STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.00-A	*TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA INDEX)*	*08/11/10*	*07/29/10*
MD 104.00-B	*TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA INDEX)*	*08/11/10*	*07/29/10*
MD 104.00-C	*TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA INDEX)*	*08/11/10*	*07/29/10*
MD 104.00-D	*TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA INDEX)*	*08/11/10*	*07/29/10*
MD 104.00-E	*TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA INDEX)*	*08/11/10*	*07/29/10*
MD 104.00-F	*TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA INDEX)*	*08/11/10*	*07/29/10*
MD 104.00-G	*TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA INDEX)*	*08/11/10*	*07/29/10*
MD 104.00-H	*TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA INDEX)*	*08/11/10*	*07/29/10*
MD 104.00-I	*TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA INDEX)*	*08/11/10*	*07/29/10*
MD 104.00-J	*TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA INDEX)*	*08/11/10*	*07/29/10*
MD 104.00-K	*TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA INDEX)*	*04/07/15*	*07/29/10*
MD 104.00-01	*GENERAL NOTES*	*02/19/24*	*11/16/23*
MD 104.00-02	*GENERAL NOTES*	*02/19/24*	*11/16/23*
MD 104.00-03	*GENERAL NOTES*	*02/19/24*	*11/16/23*
MD 104.00-04	*GENERAL NOTES*	*02/19/24*	*11/16/23*
MD 104.00-05	*GENERAL NOTES (ABBREVIATIONS)*	*02/23/18*	*06/01/17*
MD 104.00-06	*GENERAL NOTES (SIGNS)*	*08/11/10*	*07/29/10*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.00-07	*GENERAL NOTES (SIGNS)*	*08/11/10*	*07/29/10*
MD 104.00-08	*GENERAL NOTES (SIGNS & PORTABLE VARIABLE MESSAGE SIGNS-PVMS)*	*08/11/10*	*07/29/10*
MD 104.00-09	*GENERAL NOTES (PORTABLE VARIABLE MESSAGE SIGNS-PVMS, ARROW PANELS & CHANNELIZING DEVICES)*	*08/11/10*	*10/05/10*
MD 104.00-10	*GENERAL NOTES (CHANNELIZING DEVICES &PAVEMENT MARKINGS)*	*07/01/09*	*07/27/09*
MD 104.00-11	*GENERAL NOTES (PAVEMENT MARKINGS & FLAGGING)*	*07/01/09*	*07/27/09*
MD 104.00-12	*GENERAL NOTES*	*02/19/24*	*11/16/23*
MD 104.00-13	*GENERAL NOTES (VEHICLES & STRATEGIES FOR SAFE ENTRY/EXIT OF WORK ZONE VEHICLES TO/FROM THE WORK AREA)*	*08/20/14*	*08/11/14*
MD 104.00-14	*GENERAL NOTES (WORK HOUR RESTRICTIONS, TEMPORARY LIGHTING & PAVEMENT DROP-OFF)*	*08/11/10*	*07/29/10*
MD 104.00-16	*GENERAL NOTES (SIGHT DISTANCE & WORK ZONE SPEED LIMITS ALONG 65 AND 60 MPH ROADWAYS)*	*06/08/04*	*09/23/03*
MD 104.00-17	*GENERAL NOTES (WORK ZONE SPEED LIMITS ALONG 65 AND 60 MPH ROADWAYS & HIGHWAY/RAIL GRADE CROSSINGS)*	*08/11/10*	*07/29/10*
MD 104.00-18	*GENERAL NOTES*	*02/19/24*	*11/16/23*
MD 104.01-01	*ROADWAY/HIGHWAY TYPES*	*02/19/24*	*11/16/23*
MD 104.01-02	*SIGN SPACING CHART*	*08/11/10*	*07/29/10*
MD 104.01-03	*PROJECT LIMITS SIGNS*	*08/11/10*	*07/29/10*
MD 104.01-04	*GENERAL NOTES HAT AND SHOVEL SIGN – GREATER THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.01-05	*GENERAL NOTES HAT AND SHOVEL SIGN – LESS THAN OR EQUAL TO 40 MPH*	*08/11/10*	*07/29/10*
MD 104.01-06	*REGULATORY SPEED SIGNS*	*08/11/10*	*10/05/10*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.01-07	*REGULATORY SPEED SIGNS*	*08/11/10*	*10/05/10*
MD 104.01-08	*TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART*	*02/19/24*	*11/16/23*
MD 104.01-09	*TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART*	*02/19/24*	*11/16/23*
MD 104.01-10	*TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART*	*02/19/24*	*11/16/23*
MD 104.01-11	*TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART*	*02/19/24*	*11/16/23*
MD 104.01-11A	*TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART*	*02/19/24*	*11/16/23*
MD 104.01-12	*REGULATORY, WARNING AND SPECIAL SIGNS*	*08/11/10*	*10/05/10*
MD 104.01-13	*REGULATORY, WARNING AND SPECIAL SIGNS*	*08/11/10*	*07/29/10*
MD 104.01-14	*REGULATORY, WARNING AND SPECIAL SIGNS*	*08/11/10*	*07/29/10*
MD 104.01-15	*REGULATORY, WARNING AND SPECIAL SIGNS*	*08/11/10*	*10/14/10*
MD 104.01-16	*REGULATORY, WARNING AND SPECIAL SIGNS*	*08/11/10*	*07/29/10*
MD 104.01-17 A	*ROADSIDE SIGN / SIGN SUPPORT PLACEMENT*	*02/23/18*	*09/18/17*
MD 104.01-17 B	*ROADSIDE SIGN SUPPORTS FOUNDATIONS AND BREAKAWAY FEATURES (WOOD)*	*08/11/10*	*07/29/10*
MD 104.01-17 C	*BREAKAWAY TUBULAR STEEL SIGN SUPPORTS*	*08/11/10*	*07/29/10*
MD 104.01-17D	*ROADSIDE SIGN SUPPORTS SKID MOUNTED FEATURES (WOOD & STEEL)*	*02/23/18*	*06/01/17*
MD 104.01-18 A	*VEHICLE CONSPICUITY AND LIGHTING*	*02/19/24*	*12/06/23*
MD 104.01-18 B	*TEMPORARY TRAFFIC CONTROL VEHICLE LIGHTING SELECTION CHART*	*02/19/24*	*12/06/23*
MD 104.01-19 A	*WORK ZONE VEHICLE PAINT TRUCK*	*07/01/09*	*07/27/09*
MD 104.01-19 B	*WORK ZONE VEHICLE PAINT TRAIN VEHICLE – VAN/PICKUP*	*07/01/09*	*07/27/09*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.01-19 C	*PROTECTION VEHICLE WITH REAR TRUCK / TRAILER TRUCK – TRUCK MOUNTED ATTENUATOR*	*08/11/10*	*07/29/10*
MD 104.01-22	*PORTABLE VARIABLE MESSAGE SIGN PLACEMENT ALL ROADWAYS / ALL SPEEDS*	*08/11/10*	*07/29/10*
MD 104.01-23A	*ADVANCE CHANNELIZATION AND PROTECTION FOR BARRIER FLARE SECTION*	*08/11/10*	*10/14/10*
MD 104.01-23B	*ADVANCE CHANNELIZATION AND PROTECTION FOR BARRIER FLARE SECTION*	*08/11/10*	*10/14/10*
MD 104.01-25	*BARRIER DELINEATION BARRIER 4 FEET OR CLOSER TO EDGE LINE*	*08/11/10*	*07/29/10*
MD 104.01-26	*BARRIER DELINEATION BARRIER BETWEEN 4 AND 15 FEET FROM EDGE LINE*	*08/11/10*	*07/29/10*
MD 104.01-27	*PLACEMENT OF PAVEMENT MARKING ARROWS LANE TRANSITION*	*08/20/03*	*09/23/03*
MD 104.01-28	*STAGED ROADWAY CONSTRUCTION*	*08/20/03*	*09/23/03*
MD 104.01-29	*SIGHT TRIANGLE, STOPPING SIGHT DISTANCE & RAMP JUNCTION SIGHT DISTANCE*	*08/20/03*	*09/23/03*
MD 104.01-30 A	*CHANNELIZATION DEVICE USAGE EQUAL/LESS THAN 40 MPH OVER 12 HOURS NIGHTTIME USE*	*08/11/10*	*10/05/10*
MD 104.01-30 B	*CHANNELIZATION DEVICE SPACING EQL/LESS THAN 40 MPH*	*02/19/24*	*11/16/23*
MD 104.01-30 C	*CHANNELIZATION DEVICE SPACING GREATER THAN 40 MPH*	*02/19/24*	*11/16/23*
MD 104.01-30 D	*CHANNELIZATION DEVICE USAGE CRITERIA TABLE*	*07/01/09*	*07/27/09*
MD 104.01-31	*WARRANTS FOR YIELD SIGNS ON ENTRANCE RAMPS CONVERGING WITH EXPRESSWAYS / FREEWAYS*	*08/20/03*	*09/23/03*
MD 104.01-32	*BARRIER-MOUNTED WARNING SIGN OPTIONS FOR RESTRICTED LATERAL CLEARANCE CONDITIONS*	*08/20/03*	*09/23/03*
MD 104.01-46	*PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END*	*09/30/04*	*03/31/04*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.01-47	*PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END – RIGHT SIDE APPROACH*	*02/10/04*	*03/31/04*
MD 104.01-48	*PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END – RIGHT SIDE APPROACH DETAILS*	*08/20/03*	*09/23/03*
MD 104.01-49	*PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END – RIGHT SIDE APPROACH DETAILS*	*02/10/04*	*03/31/04*
MD 104.01-50	*PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END – LEFT SIDE APPROACH*	*02/10/04*	*03/31/04*
MD 104.01-51	*PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END – LEFT SIDE APPROACH DETAILS*	*02/10/04*	*03/31/04*
MD 104.01-52	*PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END – LEFT SIDE APPROACH DETAILS*	*02/10/04*	*03/31/04*
MD 104.01-53	*PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER (PIN AND LOOP JOINT)*	*09/30/04*	*03/31/04*
MD 104.01-54	*PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER (PIN AND LOOP JOINT)*	*02/10/04*	*03/31/04*
MD 104.01-55	*PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TRANSITION RIGHT SIDE APPROACH*	*02/10/04*	*03/31/04*
MD 104.01-56	*APPROACH PLATE FOR PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER FOR TRANSITION RIGHT SIDE*	*02/10/04*	*03/31/04*
MD 104.01-57	*PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TRANSITION- LEFT SIDE APPROACH*	*02/10/04*	*03/31/04*
MD 104.01-58	*APPROACH PLATE FOR PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER FOR TRANSITION LEFT SIDE*	*08/20/03*	*09/23/03*
MD 104.01-61	*TRAFFIC BARRIER W BEAM ANCHORAGE AT PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END*	*02/10/04*	*03/31/04*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.01-62	*TRAFFIC BARRIER W BEAM MEDIAN BARRIER ANCHORAGE AT PRECAST 32 INCH F SHAPE TEMPORARY CONCRETE TRAFFIC BARRIER TERMINAL END*	*02/10/04*	*03/31/04*
MD 104.01-70	*CRASH CUSHION SAND FILLED PLASTIC BARRELS (TEMPORARY OR PERMANENT)*	*08/20/03*	*09/23/03*
MD 104.01-71	*CRASH CUSHION SAND FILLED PLASTIC BARRELS (TEMPORARY OR PERMANENT)*	*08/20/03*	*09/23/03*
MD 104.01-72	*CRASH CUSHION SAND FILLED PLASTIC BARRELS (TEMPORARY OR PERMANENT)*	*03/23/18*	*09/18/17*
MD 104.01-73	*CRASH CUSHION SAND FILLED PLASTIC BARRELS (TEMPORARY OR PERMANENT)*	*08/12/02*	*09/04/02*
MD 104.01-80	*TAPER LENGTH CRITERIA TABLE*	*08/20/03*	*09/23/03*
MD 104.01-81	*TYPICAL APPLICATION NOTES*	*08/11/10*	*07/29/10*
MD104.01-85	*STEEL PLATE-METHOD 1, GREATER THAN 40 MPH*	*10/20/16*	*10/13/16*
MD 104.01-86	*STEEL PLATE-METHOD 2, EQUAL TO OR LESS THAN 40 MPH*	*10/20/16*	*10/13/16*
MD 104.01-87	*STEEL PLATE-METHOD 3, BRIDGE DECK PLATING*	*01/10/17*	*12/01/16*
MD 104.01-88	*STEEL PLATE-METHOD 3, BRIDGE DECK PLATING PLAN VIEW*	*04/12/16*	*03/21/16*
MD 104.02-01	*SHOULDER WORK/2-LANE, 2-WAY GREATER THAN 40 MPH*	*02/19/24*	*11/16/23*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.02-02	*SHOULDER WORK/2-LANE, 2-WAY EQL/LESS THAN 40 MPH*	*02/19/24*	*11/16/23*
MD 104.02-03	*LANE SHIFT RIGHT OR LEFT SIDE/2-LANE, 2-WAY GREATER THAN 40 MPH/15 MIN-12 HRS. OR DAYTIME ONLY*	*08/11/10*	*10/05/10*
MD 104.02-04	*LANE SHIFT RIGHT OR LEFT SIDE/2-LANE, 2-WAY EQUAL/LESS THAN 40 MPH/15 MIN-12 HRS. OR DAYTIME ONLY*	*08/11/10*	*10/05/10*
MD104.02-05	*WORK IN CENTER OF LOW-VOLUME ROAD 2-LANE, 2-WAY / GREATER THAN 40 MPH / 15 MIN – 12 HRS. OR DAYTIME ONLY*	*08/11/10*	*10/05/10*
MD 104.02-06	*WORK IN CENTER OF LOW-VOLUME ROAD 2-LANE, 2-WAY EQUAL/LESS THAN 40 MPH / 15 MIN –12 HRS. OR DAYTIME ONLY*	*08/11/10*	*10/05/10*
MD 104.02-07	*LANE SHIFT FOR COMPLETE TRAVEL WAY BLOCKAGE/2-LANE, 2-WAY GREATER THAN 40 MPH / 15 MIN – 12 HRS. OR DAYTIME ONLY*	*08/11/10*	*07/29/10*
MD 104.02-08	*LANE SHIFT FOR COMPLETE TRAVEL WAY BLOCKAGE/2-LANE, 2-WAY EQUAL/LESS THAN 40 MPH / 15 MIN – 12 HRS. OR DAYTIME ONLY*	*08/11/10*	*07/29/10*
MD 104.02-09	*FLAGGING OPERATION / 2-LANE, 2-WAY GREATER THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.02-09A	*FLAGGING OPERATION (AFAD CONTROLLED) 2-LANE, 2-WAY /GREATER THAN 40 MPH*	*02/19/24*	*12/06/23*
MD 104.02-10	*FLAGGING OPERATION / 2-LANE, 2-WAY EQUAL/LESS THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.02-10A	*FLAGGING OPERATION (AFAD CONTROLLED) 2-LANE, 2-WAY EQL/LESS THAN 40 MPH*	*02/19/24*	*12/06/23*
MD 104.02-11	*BYPASS DETOUR / 2-LANE, 2-WAY GREATER THAN 40 MPH / OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*07/29/10*
MD 104.02-12	*BYPASS DETOUR / 2-LANE, 2-WAY EQUAL/LESS THAN 40 MPH / OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*07/29/10*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.02-13	*INTERSECTION FLAGGING OPERATION 2-LANE, 2-WAY GREATER THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.02-14	*INTERSECTION FLAGGING OPERATION 2-LANE, 2-WAY EQUAL/LESS THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.02-15	*MOBILE OPERATION / 2 LANE, 2-WAY ALL SPEEDS / 0-15 MIN. AND MOVING SLOW*	*08/20/14*	*08/11/14*
MD 104.02-16	*MOBILE OPERATION / 2 LANE, 2-WAY ALL SPEEDS / MOVING NORMAL*	*08/11/10*	*07/29/10*
MD 104.02-17	*MOBILE WORK OPERATION / 2 LANE, 2-WAY ALL SPEEDS*	*08/20/14*	*08/11/14*
MD 104.02-18	*MOBILE MARKING OPERATION / 2 LANE, 2-WAY ALL SPEEDS*	*08/11/10*	*07/29/10*
MD 104.03-01	*SHOULDER WORK/MULTILANE UNDIVIDED GREATER THAN 40 MPH*	*02/19/24*	*11/16/23*
MD 104.03-02	*SHOULDER WORK/MULTILANE UNDIVIDED EQL/LESS THAN 40 MPH*	*02/19/24*	*11/16/23*
MD 104.03-03	*LEFT LANE CLOSURE/MULTILANE UNDIV. GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.03-04	*LEFT LANE CLOSURE/MULTILANE UNDIV. EQUAL/LESS THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.03-05	*RIGHT LANE CLOSURE/MULTILANE UNDIV. GREATER THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.03-06	*RIGHT LANE CLOSURE/MULTILANE UNDIV. EQUAL/LESS THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.03-07	*PARTIAL ROADWAY CLOSURE/MULTILANE UNDIV. GREATER THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.03-08	*PARTIAL ROADWAY CLOSURE/MULTILANE UNDIV. EQUAL/LESS THAN 40 MPH*	*08/11/10*	*07/29/10*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.03-09	*INTER. FAR-LEFT LANE CLOSURE/MULTILANE UNDIV. GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.03-10	*INTER. FAR-LEFT LANE CLOSURE/MULTILANE UNDIV. EQUAL/LESS THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.03-11	*INTER. FAR-RIGHT LANE CLOSURE/MULTILANE UNDIV. GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.03-12	*INTER. FAR-RIGHT LANE CLOSURE/MULTILANE UNDIV. EQUAL/LESS THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.03-13	*INTER. FAR-SIDE CLOSURE/MULTILANE UNDIV. GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.03-14	*INTER. FAR-SIDE CLOSURE/MULTILANE UNDIV. EQUAL/LESS THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.03-15	*MOBILE OPERATION/MULTILANE UNDIV. ALL SPEEDS / 0-15 MIN. AND MOVING SLOW*	*08/20/14*	*08/11/14*
MD 104.03-16	*MOBILE OPERATION/MULTILANE UNDIV. ALL SPEEDS / MOVING NORMAL*	*08/11/10*	*07/29/10*
MD 104.03-17	*MOBILE WORK OPERATION/MULTILANE UNDIV. ALL SPEEDS*	*08/20/14*	*08/11/14*
MD 104.03-18	*MOBILE MARKING OPERATION/ MULTILANE UNDIV. ALL SPEEDS*	*08/11/10*	*07/29/10*
MD 104.04-01	*SHOULDER WORK/DIVIDED UNCONTROLLED GREATER THAN 40 MPH*	*02/19/24*	*11/16/23*
MD 104.04-02	*SHOULDER WORK/DIVIDED UNCONTROLLED EQL/LESS THAN 40 MPH*	*02/19/24*	*11/16/23*
MD 104.04-03	*LEFT LANE CLOSURE/DIVIDED UNCON. GREATER THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.04-04	*LEFT LANE CLOSURE/DIVIDED UNCON. EQUAL/LESS THAN 40 MPH*	*08/11/10*	*07/29/10*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.04-05	*RIGHT LANE CLOSURE/DIVIDED UNCON. GREATER THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.04-06	*RIGHT LANE CLOSURE/DIVIDED UNCON. EQUAL/LESS THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.04-07	*CENTER LANE CLOSURE/DIVIDED UNCON. GREATER THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.04-08	*CENTER LANE CLOSURE/DIVIDED UNCON. EQUAL/LESS THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.04-09	*2 RIGHT (LEFT) LANES CLOSURE/DIVIDED UNCON. GREATER THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.04-10	*2 RIGHT (LEFT) LANES CLOSURE/DIVIDED UNCON. EQUAL/LESS THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.04-11	*ROADWAY CLOSURE/DIVIDED UNCON. GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*07/29/10*
MD 104.04-12	*ROADWAY CLOSURE/DIVIDED UNCON. EQUAL/LESS THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*07/29/10*
MD 104.04-13	*LEFT-TURN BAY CLOSURE/DIVIDED UNCON. GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.04-14	*LEFT-TURN BAY CLOSURE/DIVIDED UNCON. EQUAL/LESS THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.04-15	*INTER. (LEFT LANE, TURN BAY) CLOSURE/DIVIDED UNCON. GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.04-16	*INTER. (LEFT LANE, TURN BAY) CLOSURE/DIVIDED UNCON. EQUAL/LESS THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.04-17	*MOBILE OPERATIONS/DIVIDED UNCON. OR EXP-FREEWAY ALL SPEEDS/0-15 MIN. AND MOVING SLOW*	*08/20/14*	*08/11/14*
MD 104.04-18	*MOBILE OPERATION/DIVIDED UNCON. OR EXP-FREEWAY ALL SPEEDS/MOVING NORMAL*	*08/11/10*	*07/29/10*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.04-19	*MOBILE WORK OPERATION/DIVIDED UNCON. OR EXP-FREEWAY ALL SPEEDS*	*08/20/14*	*08/11/14*
MD 104.04-20	*MOBILE MARKING OPERATION/DIVIDED UNCON. ALL SPEEDS*	*08/11/10*	*07/29/10*
MD 104.05-01	*SHOULDER WORK/DIVIDED CONTROLLED (EXP-FWY) GREATER THAN 40 MPH*	*02/19/24*	*11/16/23*
MD 104.05-02	*SHOULDER WORK/DIVIDED CONTROLLED (EXP-FWY) EQL/LESS THAN 40 MPH*	*02/19/24*	*11/16/23*
MD 104.05-03	*ROADWAY SHIFT/EXP-FREEWAY GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.05-04	*LANES DIVIDE/EXP-FREEWAY GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.05-05	*LANE SHIFT/EXP-FREEWAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*10/05/10*
MD 104.05-06	*LANES DIVIDE/EXP-FREEWAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*10/05/10*
MD 104.05-07	*RIGHT LANE CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.05-08	*LEFT LANE CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.05-09	*2 RIGHT (LEFT) LANES CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.05-10	*CENTER LANE CLOSURE/EXP FREEWAY GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.05-11	*3 RIGHT LANES CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE.*	*08/11/10*	*10/05/10*
MD 104.05-12	*3 LEFT LANES CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE.*	*08/11/10*	*10/05/10*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.05-13	*AUXILIARY LANE CLOSURE/EXP-FREEWAY AT EXIT AND ENTRANCE RAMPS GREATER THAN 40 MPH*	*08/11/10*	*07/29/10*
MD 104.05-14	*RIGHT LANE CLOSURE/EXP-FREEWAY AT EXIT AND ENTRANCE RAMPS GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.05-15	*ENTRANCE RAMP TREATMENT/EXP-FREEWAY GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.05-16	*ENTRANCE RAMP TREATMENT/EXP-FREEWAY GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.05-17	*ENTRANCE RAMP TREATMENT/EXP-FREEWAY GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.05-18	*PARTIAL RAMP CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.05-18A	*FULL RAMP CLOSURE / EXP.-FREEWAY GREATER THAN 40 MPH*	*02/23/18*	*09/18/17*
MD 104.05-19	*EXIT RAMP TREATMENT/EXP-FREEWAY GREATER THAN 40 MPH*	*01/24/19*	*03/04/16*
MD 104.05-20	*3 RIGHT LANES CLOSURE/EXP-FREEWAY AT EXIT AND ENTRANCE RAMPS*	*08/11/10*	*07/29/10*
MD 104.05-21	*3 LEFT LANES CLOSURE/EXP-FREEWAY AT EXIT AND ENTRANCE RAMPS*	*08/11/10*	*07/29/10*
MD 104.05-22	*ROADWAY CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH*	*08/11/10*	*10/05/10*
MD 104.05-23	*MOBILE MARKING OPERATION/EXP-FREEWAY ALL SPEEDS*	*08/11/10*	*07/29/10*
MD 104.06-01	*INSTALLING LANE CLOSURE STEPS - 1 AND 2*	*09/15/15*	*08/13/15*
MD 104.06-02	*INSTALLING LANE CLOSURE - STEPS 3 AND 4*	*09/15/15*	*08/13/15*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.06-03	*INSTALLING LANE CLOSURE - STEP 5 REMOVING LANE CLOSURE - STEP 6*	*09/15/15*	*08/13/15*
MD 104.06-04	*REMOVING LANE CLOSURE - STEPS 7 AND 8*	*09/15/15*	*08/13/15*
MD 104.06-05	*DETOUR SIGNING FOR ROADWAY CLOSURE/ 2-LANE, 2-WAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*10/05/10*
MD 104.06-06	*DETOUR SIGNING FOR CLOSED STREET/2-LANE, 2-WAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*07/29/10*
MD 104.06-07	*ONE LANE ROAD (YIELD CONTROLLED)/2-LANE, 2-WAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*10/05/10*
MD 104.06-08	*ONE LANE ROAD (SIGNAL CONTROLLED)/ 2-LANE, 2-WAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*10/05/10*
MD 104.06-09A	*PED AND CURB-LANE CONTROL / MULTILANE UNDIV. SPEED LESS THAN OR EQUAL TO 40 MPH / OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*07/29/10*
MD 104.06-09B	*PED AND CURB-LANE CONTROL / MULTILANE UNDIV. FOR SPEEDS GREATER THAN 40 MPH / OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*07/29/10*
MD 104.06-09C	*PED AND CURB-LANE CONTROL / MULTILANE UNDIV. SPEEDS LESS THAN OR EQUAL TO 40 MPH / OVER 12HRS. OR NIGHTTIME USE*	*08/11/10*	*07/29/10*
MD104.06-09D	*PED AND CURB-LANE CONTROL / MULTILANE UNDIV. FOR SPEEDS GREATER THAN 40 MPH / OVER 12 HRS. OR HIGHTTIME USE*	*08/11/10*	*07/29/10*
MD 104.06-10	*MOBILE SERVICE WORK/INTERSECTION EQUAL/LESS THAN 40 MPH 0-15 MIN.*	*08/11/10*	*07/29/10*
MD 104.06-11	*MOBILE SERVICE WORK/INTERSECTION GREATER THAN 40 MPH 0-15 MIN.*	*08/11/10*	*07/29/10*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.06-12	*TEMPORARY ROADWAY CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*07/29/10*
MD 104.06-13	*TEMP. ROADWAY CLOSURE WITH LANE CLOSURE AND FLAGGER CONTROL DIVIDED UNCONTROLLED GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*07/29/10*
MD 104.06-14	*UNMARKED NO PASSING ZONES/2 OR 3-LANE, 2-WAY ALL SPEEDS*	*08/11/10*	*07/29/10*
MD 104.06-15	*PAVEMENT DROP-OFF 2.5 INCHES OR LESS (BETWEEN TRAFFIC LANES)*	*01/03/19*	*09/18/17*
MD 104.06-16	*PAVEMENT EDGE DROP-OFF 2.5 INCHES OR LESS (BETWEEN TRAFFIC LANES AND SHOULDER)*	*01/03/19*	*09/18/17*
MD 104.06-17	*PAVEMENT EDGE DROP-OFF GREATER THAN 2.5 INCHES BUT EQUAL TO OR LESS THAN 5 INCHES (BETWEEN TRAFFIC LANES AND SHOULDER)*	*08/11/10*	*07/29/10*
MD 104.06-18	*PAVEMENT EDGE DROP-OFF, GREATER THAN 5 INCHES WITHOUT AN ADJACENT LANE CLOSURE*	*02/23/18*	*06-01-17*
MD 104.06-19	*PAVEMENT EDGE DROP-OFF, GREATER THAN 5 INCHES WITH AN ADJACENT LANE CLOSURE*	*08/11/10*	*07/29/10*
MD 104.06-20	*MOVEABLE BARRIER TRANSFER OPERATION RIGHT LANE CLOSURE/MULTILANE UNDIV.*	*08/11/10*	*07/29/10*
MD 104.06-21	*MOVEABLE BARRIER TRANSFER OPERATION RIGHT LANE CLOSURE DIVIDED UNCON. OR EXP-FREEWAY*	*08/11/10*	*10/05/10*
MD 104.06-22	*MOVEABLE BARRIER TRANSFER OPERATION (STEP 1) MULTILANE UNDIVIDED*	*08/11/10*	*07/29/10*
MD 104.06-23	*MOVEABLE BARRIER TRANSFER OPERATION (STEP 2) MULTILANE UNDIVIDED*	*08/11/10*	*07/29/10*

STANDARD NUMBERS	DESCRIPTION	Dates	
		MDSHA	FHWA
	CATEGORY "1" PRELIMINARY		
MD 104.06-24	*DUAL HIGHWAY CONSTRUCTION/2-LANE, 2-WAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE*	*08/11/10*	*07/29/10*
MD 104.06-25	*MEDIAN WORK ALL SPEEDS*	*02/19/24*	*11/16/23*
MD 104.06-26	*AUTOMATED SPEED ENFOREMENT TYPICAL LAYOUT*	*03/07/12*	*03/07/12*
MD 104.06-27	*ROUNDABOUT FLAGGING OPERATION 2–LANE, 2–WAY ALL SPEEDS*	*03/08/14*	*02/04/14*
MD 104.06-28	*FLAGGING OPERATION/2–LANE, 2–WAY W/TEMPORARY PORTABLE RUMBLE STRIPS*	*02/19/24*	*12/06/23*
MD 104.06-29	*LANE CLOSURE(S) ON MULTILANE UNDIVIDED W/TEMPORARY PORTABLE RUMBLE STRIPS*	*02/19/24*	*12/06/23*
MD 104.06-30	*LANE CLOSURE(S) ON MULTILANE DIVIDED UNCONTROLLED WITH TEMPORARY PORTABLE RUMBLE STRIPS*	*02/19/24*	*12/06/23*
MD 104.06-31	*LANE CLOSURE(S) ON DIVIDE CONTROLLED (FREEWAY/EXPRESSWAY) WITH TEMPORARY PORTABLE RUMBLE STRIPS*	*02/19/24*	*12/06/23*

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SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–20–03	APPROVAL	9–23–03
REVISED	8–11–10	REVISED	7–29–10
REVISED		REVISED	
REVISED		REVISED	

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SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

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STANDARD NO. MD 104.00-B

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA) INDEX

STANDARD DETAILS (CONTINUED)

SPECIFICATION	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–20–03	APPROVAL	9–23–03
REVISED	8–11–10	REVISED	7–29–10
REVISED		REVISED	
REVISED		REVISED	

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STANDARD DETAILS (CONTINUED)

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–20–03	APPROVAL	9–23–03
REVISED	8–11–10	REVISED	7–29–10
REVISED		REVISED	
REVISED		REVISED	

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STANDARD NO. MD 104.00–D

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA) INDEX

TYPICAL APPLICATIONS

TWO–LANE, TWO–WAY	SPEED	USE THIS TTCTA
STATIONARY – ROADWAY		
Shoulder Work	> 40 MPH	MD 104.02–01
	≤ 40 MPH	MD 104.02–02
Lane Shift Right or Left Side	> 40 MPH	MD 104.02–03
	≤ 40 MPH	MD 104.02–04
Work in Center of Low–Volume Road	> 40 MPH	MD 104.02–05
	≤ 40 MPH	MD 104.02–06
Lane Shift for Complete Travel Way Blockage	> 40 MPH	MD 104.02–07
	≤ 40 MPH	MD 104.02–08
Flagging Operation	> 40 MPH	MD 104.02–09
	≤ 40 MPH	MD 104.02–10
Bypass Detour	> 40 MPH	MD 104.02–11
	≤ 40 MPH	MD 104.02–12
STATIONARY – INTERSECTION		
Intersection Flagging	> 40 MPH	MD 104.02–13
	≤ 40 MPH	MD 104.02–14
MOBILE		
Less Than 15 Minutes / Moving Slow	All Speeds	MD 104.02–15
Moving Normal	All Speeds	MD 104.02–16
Mobile Work	All Speeds	MD 104.02–17
Marking	All Speeds	MD 104.02–18
MULTILANE UNDIVIDED		
STATIONARY – ROADWAY		
Shoulder Work	> 40 MPH	MD 104.03–01
	≤ 40 MPH	MD 104.03–02
Left Lane Closure	> 40 MPH	MD 104.03–03
	≤ 40 MPH	MD 104.03–04

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

	APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL		8–20–03	APPROVAL	9–23–03
REVISED		2–10–04	REVISED	3–31–04
REVISED		8–11–10	REVISED	7–29–10
REVISED			REVISED	

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TYPICAL APPLICATIONS (CONTINUED)

MULTILANE UNDIVIDED (CONTINUED)	SPEED	USE THIS TTCTA
STATIONARY – ROADWAY (CONTINUED)		
Right Lane Closure	> 40 MPH	MD 104.03–05
	≤ 40 MPH	MD 104.03–06
Partial Roadway Closure	> 40 MPH	MD 104.03–07
	≤ 40 MPH	MD 104.03–08
STATIONARY – INTERSECTION		
Intersection Far Left Lane Closure	> 40 MPH	MD 104.03–09
	≤ 40 MPH	MD 104.03–10
Intersection Far Right Lane Closure	> 40 MPH	MD 104.03–11
	≤ 40 MPH	MD 104.03–12
Intersection Far–Side Closure	> 40 MPH	MD 104.03–13
	≤ 40 MPH	MD 104.03–14
MOBILE		
Less Than 15 Minutes / Moving Slow	All Speeds	MD 104.03–15
Moving Normal	All Speeds	MD 104.03–16
Mobile Work	All Speeds	MD 104.03–17
Marking	All Speeds	MD 104.03–18
DIVIDED UNCONTROLLED		
STATIONARY – ROADWAY		
Shoulder Work	> 40 MPH	MD 104.04–01
	≤ 40 MPH	MD 104.04–02
Left Lane Closure	> 40 MPH	MD 104.04–03
	≤ 40 MPH	MD 104.04–04

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–20–03	APPROVAL	9–23–03
REVISED	2–10–04	REVISED	3–31–04
REVISED	8–11–10	REVISED	7–29–10
REVISED		REVISED	

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TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA) INDEX

TYPICAL APPLICATIONS (CONTINUED)

DIVIDED UNCONTROLLED (CONTINUED)	SPEED	USE THIS TTCTA
STATIONARY – ROADWAY (CONTINUED)		
Right Lane Closure	> 40 MPH	MD 104.04–05
	≤ 40 MPH	MD 104.04–06
Center Lane Closure	> 40 MPH	MD 104.04–07
	≤ 40 MPH	MD 104.04–08
2 Right (Left) Lanes Closure	> 40 MPH	MD 104.04–09
	≤ 40 MPH	MD 104.04–10
Roadway Closure	> 40 MPH	MD 104.04–11
	≤ 40 MPH	MD 104.04–12
STATIONARY – INTERSECTION		
Left–Turn Bay Closure	> 40 MPH	MD 104.04–13
	≤ 40 MPH	MD 104.04–14
Intersection (Left Lane / Turn Bay Closure)	> 40 MPH	MD 104.04–15
	≤ 40 MPH	MD 104.04–16
MOBILE		
Less Than 15 Minutes / Moving Slow	All Speeds	MD 104.04–17
Moving Normal	All Speeds	MD 104.04–18
Mobile Work	All Speeds	MD 104.04–19
Marking	All Speeds	MD 104.04–20
EXPRESSWAY/FREEWAY		
STATIONARY – ROADWAY		
Shoulder Work	> 40 MPH	MD 104.05–01
	≤ 40 MPH	MD 104.05–02
Roadway Shift	> 40 MPH	MD 104.05–03

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–20–03	APPROVAL	9–23–03
REVISED	2–10–04	REVISED	3–31–04
REVISED	8–11–10	REVISED	7–29–10
REVISED		REVISED	

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TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA) INDEX

TYPICAL APPLICATIONS (CONTINUED)

EXPRESSWAY/FREEWAY (CONTINUED)	SPEED	USE THIS TTCTA
STATIONARY – ROADWAY (CONTINUED)		
2 Lanes Divide	> 40 MPH	MD 104.05–04
3 Lanes Shift	> 40 MPH	MD 104.05–05
3 Lanes Divide	> 40 MPH	MD 104.05–06
Right Lane Closure	> 40 MPH	MD 104.05–07
Left Lane Closure	> 40 MPH	MD 104.05–08
2 Right (Left) Lanes Closure	> 40 MPH	MD 104.05–09
Center Lane Closure	> 40 MPH	MD 104.05–10
3 Right Lanes Closure	> 40 MPH	MD 104.05–11
3 Left Lanes Closure	> 40 MPH	MD 104.05–12
Auxiliary Lane Closure at Exit and Entrance Ramps	> 40 MPH	MD 104.05–13
Right Lane Closure at Exit and Entrance Ramps	> 40 MPH	MD 104.05–14
Entrance Ramp Treatment	> 40 MPH	MD 104.05–15
	> 40 MPH	MD 104.05–16
	> 40 MPH	MD 104.05–17
Partial Ramp Closure	> 40 MPH	MD 104.05–18
Exit Ramp Treatment	> 40 MPH	MD 104.05–19

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–20–03	APPROVAL	9–23–03
REVISED	2–10–04	REVISED	3–31–04
REVISED	8–11–10	REVISED	7–29–10
REVISED		REVISED	

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TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA) INDEX

TYPICAL APPLICATIONS (CONTINUED)

EXPRESSWAY/FREEWAY (CONTINUED)	SPEED	USE THIS TTCTA
3 Right Lanes Closure	> 40 MPH	MD 104.05–20
3 Left Lanes Closure	> 40 MPH	MD 104.05–21
Roadway Closure	> 40 MPH	MD 104.05–22

MOBILE

Less Than 15 Minutes / Moving Slow	All Speeds	MD 104.04–17
Moving Normal	All Speeds	MD 104.04–18
Mobile Work	All Speeds	MD 104.04–19
Marking	All Speeds	MD 104.05–23

SPECIAL

	SPEED	USE THIS TTCTA
Installing /Removing Lane Closure	All Speeds	MD 104.06–01 MD 104.06–02 MD 104.06–03 MD 104.06–04
Detour Signing (Roadway Closure)	All Speeds	MD 104.06–05
Detour Signing (Street Closure)	All Speeds	MD 104.06–06
One Lane Road (Yield Controlled)	> 40 MPH	MD 104.06–07
One Lane Road (Signal Controlled)	> 40 MPH	MD 104.06–08

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–20–03	APPROVAL	9–23–03
REVISED	2–10–04	REVISED	3–31–04
REVISED	8–11–10	REVISED	7–29–10
REVISED		REVISED	

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SPECIAL (CONTINUED)

	SPEED	USE THIS TTCTA
Pedestrian and Curb Lane Control	All Speeds	MD 104.06–09A
		MD 104.06–09B
		MD 104.06–09C
		MD 104.06–09D
Mobile Service Work	≤40 MPH	MD 104.06–10
	>40 MPH	MD 104.06–11
Temporary Roadway Closure (Exp–Freeway)	>40 MPH	MD 104.06–12
Temporary Roadway Closure with Lane Closure and Flagger Control	>40 MPH	MD 104.06–13
Unmarked No Passing Zones	All Speeds	MD 104.06–14
Pavement Drop–off 2.5 Inches or Less (Between Traffic Lanes)	All Speeds	MD 104.06–15
Pavement Drop–off 2.5 Inches or Less (Between Traffic Lanes and Shoulder)	All Speeds	MD 104.06–16
Pavement Drop–off Greater Than 2.5 Inches but Equal to or Less than 5 Inches (Between Traffic Lanes and Shoulder)	All Speeds	MD 104.06–17
Pavement Drop–off Greater Than 5 Inches Without an Adjacent Lane Closure	All Speeds	MD 104.06–18
Pavement Drop–off Greater Than 5 Inches With an Adjacent Lane Closure	All Speeds	MD 104.06–19
Moveable Barrier Transfer Operation Right Lane Closure /Multilane Undivided	All Speeds	MD 104.06–20
Moveable Barrier Transfer Operation Right Lane Closure /Divided Uncon. or Expressway /Freeway	All Speeds	MD 104.06–21
Reversible Operation Multilane Undivided	All Speeds	MD 104.06–22 MD 104.06–23

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–20–03	APPROVAL	9–23–03
REVISED	2–10–04	REVISED	3–31–04
REVISED	8–11–10	REVISED	7–29–10
REVISED		REVISED	

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TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA) INDEX

SPECIAL (CONTINUED)

	SPEED	USE THIS TTCTA
Dual Highway Construction	> 40 MPH	MD 104.06–24
Median Work	All Speeds	MD 104.06–25
Automated Speed Enforcement Typical Layout	≥ 45 MPH	MD 104.06–26
Roundabout Flagging Operation	All Speeds	MD 104.06–27

SPECIFICATION	CATEGORY CODE ITEMS

APPROVED Cedric W. Ward

DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–20–03	APPROVAL	9–23–03
REVISED	2–10–04	REVISED	3–31–04
REVISED	8–11–10	REVISED	7–29–10
REVISED	4–7–15	REVISED	

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STANDARD NO. MD 104.00–K

GENERAL NOTES FOR TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA)

1.0 INTRODUCTION

1.1 The General Notes (GN) supplement the Standard Details and the TTCTAs, and have been assembled to provide additional direction on the installation and application of traffic control devices shown in these standards. The GNs also provide additional guidelines and other useful information that will facilitate the installation of appropriate temporary traffic controls. Users of these standards shall also comply with provisions of the Maryland Manual on Uniform Traffic Control Devices (MdMUTCD), MDOT SHA's Standard Specifications for Construction and Materials (Latest Edition), and General Provisions for Construction Contracts.

1.2 The TTCTA show the minimum requirements necessary to plan for the safety of workers, motorists, pedestrians, and other system users throughout the temporary traffic control zone for various types of work activities. Typically, more traffic control devices are required for long–term stationary work activities than for short–term stationary work activities. Additional temporary traffic control devices may be necessary because of other traffic factors, such as the roadway's crash history, expected traffic backups, high truck traffic, roadway geometrics or characteristics, and other conditions that may adversely affect the flow of traffic. Users of these TTCTA should review the temporary traffic control setup once in place to ensure that traffic is traveling smoothly throughout the traffic control zone, driver expectancy is being met, and no other adjustments to the temporary traffic control devices are necessary. This review is to be repeated on a regular basis as noted elsewhere.

1.3 The TTCTA address a wide variety of different conditions; however, every situation could not be shown. Therefore, charts have been provided showing standard devices to be used for the proposed work zone activity and the placement of these devices for certain roadway conditions and work durations. The user is expected to combine the information from these charts into a workable traffic control plan.

1.4 In applying these standards and guidelines, questions about applications and interpretations should be referred to the MDOT SHA's Assistant District Engineer–Traffic, County Traffic Engineer, City Traffic Engineer, Public Works Engineer, or other responsible party, who has expertise in traffic engineering and has jurisdiction on the appropriate roadways. Such consultation may be required, for example, to determine the appropriate TTCTA for the work zone condition.

1.5 The definitions of roadway types in the General Notes are intended to be used to identify the key roadway characteristics for selecting TTCTAs. Roadway types may be defined differently in other design standards, manuals, etc. These definitions are only applicable to the selection of TTCTAs and temporary traffic control plans.

SPECIFICATION	CATEGORY CODE ITEMS

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–20–03	APPROVAL	9–23–03
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STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

GENERAL NOTES

STANDARD NO. MD 104.00–01

1.6 The General Notes address the following topics:

- Definitions
- Abbreviations
- Signs
- Portable Variable Message Signs
- Arrow Panels
- Channelizing Devices
- Pavement Markings
- Flagging
- Vehicles
- Work Restrictions
- Temporary Traffic Control Plans
- Sign and Buffer Spacing Charts /Standards Temporary
- Temporary Traffic Control (TTC) Operations
- Project Limits Signs
- Identification Signs
- Placement of Regulatory Speed Signs
- TTC Device Selection Charts (for various roadway types)
- Warning, Regulatory and Special Signs /Sign Designations
- Sign /Sign Support Placement
- Vehicle Conspicuity
- Protection Vehicle /Paint Train Vehicle Signing
- Protection Vehicle Utilization Matrix

2.0 DEFINITIONS

Administration – Maryland Department of Transportation, State Highway Administration.

Access Control – Defines the level of access provided to a highway. A highway is either controlled or uncontrolled. Controlled highways have either Full Access Control or Partial Access Control.

- Full Access Control – Access to /from adjoining roads is provided exclusively via grade–separated facilities such as on–ramps or off–ramps.

- Partial Access Control – Access to /from adjoining roads is provided via grade–separated facilities such as on–ramps or off–ramps and via a small number of at–grade crossings such as intersections.

- Uncontrolled Access – Access to /from adjoining roads is provided exclusively via at–grade crossings such as intersections and driveways.

Average Daily Traffic – The number of vehicles flowing in both directions along a particular segment of roadway during an 24–hour period.

Divided Highway – A two–way highway with traffic in one direction of travel separated from traffic in the opposite direction by a median or barrier. See General Note 1.5.

Divided Uncontrolled Highway – A divided highway having at–grade access to /from adjoining roads or driveways. Refer to MD 104.01–01 Roadway Types for graphical depiction and refer to General Note 1.5.

Driver Expectancy – Temporary traffic control should be designed and applied in a manner equal to or better than permanent /existing conditions, so as to compensate for the unexpectancy of the work zone situation, thus providing positive guidance for the road users traversing the area.

Engineer – A person designated by the Administration acting directly or through their duly authorized representative, such representative acting within the scope of the particular authority and duties assigned to that person.

Emergency Repair Operation – An unplanned work operation resulting from a failure or imminent failure of a structure or system that, if not controlled or corrected immediately, may present a hazard to the public.

Expressway – A divided highway with full or partial control of access and grade separations at major intersections. Refer to MD 104.01–01 for graphical depiction and refer to General Note 1.5.

Freeway – An expressway with full control of access. Refer to MD 104.01–01 for graphical depiction and refer to General Note 1.5.

High Bus /Truck Volumes – Bus /truck volumes representing more than 10 percent of the total volume of traffic.

Line of Sight – Decision sight distance for the following rate of speed:

Decision Sight Distance	
MPH	Feet
30	450–625
40	600–825
50	750–1025
60	1000–1275
70	1100–1450

Long–Term Stationary Work Activity – Work that occupies a location more than 12 hours or is conducted during darkness.

Mobile Operation – Work activity that moves along the road either intermittently or continuously; may involve stops as long as 15 minutes.

Moving Normal – Mobile work operation traveling at, or within 15 mph of, the posted speed limit.

Moving Slow – Mobile work operation traveling more than 15 mph below the posted speed limit.

Multi–Lane Divided Controlled Access Highway – A two–way highway with at least two lanes in each direction. Traffic in one direction of travel will be separated by a median or barrier. The road is free of at–grade crossing with other roads. Refer to MD 104.01–01 Roadway Types for graphical depiction and refer to General Note 1.5.

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Multi–Lane Divided Uncontrolled Access Highway – A two–way highway with at least two lanes in each direction. Traffic in one direction of travel will be separated from traffic in the opposite direction by a median or barrier. The road will have at–grade access to adjoining roads or driveways. Refer to MD 104.01–01 Roadway Types for graphical depiction and refer to General Note 1.5.

Multi–Lane Undivided Highway – A two–way highway having three or more lanes that typically provides at least two lanes in each direction, with traffic separated by a center line as defined by the Manual on Uniform Traffic Control Devices. A two–way highway having one or more lanes in each direction and a two–way left turn lane in the center is classified as a Multi–Lane Undivided Highway. Refer to MD 104.01–01 Roadway Types for graphical depiction and refer to General Note 1.5.

Physical Barrier – A device which provides a physical limitation through which a vehicle would not normally pass. It is intended to contain or redirect an errant vehicle.

Prevailing (Travel) Speed – The speed at which the majority of the traffic is traveling at or below (normally the 85th percentile). Contact the ADE–T to determine the prevailing speed when not provided in the contract documents.

Protection Vehicle (PV) – A work vehicle with approved flashing lights, a truck or trailer–truck mounted attenuator (TMA / TTMA) with support structure designed for attaching the system to the work vehicle, and arrow panel that is used to provide protection for workers, motorists, equipment, and work operations.

Roll Ahead Distance (RAD) – The distance a protection vehicle will move/be displaced in the event of an impact. See AASHTO Roadside Design Guide for guidance on RAD.

Queue – A line of vehicles, or traffic backup, that forms on a section of roadway where traffic volume exceeds capacity.

Service Vehicle – The work vehicle typically used to maintain traffic control devices, such as PCMS and traffic signals.

Short Duration Activity – Work that occupies a location for less than 15 minutes.

Short–Term Stationary Work Activity – Daylight work that occupies a location from 15 minutes to 12 hours.

Specifications – The Administration's Standard Specifications for Construction and Materials, latest edition.

Speed – The term "speed" may mean the 85th percentile speed, prevailing speed, posted speed, design speed, or advisory speed.
- High Speed – Greater than 40 mph.
- Low Speed – Equal to or less than 40 mph.

Two–Lane, Two–Way Roadway – A roadway that provides a single travel lane in each direction. Traffic is separated by a center line as defined in the Manual on Uniform Traffic Control Devices. Refer to MD 104.01–01 Roadway Types for graphical depiction and refer to General Note 1.5.

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3.0 ABBREVIATIONS

ADE–T – Assistant District Engineer–Traffic
ADT – Average Daily Traffic
ASST – Assistant
BL – Buffer Length
CD or CHAN – Channelizing Devices
DARK – Darkness (nighttime)
DAY – Daytime
EQL – Equal
EXP – Expressway
FT – Feet
FOHPWA – Fluorescent Orange High–Performance Wide Angle
GN – General Notes
HRS – Hours
INTERSECT – Intersection
L – Taper Length
LT – Left
LGTS – Lights
LOC – Location
MASH – Manual for Assessing Safety Hardware
MUTCD – Manual on Uniform Traffic Control Devices
MDOT – Maryland Department of Transportation
MAX – Maximum
MPH – Miles per hour
MIN – Minimum
15 MIN – 15 minutes (title block)
NCHRP – National Cooperative Highway Research Program
OOTS/OOT&S – Office of Traffic & Safety
PED – Pedestrian
PCMS – Portable Changeable Message Sign
PV – Protection Vehicle
RT – Right
SHA – State Highway Administration
STD – Standard
TEMP – Temporary
TTC – Temporary Traffic Control
TTCTA – Temporary Traffic Control Typical Application(s)
TMA – Truck Mounted Attenuator
TYP – Typical
UNCON – Uncontrolled
UNDIV – Undivided
VEH – Vehicle
VP–1 – Vertical Panel–1 (object marker designation)

4.0 SIGNS

4.1 Signs should be spaced at the distances shown on the TTCTA diagrams.

4.2 See the "Sign and Buffer Spacing Charts/Standard Temporary Traffic Control Operations" for the appropriate spacing of the advance warning signs for lower speed highway facilities.

4.3 At locations where queues extend beyond the first advance warning sign, additional advance warning signs (static and/or PCMS) shall be placed in advance of the longest observed queue.

4.4 When bus and/or truck volumes are high, an initial advance warning sign may be placed on the left side of a multilane undivided roadway.

4.5 Administration approved Fluorescent Orange Sign Sheeting Material shall be used on all temporary warning signs erected in work zones (post–mounted, roll–up, etc.).

4.6 Administration approved temporary roll–up, composite, and plastic signs on approved portable sign stands may be used for work along all roadways, as directed in Specification 104.08.

4.7 When work zone speed limits along 65 and 60 mph roadways are reduced, temporary regulatory speed signing shall be posted for work activities of one–hour duration or longer, unless otherwise directed by the Engineer. These signs are to be placed as directed in Standard Nos. MD 104.01–06 and MD 104.01–07.

4.8 Sign designations and messages for the signs most commonly used in work zones are shown within these General Notes. See Specification 104.08–03 for information on other temporary traffic signs.

4.9 G2–1 (Hat and Shovel) signs shall be used for projects lasting greater than two months in duration, unless otherwise specified by the Engineer.

4.10 Along streets in urban areas where the prevailing speed is 35 mph or less, and along secondary roads where the Average Daily Traffic (ADT) is less than 1000 vehicles, the minimum sign size of 36" x 36" may be used.

4.11 Where the use of Automated Speed Enforcement (ASE) is determined, the design of signs to be used (i.e. dimensions & legend) and placement shall be approved by OOTS.

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4.12 For utility operations, the word "AHEAD" may be used on warning signs in lieu of distance messages for warning signs placed up to and including 1500 feet in advance of the work area. At greater distances, the correct distance messages shall be used on such warning signs. Also, the message UTILITY WORK may be used in lieu of ROAD WORK or SHOULDER WORK. ROAD WORK AHEAD signs may also be used in lieu of distance messages on side streets and entrance ramps that intersect roads where work is being performed (as shown in the Typical Applications) and on the main road during mobile and mowing operations.

4.13 ROAD WORK AHEAD signs shall be installed on all side streets and entrance ramps that intersect roads within work zones. The signing shall be placed along the intersection approach to the right of the travel lane. Refer to Standard Detail 104.01–02 for guidance on sign placement. For side streets intersecting roads outside of work zone boundaries, no advanced signing should be installed.

4.14 Warning signs mounted on wood posts, and those mounted on approved portable supports, shall be mounted in conformance with Standard No. MD 104.01–17. Signs mounted on concrete barrier shall be installed using clamps that are on the Office of Traffic & Safety's Approved Product List. Supplementary signs may be mounted on portable sign stands using additional brackets obtained from the stand manufacturer. Supplementary signs shall not cover any part of the face of the primary sign.

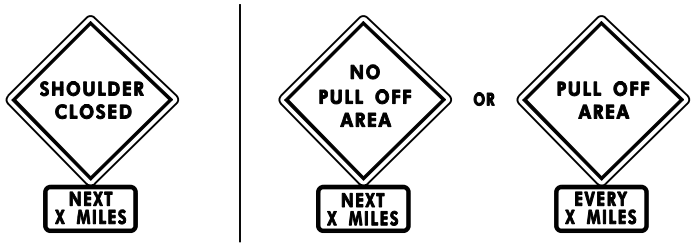
4.15 For shoulder closures greater than a half (1/2) mile in length, advance warning signs should be placed as follows:

a. A NEXT XX MILES supplemental plate should be provided with the first SHOULDER CLOSED sign in the sequence

b. The second SHOULDER CLOSED sign in the sequence should be replaced with either:

– a NO PULL OFF AREA warning sign with NEXT XX MILES supplemental plate, if there are no pull off areas throughout the work area, or

– a PULL OFF AREA warning sign with EVERY XX MILES supplemental plate, if pull off areas are provided (see MD 104.06–18).



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4.16 A BUMP sign should be placed when there is a temporary pavement wedge along a transverse joint, a transverse construction trench with temporary backfill, or a similar transverse disturbance. Signs should be placed according to Shoulder Work Typical Applications for the appropriate prevailing speed and work duration, with BUMP signs replacing the SHOULDER WORK signs.

4.17 TRUCK CROSSING signs (W11–(10)1) shall be used as specified in 11.0, Strategies for Safe Entry/Exit of Work Zone Vehicles to/from the Work Area

5.0 PORTABLE VARIABLE MESSAGE SIGNS (PVMS)

5.1 The PVMS shall not replace standard traffic control devices, but is to supplement these devices.

5.2 PVMS shall be used where a new traffic signal has been installed along State routes having a prevailing speed of 50 mph or greater.

5.3 PVMS shall display a message regarding new traffic signal installation up to 3 days prior to signal turn–on. PVMS shall be removed no later than 7 days after the signal is operational.

5.4 When PVMS are used to advise/warn motorists regarding a new traffic signal installation, they shall be installed along all the major approaches to the intersection, and shall be used in such a way as to supplement the standard traffic control devices required for a new traffic signal installation.

5.5 No more than two displays shall be used within any message cycle unless approved by the District Engineer or ADE–T.

5.6 For a list of standard messages/abbreviations, contact appropriate District Engineer or ADE–T. All customized messages shall be approved by the ADE–T.

5.7 A single message shall be displayed for 2–3 seconds with an "off" interval of 0.5 to 1.0 second. When two messages comprise a message cycle, neither message shall exceed 2 seconds duration. The second message shall follow the first message immediately without any "off" interval. If an off–interval is used between the first and second messages, it shall not exceed 0.5 second.

5.8 The text of the message shall not scroll or travel (horizontally or vertically) across the face of the sign.

5.9 A PVMS should not be used for more than 14 continuous days as part of the same application. A PVMS should be used 3 to 5 days in advance of planned roadwork, if needed.

5.10 PVMS should be used if there is significant change in traffic patterns, unexpected road conditions, or safety concerns that may result in delays/queues and may require caution/diversion.

5.11 PVMS should not be used in place of an arrow panel. The PVMS should be visible from 0.5 mile under day and night conditions and should be legible from a minimum distance of 900 feet.

5.12 PVMS should be placed on the shoulder of the roadway or, if practical, farther from the traveled lane (Standard MD 104.01–22).

5.13 In order to reduce the effect of sun behind the PVMS, the PVMS should be placed so that the sun is not directly behind it (such as during sunrise or sunset).

5.14 The entire message should be readable at least twice at the off–peak 85th–percentile speed prior to work starting or the anticipated prevailing speed.

6.0 ARROW PANELS

6.1 Arrow panels that are installed along roadways with prevailing speeds greater than 40 mph shall be provided with a minimum shoulder closure taper of 1/3 the taper length, (see 7.0 Channelizing Devices). For all other roadways a 100–foot minimum shoulder closure taper shall be used.

7.0 CHANNELIZING DEVICES

7.1 Taper Formulas:

$L = WS$ for speeds greater than (>) 40 mph

$L = WS^2/60$ for speeds equal to or less than (<) 40 mph

Where: L = minimum length of taper (ft)
S = numerical value of prevailing travel speed or speed limit (MPH), whichever is higher, prior to work starting,
W = width of offset (ft)

7.2 Maximum spacing between channelizing devices:

Taper Channelization – Shall be equal in feet to the posted speed limit for posted speeds eq/less than 40 mph and 40 feet for posted speeds greater than 40 mph.

Tangent Channelization – Shall be equal in feet to twice the posted speed limit in the buffer and equal in feet to the posted speed adjacent to the work area for posted speeds eq/less than 40 MPH. Spacing shall be 80 feet in the buffer and 40 feet adjacent to the work area for posted speeds greater than 40 MPH.

7.3 At horizontal or vertical curves, channelizing devices should be extended to a point where they are visible to approaching traffic. On two–lane, two–way roadways, a full taper length shall always be provided in advance of curves.

7.4 Drums, not cones, shall be used to form the taper on expressways/freeways. Drums, not cones, should be used to form the taper on all other roadways having a prevailing travel speed greater than 40 MPH.

7.5 Storing channelizing devices within 30 feet of the edge of open section roadway or 15 feet of a closed section roadway along any roadway is prohibited without approval of the Engineer.

7.6 Type 3 object markers (VP–1) are required for barrier flare / tangent points.

7.7 The appropriate channelizing devices (including approved barrier) to separate opposing traffic shall be as shown on the plans or as directed by the Engineer.

7.8 On straight sections of roadway with full dimension center and / or lane lines, but without edge lines, channelizing drums shall be used to delineate the edge of the roadway, except at locations designated by the Engineer. Examples would include roadways with curbs, parking, bicycle lanes, or other markings. The channelizing drums may be spaced up to 500' apart where no undue hazards exist unless otherwise directed by the Engineer. On curves, these spacings shall be reduced to a value equal to the posted speed limit, unless otherwise directed by the Engineer.

8.0 PAVEMENT MARKINGS

8.1 Temporary pavement markings should be installed according to Section 104.02–03(f), Specific Requirements for Temporary Pavement Markings, from the Standard Specifications for Construction and Materials and from SHA's "Pavement Marking Policy and Guidelines" issued by OOTS.

8.2 Pavement markings that are no longer applicable shall be completely removed or obliterated. Temporary markings shall be used as necessary. Operations less than 12 hours or undertaken during the daytime may require that the permanent markings be temporarily covered with black tape as specified in Section 8.3.

8.3 Pavement marking lines adjacent to any long duration lane transition or lane closure taper shall be removed (or covered with SHA approved black pavement marking tape), unless otherwise directed by the Engineer. Pavement marking lines shall be re–installed (or uncovered) prior to re–opening the closed lane(s).

8.4 Temporary markings on intermediate pavement surfaces (e.g. base course) shall be placed to full dimensions per the Contract Documents (i.e. continuous double yellow center lines; single dashed yellow center line @ 10' segments, 30' gaps where passing is allowed; lane lines @ 10' segments, 30' gaps).

8.5 Guidance on UNMARKED PAVEMENT signing:

1. Daytime: If the pavement is not marked to SHA's standards/specifications during the daytime, no sign is needed, provided item #3 below is adhered to.

2. Nighttime: If, due to unforeseen circumstances as determined by the Engineer, the pavement is left in a condition overnight that does not meet SHA pavement marking standards/specifications, then UNMARKED PAVEMENT signing shall be used.

3. In all instances where less than standard markings are in place (permanent or short–term), appropriate channelizing devices and other traffic control devices shall be used to guide traffic through the work zone in an effective, safe, and positive manner.

9.0 FLAGGING

9.1 Where two or more flaggers are used and are unable to see each other, two–way radio communications shall be used.

9.2 If the entire work area is visible from one station, a single flagger may be used, subject to other safety considerations.

9.3 Guidance on flagging at signalized intersections:

1. Issues regarding flagging at signalized intersections should be discussed in the planning/design stages of the project and the recommended intersection control strategy should be specified in the contract documents.

2. At the pre–construction conference, SHA staff and the contractor should discuss the need for flagging operations, MSP (or local police) presence, and the Standard Operating Procedures to request signal operating mode modifications (if needed).

3. In general, all persons (contractors, maintenance, and utility) should contact the Assistant District Engineer – Traffic (ADE–T) to determine the best method for temporary traffic control at a signalized intersection from the following two (2) cases:

Case 1: The signal is turned to flashing mode during flagging operation.

Case 2: The signal is turned off (dark mode) during flagging operation.

Note: Except for police, flagging shall not occur at a signalized intersection operating in a full–color stop–and–go mode (Normal Operation).

10.0 VEHICLES

10.1 If work vehicles need to be stopped in a lane beyond a horizontal curve or a vertical curve (hill), non–essential vehicles are to be pulled as far off the road as possible or be otherwise parked in a manner as to inhibit the movement of traffic as little as possible. If no protection vehicle is available, channelizing devices shall be placed as specified in 7.0, Channelizing Devices.

10.2 Work vehicles should not occupy any part of the buffer area.

10.3 Vehicle safety lights, as specified in Standard MD 104.01–18A & 18B shall be Class I, as determined by the Society of Automotive Engineers (SAE) and as directed by the Office of Maintenance.

10.4 The use of a protection vehicle (PV) shall be based on Standard MD 104.01–11A, or as directed by the Engineer.

When closing or opening a lane or a shoulder on roadways with posted speed of 55 mph or greater, ensure that the work vehicle carrying the crew installing or removing the temporary traffic control devices is closely followed by a PV. For closing or opening a narrow shoulder with insufficient width to accommodate the PV, the PV can be positioned in the adjacent lane or as directed by the Engineer.

A PV should also be used in advance of work operation located beyond a horizontal and/or vertical curve. Consideration should be given to placing an additional temporary advance warning sign(s) or truck mounted variable message sign no less than 500' and no more than 1500' (1/2 mile for expressway conditions) in advance of the PV, when one or more of the traffic factors listed under General Notes 1.2 exist.

The protection vehicle may be considered as a substitute for the initial advance warning sign for some mobile work operations.

10.5 When a police vehicle is required, the vehicle shall not be located in the buffer and/or taper, but should be located as directed by the Engineer, depending on the type of work. It is sometimes preferable to deploy the police vehicle in advance of the work zone or queue (if queue exists) to encourage speed reduction prior to the work zone.

11.0 STRATEGIES FOR SAFE ENTRY/EXIT OF WORK ZONE VEHICLES TO/FROM THE WORK AREA

11.1 Use TRUCK CROSSING signs (W11–(10)1) when:

1) A work area entrance is allowed along a controlled access highway; OR

2) A work area entrance provided along highways other than controlled access does not have adequate decision sight distance for approaching traffic and the entrance cannot be relocated to provide adequate decision sight distance. Refer to Standard No. MD 104.00–03 of the General Notes for decision sight distance criteria.

TRUCK CROSSING signs shall be placed according to the Shoulder Work Typical Applications, with TRUCK CROSSING signs replacing all SHOULDER WORK signs.

Any distances to be displayed on the TRUCK CROSSING sign shall be installed using supplemental distance plaques.

(OPTIONAL)

11.2 All work zone vehicles when entering/exiting the work area or operating within the work zone shall display flashing warning lights, as specified in Standards MD 104.01–18A & B.

11.3 PVMS may be used as a supplementary sign to warn drivers of work zone vehicles entering or exiting the work area.

11.4 Coordinate deliveries of materials with proposed lane closures, preferably during occurences when traffic volumes are low.

12.0 WORK HOUR RESTRICTIONS

12.1 Unless otherwise specified in the Contract Document or permitted by the Engineer, work within a lane, within 15 feet of the nearest edge line (open section roadway), or within 2 feet of the face of curb (closed section roadway), is prohibited during peak hours 6 a.m. – 9 a.m. and 3 p.m. – 7 p.m., Monday – Friday. Also, such work is not permitted on Saturdays, Sundays, National or State holidays, or days preceding and following said holidays.

13.0 TEMPORARY LIGHTING

13.1 Roadway lighting shall be considered during the planning of temporary traffic control plans. Lighting may be required due to nighttime work zone traffic operations or for new traffic patterns (e.g., new exit or lane shift). Once the need for temporary lighting is identified, it should be provided in one of two ways:

1. If practical, permanent lighting that is being installed as part of the project should be installed in the early stages so that it can be used for illuminating travel lanes through the work zone throughout the project.

2. If installation of permanent lighting is not a part of project, then temporary lighting (temporary light poles or flood lights) should be provided to illuminate travel path.

Contractor shall maintain existing lighting.

13.2 The Contractor shall submit a Situation Plan to the Engineer showing the locations and aiming of floodlights. The floodlighting system shall be capable of maintaining 20 ft–c without producing a disabling glare condition for approaching road users. The adequacy of the floodlight placement and the absence of glare should be field–verified by the Engineer and Contractor. This involves driving through and observing the floodlighted area from each direction on all approaching roadways immediately after the initial floodlight setup, at night, and periodically.

14.0 PAVEMENT DROP–OFF

14.1 When pavement drop–offs are present, the placement of temporary traffic control devices, including signs, channelizing devices, and barriers, as well as slope fillet wedges, shall follow SHA Standard Nos. MD 104.06–15, MD 104.06–16, MD 104.06–17, MD 104.06–18, MD 104.06–19, and MD 104.01–28. The Engineer may recommend alternative methods to protect the pavement edge drop–off, considering factors such as: pedestrian, bicycle, and traffic volumes, vehicle speeds, size of work zone, duration of work, etc.

15.0 SIGHT DISTANCE

15.1 Temporary traffic control devices, including drums, barriers, and vertical panels, and construction equipment, shall be placed to ensure that adequate sight distance is not restricted at ramp junctions and intersections. If sight distance restrictions are unavoidable, additional applicable warning signs must be installed. The placement of vertical panels on concrete barrier and the close spacing of approved drums may, in some instances, contribute to restricted sight distance at roadway junctions. For additional guidance on channelizing device placement at intersections, driveways, and/or ramp junctions, see Standard Detail MD 104.01–29.

The following additional criteria should be considered when placing traffic control devices at intersections or ramp junctions:

- TCDs installed at or near intersections, including median openings or driveways, should be designed/installed with adequate corner sight distance (as suggested for intersections in Chapter 9 of AASHTO's "A Policy on Geometric Design of Highways and Streets", 2001 ed.). The area around the intersection should be kept free of obstacles.

- Sight distance along a ramp should be, at a minimum, equal to the safe stopping sight distance based on prevailing speed.

- There should be a clear view of the entire exit terminal, including the exit nose and a section of the ramp roadway behind the gore.

16.0 WORK ZONE SPEED LIMITS ALONG 65 AND 60 MPH ROADWAYS

16.1 Where it is necessary to reduce work zone speed limits along 65 and 60 MPH roadways, such reduced speed limits should be based on adequate engineering study /judgment and approved by the District Engineer. The reduced speed limit should usually be 5 MPH less than the normally posted speed limit, but shall be no more than 10 MPH less than the posted speed. The following guidelines are to be used in consideration of speed limit reduction in work zones:

- Work zone traffic controls should be designed to ensure adequate safety and mobility through work zones and provide site conditions consistent with prevailing operating speeds and driver expectations.

- Where the Engineer is considering reducing the posted speed limits to improve safety, such reduced speed limits should be based on adequate engineering study /judgment and approved by the District Engineer.

- Reduced speed limits should be posted only when the conditions that necessitate the reduced speed are actually present. It is essential to cover or remove reduced speed limit signs if work is not actually underway and site conditions do not require a reduced speed limit.

- Where the use of automated speed enforcement (ASE) is expected, any reduction in speed limits in work zones shall be jointly approved by District Engineer (DE) and Director of OOTS or shall be approved by DE in consultation with Director of OOTS.

- Use advisory speed limits for spot situations, such as sharp alignment changes or short section of narrow lanes.

- Advisory speed signing shall not be used with general warning signs (e.g. W20–1), or along sections of the work zone.

- The use of regulatory work zone speed limits should be made in conjunction with State Police usage.

- All traffic control devices are to be placed and maintained in accordance with SHA requirements and the MUTCD.

- Work zone speed limit signs shall be placed in accordance with SHA guidelines and standards (see MD 104.01–06 and MD 104.01–07 for additional information).

17.0 HIGHWAY/RAIL GRADE CROSSINGS

17.1 Where vehicles might be stopped within a highway–rail grade crossing, the limits of which are defined as 15 feet on either side of the outside rail, the following guidelines apply:

- Coordinate with appropriate agency or company having jurisdiction over the affected rail line prior to the start of road work. Do not set up any portion of the work zone within railroad right of way. The OOTS Railroad Coordinator (Phone (410) 787–5867) should be contacted if this information is not known.

- When a two–way flagging operation will result in a queue that extends across the highway–rail grade crossing, an additional flagger shall be provided at the approach to highway–rail grade crossing.

- Consider the railroad gate operation in the placement of traffic control devices.

- The DO NOT STOP ON TRACKS sign (design) shall be used on all approaches to a highway–rail grade crossing within the limits of a temporary traffic control zone.

18.0 TRAFFIC CONTROL PLANS

18.1 Alternate traffic control plans may be presented to the SHA District Office for approval in conformance with Section 104.01 of the Standard Specifications for Construction and Materials.

18.2 For emergency repair operations, a lesser number of traffic control devices (TCDs) than the full compliment may be used. This generally will consist of one sign per direction, flashing lights on the vehicle, and minimum number of channelizing devices, flags, or high level warning devices. Additional TCDs such as arrow panel(s), additional signing, etc., shall be placed as soon as possible in accordance with the standard TTCTA.

18.3 Where closely spaced work zones create conflicting traffic patterns (e.g. left–lane closure followed by right–lane closure), they should be no closer than 1.5 miles apart (last sign to first sign). Where work zones are closely spaced, but where traffic patterns are not significantly altered and no conflicts exist, no minimum spacing is required; however, care should be exercised to present appropriate and non–conflicting guidance to the public.

18.4 All signs, channelizing devices, and other traffic control devices shall be in conformance with the latest edition of the MdMUTCD.

19.0 TEMPORARY PORTABLE RUMBLE STRIPS

19.1 RECOMMENDED USE:
TPRS should be considered for use in work zones in advance of detours, flaggers, lane closures, temporary traffic signals, and locations that require reduction in speed and /to alert drivers of the upcoming changes to the road conditions. Refer to the "Temporary Portable Rumble Strip Guildelines" for additional guidance on usage and placement.

19.2 MANDATORY USE:
TPRS shall be used when all the following conditions are met:
- Work zone activities involve daytime flagging operations on a two–lane roadway, and
- Duration of work zone activity at a location is greater than 3 hours, and
- Posted speed limit is greater than or equal to 40 MPH.

SPECIFICATION 000	CATEGORY CODE ITEMS

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–20–03	APPROVAL	9–23–03
REVISED	2–19–24	REVISED	12–06–23
REVISED		REVISED	
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

GENERAL NOTES

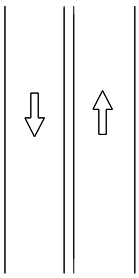
STANDARD NO. MD 104.00–18

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

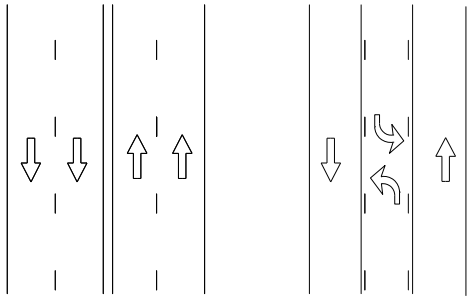
ROADWAY/HIGHWAY TYPES

REFER TO MD 104.00 GENERAL NOTES FOR DEFINITIONS OF ROADWAY TYPES

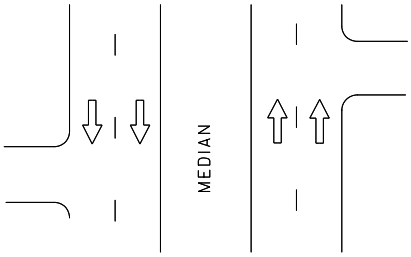
TWO–LANE, TWO–WAY



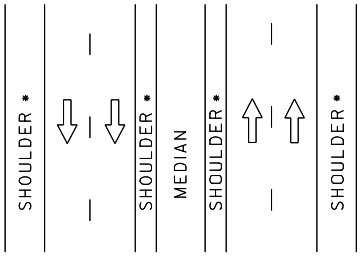
MULTI–LANE UNDIVIDED



MULTI–LANE DIVIDED
UNCONTROLLED ACCESS



MULTI–LANE DIVIDED
CONTROLLED ACCESS
(EXPRESSWAY/FREEWAY)



* SHOULDER IS NOT PRESENT ON ALL EXPRESSWAYS/ FREEWAYS

SPECIFICATION	CATEGORY CODE ITEMS

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–20–03	APPROVAL	9–23–03
REVISED	2–19–24	REVISED	11–16–23
REVISED		REVISED	
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ROADWAY/HIGHWAY TYPES

STANDARD NO. MD 104.01–01

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
SIGN SPACING CHART
STANDARD TEMPORARY TRAFFIC CONTROL OPERATIONS

* SPEED (MPH)	MINIMUM DISTANCE FROM TAPER TO FIRST SIGN & FOR SIDE STREET SIGN DISTANCE A	ADDITIONAL SIGNS IN SERIES TO BE SPACED AT A MINIMUM B	C	D	MINIMUM COMBINED ADVANCED WARNING
≤ 25	200′	200′	200′	-	600′
26 - 35	300′	300′	300′	-	900′
36 - 40	500′	500′	500′	-	1500′
41 - 65	800′	700′	1100′	2600′ (1/2 MILE)	5200′ (1 MILE)
EXPRESSWAY/FREEWAY	1000′	500′	1100′	2600′ (1/2 MILE)	5200′ (1 MILE)

* SPEED LIMIT OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER.

BELOW EXAMPLE TWO LANES, ONE-WAY ROADWAY /SPEED LIMIT IS 35 MPH /PREVAILING SPEED IS 38 MPH (USE 40 MPH)

** REFER TO STANDARD NO. MD 104.01-81 (TYPICAL APPLICATION NOTES) FOR BUFFER LENGTHS.

*** THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

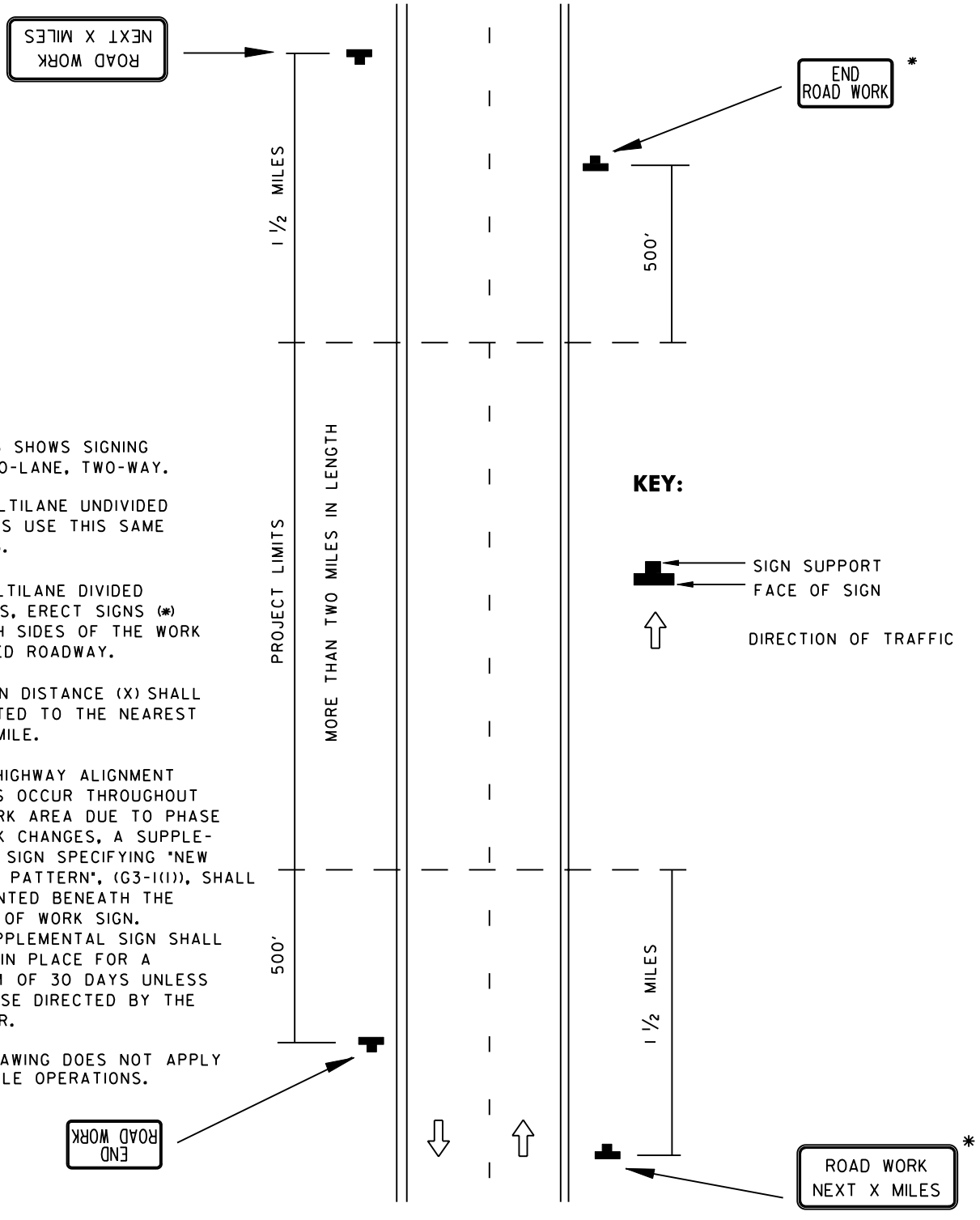
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SIGN SPACING CHART

STANDARD NO. MD 104.01-02

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
PROJECT LIMITS SIGNS



NOTES:

DRAWING SHOWS SIGNING FOR TWO-LANE, TWO-WAY.

FOR MULTILANE UNDIVIDED HIGHWAYS USE THIS SAME DRAWING.

FOR MULTILANE DIVIDED HIGHWAYS, ERECT SIGNS (*) ON BOTH SIDES OF THE WORK AFFECTED ROADWAY.

THE SIGN DISTANCE (X) SHALL BE STATED TO THE NEAREST WHOLE MILE.

WHERE HIGHWAY ALIGNMENT CHANGES OCCUR THROUGHOUT THE WORK AREA DUE TO PHASE OF WORK CHANGES, A SUPPLEMENTAL SIGN SPECIFYING "NEW TRAFFIC PATTERN", (G3-1(1)), SHALL BE MOUNTED BENEATH THE LENGTH OF WORK SIGN. THE SUPPLEMENTAL SIGN SHALL REMAIN IN PLACE FOR A MAXIMUM OF 30 DAYS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

THIS DRAWING DOES NOT APPLY TO MOBILE OPERATIONS.

SPECIFICATION	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PROJECT LIMITS SIGNS

STANDARD NO. MD 104.01-03

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
IDENTIFICATION HAT AND SHOVEL SIGNS

* TTC IDENTIFICATION SIGNS - HAT AND SHOVEL SIGN G2-1(1) SHALL BE INSTALLED AT EACH APPROACH OF THE PROJECT.

THE MESSAGES TO BE PLACED ON THE G2-1(1) SIGNS SHALL BE APPROVED BY ADE-TRAFFIC.

THE FOLLOWING IS A LIST OF SUGGESTED MESSAGES FOR HAT AND SHOVEL SIGN G2-1(1):

WORK AREA MESSAGES

- TAKING A STRIDE TO BETTER YOUR RIDE
- BREAKING GROUND TO GET YOU AROUND
- WE'RE IMPROVING TO KEEP YOU MOVING
- PAVING THE WAY TO REDUCE DELAY
- DELAY TODAY TO SMOOTH YOUR WAY
- IN PURSUIT OF A BETTER (SAFER) COMMUTE
- DELAY TODAY FOR A BETTER (SAFER) TOMORROW
- SMILE! THIS IS ALL WORTHWHILE.

WORK DESCRIPTION MESSAGES

- BRIDGE WIDENING
- BRIDGE IMPROVEMENT
- HIGHWAY REALIGNMENT
- HIGHWAY WIDENING
- HIGHWAY IMPROVEMENT
- INTERCHANGE CONSTRUCTION
- INTERSECTION IMPROVEMENT
- ROUNDABOUT CONSTRUCTION
- STREETSCAPE IMPROVEMENT
- DRAINAGE IMPROVEMENT
- RESURFACING
- PAVING

SAFETY MESSAGES

- STAY ALERT. STAY ALIVE.
- DRIVE SMART. DRIVE SAFELY.
- STAY ALERT. STAY SAFE.
- SAFETY FIRST
- PLEASE DRIVE SAFELY
- PLEASE DRIVE COURTEOUSLY
- DRIVE CAREFULLY
- RESPECT WORKERS
- KEEP OUR WORKERS SAFE

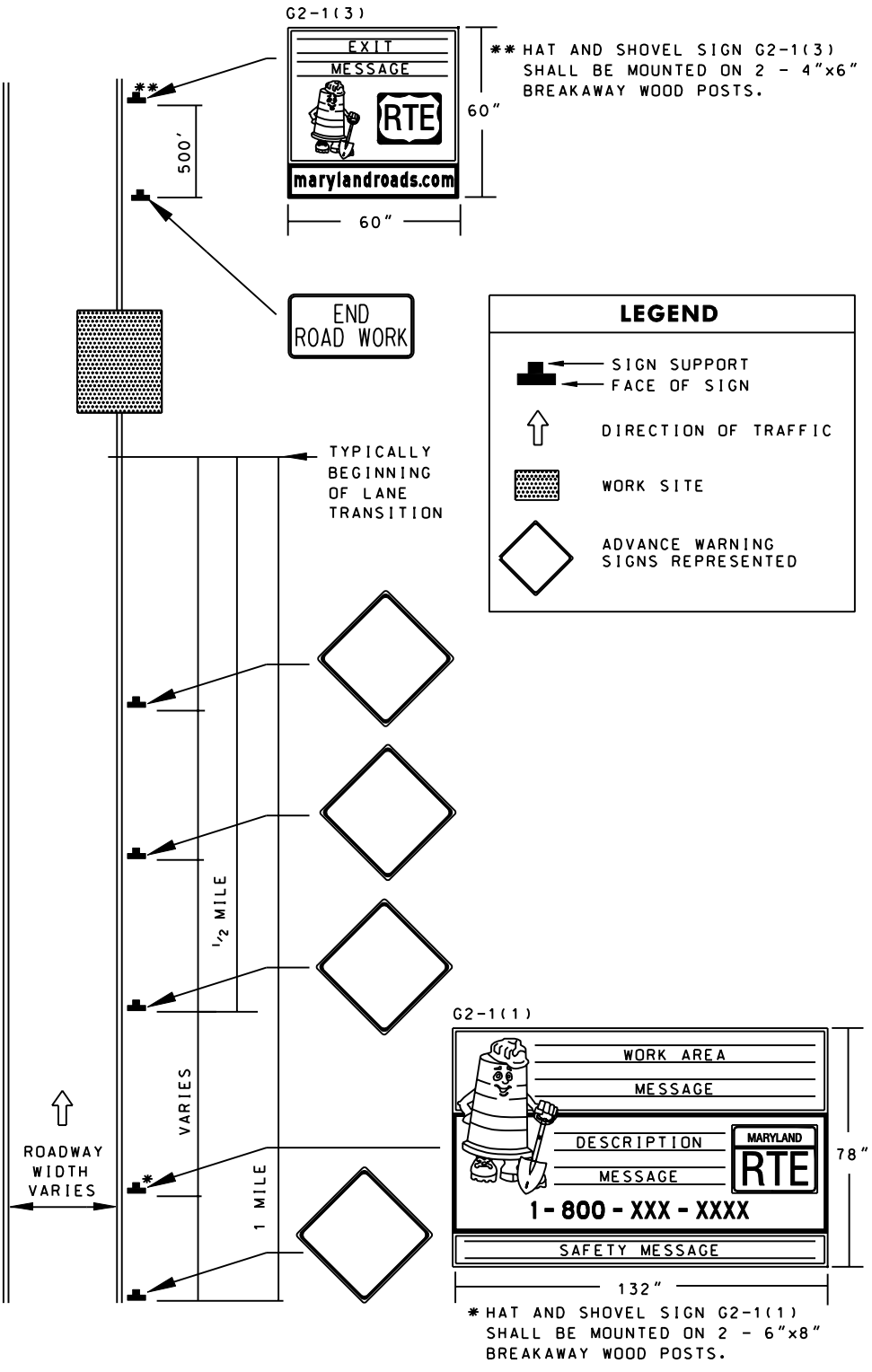
** TTC IDENTIFICATION SIGNS - HAT AND SHOVEL SIGN G2-1(3) SHALL BE INSTALLED AT EACH END AREA OF THE PROJECT.

THE MESSAGES TO BE PLACED ON THE G2-1(3) SIGNS SHALL BE APPROVED BY ADE-TRAFFIC.

THE FOLLOWING IS A SUGGESTED MESSAGE FOR HAT AND SHOVEL SIGN G2-1(3):

EXIT MESSAGE

- THANKS FOR YOUR PATIENCE



SPECIFICATION	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
GENERAL NOTES
HAT AND SHOVEL SIGN - GREATER THAN 40 MPH

STANDARD NO. MD 104.01-04

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
IDENTIFICATION HAT AND SHOVEL SIGNS

* TTC IDENTIFICATION SIGNS - HAT AND SHOVEL SIGN G2-1(2) SHALL BE INSTALLED AT EACH APPROACH OF THE PROJECT. THE MESSAGES TO BE PLACED ON THE G2-1(2) SIGNS SHALL BE APPROVED BY ADE-TRAFFIC.

