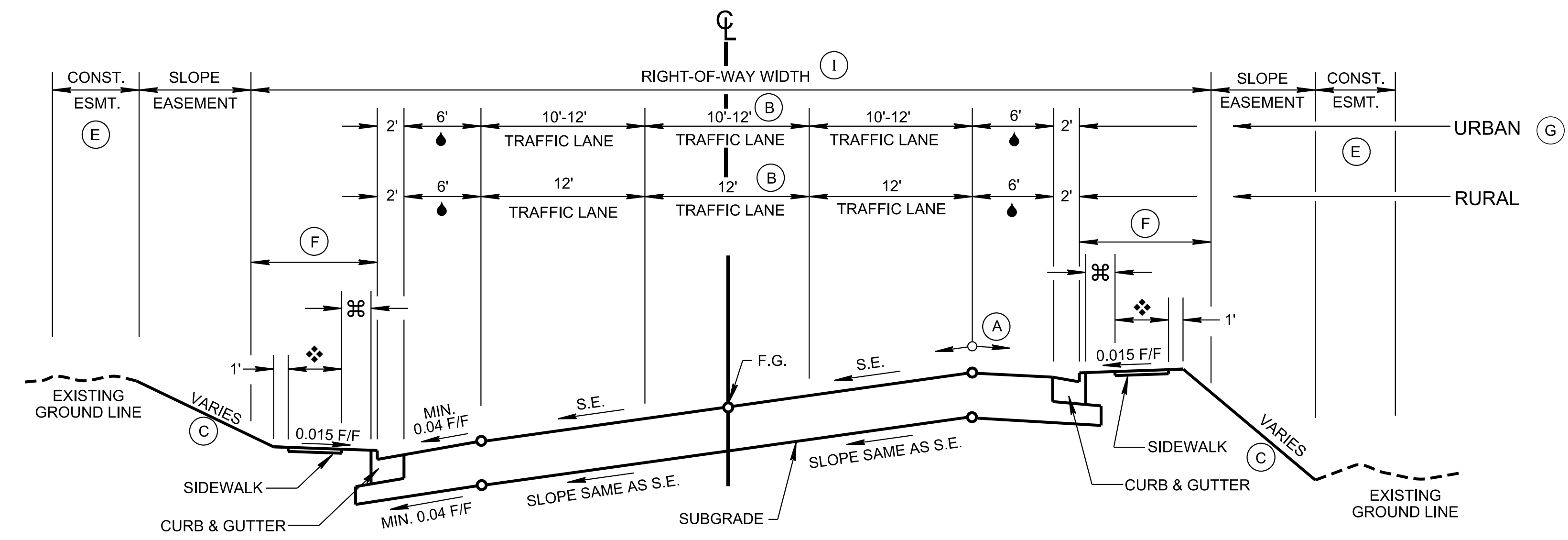


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 P:\StandDraw\DESIGN STANDARDS\Library\Standard Roadway Drawings - CURRENT\In Progress\10-100.00 Roadway Design Standards\IP100.03 RD11 Typical Sections and Design Criteria



TANGENT SECTION (D) (G) (H)



SUPERELEVATED SECTION (D) (G) (H)

LEGEND

- ⌘ GRASS STRIP VARIES (FOR LATERAL OFFSETS FOR SIDEWALK AND SHARED USE PATH SEE STD. DWG. MM-TS-2)
- ⌘ SIDEWALK VARIES (5' MIN.) (FOR LATERAL OFFSETS FOR SIDEWALK AND SHARED USE PATH SEE STD. DWG. MM-TS-2) (FOR DETAILS FOR CONCRETE SIDEWALK SEE STD. DWG. MM-SW-1)
- SHOULDER (FOR BIKE ACCOMMODATION DESIGN GUIDANCE SEE STD. DWG. MM-TS-1)

DESIGN NOTES

- (A) THE SLOPES OF THE SHOULDER AND ROADWAY PAVEMENT SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 7%.
- (B) THE DESIRABLE LANE WIDTH IN INDUSTRIAL AREAS WITH HEAVY TRUCK TRAFFIC IS 14 FEET.
- (C) ON URBAN PROJECTS THE BACKSLOPE AND FORESLOPE DESIGN WILL VARY FROM PROJECT TO PROJECT, AS A GENERAL RULE USE THE FOLLOWING:

