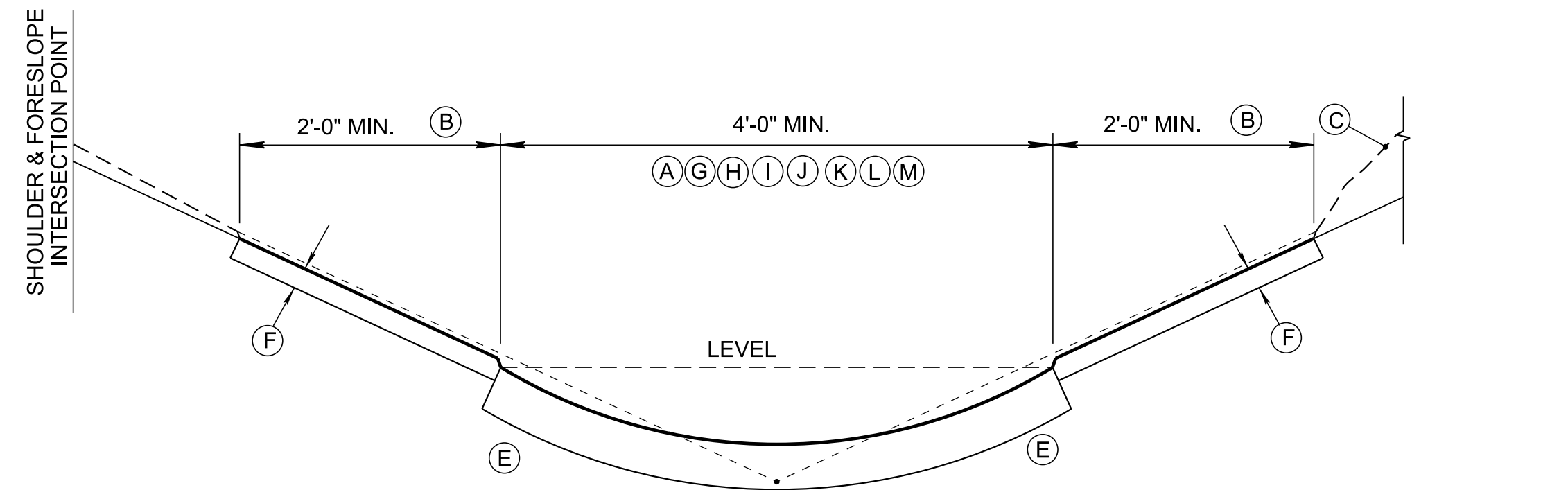
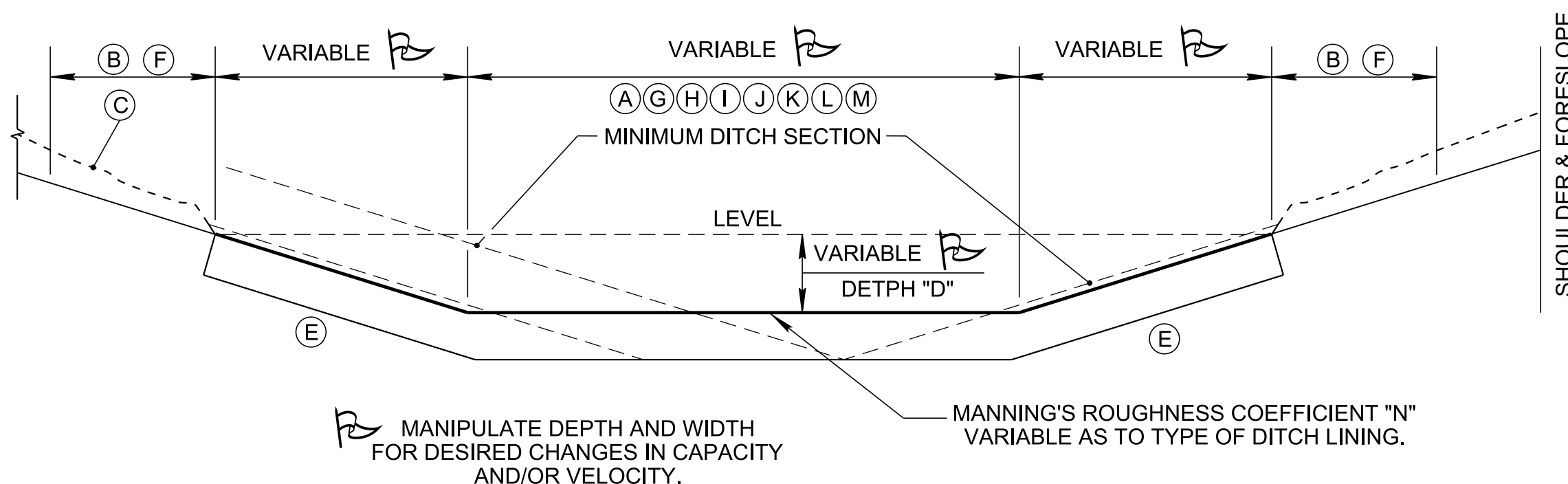