THE FOLLOWING IS A LIST OF SUGGESTED MESSAGES FOR HAT AND SHOVEL SIGN G2-1(2):

WORK AREA MESSAGES

- BREAKING GROUND TO GET YOU AROUND
- WE'RE IMPROVING TO KEEP YOU MOVING
- PAVING THE WAY TO REDUCE DELAY
- IN PURSUIT OF A BETTER (SAFER) COMMUTE
- DELAY TODAY FOR A BETTER (SAFER) TOMORROW
- SMILE! THIS IS ALL WORTHWHILE.
- PARDON OUR GROWING PAINS
- BREAKING THE BOTTLENECK
- PARDON OUR PROGRESS
- MOVING MARYLAND
- IMPROVEMENTS AHEAD
- PAVING THE WAY

WORK DESCRIPTION MESSAGES

- BRIDGE WIDENING
- BRIDGE IMPROVEMENT
- HIGHWAY REALIGNMENT
- HIGHWAY WIDENING
- HIGHWAY IMPROVEMENT
- INTERCHANGE CONSTRUCTION
- INTERSECTION IMPROVEMENT
- ROUNDABOUT CONSTRUCTION
- STREETSCAPE IMPROVEMENT
- DRAINAGE IMPROVEMENT
- RESURFACING
- PAVING

SAFETY MESSAGES

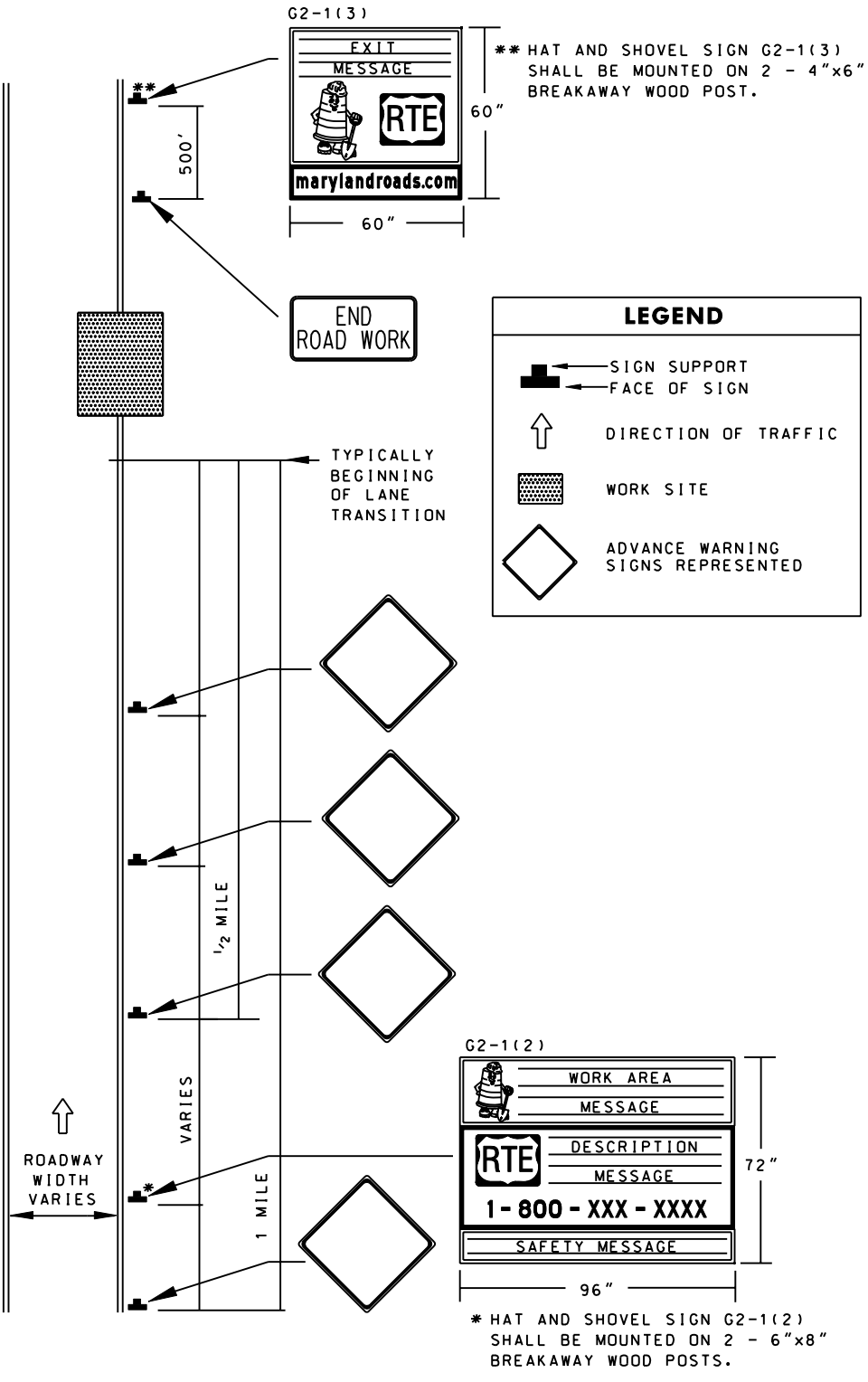
- STAY ALERT. STAY ALIVE.
- DRIVE SMART. DRIVE SAFELY.
- STAY ALERT. STAY SAFE.
- SAFETY FIRST
- PLEASE DRIVE SAFELY
- DRIVE COURTEOUSLY
- DRIVE CAREFULLY
- RESPECT WORKERS
- KEEP OUR WORKERS SAFE

** TTC IDENTIFICATION SIGNS - HAT AND SHOVEL SIGN G2-1(3) SHALL BE INSTALLED AT EACH END AREA OF THE PROJECT. THE MESSAGES TO BE PLACED ON THE G2-1(3) SIGNS SHALL BE APPROVED BY ADE-TRAFFIC.

THE FOLLOWING IS A SUGGESTED MESSAGE FOR HAT AND SHOVEL SIGN G2-1(3):

EXIT MESSAGES

- THANKS FOR YOUR PATIENCE



SPECIFICATION	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
GENERAL NOTES
HAT AND SHOVEL SIGN - LESS THAN OR EQUAL TO 40 MPH

STANDARD NO. MD 104.01-05

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
PLACEMENT OF REGULATORY SPEED SIGNS
PROJECT EQUAL TO OR LESS THAN 2 MONTHS IN DURATION

NOTE:
THE PLACEMENT OF THE REGULATORY SPEED SIGNS VARIES AS DIRECTED BY THE ENGINEER.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

NOTE:
A MEMORANDUM OF ACTION (MOA) FOR TEMPORARY SPEED LIMIT REDUCTIONS IN WORK ZONES MUST BE IN EFFECT OR REGULATORY SIGNS ERECTED WITHIN THE WORK ZONE ARE NOT ENFORCEABLE. IN ORDER TO OBTAIN AN MOA FOR A TEMPORARY SPEED LIMIT REDUCTION WITHIN A WORK ZONE, THE FOLLOWING MUST BE COMPLETED:

- A TRAFFIC ENGINEERING STUDY THAT ANALYZES TRAFFIC CONDITIONS DURING CONSTRUCTION.
- A DETERMINATION OF THE CONDITIONS THAT NECESSITATE THE REDUCED SPEED LIMIT.
- A RECOMMENDATION OF THE APPROPRIATE SPEED LIMIT, BASED ON TRAFFIC CONDITIONS.
- A STATEMENT OF THE EXTENT OF THE WORK ZONE WHERE THE TEMPORARY SPEED LIMIT REDUCTION IS TO BE ENFORCED.

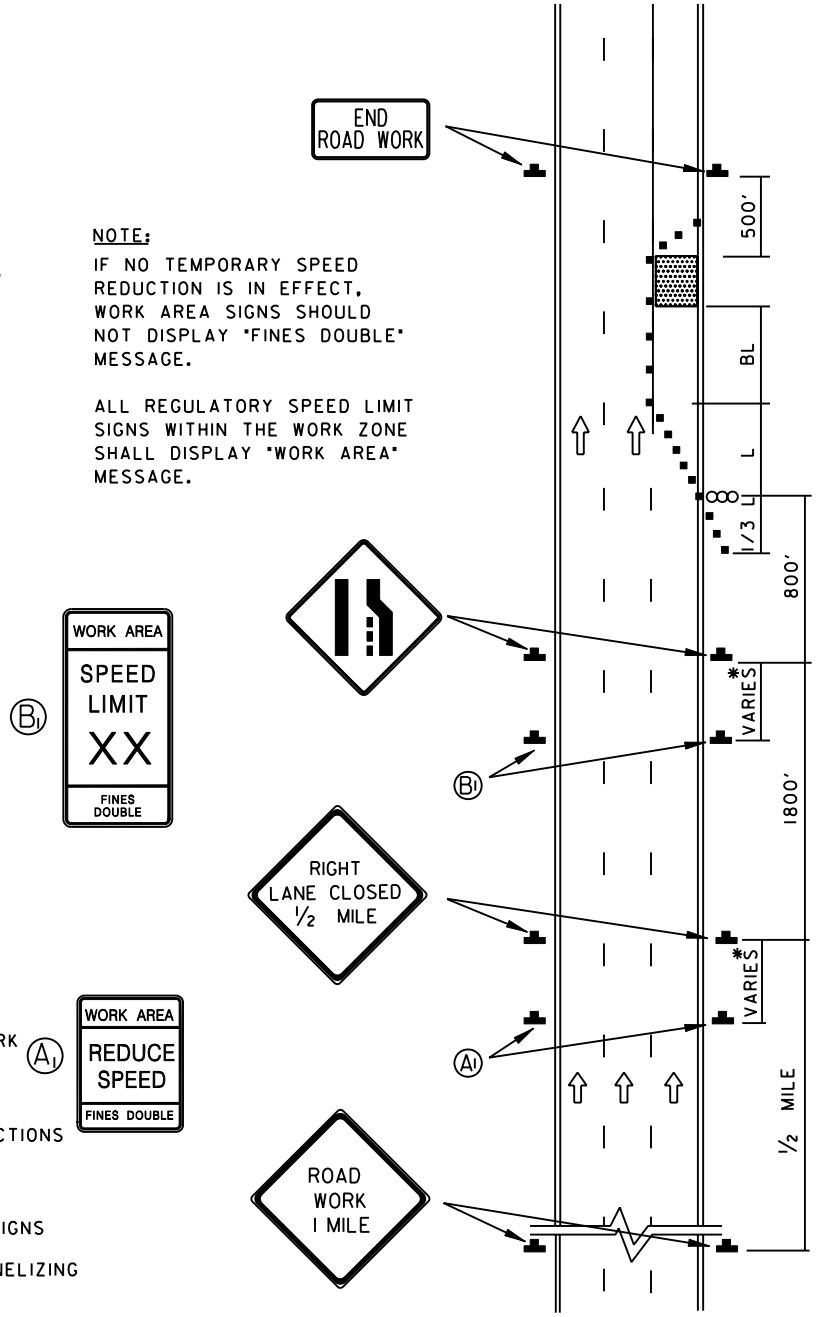
THE MOA FOR TEMPORARY SPEED LIMIT REDUCTIONS IS CONSIDERED "IN EFFECT" UPON APPROVAL OF THE DISTRICT ENGINEER.

* MAINTAIN MINIMUM 300' SPACING BETWEEN SIGNS

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

NOTE:
IF NO TEMPORARY SPEED REDUCTION IS IN EFFECT, WORK AREA SIGNS SHOULD NOT DISPLAY "FINES DOUBLE" MESSAGE.

ALL REGULATORY SPEED LIMIT SIGNS WITHIN THE WORK ZONE SHALL DISPLAY "WORK AREA" MESSAGE.



SPECIFICATION	CATEGORY CODE ITEMS
	SECTION 100

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	**8-20-03**	APPROVAL	**9-23-03**
REVISED	**8-11-10**	REVISED	**10-5-10**
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

REGULATORY SPEED SIGNS

STANDARD NO. MD 104.01-06

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
PLACEMENT OF REGULATORY SPEED SIGNS
PROJECT GREATER THAN 2 MONTHS IN DURATION

NOTES:

THE PLACEMENT OF THE REGULATORY SPEED SIGNS VARIES AS DIRECTED BY THE ENGINEER.

* ADDITIONAL SPEED LIMIT SIGNS MAY BE REQUIRED AND SPACED AT ABOUT 1000 FT AND ½ MILE FOR LOW AND HIGH SPEED ROADWAYS RESPECTIVELY, AS DIRECTED BY THE ENGINEER.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

NOTE:

A MEMORANDUM OF ACTION (MOA) FOR TEMPORARY SPEED LIMIT REDUCTIONS IN WORK ZONES MUST BE IN EFFECT OR REGULATORY SIGNS ERECTED WITHIN THE WORK ZONE ARE NOT ENFORCEABLE. IN ORDER TO OBTAIN AN MOA FOR A TEMPORARY SPEED LIMIT REDUCTION WITHIN A WORK ZONE, THE FOLLOWING MUST BE COMPLETED:

- A TRAFFIC ENGINEERING STUDY THAT ANALYZES TRAFFIC CONDITIONS DURING CONSTRUCTION.
- A DETERMINATION OF THE CONDITIONS THAT NECESSITATE THE REDUCED SPEED LIMIT.
- A RECOMMENDATION OF THE APPROPRIATE SPEED LIMIT, BASED ON TRAFFIC CONDITIONS.
- A STATEMENT OF THE EXTENT OF THE WORK ZONE WHERE THE TEMPORARY SPEED LIMIT REDUCTION IS TO BE ENFORCED.

THE MOA FOR TEMPORARY SPEED LIMIT REDUCTIONS IS CONSIDERED "IN EFFECT" UPON APPROVAL OF THE DISTRICT ENGINEER.

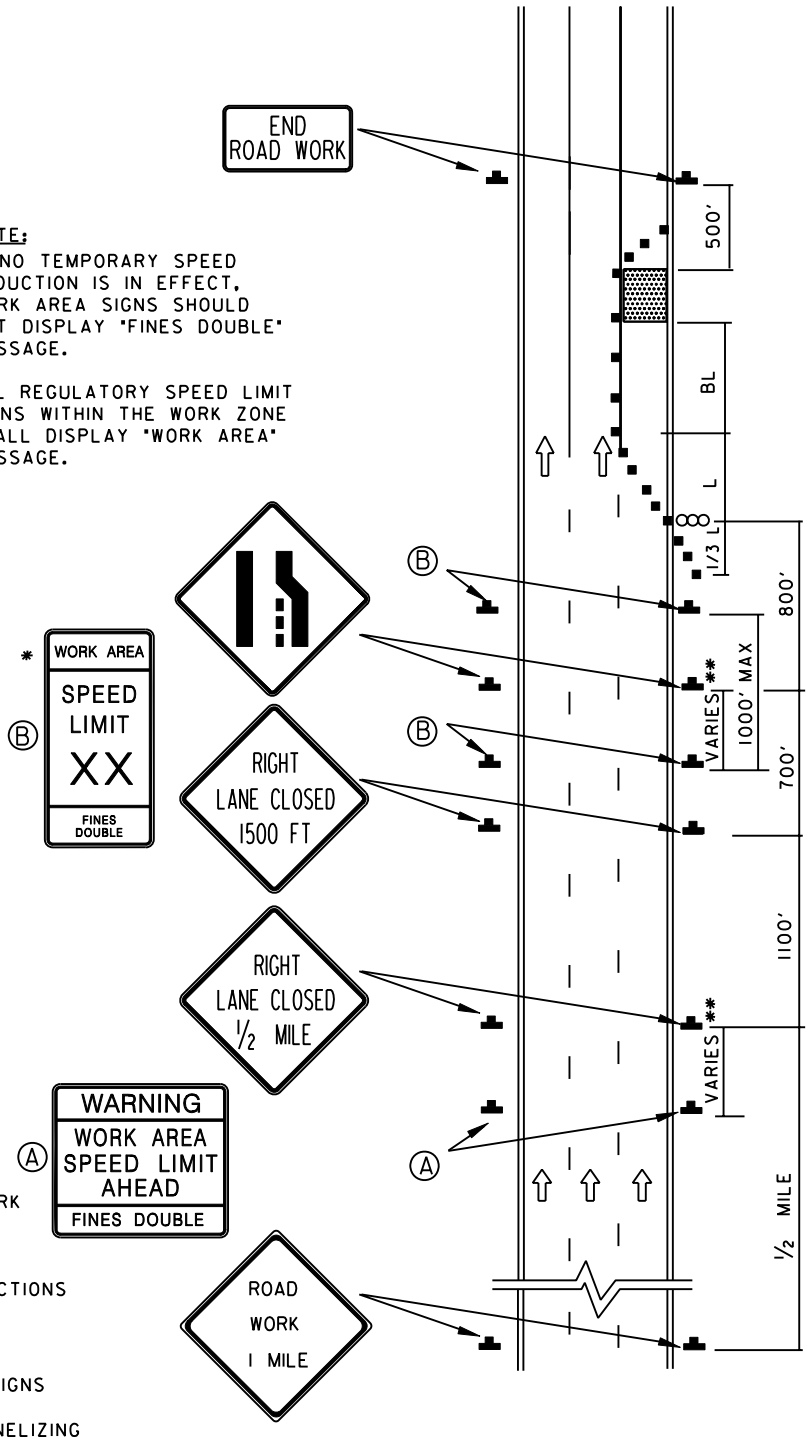
* *MAINTAIN MINIMUM 300' SPACING BETWEEN SIGNS

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

NOTE:

IF NO TEMPORARY SPEED REDUCTION IS IN EFFECT, WORK AREA SIGNS SHOULD NOT DISPLAY "FINES DOUBLE" MESSAGE.

ALL REGULATORY SPEED LIMIT SIGNS WITHIN THE WORK ZONE SHALL DISPLAY "WORK AREA" MESSAGE.



SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

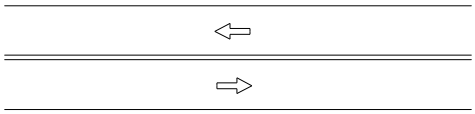
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

REGULATORY SPEED SIGNS

STANDARD NO. MD 104.01-07

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART

TWO-LANE, TWO-WAY



LOCATION OF WORK	SPEED	DURATION	STANDARD TRAFFIC CONTROL DEVICES																
										SIGN LOCATIONS									
			FLAGGER	VEHICLE LGTS	MARKINGS	ARROW PANEL	CHAN. DEVICES	PORTABLE VMS	NEXT MILES	2 MILES	1 MILE	½ MILE	1500 FT	1000 FT	800 FT	500 FT	AHEAD **	BOTH SIDES
ON ROAD	> 40 MPH	> 12 HRS/NIGHTTIME ○	X				X				X	X	X		X			
		15 MIN-12 HRS/DAYTIME □	X				X					X	X		X			
		< 15 MIN/LOCATION △		X													X	
		MOVING SLOW MOBILE *		X													X	
		MOVING NORMAL MOBILE		X														
	≤ 40 MPH	> 12 HRS/NIGHTTIME ○	X				X					X	X	X		X			
		15 MIN-12 HRS/DAYTIME □	X				X						X		X			
		< 15 MIN/LOCATION △		X													X	
		MOVING SLOW MOBILE *		X													X	
		MOVING NORMAL MOBILE		X														
ADJACENT TO ROAD ***	> 40 MPH	> 12 HRS/NIGHTTIME ○					X					X	X		X			
		15 MIN-12 HRS/DAYTIME □					X						X		X			
		< 15 MIN/LOCATION △		X														
	≤ 40 MPH	> 12 HRS/NIGHTTIME ○					X						X		X			
		15 MIN-12 HRS/DAYTIME □					X								X			
		< 15 MIN/LOCATION △		X														

KEY : X-REQUIRED, /-OPTIONAL ○-LONG TERM STATIONARY □-SHORT TERM STATIONARY △-SHORT DURATION ACTIVITY

* MOVING SLOW MEANS TRAVELING BELOW THE POSTED SPEED BY MORE THAN 15 MPH

** FOR MOVING OPERATIONS THE APPROPRIATE ADVANCE WARNING SIGNS MAY BE VEHICLE MOUNTED.

*** ADJACENT TO THE ROAD MEANS WITHIN 15 FEET OF THE EDGE OF TRAVEL LANE OR WITHIN 2 FEET FROM THE FACE OF CURB

NOTES

1. REFER TO TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART 104.01-11A FOR PROTECTION VEHICLE REQUIREMENTS.

2. STANDARD TRAFFIC CONTROL DEVICES MOST COMMONLY REQUIRED IN WORK ZONE ARE SHOWN WITHIN THESE TEMPORARY TRAFFIC CONTROL SELECTION CHARTS. TYPICAL APPLICATIONS SHOULD BE ALTERED, WHEN NECESSARY, TO FIT UNIQUE WORK ZONE CONDITIONS. REFER TO THE GENERAL NOTES.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED	2-19-24	REVISED	11-16-23

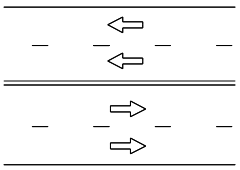
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

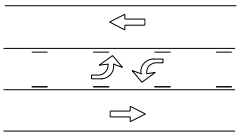
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART

STANDARD NO. MD 104.01-08

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART





MULTILANE UNDIVIDED

LOCATION OF WORK	SPEED	DURATION	STANDARD TRAFFIC CONTROL DEVICES																	
									SIGN LOCATIONS											
			FLAGGER	VEHICLE LGTS	MARKINGS	ARROW PANEL	CHAN. DEVICES	PORTABLE VMS	NEXT_MILES	2 MILES	1 MILE	½ MILE	1500 FT	1000 FT	800 FT	500 FT	AHEAD **	BOTH SIDES
ON ROAD	> 40 MPH	> 12 HRS/NIGHTTIME ○				X	X				X	X	X		X			
		15 MIN-12 HRS/DAYTIME □				X	X					X	X		X			
		< 15 MIN/LOCATION △		X		X											X	
		MOVING SLOW MOBILE *		X		X											X	
		MOVING NORMAL MOBILE		X														
	≤ 40 MPH	> 12 HRS/NIGHTTIME ○				X	X					X	X	X		X		
		15 MIN-12 HRS/DAYTIME □				X	X						X	X		X		
		< 15 MIN/LOCATION △		X		/											X	
		MOVING SLOW MOBILE *		X		/											X	
		MOVING NORMAL MOBILE		X														
ADJACENT TO ROAD ***	> 40 MPH	> 12 HRS/NIGHTTIME ○					X					X	X		X			
		15 MIN-12 HRS/DAYTIME □					X						X		X			
		< 15 MIN/LOCATION △		X														
	≤ 40 MPH	> 12 HRS/NIGHTTIME ○					X						X		X			
		15 MIN-12 HRS/DAYTIME □					X								X			
		< 15 MIN/LOCATION △		X														

KEY : X -REQUIRED, / -OPTIONAL ○ -LONG TERM STATIONARY □ -SHORT TERM STATIONARY △ -SHORT DURATION ACTIVITY

* MOVING SLOW MEANS TRAVELING BELOW THE POSTED SPEED BY MORE THAN 15 MPH

** FOR MOVING OPERATIONS THE APPROPRIATE ADVANCE WARNING SIGNS MAY BE VEHICLE MOUNTED.

*** ADJACENT TO THE ROAD MEANS WITHIN 15 FEET OF THE EDGE LINE OR WITHIN 2 FEET FROM THE FACE OF CURB

NOTES

1. REFER TO TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART 104.01-11A FOR PROTECTION VEHICLE REQUIREMENTS.

2. STANDARD TRAFFIC CONTROL DEVICES MOST COMMONLY REQUIRED IN WORK ZONE ARE SHOWN WITHIN THESE TEMPORARY TRAFFIC CONTROL SELECTION CHARTS. TYPICAL APPLICATIONS SHOULD BE ALTERED, WHEN NECESSARY, TO FIT UNIQUE WORK ZONE CONDITIONS. REFER TO THE GENERAL NOTES.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED	2-19-24	REVISED	11-16-23

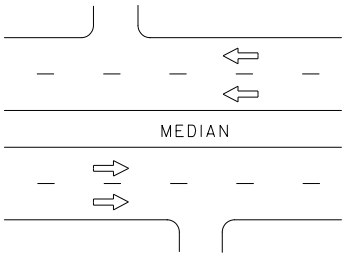
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART

STANDARD NO. MD 104.01-09

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART



MULTILANE DIVIDED UNCONTROLLED ACCESS

LOCATION OF WORK	SPEED	DURATION	STANDARD TRAFFIC CONTROL DEVICES																	
									SIGN LOCATIONS											
			FLAGGER	VEHICLE LGTS	MARKINGS	ARROW PANEL	CHAN. DEVICES	PORTABLE VMS	NEXT MILES	2 MILES	1 MILE	1/2 MILE	1500 FT	1000 FT	800 FT	500 FT	AHEAD **	BOTH SIDES
ON ROAD	> 40 MPH	> 12 HRS/NIGHTTIME ○				X	X				X	X	X		X			X
		15 MIN-12 HRS/DAYTIME □				X	X					X	X		X			X
		< 15 MIN/LOCATION △		X		X											X	X
		MOVING SLOW MOBILE *		X		X											X	X
		MOVING NORMAL MOBILE		X														
	≤ 40 MPH	> 12 HRS/NIGHTTIME ○				X	X					X	X	X		X		X
		15 MIN-12 HRS/DAYTIME □				X	X						X	X		X		X
		< 15 MIN/LOCATION △		X		X											X	X
		MOVING SLOW MOBILE *		X		X											X	X
		MOVING NORMAL MOBILE		X														
ADJACENT TO ROAD ***	> 40 MPH	> 12 HRS/NIGHTTIME ○					X					X	X		X			/
		15 MIN-12 HRS/DAYTIME □					X						X		X			/
		< 15 MIN/LOCATION △		X														
	≤ 40 MPH	> 12 HRS/NIGHTTIME ○					X						X		X			/
		15 MIN-12 HRS/DAYTIME □					X								X			/
		< 15 MIN/LOCATION △		X														

KEY: X-REQUIRED, / -OPTIONAL ○ -LONG TERM STATIONARY □ -SHORT TERM STATIONARY △ -SHORT DURATION ACTIVITY

* MOVING SLOW MEANS TRAVELING BELOW THE POSTED SPEED BY MORE THAN 15 MPH

** FOR MOVING OPERATIONS THE APPROPRIATE ADVANCE WARNING SIGNS MAY BE VEHICLE MOUNTED.

*** ADJACENT TO THE ROAD MEANS WITHIN 15 FEET OF THE EDGE LINE OR WITHIN 2 FEET FROM THE FACE OF CURB

NOTES

1. REFER TO TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART 104.01-11A FOR PROTECTION VEHICLE REQUIREMENTS.
2. STANDARD TRAFFIC CONTROL DEVICES MOST COMMONLY REQUIRED IN WORK ZONE ARE SHOWN WITHIN THESE TEMPORARY TRAFFIC CONTROL SELECTION CHARTS.TYPICAL APPLICATIONS SHOULD BE ALTERED, WHEN NECESSARY, TO FIT UNIQUE WORK ZONE CONDITIONS. REFER TO THE GENERAL NOTES.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED	2-19-24	REVISED	11-16-23

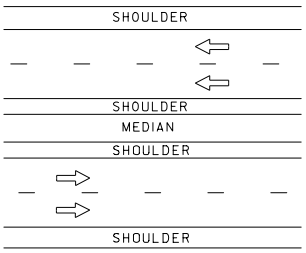
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART

STANDARD NO. MD 104.01-10

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART



MULTILANE DIVIDED CONTROLLED ACCESS (EXPRESSWAY /FREEWAY)

LOCATION OF WORK	SPEED	DURATION	STANDARD TRAFFIC CONTROL DEVICES																
									SIGN LOCATIONS										
			FLAGGER	VEHICLE LGTS	MARKINGS	ARROW PANEL	CHAN. DEVICES	PORTABLE VMS	NEXT-MILES	2 MILES	1 MILE	½ MILE	1500 FT	1000 FT	500 FT	AHEAD **	BOTH SIDES
ON ROAD	> 40 MPH	> 12 HRS/NIGHTTIME ○				X	X	/			X	X	X	X			X
		15 MIN-12 HRS/DAYTIME □				X	X				X	X		X			X
		< 15 MIN/LOCATION △		X		X										X	X
		MOVING SLOW MOBILE *		X		X										X	X
		MOVING NORMAL MOBILE		X													
	≤ 40 MPH	> 12 HRS/NIGHTTIME ○				X	X					X	X	X	X		X
		15 MIN-12 HRS/DAYTIME □				X	X					X	X	X			X
		< 15 MIN/LOCATION △		X		X										X	X
		MOVING SLOW MOBILE *		X		X										X	X
		MOVING NORMAL MOBILE		X													
ADJACENT TO ROAD ***	> 40 MPH	> 12 HRS/NIGHTTIME ○					X					X	X	X			/
		15 MIN-12 HRS/DAYTIME □					X						X	X			/
		< 15 MIN/LOCATION △		X													
	≤ 40 MPH	> 12 HRS/NIGHTTIME ○					X					X	X	X			/
		15 MIN-12 HRS/DAYTIME □					X							X			/
		< 15 MIN/LOCATION △		X													

KEY: X -REQUIRED, / -OPTIONAL ○ -LONG TERM STATIONARY □ -SHORT TERM STATIONARY △ -SHORT DURATION ACTIVITY

* MOVING SLOW MEANS TRAVELING BELOW THE POSTED SPEED BY MORE THAN 15 MPH

** FOR MOVING OPERATIONS THE APPROPRIATE ADVANCE WARNING SIGNS MAY BE VEHICLE MOUNTED.

*** ADJACENT TO THE ROAD MEANS WITHIN 15 FEET OF THE EDGE OF TRAVEL LANE OR WITHIN 2 FEET FROM THE FACE OF CURB

NOTES

1. REFER TO TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART 104.01-11A FOR PROTECTION VEHICLE REQUIREMENTS.

2. STANDARD TRAFFIC CONTROL DEVICES MOST COMMONLY REQUIRED IN WORK ZONE ARE SHOWN WITHIN THESE TEMPORARY TRAFFIC CONTROL SELECTION CHARTS. TYPICAL APPLICATIONS SHOULD BE ALTERED, WHEN NECESSARY, TO FIT UNIQUE WORK ZONE CONDITIONS. REFER TO THE GENERAL NOTES.

SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-20-14	REVISED	8-11-14
REVISED	9-15-15	REVISED	6-18-15
REVISED	2-19-24	REVISED	11-16-23

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART

STANDARD NO. MD 104.01-11

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART
PROTECTION VEHICLE (PV) UTILIZATION MATRIX

LOCATION OF WORK	POSTED SPEED LIMIT **	ROADWAY TYPE	DURATION				
			MOBILE OPERATIONS		SHORT DURATION ACTIVITY	SHORT-TERM STATIONARY	LONG-TERM STATIONARY
			MOVING SLOW *	MOVING NORMAL	< 15 MIN/ LOCATION	15 MIN-12 HRS AND DAYTIME	> 12 HRS OR NIGHT TIME
ON ROAD	≥ 55 MPH	TWO LANE,TWO-WAY	RQ		RQ	RQ	RQ
		MULTILANE UNDIVIDED	RQ		RQ	RQ	RQ
		MULTILANE DIVIDED UNCONTROLLED	RQ		RQ	RQ	RQ
		MULTILANE DIVIDED CONTROLLED (FREEWAY/EXPRESSWAY)	RQ		RQ	RQ	RQ
	< 55 MPH	TWO LANE,TWO-WAY					
		MULTILANE UNDIVIDED					
		MULTILANE DIVIDED UNCONTROLLED					
		MULTILANE DIVIDED CONTROLLED (FREEWAY/EXPRESSWAY)	RQ		RQ	RQ	RQ
ADJACENT TO ROAD ***	≥ 55 MPH	TWO LANE,TWO-WAY				RQ	RQ
		MULTILANE UNDIVIDED				RQ	RQ
		MULTILANE DIVIDED UNCONTROLLED				RQ	RQ
		MULTILANE DIVIDED CONTROLLED (FREEWAY/EXPRESSWAY)	RQ			RQ	RQ
	< 55 MPH	TWO LANE,TWO-WAY					
		MULTILANE UNDIVIDED					
		MULTILANE DIVIDED UNCONTROLLED					
		MULTILANE DIVIDED CONTROLLED (FREEWAY/EXPRESSWAY)	RQ			RQ	RQ

KEY: RQ - REQUIRED

* MOVING SLOW MEANS TRAVELING BELOW THE POSTED SPEED BY MORE THAN 15 MPH.

** FOR OFF-RAMPS USE THE POSTED SPEED LIMIT OF THE MAINLINE IN THE VICINITY OF THE RAMP. FOR ON-RAMPS USE THE POSTED SPEED LIMIT OF THE MAINLINE IN THE VICINITY OF THE MERGE POINT. FOR RAMP CONNECTING TWO ROADWAYS, USE THE LARGER POSTED SPEED LIMIT OF THE TWO MAINLINES.

*** ADJACENT TO THE ROAD MEANS WITHIN 15 FEET OF THE EDGE OF TRAVEL LANE OR WITHIN 2 FEET FROM THE FACE OF CURB.

NOTES

1. WHEN CLOSING OR OPENING A LANE OR SHOULDER ON ROADWAY WITH POSTED SPEED LIMIT OF 55 MPH OR GREATER, ENSURE THAT THE WORK VEHICLE USED FOR CLOSING OR OPENING THE LANE/SHOULDER IS CLOSELY FOLLOWED BY A PROTECTION VEHICLE (PV) DURING THE INSTALLATION AND REMOVAL OF TEMPORARY TRAFFIC CONTROL DEVICES.
2. IF PERSONNEL AND/OR EQUIPMENT ARE EXPECTED TO BE WITHIN 15 FEET FROM THE EDGE OF TRAVEL OR WITHIN 2 FEET FROM FACE OF CURB FOR A PERIOD LONGER THAN 15 MINUTES AT A SINGLE LOCATION (THIS INCLUDES ACTIVITIES SUCH AS MOWING AND LITTER COLLECTION), FOLLOW THE RECOMMENDATION LISTED UNDER WORK ADJACENT TO ROAD. A PV IS NOT REQUIRED IF PERSONNEL AND EQUIPMENT ARE POSITIONED BEHIND POSITIVE PROTECTION FOR THE ENTIRE WORK DURATION.
3. IF A PV IS REQUIRED BUT THE SHOULDER IS NOT WIDE ENOUGH TO ACCOMMODATE A PV AND PROVIDE A MINIMUM OF 2 FEET BETWEEN THE PV AND THE EDGE OF TRAVEL LANE, CONTACT THE ENGINEER TO DISCUSS OPTIONS FOR SAFELY CONDUCTING THE WORK.
4. IF THE PROTECTION VEHICLE MATRIX DOES NOT INDICATE THAT PV USE IS REQUIRED AND THERE IS A SAFETY CONCERN, CONTACT THE ENGINEER TO DISCUSS OPTIONS FOR SAFELY CONDUCTING THE WORK.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-19-24	APPROVAL	11-16-23
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

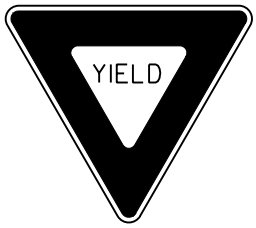
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

TEMPORARY TRAFFIC CONTROL DEVICE SELECTION CHART

STANDARD NO. MD 104.01-11A

REGULATORY SIGNS

R1-2



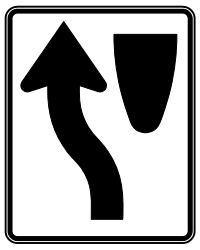
R4-1

R4-2

R4-7

R4-7a

R4-8



R5-1

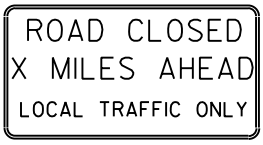
R9-9

M4-9b(2)

R10-6a

R11-2

R11-3a

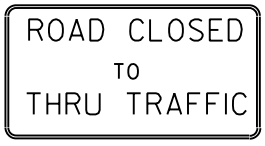


R3-7(4)(R)

R3-7(4)(L)

R1-2a

R11-4



SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

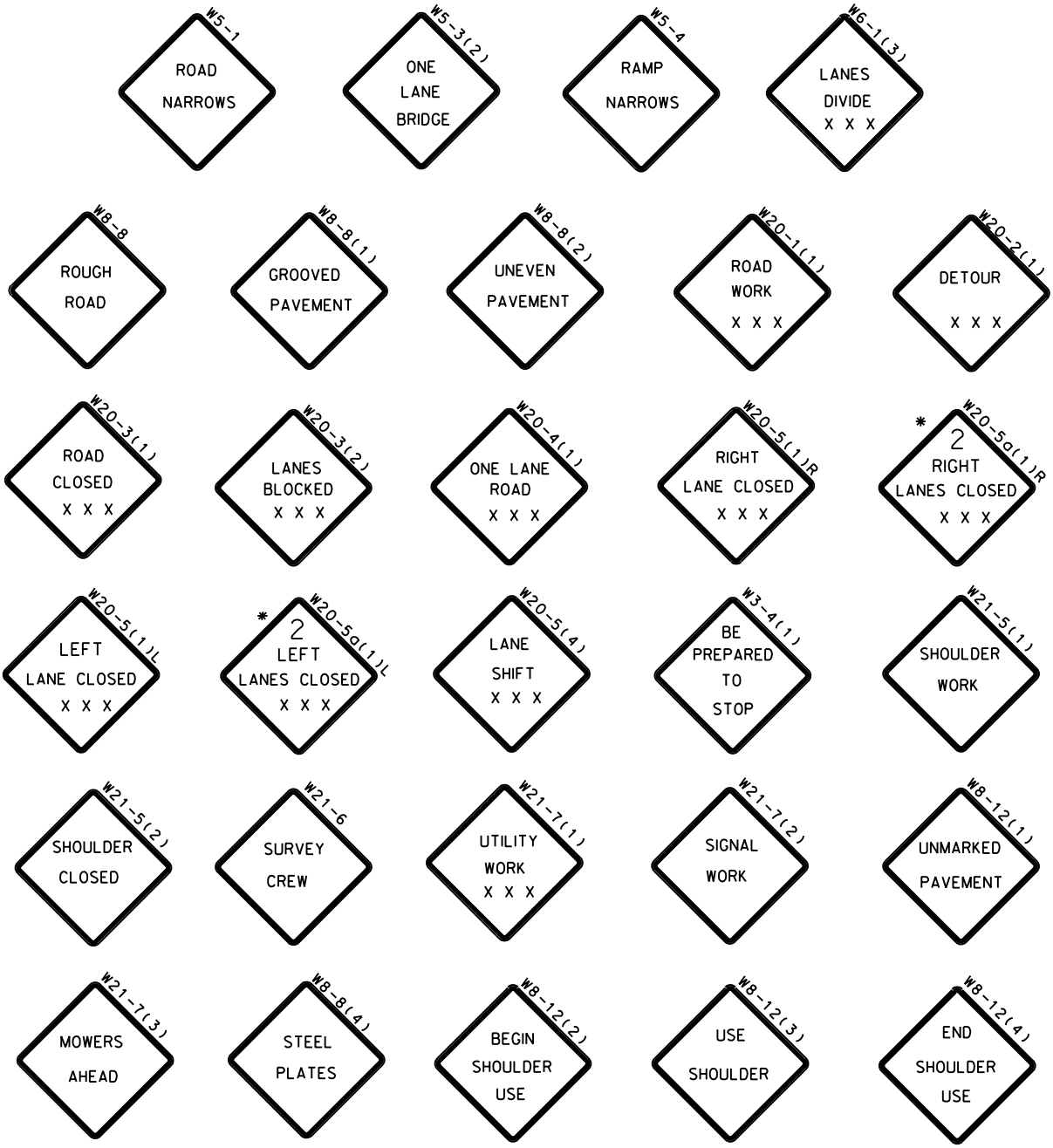
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

REGULATORY, WARNING, AND SPECIAL SIGNS

STANDARD NO. MD 104.01-12

WARNING SIGNS



*60 X 60 IN SIZE

SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

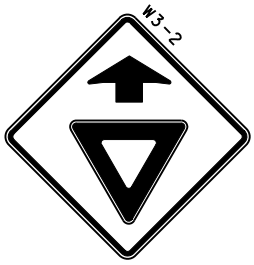
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

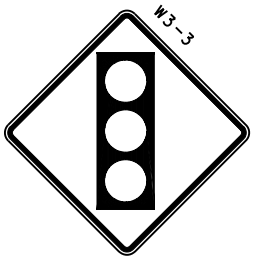
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

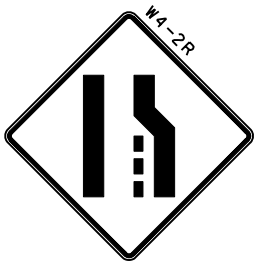
REGULATORY, WARNING, AND SPECIAL SIGNS

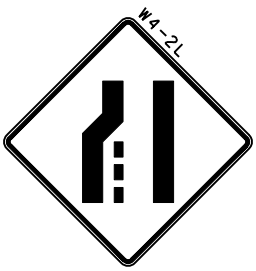
STANDARD NO. MD 104.01-13

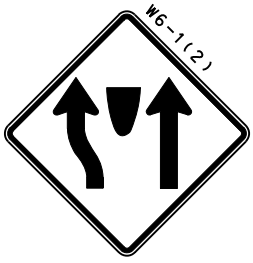
WARNING SIGNS

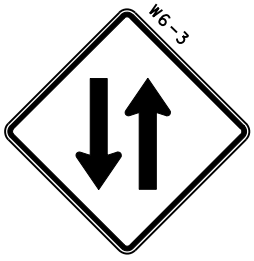


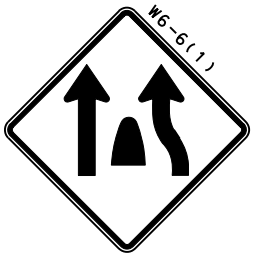


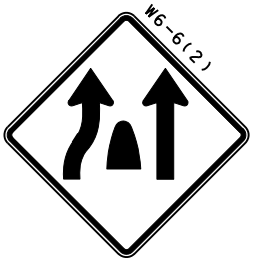












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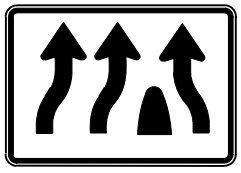

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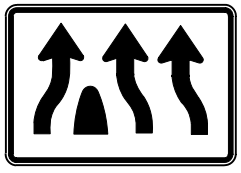

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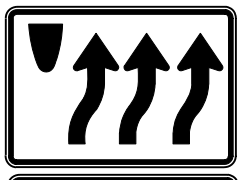
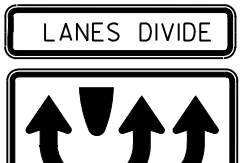


W9-3a(5)

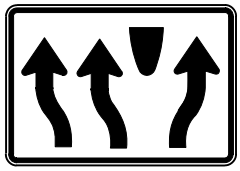
W9-3a(3)



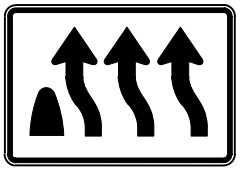
W9-3a(4)

W9-3a(5)

W9-3a(4)



W9-3a(6)



SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

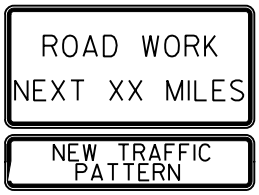
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

REGULATORY, WARNING, AND SPECIAL SIGNS

STANDARD NO. MD 104.01-14

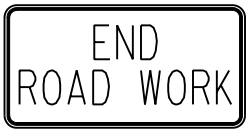
WARNING SIGNS

G20-1(1)



G3-1(1)

G20-2(1)



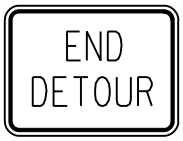
STOP(PADDLE)

SLOW(PADDLE)

W6-4(1)

W4-3(1)

M4-8a(1)

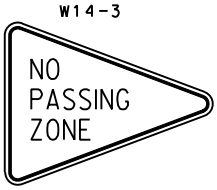


W8-8(3)

W13-1

W13-4

W14-3



W16-2(1)

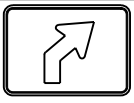
W16-4(1)

W16-2(1)

M4-8

M3-1

M1-5



M5-2

M4-9r

M4-10(L)

M4-9b(1)

VP-1(1)(L)

VP-1(1)(R)

OM-3(3)

SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-14-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

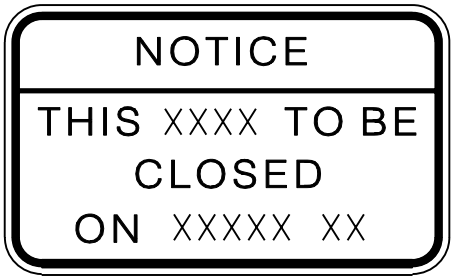
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

REGULATORY, WARNING, AND SPECIAL SIGNS

STANDARD NO. MD 104.01-15

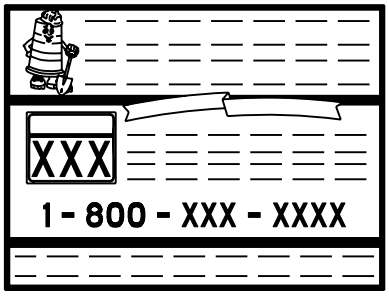
SPECIAL SIGNS

R11-2(6)

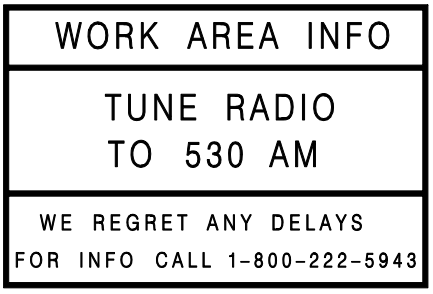


G2-1(3)

G2-1(1), G2-1(2)



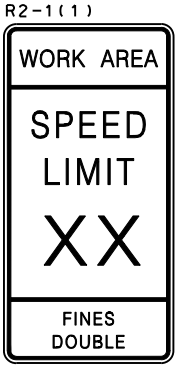
G2-1(4)



W3-5(1)

W3-5(2)

R2-1(1)



R2-1(2)

W21-2(1)

W21-2(2)(L)

W21-2(2)(R)

W21-2(3)

W21-2(4)

W14-3(1)

E5-2(1)

E5-1(1)

SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

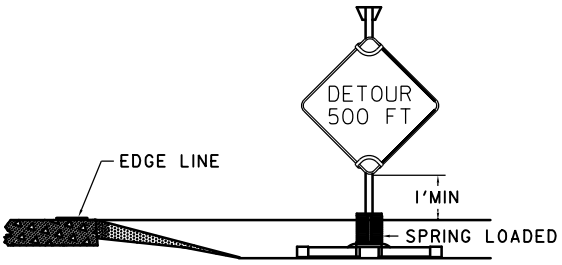
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

REGULATORY, WARNING, AND SPECIAL SIGNS

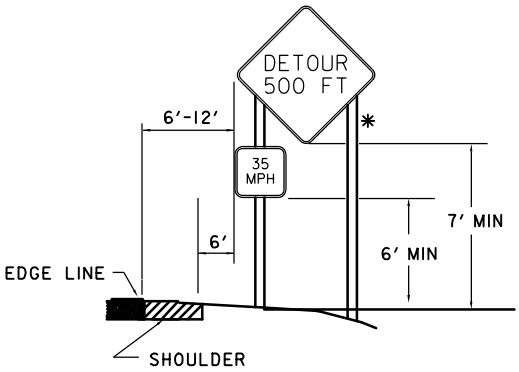
STANDARD NO. MD 104.01-16

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
ROADSIDE SIGN /SIGN SUPPORT PLACEMENT

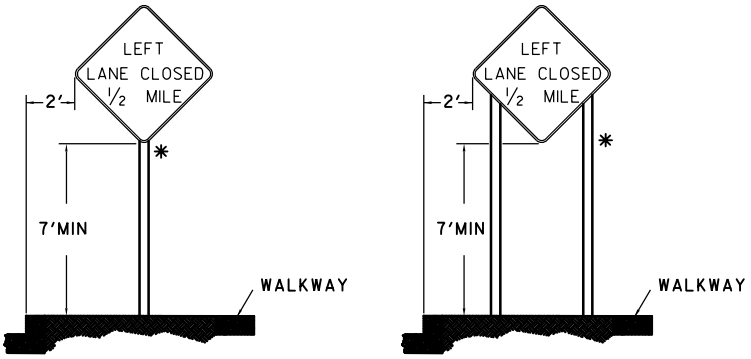
MD SHA'S OFFICE OF TRAFFIC AND SAFETY MAINTAINS A LIST OF APPROVED PORTABLE SIGN SUPPORTS. SIGN SUPPORTS SHALL BE USED AT HEIGHT WHICH MEETS MANUFACTURERS' RECOMMENDATION TO MEET MASH OR NCHRP 350 (LEVEL 3) CRITERIA.



PORTABLE



RURAL DISTRICT



URBAN DISTRICT

* BREAKAWAY WOOD SUPPORTS OR BREAKAWAY SQUARE METAL POSTS (TYPICAL) REFER TO MD 104.01-17B FOR WOOD SUPPORT AND MD 104.01-17C FOR TUBULAR STEEL BREAKAWAY INFORMATION.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	4-20-11	REVISED	
REVISED	2-23-18	REVISED	9-18-17

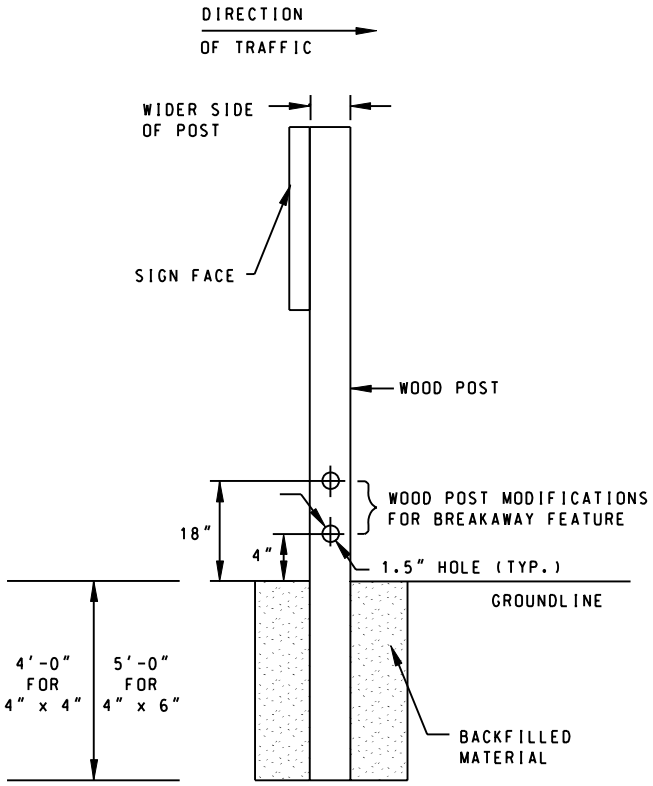
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

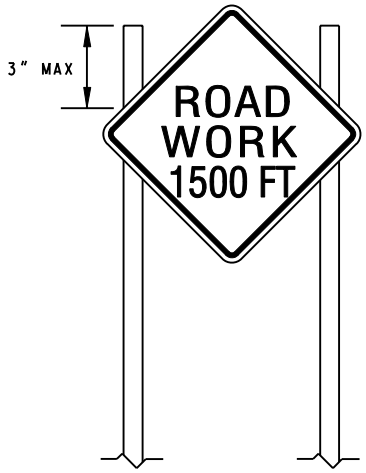
ROADSIDE SIGN SUPPORTS PLACEMENT

STANDARD NO. MD 104.01-17 A

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



TYPICAL FOUNDATION FOR WOOD SUPPORTS



MAXIMUM POST PROTRUSION

NOTES:

1. ALL WOOD POSTS 4"x 6" SHALL BE MADE BREAKAWAY BY DRILLING TWO 1-1/2" HOLES CENTERED AT 4" AND 18" ABOVE THE GROUNDLINE AND PERPENDICULAR TO THE ROADWAY.
2. ALL SUPPORTS SHALL BE BREAKAWAY UNLESS PROTECTED BY BARRIER OR GUARDRAIL.
3. TREATED WOODEN POST SHALL BE PLACED IN PRE-DUG HOLE IN GROUND. BACKFILLED USING SUITABLE MATERIAL. AND TAMPED THOROUGHLY TO PROVIDE A RIGID SUB-SURFACE CONDITION AROUND THE POST.

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

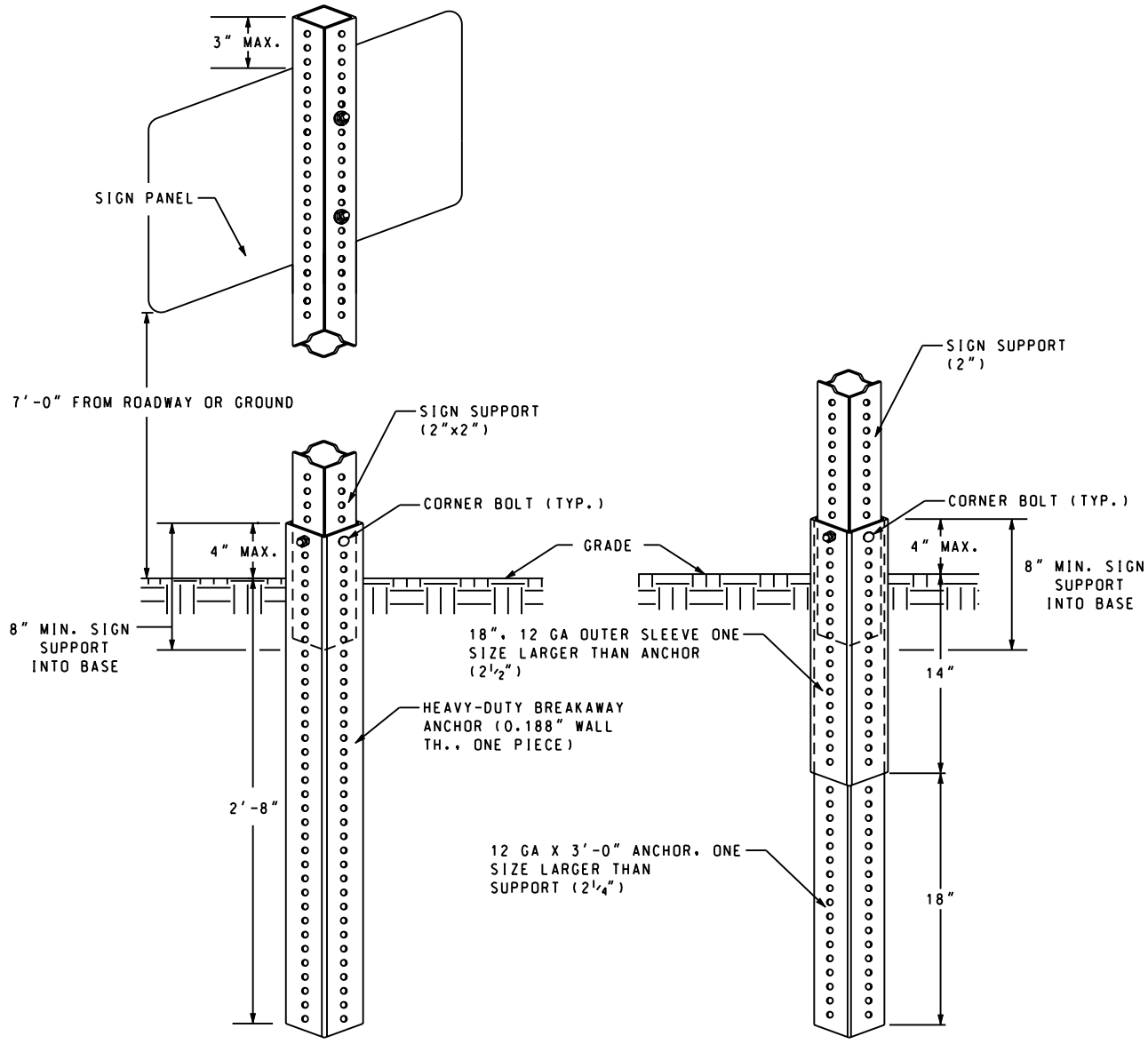
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-1-09	APPROVAL	7-27-09
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ROADSIDE SIGN SUPPORTS
FOUNDATIONS/BREAKAWAY FEATURES (WOOD)

STANDARD NO. MD 104.01-17 B

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



ONE PIECE ANCHOR SYSTEM **TWO PIECE ANCHOR SYSTEM**

NOTES:

1. INSTALLATION SHALL BE PERFORMED PER MANUFACTURER'S RECOMMENDATIONS.
2. CORNER BOLTS AND HARDWARE SHALL BE AS APPROVED BY AASHTO AND PER MANUFACTURER'S RECOMMENDATIONS.
3. THE INSTALLATION SHALL MEET THE LATEST AASHTO BREAKAWAY REQUIREMENTS.
4. SPLICES SHALL NOT BE USED TO EXTEND THE HEIGHT OF A SIGN POST.
5. ONLY 2" SIGN SUPPORTS SHALL BE USED. SIGN POSTS GREATER THAN OR LESS THAN 2" ARE NOT PERMITTED.
6. FOR COMPOSITE SIGN ATTACHMENT, FENDER WASHERS SHOULD BE USED ON THE SIGN PANEL.
7. ALL SIGNS 5' WIDE AND LARGER SHALL BE BRACED WITH TWO HORIZONTAL 2"X4" TREATED WOOD OR EQUAL, ATTACHED TO THE SUPPORTS. THE BOLT LENGTHS SHALL BE COORDINATED.

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-1-09	APPROVAL	7-27-09
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ROADSIDE SIGN SUPPORTS FOUNDATIONS/BREAKAWAY FEATURES (STEEL)

STANDARD NO. MD 104.01-17 C

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

VEHICLE CONSPICUITY (STRIPING/LIGHTING) REQUIREMENTS

NOTES:

- ADEQUATE LINE OF SIGHT*(SIGHT DISTANCE) DURING MOBILE OPERATION IS NECESSARY FOR THE EFFECTIVE PERFORMANCE OF THESE VEHICLES CONSPICUITY REQUIREMENTS. IN CASE OF LIMITED LINE OF SIGHT A LANE/SHOULDER SHOULD BE CLOSED TO PROTECT THE VEHICLE ACCORDING TO THE APPROPRIATE TTC STANDARD.
- ALL WORK VEHICLES THAT ARE NOT PART OF THE MOBILE OPERATION AND ARE NOT PROTECTED BY CHANNELIZING DEVICES/BARRIER, SHALL ALSO DISPLAY FLASHING LIGHTS AND RETROREFLECTIVE STRIPING.
- FOR PERIODS < 15 MINUTES, VEHICLES MAY BE IN CLEAR ZONE, PROVIDED FLASHING LIGHTS ARE ON AND RETROREFLECTIVE STRIPING IS PRESENT.

STRIPING NOTES:

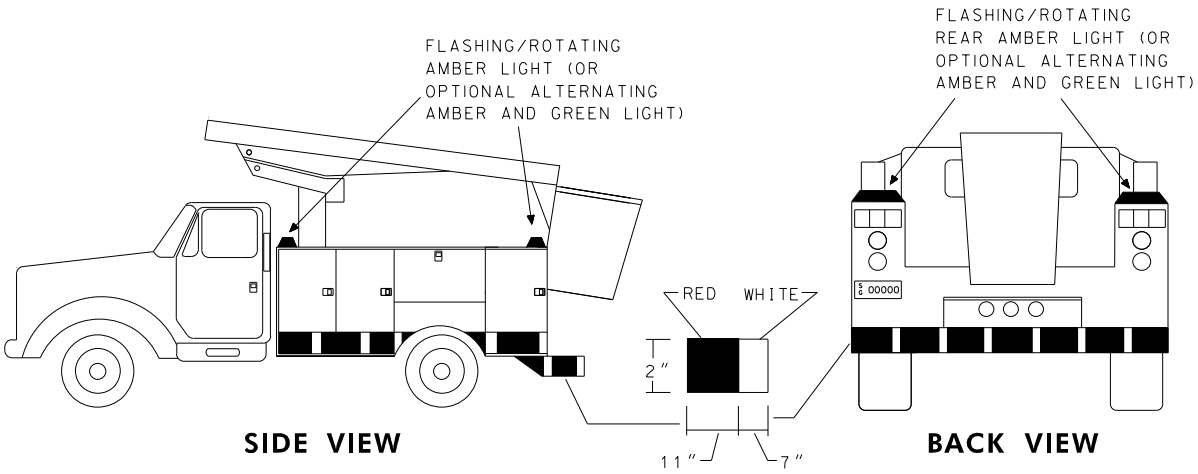
- ALL WORK VEHICLES SHALL HAVE SPECIFIED RETROREFLECTIVE STRIPES.
- HIGH PERFORMANCE WIDE ANGLE RETROREFLECTIVE SHEETING-VEHICLE MARKING TAPE STRIPE WIDTH - 2 INCH MINIMUM.

LIGHTING NOTES:

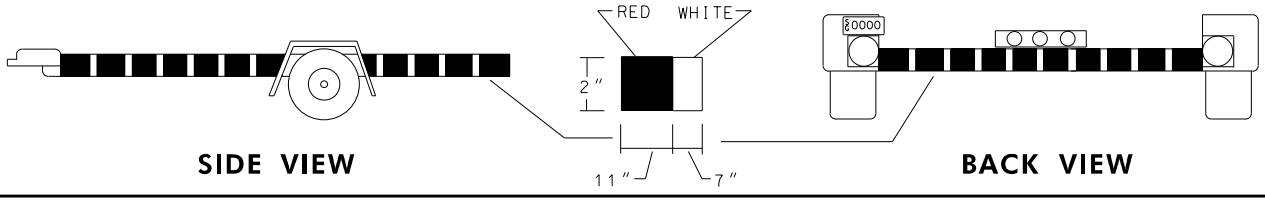
- BAR AND DOME LIGHTS SHALL BE CLASS 1, AS DEFINED BY THE SOCIETY OF AUTOMOTIVE ENGINEERS (SAE).
- TO DETERMINE VEHICLE SPECIFIC LIGHTING, SEE MD 104.01-18B FOR VEHICLE LIGHTING SELECTION CHART.
- VEHICLE MAY ALSO DISPLAY FLASHING HAZARD/PARKING LIGHTS IN FRONT AND REAR.
- WHILE USE OF AMBER LIGHTS IS MANDATORY, SUPPLEMENTING AMBER LIGHTS WITH GREEN LIGHTS IS OPTIONAL AND IS RESERVED FOR HIGHWAY MAINTENANCE VEHICLES WHILE IN USE FOR SNOW REMOVAL OR PROTECTION OF HIGHWAY MAINTENANCE WORKERS. SEE 104.01-18B FOR DEPLOYMENT DETAILS.
- IF USED, GREEN LIGHTS SHALL BE USED TOGETHER WITH AMBER LIGHTS IN AN ALTERNATING PATTERN AND THE NUMBER OF GREEN LIGHTS SHALL NOT EXCEED THE NUMBER OF AMBER LIGHTS EQUIPPED AND DISPLAYED.

* SEE GENERAL NOTES DEFINITION.

EXAMPLE OF VEHICLE CONSPICUITY STRIPING/LIGHTING ON A WORK VEHICLE



EXAMPLE OF PORTABLE TRAILER VEHICLE CONSPICUITY STRIPING



SPECIFICATION	CATEGORY CODE ITEMS

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-1-09	APPROVAL	7-27-09
REVISED	8-20-14	REVISED	8-11-14
REVISED	2-19-24	REVISED	12-06-23
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

VEHICLE CONSPICUITY AND LIGHTING

STANDARD NO. MD 104.01-18A

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
VEHICLE LIGHTING SELECTION CHART

LEVEL	VEHICLE TYPES	OPTION	VEHICLE LIGHTING DEVICES: SINGLE AMBER FLASHING LIGHT*	AMBER FLASHING BAR LIGHT**	TWO AMBER FLASHING BAR LIGHTS (NOT IN REAR) ***	TWO REAR AMBER FLASHING BAR LIGHTS***	TWO AMBER FLASHING DOME LIGHTS**	FOUR-WAY FLASHERS****	AMBER FLASHING LIGHTS IN GRILL OR TAIL LIGHTS	360 DEGREE VISIBILITY	AMBER & GREEN FLASHING BAR LIGHTS*****	USE	SPECIAL INSTRUCTIONS
1	PASSENGER CARS, SPORT UTILITY VEH., PICK-UP TRUCKS, ROLLERS, MINIVANS	1	X					X	/	X		* WARNING LIGHTS ON DURING WORK ZONE SET-UP/REMOVAL. * WARNING LIGHTS REMAIN ON IN HIGHWAY WORK ZONE.	* RED AND WHITE LIGHTS TO BE INSTALLED IN ACCORDANCE WITH THE MARYLAND MOTOR VEHICLE LAW. * AMBER FLASHING LIGHT INSTALLATION/USE MUST BE APPROVED BY ENGINEER.
		2		X				X	/	X			
2	UTILITY VEHICLES, CREW CABS, DUMP TRUCKS, PAINT TRUCKS, BRIDGE INSPECTION VEHICLES, GRADERS, CRANES, SWEEPERS, LOADERS, EXCAVATORS, MOWERS, BACKHOES, FORKLIFTS, CARGO VANS, PASSENGER VANS, ETC.	1			X	X		X	/	X		* WARNING LIGHTS ON DURING WORK ZONE SET-UP/REMOVAL. * WARNING LIGHTS REMAIN ON IN HIGHWAY WORK ZONE.	* RED AND WHITE LIGHTS TO BE INSTALLED IN ACCORDANCE WITH THE MARYLAND MOTOR VEHICLE LAW. * AMBER FLASHING LIGHT INSTALLATION/USE MUST BE APPROVED BY ENGINEER.
		2					X	X	/	X			
		3	X			X		X	/	X			
3	VEHICLES RETROFITTED WITH ARROW PANEL OR PVMS	1				X		X	/	X		* WARNING LIGHTS ON DURING WORK ZONE SET-UP/REMOVAL. * WARNING LIGHTS REMAIN ON IN HIGHWAY WORK ZONE. * WARNING LIGHTS THAT CONFLICT WITH ARROW PANEL OR PVMS SHALL BE TURNED OFF.	* RED AND WHITE LIGHTS TO BE INSTALLED IN ACCORDANCE WITH THE MARYLAND MOTOR VEHICLE LAW. * AMBER FLASHING LIGHT INSTALLATION/USE MUST BE APPROVED BY ENGINEER.
		2					X	X	/	X			
4	SNOW PLOWS, HIGHWAY MAINTENANCE AND SERVICE VEHICLES WHILE IN USE FOR SNOW REMOVAL OR PROTECTION OF HIGHWAY MAINTENANCE WORKERS	1			X	X		X	/	X		* WARNING LIGHTS REMAIN ON DURING MAINTENANCE OPERATIONS. * WARNING LIGHTS THAT CONFLICT WITH ARROW PANEL SHALL BE TURNED OFF.	* RED AND WHITE LIGHTS TO BE INSTALLED IN ACCORDANCE WITH THE MARYLAND MOTOR VEHICLE LAW. * AMBER AND GREEN FLASHING LIGHTS INSTALLATION/USE MUST BE APPROVED BY ENGINEER.
		2					X	X	/	X			
		3					X	X	/	X	X		
		4			X			X	/	X	X		
		5			X		X	X	/	X	X		

KEY : X -REQUIRED, / -OPTIONAL

*FLASHING LIGHT OR FLASHING ROTATING

**FLASHING LIGHT AND FLASHING ROTATING

***ONE FLASHING/ROTATING LEFT AND ONE FLASHING/ROTATING RIGHT

NOTE: REAR AMBER FLASHING LIGHTS SHALL FLASH IN AN ALTERNATING MANNER

****IF A VEHICLE DOES NOT HAVE STANDARD EQUIPPED FOUR-WAY FLASHERS, THEY ARE NOT REQUIRED

NOTE: ADDITIONAL LIGHTS SHOULD BE ADDED TO THE VEHICLE TO OUTLINE OBSTACLES ATTACHED TO THE VEHICLE SUCH AS A BLADE OR TRAILER

*****USE OF AMBER AND GREEN LIGHTS MUST BE SYMMETRICAL AND BE DISPLAYED IN AN ALTERNATING PATTERN.

DEVICE DESCRIPTIONS:

ROTATING LIGHTS - DEVICE DESIGNED TO PROJECT LIGHT ON A SWEEPING 360 DEGREE ARC.

LIGHT BAR - A HOUSING UNIT OR GROUP OF HOUSINGS OR UNITS CONTAINING AMBER LIGHTS OR LENSES WITH ONE OR MORE FLASHING WARNING LIGHTS IN EACH HOUSING.

FLASHING LIGHT - DEVICE THAT EMITS LIGHT IN PULSES AT A RATE NOT TO EXCEED 5 PULSES PER SECOND (5 Hz).

4-WAY FLASHERS - LIGHTS INSTALLED ON VEHICLES, REFERRED TO AS HAZARDS, THAT FLASH AT A CERTAIN RATE WHEN ACTIVATED.

NOTE: LIGHTS SHALL BE CLASS I AS DEFINED BY THE SOCIETY OF AUTOMOTIVE ENGINEERS (SAE).

SPECIFICATION	CATEGORY CODE ITEMS

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-1-09	APPROVAL	7-27-09
REVISED	4-19-10	REVISED	
REVISED	2-19-24	REVISED	12-06-23
REVISED		REVISED	

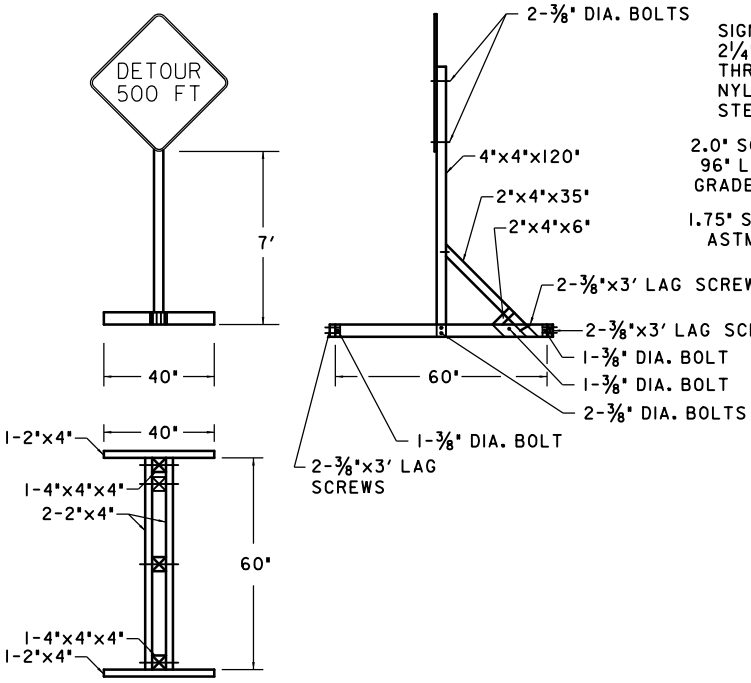
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

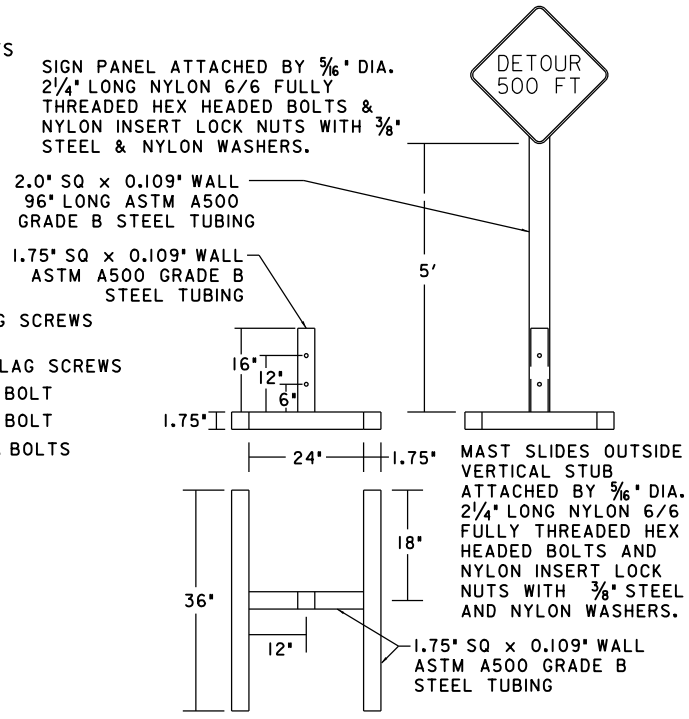
TEMPORARY TRAFFIC CONTROL VEHICLE LIGHTING SELECTION CHART

STANDARD NO. MD 104.01-18B

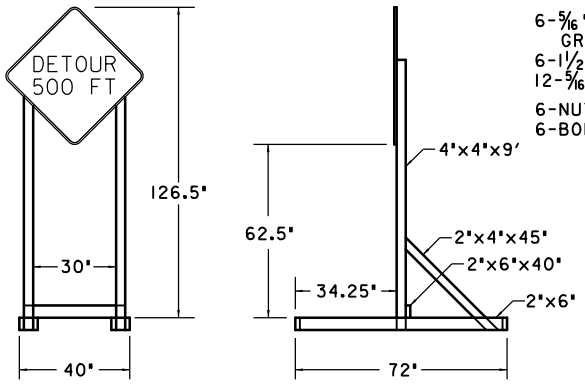
TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
SKID MOUNTED SIGN SUPPORTS

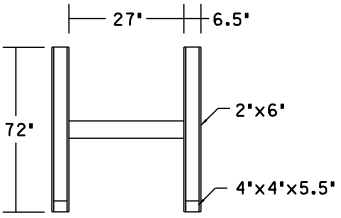


SINGLE–POST WOOD
(36" x 36" MAX. SIGN SIZE)

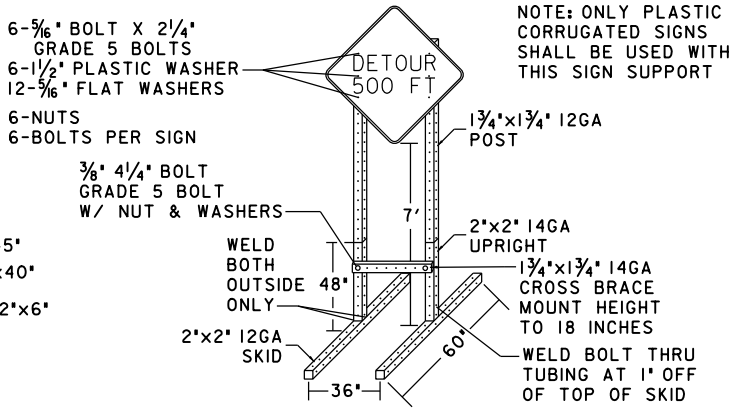


SINGLE–POST SQUARE TUBULAR STEEL
(36" x 36" MAX. SIGN SIZE)





DOUBLE–POST WOOD
(48" x 48" MAX. SIGN SIZE)



DOUBLE–POST SQUARE TUBULAR STEEL
(48" x 48" MAX. SIGN SIZE)

NOTE: TEMPORARY SKID SIGN SUPPORTS SHALL BE MASH OR NCHRP-350 APPROVED DESIGNS AS SHOWN

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____ DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-11-10	APPROVAL	10-5-10
REVISED	2-23-18	REVISED	6-1-17
REVISED		REVISED	
REVISED		REVISED	

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ROADSIDE SIGN SUPPORTS
SKID MOUNTED FEATURES (WOOD & STEEL)

STANDARD NO. MD 104.01-17 D

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

PAINT TRUCK

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

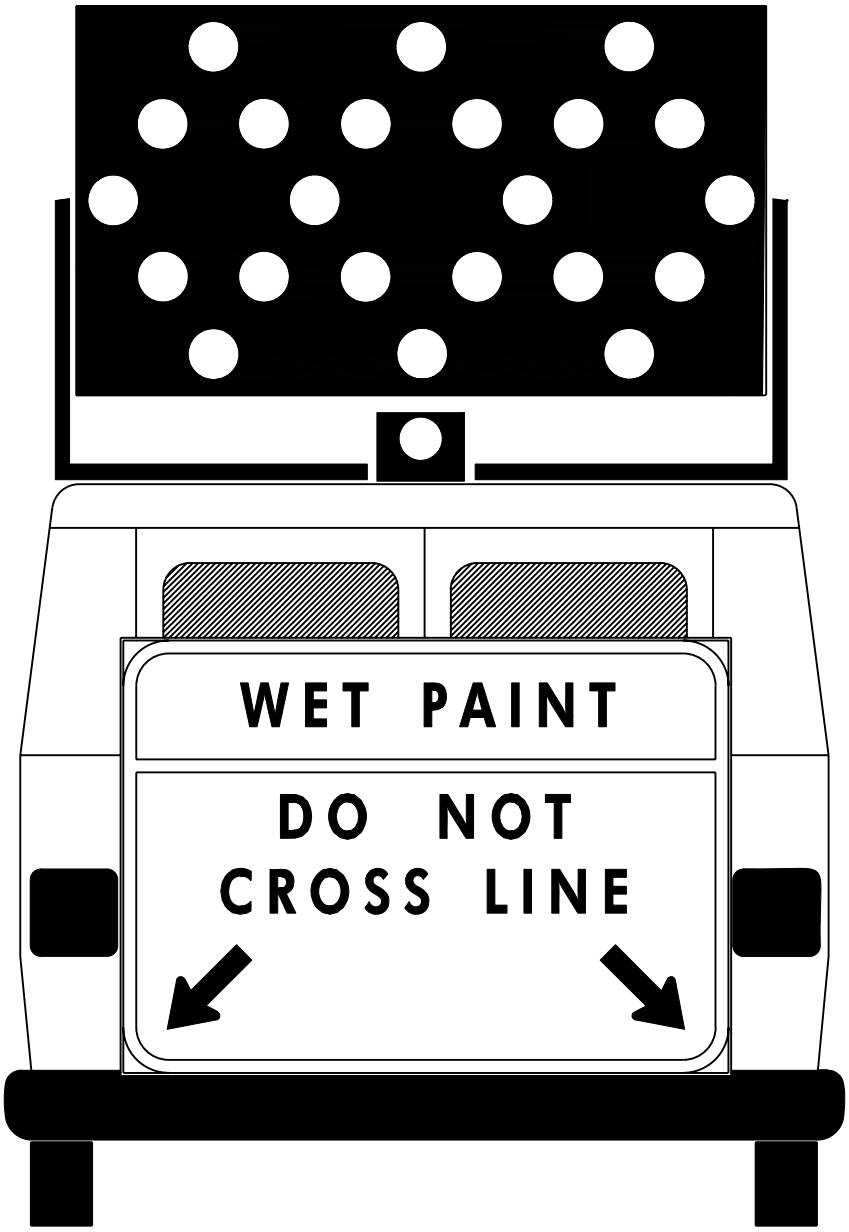
APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 7-1-09	APPROVAL 7-27-09
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PAINT TRUCK

STANDARD NO. MD 104.01-19 A

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
WORK ZONE VEHICLE
PAINT TRAIN VEHICLE – VAN/PICKUP



SPECIFICATION	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 7-1-09	APPROVAL 7-27-09
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

WORK ZONE VEHICLE
PAINT TRAIN VEHICLE – VAN/PICKUP

STANDARD NO. MD 104.01-19 B

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
WORK ZONE VEHICLE

PROTECTION VEHICLE

- ARROW PANEL

- REAR TRUCK/ TRAILER-TRUCK MOUNTED ATTENUATOR

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-1-09	APPROVAL	7-27-09
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PROTECTION VEHICLE

STANDARD NO. MD 104.01-19 C

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES:

THIS TYPICAL ALSO APPLIES TO PVMS PLACEMENT ON OR ALONG A MEDIAN SHOULDER.

PVMS MESSAGES AND PLACEMENT OF THIS DEVICE SHALL BE APPROVED BY THE ASSISTANT DISTRICT ENGINEER-TRAFFIC.

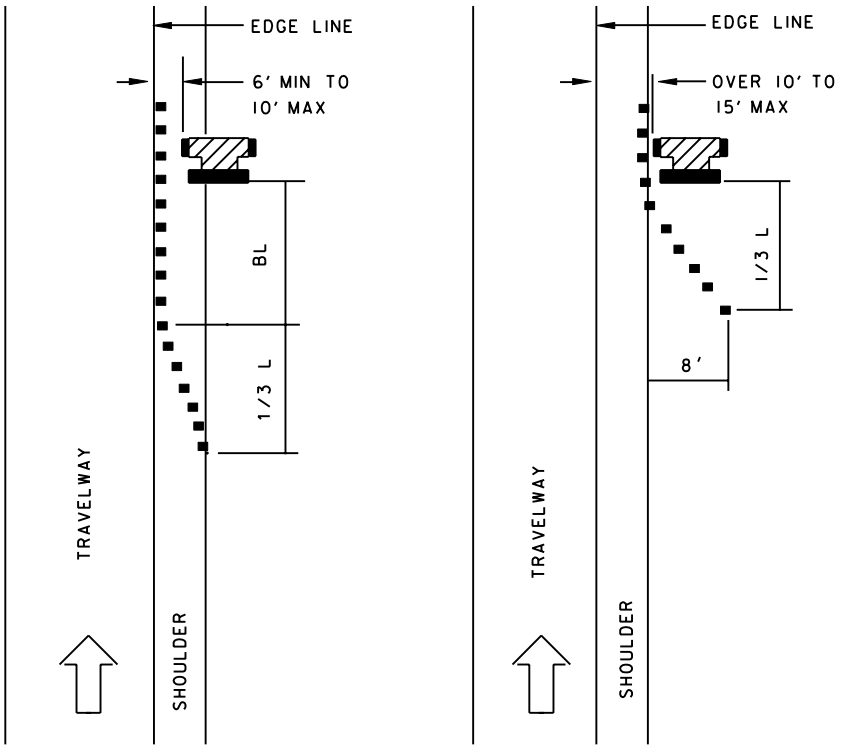
PVMS SHALL BE PLACED A MINIMUM OF 6' AND NO MORE THAN 15' FROM EDGE LINE.

ON LONG TERM PROJECTS PVMS'S SHOULD BE INSTALLED BEHIND TRAFFIC BARRIER.

PVMS PLACED BEHIND THE TRAFFIC BARRIER SHALL BE LOCATED A MINIMUM OF 4' FROM FACE OF BARRIER.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

PLACEMENT OF PVMS



6' TO 10' FROM EDGE LINE

GREATER THAN 10' TO 15' FROM EDGE LINE

KEY:

PORTABLE VARIABLE MESSAGE SIGN (PVMS)

CHANNELIZING DEVICES

DIRECTION OF TRAFFIC

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

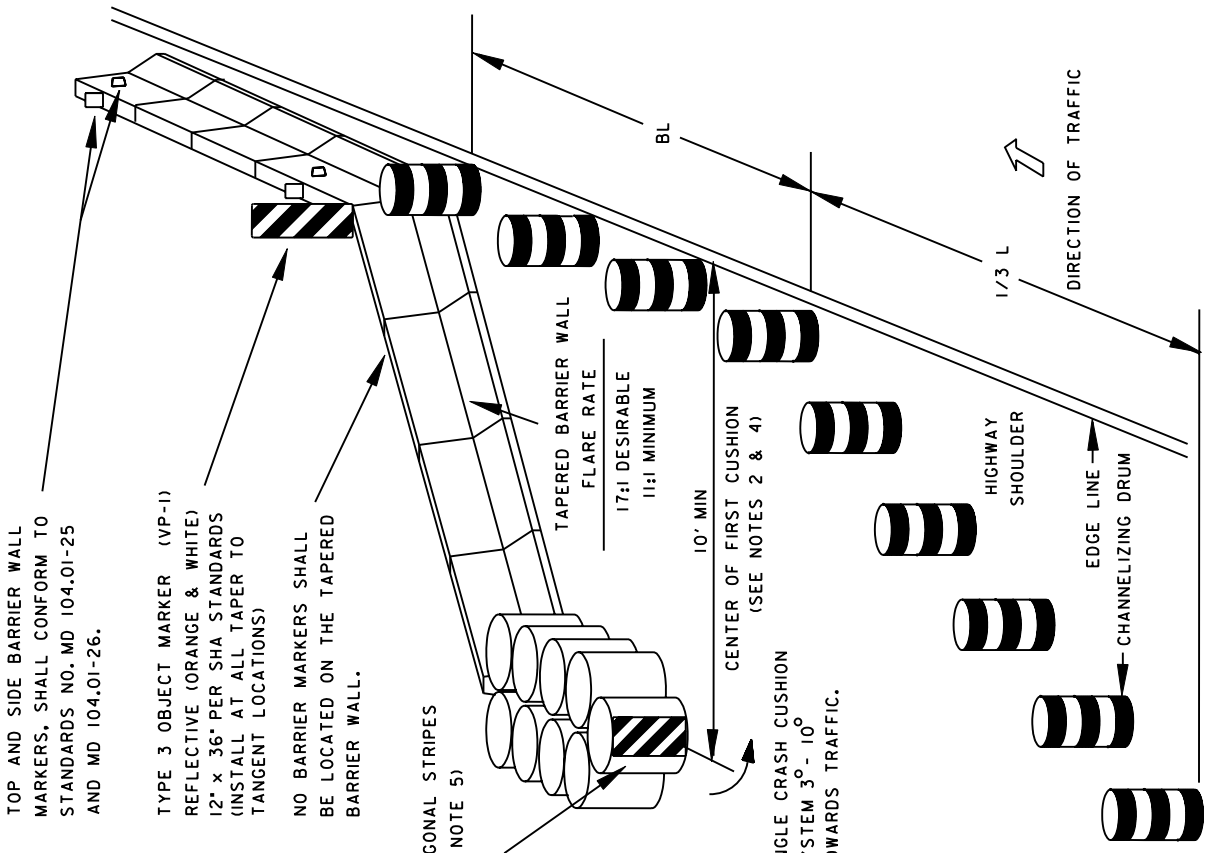
PORTABLE VARIABLE MESSAGE SIGN
PLACEMENT ALL ROADWAYS/ALL SPEEDS

STANDARD NO. **MD 104.01-22**

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES:

1. TEMPORARY EDGE LINE STRIPING-
   - O TEMPORARY EDGE LINE STRIPING IS OPTIONAL ALONG THE ENTIRE LENGTH OF TANGENT BARRIER WALL UNLESS OTHERWISE SPECIFIED.
   - O THE EDGE LINE SHALL BE REQUIRED WHERE BARRIER WOULD NOT BE TANGENT TO, OR WOULD BE TANGENT TO, BUT NOT WITHIN 2' OF PROJECTED EDGE LINE.
   - O TEMPORARY EDGE LINE STRIPING SHALL BE REQUIRED ALONG THE TANGENT BARRIER WALL FOR A DISTANCE OF 100' PAST THE BEGINNING OF THE TANGENT SECTIONS.
   - O THE EDGE LINE SHOULD BE PLACED 8' - 12' FROM AND ALONG THE THE BARRIER, WHEN POSSIBLE.
2. WHERE SPACE IS LIMITED AN END TREATMENT MAY BE INSTALLED AS APPROVED BY THE ENGINEER.
3. THE SLOPED END BARRIER TRANSITION IS NOT PERMITTED ON ANY ROADWAY WHERE THE TRAVEL SPEED IS GREATER THAN 25 MPH.
4. UNLESS CONDITIONS DETERMINE OTHERWISE, AS DETERMINED BY THE ENGINEER
5. REFLECTORIZATION IS REQUIRED ON INITIAL CRASH CUSHION. USE VP-1 WITH DIAGONAL STRIPES.
6. REFER TO STANDARD NO. MD 104.01-23 B FOR BARRIER FLARE SECTIONS ON TWO-LANE, TWO-WAY ROADWAYS.
7. TAPERED BARRIER WALL MAY BE CONNECTED TO EXISTING W BEAM AS DIRECTED BY THE ENGINEER. REFER TO CATEGORY I OF THE BOOK OF STANDARDS FOR RELEVANT STANDARD DETAIL(S).
8. THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.



SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	3-15-06	REVISED	
REVISED	8-11-10	REVISED	10-14-10
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ADVANCE CHANNELIZATION AND PROTECTION FOR BARRIER FLARE SECTION

STANDARD NO. MD 104.01-23 A

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES:

1. TEMPORARY EDGE LINE STRIPING-
   - O TEMPORARY EDGE LINE STRIPING IS OPTIONAL ALONG THE ENTIRE LENGTH OF TANGENT BARRIER WALL UNLESS OTHERWISE SPECIFIED.
   - O THE EDGE LINE SHALL BE REQUIRED WHERE BARRIER WOULD NOT BE TANGENT TO, OR WOULD BE TANGENT TO, BUT NOT WITHIN 2' OF PROJECTED EDGE LINE.
   - O TEMPORARY EDGE LINE STRIPING SHALL BE REQUIRED ALONG THE TANGENT BARRIER WALL FOR A DISTANCE OF 100' PAST THE BEGINNING OF THE TANGENT SECTIONS.
   - O THE EDGE LINE SHOULD BE PLACED 8' - 12' FROM AND ALONG THE THE BARRIER, WHEN POSSIBLE.
2. WHERE SPACE IS LIMITED AN END TREATMENT MAY BE INSTALLED AS APPROVED BY THE ENGINEER.
3. THE SLOPED END BARRIER TRANSITION IS NOT PERMITTED ON ANY ROADWAY WHERE THE TRAVEL SPEED IS GREATER THAN 25 MPH.
4. UNLESS CONDITIONS DETERMINE OTHERWISE, AS DETERMINED BY THE ENGINEER
5. REFLECTORIZATION IS REQUIRED ON INITIAL CRASH CUSHION. USE VP-1 WITH DIAGONAL STRIPES.
6. ON TWO-LANE, TWO-WAY ROADWAYS, THE TWO-WAY TRAFFIC TAPER SHALL BE A MINIMUM OF 100'.
7. TAPERED BARRIER WALL MAY BE CONNECTED TO EXISTING W BEAM AS DIRECTED BY THE ENGINEER. REFER TO CATEGORY I OF THE BOOK OF STANDARDS FOR RELEVANT STANDARD DETAIL(S).
8. IF THE TRAILING END OF THE BARRIER IS WITHIN THE CLEAR ZONE (REFER TO CLEAR ZONE CHART IN GENERAL NOTES), BARRIER PROTECTION IS REQUIRED.
9. THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	3-15-06	REVISED	
REVISED	8-11-10	REVISED	10-14-10
REVISED		REVISED	

SHA State Highway Administration

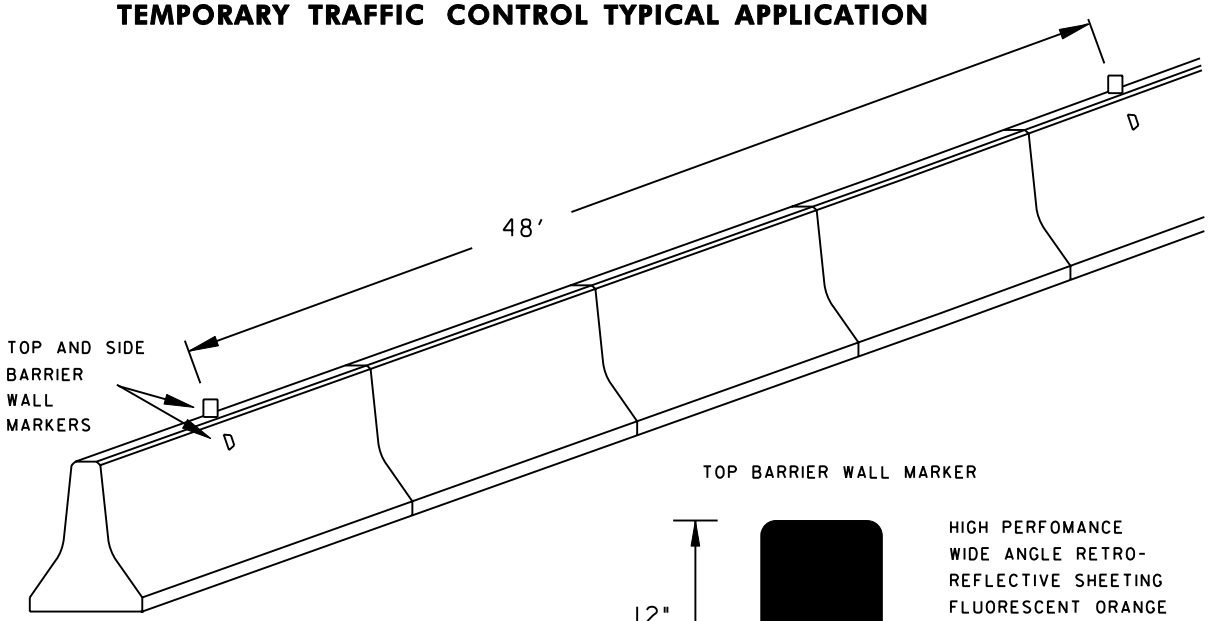
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

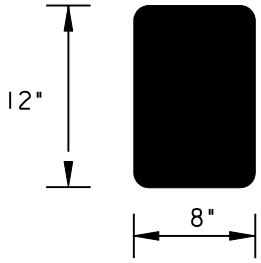
ADVANCE CHANNELIZATION AND PROTECTION FOR BARRIER FLARE SECTION

STANDARD NO. MD 104.01-23 B

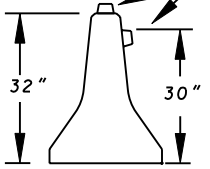
TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



TOP BARRIER WALL MARKER



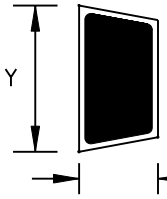
HIGH PERFOMANCE
WIDE ANGLE RETRO-
REFLECTIVE SHEETING
FLUORESCENT ORANGE



F-SHAPE
FRONT VIEW

NOTE:
FOR BIFURCATED F-SHAPED
BARRIER, MAINTAIN 30 INCH
HEIGHT TO TOP OF MARKER

SIDE BARRIER WALL MARKER



HIGH PERFOMANCE
WIDE ANGLE RETRO-
REFLECTIVE SHEETING
OR RETROREFLECTIVE
REFLECTORS

MINIMUM REFLECTIVE
AREA, 7.5 SQ. IN.

NOTES: SIDE BARRIER MARKERS SHALL BE YELLOW IN COLOR WHEN PLACED ON MEDIAN-SIDE BARRIER (SEPARATING OPPOSING TRAFFIC).

SIDE BARRIER MARKERS SHALL BE WHITE IN COLOR WHEN PLACED ON SHOULDER-SIDE BARRIER (OR BARRIER SEPARATING SAME DIRECTION TRAFFIC).

THE 48 FOOT SPACINGS BETWEEN MARKERS SHALL BE MAINTAINED ON CURVES/TURNS.

INSTALL SIDE MARKERS IN CONFORMANCE WITH MANUFACTURERS DIRECTIONS.

THE BOTTOM OF THE TOP MARKER SHALL BE AT THE SAME ELEVATION AS THE TOP OF THE BARRIER. NO ATTACHMENT METHOD MAY BLOCK ANY PART OF THE REFLECTIVE AREA OF THE MARKER. BACKING FOR TOP MARKERS SHALL BE SHEET ALUMINUM, MEETING MATERIAL THICKNESS PER TEMPORARY TRAFFIC SIGNS SPECIFICATIONS OR ANY OTHER MATERIAL APPROVED BY OOTS.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED

DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	5-29-07	REVISED	5-2-07
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	

SHA State Highway Administration

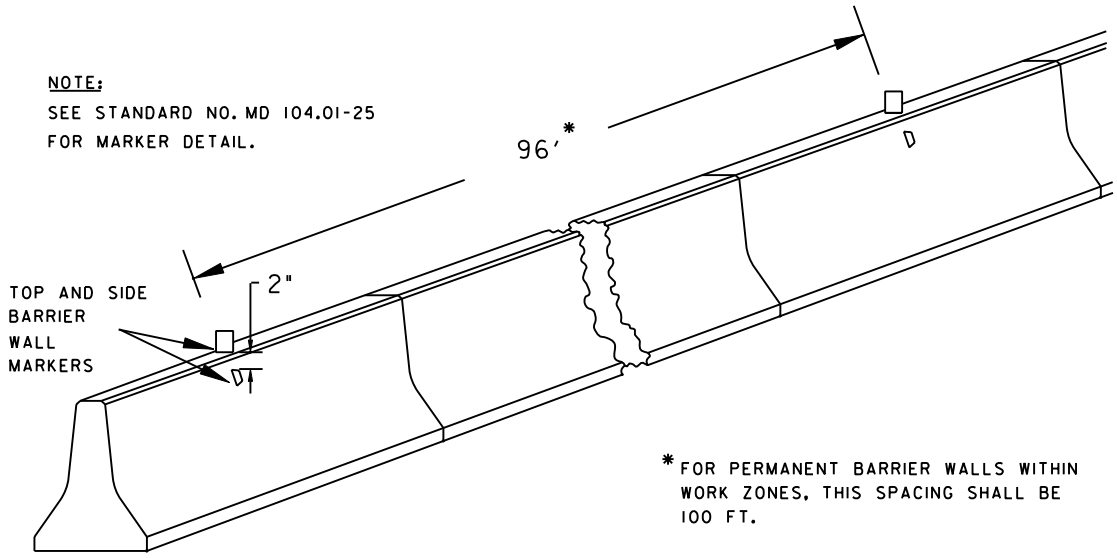
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

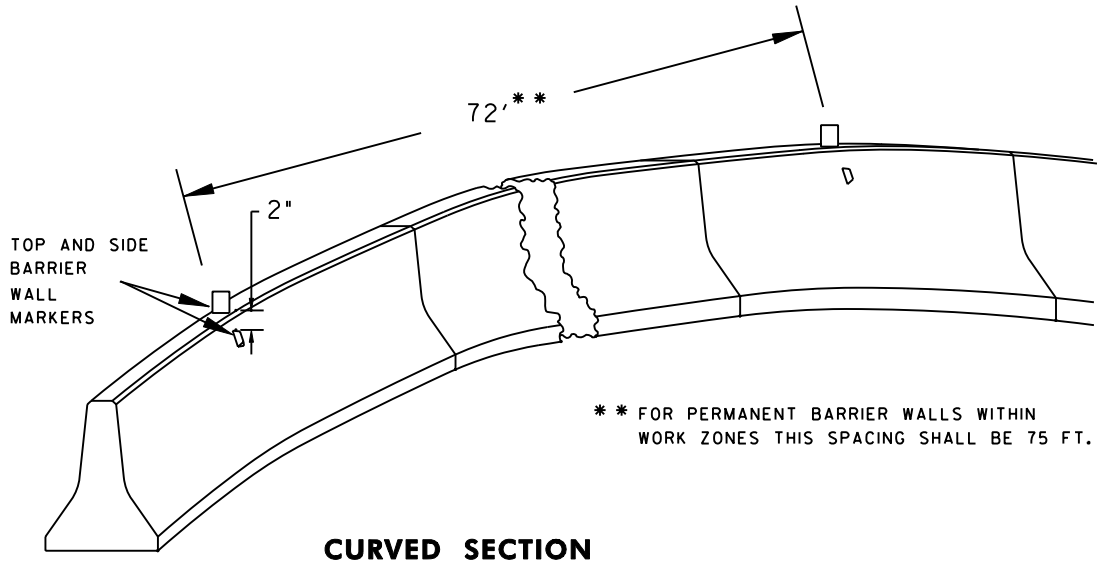
BARRIER DELINEATION
BARRIER 4 FEET OR CLOSER TO EDGE LINE

STANDARD NO. **MD 104.01-25**

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



TANGENT SECTION



CURVED SECTION

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

BARRIER DELINEATION
BARRIER BETWEEN 4 AND 15 FEET FROM EDGE LINE

STANDARD NO. MD 104.01-26

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES:

AN "ABRUPT" LANE SHIFT IS ANY SHIFT WITH A TAPER LENGTH (L) LESS THAN THE VALUE SPECIFIED IN THE TAPER LENGTH CRITERIA TABLE.

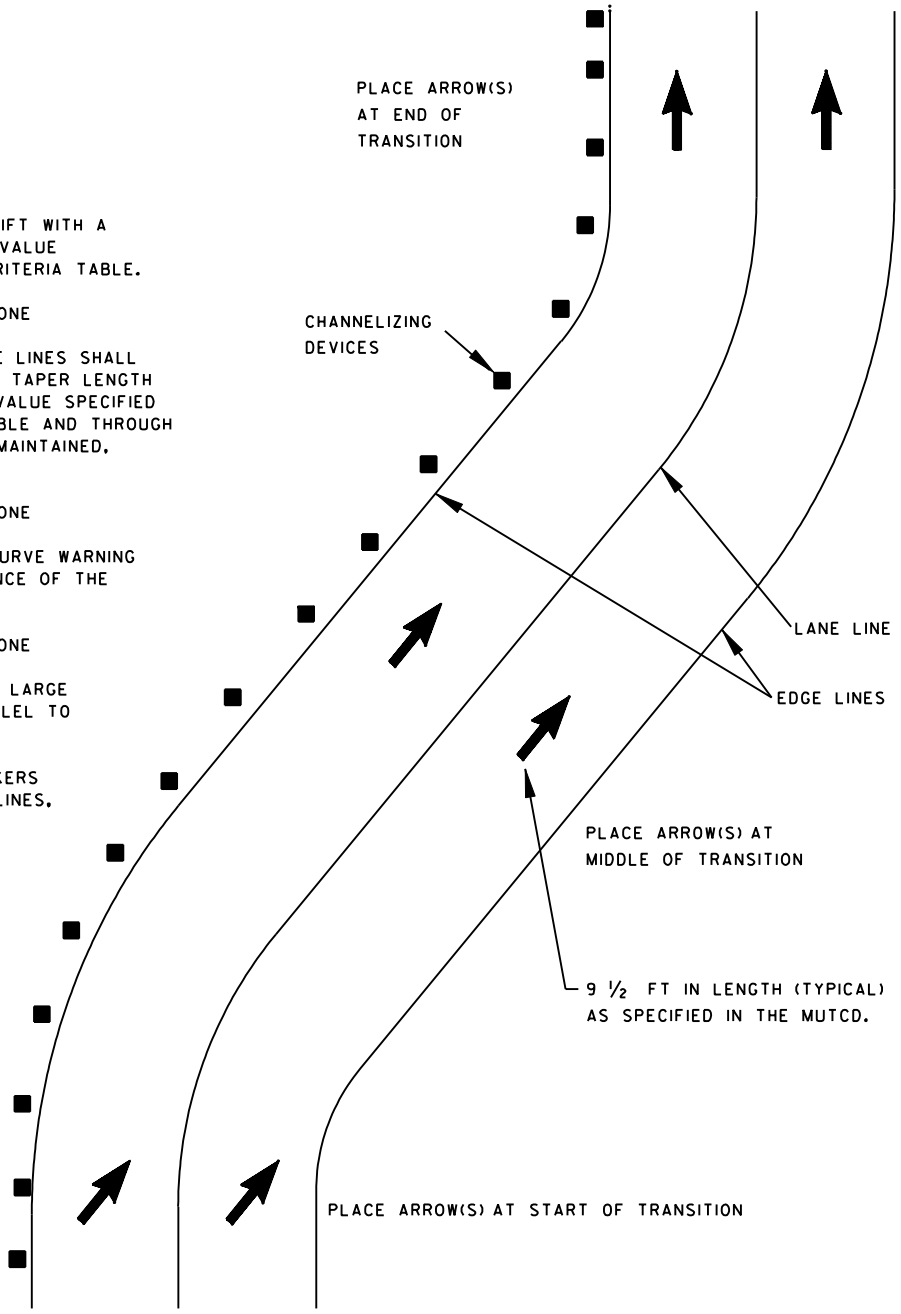
FOR ANY "ABRUPT" LANE SHIFT OR ONE THROUGH WHICH PREVAILING SPEEDS CANNOT BE MAINTAINED, SOLID LANE LINES SHALL BE USED. FOR LANE SHIFTS WITH A TAPER LENGTH GREATER THAN OR EQUAL TO THE VALUE SPECIFIED IN THE TAPER LENGTH CRITERIA TABLE AND THROUGH WHICH PREVAILING SPEEDS CAN BE MAINTAINED, SKIP LANE LINES MAY BE USED.

FOR ANY "ABRUPT" LANE SHIFT OR ONE THROUGH WHICH PREVAILING SPEEDS CANNOT BE MAINTAINED, REVERSE CURVE WARNING SIGNS SHALL BE MOUNTED IN ADVANCE OF THE REVERSE CURVES.

FOR ANY "ABRUPT" LANE SHIFT OR ONE THROUGH WHICH PREVAILING SPEEDS CANNOT BE MAINTAINED, PLACE THE LARGE PAVEMENT MARKING ARROW(S) PARALLEL TO AND CENTERED WITHIN THE LANE(S).

TEMPORARY RAISED PAVEMENT MARKERS SHALL BE REQUIRED ON ALL LANE LINES, UNLESS OTHERWISE SPECIFIED.

NUMBER OF LANES VARIES



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

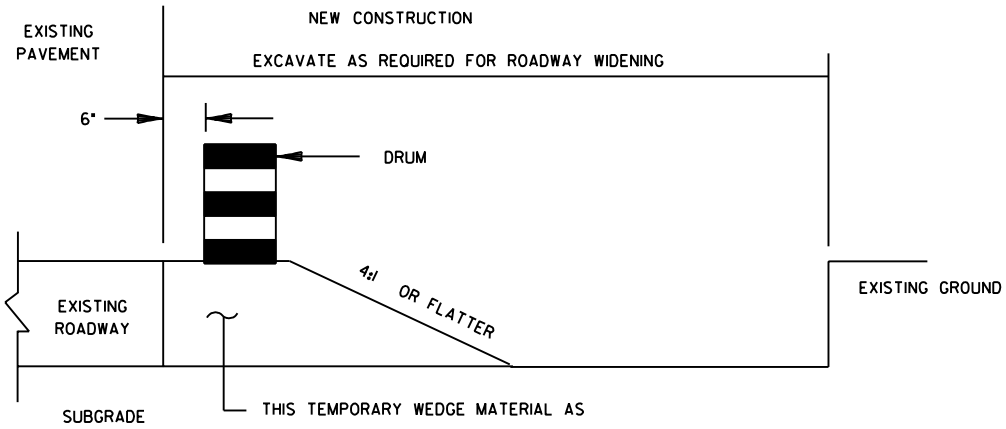
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

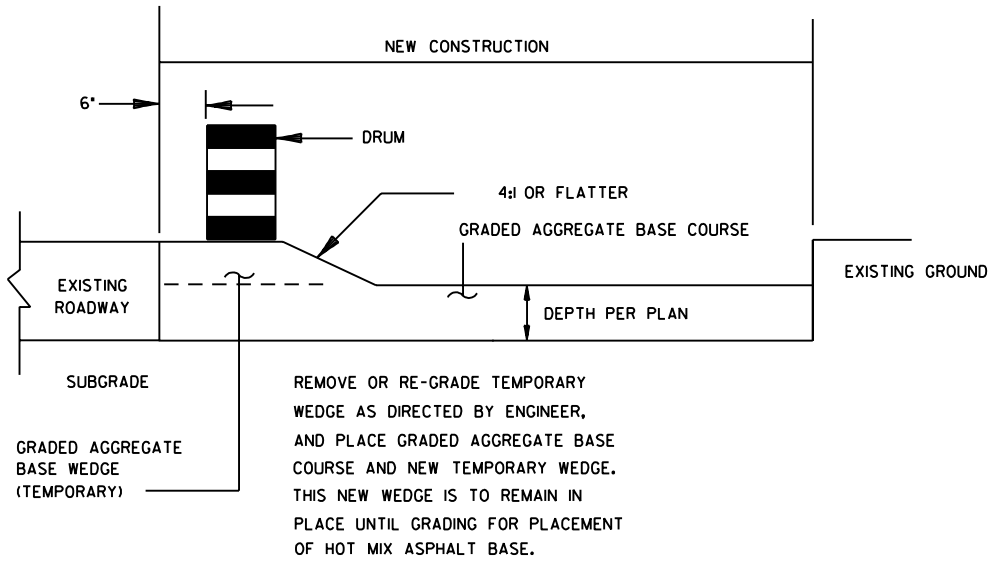
PLACEMENT OF PAVEMENT MARKING ARROWS LANE TRANSITION

STANDARD NO. MD 104.01-27

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



EXCAVATION



BASE COURSE

SPECIFICATION	CATEGORY CODE ITEMS
104,201,501	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

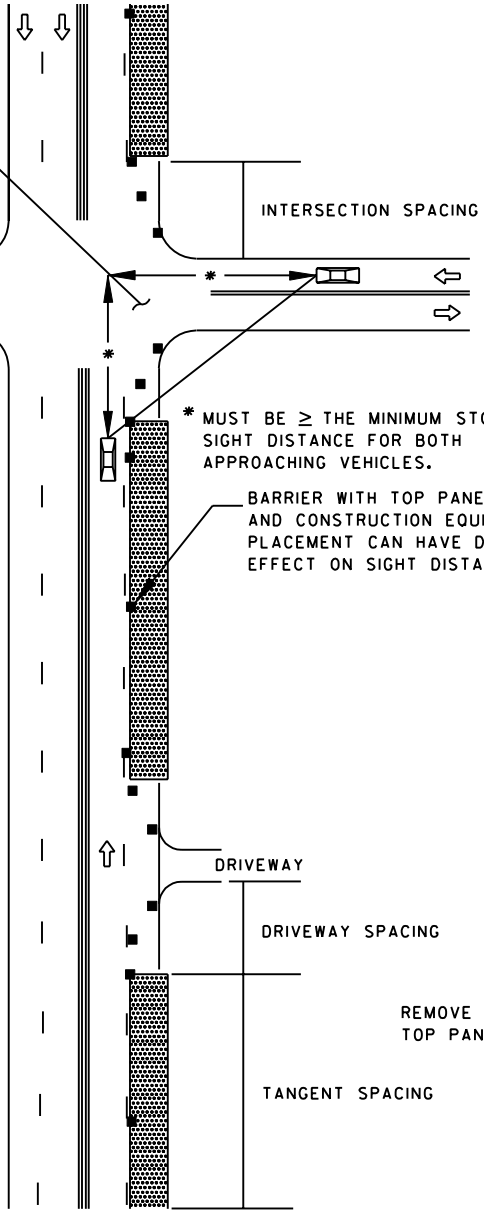
STAGED ROADWAY CONSTRUCTION

STANDARD NO. MD 104.01-28

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

SIGHT TRIANGLE:

THE SIGHT TRIANGLE CONSISTS OF THE STOPPING SIGHT DISTANCE FOR TWO VEHICLES AND THE LINE OF SIGHT BETWEEN TWO VEHICLES, AT THE POINT JUST PAST THE OBSTRUCTION

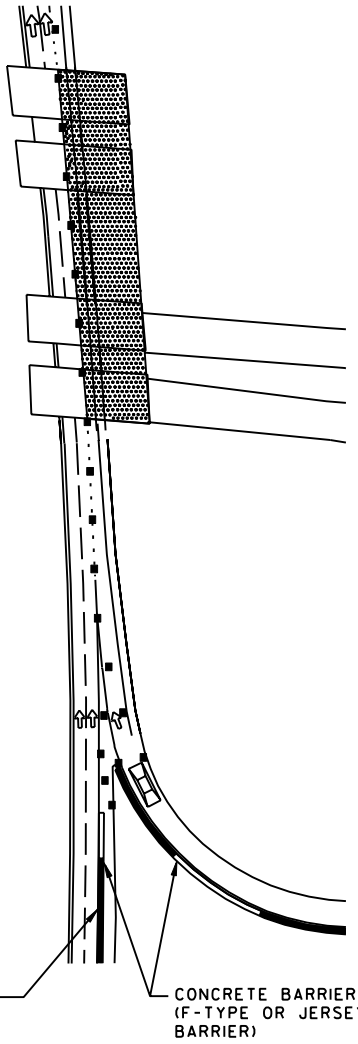


NOTE:

REFER TO GENERAL NOTE 7.8 FOR GUIDANCE ON USING CHANNELIZING DRUMS TO DELINEATE THE EDGE OF THE ROADWAY

KEY:

- CHANNELIZING DEVICES
- DIRECTION OF TRAFFIC
- WORK SITE



NOTE:

THE INABILITY TO SEE APPROACHING VEHICLES DUE TO BARRIER AND/OR DRUM OBSTRUCTIONS MAY RESULT IN COLLISIONS IN INSTANCES WHERE YIELD NO MERGE AREAS ARE PROVIDED.

BARRIERS WITH TOP PANELS COULD CONTRIBUTE TO SOME DEGREE OF SIGHT DISTANCE OBSTRUCTION.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SIGHT TRIANGLE, STOPPING SIGHT DISTANCE, & RAMP JUNCTION SIGHT DISTANCE

STANDARD NO. MD 104.01-29

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTE:
REFER TO GENERAL NOTE 7.8 FOR GUIDANCE ON USING CHANNELIZING DRUMS TO DELINEATE THE EDGE OF THE ROADWAY.

FOR TWO-LANE, TWO-WAY SCENARIOS, IN ADDITION TO THE FLAGGER(S) REQUIRED, AN ADDITIONAL FLAGGER, DIRECTING MOTORISTS FROM THEIR DRIVEWAYS, MAY BE NEEDED.

A STOP SIGN SHALL BE INSTALLED WHERE THE DRIVEWAY INTERSECTS THE CLOSED LANE. IF AN ADDITIONAL FLAGGER IS PRESENT, A STOP SIGN MAY NOT BE NECESSARY.

MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES (TYPICAL):

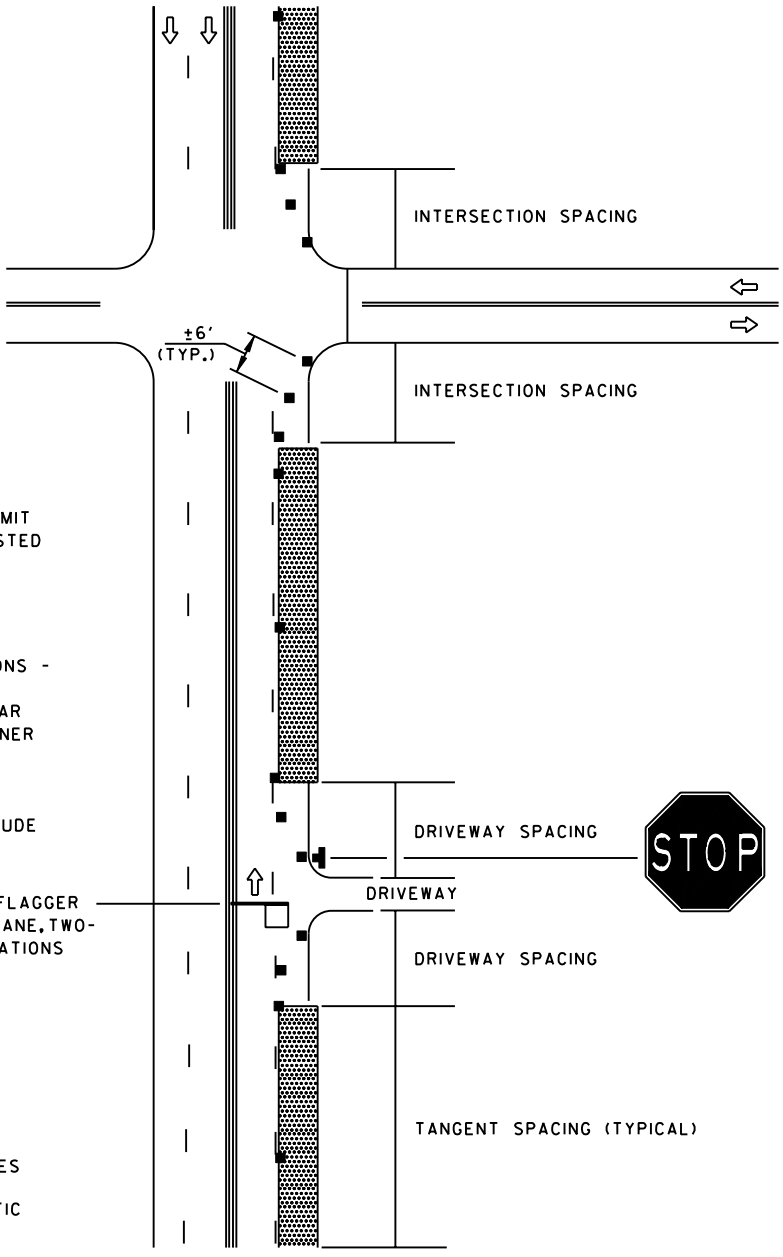
TAPER CHANNELIZATION - SPACING SHALL BE EQUAL IN FEET TO THE POSTED SPEED LIMIT

TANGENT CHANNELIZATION - SPACING SHALL BE EQUAL IN FEET TO TWICE THE POSTED SPEED LIMIT IN THE BUFFER AND EQUAL IN FEET TO THE POSTED SPEED LIMIT ADJACENT TO THE WORK AREA

SPACING BETWEEN CHANNELIZING DEVICES AT DRIVEWAYS AND INTERSECTIONS:

CHANNELIZATION AT DRIVEWAYS AND INTERSECTIONS - SPACING SHALL BE APPROXIMATELY 6 FEET. CHANNELIZING DEVICES SHALL BE SPACED AS NEAR AS POSSIBLE TO 6 FEET AND PLACED IN A MANNER THAT THEY DO NOT RESTRICT SIGHT DISTANCE FROM THE DRIVEWAY OR INTERSECTION.

THIS REDUCED SPACING IS NECESSARY TO PRECLUDE MOTORISTS FROM TURNING INTO THE WORK ZONE



KEY:

- CHANNELIZING DEVICES
- DIRECTION OF TRAFFIC
- WORK SITE

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-1-09	APPROVAL	7-27-09
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

CHANNELIZATION DEVICE USAGE
EQL /LESS THAN 40 MPH OVER 12 HRS. NIGHTTIME USE

STANDARD NO. MD 104.01-30 A

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81.

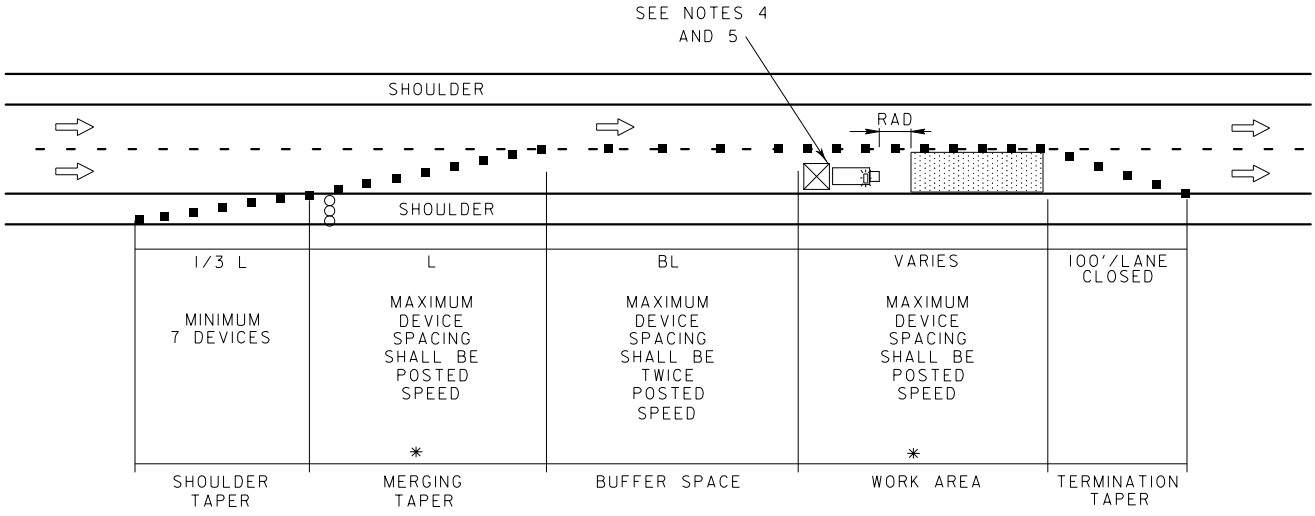
TALL WEIGHTED CONES ARE 42" TALL CONES WITH A WEIGHTED BASE. SEE STANDARD SPECIFICATION 104.14.

NOTES

1. REFER TO GENERAL NOTE 7.8 FOR GUIDANCE ON USING CHANNELIZING DEVICES TO DELINEATE THE EDGE OF THE ROADWAY.
2. DRUMS, 36" CONES OR TALL WEIGHTED CONES SHALL BE USED IN THE MERGING TAPER.
3. DRUMS, 36" CONES OR TALL WEIGHTED CONES SHALL BE USED ADJACENT TO THE WORK AREA.
4. REFER TO GENERAL NOTE 10.4 AND MD 104.01-11A FOR GUIDANCE ON USING A PROTECTION VEHICLE (PV).
5. IF A PV IS USED TO PROTECT THE WORK AREA, IT SHOULD BE PLACED IN THE WORK AREA AS SHOWN IN THE FIGURE WHILE ALLOWING FOR THE ROLL AHEAD DISTANCE (RAD) ANTICIPATED WITH IMPACT. A PV MAY BE DEPLOYED IN THE BUFFER SPACE, PROVIDED IT IS IN PROXIMITY TO THE ACTIVE WORK AREA AND THE BUFFER LENGTH IS ADJUSTED TO INCLUDE THE LENGTH OF THE PV AND THE ANTICIPATED RAD.
6. REFER TO STANDARD MD 104.01-81 TO DETERMINE THE BUFFER LENGTH.
7. THIS TYPICAL APPLICATION DOES NOT APPLY TO PAVING OPERATIONS, BUT CAN BE USED AT THE DISCRETION OF THE ENGINEER.

KEY:

- CHANNELIZING DEVICES
- DIRECTION OF TRAFFIC
- WORK AREA
- ARROW PANEL
- PROTECTION VEHICLE WITH TMA/TTMA



* DRUMS, 36" CONES OR TALL WEIGHTED CONES SHALL BE USED.

SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-1-09	APPROVAL	7-27-09
REVISED	8-11-10	REVISED	7-29-10
REVISED	2-19-24	REVISED	11-16-23
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

CHANNELIZATION DEVICE SPACING EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.01-30 B

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81.

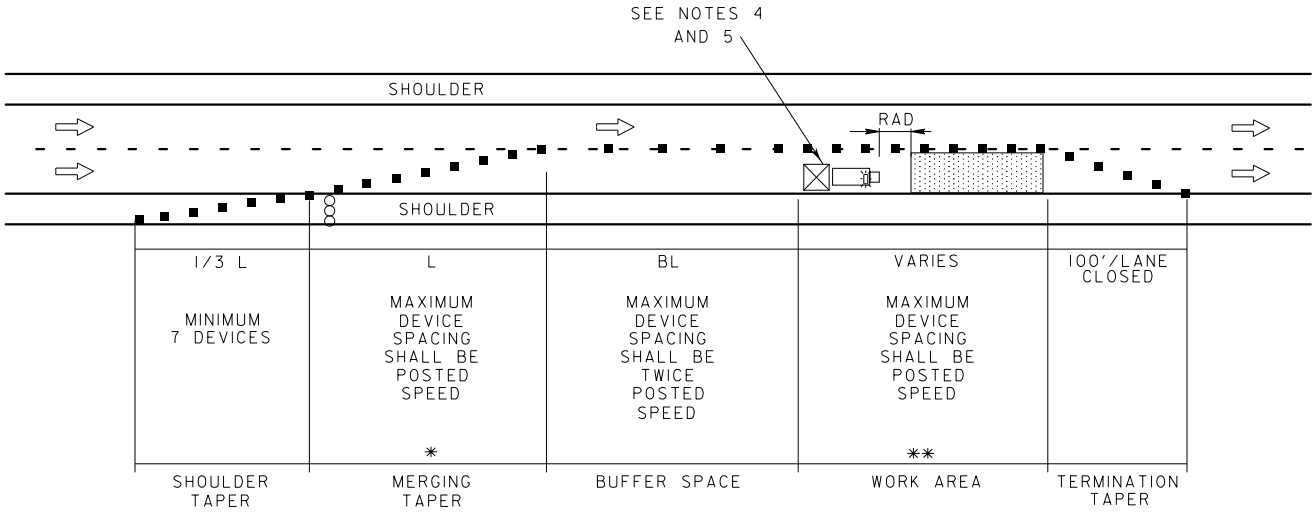
TALL WEIGHTED CONES ARE 42" TALL CONES WITH A WEIGHTED BASE. SEE STANDARD SPECIFICATION 104.14.

NOTES

1. REFER TO GENERAL NOTE 7.8 FOR GUIDANCE ON USING CHANNELIZING DEVICES TO DELINEATE THE EDGE OF THE ROADWAY.
2. DRUMS SHALL BE USED IN THE MERGING TAPER.
3. DRUMS, 36" CONES OR TALL WEIGHTED CONES SHALL BE USED ADJACENT TO THE WORK AREA.
4. REFER TO GENERAL NOTE 10.4 AND MD 104.01-11A FOR GUIDANCE ON USING A PROTECTION VEHICLE (PV).
5. IF A PV IS USED TO PROTECT THE WORK AREA, IT SHOULD BE PLACED IN THE WORK AREA AS SHOWN IN THE FIGURE WHILE ALLOWING FOR THE ROLL AHEAD DISTANCE (RAD) ANTICIPATED WITH IMPACT. A PV MAY BE DEPLOYED IN THE BUFFER SPACE, PROVIDED IT IS IN PROXIMITY TO THE ACTIVE WORK AREA AND THE BUFFER LENGTH IS ADJUSTED TO INCLUDE THE LENGTH OF THE PV AND THE ANTICIPATED RAD.
6. REFER TO STANDARD MD 104.00-81 TO DETERMINE THE BUFFER LENGTH.
7. THIS TYPICAL APPLICATION DOES NOT APPLY TO PAVING OPERATIONS, BUT CAN BE USED AT THE DISCRETION OF THE ENGINEER.

KEY:

- CHANNELIZING DEVICES
- DIRECTION OF TRAFFIC
- WORK AREA
- ARROW PANEL
- PROTECTION VEHICLE WITH TMA/TTMA



* DRUMS SHALL BE USED.
** DRUMS, 36" CONES OR TALL WEIGHTED CONES SHALL BE USED.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-1-09	APPROVAL	7-27-09
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED	2-19-24	REVISED	11-16-23

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

CHANNELIZATION DEVICE SPACING GREATER THAN 40 MPH

STANDARD NO. MD 104.01-30 C

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTE:
REFER TO GENERAL NOTE 7.8 FOR GUIDANCE ON USING CHANNELIZING DRUMS TO DELINEATE THE EDGE OF THE ROADWAY.

FOR TWO-LANE, TWO-WAY SCENARIOS, IN ADDITION TO THE FLAGGER(S) REQUIRED, AN ADDITIONAL FLAGGER, DIRECTING MOTORISTS FROM THEIR DRIVEWAYS, MAY BE NEEDED.

A STOP SIGN SHALL BE INSTALLED WHERE THE DRIVEWAY INTERSECTS THE CLOSED LANE. IF AN ADDITIONAL FLAGGER IS PRESENT, A STOP SIGN MAY NOT BE NECESSARY.

MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES (TYPICAL):

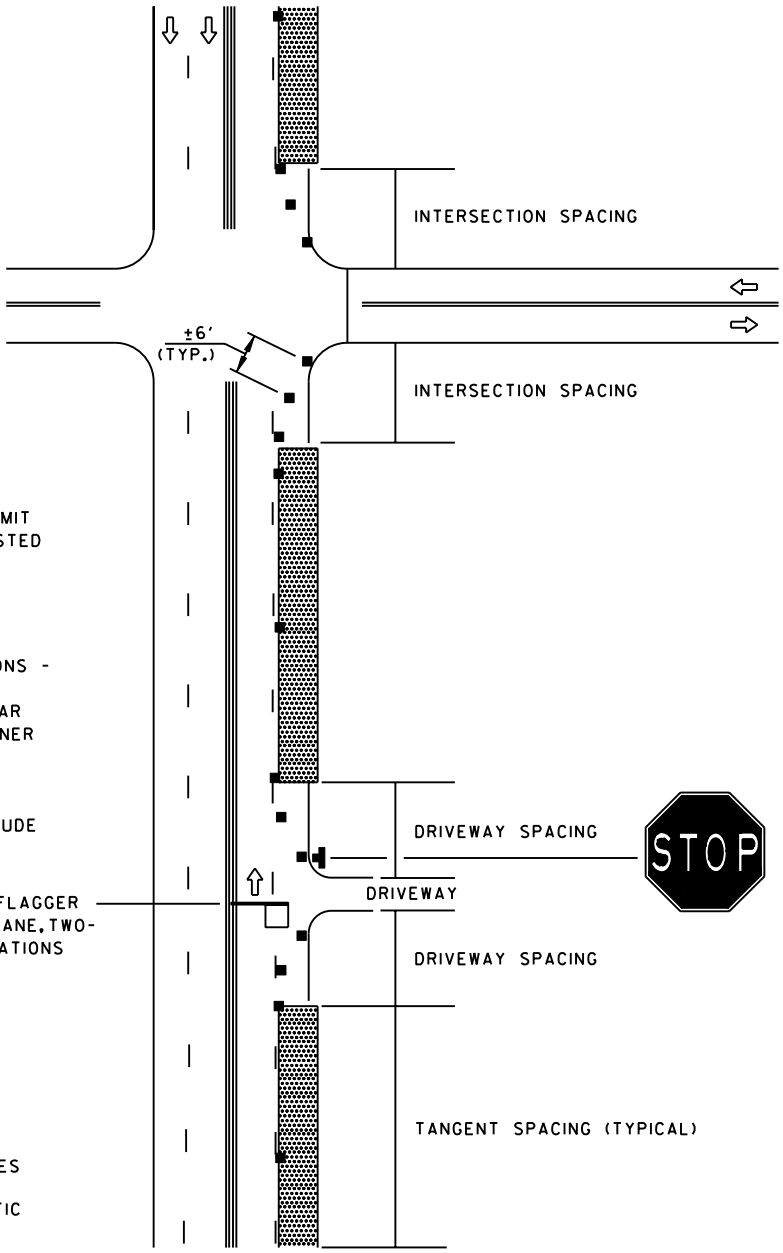
TAPER CHANNELIZATION - SPACING SHALL BE EQUAL IN FEET TO THE POSTED SPEED LIMIT

TANGENT CHANNELIZATION - SPACING SHALL BE EQUAL IN FEET TO TWICE THE POSTED SPEED LIMIT IN THE BUFFER AND EQUAL IN FEET TO THE POSTED SPEED LIMIT ADJACENT TO THE WORK AREA

SPACING BETWEEN CHANNELIZING DEVICES AT DRIVEWAYS AND INTERSECTIONS:

CHANNELIZATION AT DRIVEWAYS AND INTERSECTIONS - SPACING SHALL BE APPROXIMATELY 6 FEET. CHANNELIZING DEVICES SHALL BE SPACED AS NEAR AS POSSIBLE TO 6 FEET AND PLACED IN A MANNER THAT THEY DO NOT RESTRICT SIGHT DISTANCE FROM THE DRIVEWAY OR INTERSECTION.

THIS REDUCED SPACING IS NECESSARY TO PRECLUDE MOTORISTS FROM TURNING INTO THE WORK ZONE



KEY:

- CHANNELIZING DEVICES
- DIRECTION OF TRAFFIC
- WORK SITE

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-1-09	APPROVAL	7-27-09
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

CHANNELIZATION DEVICE USAGE
EQL /LESS THAN 40 MPH OVER 12 HRS. NIGHTTIME USE

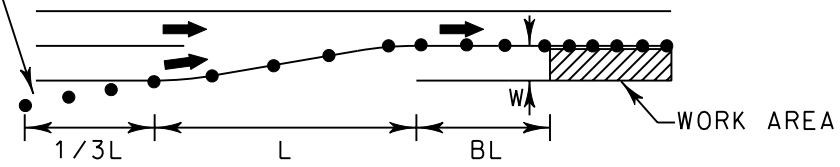
STANDARD NO. MD 104.01-30 A

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

SPEED IN MPH	MIN. MERGING TAPER (L) (LENGTH/# DEVICES) WIDTH OF OFFSET, W (FT) 9	10	11	12	BUFFER (BL) (LENGTH/# DEVICES) ALL WIDTHS
30	135 / 6	150 / 6	165 / 7	180 / 7	200 / 5
35	184 / 7	205 / 7	225 / 8	245 / 8	250 / 5
40	240 / 7	267 / 8	294 / 9	320 / 9	305 / 5
45	405 / 11	450 / 12	495 / 13	540 / 15	360 / 6
50	450 / 12	500 / 14	550 / 15	600 / 16	425 / 6
55	495 / 13	550 / 15	605 / 16	660 / 18	495 / 7
60	1000 / 26				570 / 8
65	1000 / 26				645 / 9
70	1000 / 26				730 / 10
75	1000 / 26				820 / 11

DEVICES = (LENGTH / DEVICE SPACING) + 1

SHOULDER TAPER = 1/3L, MINIMUM 7 DEVICES



SPECIFICATION	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 7-1-09	APPROVAL 7-27-09
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

CHANNELIZATION DEVICE USAGE CRITERIA TABLE

STANDARD NO. MD 104.01-30 D

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

1. Follow the steps below to determine when YIELD signs should be installed on entrance ramps:

YIELD SIGN WARRANT CHECKLIST

Mainline design * speed (A) _____ MPH

Entrance ramp design speed ** (B) _____ MPH

Length of acceleration lane (from Figure 2) (C) _____ FT

Grade of acceleration lane (D) _____ % UP/DOWN

Grade adjustment factor (If > 2%) from Table 1 (E) _____

Minimum required length of acceleration lane = (C)x(E) (F) _____ FEET

Measured length of acceleration lane (from Figure 1) (G) _____ FEET

Is the measured length of the acceleration lane greater than the minimum required length (G > F)?

YES - Yield sign not required
NO - go to step 2

* If design speed is unknown, add 10 mph to the posted speed to approximate design speed

** If the ramp speed is not posted, use the mainline posted speed

2. Follow the steps below to determine when YIELD AHEAD and NO MERGE AREA signs should be installed:

YIELD AHEAD/NO MERGE AREA SIGN WARRANT CHECKLIST

Use Figure 3 to determine required signing

Length of acceleration lane (G) _____

Ramp speed (B) _____

Intersecting point of (G) and (B) (circle) _____

ZONE 1 - YIELD only
ZONE 2 - YIELD with YIELD AHEAD
ZONE 3 - YIELD with YIELD AHEAD and NO MERGE AREA

GENERAL NOTES:

YIELD signs shall be placed opposite the physical gore, on the right side of the entrance ramp.

YIELD AHEAD signs may be placed on the right or left side of the entrance ramp, depending on ramp geometry and line of sight.

YIELD sign(s), with the approval of the Assistant District Engineer - Traffic, shall be replaced with STOP sign(s) on the right side (both sides) of the approach if no acceleration lane exists for temporary entrance. Also, a temporary stop line shall be placed across the ramp at the desired stop location as determined by the Engineer.

TABLE 1

Adjustment Factors to Acceleration Lanes with Greater than 2% Grades

MAINLINE DESIGN SPEED (mph)	Entrance Ramp Design Speed (mph)									
	20	30	40	50	20	30	40	50	All Speeds	
	3% - 4% Upgrade				5% Upgrade				3% - 4% Downgrade	5%-6% Downgrade
40	1.3	1.3	-	-	1.5	1.5	-	-	0.7	0.6
45	1.3	1.35	-	-	1.5	1.6	-	-	0.675	0.575
50	1.3	1.4	1.4	-	1.5	1.7	1.9	-	0.65	0.55
55	1.35	1.45	1.45	-	1.6	1.8	2.05	-	0.625	0.525
60	1.4	1.5	1.5	1.6	1.7	1.9	2.2	2.5	0.6	0.5
65	1.45	1.55	1.6	1.7	1.85	2.05	2.4	2.75	0.6	0.5
70	1.5	1.6	1.7	1.8	2.0	2.2	2.6	3.0	0.6	0.5

(source: Exhibit 10-71. A policy on Design of Highways and Streets. AASHTO 2001)

FIGURE 1

Placement of YIELD and YIELD AHEAD Signs on Entrance Ramps to Expressways and Freeways

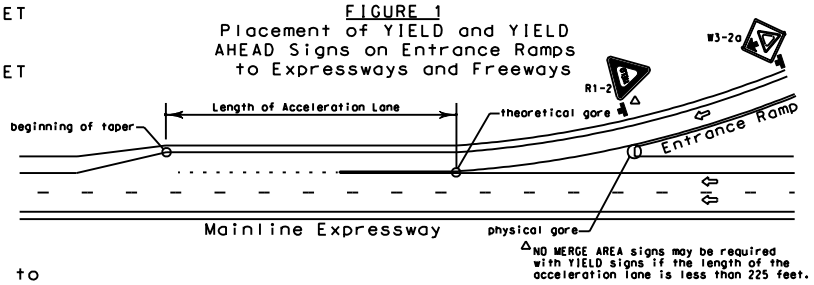


FIGURE 2

Minimum Length of Acceleration Lanes with Grades Less than 2%

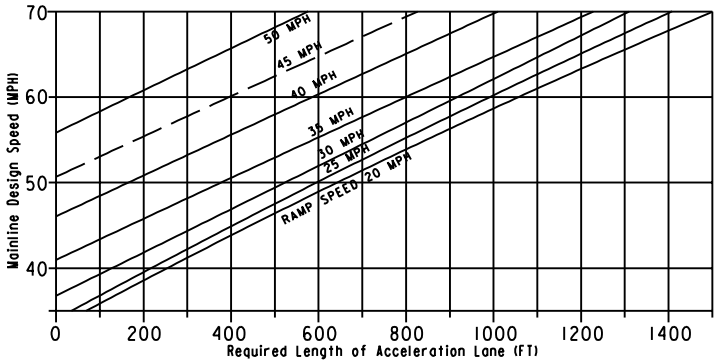
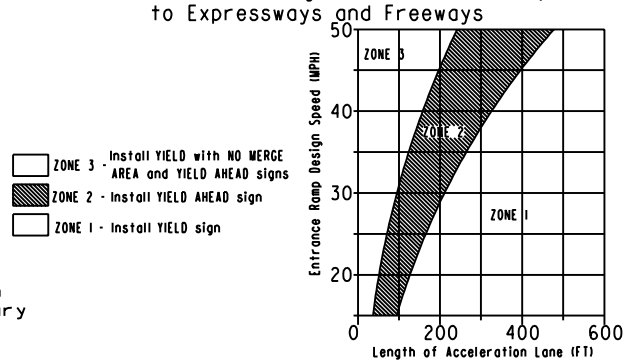


FIGURE 3

Warrants for YIELD Signs on Entrance Ramps to Expressways and Freeways



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

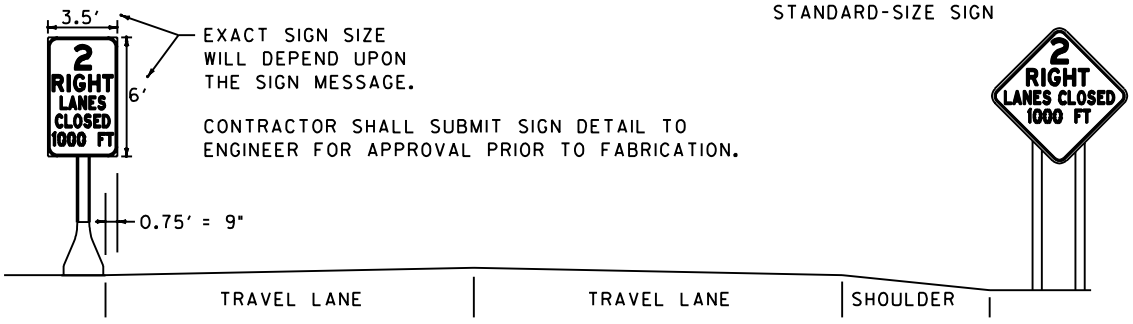
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

WARRANTS FOR YIELD SIGNS ON ENTRANCE RAMPS CONVERGING WITH EXPRESSWAYS/FREEWAYS

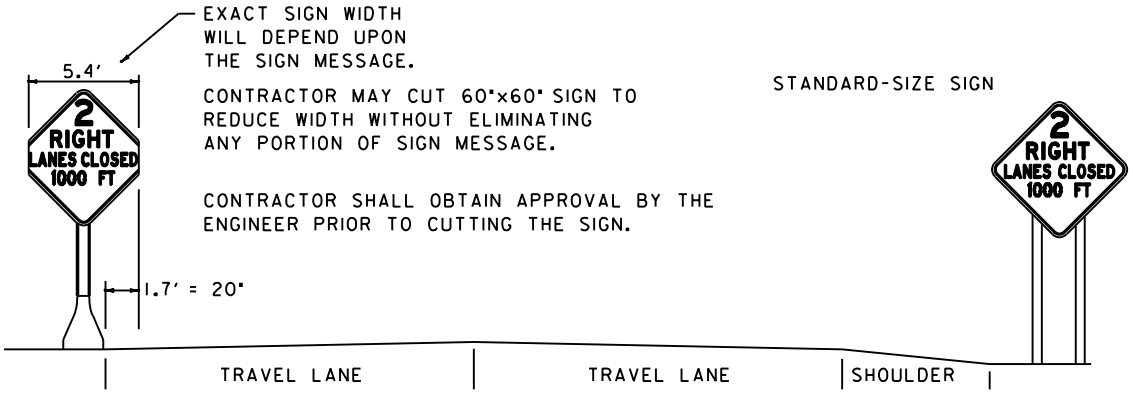
STANDARD NO. MD 104.01-31

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

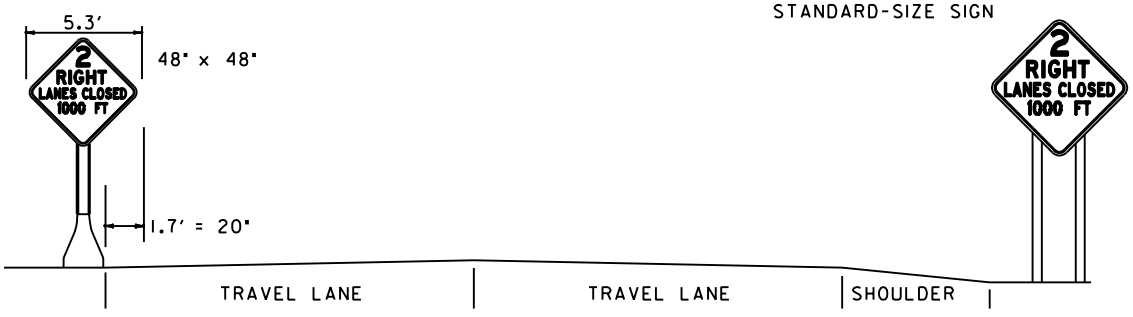
REDUCED OVERHANG SIGN OPTIONS



Option 1 (Rectangular Sign)



Option 2 (60"x60" (Original Size), with Corners Cut Off)



Option 3 (48"x48", Diamond-Shaped Sign)

NOTES:

THESE OPTIONS MAY ONLY BE USED IN CASES WHERE RESTRICTED LATERAL CLEARANCE EXISTS, OR SIGN OVERHANG MAY OTHERWISE RESULT IN UNSAFE DRIVING CONDITIONS.

TEXT SIZE MAY NEED TO BE REDUCED TO FIT WITHIN SIGN BORDER, AS APPROVED BY THE ENGINEER.

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

BARRIER-MOUNTED WARNING SIGN OPTIONS FOR RESTRICTED LATERAL CLEARANCE CONDITIONS

STANDARD NO. MD 104.01-32

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END

STANDARD NO. MD 104.01-46

SPECIFICATION 104

CATEGORY CODE ITEMS

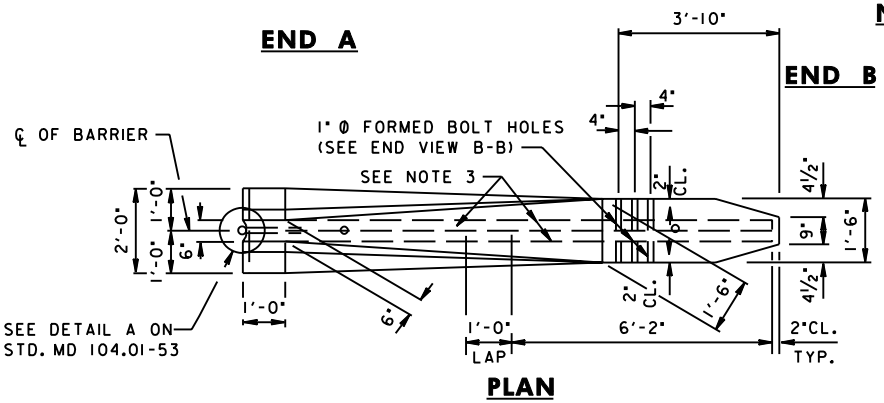
APPROVED

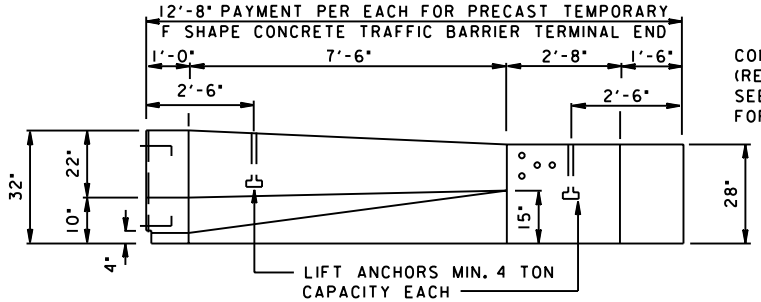
Kirk G. McClenahan
DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT

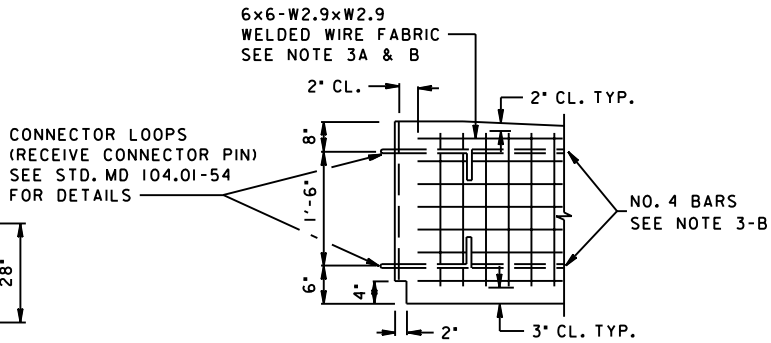
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	8-20-03	APPROVAL 9-23-03
REVISED	9-30-04	REVISED 3-31-04
REVISED		REVISED
REVISED		REVISED

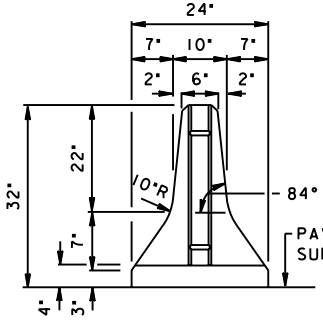
NOTES

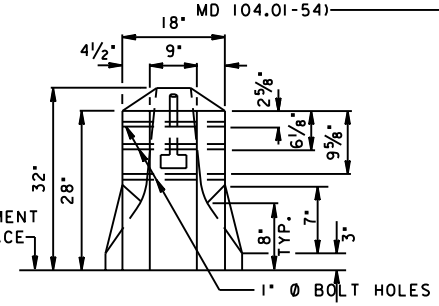
1. THIS BARRIER IS TO BE USED IN COMBINATION WITH TRAFFIC BARRIER W BEAM AS SHOWN ON STANDARD MD 605.45 OR TRAFFIC BARRIER W BEAM MEDIAN BARRIER AS SHOWN ON STANDARD MD 104.01-62 AND PRECAST TEMPORARY CONCRETE TRAFFIC BARRIER SHOWN ON STD. MD 104.01-53 AND MD 104.01-54.
2. THE PRECAST TEMPORARY CONCRETE TRAFFIC BARRIER TERMINAL END SHALL BE CAST USING CONCRETE MIX NO.6 (4500 PSI).
3. REINFORCEMENT: A) 6x6 W2.9xW2.9 WELDED WIRE FABRIC FOLDED IN U SHAPE. B) 2-NO.4 ½" ϕ REINFORCEMENT BARS-GRADE 60-EACH 11'- 4" LONG.
4. ONE CONNECTOR PIN SHALL BE FURNISHED WITH EACH BARRIER. SEE STD. MD 104.01-54 FOR DETAILS OF CONNECTOR PIN.
5. THE COST OF THE CONNECTOR PIN SHALL BE INCIDENTAL TO THE CONTRACT PRICE PER EACH FOR PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END.

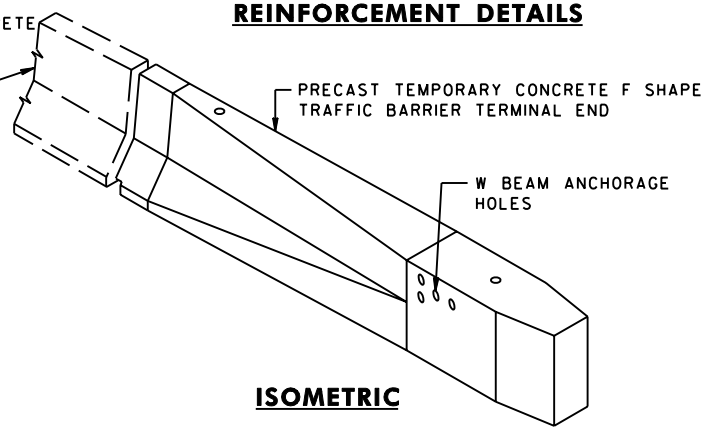












NOTES

1. THIS STANDARD SHALL BE USED IN ACCORDANCE WITH THE APPROPRIATE WORK ZONE TRAFFIC CONTROL STANDARDS. REFER TO THE BOOK OF STANDARDS SECTION 1 - PRELIMINARY.
2. INSTALL POSTS Ⓐ THRU Ⓓ WITH OFFSET BRACKETS TO THE EXISTING W BEAM ELEMENT. SPACING OF POSTS THROUGH THE STIFFENED SECTION SHALL BE 3'-1½' C/C.
3. REMOVE THE EXISTING W BEAM ELEMENT BETWEEN POSTS ① THRU ⑤ AND OFFSET BRACKETS FROM POSTS ①, ②, ③ AND ④. GRADE AREA AS NECESSARY TO PROVIDE A BASE SUITABLE FOR THE PROPER ALIGNMENT AND PLACEMENT OF THE PRECAST TEMPORARY CONCRETE TERMINAL END RIGHT SIDE APPROACH AND THE PRECAST TEMPORARY CONCRETE TRAFFIC BARRIER.
4. THE PRECAST TEMPORARY CONCRETE TRAFFIC BARRIER TERMINAL END RIGHT SIDE APPROACH SHALL BE PLACED OVER POSTS ① AND ②.
5. THE W BEAM TERMINAL CONNECTOR SHALL BE SPLICE BOLTED TO THE END OF THE EXISTING W BEAM ADJACENT TO POST ① AND BOLTED TO THE PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END RIGHT SIDE APPROACH. REFER TO STD. MD 104.01-48.
6. WHEN THE PRECAST TEMPORARY CONCRETE TRAFFIC BARRIER TERMINAL END RIGHT SIDE APPROACH IS REMOVED, THE W BEAM SYSTEM SHALL BE REASSEMBLED.
7. THE COST OF REMOVING AND REASSEMBLY OF THE W BEAM AND RELATED HARDWARE, GRADING, ADDITIONAL POSTS AND HARDWARE, DRILLING HOLES AND ALL NECESSARY EQUIPMENT, LABOR, ETC., WILL BE INCIDENTAL TO THE CONTRACT PRICE PER EACH FOR PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE BARRIER TERMINAL END RIGHT SIDE APPROACH.
8. FOR PIN AND LOOP JOINT CONNECTORS SEE STD. MD 104.01-53 AND MD 104.01-54.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Kirk G. McCall
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	2-10-04	REVISED	3-31-04
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

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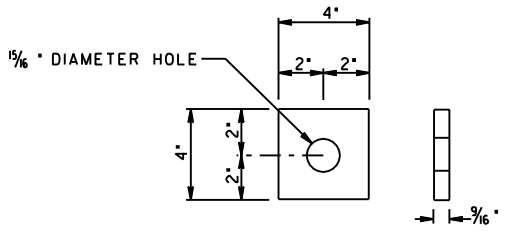
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

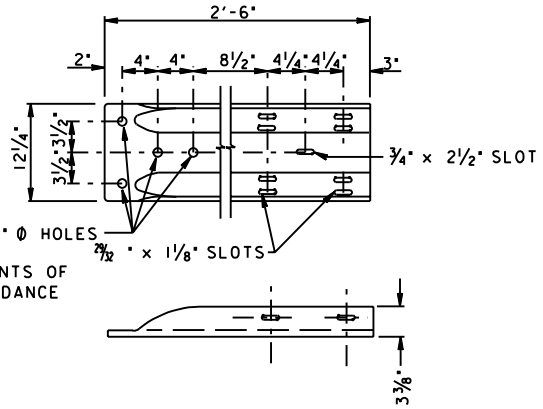
PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END – RIGHT SIDE APPROACH

STANDARD NO. MD 104.01-47



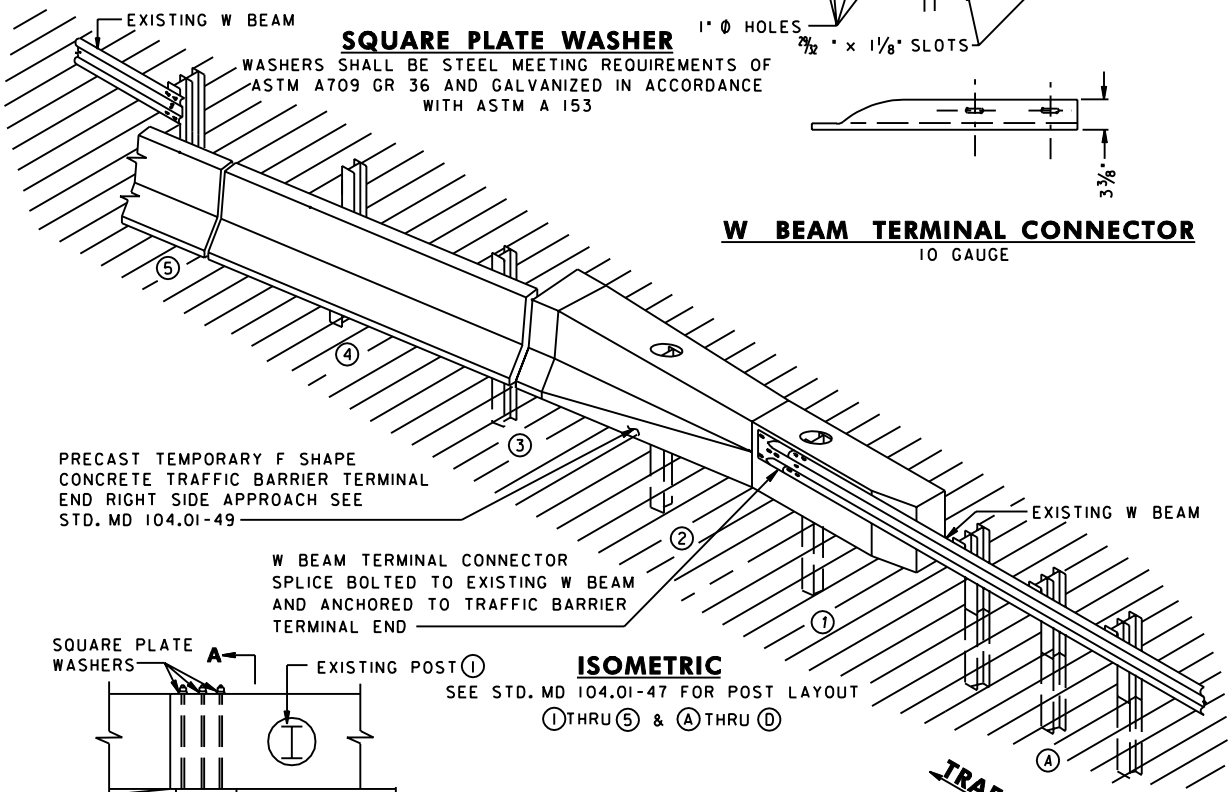
SQUARE PLATE WASHER

WASHERS SHALL BE STEEL MEETING REQUIREMENTS OF ASTM A709 GR 36 AND GALVANIZED IN ACCORDANCE WITH ASTM A 153



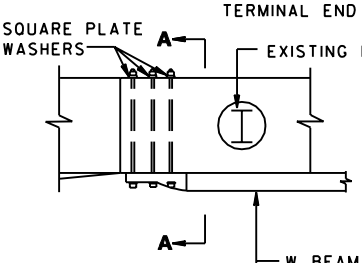
W BEAM TERMINAL CONNECTOR

10 GAUGE

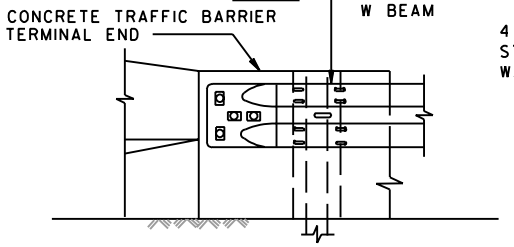


ISOMETRIC

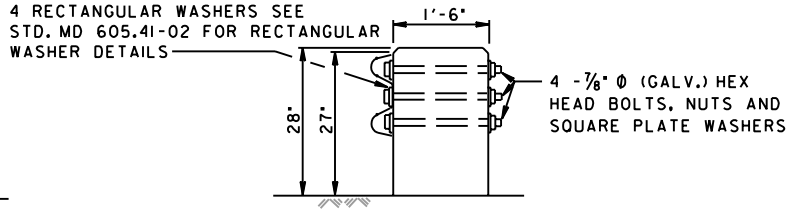
SEE STD. MD 104.01-47 FOR POST LAYOUT
(1) THRU (5) & (A) THRU (D)



PLAN



ELEVATION



SECTION A-A

ANCHORAGE DETAILS

NOTE

FOR PIN AND LOOP JOINT CONNECTOR SEE STD. MD 104.01-53 AND 104.01-54

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Kirk G. McCall
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END– RIGHT SIDE APPROACH DETAILS

STANDARD NO. MD 104.01-48

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END– RIGHT SIDE APPROACH DETAILS

STANDARD NO. MD 104.01-49

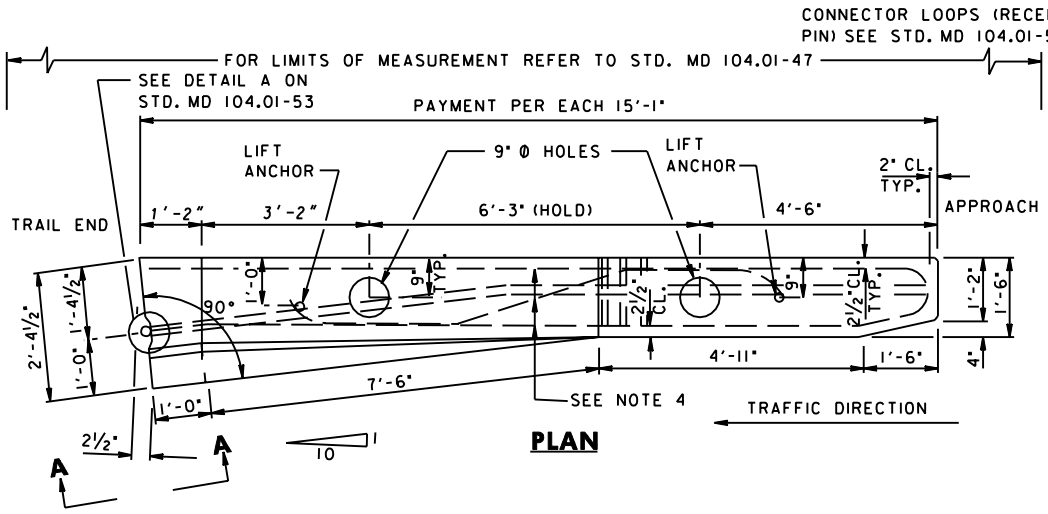
SPECIFICATION 104 | CATEGORY CODE ITEMS

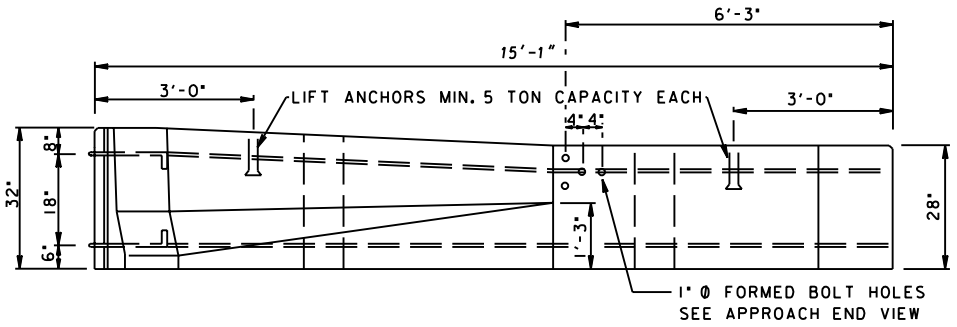
APPROVED
Kirk G. McClelland
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS
APPROVAL 8-20-03 REVISED 2-10-04 REVISED REVISED

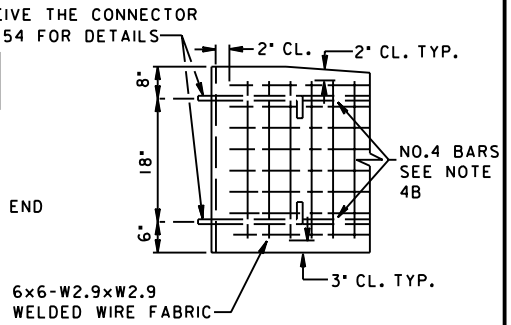
APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 9-23-03 REVISED 3-31-04 REVISED REVISED

SHA State Highway Administration

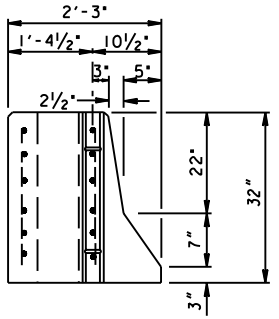




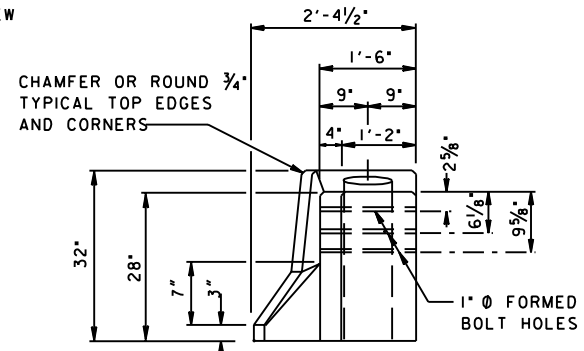
ELEVATION



VIEW A–A



TRAIL END VIEW



APPROACH END VIEW

NOTES

1. THIS BARRIER SHALL BE USED IN ACCORDANCE WITH THE APPROPRIATE WORK ZONE TRAFFIC CONTROL STANDARDS. REFER TO THE BOOK OF STANDARDS SECTION I- PRELIMINARY.
2. THE BARRIER SHALL BE USED IN COMBINATION WITH TRAFFIC BARRIER W BEAM AND PRECAST TEMPORARY CONCRETE TRAFFIC BARRIER (PIN AND LOOP) AS SHOWN ON STD. MD 104.01-47 AND MD 104.01-48.
3. THE BARRIER SHALL BE CAST USING CONCRETE MIX NO.6 (4500 PSI).
4. REINFORCEMENT: A) 6x6 W2.9x2W2.9 WELDED WIRE FABRIC FOLDED IN U SHAPE
   B) 2-NO.4 ½" Ø REINFORCEMENT BARS - GRADE 60 - EACH 11'-4" LONG
5. ONE CONNECTOR PIN SHALL BE FURNISHED WITH EACH BARRIER SEE STD. MD 104.01-54 FOR DETAILS OF CONNECTOR PIN.
6. THE COST OF THE CONNECTOR PIN SHALL BE INCIDENTAL TO THE CONTRACT PRICE PER EACH FOR PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END RIGHT SIDE APPROACH.
7. SEE STD. MD 104.01-53 AND MD 104.01-54 FOR PIN AND LOOP JOINT CONNECTOR DETAILS.

NOTES

1. THIS STANDARD SHALL BE USED IN ACCORDANCE WITH THE APPROPRIATE WORK ZONE TRAFFIC CONTROL STANDARDS. REFER TO THE BOOK OF STANDARDS SECTION 1-PRELIMINARY.
2. INSTALL POSTS A THRU H WITH OFFSET BRACKETS TO THE EXISTING W BEAM ELEMENT. SPACING OF POSTS THROUGH THE STIFFENED SECTIONS SHALL BE 3'-1½" C/C.
3. REMOVE THE EXISTING W BEAM ELEMENT BETWEEN POSTS ① THRU ⑤ AND OFFSET BRACKETS FROM POST ①, ② AND ONE OFFSET BRACKET FROM POST ③ AND ④. GRADE AREA AS NECESSARY TO PROVIDE A BASE SUITABLE FOR THE PROPER ALIGNMENT AND PLACEMENT OF THE PRECAST REMPORARY CONCRETE TRAFFIC BARRIER TERMINAL END AND THE PRECAST TEMPORARY CONCRETE TRAFFIC BARRIER.
4. THE TEMPORARY PRECAST CONCRETE TRAFFIC BARRIER TERMINAL END LEFT SIDE APPROACH SHALL BE PLACED OVER POSTS ① AND ②.
5. THE W BEAM TERMINAL CONNECTOR SHALL BE SPLICE BOLTED TO THE W BEAM ELEMENT AT POST ① AND ANCHORED TO THE PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END LEFT SIDE APPROACH. REFER TO STANDARD MD 104.01-51.
6. WHEN THE PRECAST TEMPORARY CONCRETE TRAFFIC BARRIER TERMINAL END LEFT SIDE APPROACH IS REMOVED THE W BEAM SYSTEM SHALL BE REASSEMBLED.
7. THE COST OF REMOVING AND REASSEMBLY OF THE W BEAM AND RELATED HARDWARE, GRADING, ADDITIONAL POSTS AND HARDWARE, DRILLING HOLES, AND ALL NECESSARY EQUIPMENT, LABOR ETC., WILL BE INCIDENTAL TO THE CONTRACT UNIT PRICE PER EACH FOR PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END LEFT SIDE APPROACH.

SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

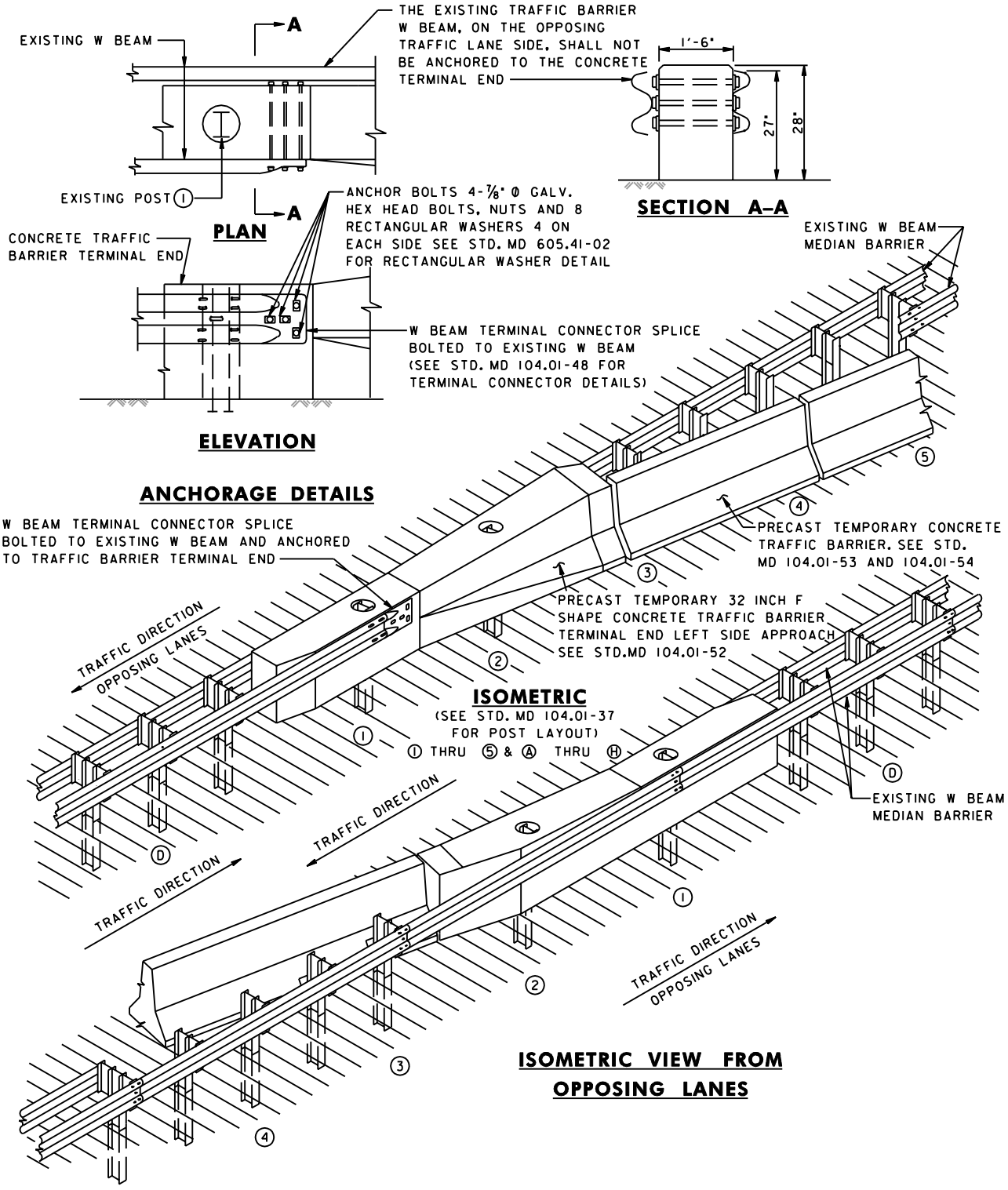
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	2-10-04	REVISED	3-31-04
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END–LEFT SIDE APPROACH

STANDARD NO. MD 104.01–50



SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	Kirk G. McCall DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	2-10-04	REVISED	3-31-04
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END– LEFT SIDE APPROACH DETAILS

STANDARD NO. MD 104.01–51

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END– LEFT SIDE APPROACH DETAILS

STANDARD NO. MD 104.01-52

SPECIFICATION 104 | CATEGORY CODE ITEMS

APPROVED

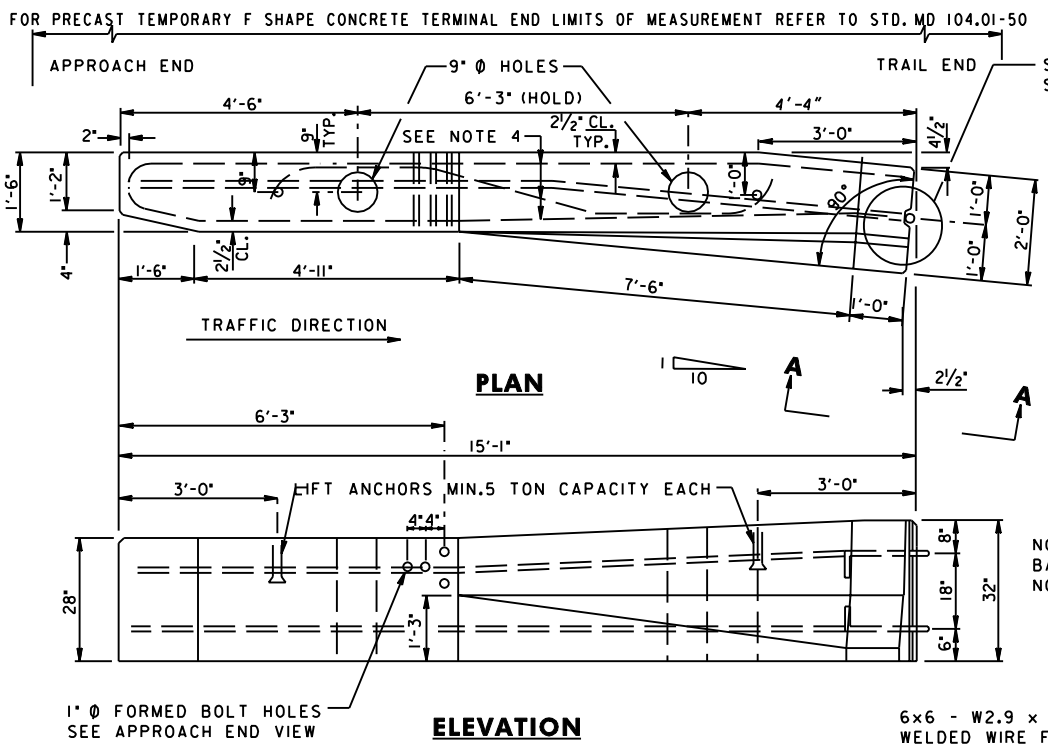
Kirk G. McClelland
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

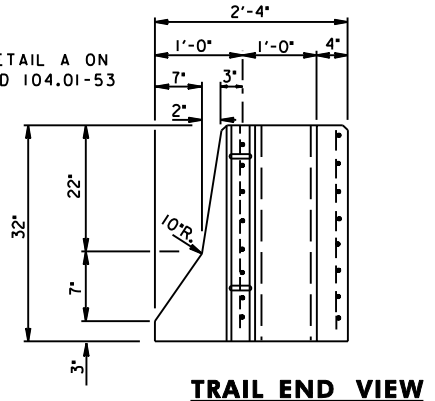
APPROVAL • SHA REVISIONS

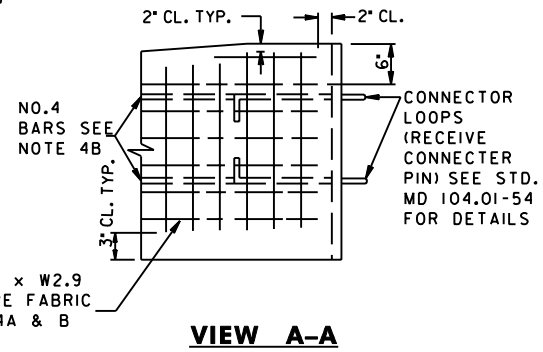
APPROVAL	8-20-03	
REVISED	2-10-04	
REVISED		
REVISED		

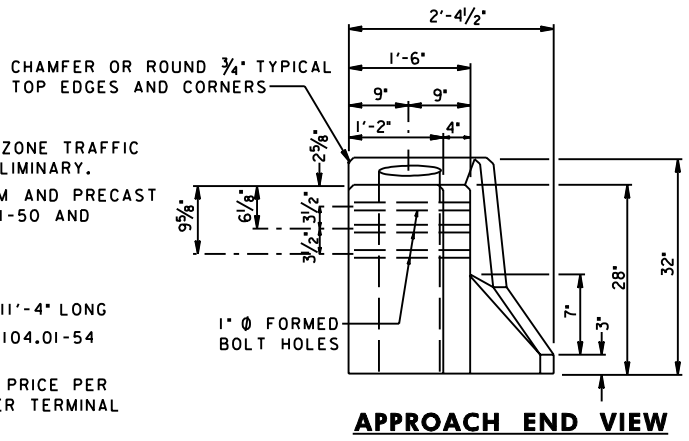
APPROVAL • FEDERAL HIGHWAY ADMINISTRATION

APPROVAL	9-23-03
REVISED	3-31-04
REVISED	
REVISED	



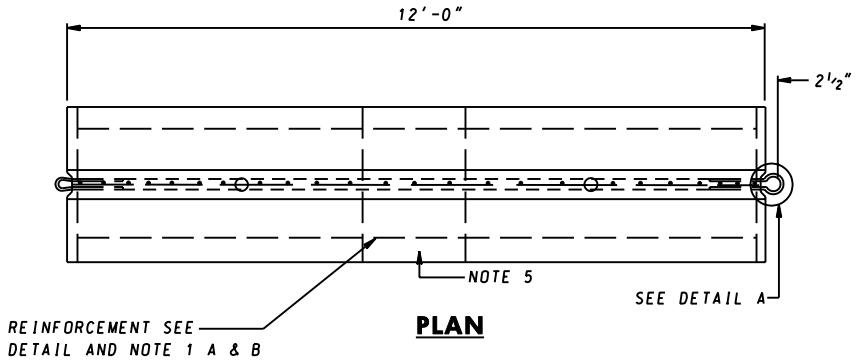




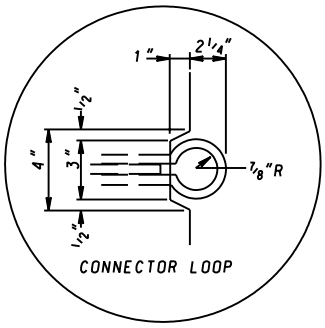


NOTES

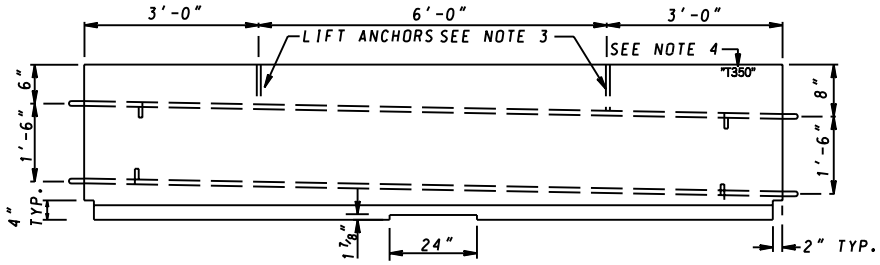
1. THIS BARRIER SHALL BE USED IN ACCORDANCE WITH THE APPROPRIATE WORK ZONE TRAFFIC CONTROL STANDARDS. REFER TO THE BOOK OF STANDARDS CATEGORY 1- PRELIMINARY.
2. THE BARRIER SHALL BE USED IN COMBINATION WITH TRAFFIC BARRIER W BEAM AND PRECAST TEMPORARY CONCRETE BARRIER (PIN AND LOOP) AS SHOWN ON STD. MD 104.01-50 AND MD 104.01-51.
3. THE BARRIER SHALL BE CAST USING CONCRETE MIX NO.6 (4500 PSI).
4. REINFORCEMENT: A.) 6x6 W2.9 x W2.9 WELDED WIRE FABRIC IN U SHAPE.
   B.) 2-NO.4 ½" Ø REINFORCEMENT BARS - GRADE 60 - EACH 11'-4" LONG
5. ONE CONNECTOR PIN SHALL BE FURNISHED WITH EACH BARRIER. SEE STD. MD 104.01-54 FOR DETAILS OF CONNECTOR PIN.
6. THE COST OF THE CONNECTOR PIN SHALL BE INCIDENTAL TO THE CONTRACT PRICE PER EACH FOR PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END LEFT SIDE APPROACH.
7. SEE STD. MD 104.01-53 AND MD 104.01-54 FOR PIN AND LOOP CONNECTOR DETAILS.