3:1 SLOPES OR FLATTER ARE DESIRABLE AND 2:1 SLOPES ARE APPLICABLE IN AREAS WHERE RIGHT-OF-WAY RESTRICTIONS OR COST WARRANTS A STEEPER THAN 3:1 SLOPE. THE MAXIMUM SLOPE IN REGION IV IS 3:1.
- (D) THESE TYPICAL SECTIONS WERE DEVELOPED FOR COLLECTORS AND ARTERIALS ROADS WITH DESIGN SPEEDS 55 MILES PER HOUR AND LOWER. IF A CONTINUOUS TWO WAY WITH LEFT TURN LANE (CTWLTL) IS NEEDED ABOVE 55 MILES PER HOUR OR, THE DESIGNER WILL REFER TO THE PROPER RD11-TS-SERIES SHEET FOR TYPICAL SECTION REQUIREMENTS.
- (E) 10 FEET MINIMUM DESIRABLE.
- (F) 10' MINIMUM RIGHT-OF-WAY WIDTH IS REQUIRED BEHIND FACE OF CURB. WHEN THE BACKSIDE OF THE SIDEWALK IS 9' OR MORE FROM THE FACE OF THE CURB, RIGHT-OF-WAY SHALL EXTEND MINIMUM 1' BEHIND THE SIDEWALK.
- (G) **URBAN ROADWAYS CROSS SECTIONAL ELEMENTS:**

FOR INFORMATION REGARDING WIDTH OF TRAVELED WAY, SHOULDERS, PARKING LANES, MEDIANS, CURBS, AND OTHER CROSS-SECTIONAL ELEMENTS FOR LOCAL ROADS, REFER TO PAGES 5-13 THROUGH 5-16 AND FOR COLLECTOR ROADS, REFER TO PAGES 6-13 THROUGH 6-16.
- (H) **URBAN ROADWAYS GENERAL DESIGN CONSIDERATIONS:**

FOR INFORMATION REGARDING DESIGN SPEED, ALIGNMENT, GRADES, SUPERELEVATION, SIGHT DISTANCE, AND OTHER DESIGN CONSIDERATIONS FOR LOCAL ROADS, REFER TO PAGES 5-11 THROUGH 5-13 AND FOR COLLECTOR ROADS, REFER TO PAGES 6-11 THROUGH 6-13.
- (I) **SERVICE APPURTENANCE** (LARGE SIGNS STRUCTURES, SIGNAL, LUMINARY AND UTILITY POLES) SHALL BE PLACED OUTSIDE THE PEDESTRIAN ACCESSIBLE SPACE, PREFERABLE OUTSIDE THE SIDEWALK AREA AND INSIDE RIGHT-OF-WAY.