TRAVERSABLE DITCH ROUNDING DETAILS
FOR ROADSIDE DITCHES LOCATED INSIDE CLEAR ZONE
(DIMENSIONED FOR FIELD LAYOUT)



"V" DITCH DETAIL (D)
(MINIMUM CUT DITCHES SIMILAR EXCEPT FOR GEOMETRIC LAYOUT, ON LEFT SIDE OF THIS SHEET.)



TRAPEZOIDAL DITCH DETAIL (D)
SECTION SHOWING DITCH ADJUSTMENT FOR VARIATIONS IN HYDRAULIC REQUIREMENTS
SEE FIGURES 3-6 AND 3-7, ROADSIDE DESIGN GUIDE, 2011 FOR PREFERRED CHANNEL CROSS-SECTION.

DESIGN NOTES

- (A) CUT SLOPE DITCHES AND SPECIAL DITCHES AT THE TOE OF FILLS WITHIN THE CLEAR ZONE SHALL BE BASED UPON THIS GEOMETRICAL CONFIGURATION REGARDLESS OF THE TYPE OF DITCH LINING REQUIRED FOR EROSION RETARDANCE. IF HYDRAULIC REQUIREMENTS DICTATE A GREATER CAPACITY THAN THE MINIMUM SHOWN HERE, THE BOTTOM OF THE TRAPEZOID MAY BE WIDENED BUT THE CORNERS SHALL REMAIN ROUNDED. DITCHES OUTSIDE OF THE CLEAR ZONE OR ALONG FILL SLOPES STEEPER THAN 3:1 MAY BE VARIED AS REQUIRED TO MEET CONDITIONS AS DICTATED BY HYDRAULIC REQUIREMENTS AND TERRAIN, EXCEPT THAT DESIGN AND CONSTRUCTION ENGINEERS SHOULD STRIVE FOR AESTHETIC BLENDING OF ANY GRADING OR STRUCTURE REQUIRED FOR THE FUNCTIONING OF THE ROADWAY FACILITY.
- (B) 2'-0" MINIMUM SOD STRIP OR OTHER RECOMMENDED EROSION CONTROL MATERIAL SHALL BE PLACED ADJACENT TO CONCRETE-PAVED OR RIP-RAP DITCH BOTTOM LINING IN ACCORDANCE WITH SECTION 803 OF THE CURRENT TDOT STANDARD SPECIFICATIONS AND/OR CURRENT SPECIAL PROVISION(S). ON BACK SLOPES, MATERIAL MAY BE EXTENDED TO BLEND INTO EXISTING VEGETATION WHEN FEASIBLE, AS DETERMINED BY THE ENGINEER.
- (C) ALL SLOPES OR EXISTING GROUND DISTURBED BY CONSTRUCTION SHALL BE SEEDED IN ACCORDANCE WITH SECTION 801 OF THE CURRENT TDOT STANDARD SPECIFICATIONS AND/OR CURRENT SPECIAL PROVISION(S) REGARDING THE SAME, UNLESS OTHERWISE INDICATED ON PLANS.
- (D) FOR EXISTING GROUND, THE DESIGNER AND THE CONSTRUCTION ENGINEER SHOULD ENDEAVOR TO PLACE THE DITCH IN CUT UNLESS STEEP TERRAIN RENDERS THIS UNFEASIBLE.
- (E) FOR DITCH SUB-GRADE, THE SUB-GRADE SHALL BE PREPARED AND COMPACTED IN ACCORDANCE WITH SECTION 205 OF THE CURRENT STANDARD SPECIFICATIONS TO A DENSITY OF NOT LESS THAN 95 %, PROCTOR (AASHTO T-99). PAYMENT FOR PREPARATION AND COMPACTION OF THE DITCH SUB-GRADE WILL BE MADE UNDER ITEM 203-01, ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED), UNLESS OTHERWISE DESIGNATED ON THE PLANS.
- (F) THE SOD STRIP SHALL HAVE A UNIFORM THICKNESS OF NOT LESS THAN 1 INCH.