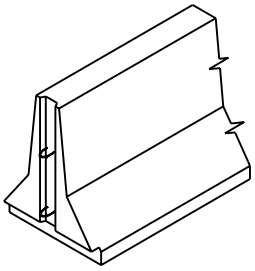
PLAN



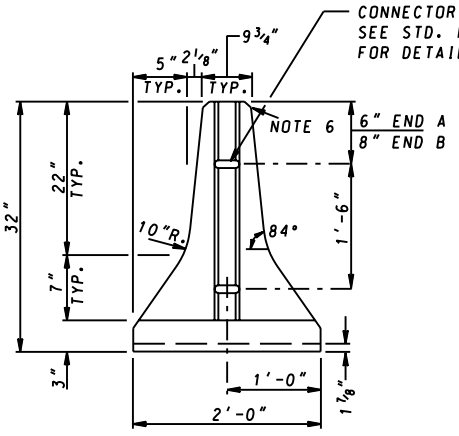
DETAIL A



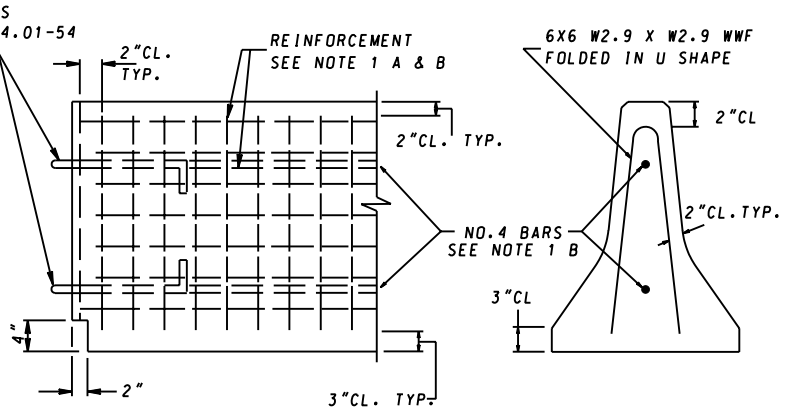
END A **ELEVATION** **END B**



ISOMETRIC END VIEW



END VIEW



REINFORCEMENT DETAILS

NOTES

1. REINFORCEMENT: A) 6x6 W2.9 X W2.9 WELDED WIRE FABRIC FOLDED IN U SHAPE. B) 2- NO.4 1/2" Ø REINFORCEMENT BARS - GRADE 60 - EACH 11'-4" LONG.
2. CONCRETE SHALL BE MIX NO. 6 (4500 PSI).
3. 2 -SC52 - 2 TON LIFTING ANCHORS.
4. ALL BARRIERS SHALL HAVE "T350" IMPRINTED ON TOP END OF BARRIER.
5. 24" WIDE X 1 7/8" HIGH DRAIN PAN.
6. 3/4" CHAMFER ALONG TOP EDGES.
7. CONNECTOR LOOP -3/4" Ø ROD ASTM 709 GRADE 36 PLAIN SHALL CONFORM TO ASTM A 153.

SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	Kirk G. McCall DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

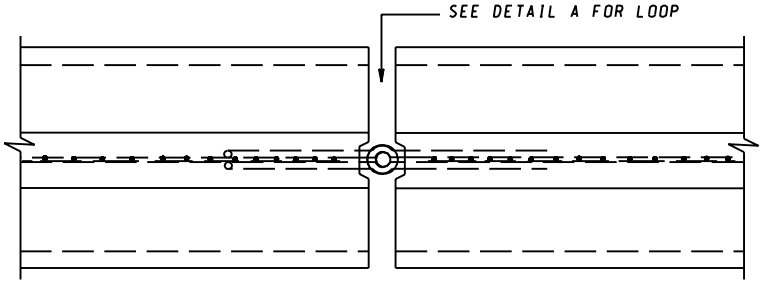
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-10-04	APPROVAL	3-31-04
REVISED	9-30-04	REVISED	
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

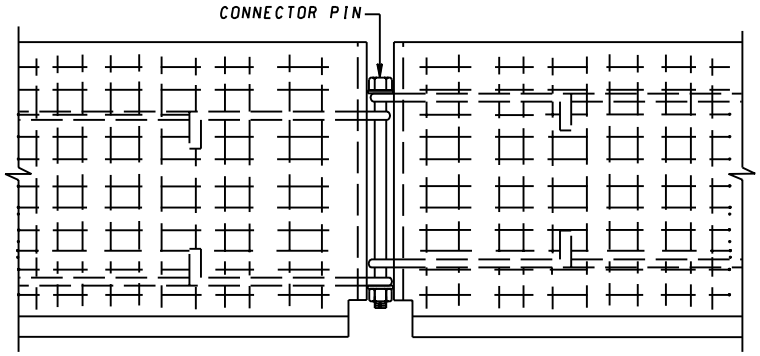
PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER (PIN AND LOOP JOINT)

STANDARD NO. MD 104.01-53



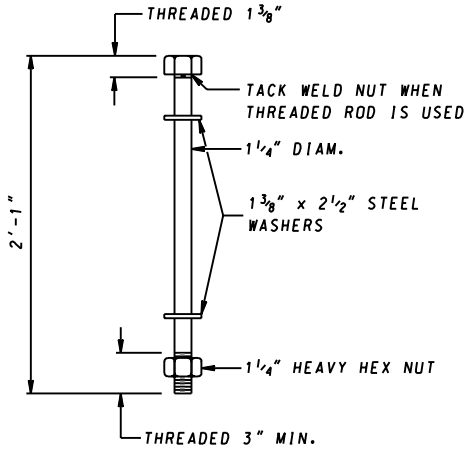
PLAN

(CONNECTOR PIN NOT SHOWN)

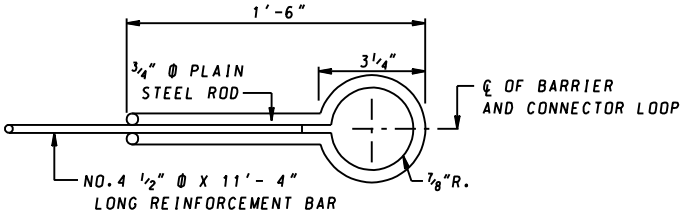


ELEVATION

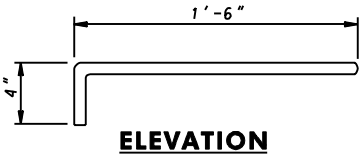
JOINT DETAILS



CONNECTOR PIN



PLAN



ELEVATION

CONNECTOR LOOP

NOTES

1) THE CONNECTOR PIN SHALL BE 1 1/4" Ø x 25" AND SHALL CONFORM TO ASTM A307, GRADE A. NUTS SHALL CONFORM TO A 563. WASHERS SHALL CONFORM TO ASTM F 436. THE CONNECTOR PIN, NUTS AND WASHERS SHALL BE PLAIN OR GALVANIZED IN ACCORDANCE WITH ASTM A 153.

2) CONNECTOR LOOP 3/4" Ø PLAIN STEEL ROD SHALL CONFORM TO ASTM A 709 GRADE 36 PLAIN OR GALVANIZED IN ACCORDANCE WITH ASTM A 153 OR STAINLESS STEEL ROD SHALL CONFORM TO ASTM A 276 FOR THE TYPE SPECIFIED.

SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	Kirk G. McCall DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-10-04	APPROVAL	3-31-04
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

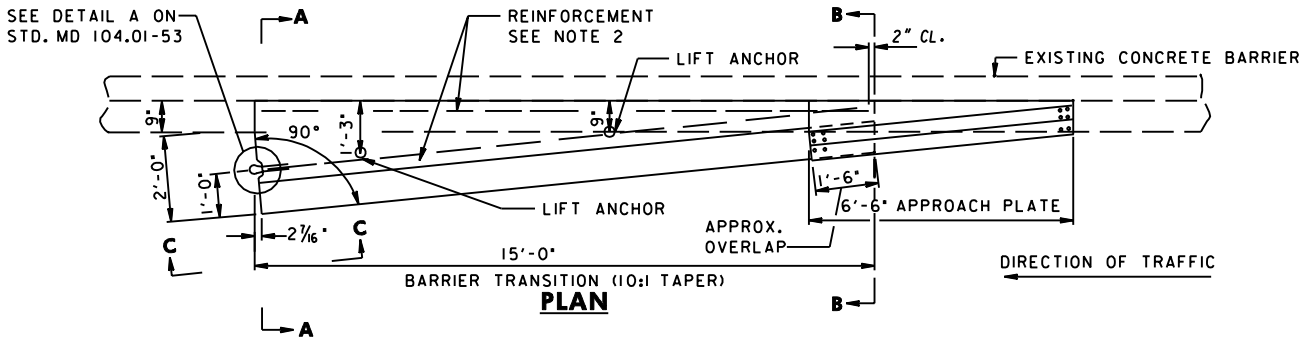
SHA State Highway Administration — Drive to Read

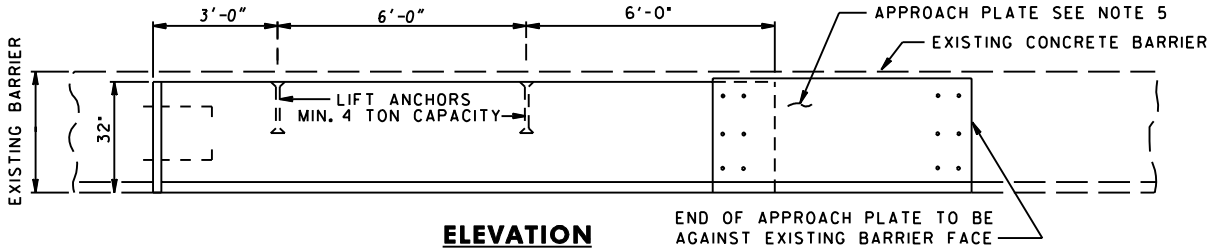
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

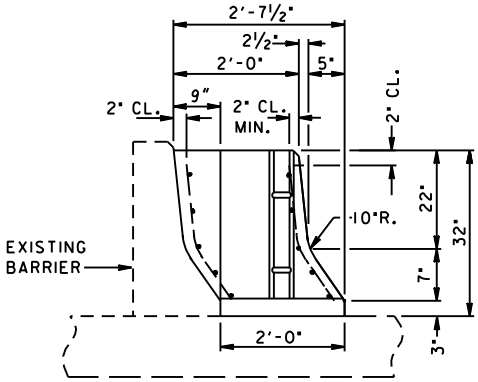
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

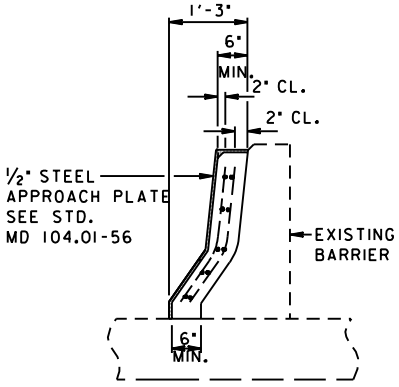
PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER (PIN AND LOOP JOINT)

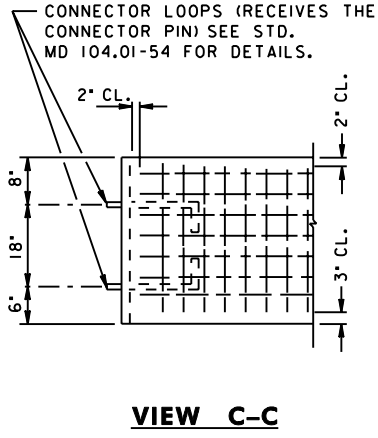
STANDARD NO. MD 104.01-54











NOTES

1. CONCRETE SHALL BE MIX NO. 6 (4500 PSI).
2. REINFORCEMENT SHALL BE GALVANIZED OR EXPOXY COATED 6"X 6"- W2.9 X W2.9 WELDED WIRE FABRIC.
3. ONE CONNECTOR PIN SHALL BE FURNISHED WITH EACH BARRIER SEE STD. MD 104.01-54 FOR DETAILS OF CONNECTOR PIN.
4. THE APPROACH PLATE SHALL BE FABRICATED USING 1/2" THICK STEEL PLATE BENT OR WELDED TO THE CONFIGURATION SHOWN ON STD. MD 104.01-57 AND GALVANIZED AFTER FABRICATION. THE APPROACH PLATE SHALL BE ANCHORED TO THE PRECAST TEMPORARY BARRIER TRANSITION AND TO THE EXISITING CONCRETE BARRIER IN THE FIELD TO ACHIEVE PROPER PLACEMENT AND HOLE ALIGNMENT WITH 6 EXPANSION ANCHORS (EACH END) AND 7/8" Ø HEX HEAD BOLTS.
5. THE COST OF THE APPROACH PLATE, ANCHORS, BOLTS, CONNECTOR PIN, LABOR, ETC. SHALL BE INCIDENTAL TO THE UNIT PRICE PER EACH FOR PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE BARRIER TRANSITION RIGHT SIDE APPROACH.

SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	Kirk G. McCall DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	2-10-04	REVISED	3-31-04
REVISED		REVISED	
REVISED		REVISED	

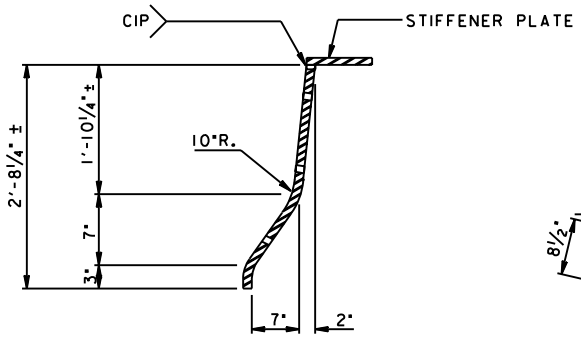
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

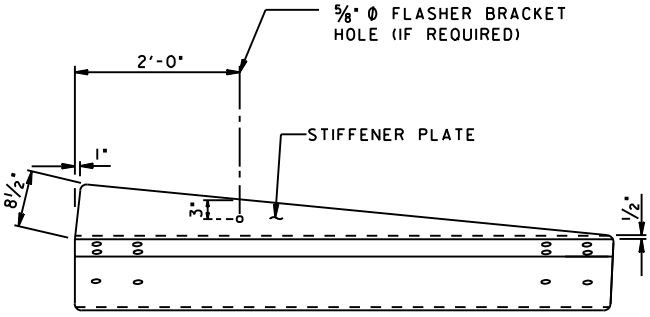
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TRANSITION RIGHT SIDE APPROACH

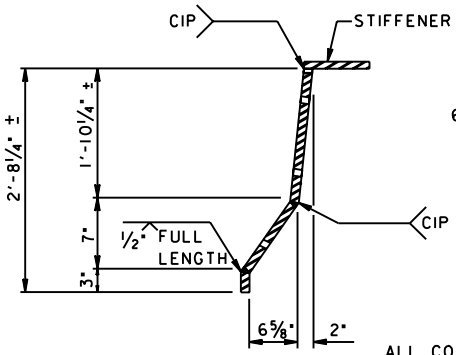
STANDARD NO. MD 104.01-55



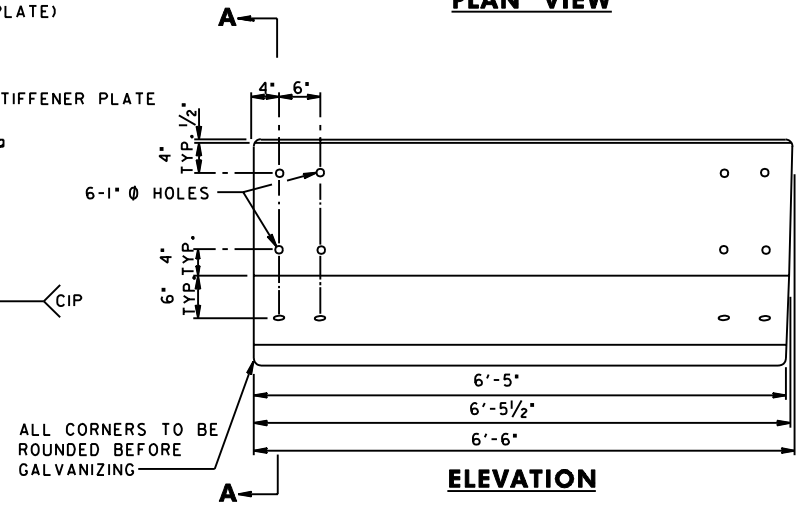
SECTION A-A
(SHOWN BENT WITH WELDED STIFFENER PLATE)



PLAN VIEW



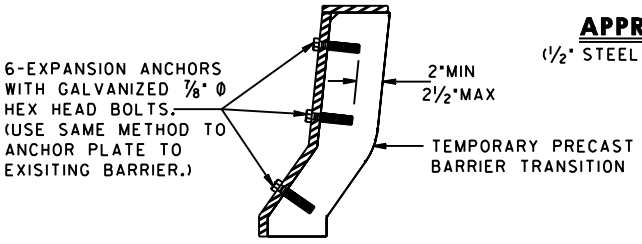
SECTION A-A
(SHOWN WELDED)



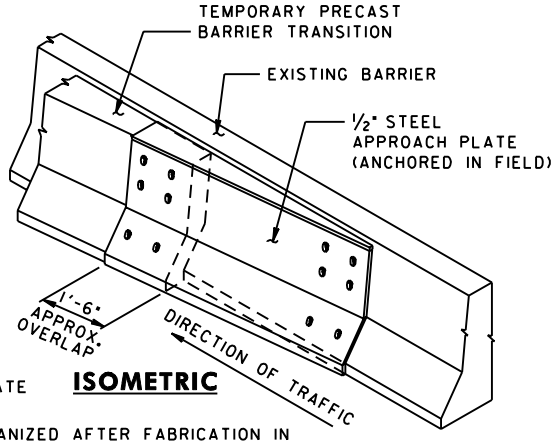
ALL CORNERS TO BE ROUNDED BEFORE GALVANIZING

ELEVATION

APPROACH PLATE
(½" STEEL PLATE - GALVANIZED)



APPROACH PLATE ANCHORAGE
(PREFORMED IN THE FIELD TO ACHIEVE PROPER PLACEMENT AND HOLE ALIGNMENT)



ISOMETRIC

NOTES

1. THE APPROACH PLATE SHALL BE FABRICATED USING ½" THICK STEEL PLATE BENT OR WELDED TO CONFIGURATION SHOWN.
2. STRUCTURAL STEEL SHALL CONFORM TO ASTM A 709 GR 36 AND GALVANIZED AFTER FABRICATION IN CONFORMANCE WITH ASTM A 123.
3. SEE STANDARD MD 104.01-55 FOR DETAILS OF PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TRANSITION RIGHT SIDE APPROACH.
4. COST OF APPROACH PLATE IS INCIDENTAL TO THE COST OF THE PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TRANSITION RIGHT SIDE APPROACH.
5. WHEN THE APPROACH PLATE IS REMOVED THE HOLES IN THE EXISTING BARRIER SHALL BE GROUTED.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Kirk G. McCall
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	2-10-04	REVISED	3-31-04
REVISED		REVISED	
REVISED		REVISED	

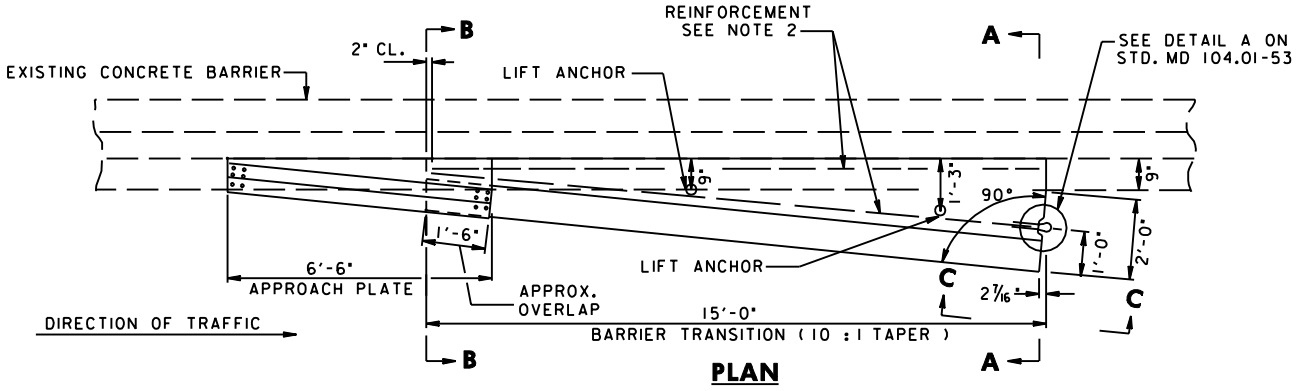
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

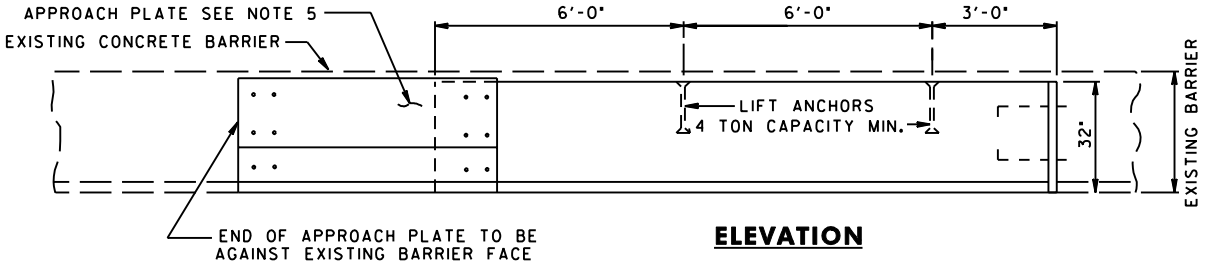
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

APPROACH PLATE FOR PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER FOR TRANSITION RIGHT SIDE

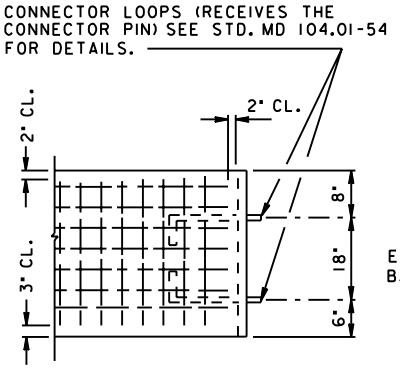
STANDARD NO. MD 104.01-56



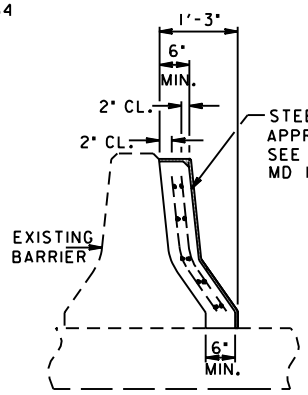
PLAN



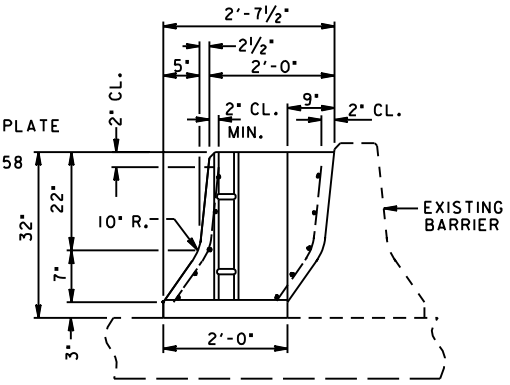
ELEVATION



VIEW C-C



SECTION B-B
(APPROACH END)



SECTION A-A
(TRAIL END)

NOTES

1. CONCRETE SHALL BE CONCRETE MIX NO. 6 (4500 PSI).
2. REINFORCEMENT SHALL BE GALVANIZED OR EXPOXY COATED 6"x6" - W2.9xW2.9 WELDED WIRE FABRIC.
3. ONE CONNECTOR PIN SHALL BE FURNISHED WITH EACH BARRIER. SEE STD. MD 104.01-41 FOR DETAILS OF CONNECTOR PIN.
4. THE APPROACH PLATE SHALL BE FABRICATED USING ½" THICK STEEL PLATE BENT OR WELDED TO THE CONFIGURATION SHOWN ON STD. MD 104.01-58 AND GALVANIZED AFTER FABRICATION. THE APPROACH PLATE SHALL BE ANCHORED TO THE PRECAST TEMPORARY BARRIER TRANSITION AND TO THE EXISTING CONCRETE BARRIER IN THE FIELD TO ACHIEVE PROPER PLACEMENT AND HOLE ALIGNMENT WITH 6 EXPANSION ANCHORS (EACH END) AND ⅞" Ø HEX HEAD BOLTS.
5. THE COST OF THE APPROACH PLATE, ANCHORS, BOLTS, CONNECTOR PIN, LABOR, ETC. SHALL BE INCIDENTAL TO THE UNIT PRICE PER EACH FOR PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE BARRIER TRANSITION LEFT SIDE APPROACH.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Kirk G. McCall
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	2-10-04	REVISED	3-31-04
REVISED		REVISED	
REVISED		REVISED	

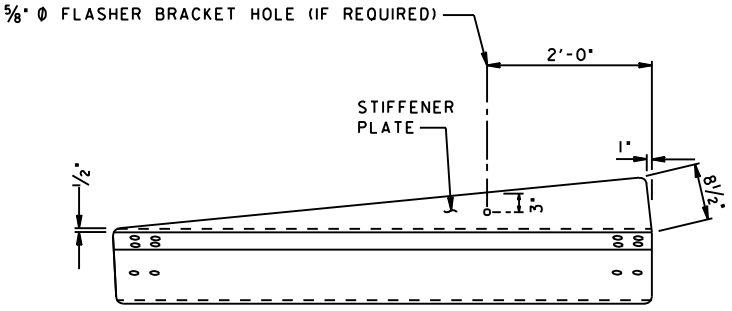
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

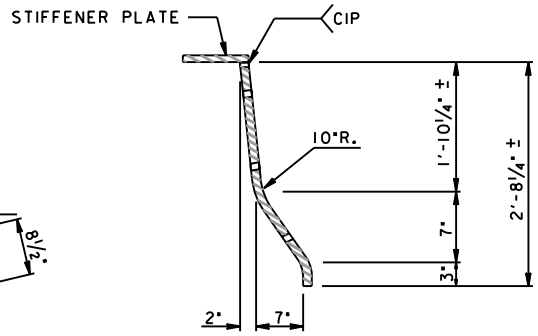
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TRANSITION– LEFT SIDE APPROACH

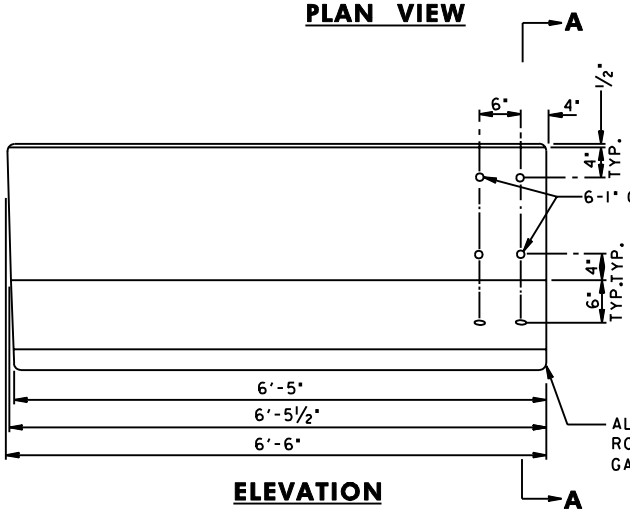
STANDARD NO. MD 104.01-57



PLAN VIEW

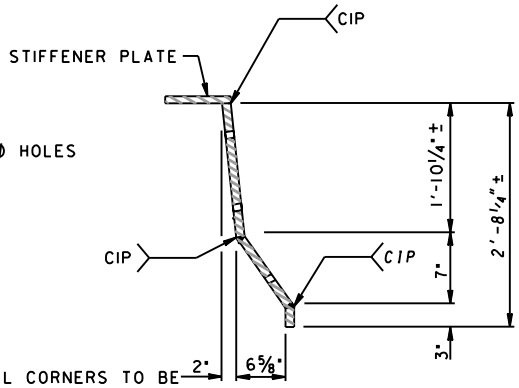


SECTION A–A
(SHOWN BENT WITH WELDED STIFFENER PLATE)



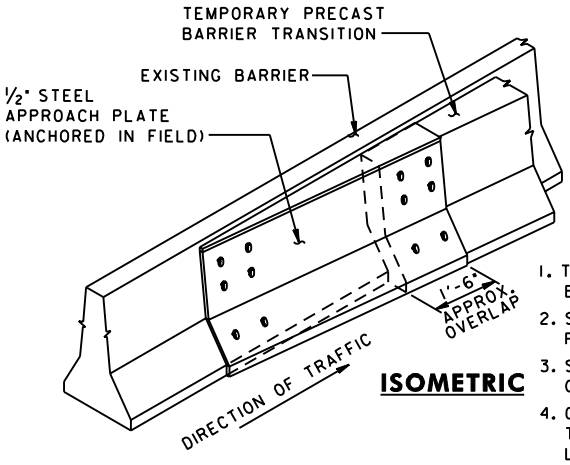
ELEVATION

ALL CORNERS TO BE ROUNDED BEFORE GALVANIZING

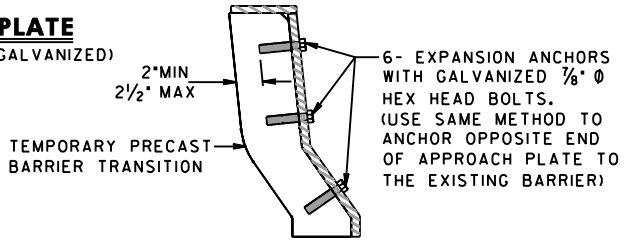


SECTION A–A
(SHOWN WELDED)

APPROACH PLATE
(½" STEEL PLATE - GALVANIZED)



ISOMETRIC



APPROACH PLATE ANCHORAGE
(PREFORMED IN THE FIELD TO ACHIEVE PROPER PLACEMENT AND HOLE ALIGNMENT)

NOTES

1. THE APPROACH PLATE SHALL BE FABRICATED USING ½" THICK STEEL PLATE BENT OR WELDED TO CONFIGURATION SHOWN.
2. STRUCTURAL STEEL SHALL CONFORM TO ASTM A709 AND GALVANIZED AFTER FABRICATION IN CONFORMANCE WITH ASTM A123.
3. SEE STANDARD MD 104.01-57 FOR DETAILS OF PRECAST TEMPORARY CONCRETE TRAFFIC BARRIER TRANSITION LEFT SIDE APPROACH.
4. COST OF APPROACH PLATE IS INCIDENTAL TO THE COST OF THE PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TRANSITION LEFT SIDE APPROACH.
5. WHEN THE APPROACH PLATE IS REMOVED THE HOLES IN EXISTING BARRIER SHALL BE GROUTED.

SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	Kirk G. McCall DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

APPROACH PLATE FOR PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER FOR TRANSITION LEFT SIDE

STANDARD NO. MD 104.01-58

NOTES

1. ALL POSTS AND OFFSET BRACKETS SHALL BE AS SHOWN ON STANDARDS MD 605.22 AND MD 605.23.
2. THE W BEAM TERMINAL CONNECTOR AND W BEAM SECTIONS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC.
3. THE COST FOR THE PRECAST 32 INCH F SHAPE TEMPORARY CONCRETE TRAFFIC BARRIER TERMINAL END WILL BE PAID FOR PER EACH.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Kirk G. McCall
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-10-04	APPROVAL	3-31-04
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration — Drive to Excel

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

TRAFFIC BARRIER W BEAM ANCHORAGE AT PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER TERMINAL END

STANDARD NO. MD 104.01-61

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Kirk G. McCall
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-10-04	APPROVAL	3-31-04
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

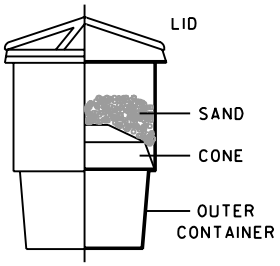
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

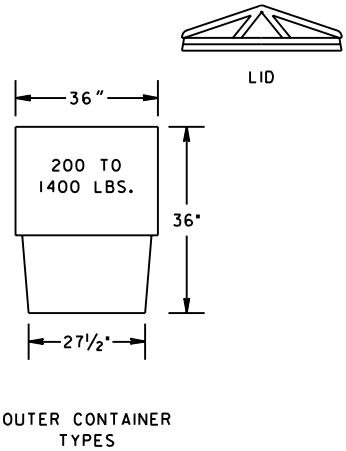
TRAFFIC BARRIER W BEAM MEDIAN BARRIER ANCHORAGE AT PRECAST 32 INCH F SHAPE TEMPORARY CONCRETE TRAFFIC BARRIER TERMINAL END

STANDARD NO. MD 104.01-62

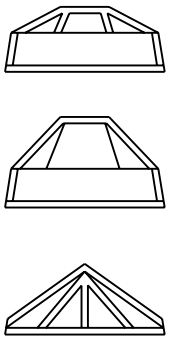
A. BARRELS



TYPICAL ASSEMBLY

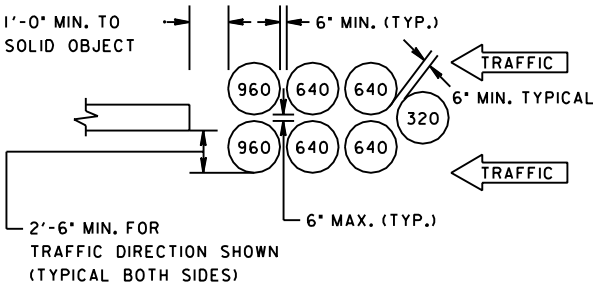


OUTER CONTAINER TYPES

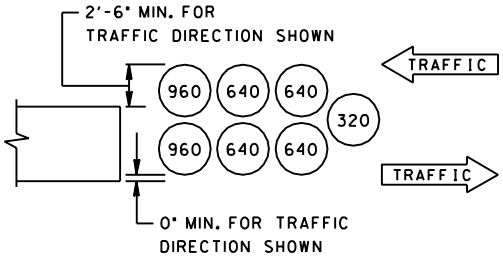


ALTERNATE CONE TYPES

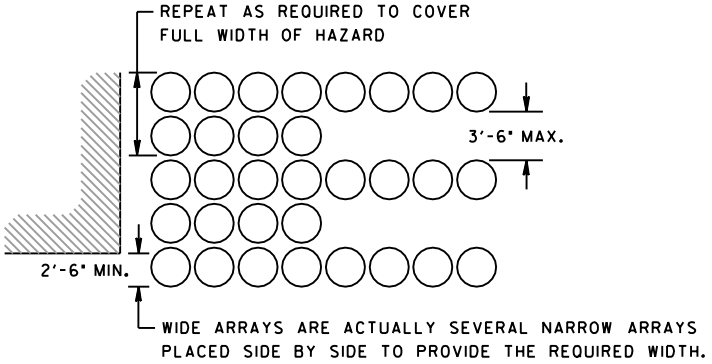
B. LAYOUT CONFIGURATION



UNIDIRECTIONAL



BIDIRECTIONAL



WIDE HAZARD EXAMPLE

SPECIFICATION	CATEGORY CODE ITEMS
104 & 606	

APPROVED Kirk G. McCall
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 8-20-03	APPROVAL 9-23-03
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

SHA State Highway Administration

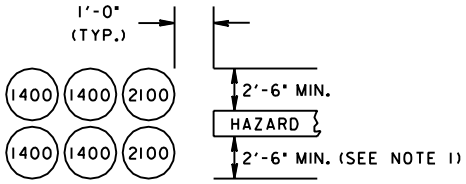
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

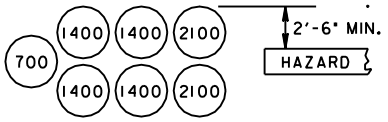
CRASH CUSHION
SAND FILLED PLASTIC BARRELS
(TEMPORARY OR PERMANENT)

STANDARD NO. MD 104.01-70

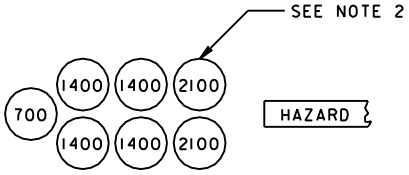
C. TYPICAL DESIGN LAYOUT



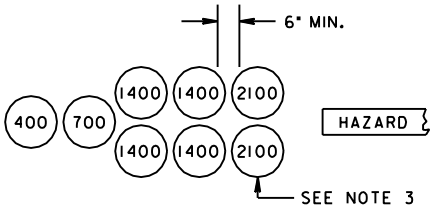
DESIGN SPEED = 25 M.P.H.



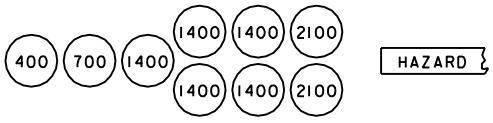
DESIGN SPEED = 30 M.P.H.



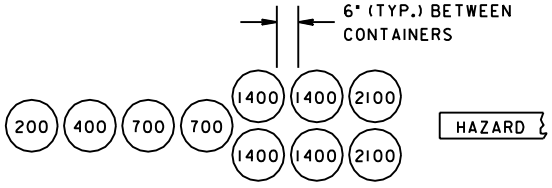
DESIGN SPEED = 35 M.P.H.



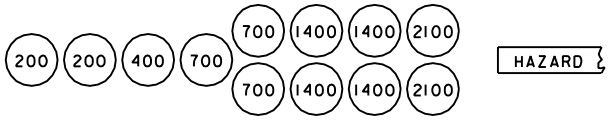
DESIGN SPEED = 40 M.P.H.



DESIGN SPEED = 45 M.P.H.



DESIGN SPEED = 50 M.P.H.



DESIGN SPEED = 55 M.P.H.

SPECIFICATION	CATEGORY CODE ITEMS
104 & 606	

APPROVED Kirk G. McCall
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

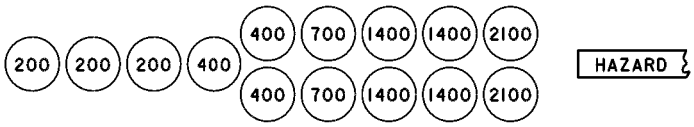
APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 8-20-03	APPROVAL 9-23-03
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

SHA State Highway Administration

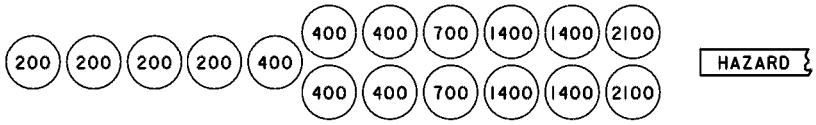
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

CRASH CUSHION
SAND FILLED PLASTIC BARRELS
(TEMPORARY OR PERMANENT)

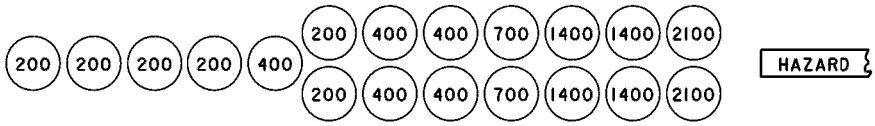
STANDARD NO. MD 104.01-71



DESIGN SPEED = 60 M.P.H.



DESIGN SPEED = 65 M.P.H. (SEE NOTE 5)



DESIGN SPEED = 70 M.P.H. (SEE NOTE 5)

NOTES:

1. THE CIRCLES REPRESENT THE BARRELS. THE NUMBER INSIDE THE BARREL INDICATES THE WEIGHT OF SAND IN POUNDS.
2. 2'-6" MIN. CLEARANCE TYPICAL BOTH SIDES APPLICABLE TO ALL ARRAY APPLICATIONS.
3. SAND BARRELS SHALL BE LOCATED TO SHIELD THE HAZARD FROM SIDE ANGLE IMPACTS.
4. SPACING BETWEEN BARRELS SHALL BE 6" MINIMUM.
5. THE DESIGN VELOCITY SPEEDS OF 65 AND 70 MPH EXCEEDS MASH AND NCHRP REPORT 350 TEST LEVEL 3 IMPACT CONDITIONS. TYPICAL IMPACTS INTO THIS ARRAY MAY NOT RESULT IN ACCEPTABLE CRASH PERFORMANCE AS DESCRIBED IN MASH AND NCHRP REPORT 350 RELATIVE TO STRUCTURAL ADEQUACY, OCCUPANT RISK AND VEHICLE TRAJECTORY.

SPECIFICATION	CATEGORY CODE ITEMS
104 & 606	

APPROVED _____
DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	3-26-18	REVISED	9-18-17
REVISED		REVISED	
REVISED		REVISED	

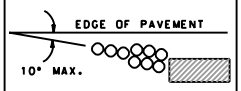
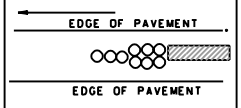
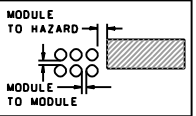
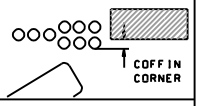
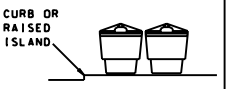
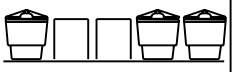
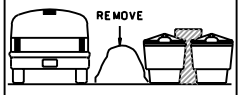
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

CRASH CUSHION
SAND FILLED PLASTIC BARRELS (TEMPORARY OR PERMANENT)

STANDARD NO. MD 104.01-72

SITE CONDITIONS AND RECOMMENDATIONS

CONDITIONS	FHWA RECOMMENDATIONS	MANUFACTURER RECOMMENDATIONS	SAMPLE
1. ANGLE OF ARRAY IN RELATION TO CENTER LINE OF OBSTACLE	NOT RECOMMENDED FOR MORE THAN 10°	SAME AS FHWA	
2. BIDIRECTIONAL TRAFFIC	OFFSET ARRAY TO AVOID IMPACT TO THE REAR MODULE FROM WRONG-WAY VEHICLES	SAME AS FHWA	
3. MODULE SPACING: MODULE TO HAZARD MODULE TO MODULE	1′ TO 2′ NONE GIVEN	6″ MINIMUM LENGTH 6″ WIDTH	
4. "COFFIN" CORNER	SHIELD 30″ OUTSIDE OF HAZARD	SAME AS FHWA	
5. CURBS AND RAISED ISLANDS OR PALLETS FOR TEMPORARY SITES	NO MORE THAN 4″ HIGH	SAME AS FHWA	
6. INTERMIXING OF BRANDS OF MODULES	APPROVED - AS LONG AS MODULES ARE FEDERALLY APPROVED AND ARRAY MEETS DESIGN CRITERIA.	SAME AS FHWA	
7. MAINTENANCE	KEEP SITE CLEAR OF DEBRIS AND SNOW	SAME AS FHWA	
8. SAND DENSITIES	100 LBS/CF	DETERMINE IN THE FIELD	
9. SINGLE ROWS OF MODULES	NOT RECOMMENDED	SAME AS FHWA	

SPECIFICATION	CATEGORY CODE ITEMS
104 & 606	

APPROVED Kirk G. McCall
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 8-12-02	APPROVAL 9-4-02
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
CRASH CUSHION
SAND FILLED PLASTIC BARRELS
(TEMPORARY OR PERMANENT)

STANDARD NO. MD 104.01-73

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
TAPER LENGTH CRITERIA TABLE

SPEED (S) IN MPH	WIDTH OF OFFSET (W) IN FEET											
	1	2	3	4	5	6	7	8	9	10	11	12
	TAPER LENGTH (L) IN FEET WHERE L = $WS^2/60$											
25	11	21	32	42	53	63	73	84	94	105	115	125
30	15	30	45	60	75	90	105	120	135	150	165	180
35	21	41	62	82	103	123	143	164	184	205	225	245
40	27	54	80	107	134	160	187	214	240	267	294	320
	TAPER LENGTH (L) IN FEET WHERE L = WS											
45	45	90	135	180	225	270	315	360	405	450	495	540
50	50	100	150	200	250	300	350	400	450	500	550	600
55	55	110	165	220	275	330	385	440	495	550	605	660
60	60	120	180	240	300	360	420	480	540	600	660	720
65	65	130	195	260	325	390	455	520	585	650	715	780
70	70	140	210	280	350	420	490	560	630	700	770	840

TYPE OF TAPER — TAPER LENGTH

MERGING TAPER
L MINIMUM (ON EXPRESSWAYS AND FREEWAYS, MERGING LANE CLOSURE TAPERS SHALL BE 1000 FEET, UNLESS DIRECTED BY THE ENGINEER)

SHIFTING TAPER
L (WHEN CONDITIONS DO NOT PERMIT SHIFTING TAPERS OF LENGTH L, SHIFTING TAPERS DOWN TO LENGTH 1/2 L (MIN.) MAY BE USED)

SHOULDER TAPER
1/3 L MINIMUM

TWO-WAY TAPER (FLAGGING)
100 FEET MAX., 50 FEET MIN.

TERMINATION TAPER
100 FEET MIMIMUM

NOTE:
AN "ABRUPT" LANE SHIFT IS ANY SHIFT WITH A TAPER LENGTH (L) LESS THAN THE VALUE SPECIFIED IN THE TABLE ABOVE.

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 8-20-03	APPROVAL 9-23-03
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

TAPER LENGTH CRITERIA TABLE

STANDARD NO. MD 104.01-80

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES:

1. MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES:

   TAPER CHANNELIZATION - SHALL BE EQUAL IN FEET TO THE POSTED SPEED LIMIT FOR POSTED SPEEDS EQL/LESS THAN 40 MPH AND 40 FEET FOR POSTED SPEEDS GREATER THAN 40 MPH

   TANGENT CHANNELIZATION - SHALL BE EQUAL IN FEET TO TWICE THE POSTED SPEED LIMIT IN THE BUFFER AND EQUAL IN FEET TO THE POSTED SPEED ADJACENT TO THE WORK AREA FOR POSTED SPEEDS EQL/LESS THAN 40 MPH. SPACING SHALL BE 80 FEET IN THE BUFFER AND 40 FEET ADJACENT TO THE WORK AREA FOR POSTED SPEEDS GREATER THAN 40 MPH

2. THE MINIMUM BUFFER LENGTH (BL) SHALL BE AS FOLLOWS:

BUFFER LENGTH (BL)

TYPICAL BUFFER LENGTH	
PREVAILING SPEED	LENGTH
(MPH)	(FEET)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

REFER TO LATEST PART VI OF THE MUTCD FOR ADDITIONAL SPEEDS/BUFFER LENGTHS AND ADJUSTMENTS TO BUFFER LENGTH DUE TO THE EFFECT OF GRADE ON STOPPING AND VARIATION FOR TRUCKS.

3. REFER TO STANDARD NO. MD 104.01-80 (TAPER LENGTH CRITERIA TABLE) FOR MINIMUM TAPER LENGTHS.

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	6-8-04	REVISED	
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

TYPICAL APPLICATION NOTES

STANDARD NO. MD 104.01-81

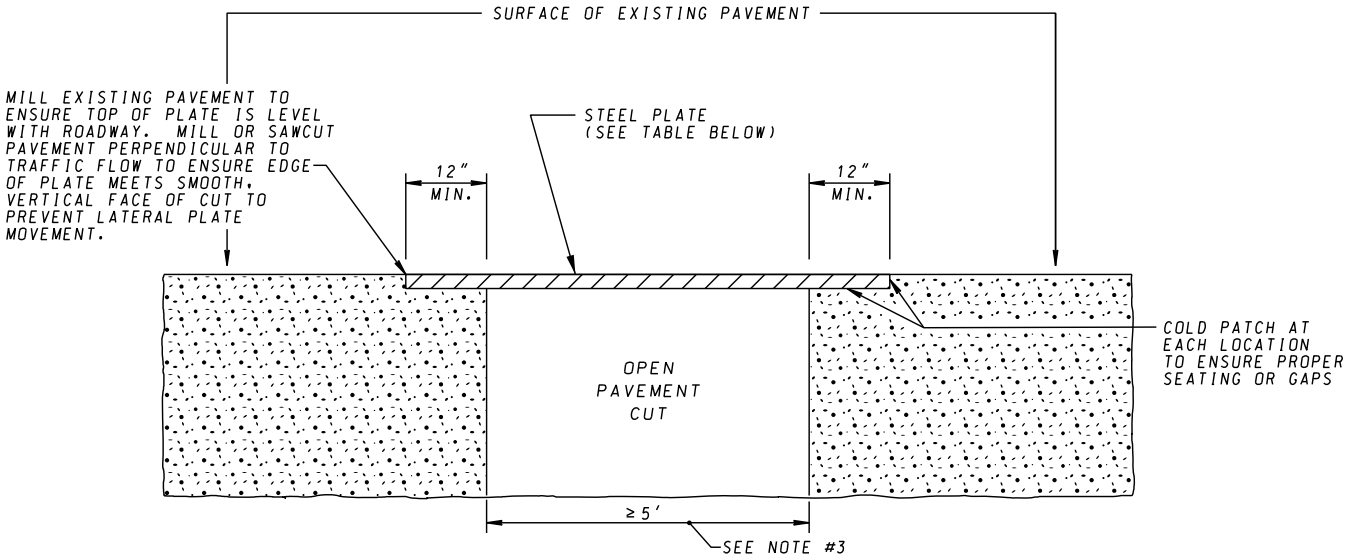
STANDARD DETAIL:

STEEL PLATE BRIDGING AND SHORING SHALL BE INSTALLED USING EITHER METHOD (1) OR (2).

METHOD 1, FOR SPEEDS GREATER THAN 40 MPH (SEE DETAIL BELOW).

THE PAVEMENT SHALL BE MILLED OR SAW CUT TO A DEPTH EQUAL TO THE THICKNESS OF THE PLATE AND TO A WIDTH AND LENGTH EQUAL TO THE DIMENSIONS OF THE PLATE.

* METHOD '1' DOES NOT APPLY TO CEMENT CONCRETE PAVEMENT SECTIONS.



STEEL PLATE DETAIL (METHOD 1, GREATER THAN 40 MPH)

NOT TO SCALE

THE FOLLOWING TABLE SHOWS THE ADVISORY MINIMAL THICKNESS OF STEEL PLATE BRIDGING REQUIRED FOR A GIVEN TRENCH (WITH A-36 GRADE STEEL):

TRENCH WIDTH	MIMIMUM PLATE THICKNESS
< 5'	1"
≥ 5'	SEE NOTE #3

NOTES

1. STEEL PLATE USAGE WILL BE INCIDENTAL TO THE WORK BEING DONE/PROTECTED UNLESS AN ITEM FOR STEEL PLATES IS INCLUDED IN THE CONTRACT SHEDULE OF PRICES.
2. STEEL PLATE INSTALLED SHALL HAVE A MAXIMUM ONE INCH DEFLECTION. STEEL PLATES SHALL BE WELDED TOGETHER BY A LICENSED WELDER.
3. FOR TRENCH WIDTHS EQUAL TO OR GREATER THAN 5 FT. STEEL PLATE AND SUPPORT SYSTEM SHALL BE DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND AND APPROVED BY THE SHA ENGINEER.
4. STEEL PLATE BRIDGING IS NOT ALLOWED ON EXPRESSWAYS/FREEWAYS.
5. ALL STEEL PLATES ARE TO BE ANCHORED USING MIN. 6 IN. ANCHOR. REFER TO STD. MD 104.01-86.

SPECIFICATION	CATEGORY CODE ITEMS
–	

APPROVED _____
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	4-12-16	APPROVAL	3-21-16
REVISED	5-19-16	REVISED	5-6-16
REVISED	10-20-16	REVISED	10-13-16
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STEEL PLATE
METHOD 1, GREATER THAN 40 MPH

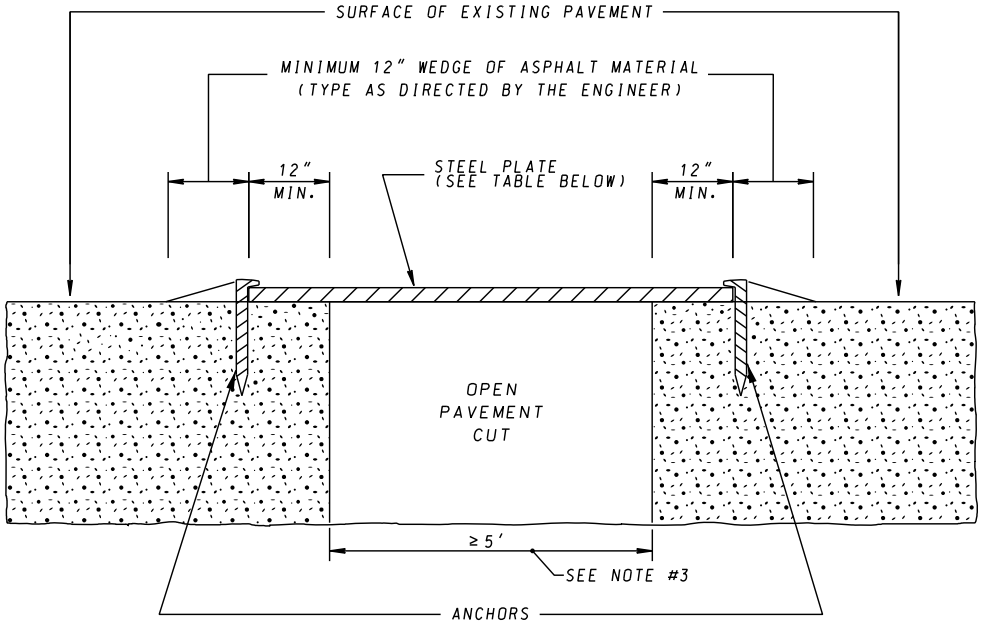
STANDARD NO. MD 104.01-85

STANDARD DETAIL:

* METHOD '2' SHALL BE USED FOR CEMENT CONCRETE PAVEMENT SECTIONS, REGARDLESS OF SPEED.*

METHOD '2', FOR SPEEDS EQUAL TO OR LESS THAN 40 MPH (SEE DETAIL BELOW)

APPROACH PLATE AND ENDING PLATE OF LONGITUDINAL PLACEMENT SHALL BE ATTACHED TO THE ROADWAY BY A MINIMUM OF 1 ANCHOR IN EACH CORNER OF THE PLATE. DRILL A 1/2 INCH DIAMETER, 5 INCH DEEP PILOT HOLE INTO THE PAVEMENT. DRIVE 1 ANCHOR INTO EACH HOLE. SUBSEQUENT PLATES ARE BUTTED TO EACH OTHER AND WELDED. ASPHALT MATERIAL SHALL BE COMPACTED TO FORM RAMPS. MAXIMUM SLOPE 8.5% WITH A MINIMUM 12 INCH TAPER TO COVER ALL EDGES OF THE STEEL PLATES. CONTRACTOR'S PROPOSED METHOD OF ANCHORING SHALL BE APPROVED BY THE ENGINEER.



STEEL PLATE DETAIL (METHOD 2, EQUAL TO OR LESS THAN 40 MPH)

NOT TO SCALE

THE FOLLOWING TABLE SHOWS THE ADVISORY MINIMAL THICKNESS OF STEEL PLATE BRIDGING REQUIRED FOR A GIVEN TRENCH (WITH A-36 GRADE STEEL):

TRENCH WIDTH	MIMIMUM PLATE THICKNESS
< 5'	1"
≥ 5'	SEE NOTE #3

NOTES

1. STEEL PLATE USAGE WILL BE INCIDENTAL TO THE WORK BEING DONE/PROTECTED UNLESS AN ITEM FOR STEEL PLATES IS INCLUDED IN THE CONTRACT SHEDULE OF PRICES.
2. STEEL PLATE INSTALLED SHALL HAVE A MAXIMUM ONE INCH DEFLECTION. STEEL PLATES SHALL BE WELDED TOGETHER BY A LICENSED WELDER.
3. FOR TRENCH WIDTHS EQUAL TO OR GREATER THAN 5 FT. STEEL PLATE AND SUPPORT SYSTEM SHALL BE DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND AND APPROVED BY THE SHA ENGINEER.
4. STEEL PLATE BRIDGING IS NOT ALLOWED ON EXPRESSWAYS/FREEWAYS.
5. ANCHORS ARE TO BE A MIN. OF 6 IN. IN LENGTH.

SPECIFICATION	CATEGORY CODE ITEMS
–	

APPROVED _____ DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

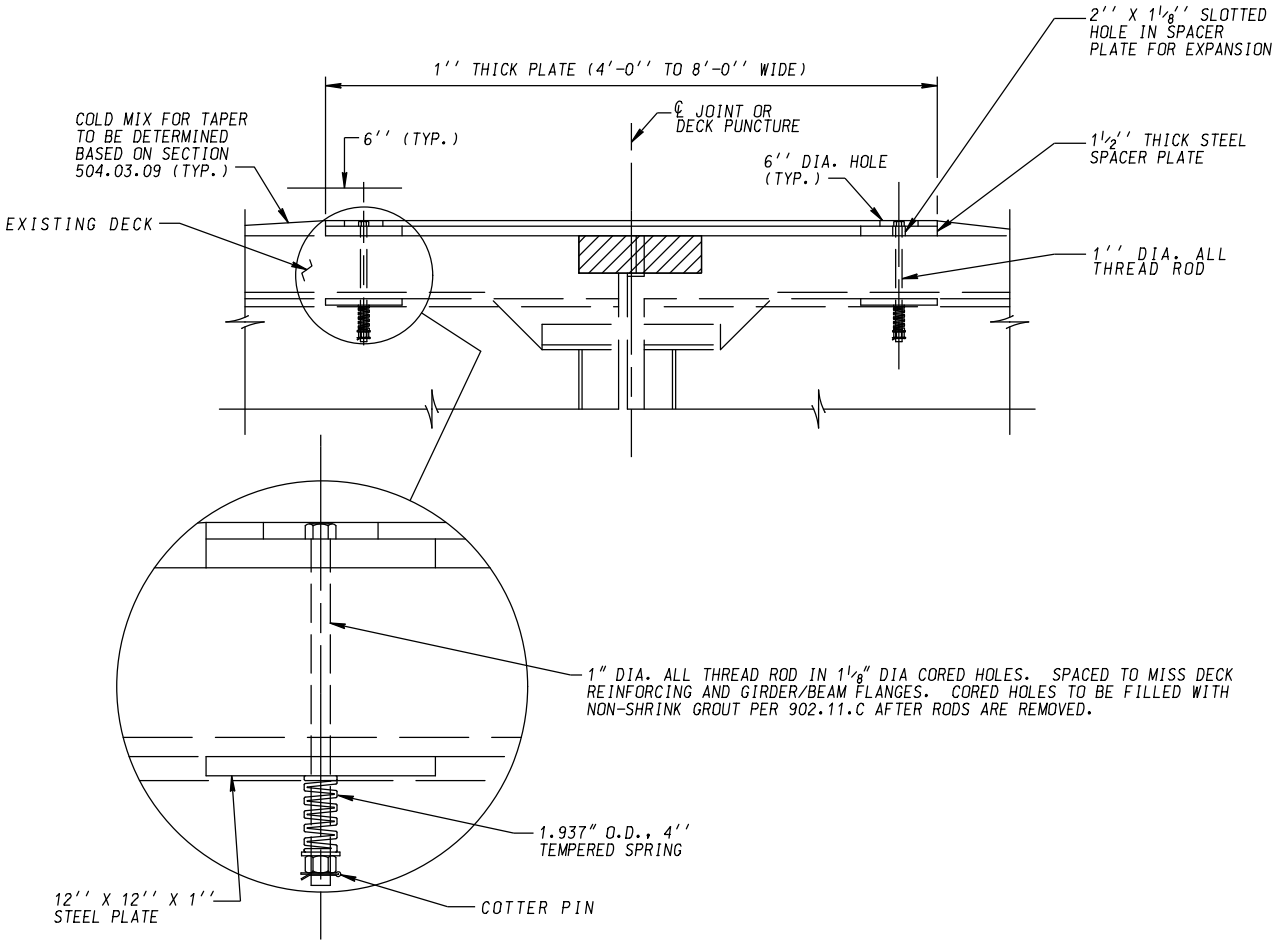
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	4-12-16	APPROVAL	3-21-16
REVISED	5-19-16	REVISED	5-6-16
REVISED	10-20-16	REVISED	10-13-16
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STEEL PLATE
METHOD 2, EQUAL TO OR LESS THAN 40 MPH

STANDARD NO. MD 104.01-86



NOTES

1. TEMPORARY STEEL PLATES TO BE PLACED WHEN REPAIRING DECK AND JOINT HEADERS.
2. ROADWAY PLATES ARE TO BE ANCHORED TO THE DECK USING 1'' DIA. ALL THREADED RODS (ASTM A307), RECESSED IN PLATE WITH WELDED NUT AND 12'' X 12'' X 1'' STEEL PLATE WASHER WITH ''SPRING SYSTEM'' NUT AND WASHER AT UNDERSIDE OF DECK TO SECURE THE ANCHORS. FULLY COMPRESS THE SPRING WHEN TIGHTENING THE NUT.
3. THE USE OF STEEL PLATES AND ALL ASSOCIATED WORK IS INCIDENTAL TO THE MAINTENANCCE OF TRAFFIC ITEM FOR STRUCTURE.
4. USE 1.937 O.D. 4'' LONG TEMPERED STEEL SPRING, (MIN. 1200 LBS/INCH) WITH A 0.375'' WIRE DIAMETER SPRING TO BE SECURED WITH STANDARD FLAT WASHER, NUT AND COTTER PIN THROUGH THREAD ROD.
5. TEMPORARY PLATES TO REMAIN IN PLACE UNTIL CONCRETE HAS ACHIEVED A MINIMUM OF 4500 PSI COMPRESSIVE STRENGTH.
6. FOR CONCRETE DECK WITH ASPHALT WEARING SURFACE DECK PUNCTURE REPAIRS, REMOVE ASPHALT WEARING SURAFCE SO TOP PLATE IS LEVEL WITH TOP OF SURROUNDING BRIDGE DECK WORKING SURFACE (OR TO TOP OF CONCRETE DECK) TO THE WIDTH AND LENGTH OF THE STEEL PLATE. REPAIR CONCRETE DECK AND PLACE STEEL PLATE WHILE CONCRETE CURES. USE COLD PATCH TO PREVENT STEEL PLATE FROM ROCKING AND TO FILL GAPS AT EDGES OF STEEL PLATE. AFTER CONCRETE CURES AND ACHEIVES 4500 PSI STRENGTH, REMOVE PLATE, FILL CORED HOLES, AND REPLACE ASPHALT WEARING SURFACE.

SPECIFICATION	CATEGORY CODE ITEMS
–	

APPROVED

DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	4-12-16	APPROVAL	3-21-16
REVISED	1-10-17	REVISED	12-1-16
REVISED		REVISED	
REVISED		REVISED	

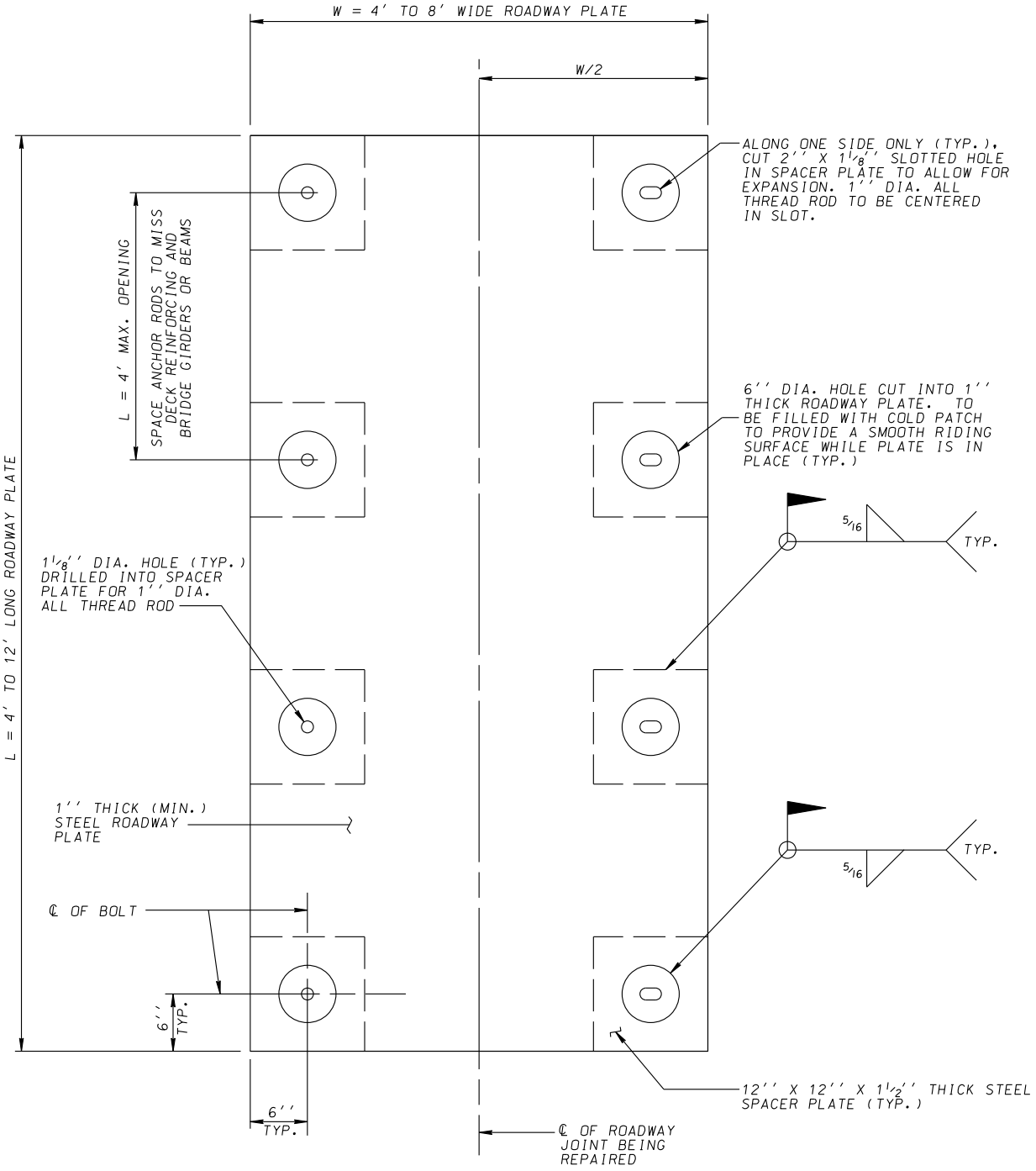
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STEEL PLATE
METHOD 3, BRIDGE DECK PLATING

STANDARD NO. ***MD 104.01-87***



PLATING DETAIL – PLAN VIEW

SPECIFICATION	CATEGORY CODE ITEMS
–	

APPROVED

DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	4-12-16	APPROVAL	3-21-16
REVISED	–	REVISED	–
REVISED		REVISED	
REVISED		REVISED	

State Highway Administration

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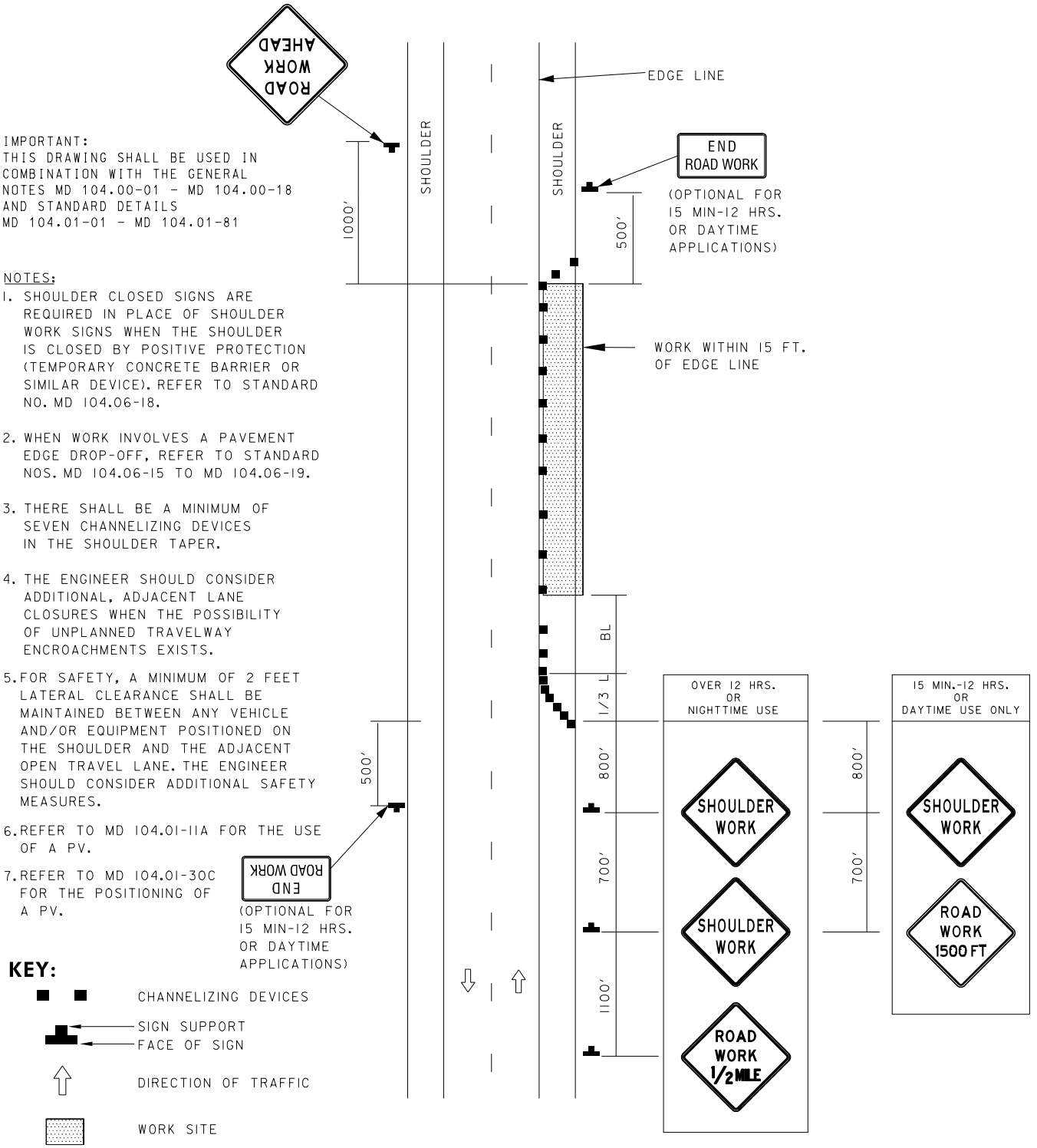
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STEEL PLATE
METHOD 3, BRIDGE DECK PLATING PLAN VIEW

STANDARD NO. ***MD 104.01-88***

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

1. SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION (TEMPORARY CONCRETE BARRIER OR SIMILAR DEVICE). REFER TO STANDARD NO. MD 104.06-18.
2. WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-15 TO MD 104.06-19.
3. THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.
4. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.
5. FOR SAFETY, A MINIMUM OF 2 FEET LATERAL CLEARANCE SHALL BE MAINTAINED BETWEEN ANY VEHICLE AND/OR EQUIPMENT POSITIONED ON THE SHOULDER AND THE ADJACENT OPEN TRAVEL LANE. THE ENGINEER SHOULD CONSIDER ADDITIONAL SAFETY MEASURES.
6. REFER TO MD 104.01-11A FOR THE USE OF A PV.
7. REFER TO MD 104.01-30C FOR THE POSITIONING OF A PV.

SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED	2-19-24	REVISED	11-16-23
REVISED		REVISED	

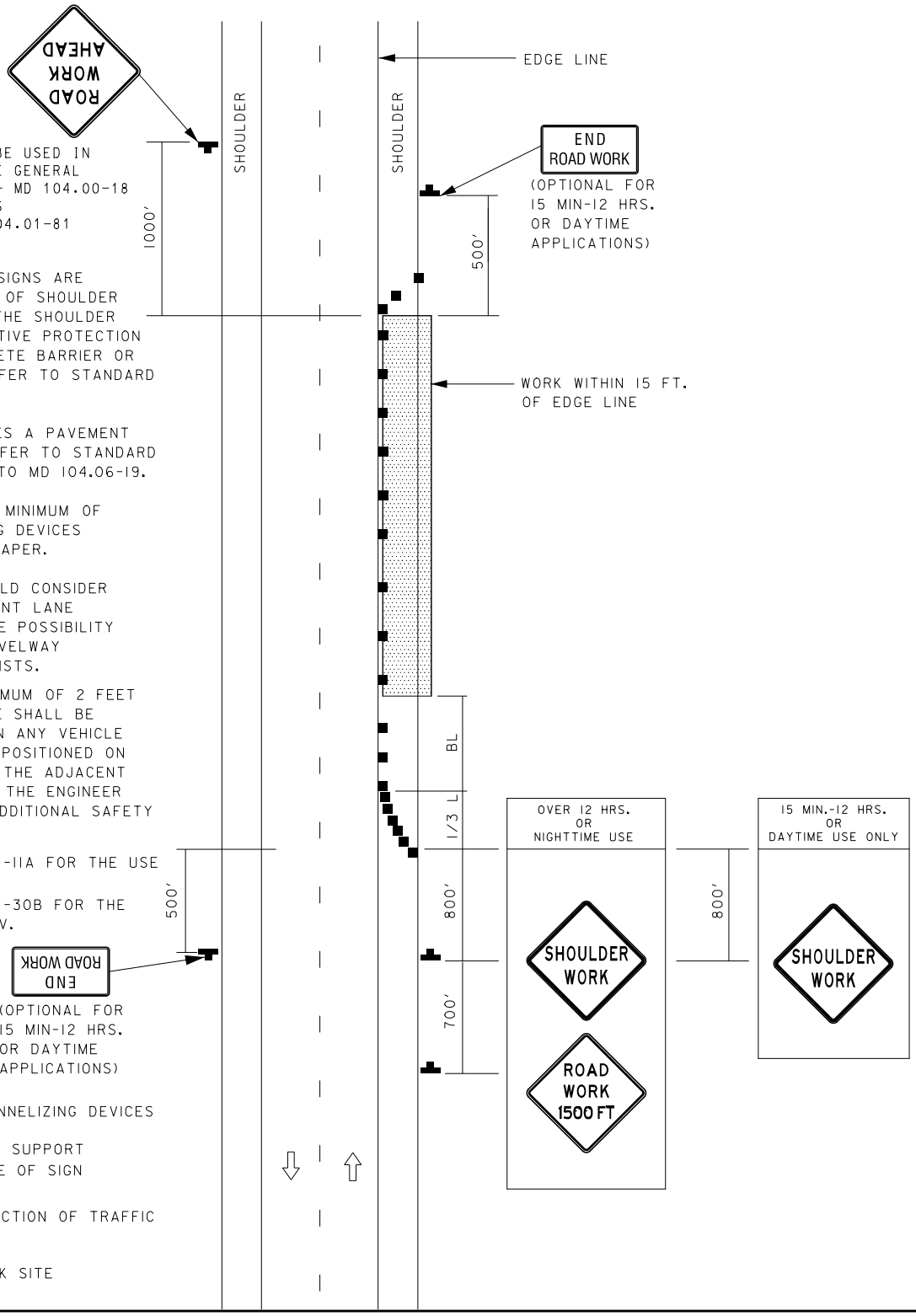
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SHOULDER WORK /2-LANE, 2-WAY GREATER THAN 40 MPH

STANDARD NO. MD 104.02-01

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

1. SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION (TEMPORARY CONCRETE BARRIER OR SIMILAR DEVICE). REFER TO STANDARD NO. MD 104.06-18.
2. WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-15 TO MD 104.06-19.
3. THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.
4. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.
5. FOR SAFETY, A MINIMUM OF 2 FEET LATERAL CLEARANCE SHALL BE MAINTAINED BETWEEN ANY VEHICLE AND/OR EQUIPMENT POSITIONED ON THE SHOULDER AND THE ADJACENT OPEN TRAVEL LANE. THE ENGINEER SHOULD CONSIDER ADDITIONAL SAFETY MEARSURES.
6. REFER TO MD 104.01-11A FOR THE USE OF A PV.
7. REFER TO MD 104.01-30B FOR THE POSITIONING OF A PV.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED	2-19-24	REVISED	11-16-23
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SHOULDER WORK/2-LANE, 2-WAY EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.02-02

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

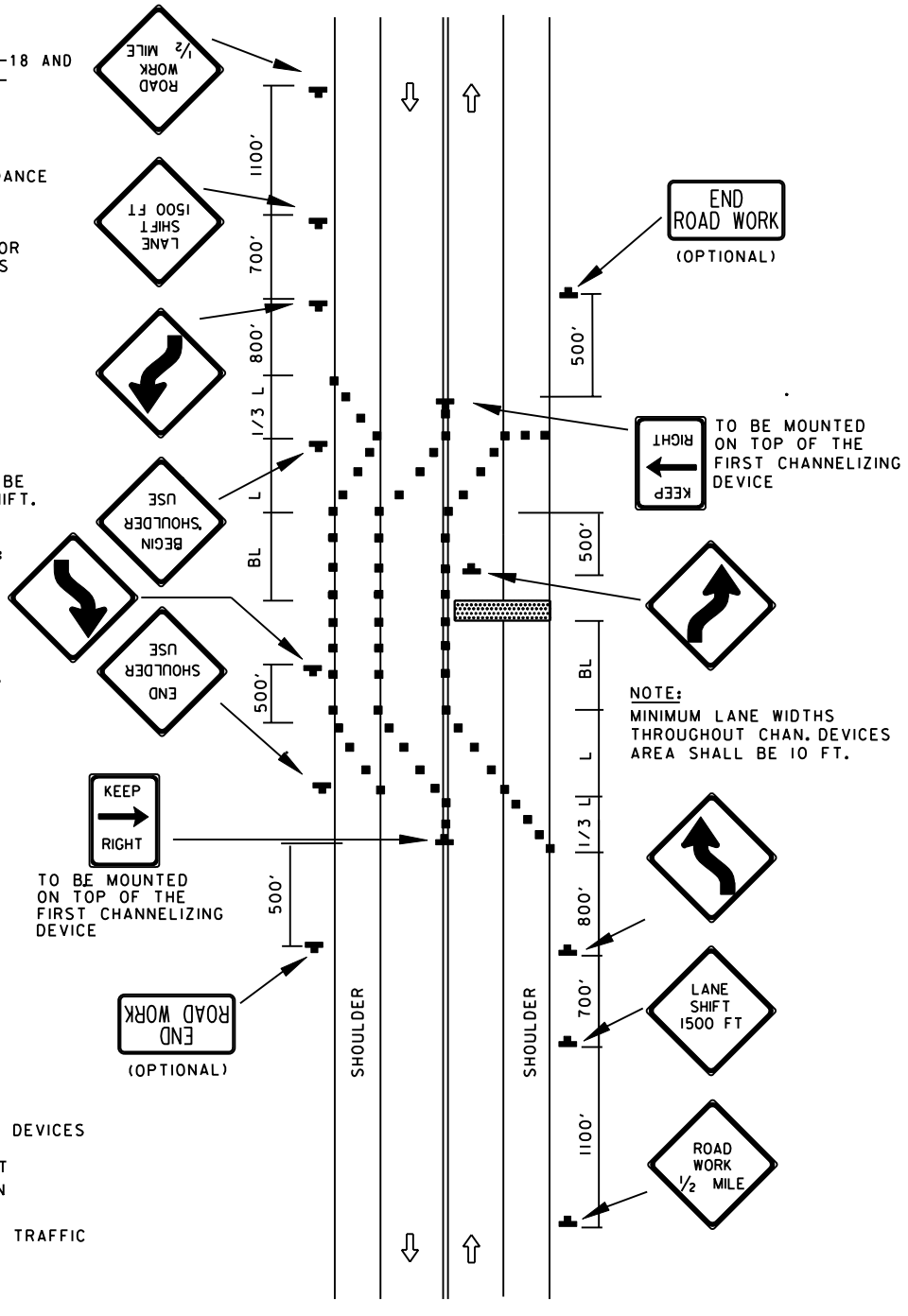
NOTES:

REFER TO MD 104.01-27 FOR GUIDANCE ON PAVEMENT MARKINGS THROUGH LANE SHIFTS.