GENERAL NOTES

- (1) FOR SPECIFIC CONDITIONS NOT COVERED ON THIS SHEET, REFERENCE SHOULD BE MADE TO A POLICY OF GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" AASHTO, 2011 (GREEN BOOK).
- (2) REFERENCE SHOULD ALSO BE MADE TO THE AASHTO "ROADSIDE DESIGN GUIDE," AASHTO, 2011.
- (3) THE DESIGN OF BRIDGES, CULVERTS, WALLS, TUNNELS AND OTHER STRUCTURES SHOULD BE IN ACCORDANCE WITH PRINCIPALS OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE DESIGN LOADING SHOULD BE THE HL-93 CALIBRATED LIVE LOAD DESIGNATION. THE MINIMUM CLEAR WIDTH FOR NEW AND REHABILITATED BRIDGES SHALL BE EQUAL TO THE FULL WIDTH OF THE APPROACH ROADWAY, CURB-TO-CURB OR FULL SHOULDER WIDTH AS APPLICABLE.
- (4) FOR EXISTING BRIDGES TO REMAIN IN PLACE, THEY SHOULD HAVE ADEQUATE STRENGTH AND A WIDTH AT LEAST EQUAL TO THE WIDTH OF THE TRAVELED WAY PLUS 2-FEET CLEARANCE ON EACH SIDE. BRIDGES SHOULD BE CONSIDERED FOR ULTIMATE WIDENING OR REPLACEMENT IF THEY DO NOT PROVIDE AT LEAST 3-FEET CLEARANCE ON EACH SIDE OR BE HL-93 CALIBRATED LIVE LOAD CAPACITY. AS AN INTERIM MEASURE, ALL BRIDGES THAT ARE LESS THAN FULL WIDTH SHOULD BE CONSIDERED FOR SPECIAL NARROW BRIDGE TREATMENTS SUCH AS SIGNING AND PAVEMENT MARKING.
- (5) THIS TYPICAL SECTION IS DESIGNED TO ACCOMMODATE AN AVERAGE DAILY TRAFFIC OF 5,000 TO 12,500 VEHICLES PER DAY, WHICH IS CONSIDERED TO BE THE TRAFFIC VOLUME NEEDED TO JUSTIFY THE TWO-WAY LEFT TURN LANE (TWLTL) FOR A 2-LANE HIGHWAY. THE TYPICAL SECTION DESIGN FOR VOLUMES LESS THAN 5,000 VEHICLES PER DAY USES THE DESIGN STANDARDS SHOWN ON STANDARD DRAWINGS RD11-TS-1, RD11-TS-2 AND RD11-TS-3.
- (6) WHEN ENCOUNTERING MAJOR INTERSECTIONS, DO NOT EXTEND THE CONTINUOUS TWO-WAY LEFT TURN LANE (CTWLTL) UP TO THE INTERSECTION. TERMINATE THE CTWLTL IN ADVANCE OF THE INTERSECTION TO ALLOW DEVELOPMENT OF AN EXCLUSIVE LEFT-TURN LANE. MINOR INTERSECTIONS MAY NOT WARRANT AN EXCLUSIVE LEFT-TURN LANE. SEE STRIPING DETAILS SHOWN ON T-M-1 OR CURRENT EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
- (7) AT LOCATIONS WHERE RIGHT-OF-WAY IS LIMITED, REPURPOSING EXISTING TWO-LANE HIGHWAY TO THREE-LANE HIGHWAY THE EXISTING SHOULDER WIDTH MAY BE REDUCED AND THE ROADWAY LANE WIDTH TO ELEVEN (11) FEET UNDER THE FOLLOWING CONDITIONS:
 - (7a) THE DESIGN ADT IS 12,500 VEHICLES PER DAY OR LESS.
 - (7b) THE DESIGN SPEED IS 55 MILES PER HOUR OR LESS. FOR DESIGN SPEEDS BETWEEN 45 AND 55 MILES PER HOUR SLOPING CURBS ARE USED IN PLACE OF VERTICAL CURBS. SEE STANDARD DRAWING RP-SC-1.
 - (7c) THERE ARE RESTRICTED AND/OR LIMITED CLEARANCES FOR RIGHT-OF-WAY DUE TO THE EXISTING SOCIAL, ENVIRONMENTAL OR ECONOMIC CONDITIONS.
 - (7d) WHEN SUFFICIENT NUMBERS OF ACCIDENTS AND/OR DELAYS IN TRAFFIC EXIST DUE TO MID-BLOCK LEFT TURNS TO JUSTIFY A CONTINUOUS LEFT TURN LANE ON EXISTING TWO-LANE ROADWAY.
- (8) ABOVE GROUND UTILITIES SHOULD BE LOCATED BEHIND THE SIDEWALK AND CLOSE TO THE RIGHT-OF-WAY.
- (9) WHEN SIDEWALK IS LOCATED NEXT TO THE CURB, SIDEWALK WIDTH SHALL NOT INCLUDE THE SIX INCH WIDTH OF PROPOSED CURB. SIDEWALK SHALL BE A MINIMUM OF FIVE FEET WIDE.
- (10) ABOVE GROUND UTILITIES SHALL NOT BE PLACED IN THE GRASS STRIP.
- (11) IN URBAN AREAS THE GRASS STRIP SHOULD BE 3' WIDE. IN SUBURBAN AREAS THE GRASS STRIP SHOULD BE 5' WIDE.
- (12) SEE STANDARD DRAWING S-PL-6 & S-PL-6A FOR TYPICAL GUARDRAIL PLACEMENT.

STATE OF TENNESSEE
 STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS
2-LANE CURB & GUTTER
WITH CONTINUOUS
2-WAY LEFT-TURN LANE
WITH GRASS STRIPS