- (G) CONCRETE, RIP-RAP, SOD, TURF REINFORCEMENT MATTING, OR OTHER DITCH LINING. THE TYPE OF LINING FOR EACH INDIVIDUAL DITCH ALONG THE ROADWAY WILL BE DESIGNATED ON THE PLANS IN ACCORDANCE WITH SYMBOLS AS SHOWN ON STANDARD DRAWING RD-L-1 AND THE PLANS. DECISIONS REGARDING THE TYPE OF LINING TO BE SPECIFIED ON PLANS WILL BE MADE BY THE DESIGNER, BASED UPON THE TYPE THAT WILL BEST SATISFY THE HYDRAULIC REQUIREMENTS AT THE LEAST COST. SEE TDOT DRAINAGE MANUAL, CHAPTER 5 FOR GUIDANCE.
- (H) DESIGNS FOR THE SOD DITCH SHALL BE IN ACCORDANCE WITH THE TDOT DRAINAGE MANUAL, CHAPTER 5.
- (I) FOR DITCH LINER SELECTION, TURF REINFORCEMENT MATTING IS THE PREFERRED TYPE OF DITCH LINER. THE DESIGN OF CONCRETE DITCHES SHOULD BE AVOIDED WHENEVER POSSIBLE. SEE TDOT DRAINAGE MANUAL CHAPTER 5 FOR GUIDANCE ON DITCH LINER SELECTION. RIP-RAP OR CONCRETE DITCH LININGS SHOULD BE CONSIDERED ONLY AFTER THE ALLOWABLE DEPTHS COMBINED WITH WIDTH ADJUSTMENTS WITHIN FEASIBLE LIMITS ("FEASIBLE LIMITS" TO BE DETERMINED BY THE DESIGNER, BASED UPON RIGHT-OF-WAY OR OTHER CASE-BY-CASE SITUATIONS) HAVE BEEN STUDIED.
- (J) THE SUBGRADE OF THE DITCH SHALL BE GRADED SO THAT THE SOD STRIP SHALL BE 1/2" MINIMUM TO 1" MAXIMUM ABOVE THE CONCRETE STRIP, AND/OR THE SEEDED SLOPE.
- (K) IN ALL CONCRETE DITCHES, FORMED OR SAWED CONTRACTION JOINTS (1/4" WIDE AND 1" DEEP) WILL BE REQUIRED AT A MAXIMUM OF 20' INTERVALS AND ONE-HALF (1/2) TRANSVERSE PRE-MOLDED FIBER EXPANSION JOINTS WILL BE REQUIRED AT 60' INTERVALS, COST TO BE INCLUDED IN THE PRICE BID FOR THE PAY ITEM FOR PAVED DITCHES. SEE STANDARD DRAWING RP-J-9 FOR JOINT DETAILS.
- (L) WHEN CONCRETE DITCHES ARE USED, THE CONCRETE WILL BE 4" THICK.
- (M) WHEN RIP-RAP DITCHES ARE USED, THE TYPE AND THICKNESS OF RIP-RAP WILL BE SPECIFIED ON THE PLANS AND MUST BE PLACED OVER GEOTEXTILE FABRIC.
- (N) PAY ITEMS:

604-01.01	CLASS A CONCRETE (ROADWAY)	C.Y.	709-05.09	MACHINED RIP-RAP (CLASS C)	TON
709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON	740-10.03	GEOTEXTILE (TYPE III) (EROSION CONTROL)	S.Y.
709-05.08	MACHINED RIP-RAP (CLASS B)	TON	803-01	SODDING (NEW SOD)	S.Y.
703-01	CEMENT CONCRETE DITCH PAVING	C.Y.			

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

**ROADSIDE DITCH
DETAILS
FOR DESIGN
AND
CONSTRUCTION**

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NOT TO SCALE