- THIS TYPICAL SHALL BE USED FOR ANY LANE SHIFT WHICH SATISFIES EITHER CONDITION 'A' OR 'B':
  - ▶ CONDITION 'A': LANE SHIFT IS "ABRUPT" - SHIFT HAS A TAPER LENGTH LESS THAN THE VALUE SPECIFIED IN THE TAPER LENGTH CRITERIA TABLE REFER TO MD 104.01-80
  - ▶ CONDITION 'B': PREVAILING SPEEDS CANNOT BE MAINTAINED THROUGH THE SHIFT.
- FOR LANE SHIFTS WHICH DO NOT SATISFY ABOVE CONDITIONS:
  - ▶ DELETE "REVERSE CURVE" WARNING SIGNS, AND
  - ▶ REPLACE "LANE SHIFT" SIGNS WITH "ROAD WORK XXX" SIGNS OR OTHER APPROPRIATE SIGNS AS SHOWN IN TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- ■ ■ CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- ⇧ DIRECTION OF TRAFFIC
- WORK SITE

SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
LANE SHIFT RIGHT OR LEFT SIDE/ 2-LANE, 2-WAY GREATER THAN 40 MPH/15 MIN – 12 HRS. OR DAYTIME ONLY

STANDARD NO. MD 104.02-03

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

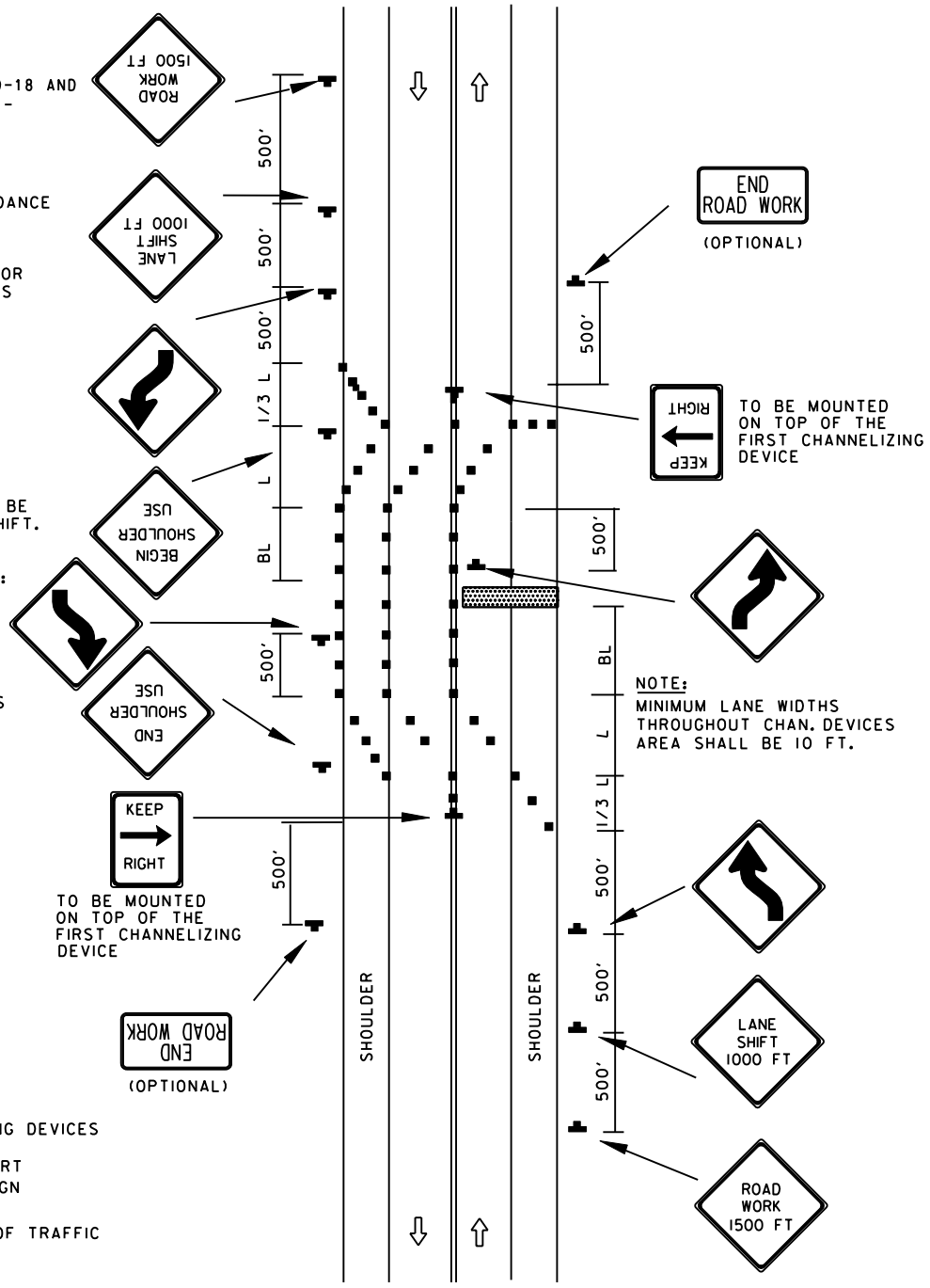
NOTES:

REFER TO MD 104.01-27 FOR GUIDANCE ON PAVEMENT MARKINGS THROUGH LANE SHIFTS.

- THIS TYPICAL SHALL BE USED FOR ANY LANE SHIFT WHICH SATISFIES EITHER CONDITION 'A' OR 'B':
  - ▶ CONDITION 'A':
    LANE SHIFT IS "ABRUPT" - SHIFT HAS A TAPER LENGTH LESS THAN THE VALUE SPECIFIED IN THE TAPER LENGTH CRITERIA TABLE REFER TO MD 104.01-80
  - ▶ CONDITION 'B':
    PREVAILING SPEEDS CANNOT BE MAINTAINED THROUGH THE SHIFT.
- FOR LANE SHIFTS WHICH DO NOT SATISFY ABOVE CONDITIONS:
  - ▶ DELETE "REVERSE CURVE" WARNING SIGNS, AND
  - ▶ REPLACE "LANE SHIFT" SIGNS WITH "ROAD WORK XXX" SIGNS OR OTHER APPROPRIATE SIGNS AS SHOWN IN TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- ■ ■ CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- ⇧ DIRECTION OF TRAFFIC
- WORK SITE

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
LANE SHIFT RIGHT OR LEFT SIDE/2-LANE, 2-WAY EQL/LESS THAN 40 MPH/15 MIN – 12 HRS. OR DAYTIME ONLY

STANDARD NO. MD 104.02-04

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

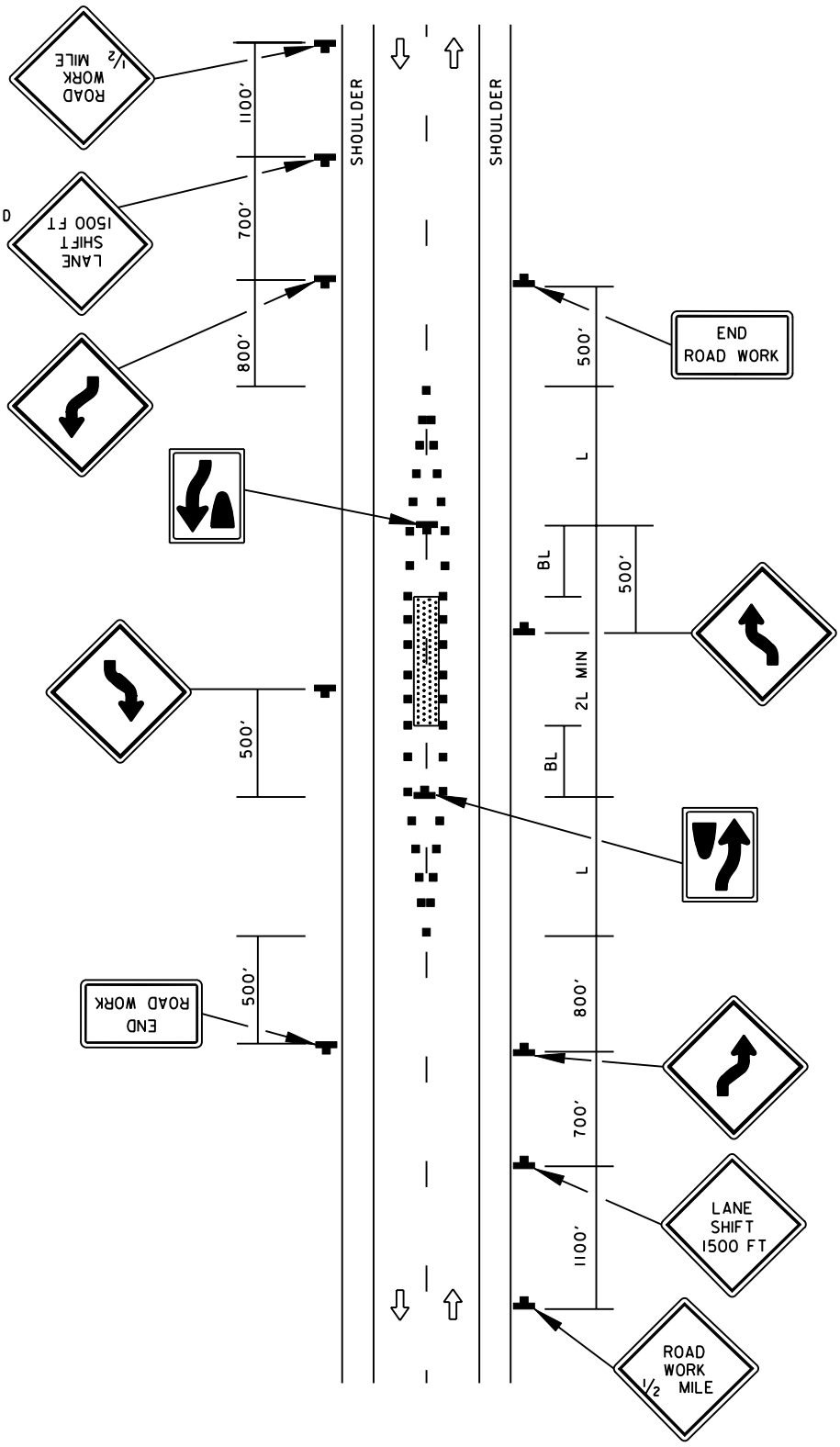
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:
THE LANES ON EITHER SIDE OF THE CENTER WORK SPACE SHALL HAVE A MINIMUM WIDTH OF 10 FT AS MEASURED FROM THE NEAR EDGE OF THE CHANNELIZING DEVICES TO THE EDGE OF PAVEMENT OR THE OUTSIDE EDGE OF PAVED SHOULDER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

WORK IN CENTER OF LOW-VOLUME ROAD 2-LANE, 2-WAY/GREATER THAN 40 MPH 15 MIN – 12 HRS. OR DAYTIME ONLY

STANDARD NO. MD 104.02-05

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

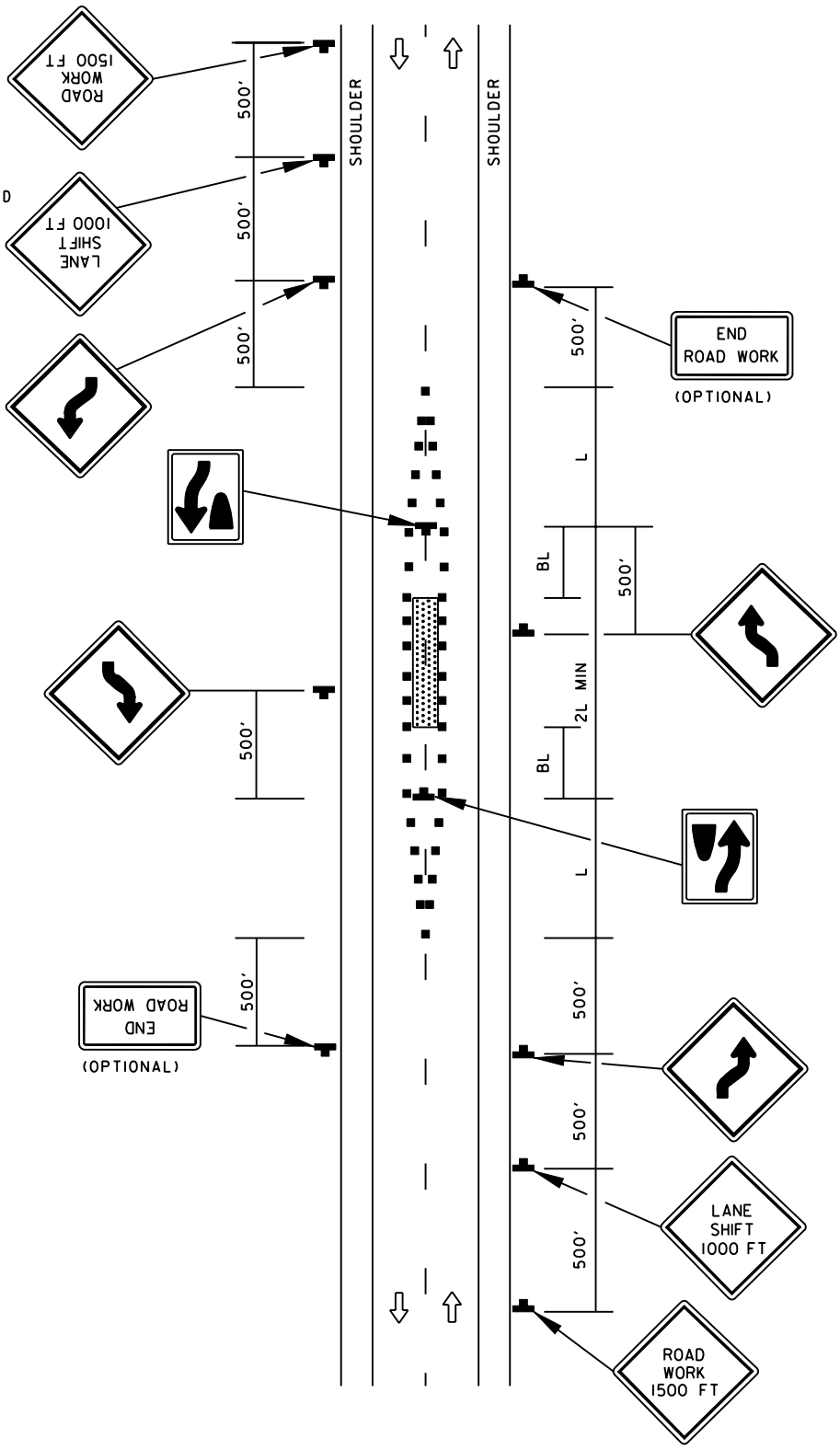
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:
THE LANES ON EITHER SIDE OF THE CENTER WORK SPACE SHALL HAVE A MINIMUM WIDTH OF 10 FT AS MEASURED FROM THE NEAR EDGE OF THE CHANNELIZING DEVICES TO THE EDGE OF PAVEMENT OR THE OUTSIDE EDGE OF PAVED SHOULDER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
WORK IN CENTER OF LOW-VOLUME ROAD
2-LANE, 2-WAY / EQL/LESS THAN 40 MPH
15 MIN – 12 HRS. OR DAYTIME ONLY

STANDARD NO. MD 104.02-06

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

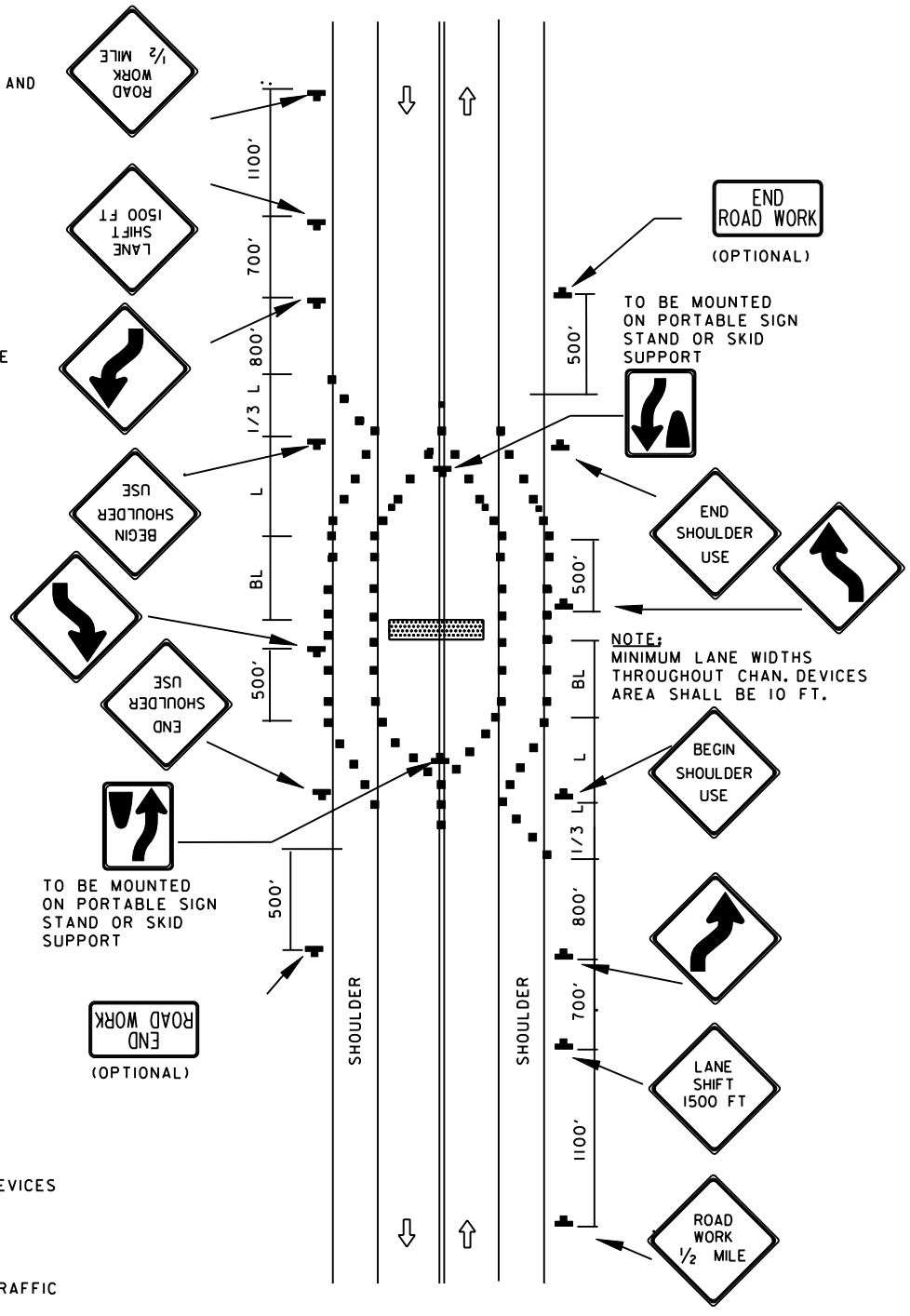
THE "BEGIN AND END SHOULDER USE" SIGNS SHOULD BE OMITTED WHEN THE SHOULDER CANNOT BE DIFFERENTIATED FROM THE NORMAL TRAVEL PATH.

REFER TO MD 104.01-27 FOR GUIDANCE ON PAVEMENT MARKINGS THROUGH LANE SHIFTS.

- THIS TYPICAL SHALL BE USED FOR ANY LANE SHIFT WHICH SATISFIES EITHER CONDITION 'A' OR 'B':
  - ▶ CONDITION 'A': LANE SHIFT IS "ABRUPT" - SHIFT HAS A TAPER LENGTH LESS THAN THE VALUE SPECIFIED IN THE TAPER LENGTH CRITERIA TABLE REFER TO MD 104.01-80
  - ▶ CONDITION 'B': PREVAILING SPEEDS CANNOT BE MAINTAINED THROUGH THE SHIFT.
- FOR LANE SHIFTS WHICH DO NOT SATISFY ABOVE CONDITIONS:
  - ▶ DELETE "REVERSE CURVE" WARNING SIGNS, AND
  - ▶ REPLACE "LANE SHIFT" SIGNS WITH "ROAD WORK XXX" SIGNS OR OTHER APPROPRIATE SIGNS AS SHOWN IN TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
LANE SHIFT FOR COMPLETE TRAVEL WAY BLOCKAGE/2-LANE, 2-WAY GREATER THAN 40 MPH/15 MIN – 12 HRS. OR DAYTIME ONLY

STANDARD NO. MD 104.02-07

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

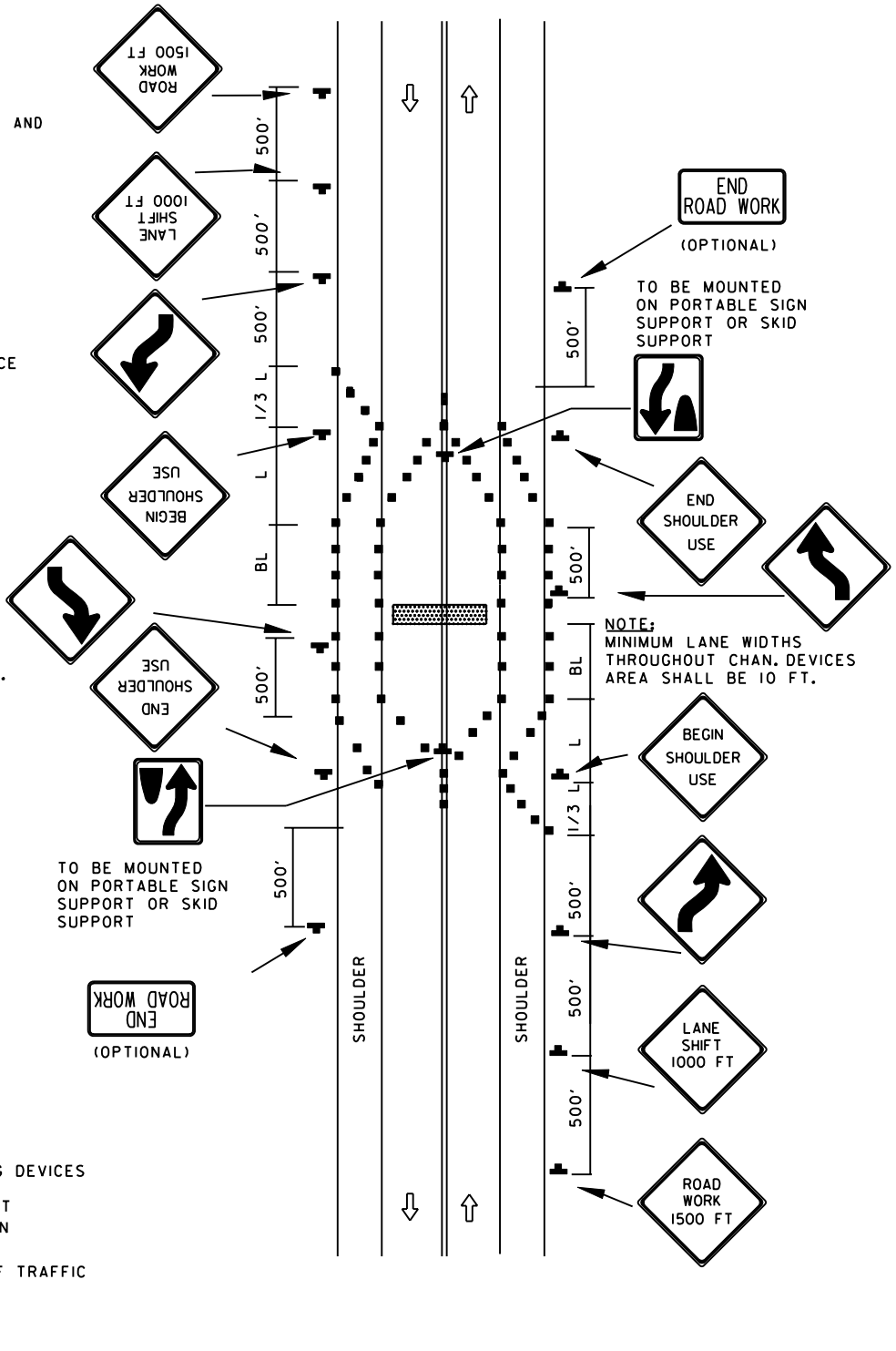
THE "BEGIN AND END SHOULDER USE" SIGNS SHOULD BE OMITTED WHEN THE SHOULDER CANNOT BE DIFFERENTIATED FROM THE NORMAL TRAVEL PATH.

REFER TO MD 104.01-27 FOR GUIDANCE ON PAVEMENT MARKINGS THROUGH LANE SHIFTS.

- THIS TYPICAL SHALL BE USED FOR ANY LANE SHIFT WHICH SATISFIES EITHER CONDITION 'A' OR 'B':
  - ▶ CONDITION 'A' : LANE SHIFT IS "ABRUPT" - SHIFT HAS A TAPER LENGTH LESS THAN THE VALUE SPECIFIED IN THE TAPER LENGTH CRITERIA TABLE REFER TO MD 104.01-80
  - ▶ CONDITION 'B': PREVAILING SPEEDS CANNOT BE MAINTAINED THROUGH THE SHIFT.
- FOR LANE SHIFTS WHICH DO NOT SATISFY ABOVE CONDITIONS:
  - ▶ DELETE "REVERSE CURVE" WARNING SIGNS, AND
  - ▶ REPLACE "LANE SHIFT" SIGNS WITH "ROAD WORK XXX" SIGNS OR OTHER APPROPRIATE SIGNS AS SHOWN IN TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
LANE SHIFT FOR COMPLETE TRAVEL WAY BLOCKAGE/2-LANE, 2-WAY EQL/LESS THAN 40 MPH/15 MIN – 12 HRS. OR DAYTIME ONLY

STANDARD NO. MD 104.02-08

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

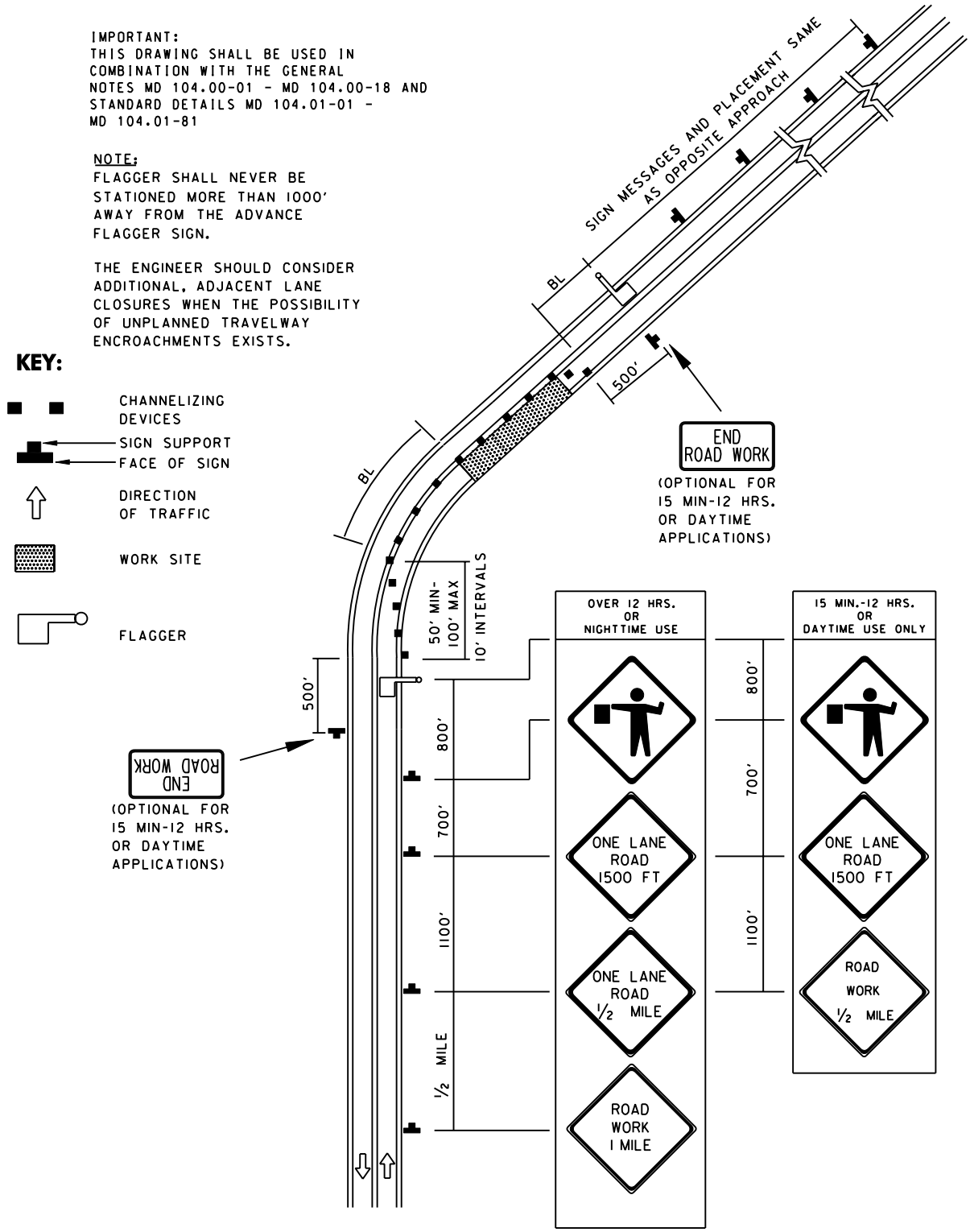
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:
FLAGGER SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- FLAGGER



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

FLAGGING OPERATION / 2-LANE,2-WAY GREATER THAN 40 MPH

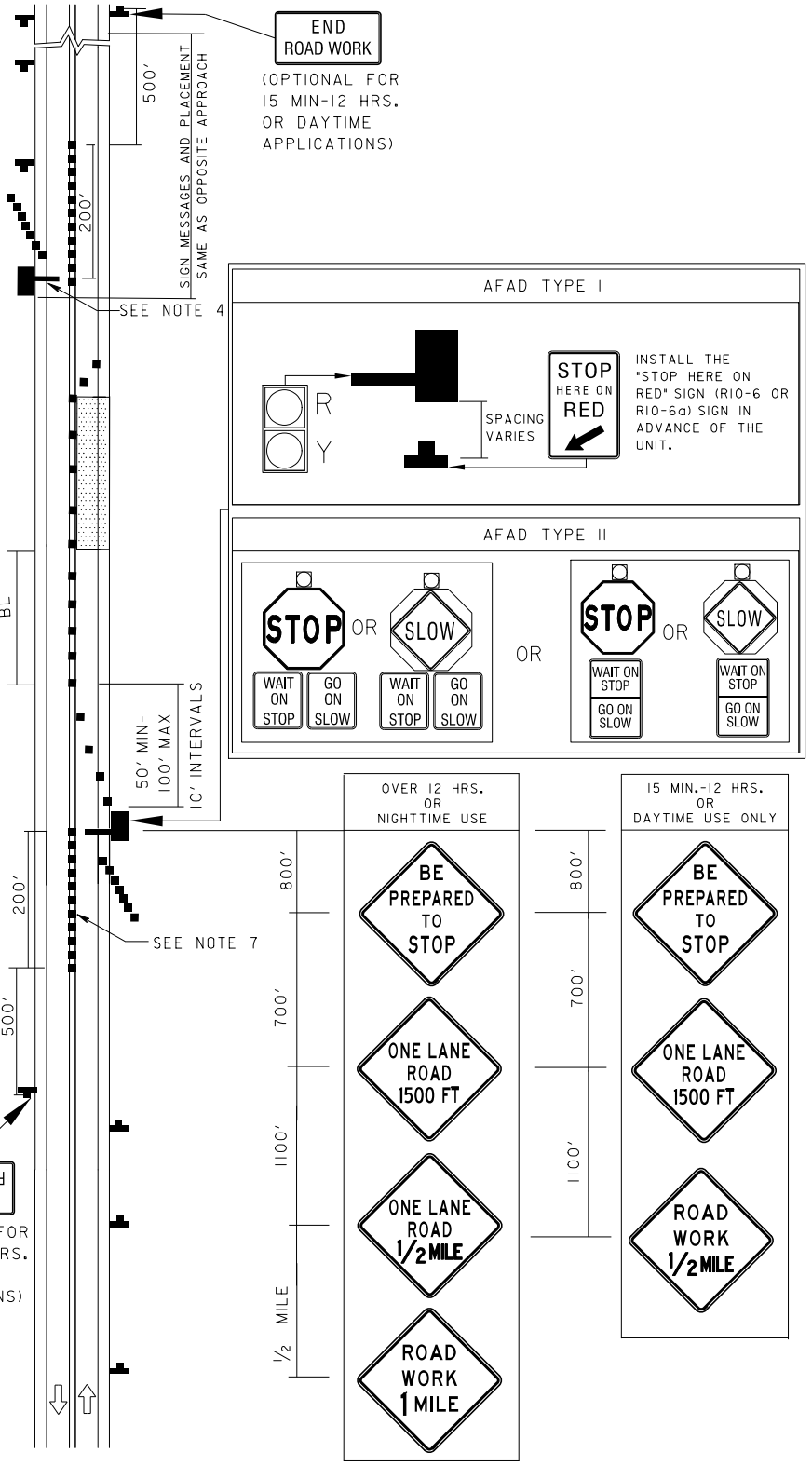
STANDARD NO. MD 104.02-09

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES

1. AFAD SHALL ONLY BE USED AT LOCATIONS WITH ONLY ONE LANE OF APPROACHING TRAFFIC IN THE DIRECTION TO BE CONTROLLED.
2. THE AFAD SHALL BE DELINEATED WITH CONES.
3. IF SHOULDERS ARE NARROW OR ABSENT, AFAD SHOULD BE PLACED IN THE CLOSED LANE. ADDITIONAL SIGNS OR MARKINGS SHOULD BE USED TO INFORM MOTORISTS OF STOPPING LOCATION. THE AFAD GATE ARM SHALL NOT EXTEND INTO THE OPEN LANE.
4. A PAIR (TWO) AFADS SHOULD BE USED TO CONTROL TRAFFIC FOR ONE LANE, TWO-WAY OPERATIONS (METHOD 1). IF FLAGGER IS USED AT ONE END AND AFAD AT THE OTHER (METHOD 2), THIS DRAWING SHALL BE USED IN COMBINATION WITH STANDARD MD 104.02-10.
5. BASED ON FIELD CONDITIONS, A SINGLE CERTIFIED FLAGGER CAN CONTROL TWO AFADS ONLY IF THE FLAGGER HAS UNIMPEDED VISIBILITY OF BOTH AFADS AND APPROACHING TRAFFIC IN BOTH DIRECTIONS. IF ONE FLAGGER IS OPERATING BOTH AFADS, THE UNITS SHOULD BE PLACED A MAXIMUM OF 1000 FEET APART. IF VISIBILITY IS RESTRICTED IN ANY WAY, TWO CERTIFIED FLAGGERS SHOULD CONTROL TWO AFADS, COORDINATING THROUGH RADIO COMMUNICATION.
6. ILLUMINATION OF THE AFAD LOCATIONS SHALL BE PROVIDED DURING NIGHTTIME FLAGGING OPERATION.
7. A MINIMUM OF 11 CONES SPACED AT 20 FEET MAXIMUM SHALL BE PLACED ALONG THE CENTERLINE IN ADVANCE OF THE AFAD TO PREVENT VEHICLES FROM GOING INTO THE OPPOSITE LANE.

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-19-24	APPROVAL	12-06-23
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

FLAGGING OPERATION (AFAD CONTROLLED) 2-LANE, 2-WAY / GREATER THAN 40 MPH

STANDARD NO. 104.02-09A

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

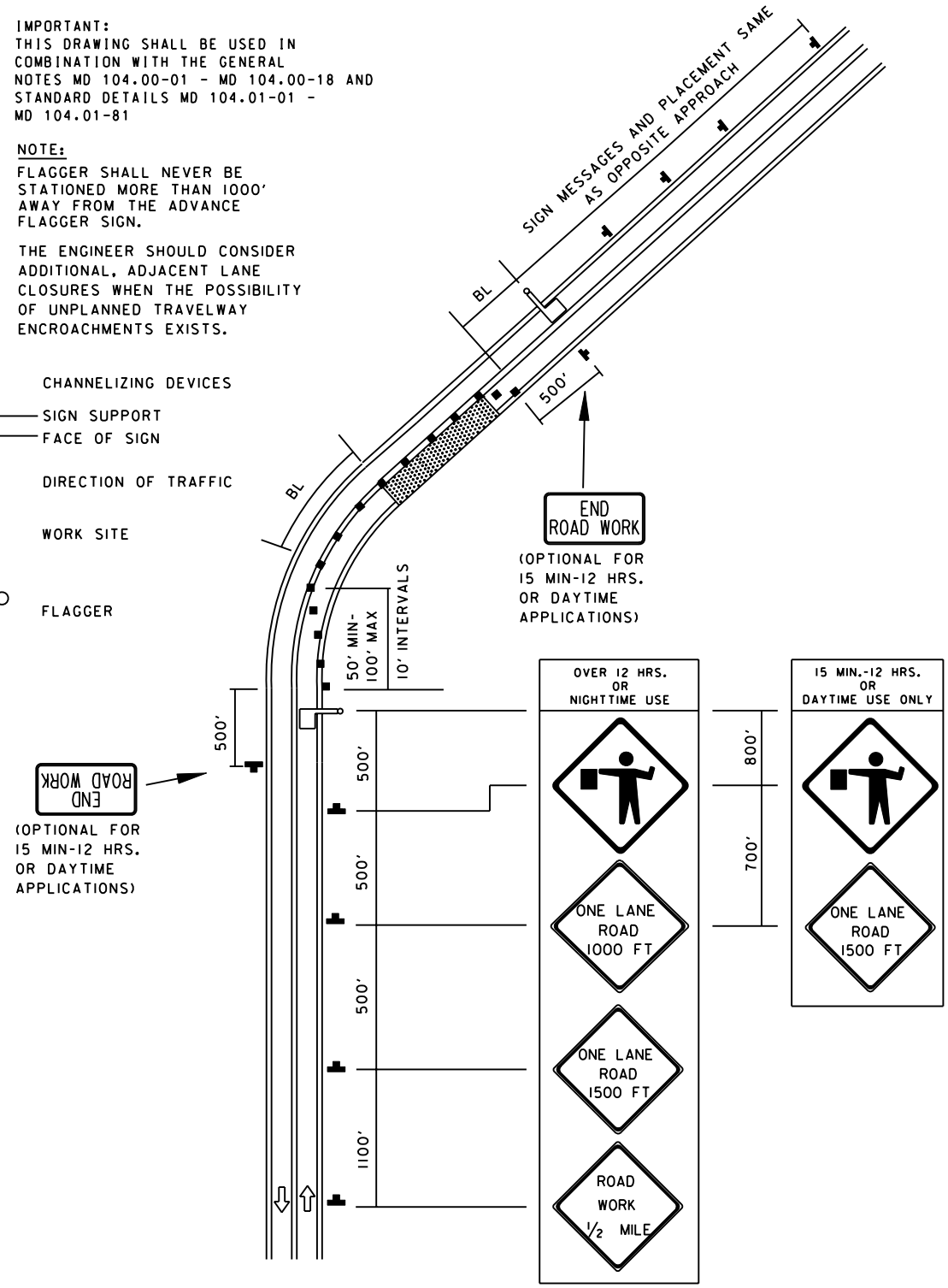
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:
FLAGGER SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- FLAGGER



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

FLAGGING OPERATION/2-LANE, 2-WAY EQL/LESS THAN 40 MPH

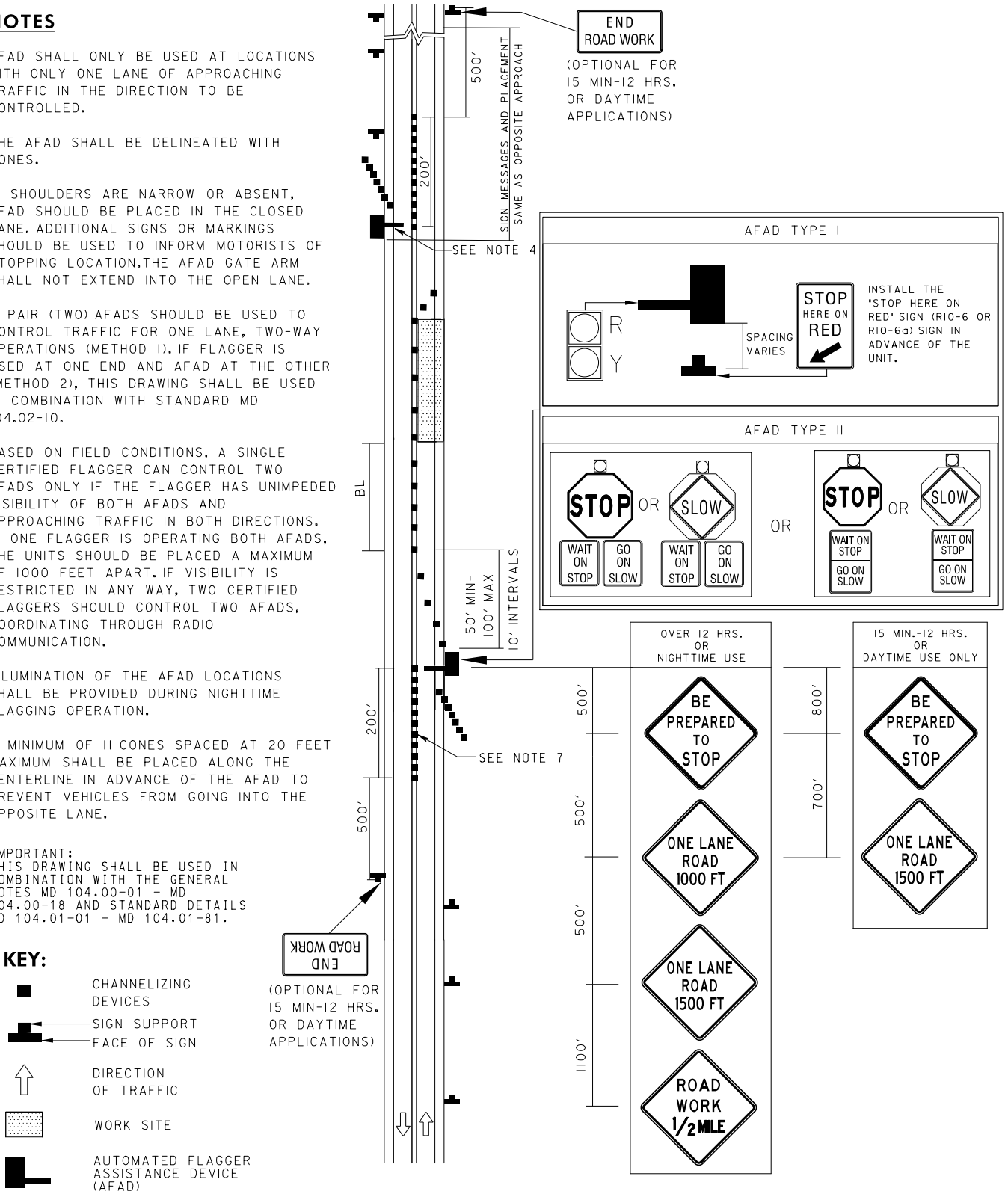
STANDARD NO. MD 104.02-10

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES

1. AFAD SHALL ONLY BE USED AT LOCATIONS WITH ONLY ONE LANE OF APPROACHING TRAFFIC IN THE DIRECTION TO BE CONTROLLED.
2. THE AFAD SHALL BE DELINEATED WITH CONES.
3. IF SHOULDERS ARE NARROW OR ABSENT, AFAD SHOULD BE PLACED IN THE CLOSED LANE. ADDITIONAL SIGNS OR MARKINGS SHOULD BE USED TO INFORM MOTORISTS OF STOPPING LOCATION. THE AFAD GATE ARM SHALL NOT EXTEND INTO THE OPEN LANE.
4. A PAIR (TWO) AFADS SHOULD BE USED TO CONTROL TRAFFIC FOR ONE LANE, TWO-WAY OPERATIONS (METHOD 1). IF FLAGGER IS USED AT ONE END AND AFAD AT THE OTHER (METHOD 2), THIS DRAWING SHALL BE USED IN COMBINATION WITH STANDARD MD 104.02-10.
5. BASED ON FIELD CONDITIONS, A SINGLE CERTIFIED FLAGGER CAN CONTROL TWO AFADS ONLY IF THE FLAGGER HAS UNIMPEDED VISIBILITY OF BOTH AFADS AND APPROACHING TRAFFIC IN BOTH DIRECTIONS. IF ONE FLAGGER IS OPERATING BOTH AFADS, THE UNITS SHOULD BE PLACED A MAXIMUM OF 1000 FEET APART. IF VISIBILITY IS RESTRICTED IN ANY WAY, TWO CERTIFIED FLAGGERS SHOULD CONTROL TWO AFADS, COORDINATING THROUGH RADIO COMMUNICATION.
6. ILLUMINATION OF THE AFAD LOCATIONS SHALL BE PROVIDED DURING NIGHTTIME FLAGGING OPERATION.
7. A MINIMUM OF 11 CONES SPACED AT 20 FEET MAXIMUM SHALL BE PLACED ALONG THE CENTERLINE IN ADVANCE OF THE AFAD TO PREVENT VEHICLES FROM GOING INTO THE OPPOSITE LANE.

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-19-24	APPROVAL	12-06-23
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

FLAGGING OPERATION (AFAD CONTROLLED)
2-LANE, 2-WAY / EQL/LESS THAN 40 MPH

STANDARD NO. 104.02-10A

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

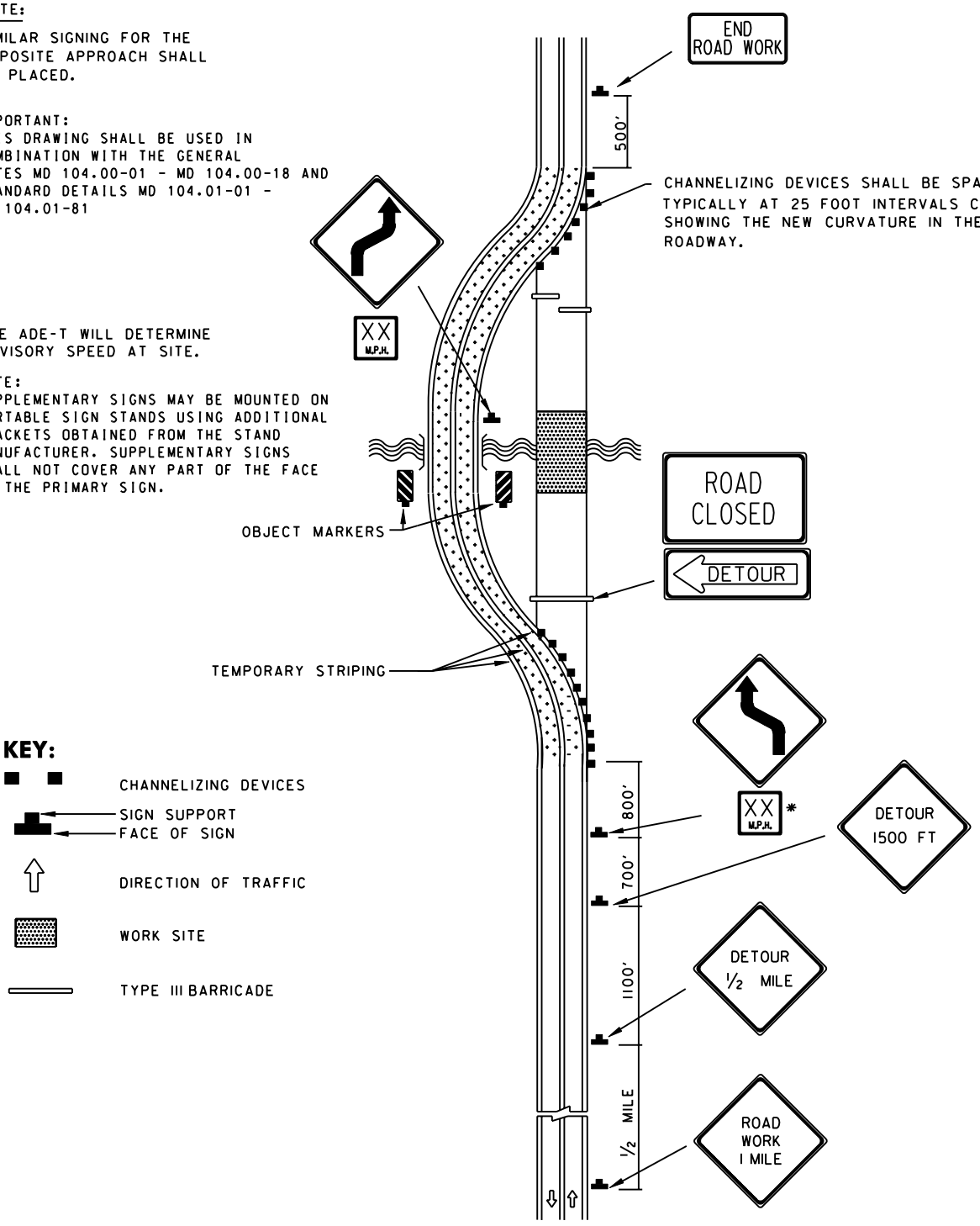
NOTE:

SIMILAR SIGNING FOR THE OPPOSITE APPROACH SHALL BE PLACED.

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

* THE ADE-T WILL DETERMINE ADVISORY SPEED AT SITE.

NOTE:
SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER. SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.



SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

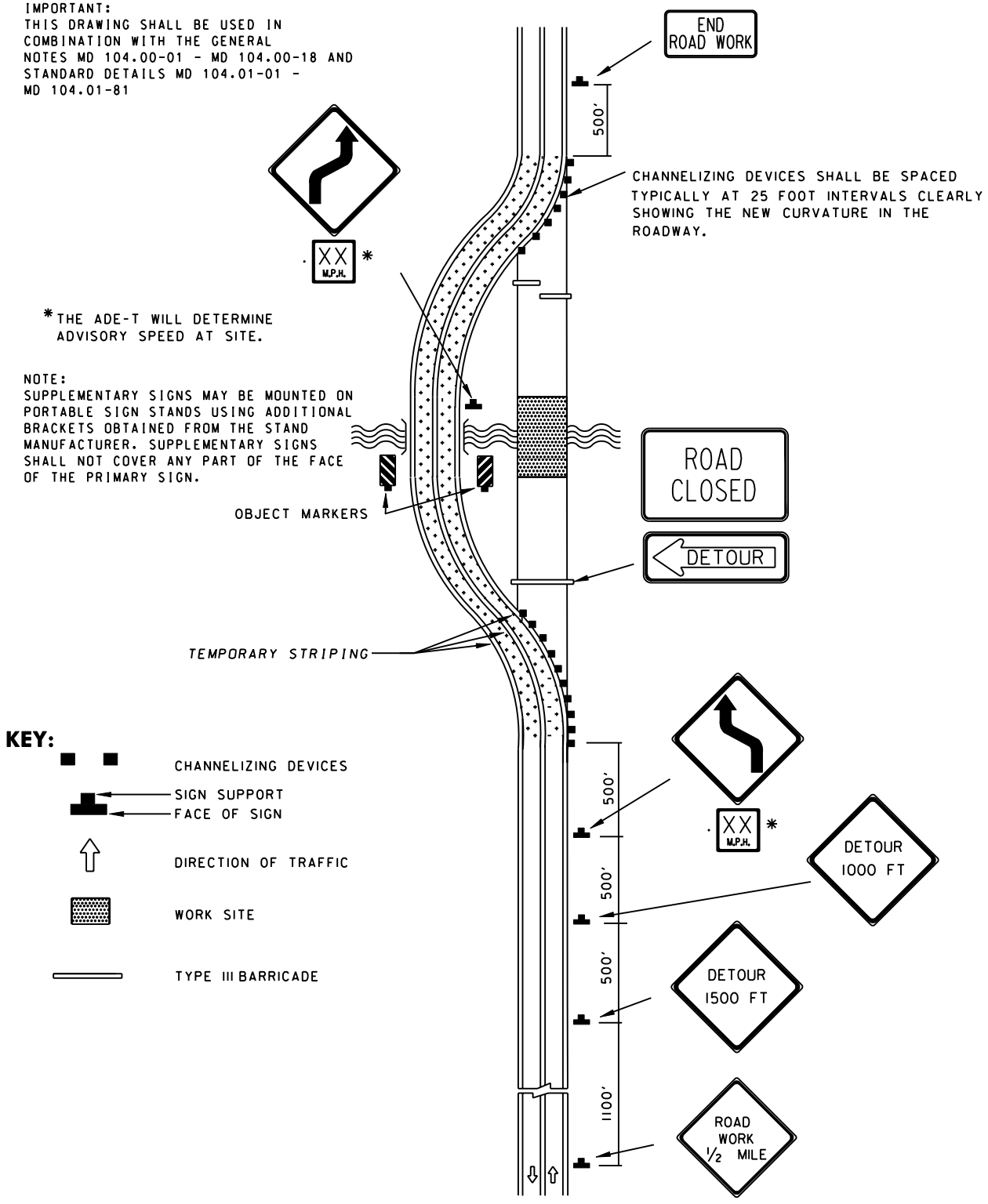
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
BYPASS DETOUR/2-LANE, 2-WAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.02-11

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81



SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

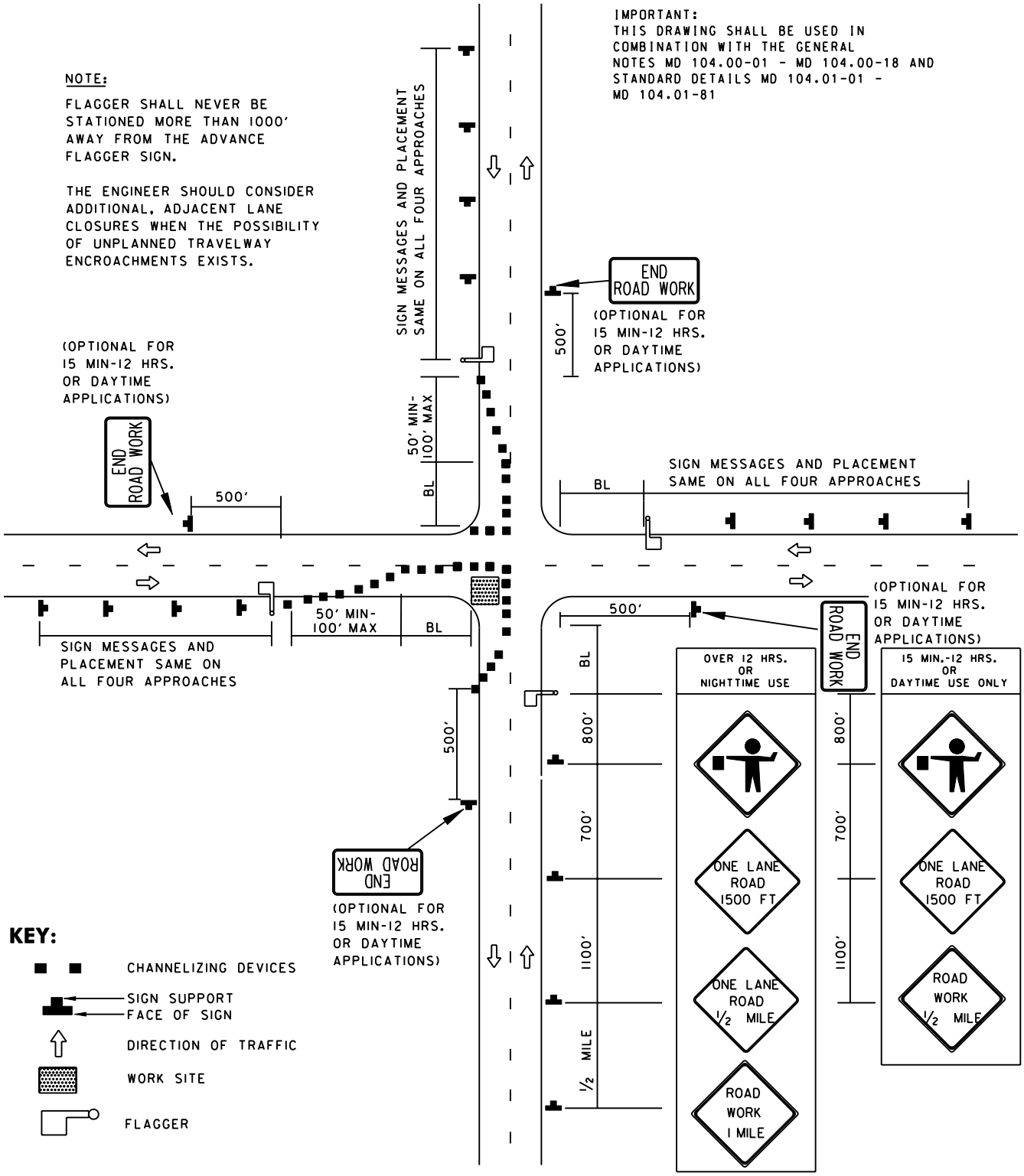
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

BYPASS DETOUR/ 2-LANE, 2-WAY EQL/LESS THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.02-12

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

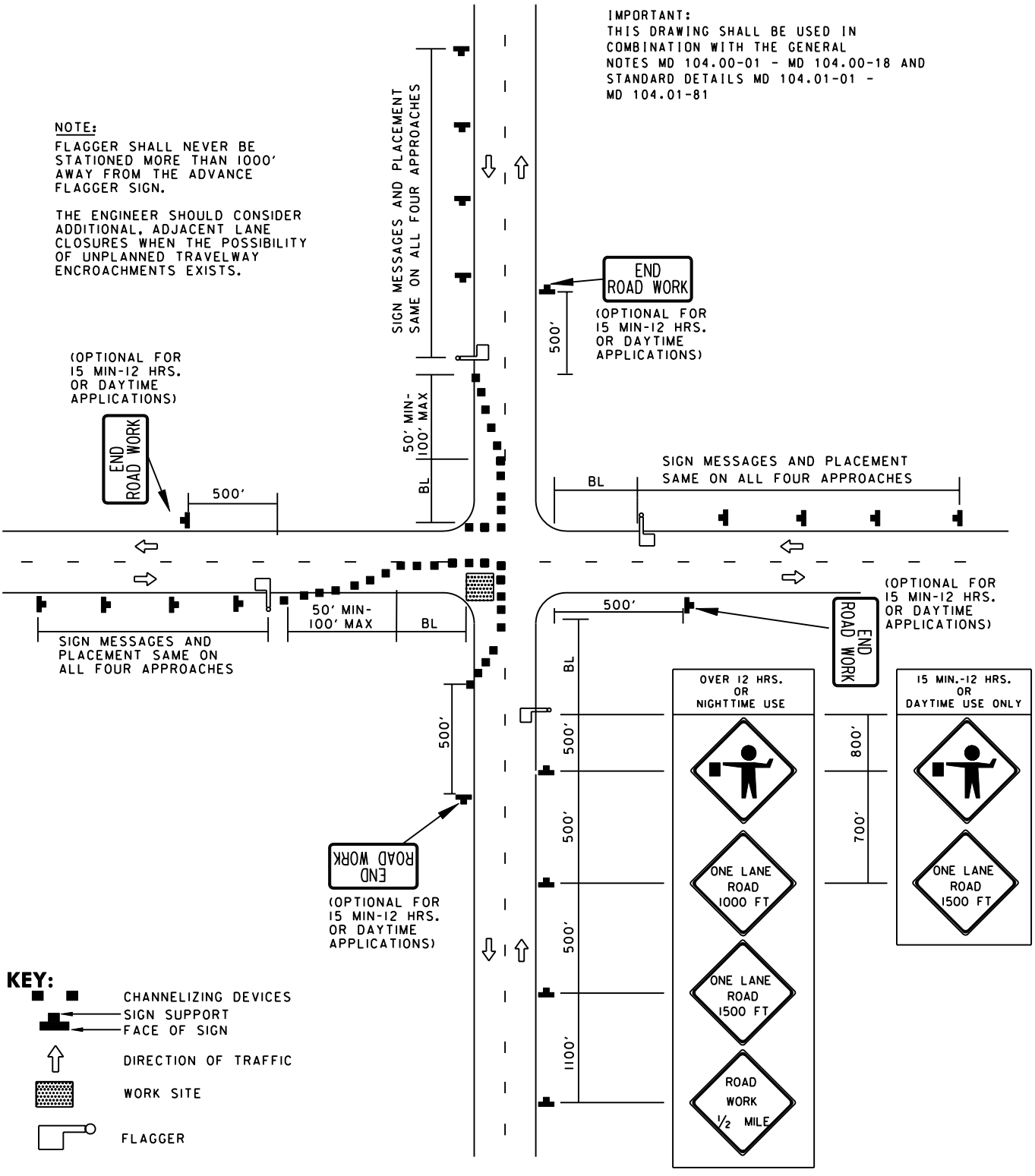
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INTERSECTION FLAGGING OPERATION 2-LANE, 2-WAY GREATER THAN 40 MPH

STANDARD NO. MD 104.02-13

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INTERSECTION FLAGGING OPERATION 2-LANE,2-WAY EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.02-14

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

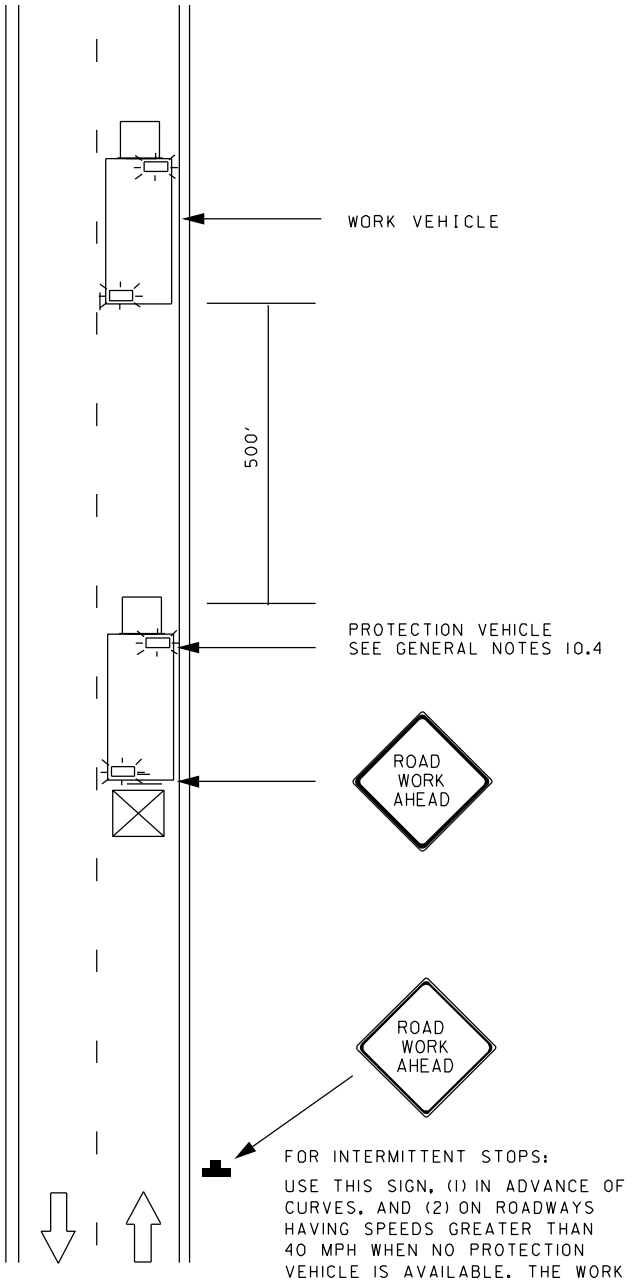
IF THE LEAD WORK VEHICLE IS TRAVELING AT THE POSTED SPEED LIMIT OR WITHIN 15 MPH OF IT, THEN NO BACK UP VEHICLE IS NECESSARY.

IN URBAN AREAS THE DISTANCE MAINTAINED BETWEEN VEHICLES MAY BE DECREASED AS NEEDED.

VEHICLES SHALL DISPLAY FLASHING HAZARD/PARKING LIGHTS IN FRONT AND REAR AS PER MD 104.01-18B.

VEHICLES THAT STOP INTERMITTENTLY SHOULD BE DRIVEN, OR PARKED, OFF THE TRAVELED LANE WHENEVER POSSIBLE.

WHEN USED, THE PROTECTION VEHICLE MAY BE USED AS A SUBSTITUTE FOR THE WORK VEHICLE WHERE DIRECTED BY THE ENGINEER.



KEY:

- SIGN SUPPORT / FACE OF SIGN
- APPROVED VEHICLE SAFETY LIGHT
- DIRECTION OF TRAFFIC
- TRUCK OR TRAILER-TRUCK MOUNTED ATTENUATOR (TMA/TTMA)

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric W. Sandy
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE OPERATION/2-LANE, 2-WAY ALL SPEEDS/0-15 MIN., AND MOVING SLOW

STANDARD NO. MD 104.02-15

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

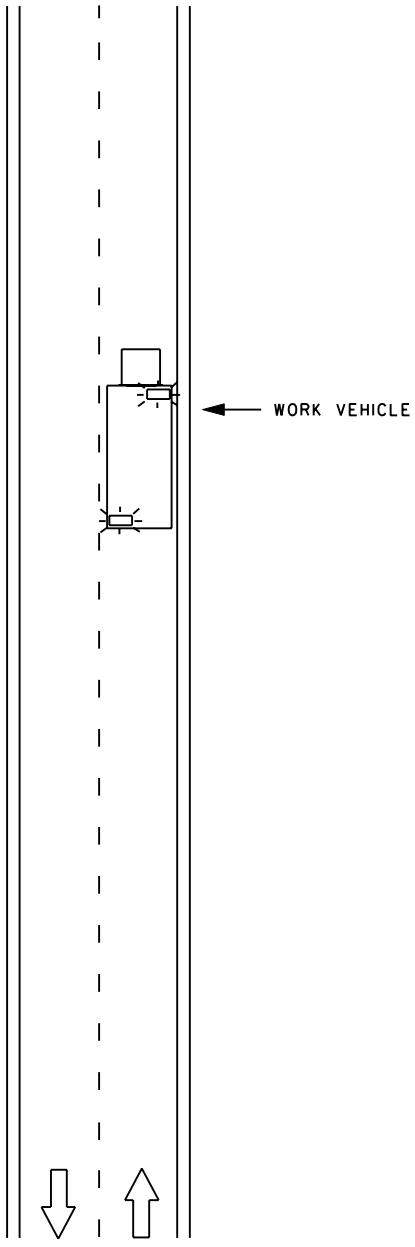
NOTES:
WORK VEHICLE IS TRAVELING AT THE POSTED SPEED LIMIT OR WITHIN 15 MPH OF IT.

VEHICLE SHALL DISPLAY FLASHING HAZARD/ PARKING LIGHTS IN FRONT AND REAR.

KEY:

APPROVED VEHICLE SAFETY LIGHT

DIRECTION OF TRAFFIC



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE OPERATION/2-LANE, 2-WAY
ALL SPEEDS/MOVING NORMAL

STANDARD NO. MD 104.02-16

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

MOWING OPERATIONS

MOWERS SHALL HAVE FLASHING WARNING LIGHTS MOUNTED ON THEM.

THE MOWERS AHEAD SIGN SHOULD BE USED TO WARN OF MOWING CREWS UNLESS MOWER(S) ARE EQUIPPED WITH TWO 360° FLASHING/ROTATING AMBER LIGHTS OR TWO 360° FLASHING DOME LIGHTS, THE DECISION SIGHT DISTANCE IS MET FOR THE RATES OF SPEED SHOWN ON STANDARD NO. MD 104.00-03, AND MOWER(S) WILL NOT BE TRAVELLING IN ANY OF THE FOLLOWING THREE CONDITIONS:

- WITHIN 15 FT. OF THE EDGE LINE OF THE ROADWAY OR ON THE SHOULDER
- IN THE ROADWAY ON A NARROW STRETCH OF ROADWAY OR TO GET AROUND A HIGHWAY STRUCTURE OR APPURTENANCE OR OTHER SUCH STRUCTURE
- ACROSS THE ROADWAY

MOWERS MAY NOT PROCEED MORE THAN 2 MILES AWAY FROM ADVANCE WARNING SIGN(S).

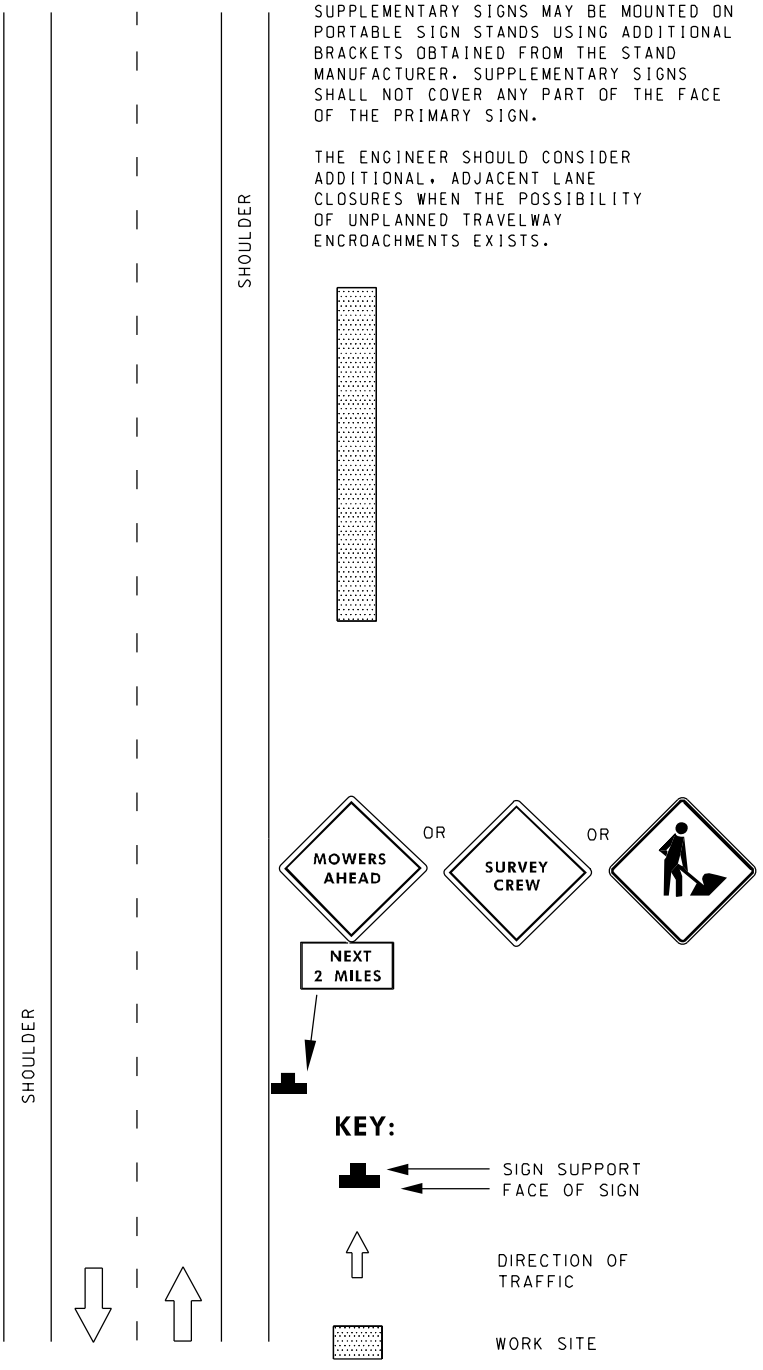
MOWERS WITHIN 15 FT. OF THE EDGE LINE SHALL TRAVEL IN THE SAME DIRECTION AS ADJACENT TRAFFIC.

OTHER OPERATIONS

THE SURVEY CREW SIGN SHOULD BE USED TO WARN OF SURVEYING CREWS WORKING IN OR ADJACENT TO THE ROADWAY.

THE WORKERS SYMBOL SIGN SHOULD BE USED TO WARN OF OTHER MOBILE OPERATIONS NOT RELATED TO MOWING OR SURVEYING ACTIVITIES, AND FOR WHICH NO MOBILE TYPICAL APPLICATION CURRENTLY EXISTS. THIS INCLUDES WORK PERFORMED BY INMATE CREWS.

PROTECTION VEHICLE SHALL BE USED IN CONFORMANCE WITH SECTION 10.4 OF THE GENERAL NOTES.



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE WORK OPERATION/2-LANE, 2-WAY ALL SPEEDS

STANDARD NO. MD 104.02-17

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

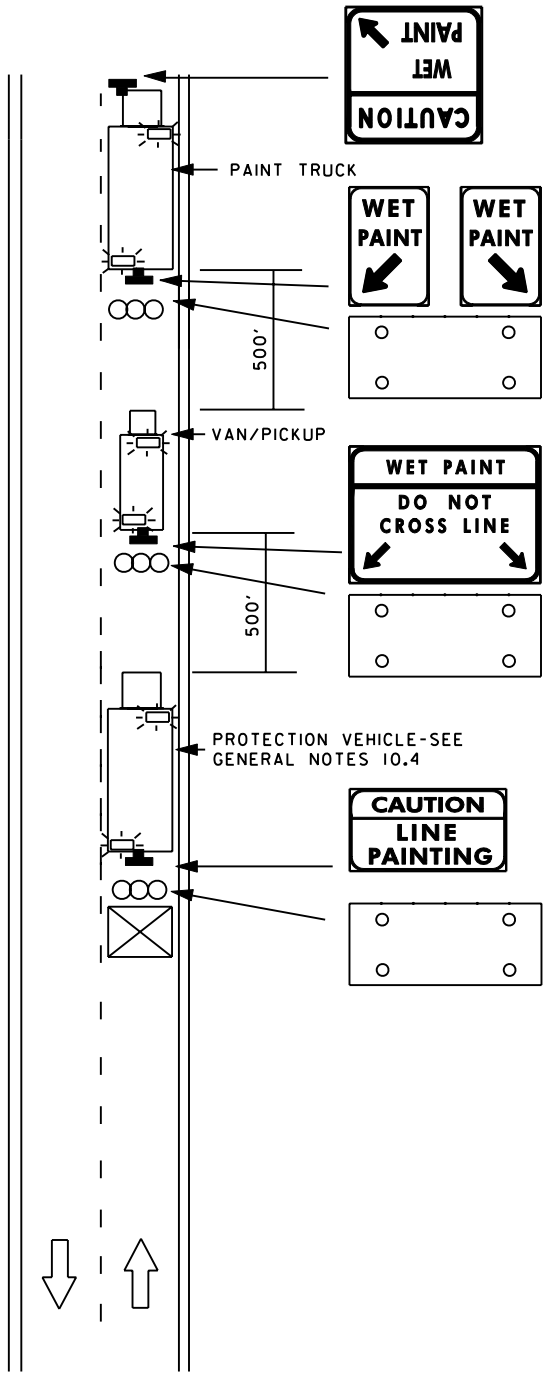
DISTANCES BETWEEN VEHICLES MAY BE INCREASED OR DECREASED DEPENDING ON PAINT DRYING TIME, TERRAIN, LOCAL AREA AND OTHER FACTORS.

CONES MAY BE REQUIRED TO PROTECT WET LINES AT GRADE CROSSINGS, ETC.

THE PAINT AND PROTECTION VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

KEY:

- SIGN SUPPORT / FACE OF SIGN
- ARROW PANEL (CAUTION MODE ONLY)
- APPROVED VEHICLE SAFETY LIGHT
- DIRECTION OF TRAFFIC
- TRUCK OR TRAILER-TRUCK MOUNTED ATTENUATOR (TMA/TTMA)



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE MARKING OPERATION/2-LANE, 2-WAY ALL SPEEDS

STANDARD NO. MD 104.02-18

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

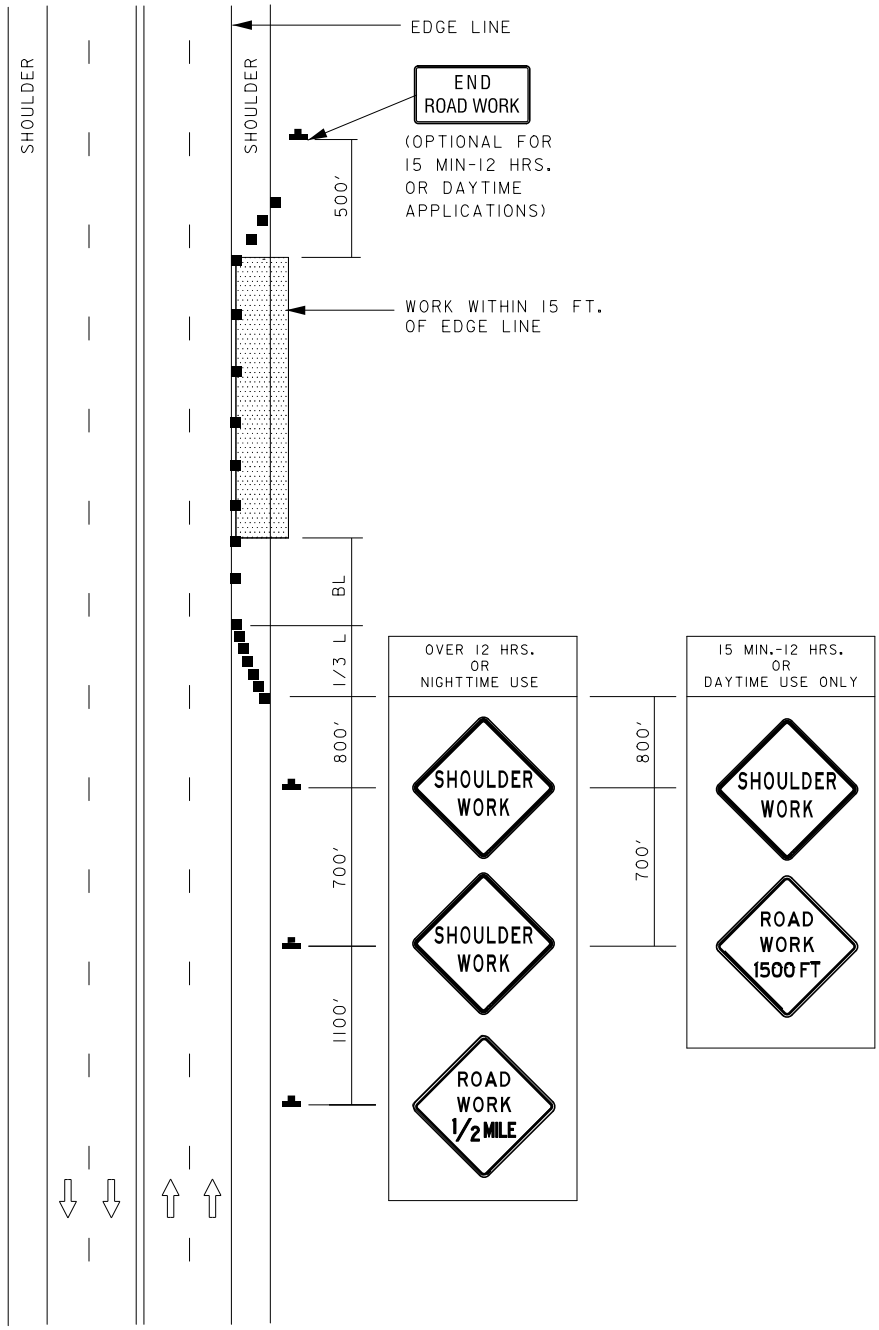
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

1. SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION (TEMPORARY CONCRETE BARRIER OR SIMILAR DEVICE). REFER TO STANDARD NO. MD 104.06-18.
2. WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-15 TO MD 104.06-19.
3. THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.
4. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.
5. FOR SAFETY, A MINIMUM OF 2 FEET LATERAL CLEARANCE SHALL BE MAINTAINED BETWEEN ANY VEHICLE AND/OR EQUIPMENT POSITIONED ON THE SHOULDER AND THE ADJACENT OPEN TRAVEL LANE. THE ENGINEER SHOULD CONSIDER ADDITIONAL SAFETY MEASURES.
6. REFER TO MD 104.01-11A FOR THE USE OF A PV.
7. REFER TO MD 104.01-30C FOR THE POSITIONING OF A PV.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED	2-19-24	REVISED	11-16-23
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SHOULDER WORK/MULTILANE UNDIVIDED GREATER THAN 40 MPH

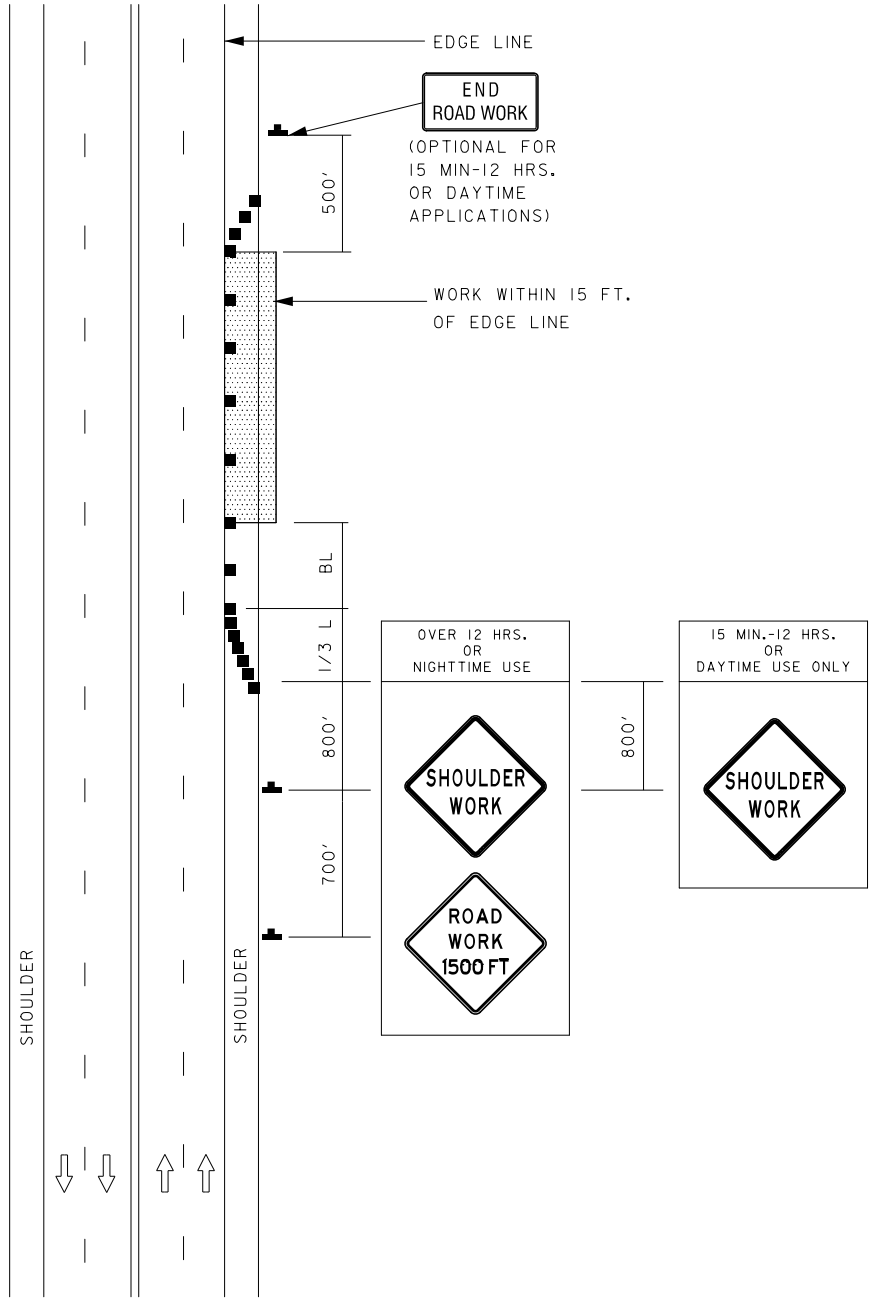
STANDARD NO. MD 104.03-01

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

1. SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION (TEMPORARY CONCRETE BARRIER OR SIMILAR DEVICE). REFER TO STANDARD NO. MD 104.06-18.
2. WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-15 TO MD 104.06-19.
3. THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.
4. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.
5. FOR SAFETY, A MINIMUM OF 2 FEET LATERAL CLEARANCE SHALL BE MAINTAINED BETWEEN ANY VEHICLE AND/OR EQUIPMENT POSITIONED ON THE SHOULDER AND THE ADJACENT OPEN TRAVEL LANE. THE ENGINEER SHOULD CONSIDER ADDITIONAL SAFETY MEASURES.
6. REFER TO MD 104.01-11A FOR THE USE OF A PV.
7. REFER TO MD 104.01-30B FOR THE POSITIONING OF A PV.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED — Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED	2-19-24	REVISED	11-16-23
REVISED		REVISED	

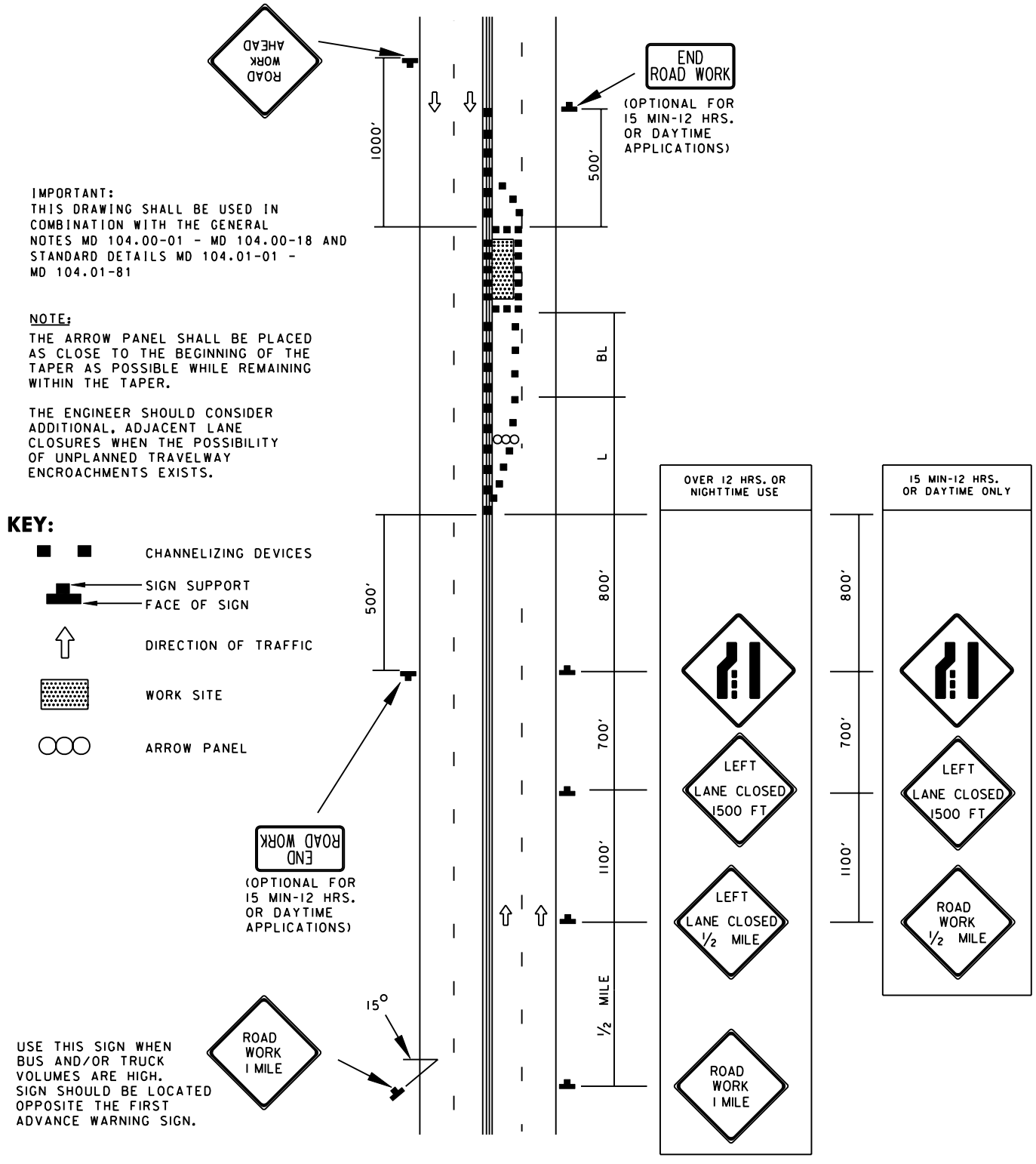
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SHOULDER WORK/MULTILANE UNDIVIDED EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.03-02

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

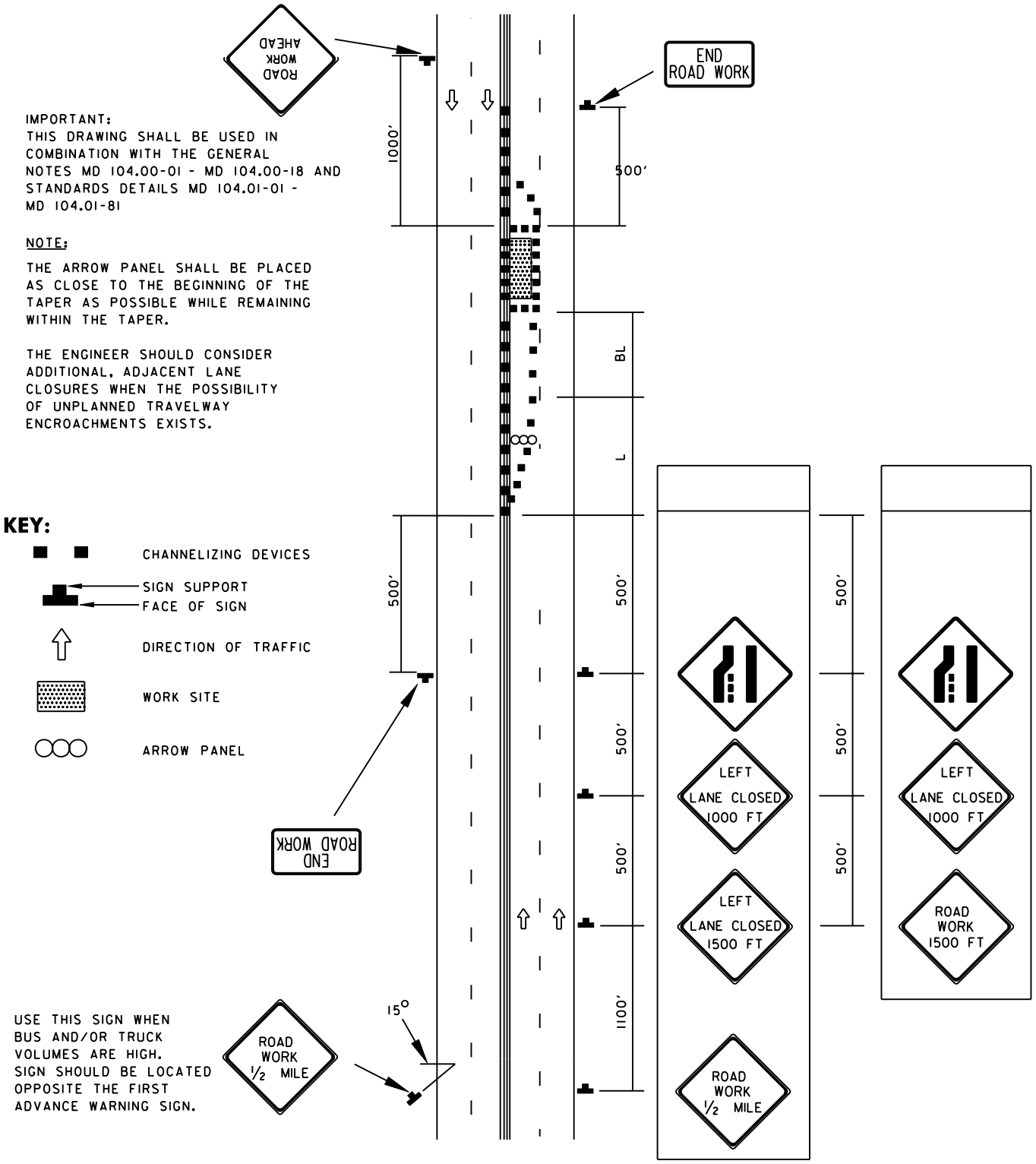
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LEFT LANE CLOSURE/MULTILANE UNDIV. GREATER THAN 40 MPH

STANDARD NO. MD 104.03-03

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARDS DETAILS MD 104.01-01 - MD 104.01-81

NOTE:

THE ARROW PANEL SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE WHILE REMAINING WITHIN THE TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

USE THIS SIGN WHEN BUS AND/OR TRUCK VOLUMES ARE HIGH. SIGN SHOULD BE LOCATED OPPOSITE THE FIRST ADVANCE WARNING SIGN.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

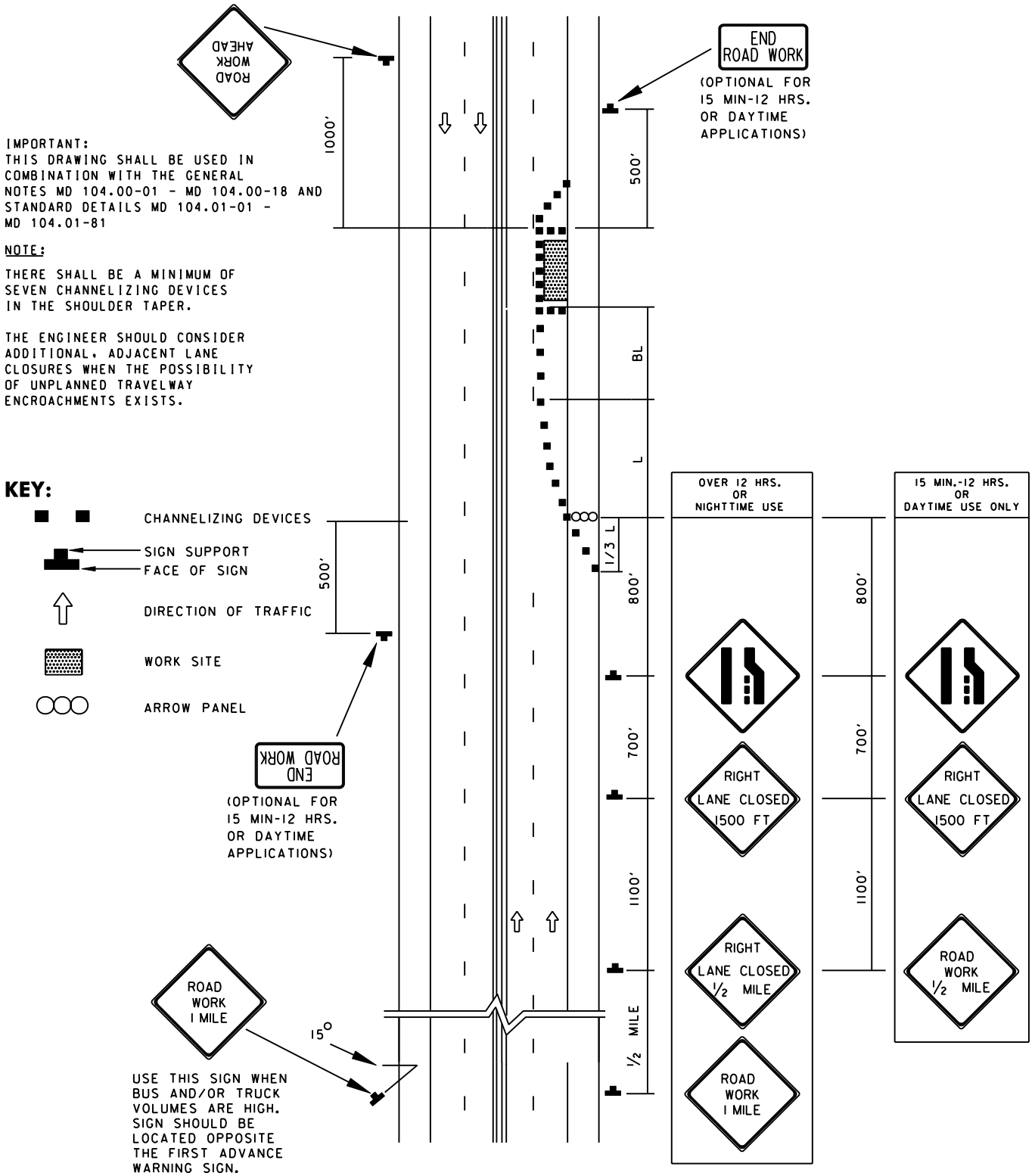
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LEFT LANE CLOSURE/MULTILANE UNDIV. EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.03-04

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

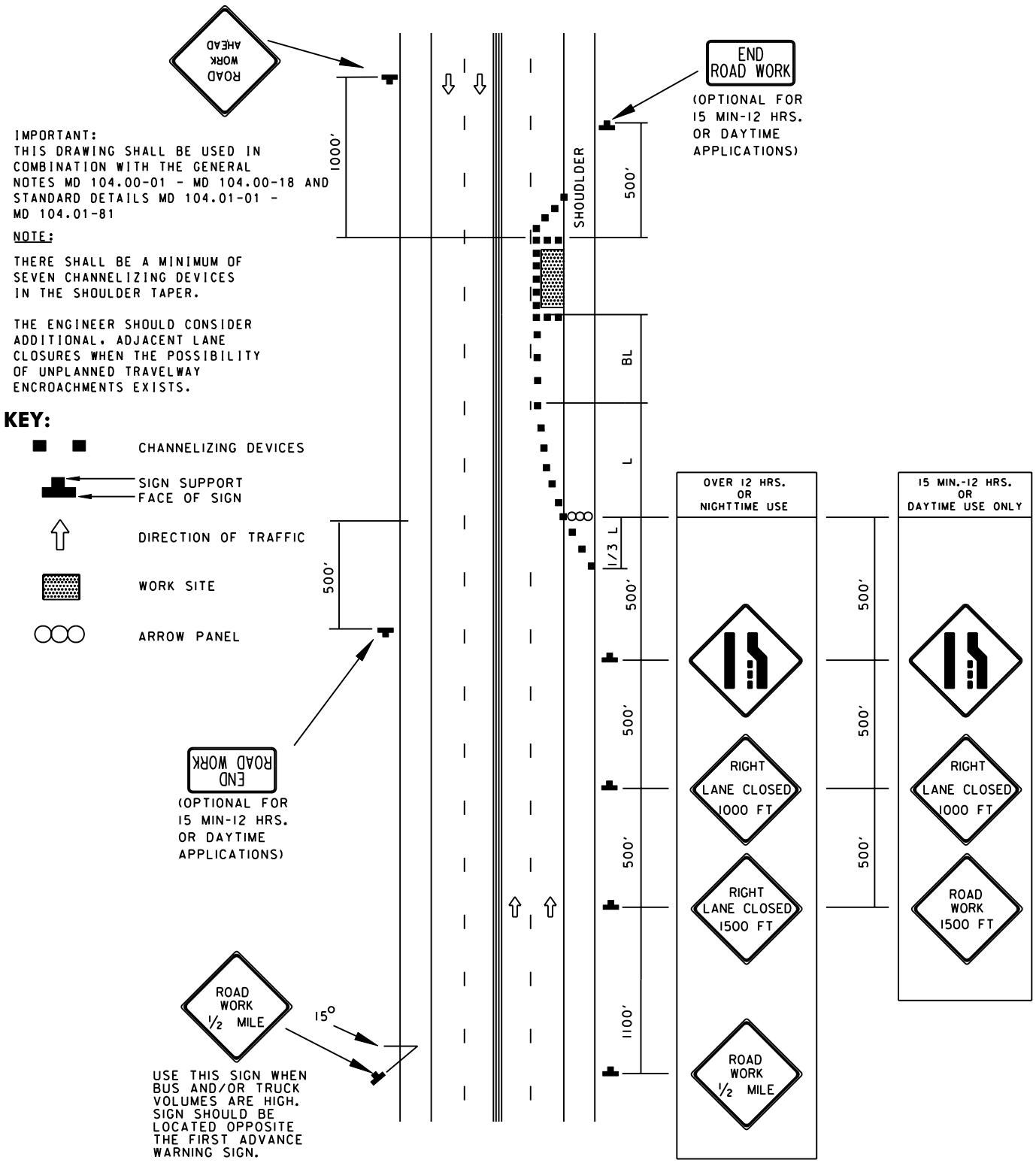
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

RIGHT LANE CLOSURE/MULTILANE UNDIV. GREATER THAN 40 MPH

STANDARD NO. MD 104.03-05

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL. ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

USE THIS SIGN WHEN BUS AND/OR TRUCK VOLUMES ARE HIGH. SIGN SHOULD BE LOCATED OPPOSITE THE FIRST ADVANCE WARNING SIGN.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

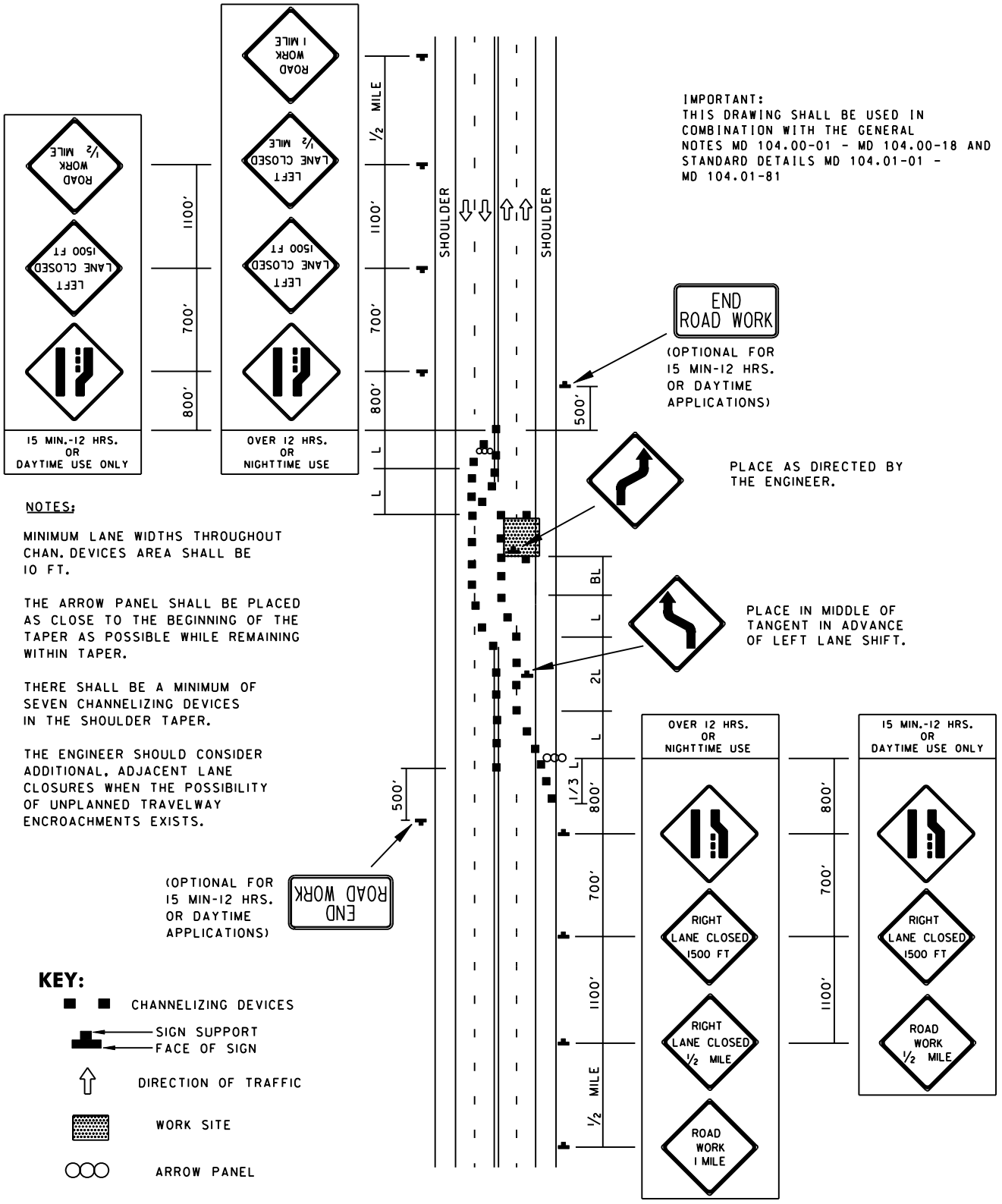
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

RIGHT LANE CLOSURE/MULTILANE UNDIV. EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.03-06

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



NOTES:

MINIMUM LANE WIDTHS THROUGHOUT CHAN. DEVICES AREA SHALL BE 10 FT.

THE ARROW PANEL SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE WHILE REMAINING WITHIN TAPER.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED

DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

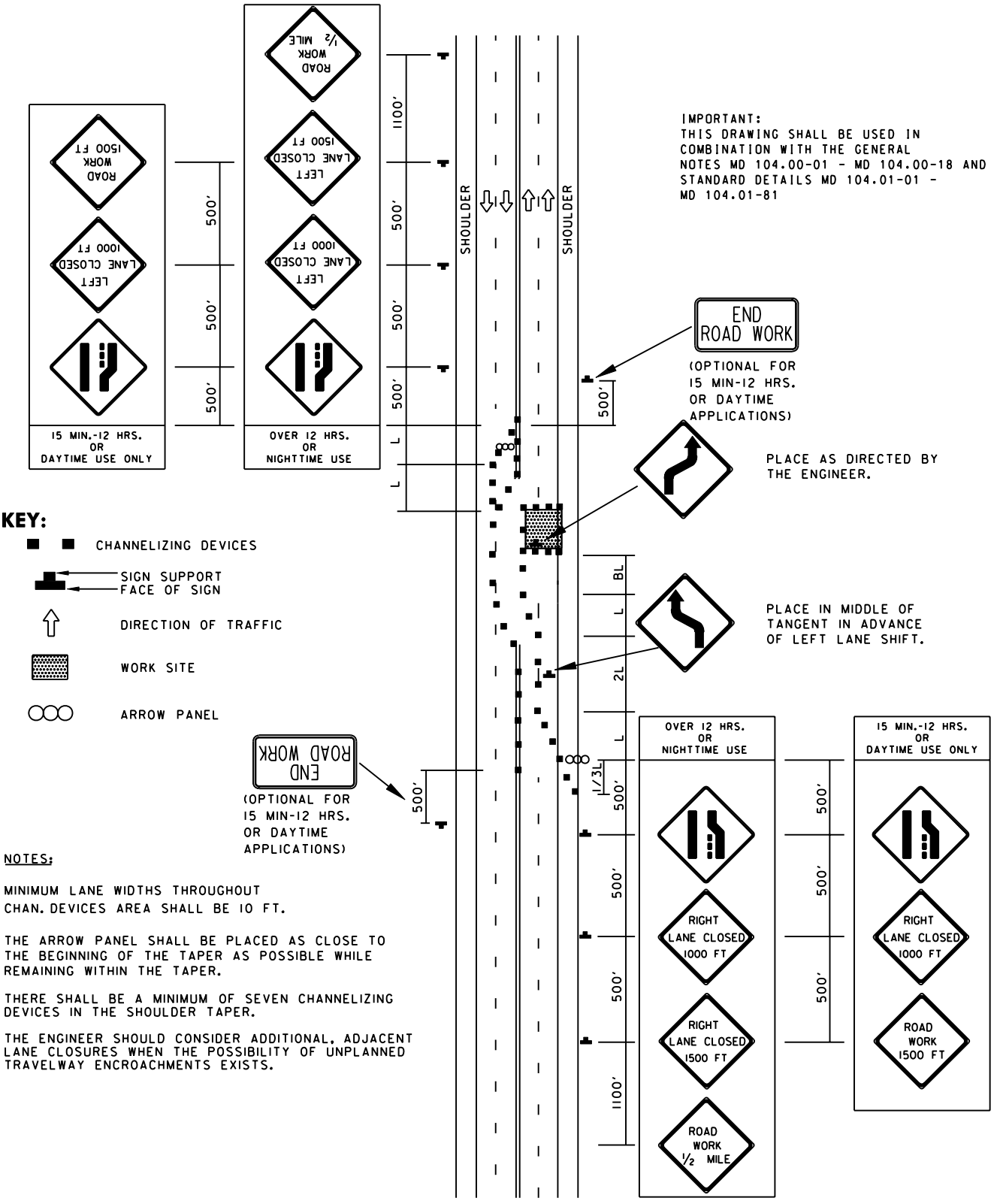
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PARTIAL ROADWAY CLOSURE/MULTILANE UNDIV. GREATER THAN 40 MPH

STANDARD NO. MD 104.03-07

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

NOTES:

MINIMUM LANE WIDTHS THROUGHOUT CHAN. DEVICES AREA SHALL BE 10 FT.

THE ARROW PANEL SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE WHILE REMAINING WITHIN THE TAPER.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

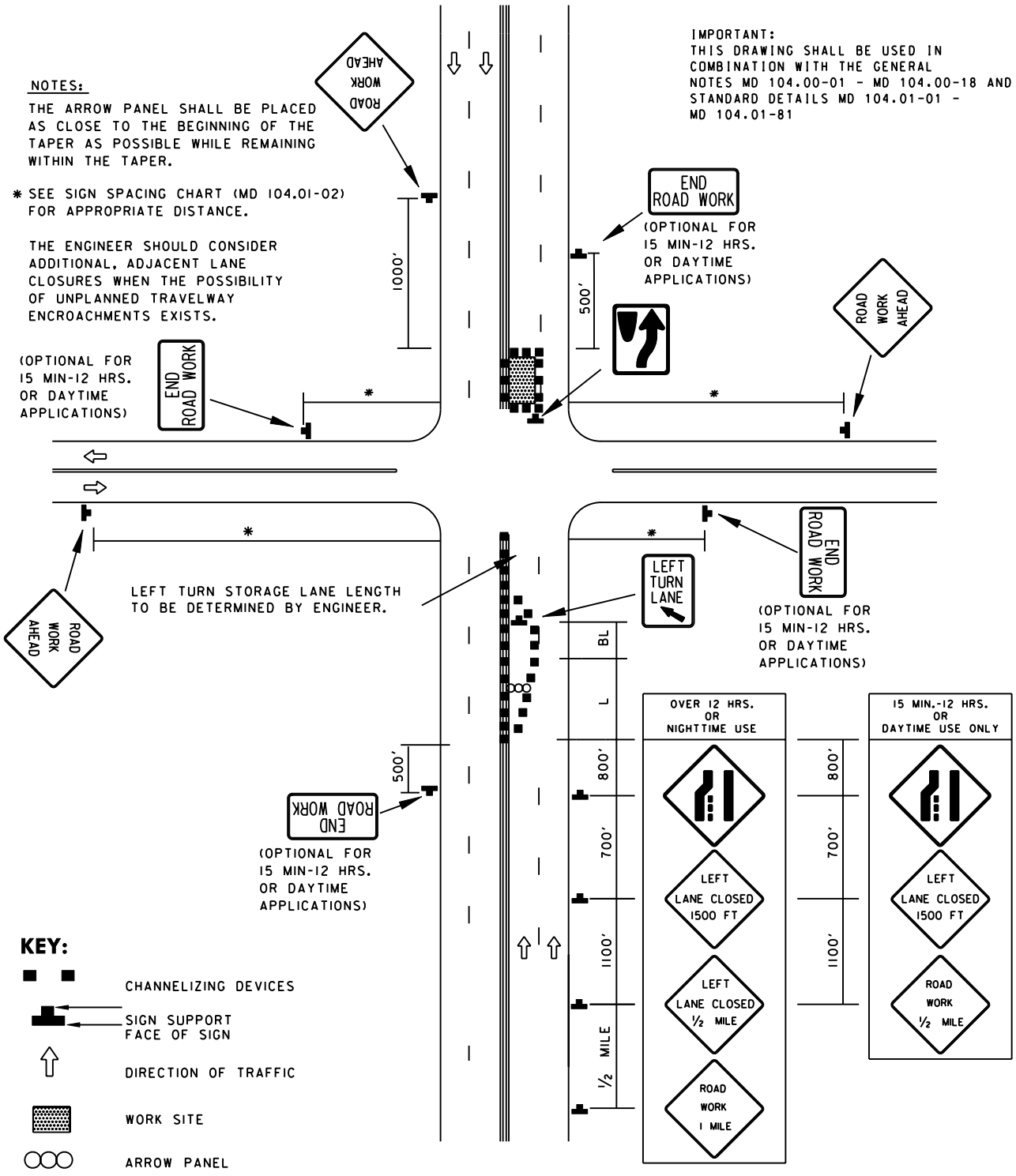
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PARTIAL ROADWAY CLOSURE/MULTILANE UNDIV. EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.03-08

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

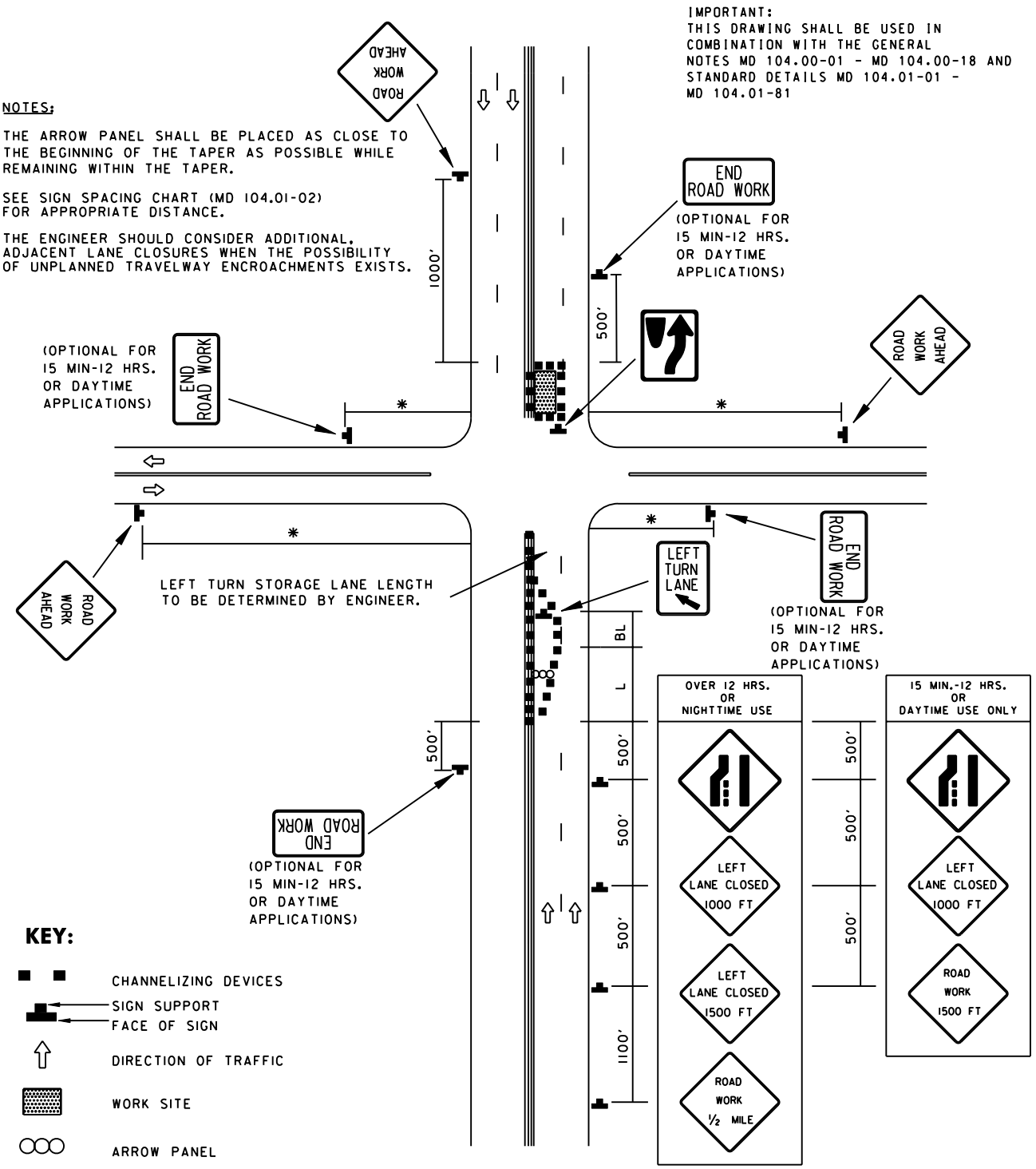
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INTER. FAR-LEFT LANE CLOSURE/ MULTILANE UNDIV. GREATER THAN 40 MPH

STANDARD NO. MD 104.03-09

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INTER. FAR-LEFT LANE CLOSURE/ MULTILANE UNDIV. EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.03-10

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

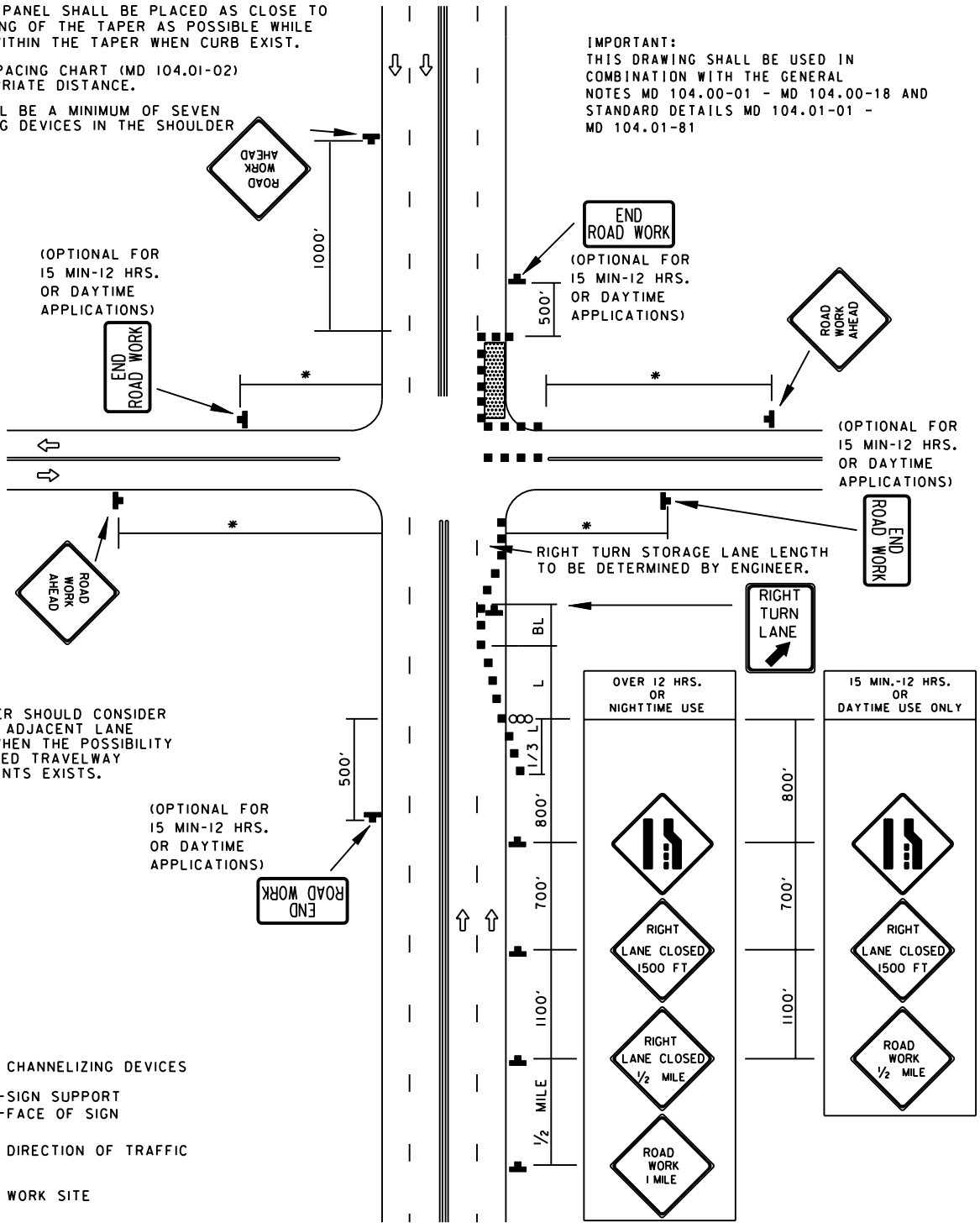
NOTES:

THE ARROW PANEL SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE WHILE REMAINING WITHIN THE TAPER WHEN CURB EXIST.

* SEE SIGN SPACING CHART (MD 104.01-02) FOR APPROPRIATE DISTANCE.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

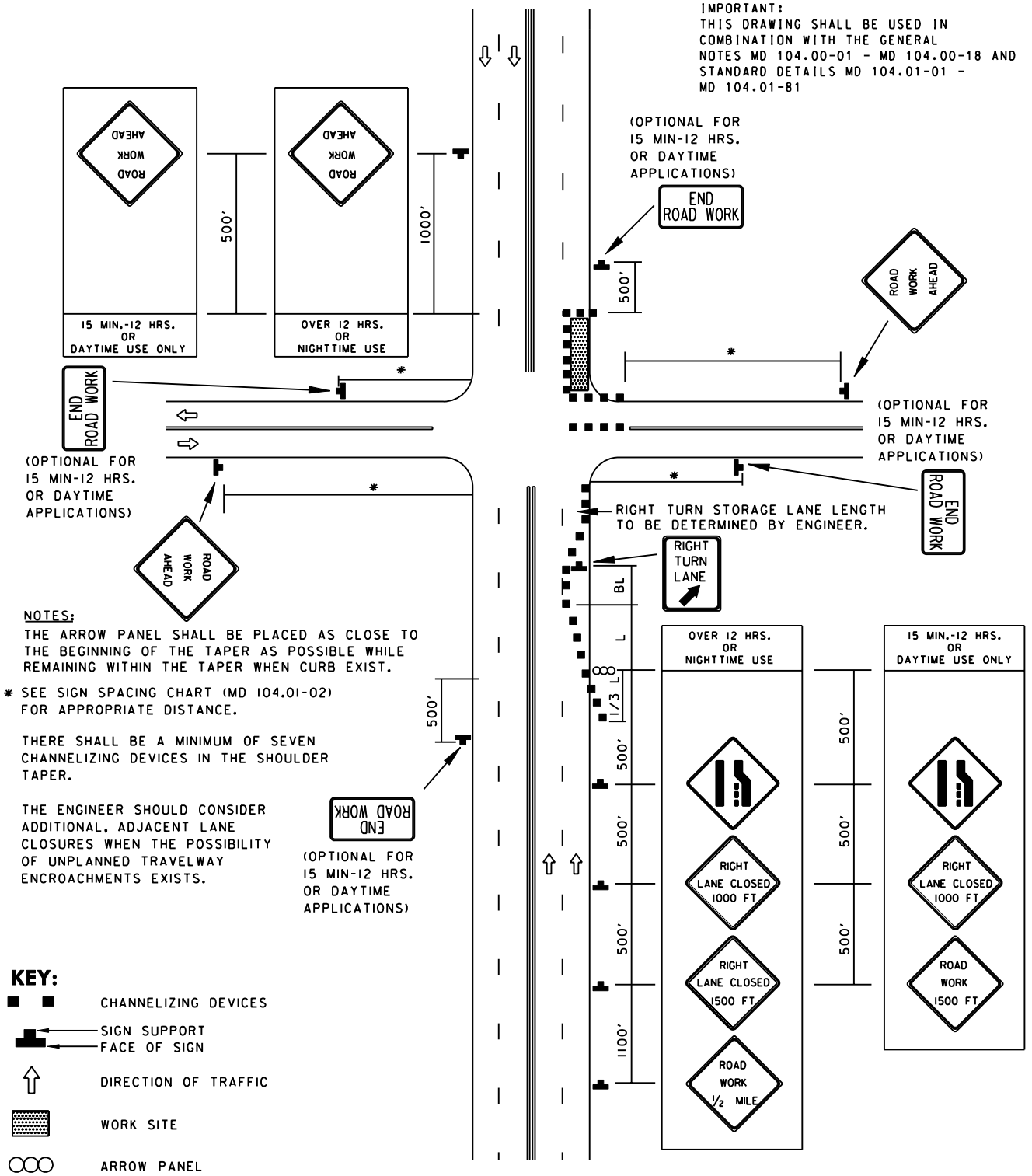
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INTER. FAR-RIGHT LANE CLOSURE/ MULTILANE UNDIV. GREATER THAN 40 MPH

STANDARD NO. MD 104.03-11

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

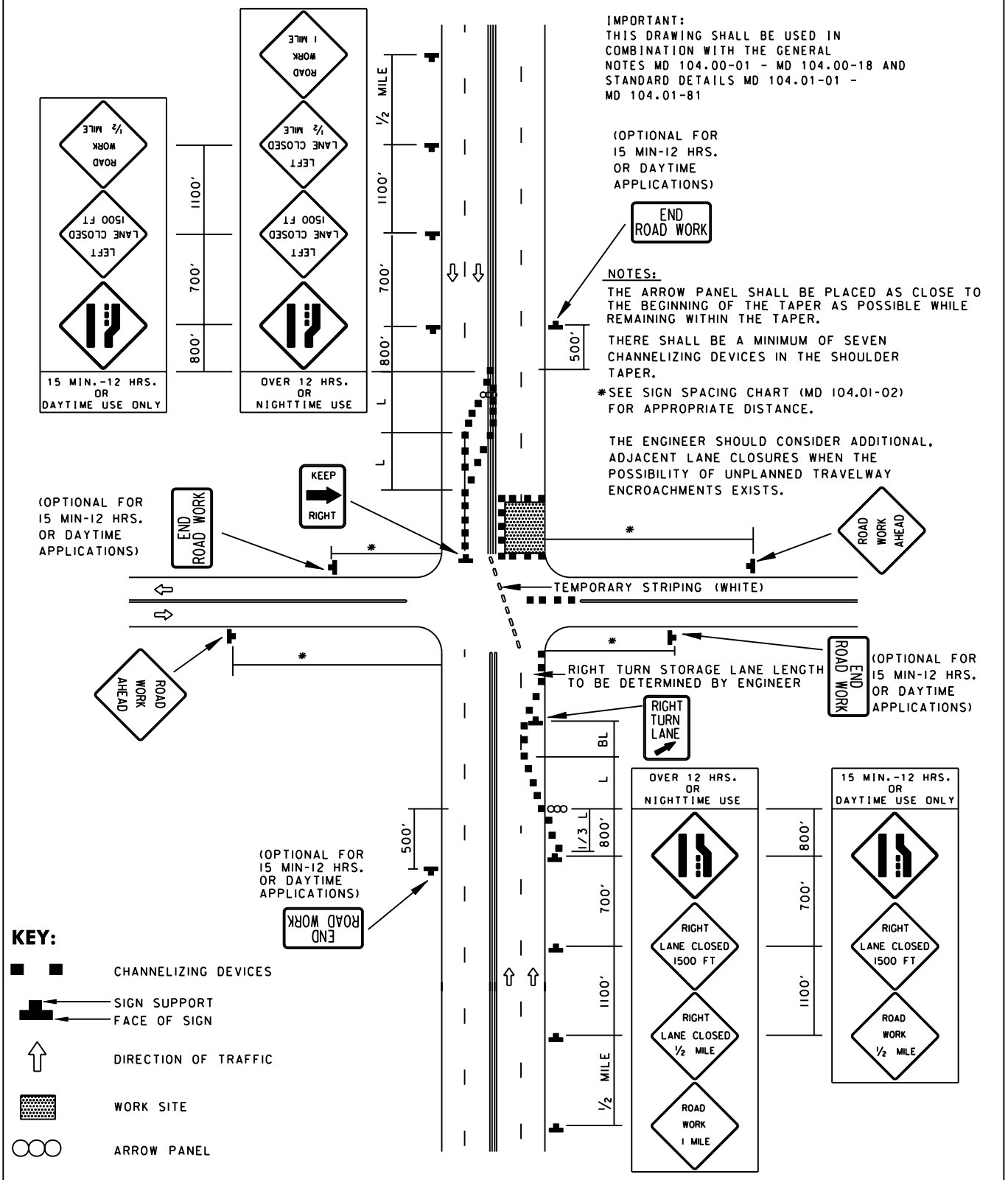
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INTER. FAR-RIGHT LANE CLOSURE/ MULTILANE UNDIV. EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.03-12

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

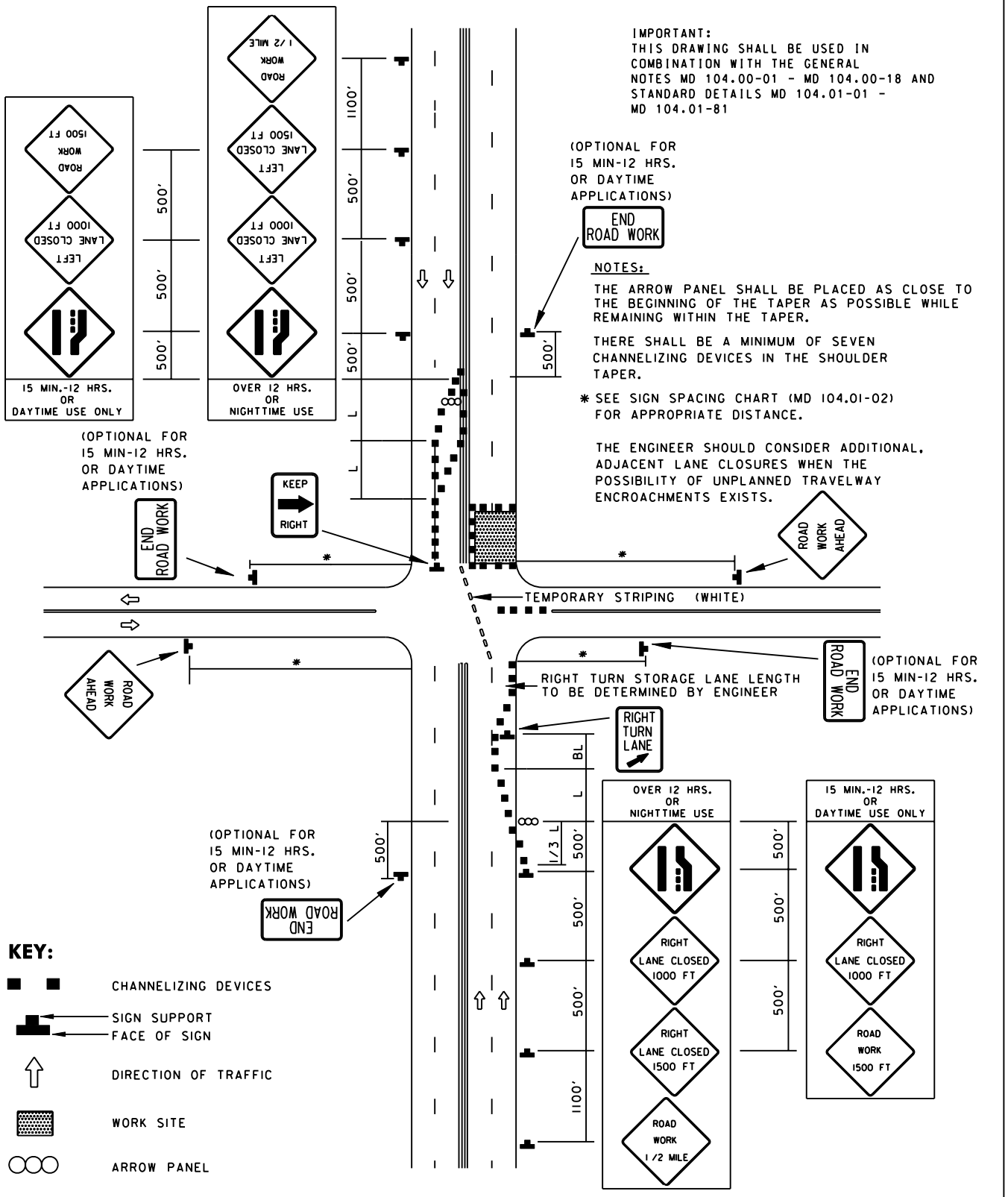
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INTERSECTION FAR-SIDE CLOSURE/MULTILANE UNDIV. GREATER THAN 40 MPH

STANDARD NO. MD 104.03-13

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

	APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL		8-20-03	APPROVAL	9-23-03
REVISED		8-11-10	REVISED	10-5-10
REVISED			REVISED	
REVISED			REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INTERSECTION FAR-SIDE CLOSURE/ MULTILANE UNDIV. EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.03-14

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

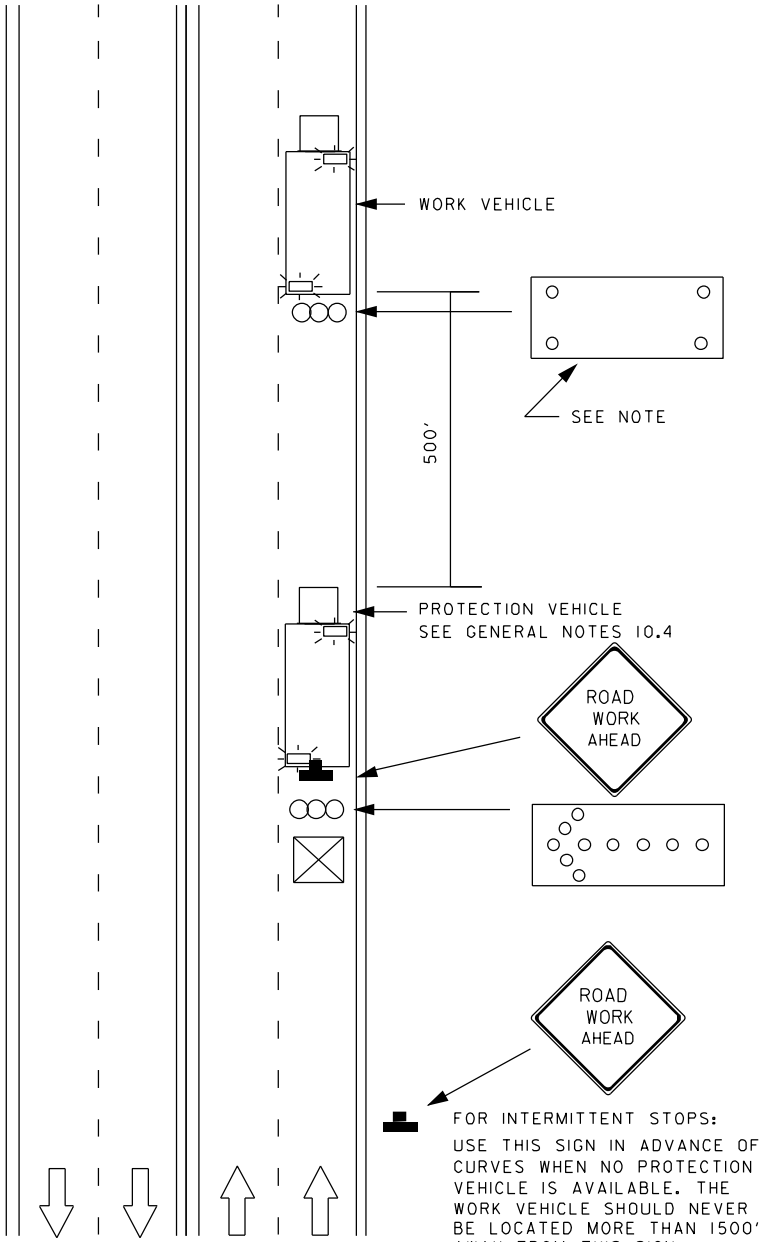
NOTES:

IF THE LEAD WORK VEHICLE IS TRAVELING AT THE POSTED SPEED LIMIT OR WITHIN 15 MPH OF IT, THEN NO BACK UP VEHICLE IS NECESSARY.

IN URBAN AREAS THE DISTANCE MAINTAINED BETWEEN VEHICLES MAY BE DECREASED AS NEEDED.

IF ONLY ONE ARROW PANEL IS AVAILABLE IT SHALL OPERATE IN ARROW MODE. EXCEPT A WORK VEHICLE ON THE SHOULDER NEED ONLY DISPLAY THE ARROW PANEL IN THE 'CAUTION' MODE.

WHEN USED, THE PROTECTION VEHICLE MAY BE USED AS A SUBSTITUTE FOR THE WORK VEHICLE WHERE DIRECTED BY THE ENGINEER.



KEY:

- SIGN SUPPORT / FACE OF SIGN
- ARROW PANEL
- APPROVED VEHICLE SAFETY LIGHT
- DIRECTION OF TRAFFIC
- TRUCK OR TRAILER-TRUCK MOUNTED ATTENUATOR (TMA/TTMA)

SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE OPERATION/MULTILANE UNDIV. ALL SPEEDS/0-15 MIN., AND MOVING SLOW

STANDARD NO. MD 104.03-15

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

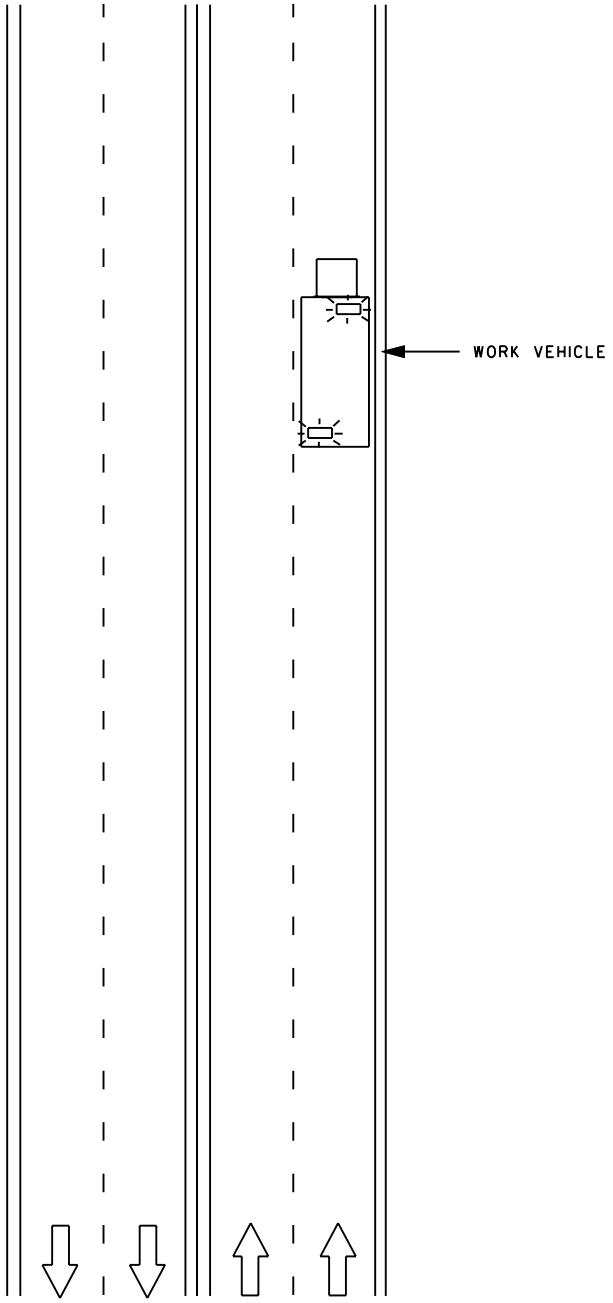
WORK VEHICLE IS TRAVELING AT THE POSTED SPEED LIMIT OR WITHIN 15 MPH OF IT.

VEHICLE SHALL DISPLAY FLASHING HAZARD/PARKING LIGHTS IN FRONT AND REAR.

KEY:

APPROVED VEHICLE SAFETY LIGHT

DIRECTION OF TRAFFIC



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE OPERATION/MULTILANE UNDIV.
ALL SPEEDS/MOVING NORMAL

STANDARD NO. MD 104.03-16

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

MOWING OPERATIONS

MOWERS SHALL HAVE FLASHING WARNING LIGHTS MOUNTED ON THEM.

THE MOWERS AHEAD SIGN SHOULD BE USED TO WARN OF MOWING CREWS UNLESS MOWER(S) ARE EQUIPPED WITH TWO 360° FLASHING/ROTATING AMBER LIGHTS OR TWO 360° FLASHING DOME LIGHTS, THE DECISION SIGHT DISTANCE IS MET FOR THE RATES OF SPEED SHOWN ON STANDARD NO. MD 104.00-03, AND MOWER(S) WILL NOT BE TRAVELLING IN ANY OF THE FOLLOWING THREE CONDITIONS:

- WITHIN 15 FT. OF THE EDGE LINE OF THE ROADWAY OR ON THE SHOULDER
- IN THE ROADWAY ON A NARROW STRETCH OF ROADWAY OR TO GET AROUND A HIGHWAY STRUCTURE OR APPURTENANCE OR OTHER SUCH STRUCTURE
- ACROSS THE ROADWAY

MOWERS MAY NOT PROCEED MORE THAN 2 MILES AWAY FROM ADVANCE WARNING SIGN(S).

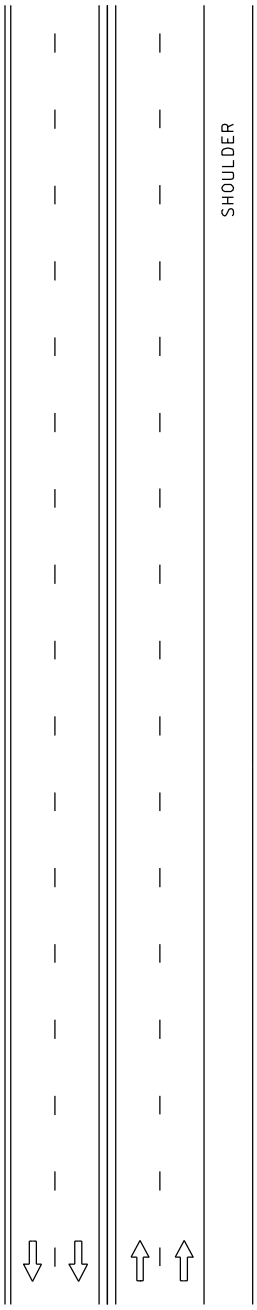
MOWERS WITHIN 15 FT. OF THE EDGE LINE SHALL TRAVEL IN THE SAME DIRECTION AS ADJACENT TRAFFIC.

OTHER OPERATIONS

THE SURVEY CREW SIGN SHOULD BE USED TO WARN OF SURVEYING CREWS WORKING IN OR ADJACENT TO THE ROADWAY.

THE WORKERS SYMBOL SIGN SHOULD BE USED TO WARN OF OTHER MOBILE OPERATIONS NOT RELATED TO MOWING OR SURVEYING ACTIVITIES, AND FOR WHICH NO MOBILE TYPICAL APPLICATION CURRENTLY EXISTS. THIS INCLUDES WORK PERFORMED BY INMATE CREWS.

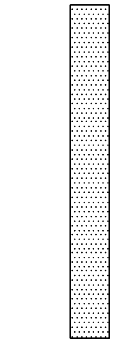
PROTECTION VEHICLE SHALL BE USED IN CONFORMANCE WITH SECTION 10.4 OF THE GENERAL NOTES.

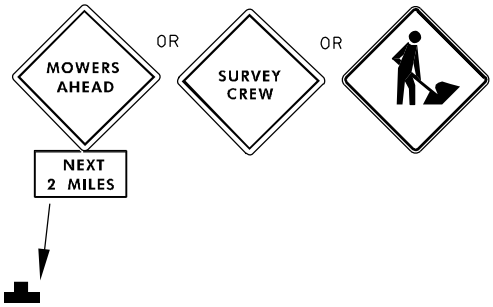


NOTES:

SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER. SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.





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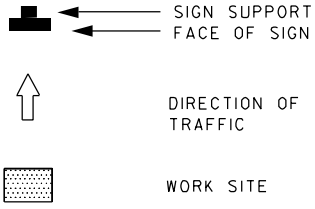


SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE WORK OPERATION /MULTILANE UNDIV. ALL SPEEDS

STANDARD NO. MD 104.03-17

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

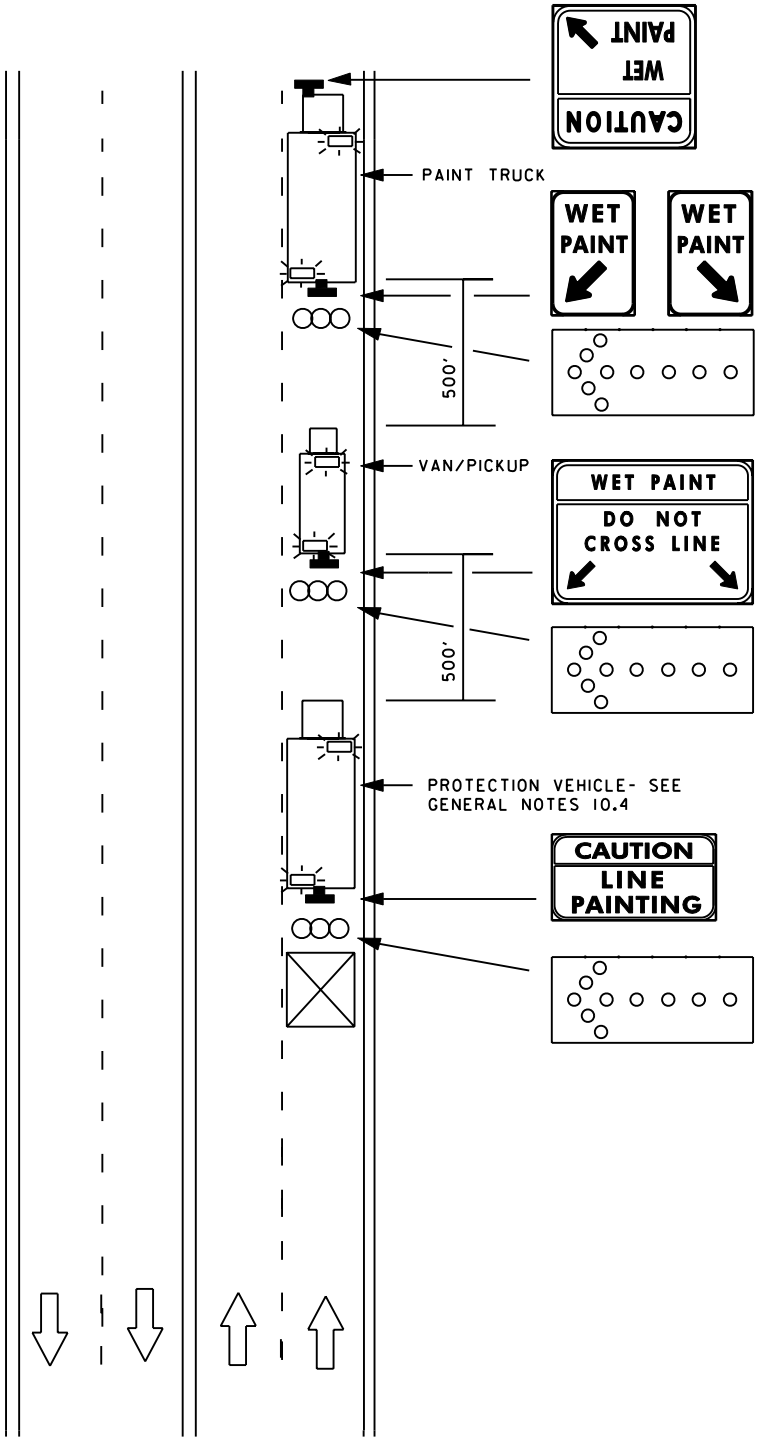
NOTES:

DISTANCES BETWEEN VEHICLES MAY BE INCREASED OR DECREASED DEPENDING ON PAINT DRYING TIME, TERRAIN, LOCAL AREA AND OTHER FACTORS.

CONES MAY BE REQUIRED TO PROTECT WET LINES AT GRADE CROSSINGS, ETC.

KEY:

- SIGN SUPPORT / FACE OF SIGN
- ARROW PANEL
- APPROVED VEHICLE SAFETY LIGHT
- DIRECTION OF TRAFFIC
- TRUCK OR TRAILER- TRUCK MOUNTED ATTENUATOR (TMA/TTMA)



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
MOBILE MARKING OPERATION/ MULTILANE UNDIV. ALL SPEEDS

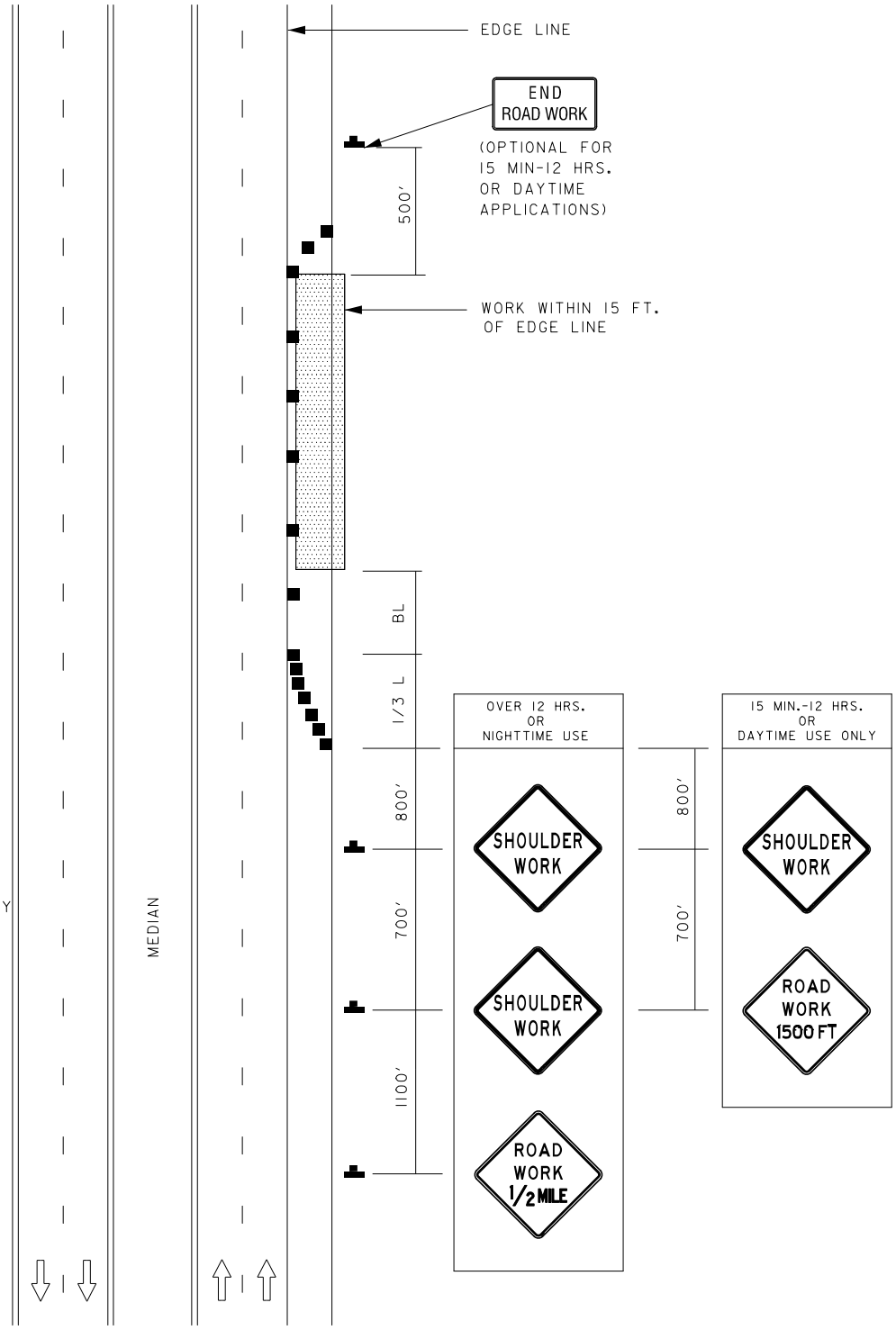
STANDARD NO. MD 104.03-18

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

1. SHOULDER WORK SIGNS SHALL BE MOUNTED ON THE SIDE OF THE ROADWAY WHERE THE SHOULDER IS AFFECTED. USAGE OF SHOULDER WORK SIGNS ON THE OPPOSITE SIDE OF DIVIDED HIGHWAYS IS OPTIONAL.
2. SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION (TEMPORARY CONCRETE BARRIER OR SIMILAR DEVICE). REFER TO STANDARD NO. MD 104.06-18.
3. WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-15 TO MD 104.06-19.
4. THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.
5. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.
6. FOR SAFETY, A MINIMUM OF 2 FEET LATERAL CLEARANCE SHALL BE MAINTAINED BETWEEN ANY VEHICLE AND/OR EQUIPMENT POSITIONED ON THE SHOULDER AND THE ADJACENT OPEN TRAVEL LANE. THE ENGINEER SHOULD CONSIDER ADDITIONAL SAFETY MEASURES.
7. REFER TO MD 104.01-11A FOR THE USE OF A PV.
8. REFER TO MD 104.01-30C FOR THE POSITIONING OF A PV.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED: Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	2-19-24	REVISED	11-16-23
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SHOULDER WORK /DIVIDED UNCONTROLLED GREATER THAN 40 MPH

STANDARD NO. MD 104.04-01

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

1. SHOULDER WORK SIGNS SHALL BE MOUNTED ON THE SIDE OF THE ROADWAY WHERE THE SHOULDER IS AFFECTED. USAGE OF SHOULDER WORK SIGNS ON THE OPPOSITE SIDE OF DIVIDED HIGHWAYS IS OPTIONAL.

2. SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION (TEMPORARY CONCRETE BARRIER OR SIMILAR DEVICE). REFER TO STANDARD NO. MD 104.06-18.

3. WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-15 TO MD 104.06-19.

4. THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

5. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

6. FOR SAFETY, A MINIMUM OF 2 FEET LATERAL CLEARANCE SHALL BE MAINTAINED BETWEEN ANY VEHICLE AND/OR EQUIPMENT POSITIONED ON THE SHOULDER AND THE ADJACENT OPEN TRAVEL LANE. THE ENGINEER SHOULD CONSIDER ADDITIONAL SAFETY MEASURES.

7. REFER TO MD 104.01-11A FOR THE USE OF A PV.

8. REFER TO MD 104.01-30B FOR THE POSITIONING OF A PV.

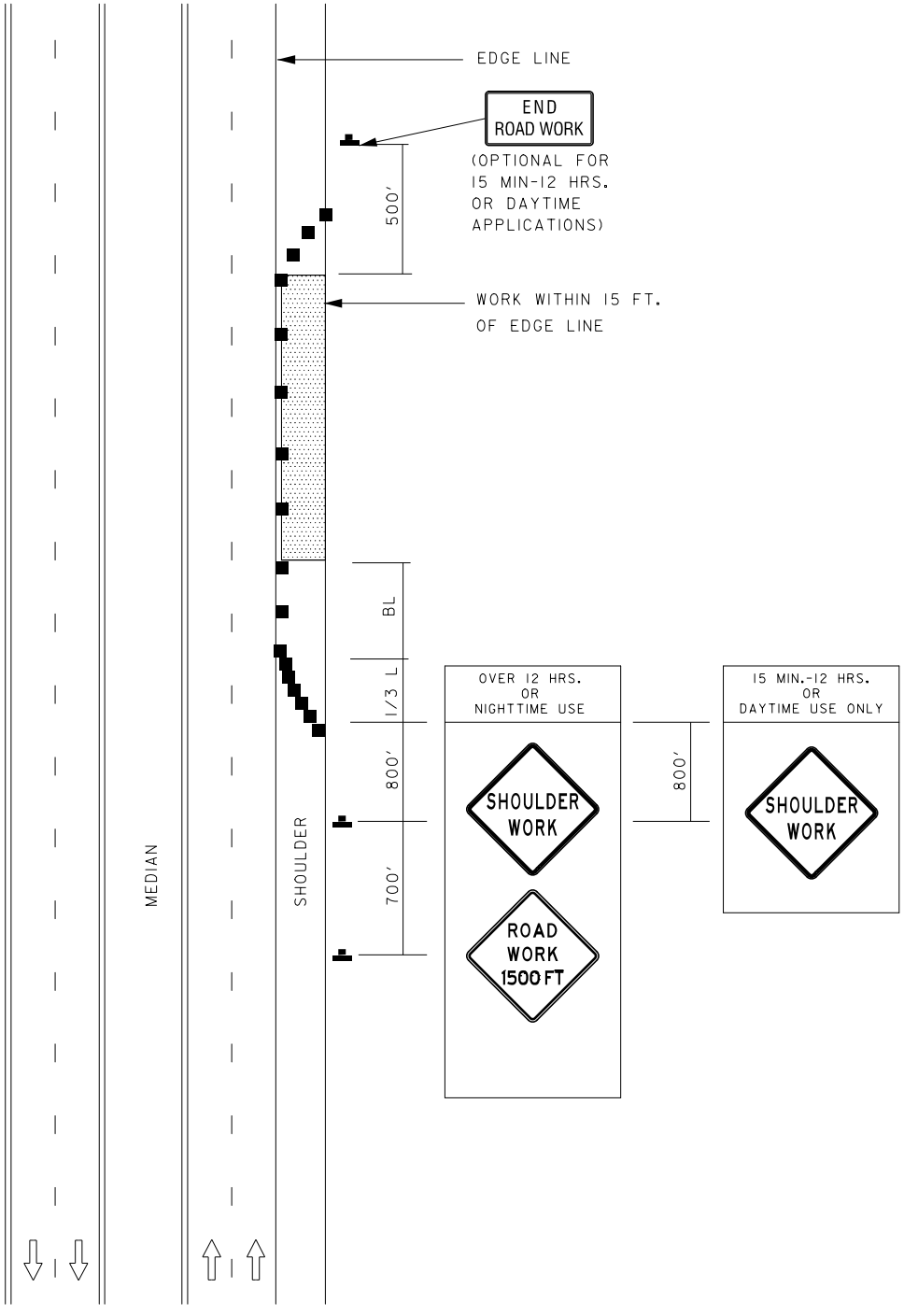
KEY:

CHANNELIZING DEVICES

SIGN SUPPORT
FACE OF SIGN

DIRECTION OF TRAFFIC

WORK SITE



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	2-19-24	REVISED	11-16-23
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SHOULDER WORK/DIVIDED UNCONTROLLED EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.04-02

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

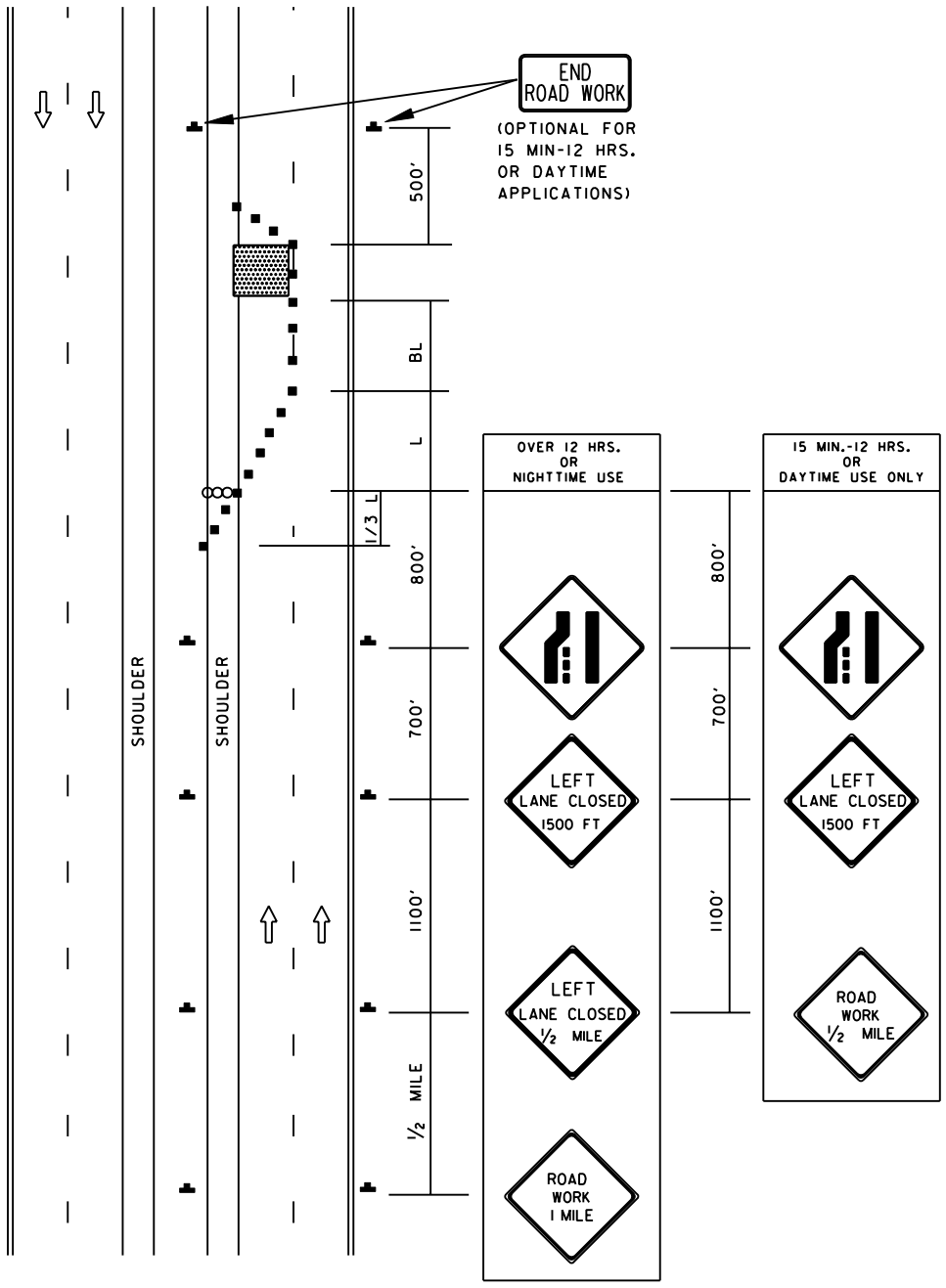
NOTE:

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LEFT LANE CLOSURE/DIVIDED UNCON. GREATER THAN 40 MPH

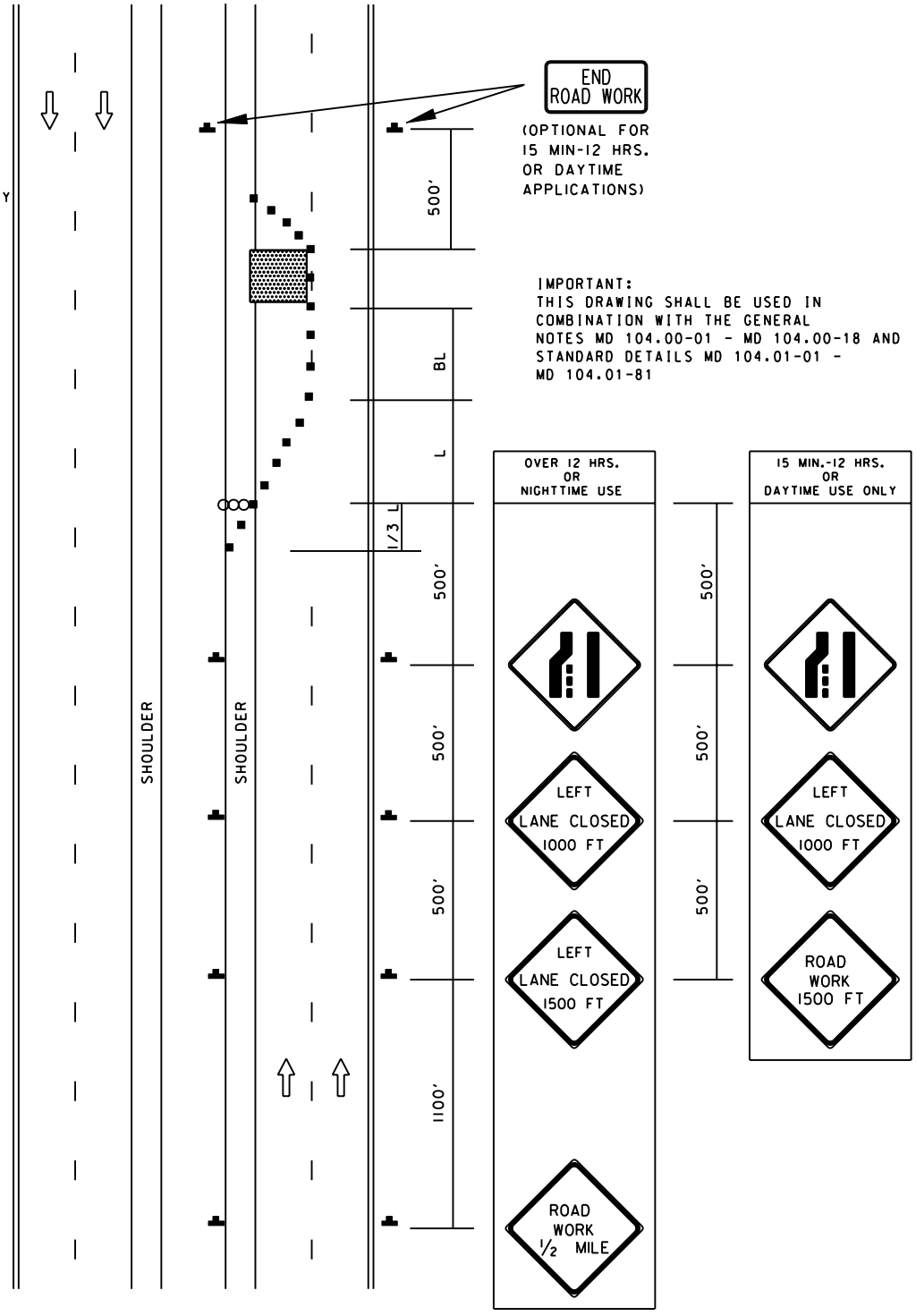
STANDARD NO. MD 104.04-03

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTE:

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- ARROW PANEL
- WORK SITE

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LEFT LANE CLOSURE/DIVIDED UNCON. EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.04-04

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

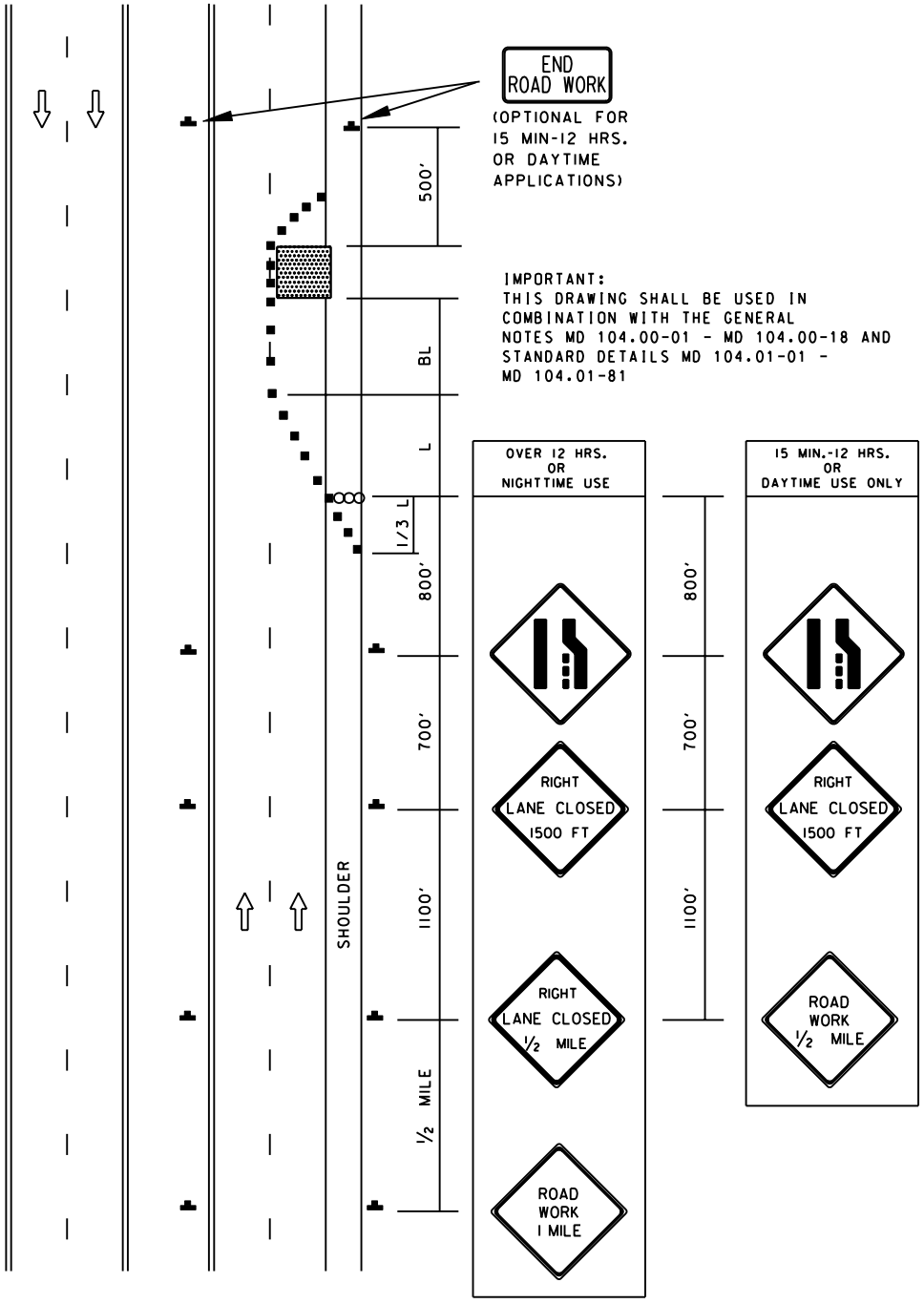
NOTE:

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

	APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL		8-20-03	APPROVAL	9-23-03
REVISED		8-11-10	REVISED	7-29-10
REVISED			REVISED	
REVISED			REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

RIGHT LANE CLOSURE/DIVIDED UNCON. GREATER THAN 40 MPH

STANDARD NO. MD 104.04-05

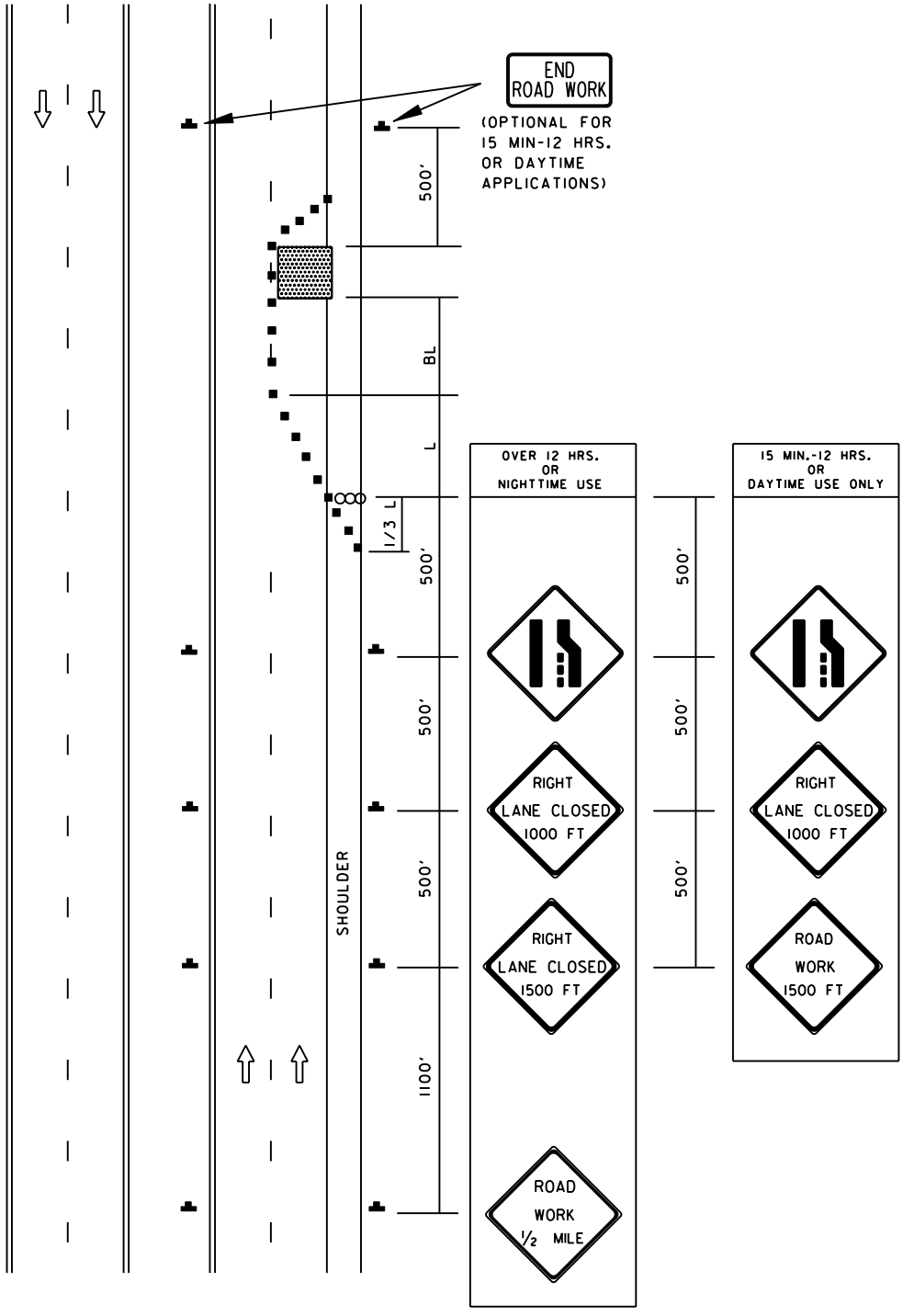
TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

RIGHT LANE CLOSURE /DIVIDED UNCON. EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.04-06

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

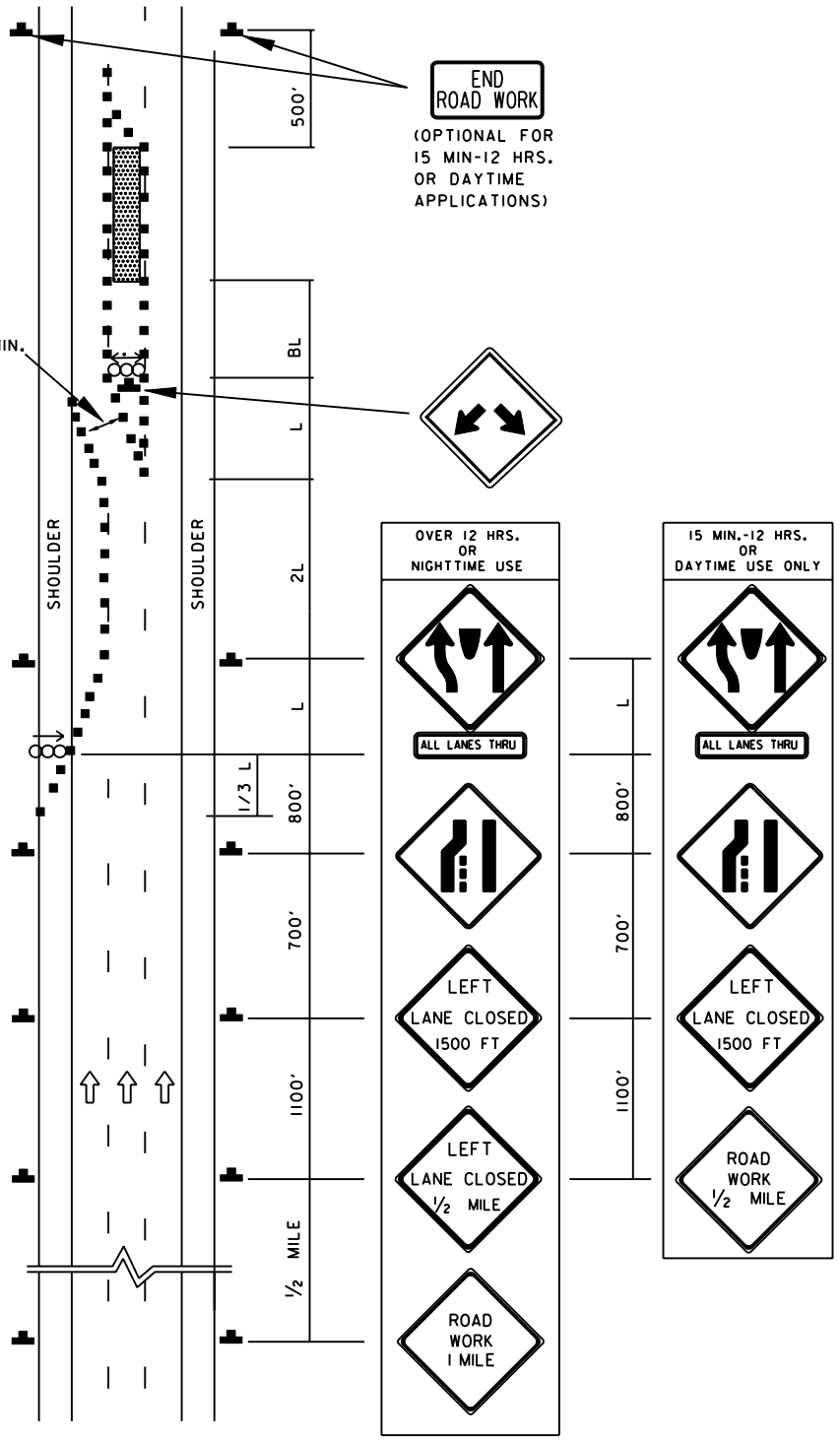
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:
THIS TYPICAL APPLICATION SHOULD GENERALLY BE USED ONLY WHEN WORKERS ARE NOT PRESENT IN THE CENTER LANE. WHEN WORKERS ARE PRESENT IN THE CENTER LANE, EITHER TEMPORARY TRAFFIC BARRIER OR A TWO-LANE CLOSURE SHOULD BE USED TO CLOSE THE CENTER LANE (SEE STANDARD NO. MD 104.04-09).

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER. SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL (WITH DIRECTIONAL ARROW)

SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

CENTER LANE CLOSURE /DIVIDED UNCON. GREATER THAN 40 MPH

STANDARD NO. MD 104.04-07

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:

THIS TYPICAL APPLICATION SHOULD GENERALLY BE USED ONLY WHEN WORKERS ARE NOT PRESENT IN THE CENTER LANE. WHEN WORKERS ARE PRESENT IN THE CENTER LANE, EITHER TEMPORARY TRAFFIC BARRIER OR A TWO-LANE CLOSURE SHOULD BE USED TO CLOSE THE CENTER LANE. (SEE STANDARD NO. MD 104.04-10).

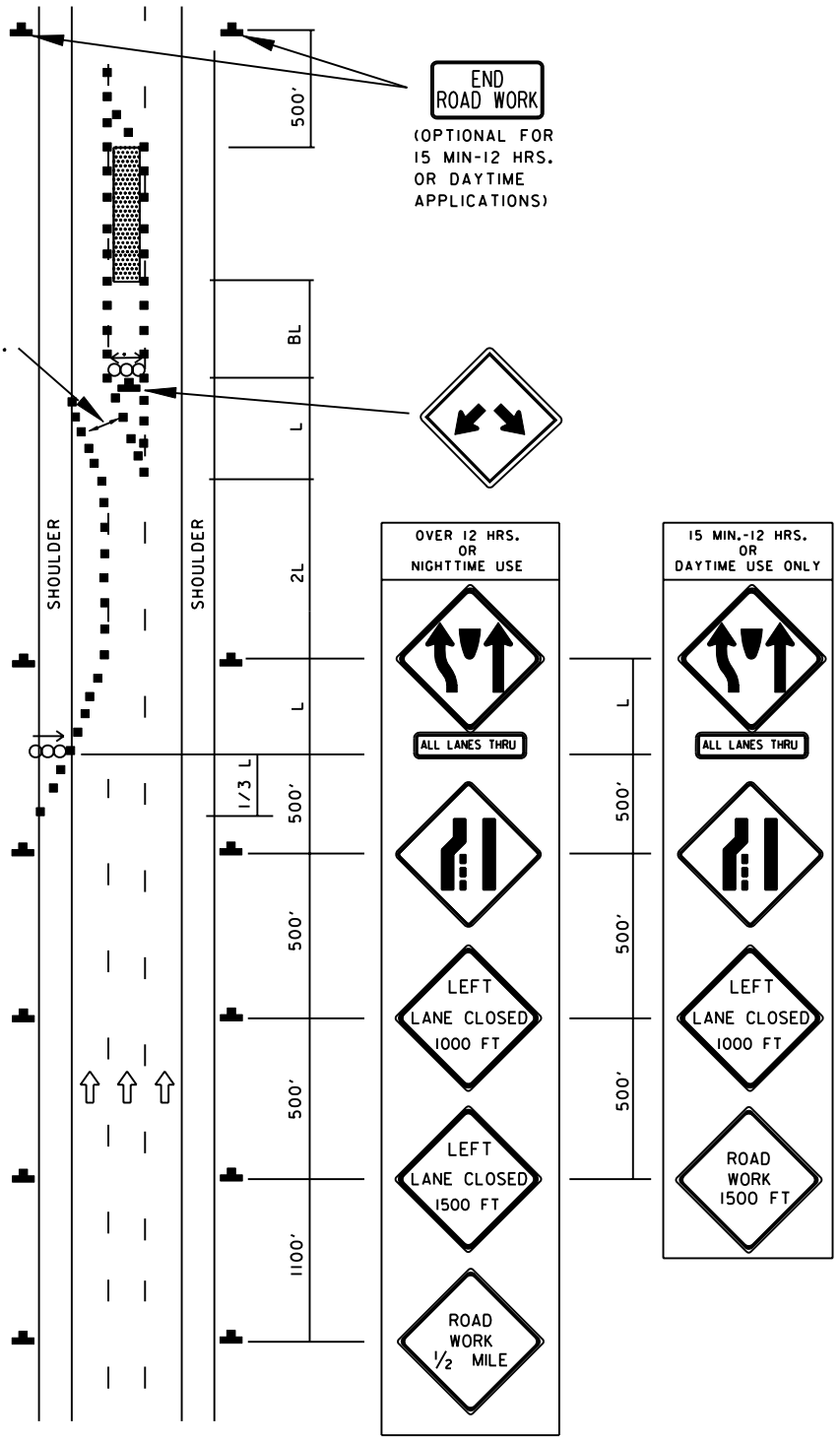
THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER. SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL (WITH DIRECTIONAL ARROW)



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

CENTER LANE CLOSURE /DIVIDED UNCON. EQL /LESS THAN 40 MPH

STANDARD NO. MD 104.04-08

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

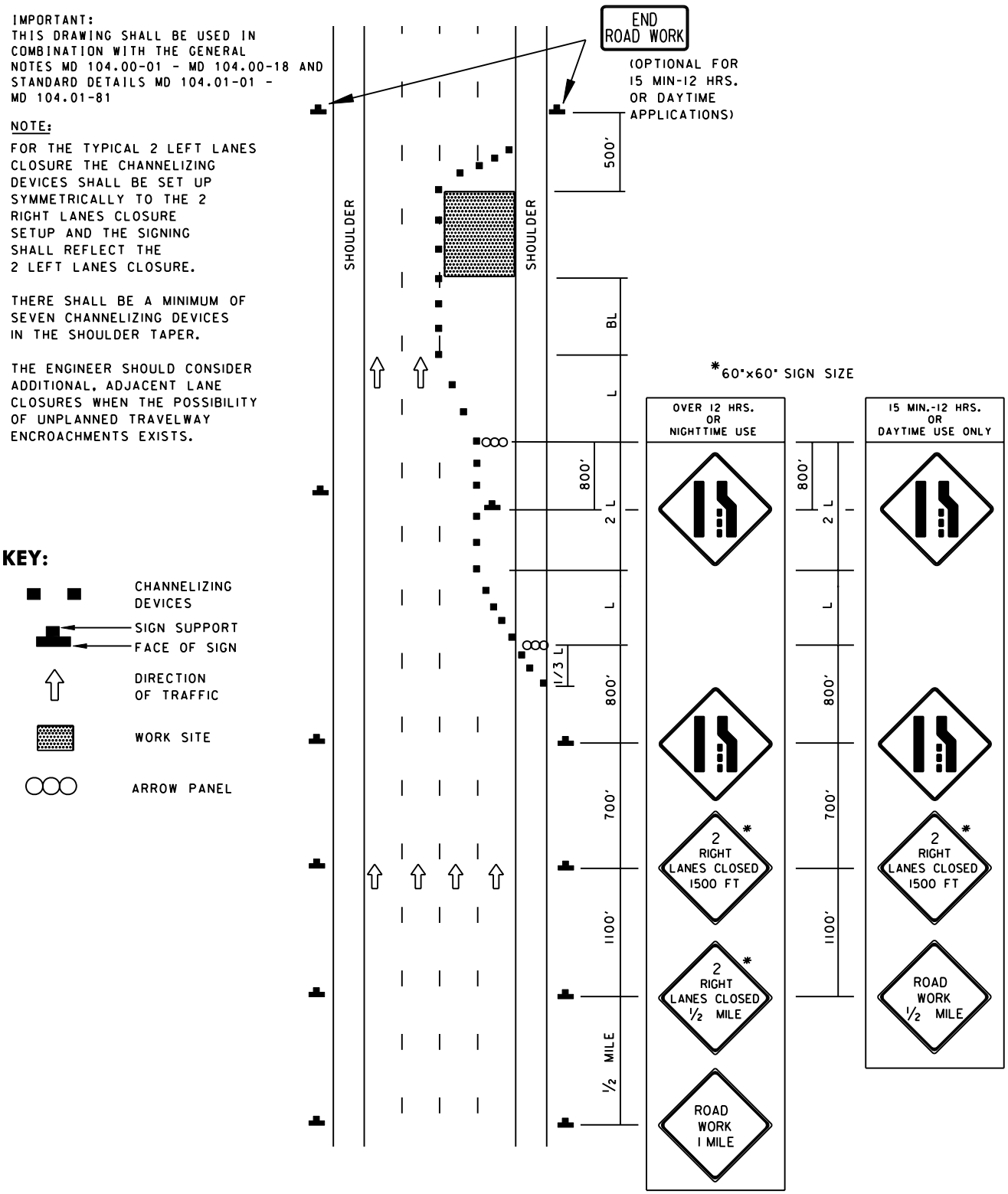
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:

FOR THE TYPICAL 2 LEFT LANES CLOSURE THE CHANNELIZING DEVICES SHALL BE SET UP SYMMETRICALLY TO THE 2 RIGHT LANES CLOSURE SETUP AND THE SIGNING SHALL REFLECT THE 2 LEFT LANES CLOSURE.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

2 RIGHT (LEFT) LANES CLOSURE/ DIVIDED UNCON./GREATER THAN 40 MPH

STANDARD NO. MD 104.04-09

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

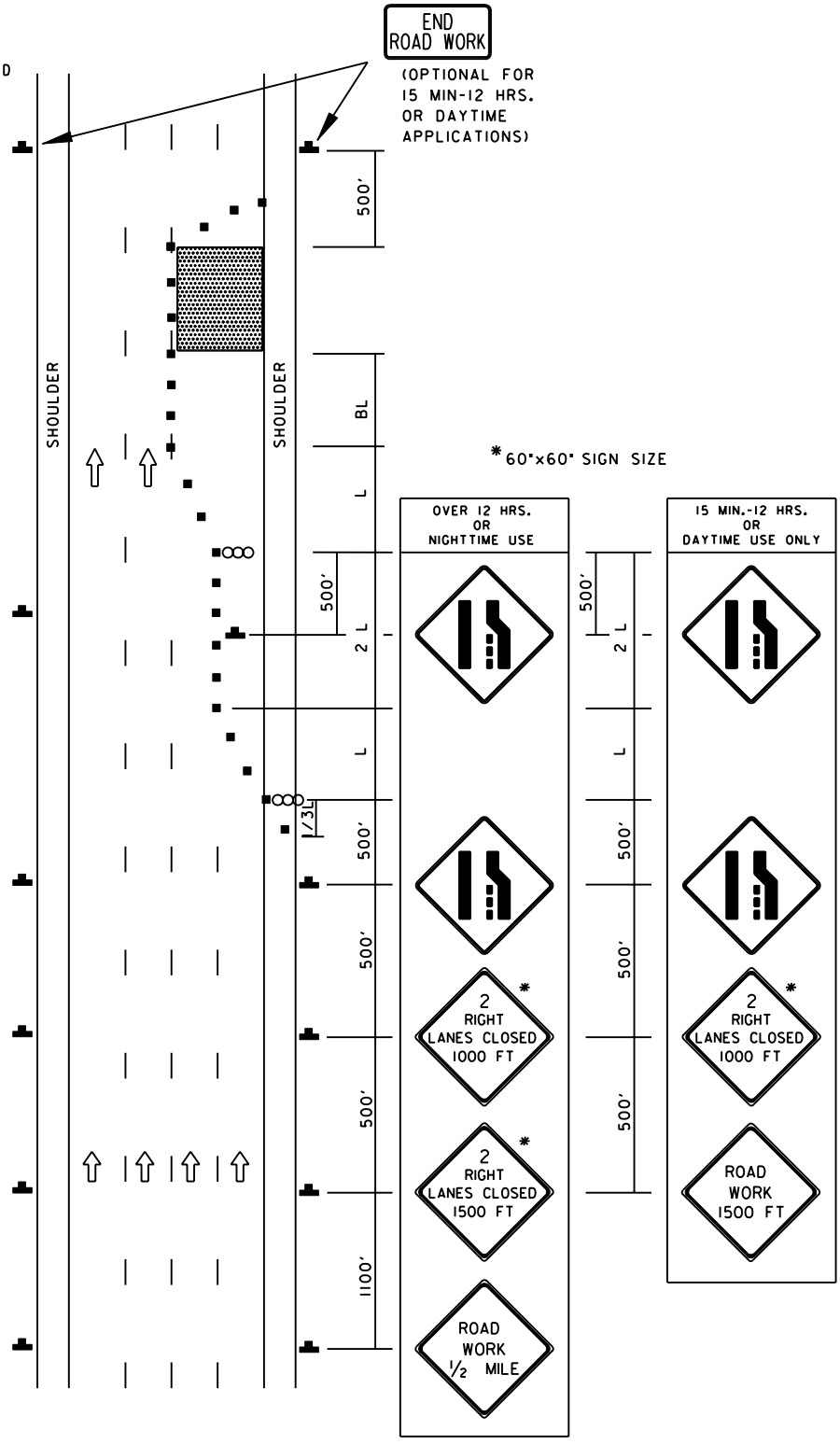
NOTE:
FOR THE TYPICAL 2 LEFT LANES CLOSURE THE CHANNELIZING DEVICES SHALL BE SET UP SYMMETRICALLY TO THE 2 RIGHT LANES CLOSURE SETUP AND THE SIGNING SHALL REFLECT THE 2 LEFT LANES CLOSURE.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

	APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL		8-20-03	APPROVAL	9-23-03
REVISED		8-11-10	REVISED	7-29-10
REVISED			REVISED	
REVISED			REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

2 RIGHT (LEFT) LANES CLOSURE/ DIVIDED UNCON./EQL/LESS THAN 40 MPH

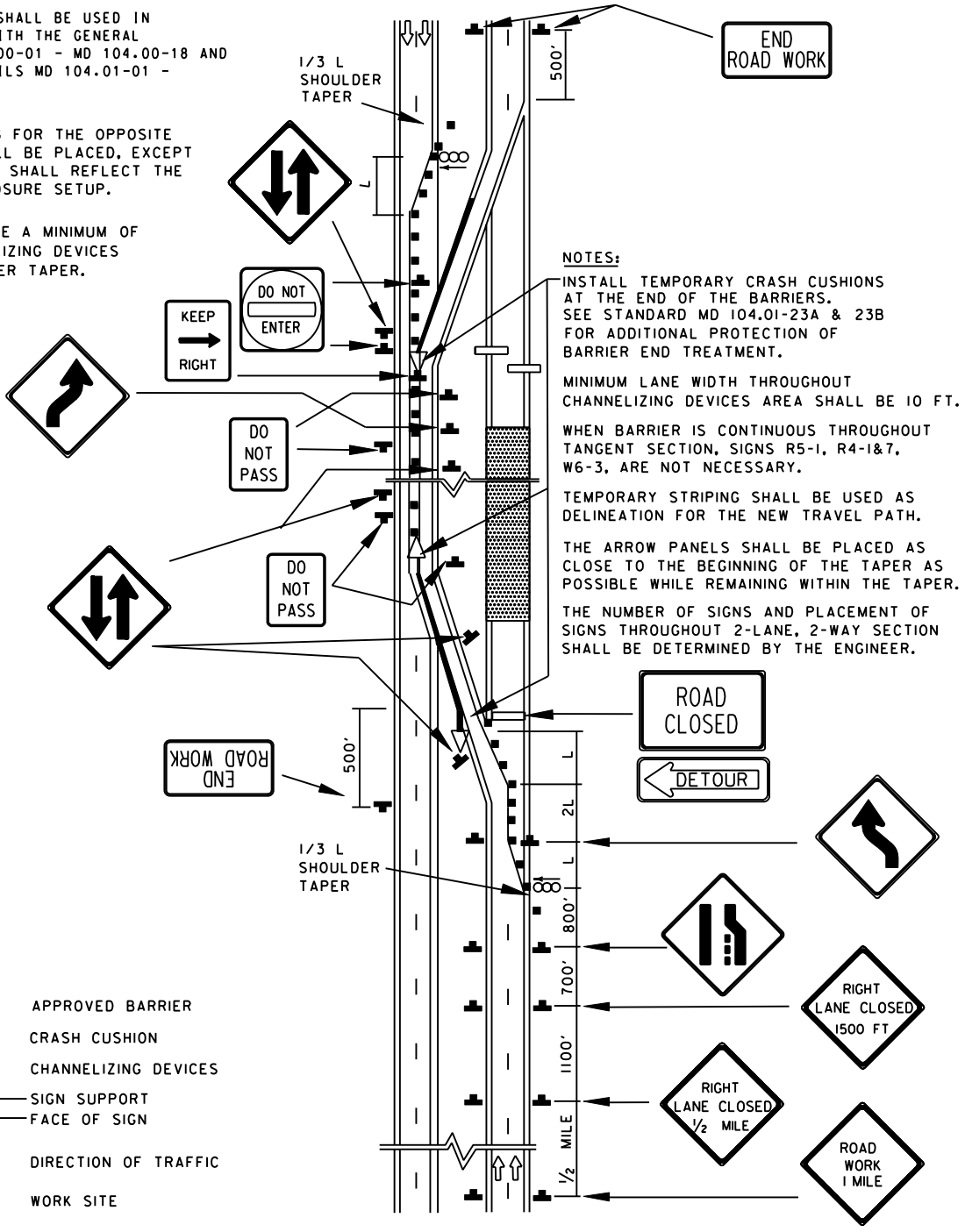
STANDARD NO. MD 104.04-10

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

SIMILAR SIGNING FOR THE OPPOSITE APPROACH SHALL BE PLACED, EXCEPT SIGN MESSAGES SHALL REFLECT THE LEFT LANE CLOSURE SETUP.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.



NOTES:

INSTALL TEMPORARY CRASH CUSHIONS AT THE END OF THE BARRIERS. SEE STANDARD MD 104.01-23A & 23B FOR ADDITIONAL PROTECTION OF BARRIER END TREATMENT.

MINIMUM LANE WIDTH THROUGHOUT CHANNELIZING DEVICES AREA SHALL BE 10 FT.

WHEN BARRIER IS CONTINUOUS THROUGHOUT TANGENT SECTION, SIGNS R5-1, R4-1&7, W6-3, ARE NOT NECESSARY.

TEMPORARY STRIPING SHALL BE USED AS DELINEATION FOR THE NEW TRAVEL PATH.

THE ARROW PANELS SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE WHILE REMAINING WITHIN THE TAPER.

THE NUMBER OF SIGNS AND PLACEMENT OF SIGNS THROUGHOUT 2-LANE, 2-WAY SECTION SHALL BE DETERMINED BY THE ENGINEER.

KEY:

- APPROVED BARRIER
- CRASH CUSHION
- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- TYPE III BARRICADE
- ARROW PANEL (WITH DIRECTIONAL ARROW)

SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ROADWAY CLOSURE/DIVIDED UNCON. GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE

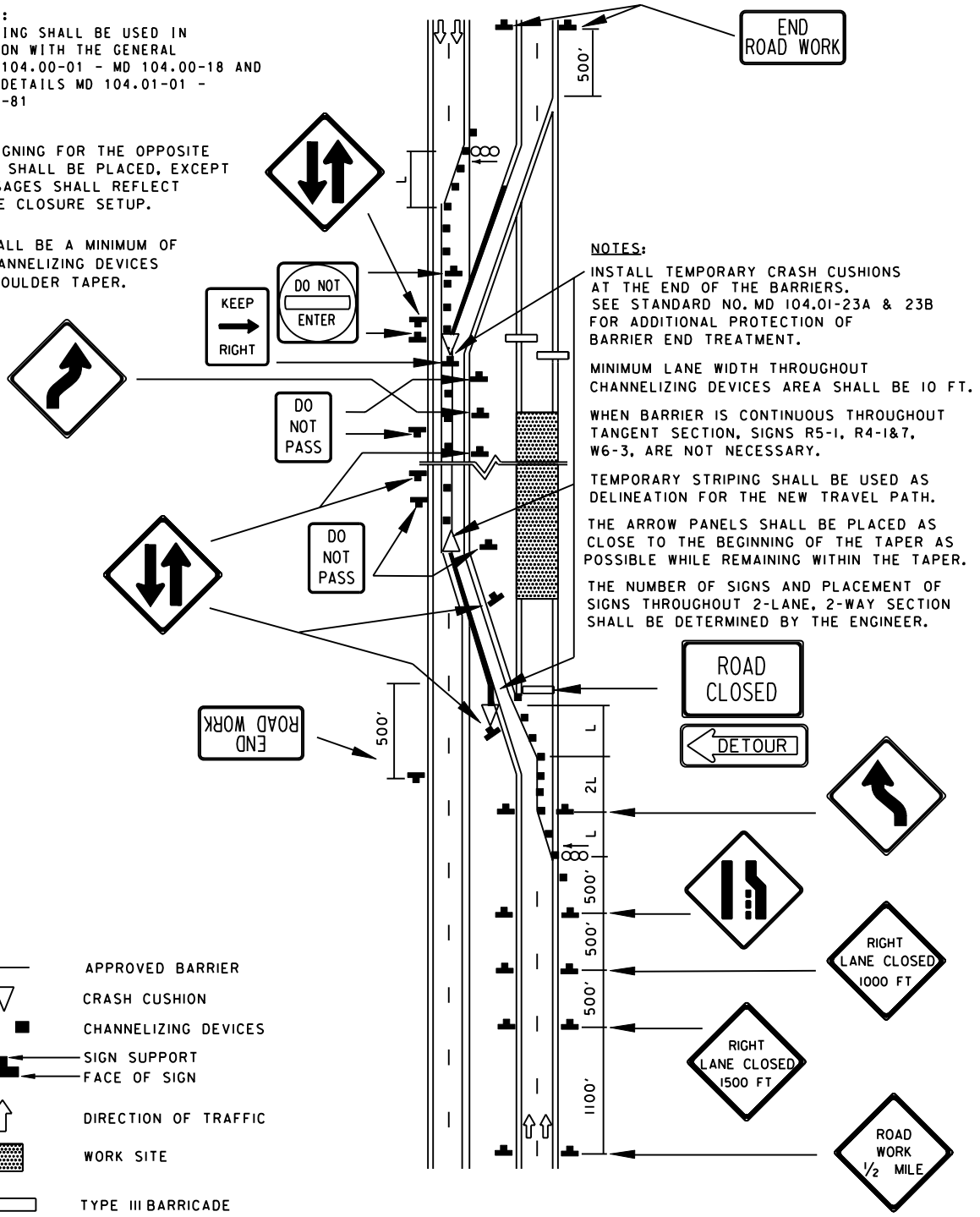
STANDARD NO. MD 104.04-11

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

SIMILAR SIGNING FOR THE OPPOSITE APPROACH SHALL BE PLACED, EXCEPT SIGN MESSAGES SHALL REFLECT LEFT LANE CLOSURE SETUP.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.



NOTES:

INSTALL TEMPORARY CRASH CUSHIONS AT THE END OF THE BARRIERS. SEE STANDARD NO. MD 104.01-23A & 23B FOR ADDITIONAL PROTECTION OF BARRIER END TREATMENT.

MINIMUM LANE WIDTH THROUGHOUT CHANNELIZING DEVICES AREA SHALL BE 10 FT.

WHEN BARRIER IS CONTINUOUS THROUGHOUT TANGENT SECTION, SIGNS R5-1, R4-1&7, W6-3, ARE NOT NECESSARY.

TEMPORARY STRIPING SHALL BE USED AS DELINEATION FOR THE NEW TRAVEL PATH.

THE ARROW PANELS SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE WHILE REMAINING WITHIN THE TAPER.

THE NUMBER OF SIGNS AND PLACEMENT OF SIGNS THROUGHOUT 2-LANE, 2-WAY SECTION SHALL BE DETERMINED BY THE ENGINEER.

KEY:

- APPROVED BARRIER
- CRASH CUSHION
- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- TYPE III BARRICADE
- ARROW PANEL (WITH DIRECTIONAL ARROW)

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

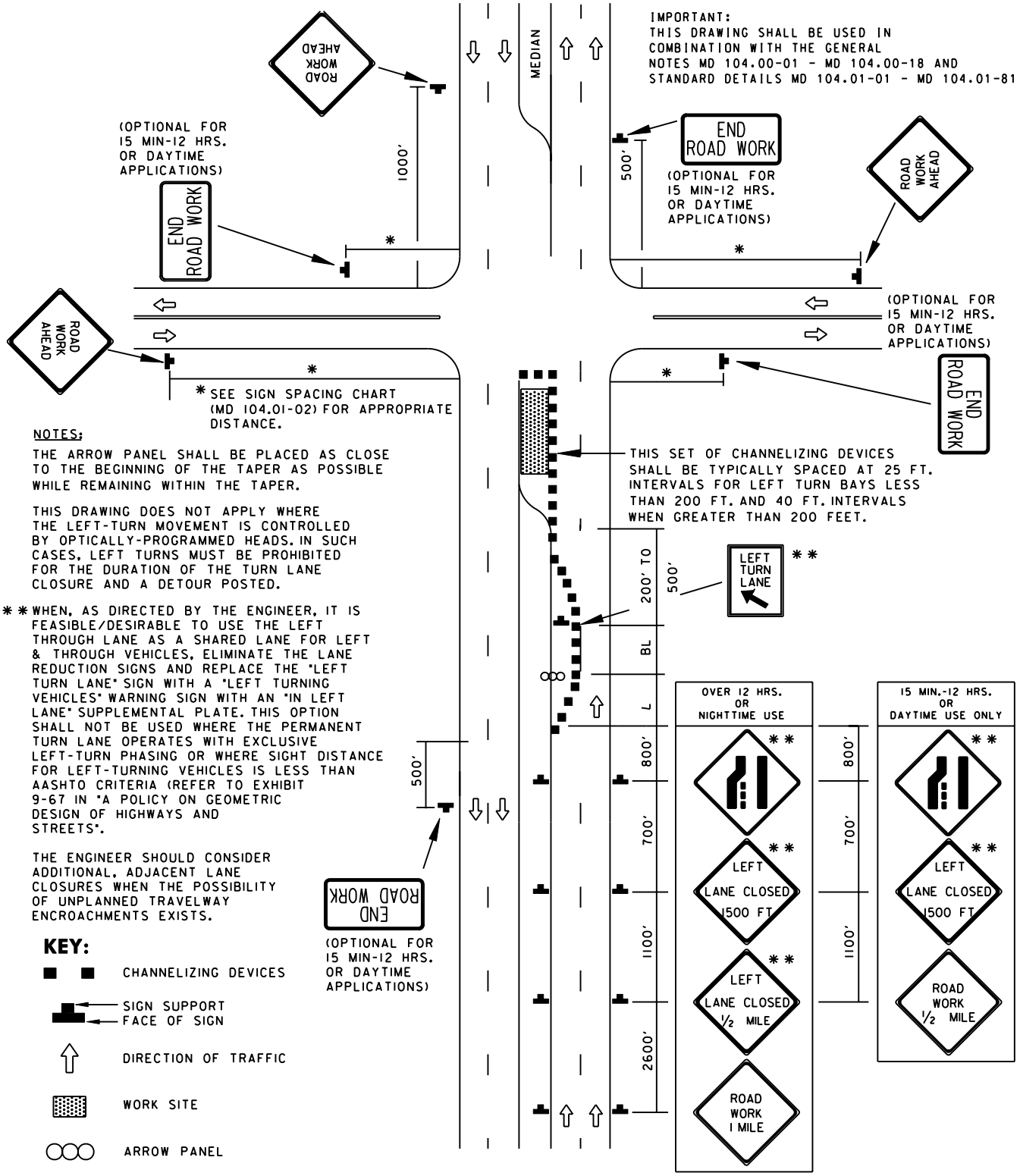
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ROADWAY CLOSURE/DIVIDED UNCON. EQL/LESS THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.04-12

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



NOTES:

THE ARROW PANEL SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE WHILE REMAINING WITHIN THE TAPER.

THIS DRAWING DOES NOT APPLY WHERE THE LEFT-TURN MOVEMENT IS CONTROLLED BY OPTICALLY-PROGRAMMED HEADS. IN SUCH CASES, LEFT TURNS MUST BE PROHIBITED FOR THE DURATION OF THE TURN LANE CLOSURE AND A DETOUR POSTED.

** WHEN, AS DIRECTED BY THE ENGINEER, IT IS FEASIBLE/DESIRABLE TO USE THE LEFT THROUGH LANE AS A SHARED LANE FOR LEFT & THROUGH VEHICLES, ELIMINATE THE LANE REDUCTION SIGNS AND REPLACE THE "LEFT TURN LANE" SIGN WITH A "LEFT TURNING VEHICLES" WARNING SIGN WITH AN "IN LEFT LANE" SUPPLEMENTAL PLATE. THIS OPTION SHALL NOT BE USED WHERE THE PERMANENT TURN LANE OPERATES WITH EXCLUSIVE LEFT-TURN PHASING OR WHERE SIGHT DISTANCE FOR LEFT-TURNING VEHICLES IS LESS THAN AASHTO CRITERIA (REFER TO EXHIBIT 9-67 IN "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS".

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED

DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

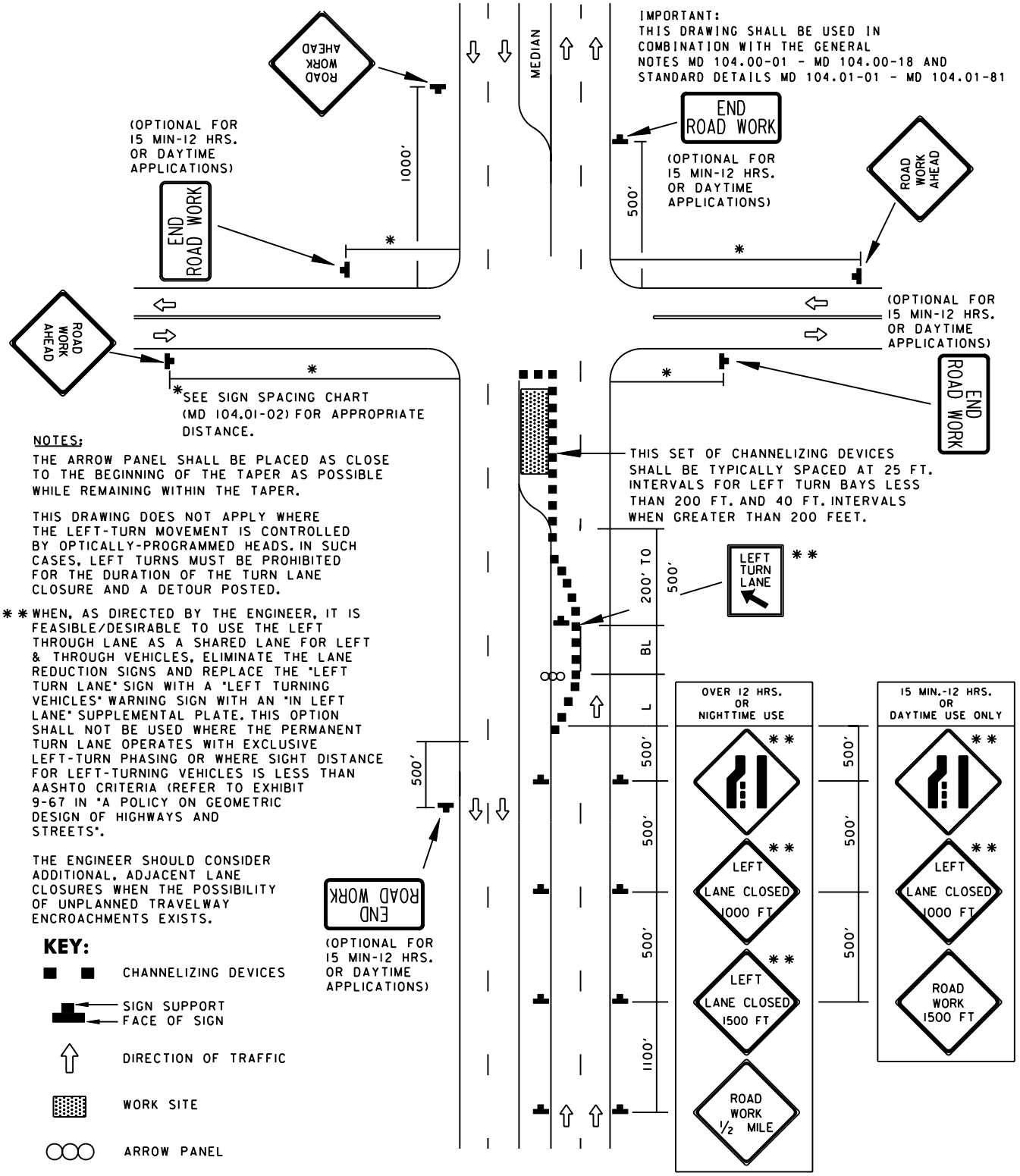
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LEFT-TURN BAY CLOSURE /DIVIDED UNCON. GREATER THAN 40 MPH

STANDARD NO. MD 104.04-13

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



NOTES:

THE ARROW PANEL SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE WHILE REMAINING WITHIN THE TAPER.

THIS DRAWING DOES NOT APPLY WHERE THE LEFT-TURN MOVEMENT IS CONTROLLED BY OPTICALLY-PROGRAMMED HEADS. IN SUCH CASES, LEFT TURNS MUST BE PROHIBITED FOR THE DURATION OF THE TURN LANE CLOSURE AND A DETOUR POSTED.

** WHEN, AS DIRECTED BY THE ENGINEER, IT IS FEASIBLE/DESIRABLE TO USE THE LEFT THROUGH LANE AS A SHARED LANE FOR LEFT & THROUGH VEHICLES, ELIMINATE THE LANE REDUCTION SIGNS AND REPLACE THE "LEFT TURN LANE" SIGN WITH A "LEFT TURNING VEHICLES" WARNING SIGN WITH AN "IN LEFT LANE" SUPPLEMENTAL PLATE. THIS OPTION SHALL NOT BE USED WHERE THE PERMANENT TURN LANE OPERATES WITH EXCLUSIVE LEFT-TURN PHASING OR WHERE SIGHT DISTANCE FOR LEFT-TURNING VEHICLES IS LESS THAN AASHTO CRITERIA (REFER TO EXHIBIT 9-67 IN "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS".

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

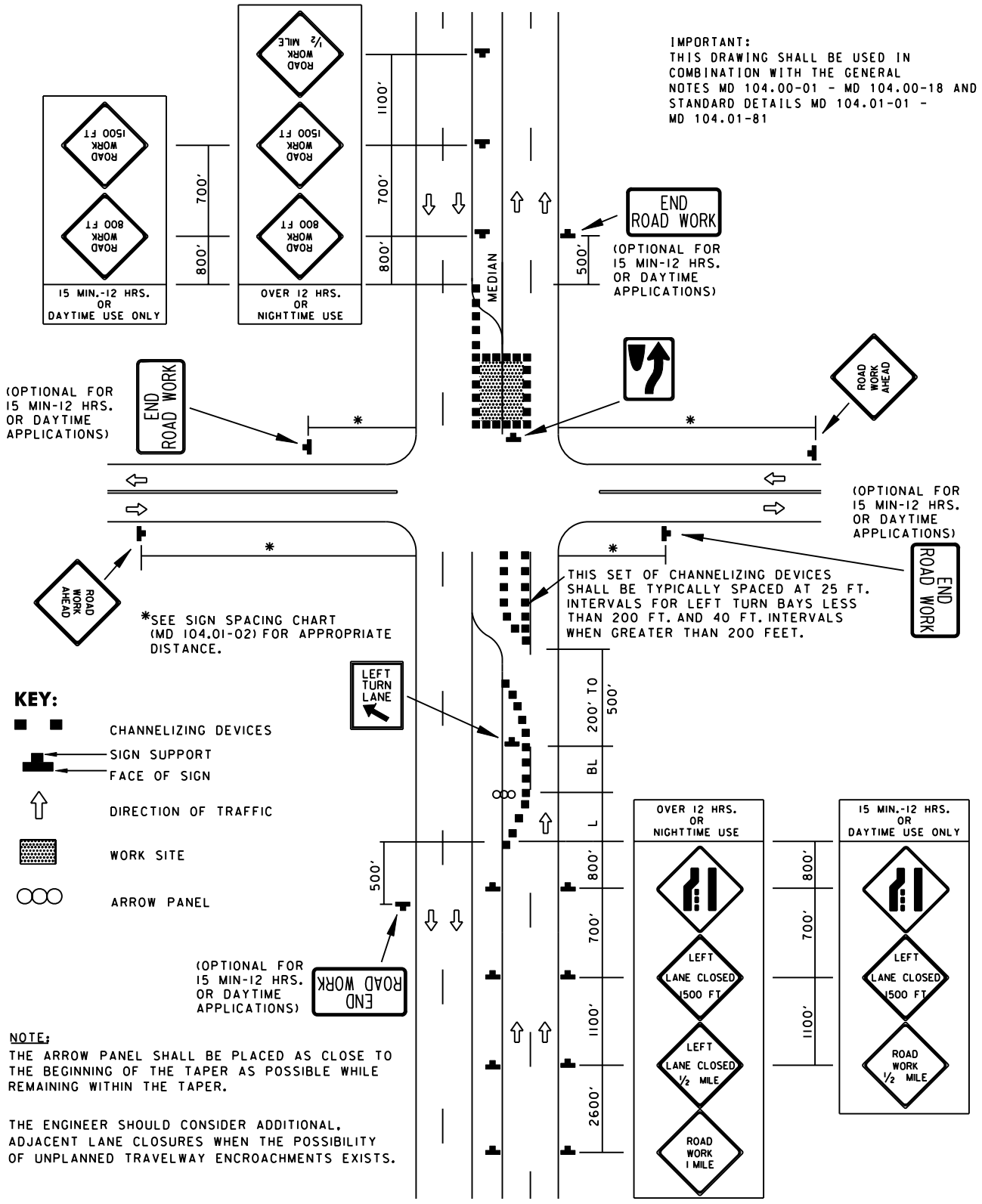
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LEFT–TURN BAY CLOSURE /DIVIDED UNCON. EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.04–14

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



NOTE;
THE ARROW PANEL SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE WHILE REMAINING WITHIN THE TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

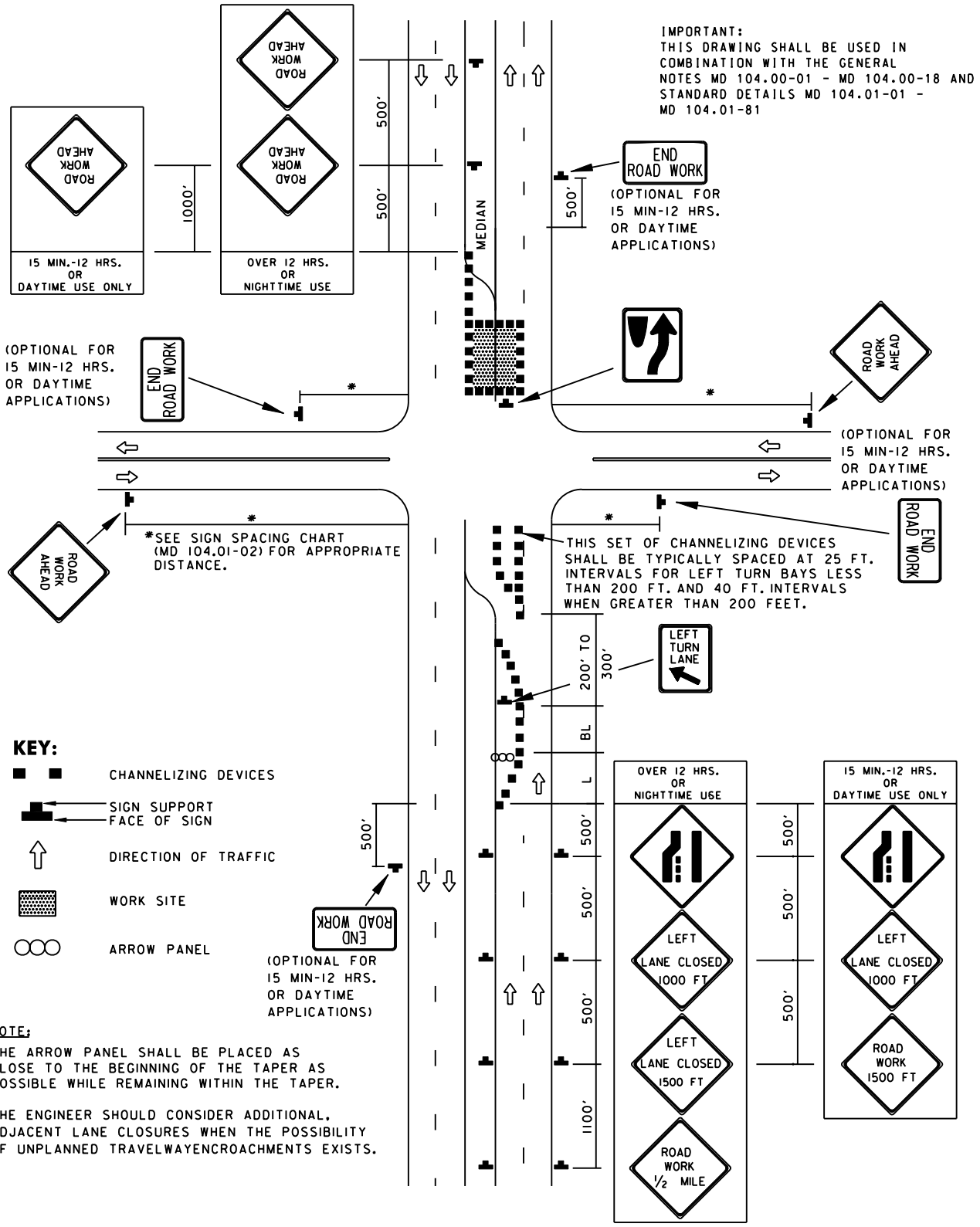
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INTER. (LEFT LANE, TURN BAY) CLOSURE/ DIVIDED UNCON. GREATER THAN 40 MPH

STANDARD NO. MD 104.04-15

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



NOTE:

THE ARROW PANEL SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE WHILE REMAINING WITHIN THE TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAYENCROACHMENTS EXISTS.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED

DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INTER. (LEFT LANE, TURN BAY) CLOSURE/ DIVIDED UNCON. EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.04-16

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

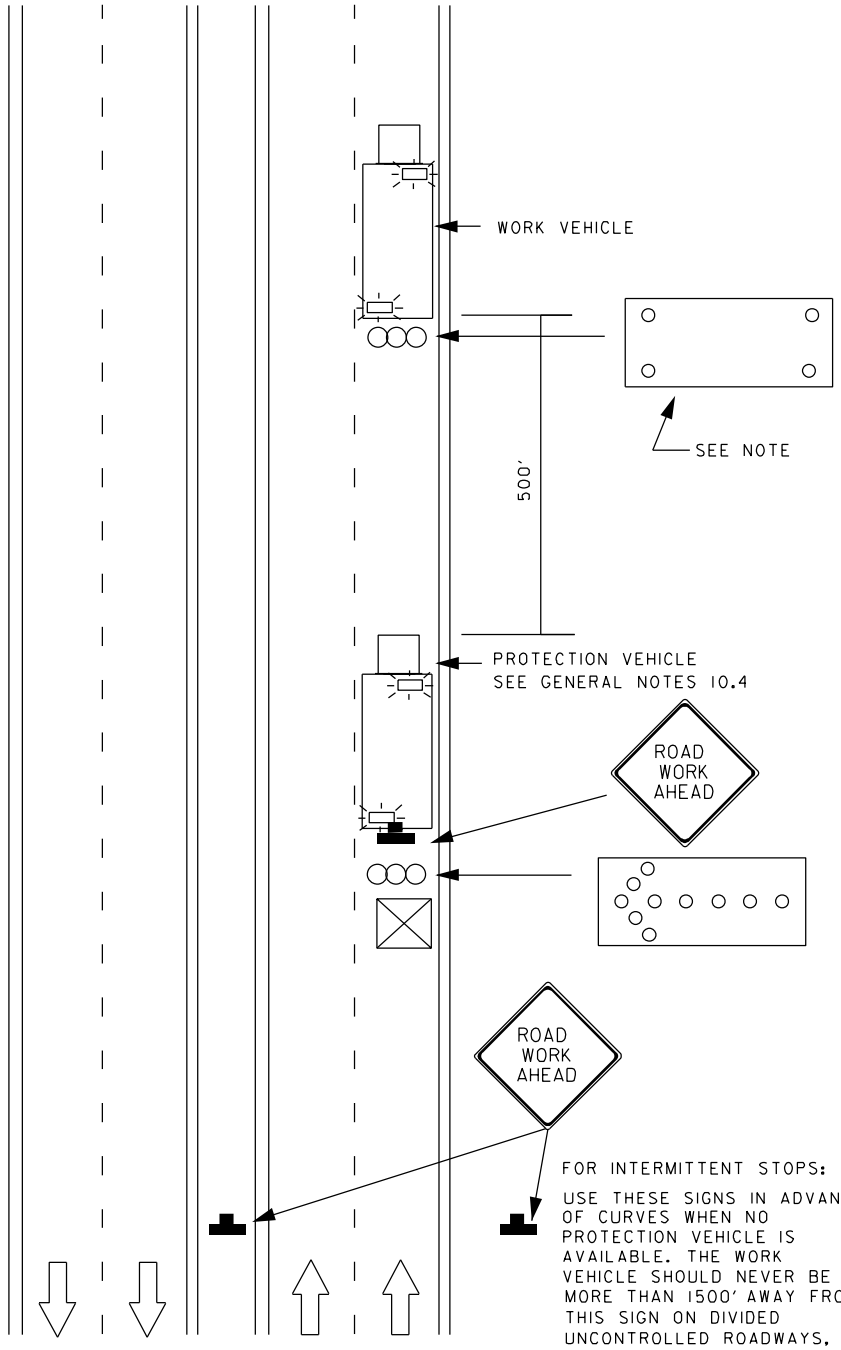
NOTES:

IF THE LEAD WORK VEHICLE IS TRAVELING AT THE POSTED SPEED LIMIT OR WITHIN 15 MPH OF IT, THEN NO BACK UP VEHICLE IS NECESSARY.

IN URBAN AREAS THE DISTANCE MAINTAINED BETWEEN VEHICLES MAY BE DECREASED AS NEEDED.

IF ONLY ONE ARROW PANEL IS AVAILABLE IT SHALL OPERATE IN ARROW MODE. EXCEPT A WORK VEHICLE ON THE SHOULDER NEED ONLY DISPLAY THE ARROW PANEL IN THE "CAUTION" MODE.

WHEN USED, THE PROTECTION VEHICLE MAY BE USED AS A SUBSTITUTE FOR THE WORK VEHICLE WHERE DIRECTED BY THE ENGINEER.



KEY:

- SIGN SUPPORT / SIGN FACE
- ARROW PANEL
- APPROVED VEHICLE SAFETY LIGHT
- DIRECTION OF TRAFFIC
- TRUCK OR TRAILER-TRUCK MOUNTED ATTENUATOR (TMA/TTMA)

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
MOBILE OPERATIONS
DIVIDED UNCON. OR EXP-FREEWAY
ALL SPEEDS/0-15 MIN., AND MOVING SLOW

STANDARD NO. MD 104.04-17

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

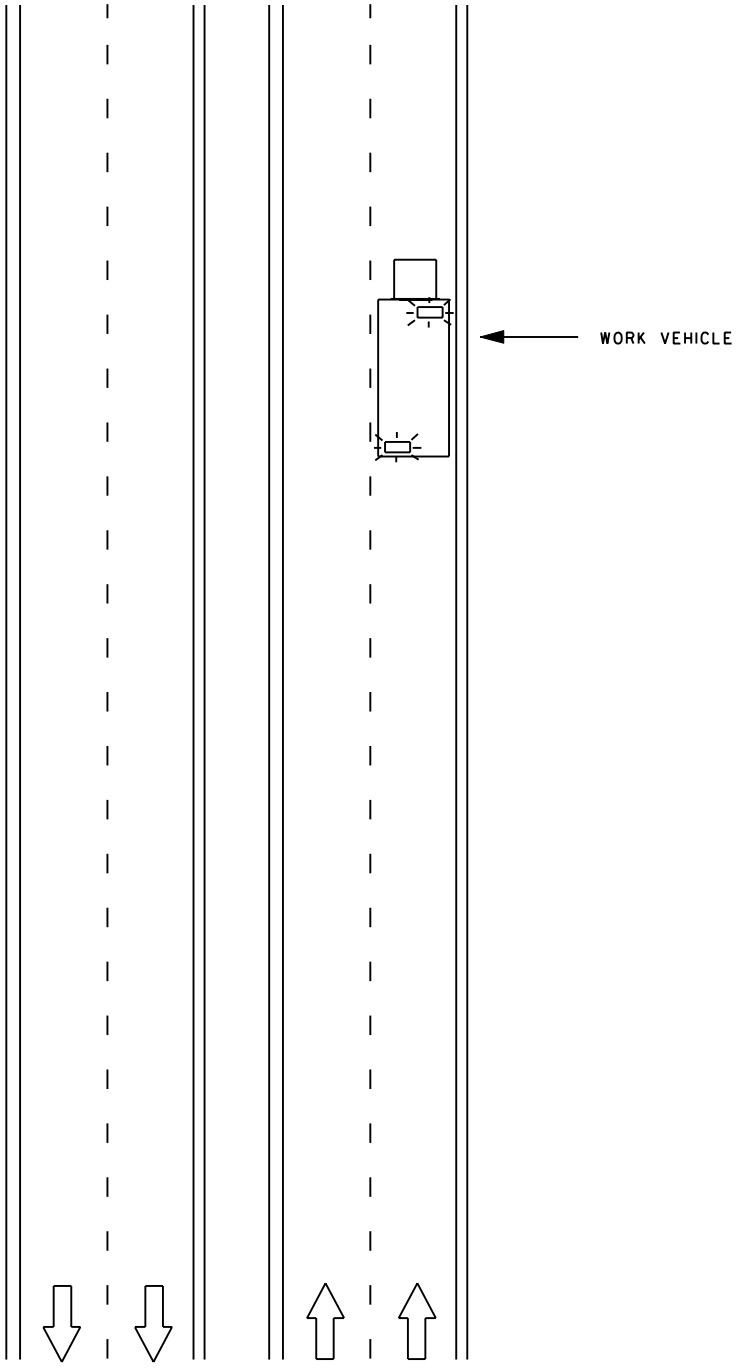
WORK VEHICLE IS TRAVELING AT THE POSTED SPEED LIMIT OR WITHIN 15 MPH OF IT.

VEHICLE SHALL DISPLAY FLASHING HAZARD/PARKING LIGHTS IN FRONT AND REAR.

KEY:

APPROVED VEHICLE SAFETY LIGHT

DIRECTION OF TRAFFIC



SPECIFICATION 104	CATEGORY CODE ITEMS

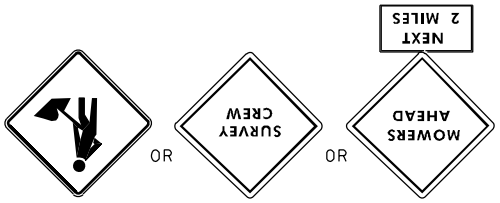
APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
MOBILE OPERATION
DIVIDED UNCON. OR EXP-FREEWAY
ALL SPEEDS/MOVING NORMAL

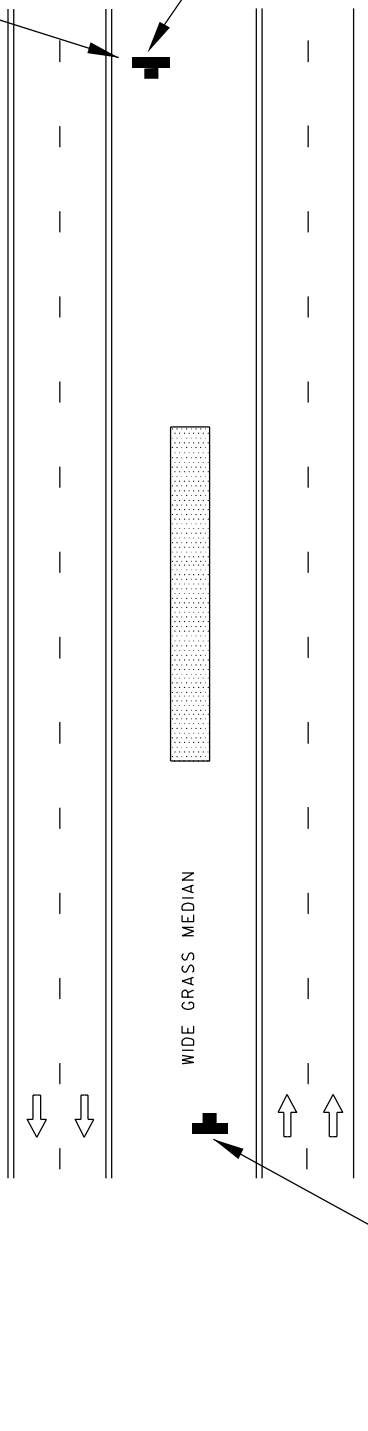
STANDARD NO. MD 104.04-18

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

SEE NOTES



KEY:

- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE

PROTECTION VEHICLE SHALL BE USED IN CONFORMANCE WITH SECTION 10.4 OF THE GENERAL NOTES.

NOTES:

MOWING OPERATIONS

MOWERS SHALL HAVE FLASHING WARNING LIGHTS MOUNTED ON THEM.

THE MOWERS AHEAD SIGN SHOULD BE USED TO WARN OF MOWING CREWS UNLESS MOWER(S) ARE EQUIPPED WITH TWO 360° FLASHING/ROTATING AMBER LIGHTS OR TWO 360° FLASHING DOME LIGHTS, THE DECISION SIGHT DISTANCE IS MET FOR THE RATES OF SPEED SHOWN ON STANDARD NO. MD 104.00.03, AND MOWER(S) WILL NOT BE TRAVELLING IN ANY OF THE FOLLOWING THREE CONDITIONS:

- WITHIN 15 FT. OF THE EDGE LINE OF THE ROADWAY OR ON THE SHOULDER
- IN THE ROADWAY ON A NARROW STRETCH OF ROADWAY OR TO GET AROUND A HIGHWAY STRUCTURE OR APPURTENANCE OR OTHER SUCH STRUCTURE
- ACROSS THE ROADWAY

MOWERS MAY NOT PROCEED MORE THAN 2 MILES AWAY FROM ADVANCE WARNING SIGN(S).

MOWERS WITHIN 15 FT. OF THE EDGE LINE SHALL TRAVEL IN THE SAME DIRECTION AS ADJACENT TRAFFIC.

IF MOWING MACHINE WITHIN MEDIAN IS LOCATED GREATER THAN 15 FT. AWAY FROM EDGE LINE OF ONE ROADWAY, SIGNS FOR THAT ROADWAY ARE UNNECESSARY.

OTHER OPERATIONS

THE SURVEY CREW SIGN SHOULD BE USED TO WARN OF SURVEYING CREWS WORKING IN OR ADJACENT TO THE ROADWAY.

THE WORKERS SYMBOL SIGN SHOULD BE USED TO WARN OF OTHER MOBILE OPERATIONS NOT RELATED TO MOWING OR SURVEYING ACTIVITIES, AND FOR WHICH NO MOBILE TYPICAL APPLICATION CURRENTLY EXISTS. THIS INCLUDES WORK PERFORMED BY INMATE CREWS.

IF SURVEYING OR OTHER MOBILE OPERATION WITHIN MEDIAN IS LOCATED GREATER THAN 15 FT. AWAY FROM EDGE LINE OF ONE ROADWAY (INCLUDING ALL EQUIPMENT AND VEHICLES), SIGNS FOR THAT ROADWAY ARE UNNECESSARY.

NOTES:

SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER. SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE WORK OPERATION
DIVIDED UNCON. OR EXP-FREEWAY
ALL SPEEDS

STANDARD NO. MD 104.04-19

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

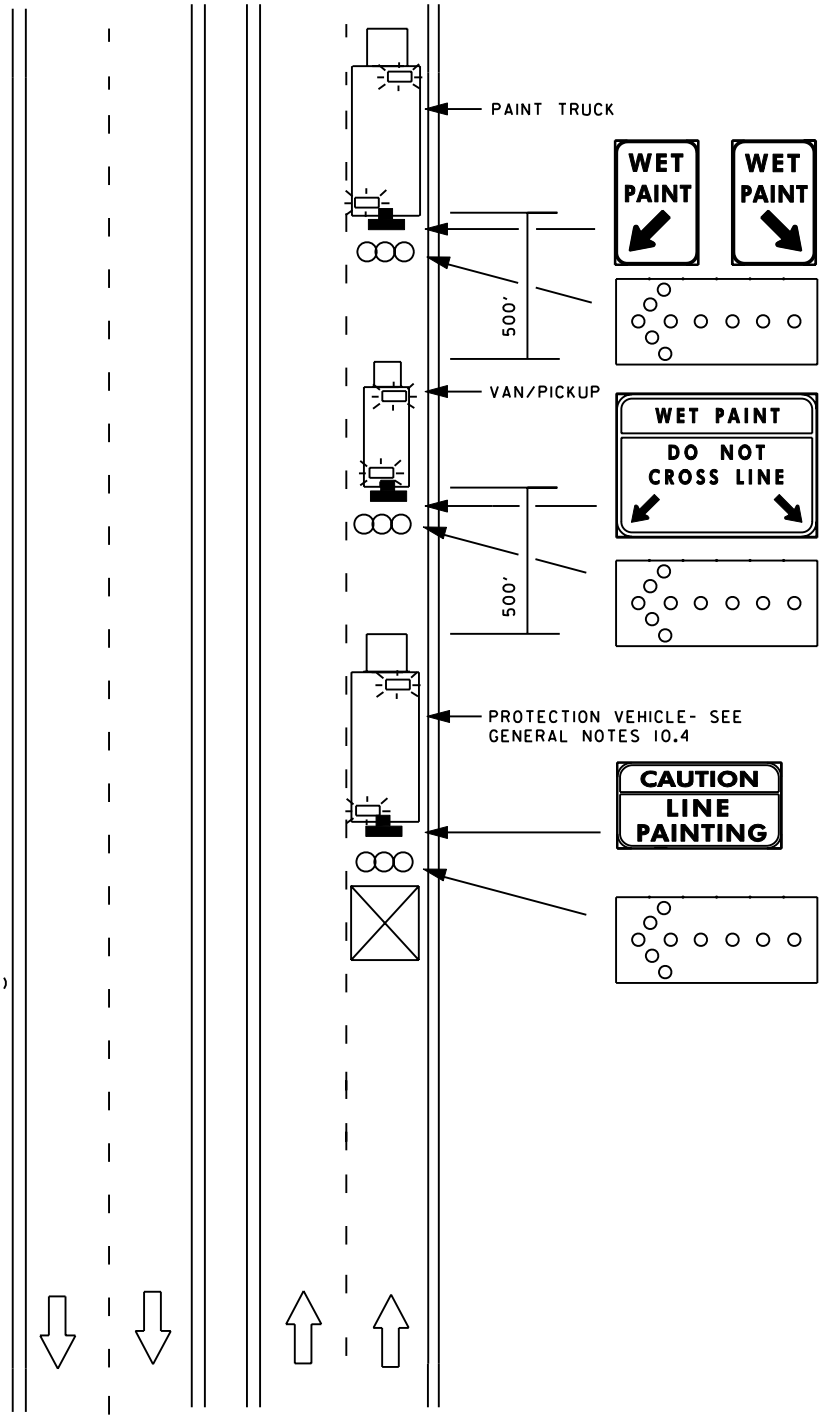
NOTES:

DISTANCES BETWEEN VEHICLES MAY BE INCREASED OR DECREASED DEPENDING ON PAINT DRYING TIME, TERRAIN, LOCAL AREA AND OTHER FACTORS.

CONES MAY BE REQUIRED TO PROTECT WET LINES AT GRADE CROSSINGS, ETC.

KEY:

- SIGN SUPPORT / FACE OF SIGN
- ARROW PANEL
- APPROVED VEHICLE SAFETY LIGHT
- DIRECTION OF TRAFFIC
- TRUCK OR TRAILER-TRUCK MOUNTED ATTENUATOR (TMA/TTMA)



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

	APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL		8-20-03	APPROVAL	9-23-03
REVISED		8-11-10	REVISED	7-29-10
REVISED			REVISED	
REVISED			REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE MARKING OPERATION/ DIVIDED UNCON. ALL SPEEDS

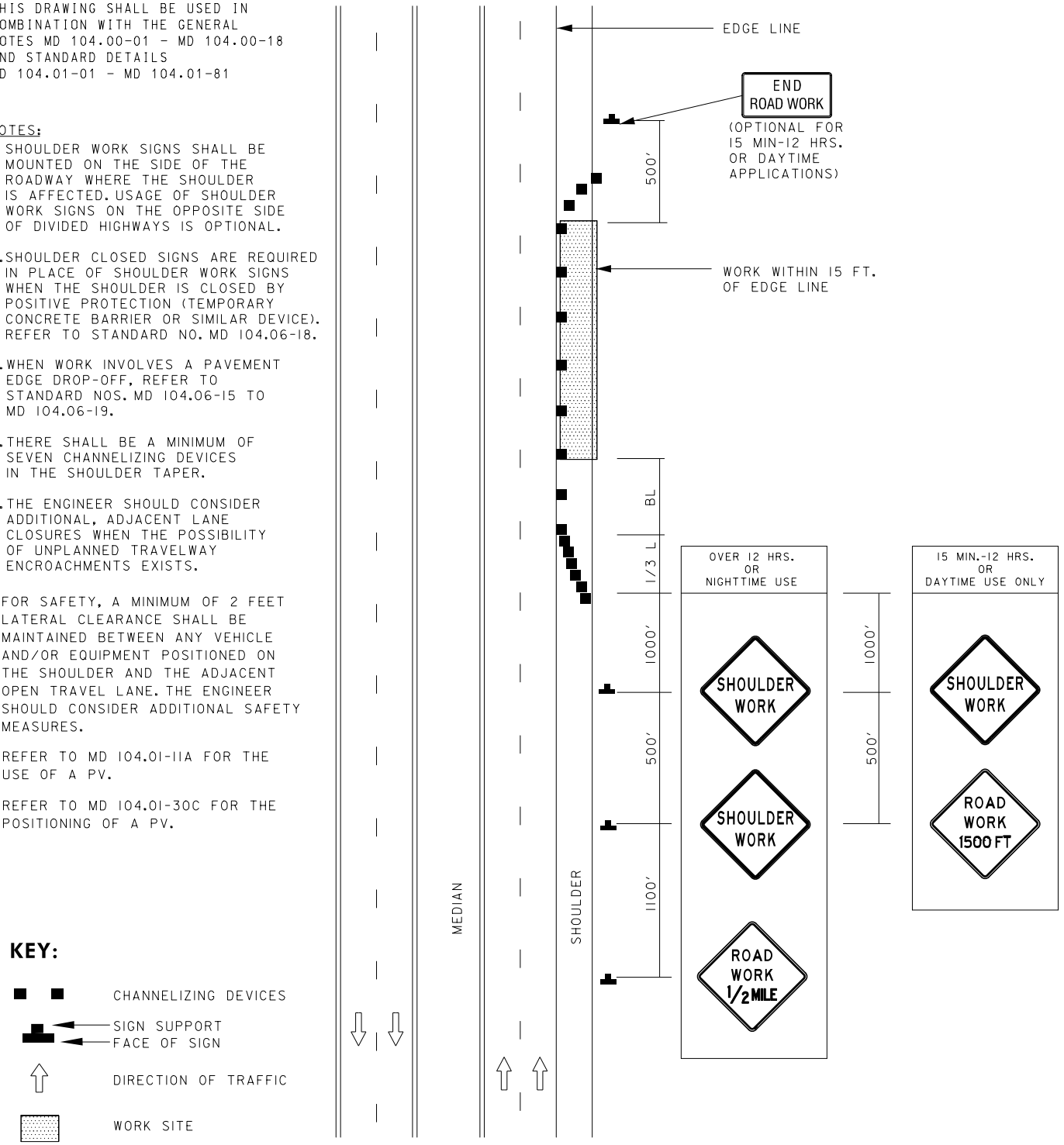
STANDARD NO. MD 104.04-20

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

1. SHOULDER WORK SIGNS SHALL BE MOUNTED ON THE SIDE OF THE ROADWAY WHERE THE SHOULDER IS AFFECTED. USAGE OF SHOULDER WORK SIGNS ON THE OPPOSITE SIDE OF DIVIDED HIGHWAYS IS OPTIONAL.
2. SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION (TEMPORARY CONCRETE BARRIER OR SIMILAR DEVICE). REFER TO STANDARD NO. MD 104.06-18.
3. WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-15 TO MD 104.06-19.
4. THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.
5. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.
6. FOR SAFETY, A MINIMUM OF 2 FEET LATERAL CLEARANCE SHALL BE MAINTAINED BETWEEN ANY VEHICLE AND/OR EQUIPMENT POSITIONED ON THE SHOULDER AND THE ADJACENT OPEN TRAVEL LANE. THE ENGINEER SHOULD CONSIDER ADDITIONAL SAFETY MEASURES.
7. REFER TO MD 104.01-11A FOR THE USE OF A PV.
8. REFER TO MD 104.01-30C FOR THE POSITIONING OF A PV.



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED	2-19-24	REVISED	11-16-23
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SHOULDER WORK /DIVIDED CONTROLLED (EXP-FWY) GREATER THAN 40 MPH

STANDARD NO. MD 104.05-01

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

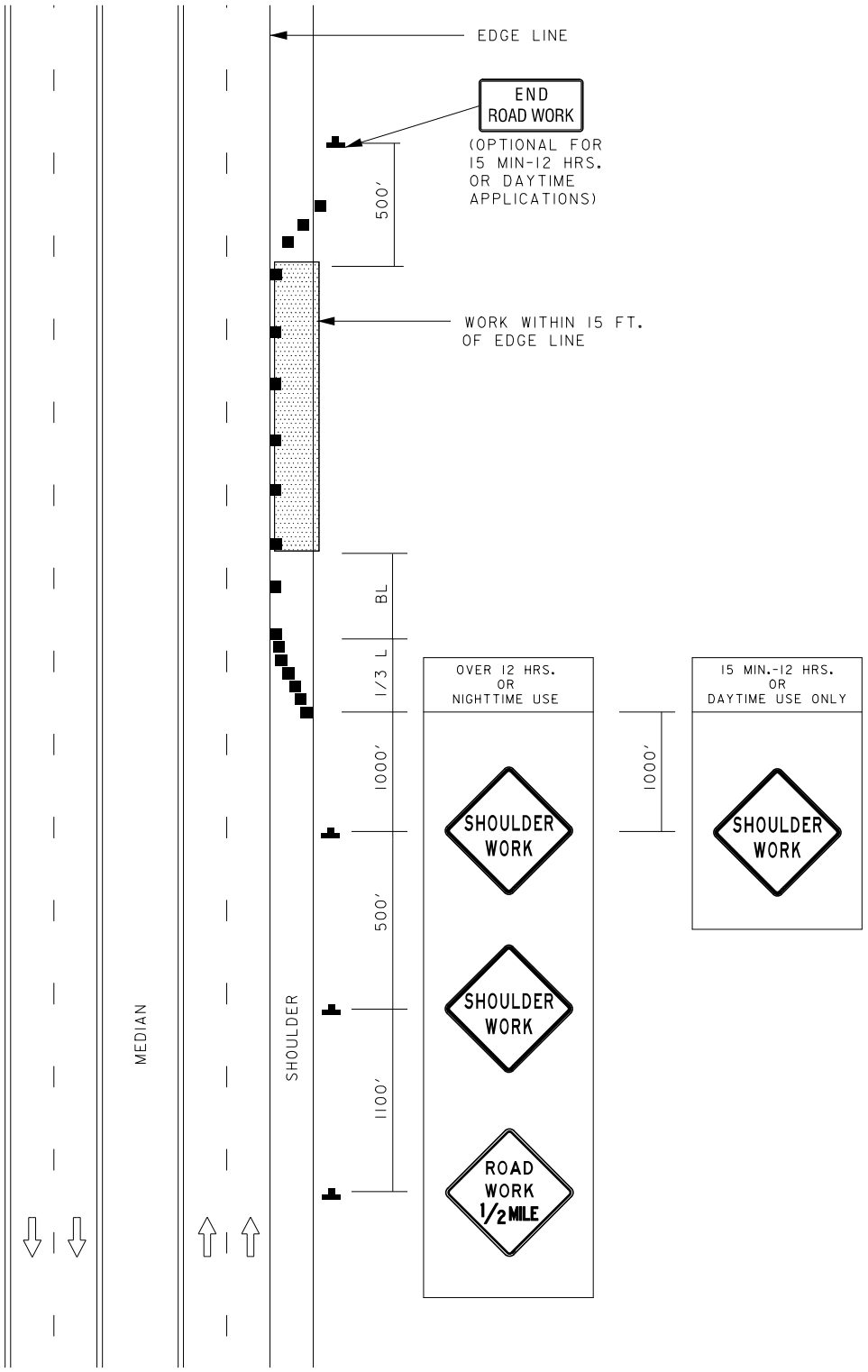
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

1. SHOULDER WORK SIGNS SHALL BE MOUNTED ON THE SIDE OF THE ROADWAY WHERE THE SHOULDER IS AFFECTED. USAGE OF SHOULDER WORK SIGNS ON THE OPPOSITE SIDE OF DIVIDED HIGHWAYS IS OPTIONAL.
2. SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION (TEMPORARY CONCRETE BARRIER OR SIMILAR DEVICE). REFER TO STANDARD NO. MD 104.06-18.
3. WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-15 TO MD 104.06-19.
4. THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.
5. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.
6. FOR SAFETY, A MINIMUM OF 2 FEET LATERAL CLEARANCE SHALL BE MAINTAINED BETWEEN ANY VEHICLE AND/OR EQUIPMENT POSITIONED ON THE SHOULDER AND THE ADJACENT OPEN TRAVEL LANE. THE ENGINEER SHOULD CONSIDER ADDITIONAL SAFETY MEASURES.
7. REFER TO MD 104.01-11A FOR THE USE OF A PV.
8. REFER TO MD 104.01-30B FOR THE POSITIONING OF A PV.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED: Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-14-10
REVISED	2-19-24	REVISED	11-16-23
REVISED		REVISED	

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SHOULDER WORK/DIVIDED CONTROLLED (EXP-FWY) EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.05-02

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

THIS TYPICAL ALSO APPLIES TO DIVIDED UNCONTROLLED HIGHWAYS EXCEPT AS OTHERWISE STATED IN THE GENERAL NOTES.

THE "BEGIN AND END SHOULDER USE" SIGNS SHOULD BE OMITTED WHEN THE SHOULDER CANNOT BE DIFFERENTIATED FROM THE NORMAL TRAVEL PATH.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

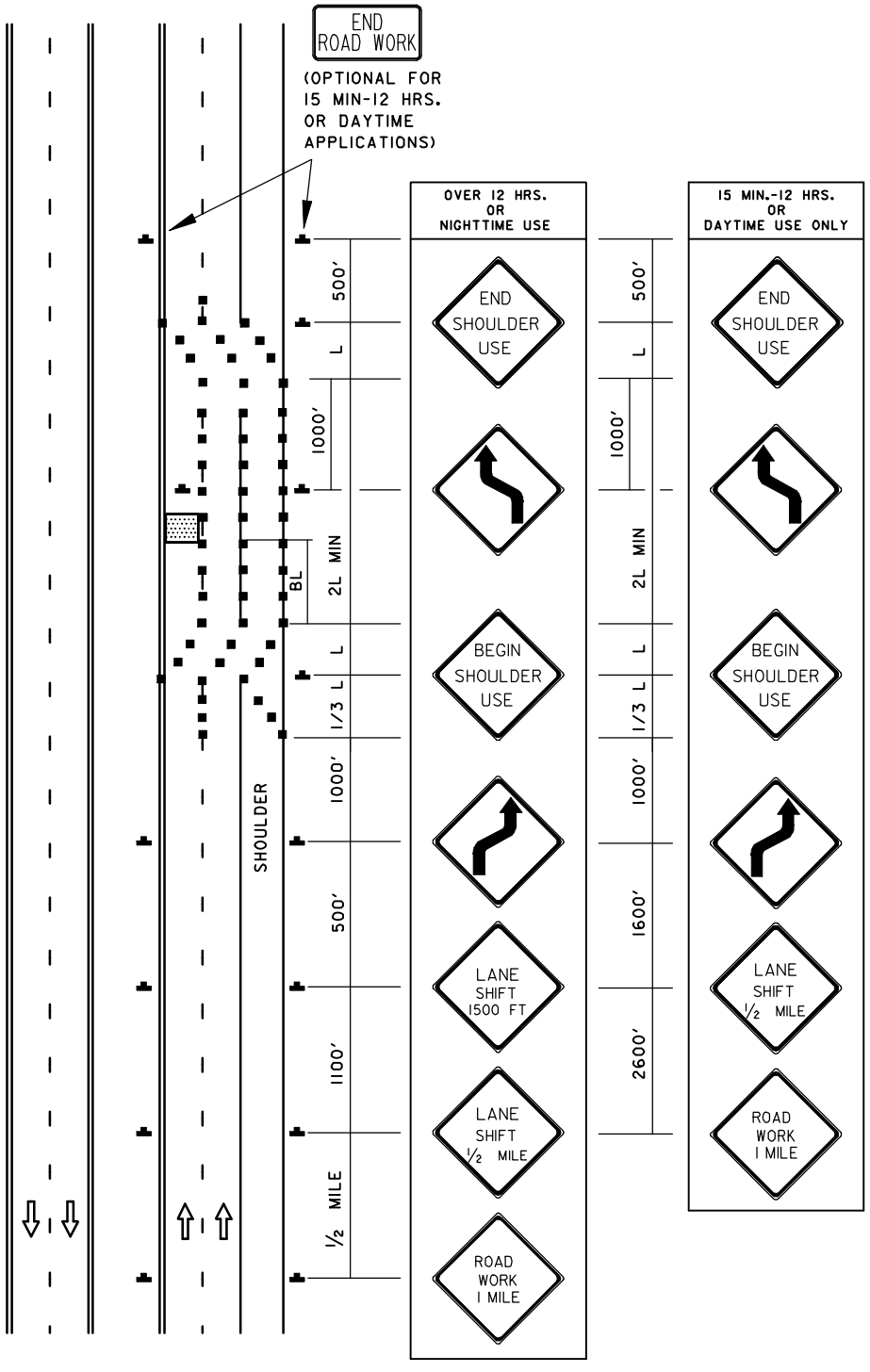
REFER TO MD 104.01-27 FOR GUIDANCE ON PAVEMENT MARKINGS THROUGH LANE SHIFTS.

- THIS TYPICAL SHALL BE USED FOR ANY LANE SHIFT WHICH SATISFIES EITHER CONDITION 'A' OR 'B':
  - ▶ CONDITION 'A': LANE SHIFT IS "ABRUPT" - SHIFT HAS A TAPER LENGTH LESS THAN THE VALUE SPECIFIED IN THE TAPER LENGTH CRITERIA TABLE (REFER TO MD 104.01-80)
  - ▶ CONDITION 'B': PREVAILING SPEEDS CANNOT BE MAINTAINED THROUGH THE SHIFT.
- FOR LANE SHIFTS WHICH DO NOT SATISFY ABOVE CONDITIONS:
  - ▶ DELETE "REVERSE CURVE" WARNING SIGNS, AND
  - ▶ REPLACE "LANE SHIFT" SIGNS WITH "ROAD WORK XXX" SIGNS OR OTHER APPROPRIATE SIGNS AS SHOWN IN TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

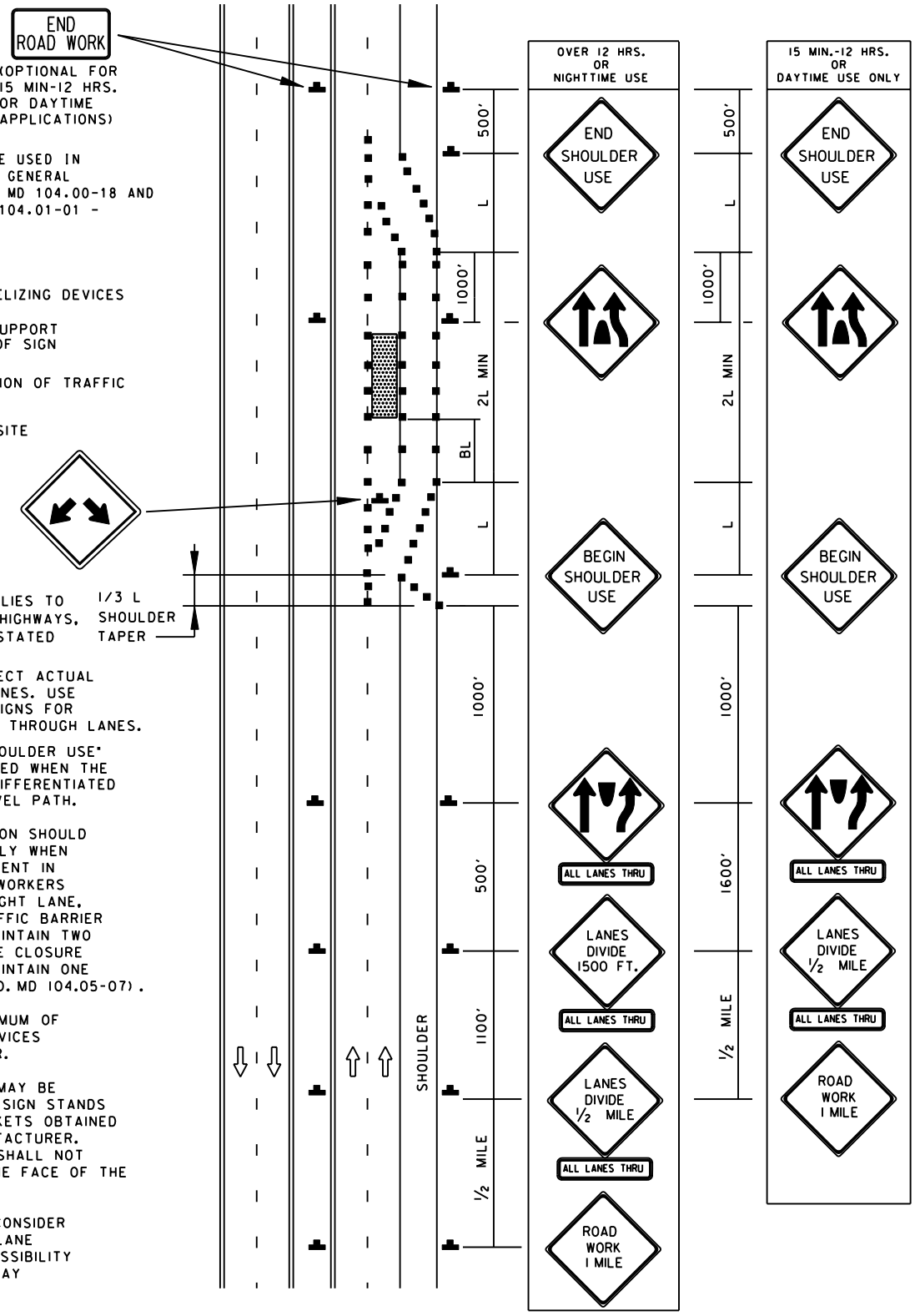
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ROADWAY SHIFT/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-03

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE

NOTES:

THIS TYPICAL ALSO APPLIES TO DIVIDED UNCONTROLLED HIGHWAYS, EXCEPT AS OTHERWISE STATED IN GENERAL NOTES.

SYMBOL SIGNS TO REFLECT ACTUAL NUMBER OF THROUGH LANES. USE RECTANGULAR SHAPED SIGNS FOR THREE OR MORE DIVIDED THROUGH LANES.

THE "BEGIN AND END SHOULDER USE" SIGNS SHOULD BE OMITTED WHEN THE SHOULDER CANNOT BE DIFFERENTIATED FROM THE NORMAL TRAVEL PATH.

THIS TYPICAL APPLICATION SHOULD GENERALLY BE USED ONLY WHEN WORKERS ARE NOT PRESENT IN THE RIGHT LANE. WHEN WORKERS ARE PRESENT IN THE RIGHT LANE, EITHER TEMPORARY TRAFFIC BARRIER SHOULD BE USED TO MAINTAIN TWO LANES OR A RIGHT LANE CLOSURE SHOULD BE USED TO MAINTAIN ONE LANE (SEE STANDARD NO. MD 104.05-07).

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER. SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

SPECIFICATION	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LANES DIVIDE/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-04

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:
THIS TYPICAL ALSO APPLIES TO DIVIDED UNCONTROLLED HIGHWAYS, EXCEPT AS OTHERWISE STATED IN GENERAL NOTES.

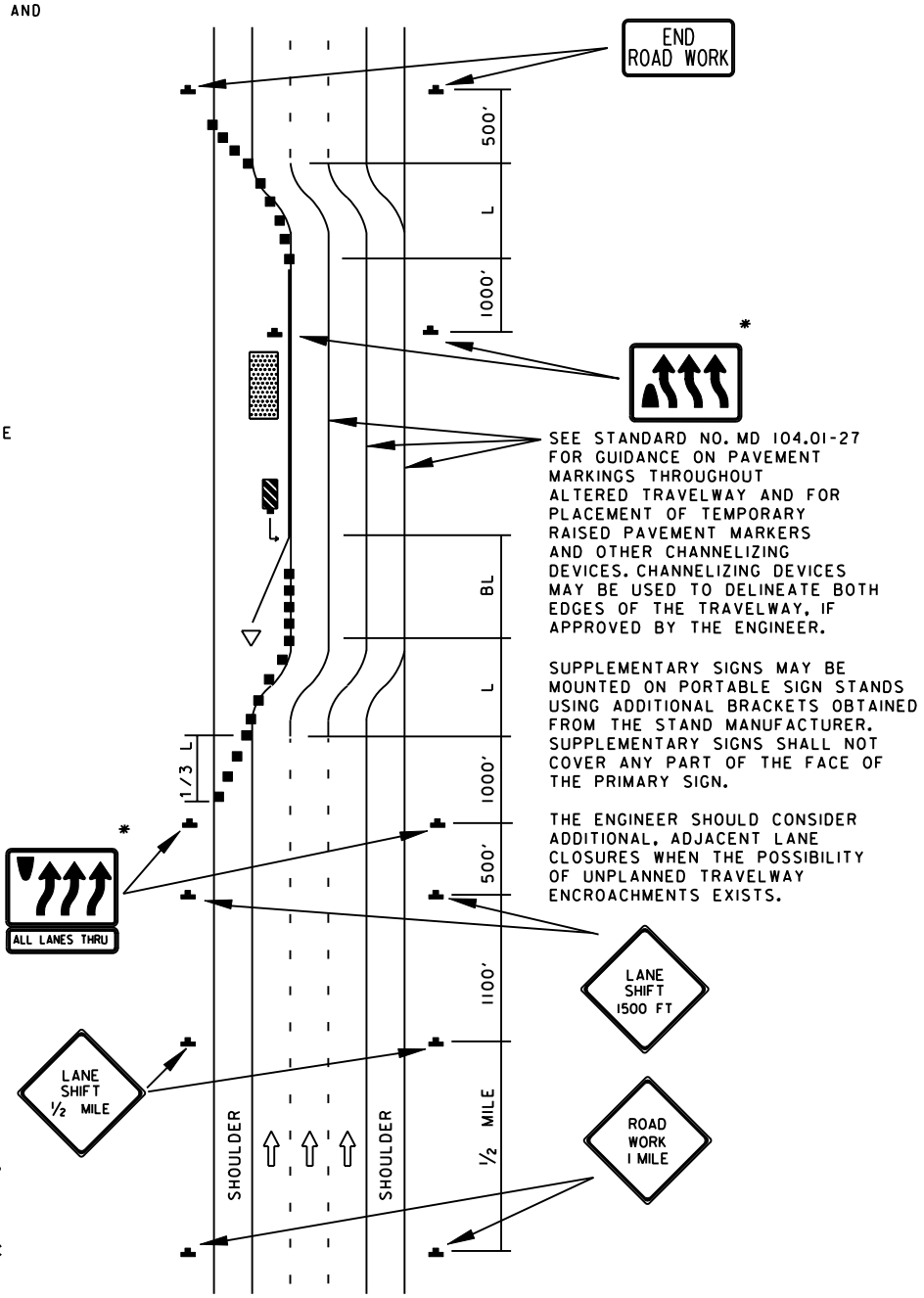
SYMBOL SIGNS TO REFLECT ACTUAL NUMBER OF THROUGH LANES.

*WHEN LANES WILL NOT BE DIVIDED IN SUBSEQUENT WORK PHASES, USE THE W 1-4(R/L) SIGNS IN LIEU OF SIGNS SHOWN WITH ASTERISK (*).

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

REFER TO MD 104.01-27 FOR GUIDANCE ON PAVEMENT MARKINGS THROUGH LANE SHIFTS.

- THIS TYPICAL SHALL BE USED FOR ANY LANE SHIFT WHICH SATISFIES EITHER CONDITION 'A' OR 'B':
  - ▶ CONDITION 'A': LANE SHIFT IS "ABRUPT" - SHIFT HAS A TAPER LENGTH LESS THAN THE VALUE SPECIFIED IN THE TAPER LENGTH CRITERIA TABLE REFER TO MD 104.01-80
  - ▶ CONDITION 'B': PREVAILING SPEEDS CANNOT BE MAINTAINED THROUGH THE SHIFT.
- FOR LANE SHIFTS WHICH DO NOT SATISFY ABOVE CONDITIONS:
  - ▶ DELETE "REVERSE CURVE" WARNING SIGNS, AND
  - ▶ REPLACE "LANE SHIFT" SIGNS WITH "ROAD WORK XXX" SIGNS OR OTHER APPROPRIATE SIGNS AS SHOWN IN TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS.



SEE STANDARD NO. MD 104.01-27 FOR GUIDANCE ON PAVEMENT MARKINGS THROUGHOUT ALTERED TRAVELWAY AND FOR PLACEMENT OF TEMPORARY RAISED PAVEMENT MARKERS AND OTHER CHANNELIZING DEVICES. CHANNELIZING DEVICES MAY BE USED TO DELINEATE BOTH EDGES OF THE TRAVELWAY, IF APPROVED BY THE ENGINEER.

SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER. SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- APPROVED BARRIER
- CRASH CUSHIONS
- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- OBJECT MARKER

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LANE SHIFT/EXP-FREEWAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.05-05

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:
THIS TYPICAL ALSO APPLIES TO DIVIDED UNCONTROLLED HIGHWAYS, EXCEPT AS OTHERWISE STATED IN GENERAL NOTES.

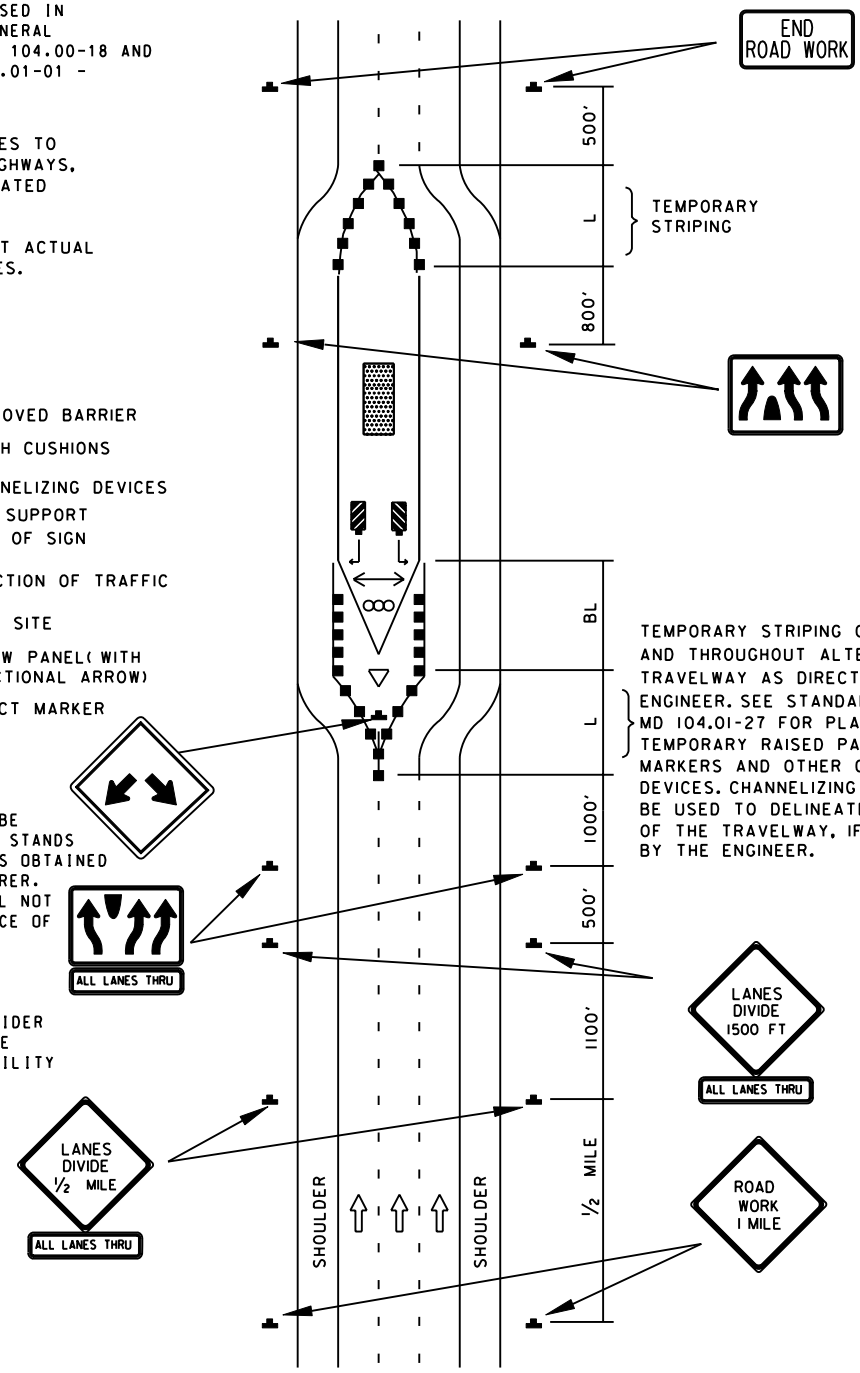
SYMBOL SIGNS TO REFLECT ACTUAL NUMBER OF THROUGH LANES.

KEY:

- APPROVED BARRIER
- CRASH CUSHIONS
- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL(WITH DIRECTIONAL ARROW)
- OBJECT MARKER

SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER. SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



TEMPORARY STRIPING ON APPROACH AND THROUGHOUT ALTERED TRAVELWAY AS DIRECTED BY THE ENGINEER. SEE STANDARD NO. MD 104.01-27 FOR PLACEMENT OF TEMPORARY RAISED PAVEMENT MARKERS AND OTHER CHANNELIZING DEVICES. CHANNELIZING DEVICES MAY BE USED TO DELINEATE BOTH EDGES OF THE TRAVELWAY, IF APPROVED BY THE ENGINEER.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LANES DIVIDE /EXP-FREEWAY / GREATER THAN 40 MPH / OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.05-06

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

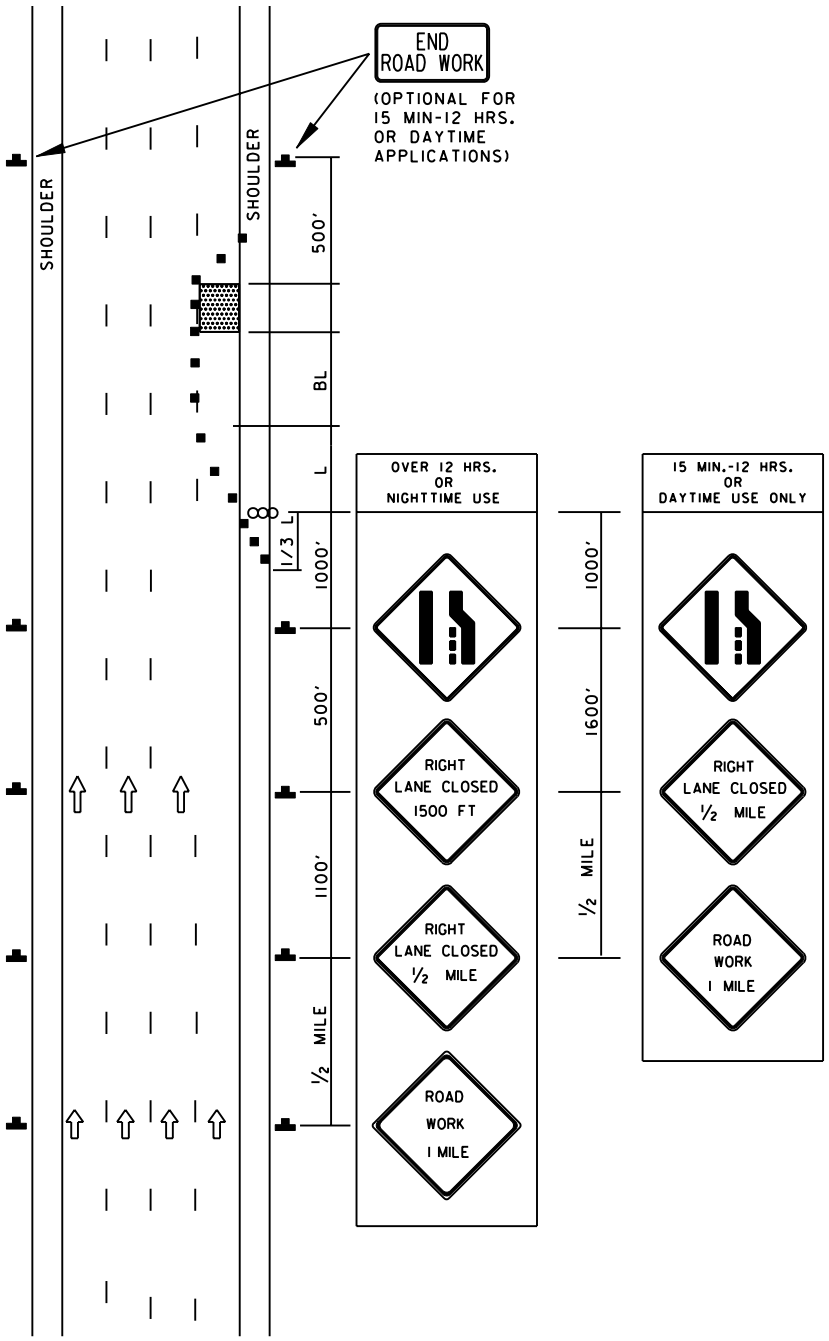
NOTE:

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

RIGHT LANE CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-07

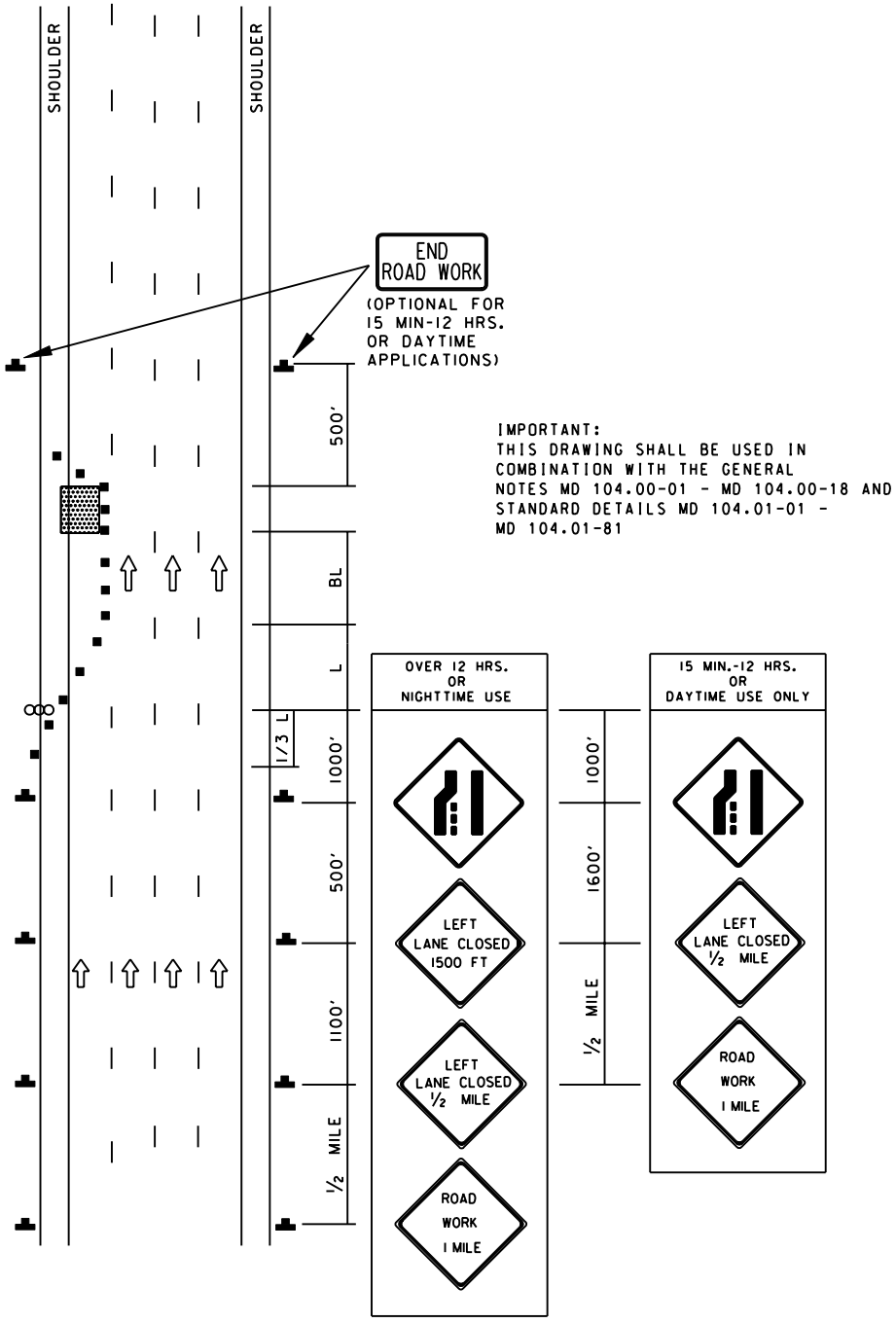
TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTE:
THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

	APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL		8-20-03	APPROVAL	9-23-03
REVISED		8-11-10	REVISED	10-5-10
REVISED			REVISED	
REVISED			REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LEFT LANE CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-08

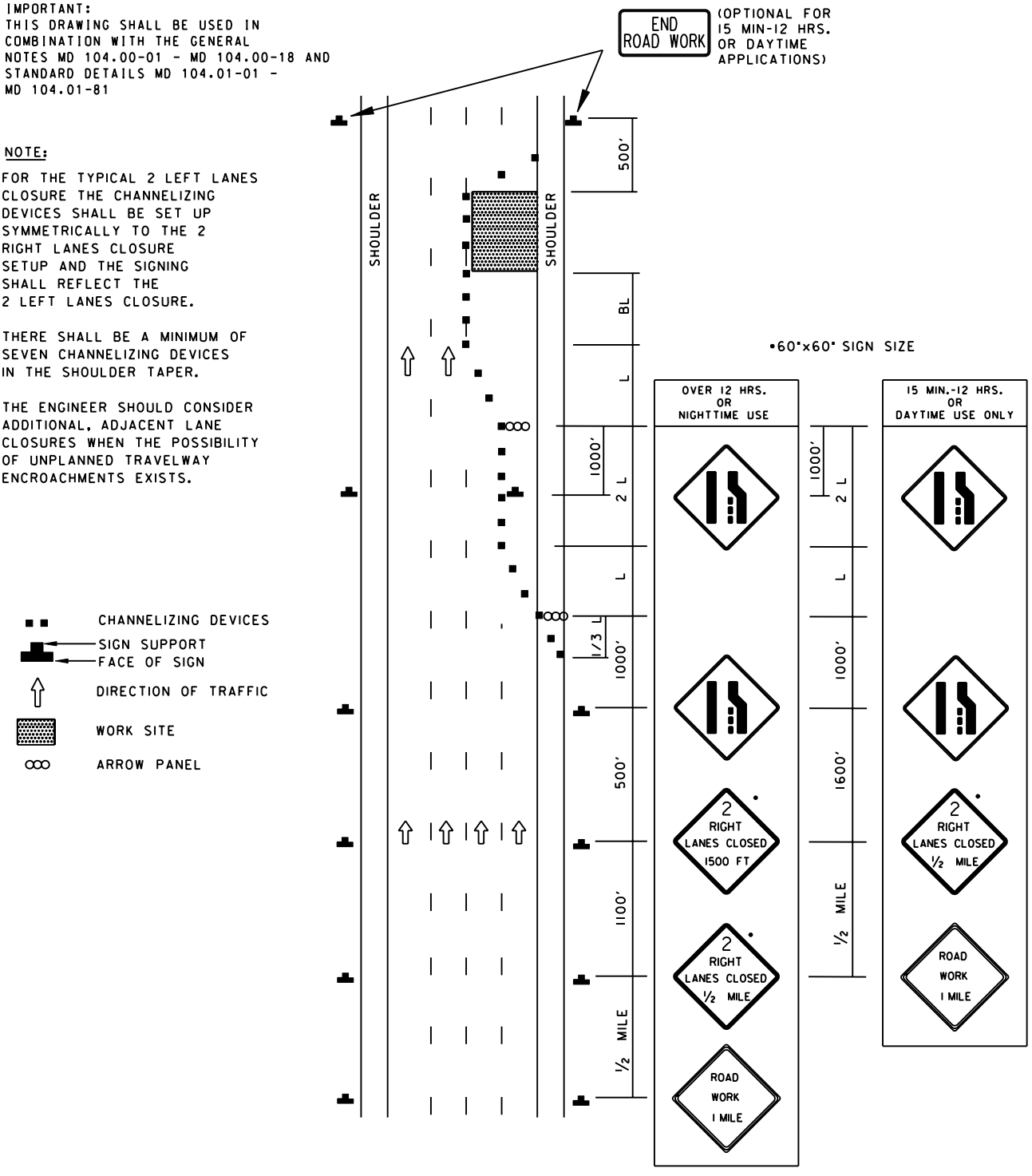
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:

FOR THE TYPICAL 2 LEFT LANES CLOSURE THE CHANNELIZING DEVICES SHALL BE SET UP SYMMETRICALLY TO THE 2 RIGHT LANES CLOSURE SETUP AND THE SIGNING SHALL REFLECT THE 2 LEFT LANES CLOSURE.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	04-11-07	REVISED	
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

2 RIGHT (LEFT) LANES CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-09

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

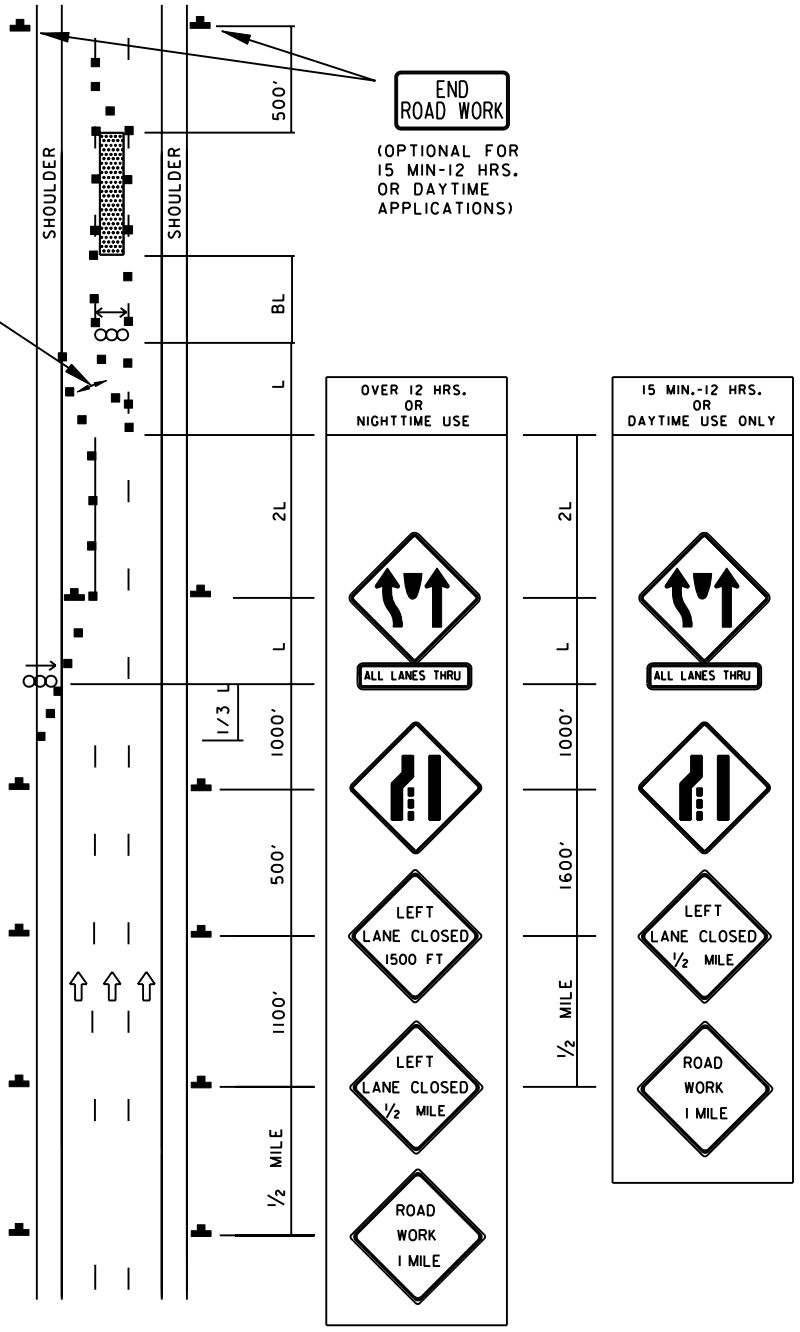
NOTE:

THIS TYPICAL APPLICATION SHOULD GENERALLY BE USED ONLY WHEN WORKERS ARE NOT PRESENT IN THE CENTER LANE. WHEN WORKERS ARE PRESENT IN THE CENTER LANE, EITHER TEMPORARY TRAFFIC BARRIER OR A TWO-LANE CLOSURE SHOULD BE USED TO CLOSE THE CENTER LANE. (SEE STANDARD NO. MD 104.05-09)

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER. SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL (WITH DIRECTIONAL ARROW)

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

	APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL		8-20-03	APPROVAL	9-23-03
REVISED		8-11-10	REVISED	10-5-10
REVISED			REVISED	
REVISED			REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

CENTER LANE CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-10

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:

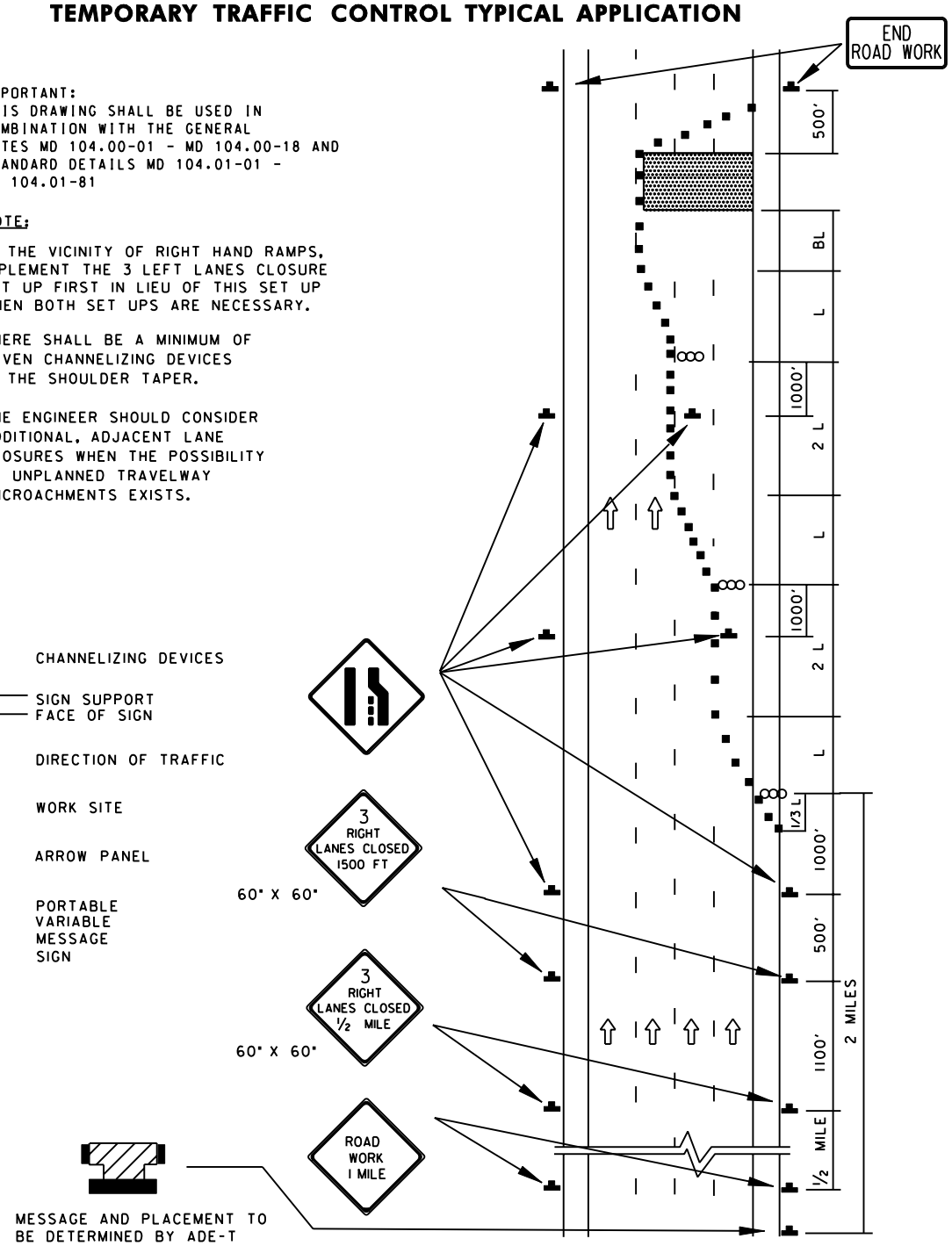
IN THE VICINITY OF RIGHT HAND RAMPS, IMPLEMENT THE 3 LEFT LANES CLOSURE SET UP FIRST IN LIEU OF THIS SET UP WHEN BOTH SET UPS ARE NECESSARY.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL
- PORTABLE VARIABLE MESSAGE SIGN



SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

3 RIGHT LANES CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.05-11

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

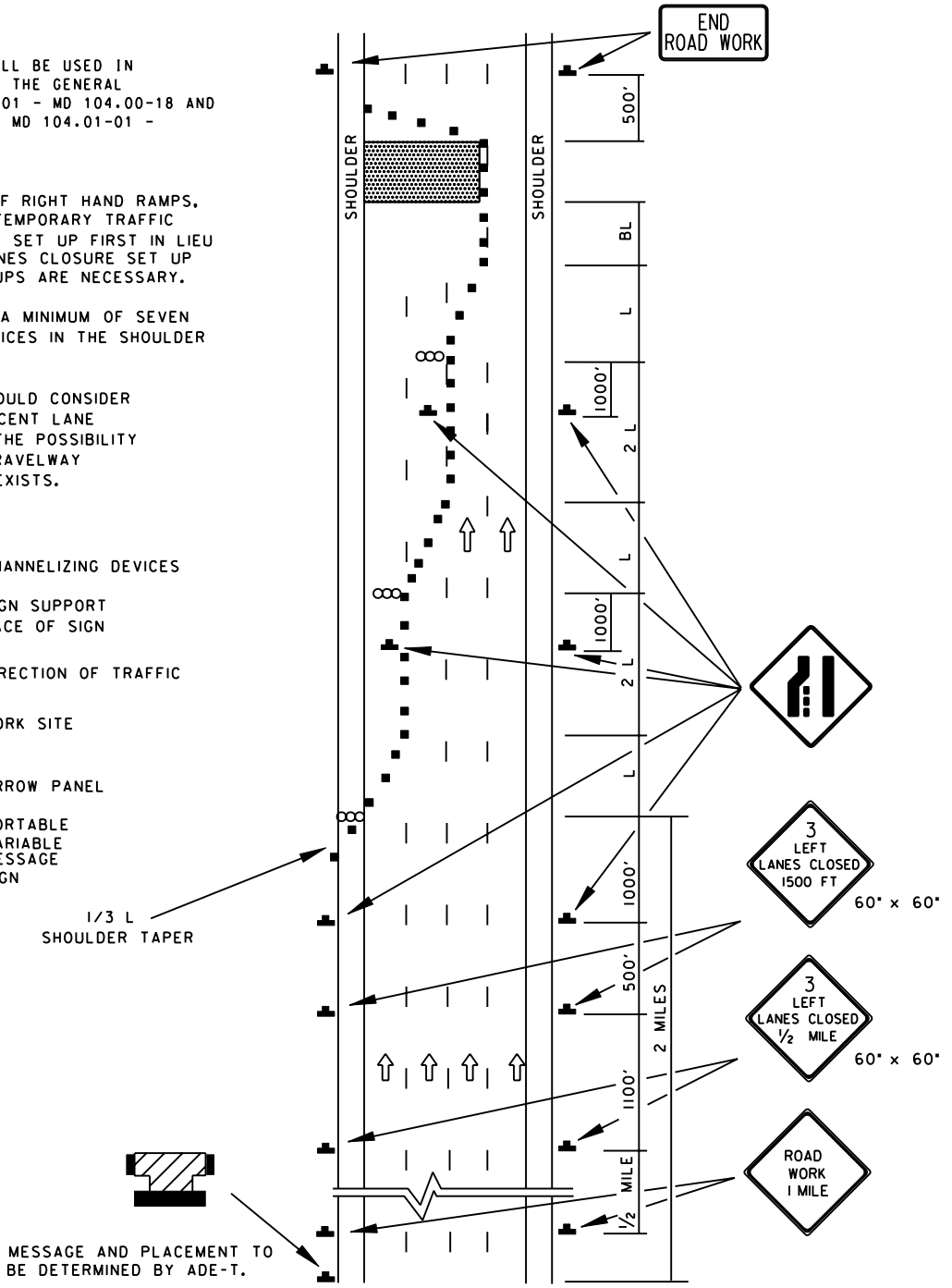
NOTE:
IN THE VICINITY OF RIGHT HAND RAMPS, IMPLEMENT THIS TEMPORARY TRAFFIC CONTROL CLOSURE SET UP FIRST IN LIEU OF THE RIGHT LANES CLOSURE SET UP WHEN BOTH SET UPS ARE NECESSARY.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL
- PORTABLE VARIABLE MESSAGE SIGN



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

3 LEFT LANES CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.05-12

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

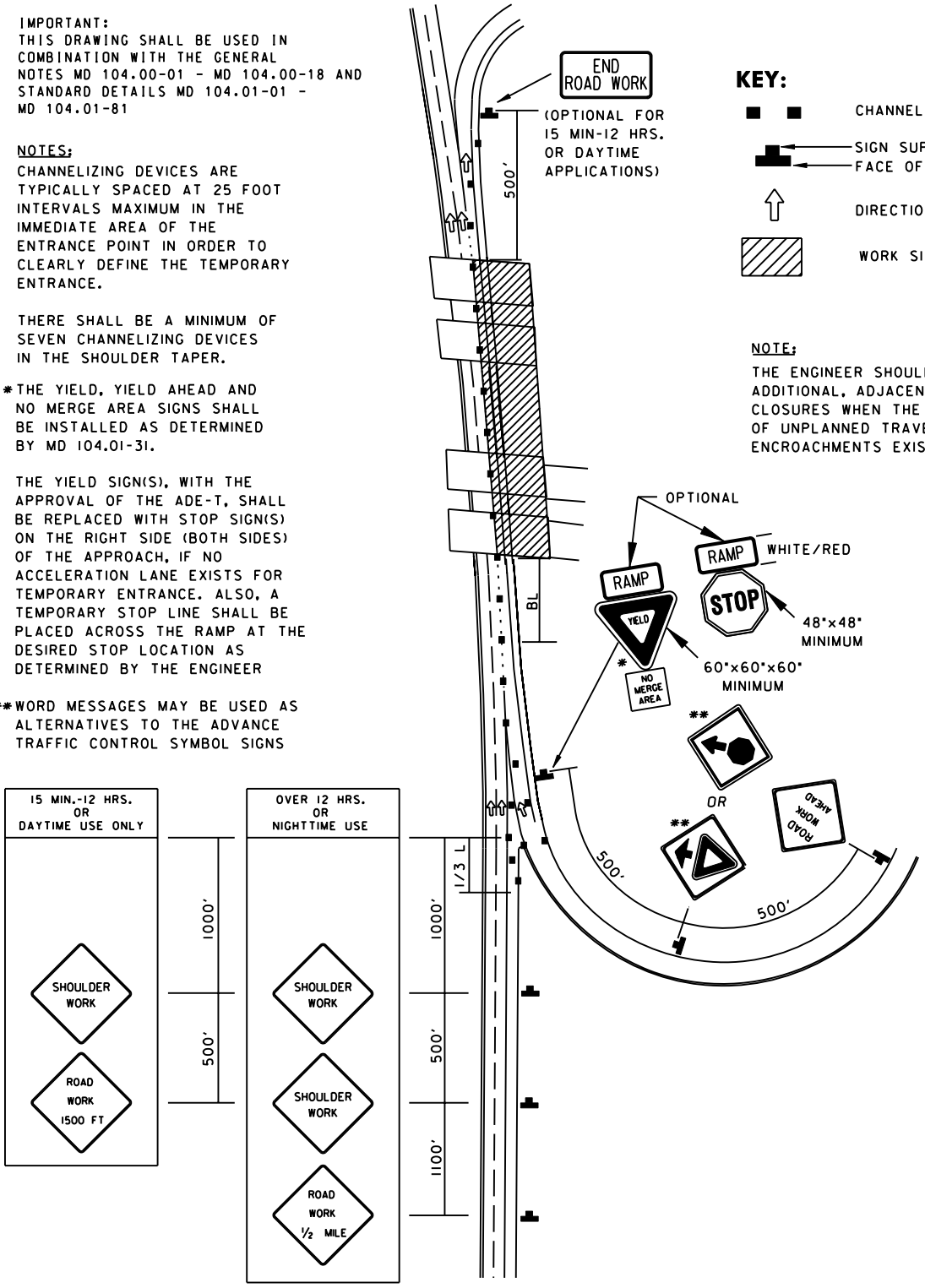
NOTES:
CHANNELIZING DEVICES ARE TYPICALLY SPACED AT 25 FOOT INTERVALS MAXIMUM IN THE IMMEDIATE AREA OF THE ENTRANCE POINT IN ORDER TO CLEARLY DEFINE THE TEMPORARY ENTRANCE.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

* THE YIELD, YIELD AHEAD AND NO MERGE AREA SIGNS SHALL BE INSTALLED AS DETERMINED BY MD 104.01-31.

THE YIELD SIGN(S), WITH THE APPROVAL OF THE ADE-T, SHALL BE REPLACED WITH STOP SIGN(S) ON THE RIGHT SIDE (BOTH SIDES) OF THE APPROACH, IF NO ACCELERATION LANE EXISTS FOR TEMPORARY ENTRANCE. ALSO, A TEMPORARY STOP LINE SHALL BE PLACED ACROSS THE RAMP AT THE DESIRED STOP LOCATION AS DETERMINED BY THE ENGINEER

** WORD MESSAGES MAY BE USED AS ALTERNATIVES TO THE ADVANCE TRAFFIC CONTROL SYMBOL SIGNS



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

AUXILIARY LANE CLOSURE /EXP-FREEWAY AT EXIT AND ENTRANCE RAMPS GREATER THAN 40 MPH

STANDARD NO. MD 104.05-13

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES;

CHANNELIZING DEVICES ARE TYPICALLY SPACED AT 25 FOOT INTERVALS MAXIMUM IN THE IMMEDIATE AREA OF THE ENTRANCE POINT IN ORDER TO CLEARLY DEFINE THE TEMPORARY ENTRANCE.

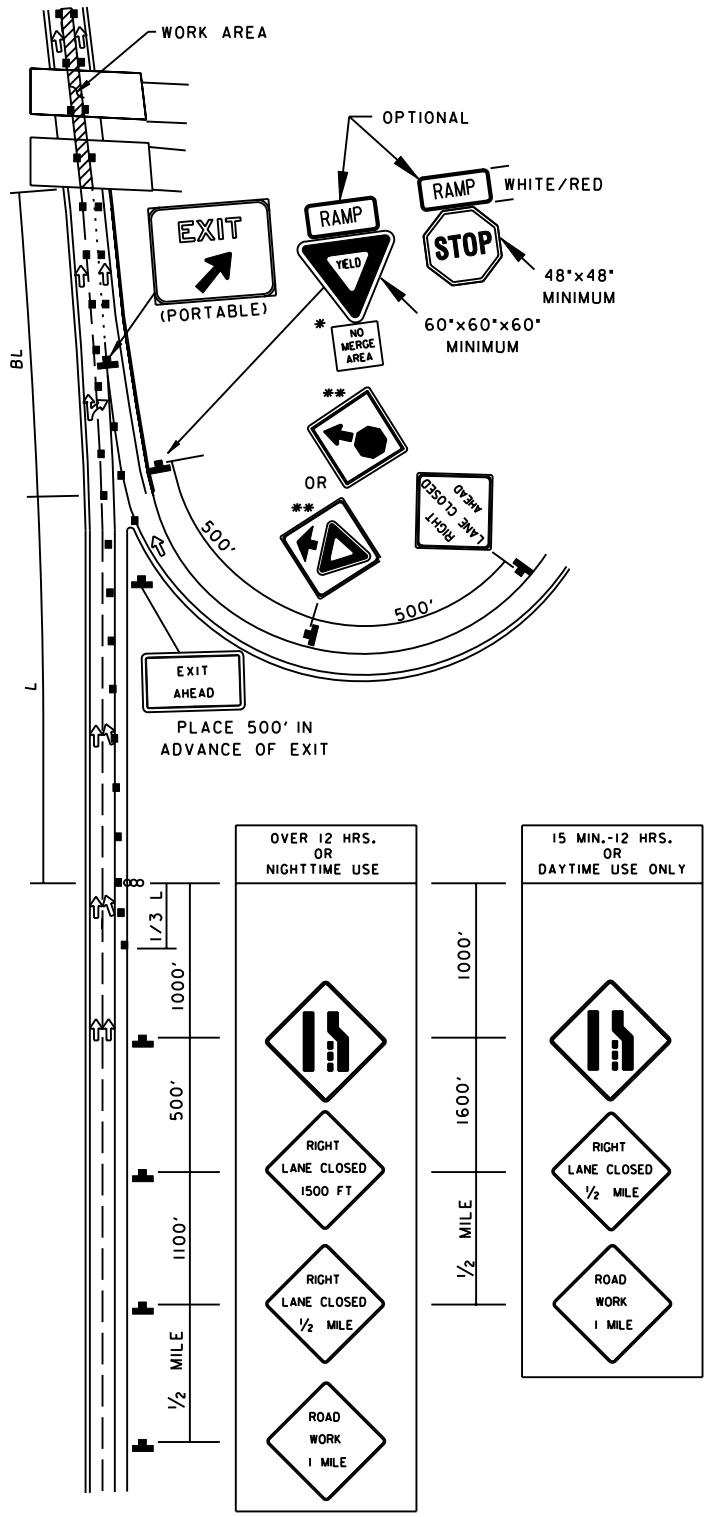
THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

* THE YIELD, YIELD AHEAD AND NO MERGE AREA SIGNS SHALL BE INSTALLED AS DETERMINED BY MD 104.01-31.

THE YIELD SIGN(S), WITH THE APPROVAL OF THE ADE-T, SHALL BE REPLACED WITH STOP SIGN(S) ON THE RIGHT SIDE (BOTH SIDES) OF THE APPROACH, IF NO ACCELERATION LANE EXISTS FOR TEMPORARY ENTRANCE. ALSO, A TEMPORARY STOP LINE SHALL BE PLACED ACROSS THE RAMP AT THE DESIRED STOP LOCATION AS DETERMINED BY THE ENGINEER

** WORD MESSAGES MAY BE USED AS ALTERNATIVES TO THE ADVANCE TRAFFIC CONTROL SYMBOL SIGNS

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

RIGHT LANE CLOSURE /EXP-FREEWAY AT EXIT AND ENTRANCE RAMPS GREATER THAN 40 MPH

STANDARD NO. MD 104.05-14

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARDS DETAILS MD 104.01-01 - MD 104.01-81

NOTES:
CHANNELIZING DEVICES ARE TYPICALLY SPACED AT 25 FOOT INTERVALS MAXIMUM IN THE IMMEDIATE AREA OF THE ENTRANCE POINT IN ORDER TO CLEARLY DEFINE THE TEMPORARY ENTRANCE.

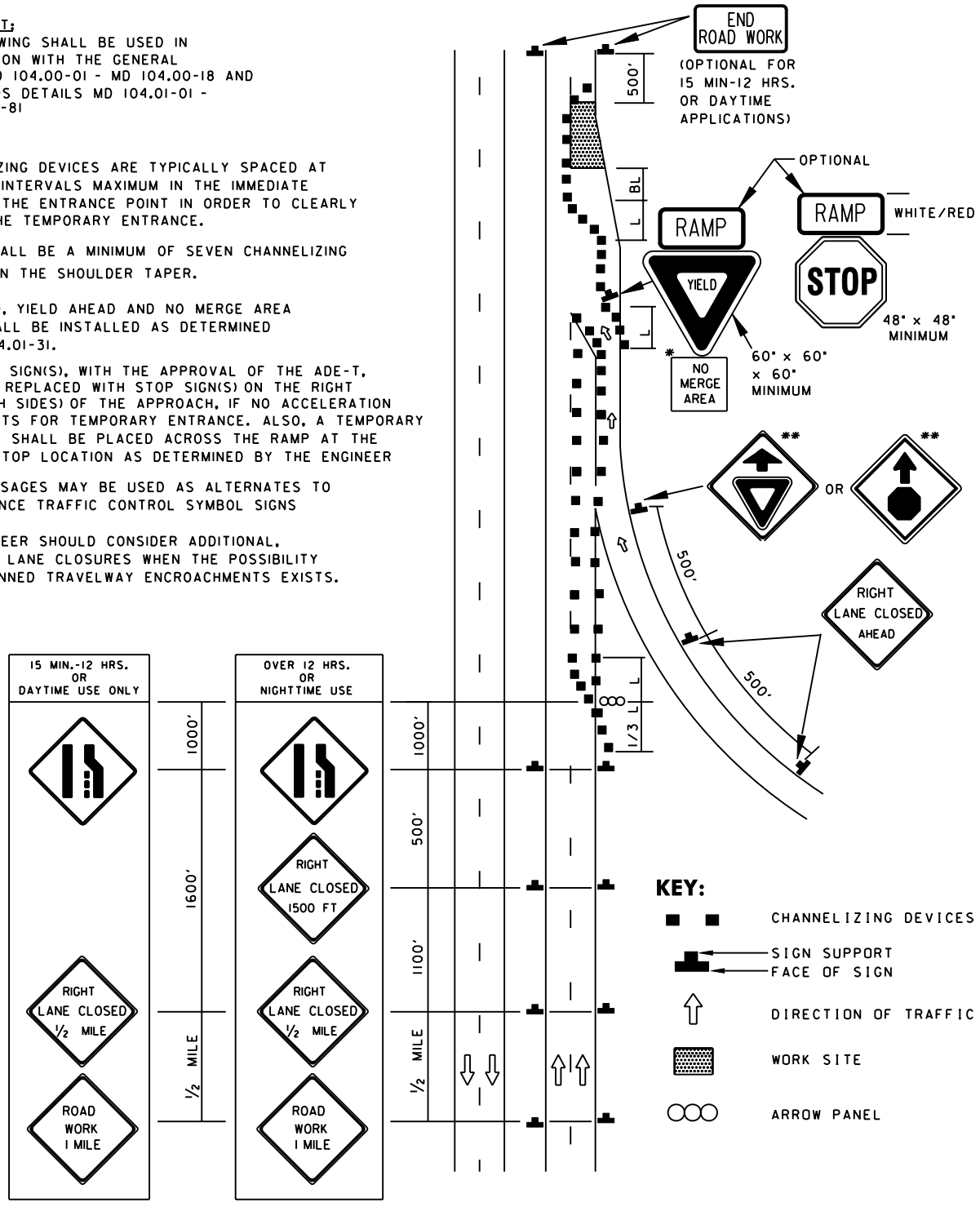
THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

* THE YIELD, YIELD AHEAD AND NO MERGE AREA SIGNS SHALL BE INSTALLED AS DETERMINED BY MD 104.01-31.

THE YIELD SIGN(S), WITH THE APPROVAL OF THE ADE-T, SHALL BE REPLACED WITH STOP SIGN(S) ON THE RIGHT SIDE (BOTH SIDES) OF THE APPROACH, IF NO ACCELERATION LANE EXISTS FOR TEMPORARY ENTRANCE. ALSO, A TEMPORARY STOP LINE SHALL BE PLACED ACROSS THE RAMP AT THE DESIRED STOP LOCATION AS DETERMINED BY THE ENGINEER

** WORD MESSAGES MAY BE USED AS ALTERNATES TO THE ADVANCE TRAFFIC CONTROL SYMBOL SIGNS

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ENTRANCE RAMP TREATMENT/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-15

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:

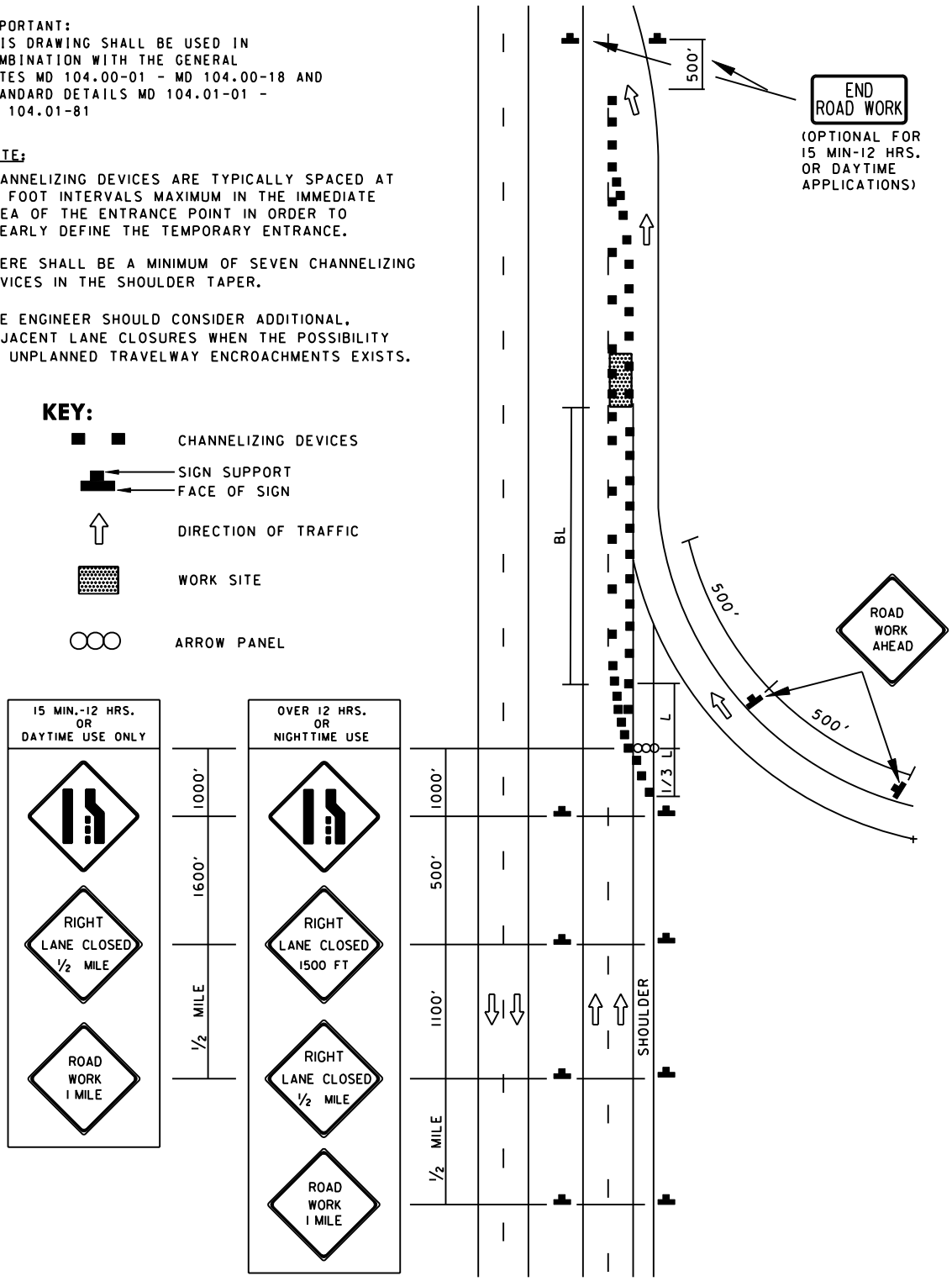
CHANNELIZING DEVICES ARE TYPICALLY SPACED AT 25 FOOT INTERVALS MAXIMUM IN THE IMMEDIATE AREA OF THE ENTRANCE POINT IN ORDER TO CLEARLY DEFINE THE TEMPORARY ENTRANCE.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL



SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ENTRANCE RAMP TREATMENT/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-16

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES;

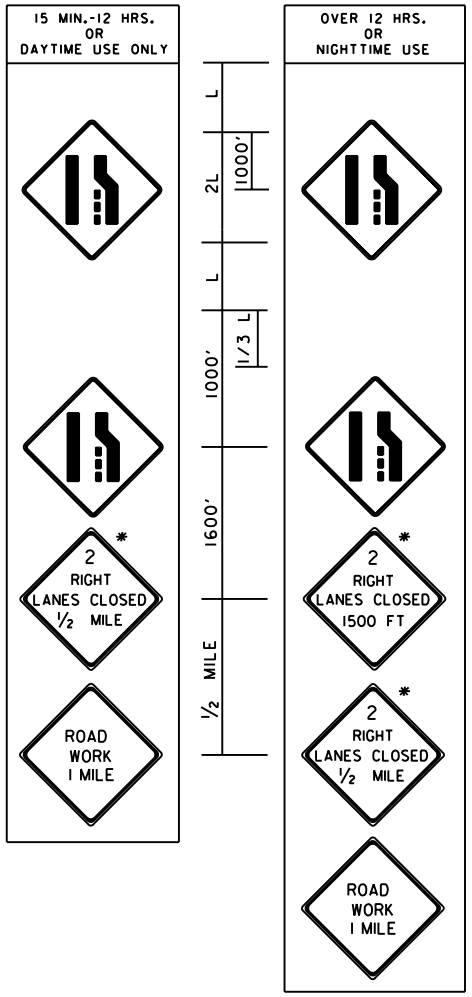
FOR THE TYPICAL 2 LEFT LANES CLOSURE THE CHANNELIZING DEVICES SHALL BE SET UP SYMMETRICALLY TO THE 2 RIGHT LANES CLOSURE SETUP AND THE SIGNING SHALL REFLECT THE 2 LEFT LANES CLOSURE. RAMP SIGNING REMAINS THE SAME.

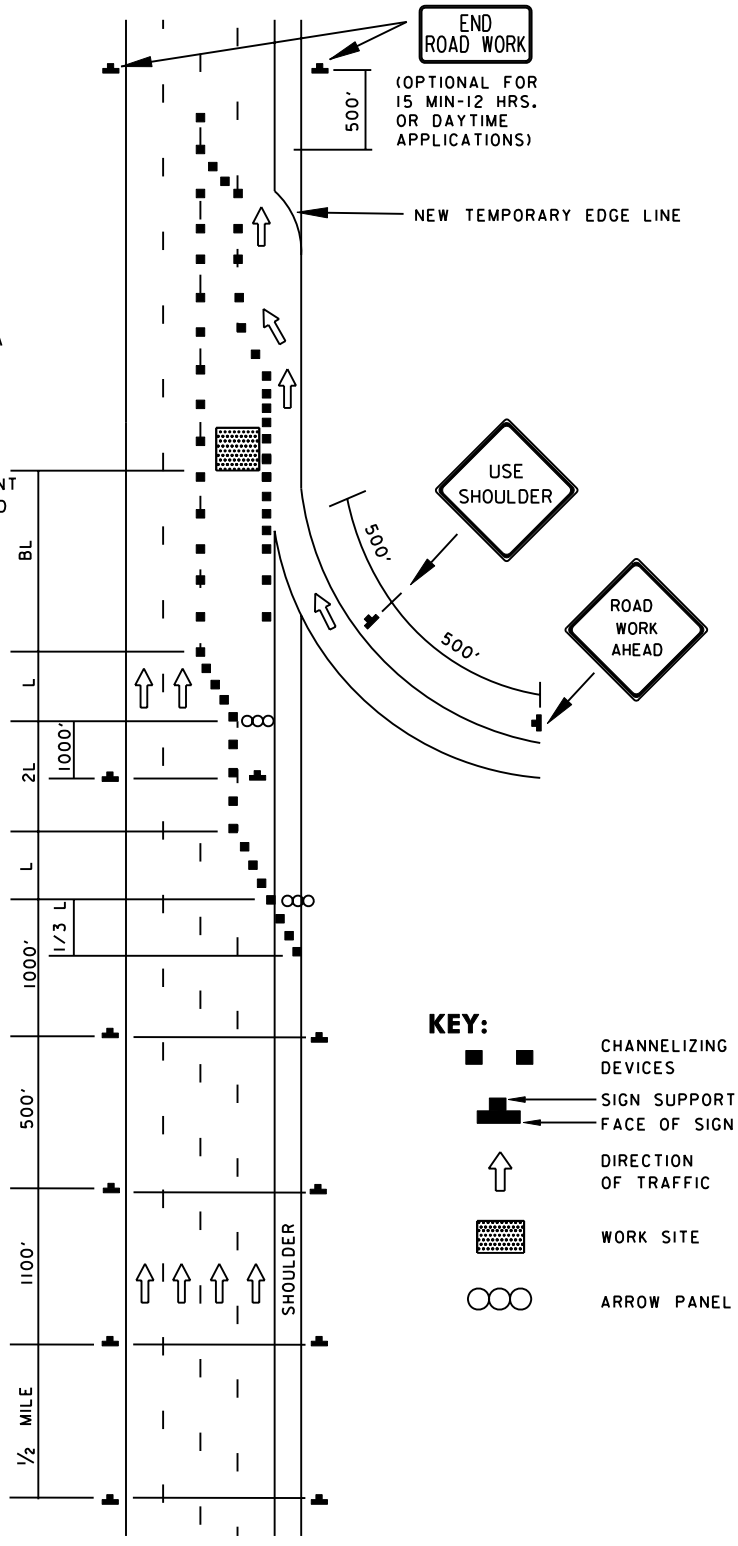
CHANNELIZING DEVICES ARE TYPICALLY SPACED AT 25 FOOT INTERVALS MAXIMUM IN THE IMMEDIATE AREA OF THE ENTRANCE POINT IN ORDER TO CLEARLY DEFINE THE TEMPORARY ENTRANCE.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

*60"x60" SIGN SIZE





SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ENTRANCE RAMP TREATMENT/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-17

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

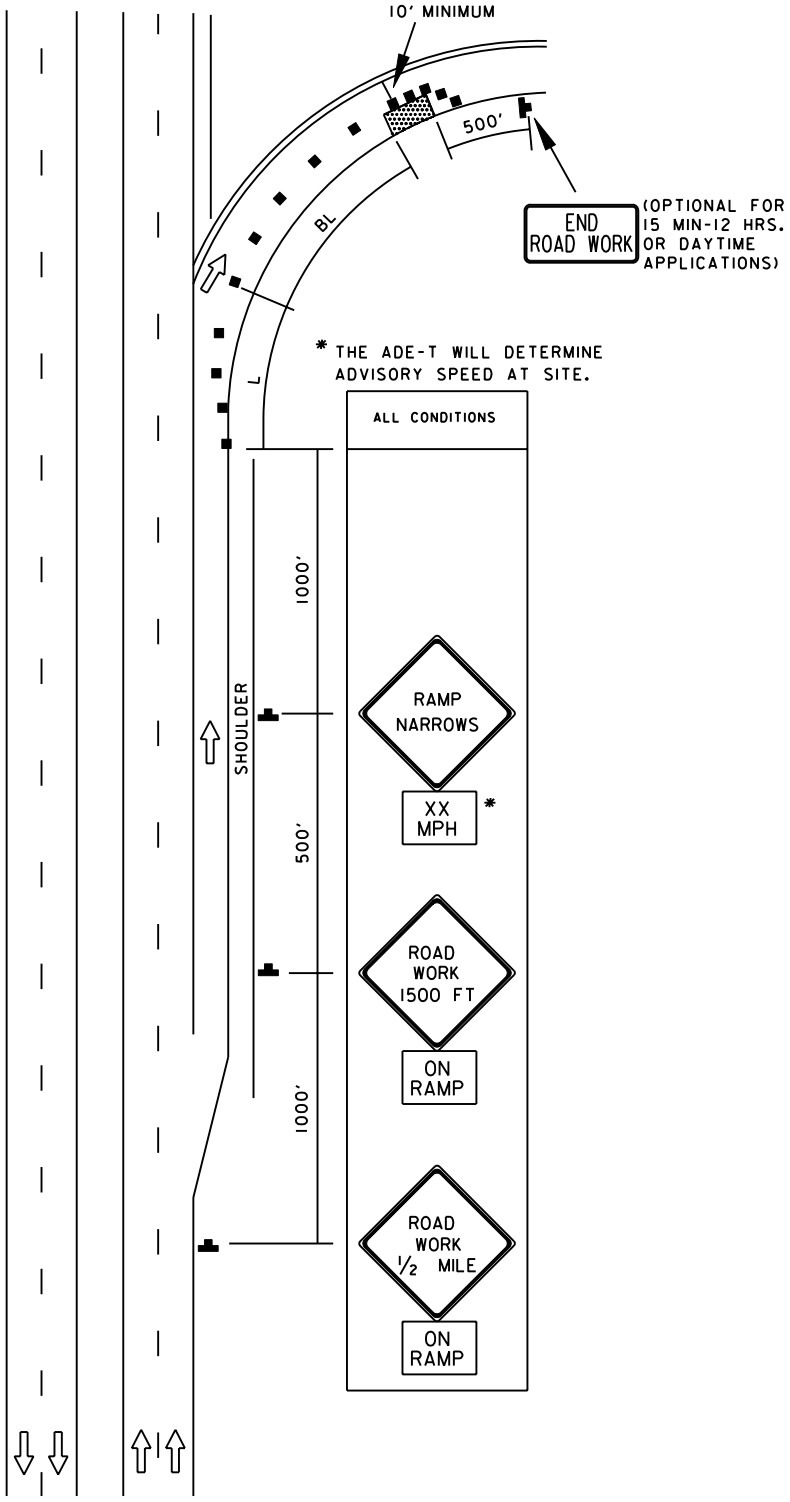
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE

SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER. SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

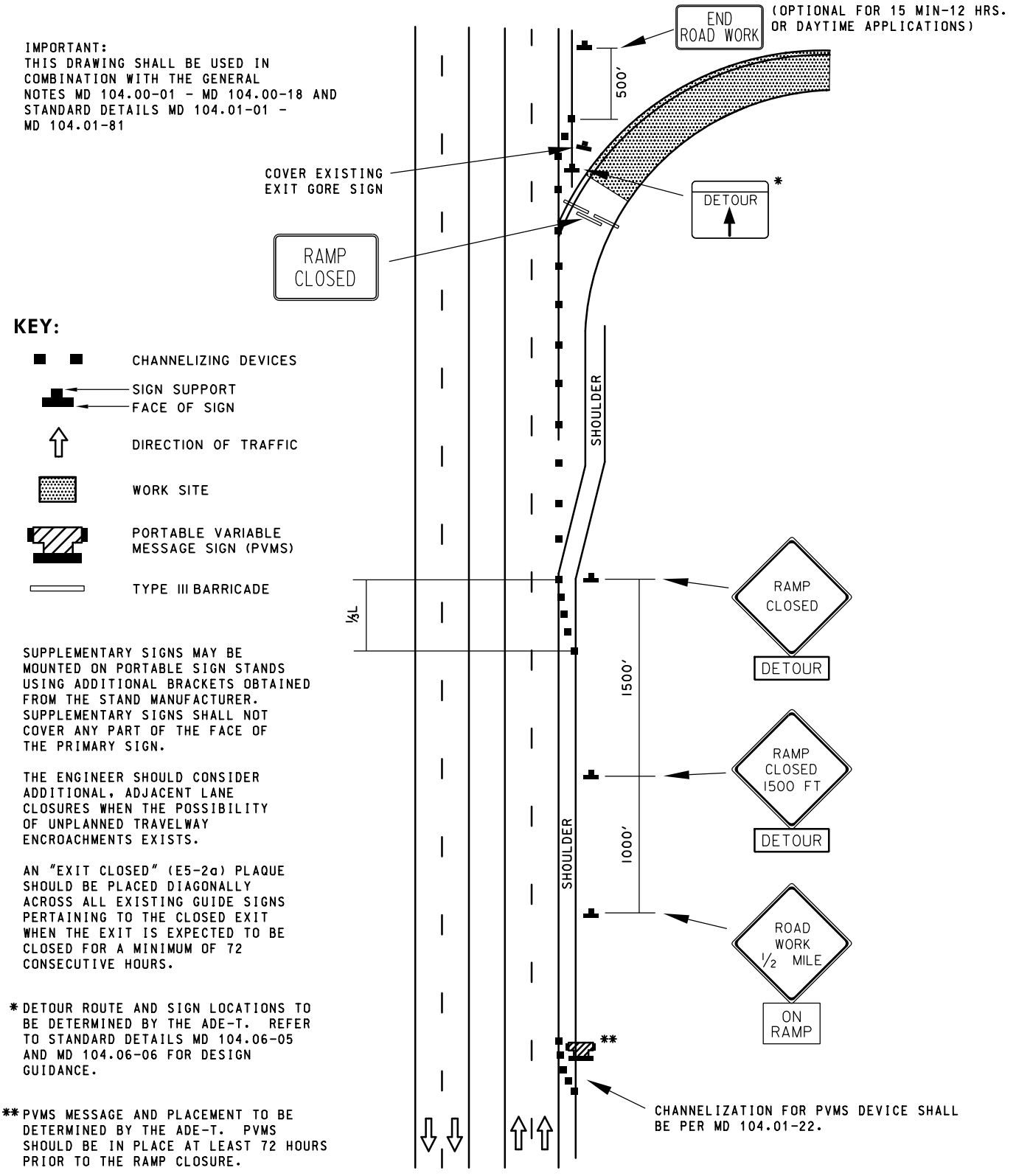
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PARTIAL RAMP CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-18

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- PORTABLE VARIABLE MESSAGE SIGN (PVMS)
- TYPE III BARRICADE

SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER. SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

AN "EXIT CLOSED" (E5-2a) PLAQUE SHOULD BE PLACED DIAGONALLY ACROSS ALL EXISTING GUIDE SIGNS PERTAINING TO THE CLOSED EXIT WHEN THE EXIT IS EXPECTED TO BE CLOSED FOR A MINIMUM OF 72 CONSECUTIVE HOURS.

* DETOUR ROUTE AND SIGN LOCATIONS TO BE DETERMINED BY THE ADE-T. REFER TO STANDARD DETAILS MD 104.06-05 AND MD 104.06-06 FOR DESIGN GUIDANCE.

** PVMS MESSAGE AND PLACEMENT TO BE DETERMINED BY THE ADE-T. PVMS SHOULD BE IN PLACE AT LEAST 72 HOURS PRIOR TO THE RAMP CLOSURE.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-23-18	APPROVAL	9-18-17
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

FULL RAMP CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-18A

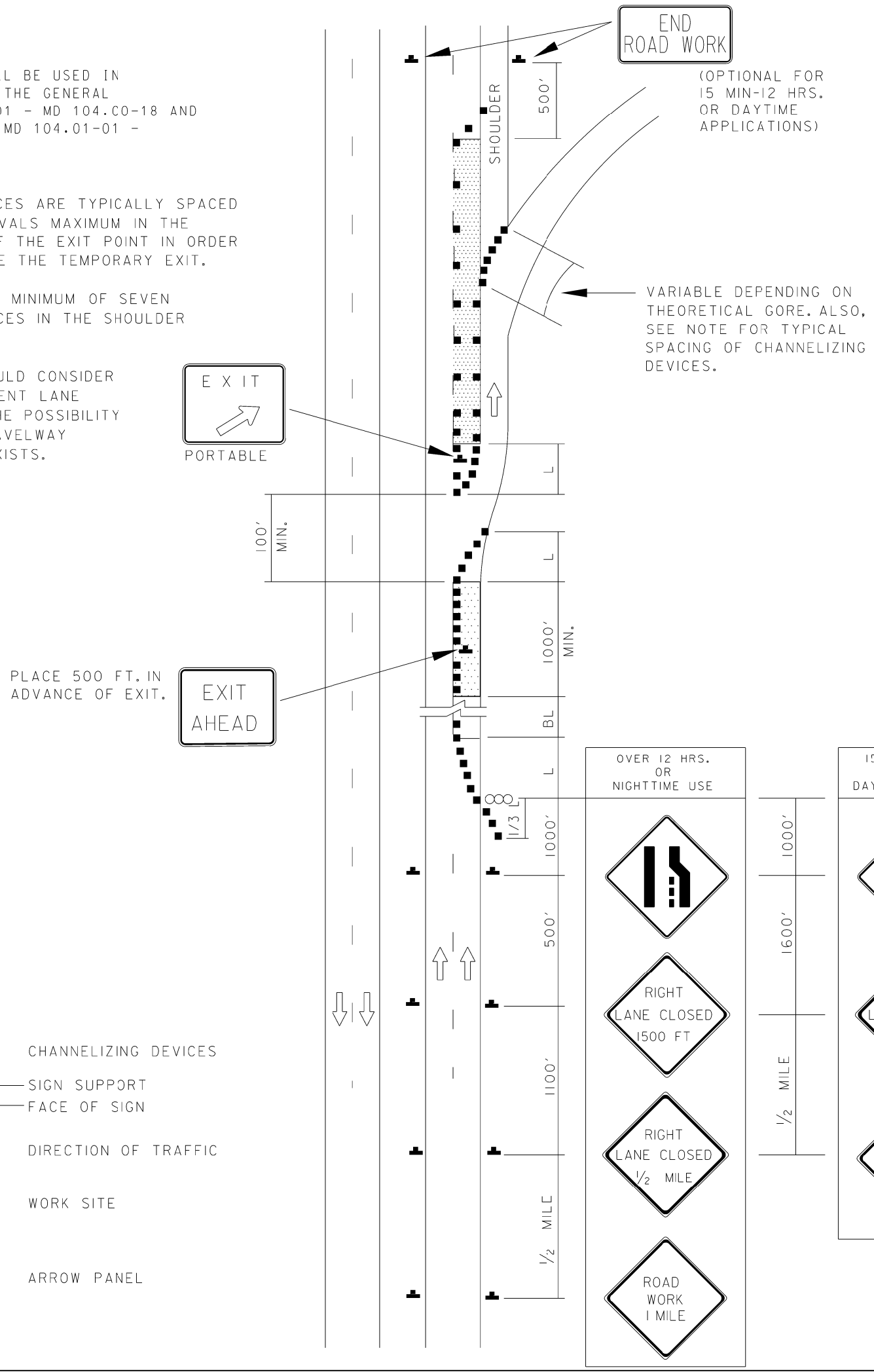
TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.CO-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:
CHANNELIZING DEVICES ARE TYPICALLY SPACED AT 25 FOOT INTERVALS MAXIMUM IN THE IMMEDIATE AREA OF THE EXIT POINT IN ORDER TO CLEARLY DEFINE THE TEMPORARY EXIT.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED	1-24-19	REVISED	3-4-16
REVISED		REVISED	

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

EXIT RAMP TREATMENT/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-19

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

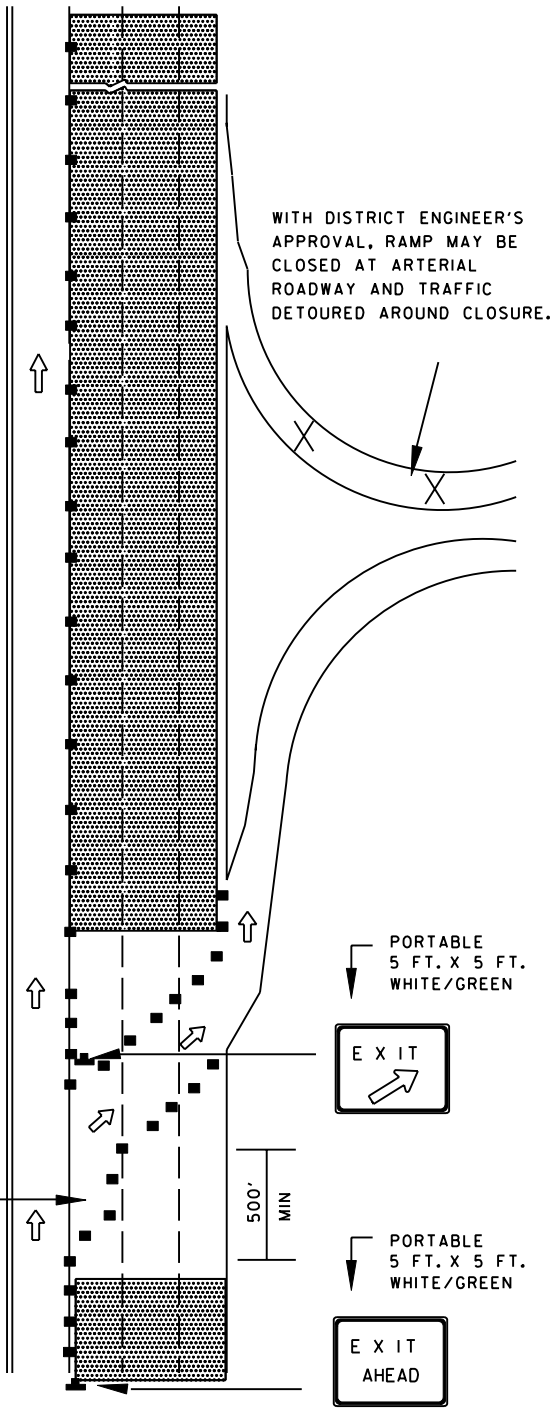
NOTES:
CHANNELIZING DEVICES SHOULD BE PLACED AT 25 FOOT INTERVALS MAXIMUM IN THE IMMEDIATE AREA OF THE ENTRANCE POINT IN ORDER TO CLEARLY DEFINE THE TEMPORARY ENTRANCE.

PLACE A DOWNSTREAM TAPER BEYOND WORK AREA AND "END ROAD WORK" SIGNS 500 FT. PAST WORK AREA.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- RAMP CONSIDERED FOR CLOSURE



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

3 RIGHT LANES CLOSURE/EXP-FREEWAY AT EXIT AND ENTRANCE RAMPS

STANDARD NO. MD 104.05-20

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

YIELD, YIELD AHEAD AND NO MERGE AREA SIGNS SHALL BE INSTALLED ON ENTRANCE RAMP(S) AS DETERMINED BY MD 104.01-31.

YIELD SIGN(S), WITH THE APPROVAL OF THE ADE-T, SHALL BE REPLACED WITH STOP SIGN(S) ON THE RIGHT SIDE (BOTH SIDES) OF THE APPROACH, IF NO ACCELERATION LANE EXISTS FOR TEMPORARY ENTRANCE. ALSO, A TEMPORARY STOP LINE SHALL BE PLACED ACROSS THE RAMP AT THE DESIRED STOP LOCATION AS DETERMINED BY THE ENGINEER

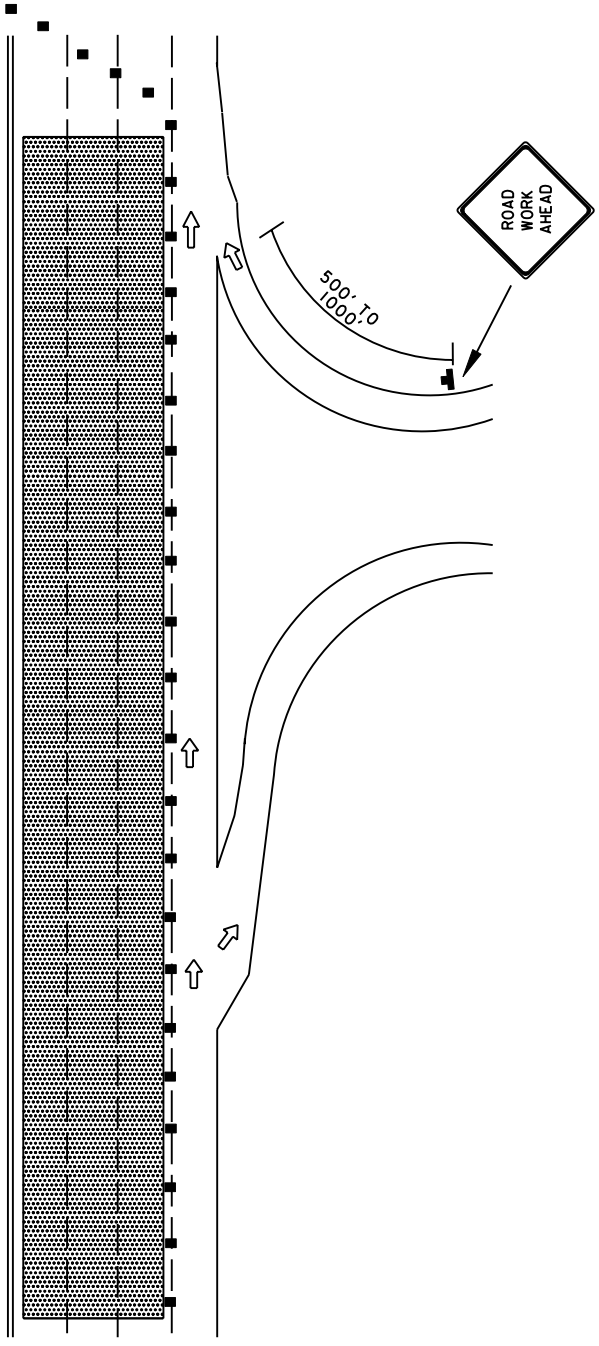
PLACE THE "ROAD WORK AHEAD" SIGN 1000 FT. UP RAMP WHEN ADDITIONAL SIGNS SUCH AS YIELD AHEAD OR STOP AHEAD WILL BE INSTALLED.

PLACE "END ROAD WORK" SIGNS 500 FT. BEYOND WORK AREA.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED

DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

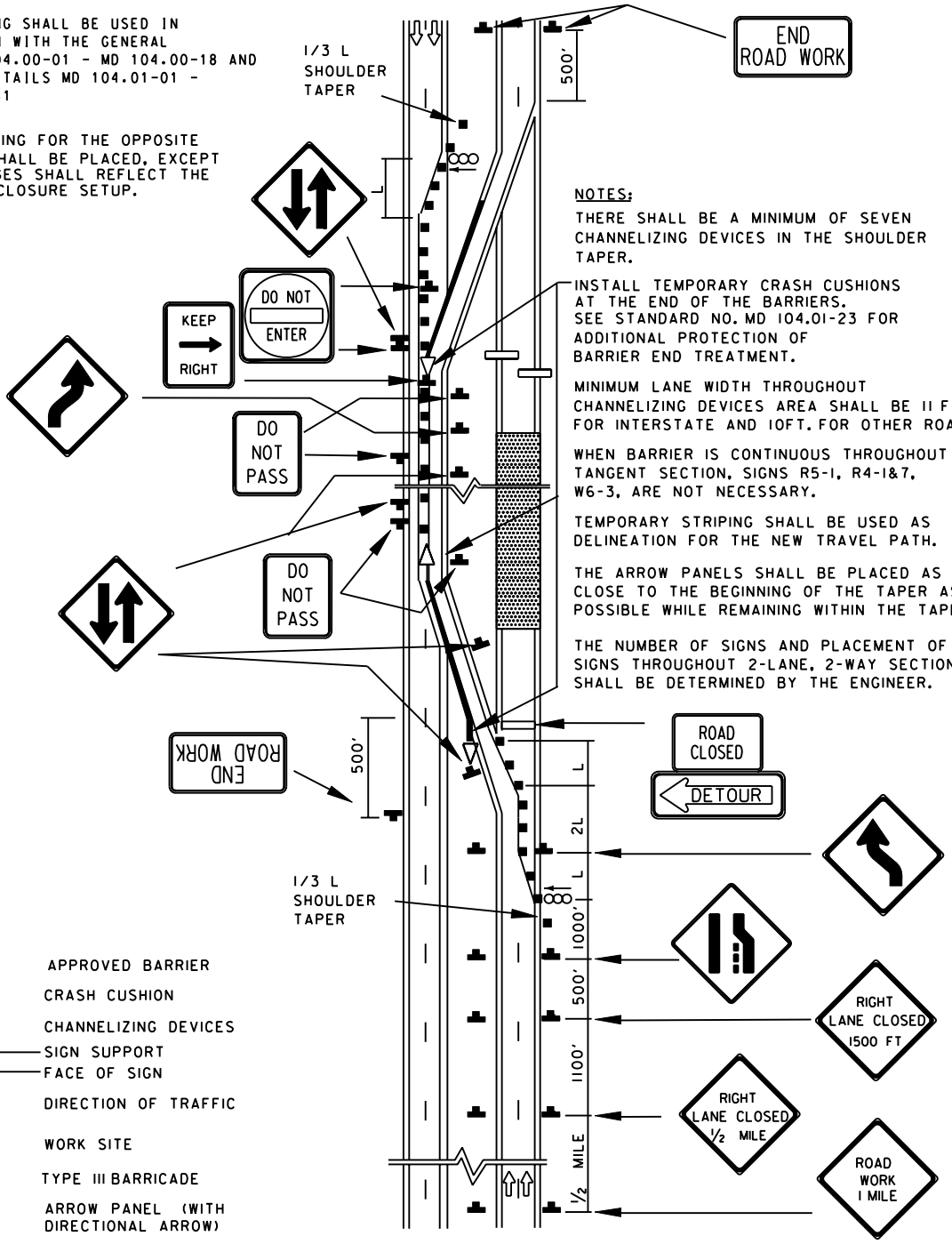
3 LEFT LANES CLOSURE/EXP-FREEWAY AT EXIT AND ENTRANCE RAMPS

STANDARD NO. MD 104.05-21

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

SIMILAR SIGNING FOR THE OPPOSITE APPROACH SHALL BE PLACED, EXCEPT SIGN MESSAGES SHALL REFLECT THE LEFT LANE CLOSURE SETUP.



NOTES:

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

INSTALL TEMPORARY CRASH CUSHIONS AT THE END OF THE BARRIERS. SEE STANDARD NO. MD 104.01-23 FOR ADDITIONAL PROTECTION OF BARRIER END TREATMENT.

MINIMUM LANE WIDTH THROUGHOUT CHANNELIZING DEVICES AREA SHALL BE 11 FT. FOR INTERSTATE AND 10FT. FOR OTHER ROADWAYS.

WHEN BARRIER IS CONTINUOUS THROUGHOUT TANGENT SECTION, SIGNS R5-1, R4-1&7, W6-3, ARE NOT NECESSARY.

TEMPORARY STRIPING SHALL BE USED AS DELINEATION FOR THE NEW TRAVEL PATH.

THE ARROW PANELS SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE WHILE REMAINING WITHIN THE TAPER.

THE NUMBER OF SIGNS AND PLACEMENT OF SIGNS THROUGHOUT 2-LANE, 2-WAY SECTION SHALL BE DETERMINED BY THE ENGINEER.

KEY:

- APPROVED BARRIER
- CRASH CUSHION
- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- TYPE III BARRICADE
- ARROW PANEL (WITH DIRECTIONAL ARROW)

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ROADWAY CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH

STANDARD NO. MD 104.05-22

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

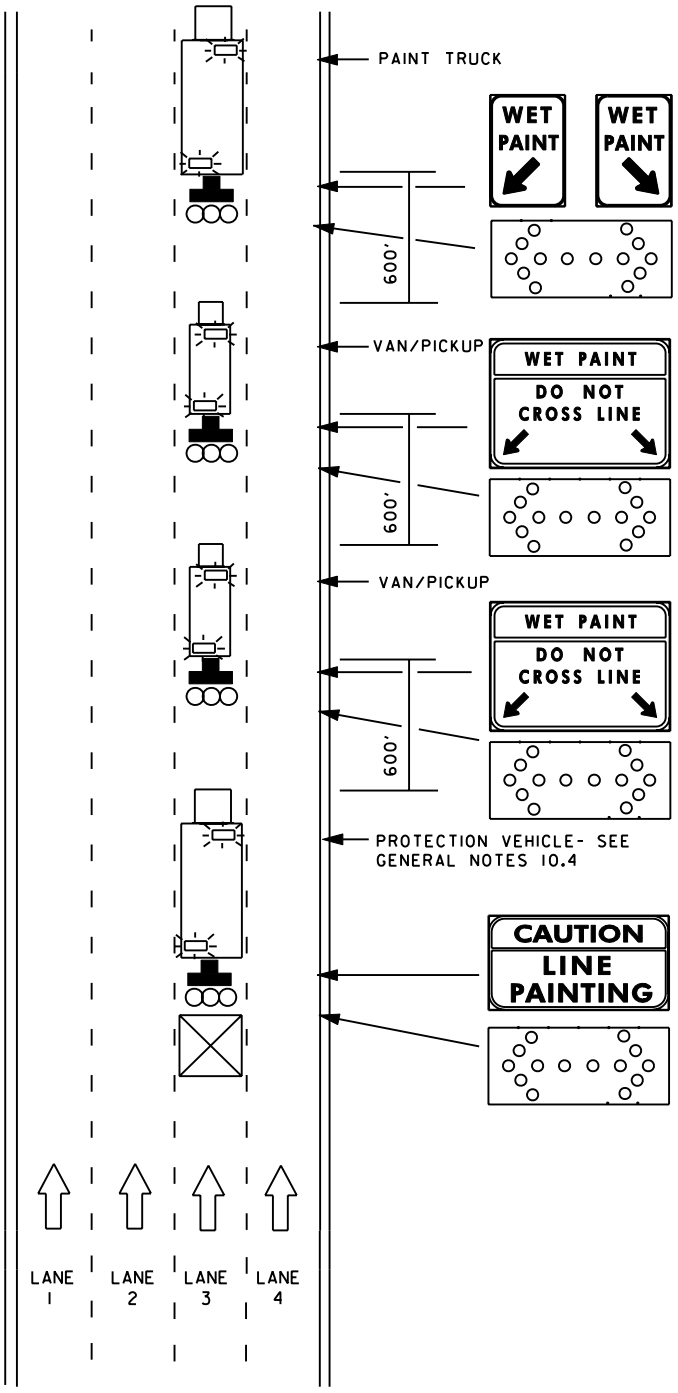
NOTES:

DISTANCES BETWEEN VEHICLES MAY BE INCREASED OR DECREASED DEPENDING ON PAINT DRYING TIME, TERRAIN, LOCAL AREA AND OTHER FACTORS.

FOR STRIPING OPERATIONS IN THE EXTERIOR LANES, USE THE APPROPRIATE RIGHT OR LEFT ARROW ON THE ARROW PANEL. IN THIS CASE, USE THE RIGHT ARROW IF OCCUPYING LANE 1 AND THE LEFT ARROW IF OCCUPYING LANE 4.

KEY:

- SIGN SUPPORT / SIGN FACE
- ARROW PANEL
- APPROVED VEHICLE SAFETY LIGHT
- DIRECTION OF TRAFFIC
- TRUCK OR TRAILER- TRUCK MOUNTED ATTENUATOR (TMA/TTMA)



SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

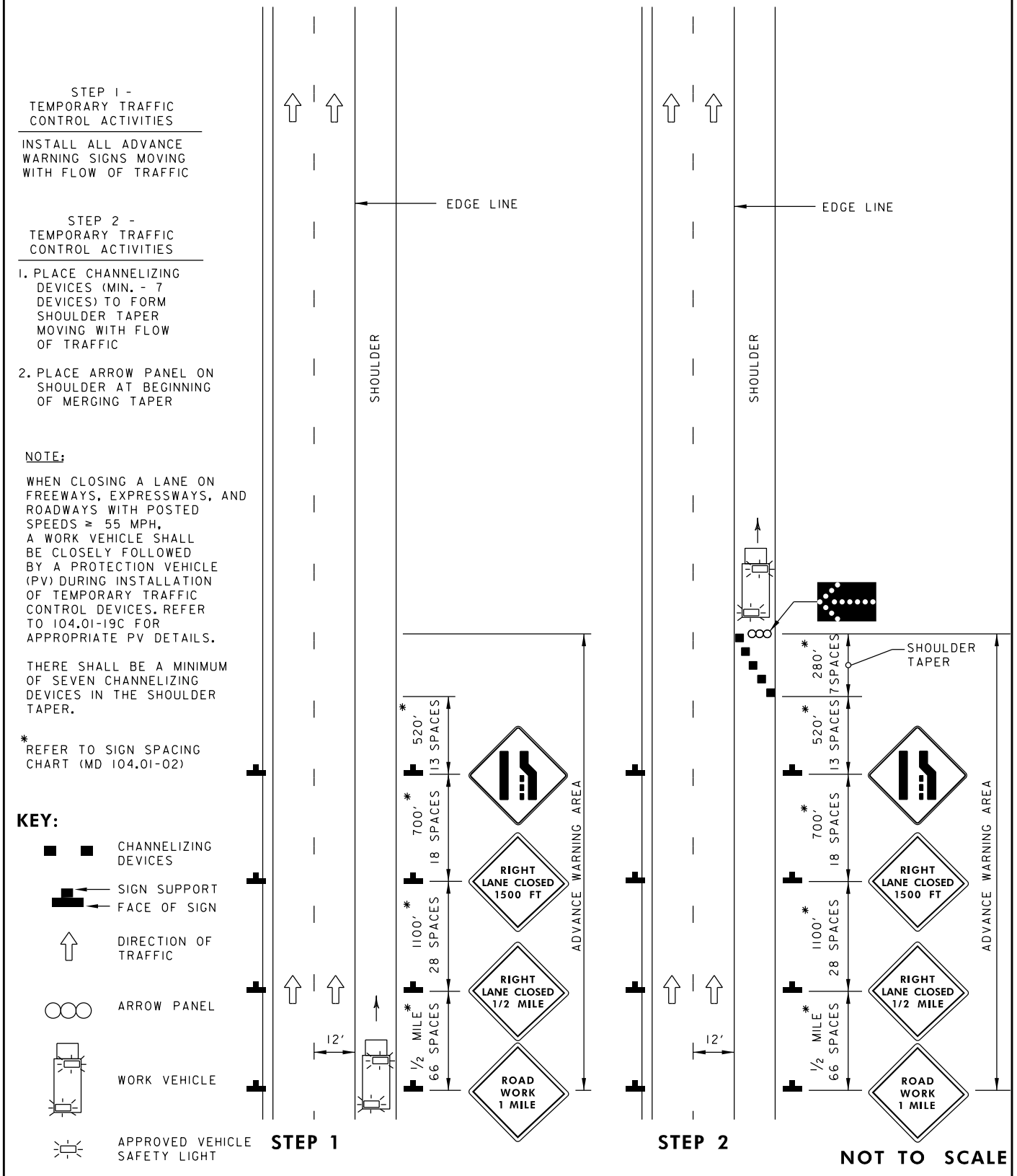
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE MARKING OPERATION/EXP-FREEWAY ALL SPEEDS

STANDARD NO. MD 104.05-23

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



SPECIFICATION	CATEGORY CODE ITEMS

APPROVED Cedric Ward
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED	9-15-15	REVISED	8-13-15

SHA State Highway Administration — Drive to Excel

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INSTALLING LANE CLOSURE STEPS 1 AND 2

STANDARD NO. MD 104.06-01

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

STEP 3 - TEMPORARY TRAFFIC CONTROL ACTIVITIES

PLACE VEHICLE ON SHOULDER AND INSTALL CHANNELIZING DEVICES AT CORRECT SPACING BY HAND FROM VEHICLE TO FORM LANE CLOSURE TAPER MOVING WITH FLOW OF TRAFFIC

STEP 4 - TEMPORARY TRAFFIC CONTROL ACTIVITIES

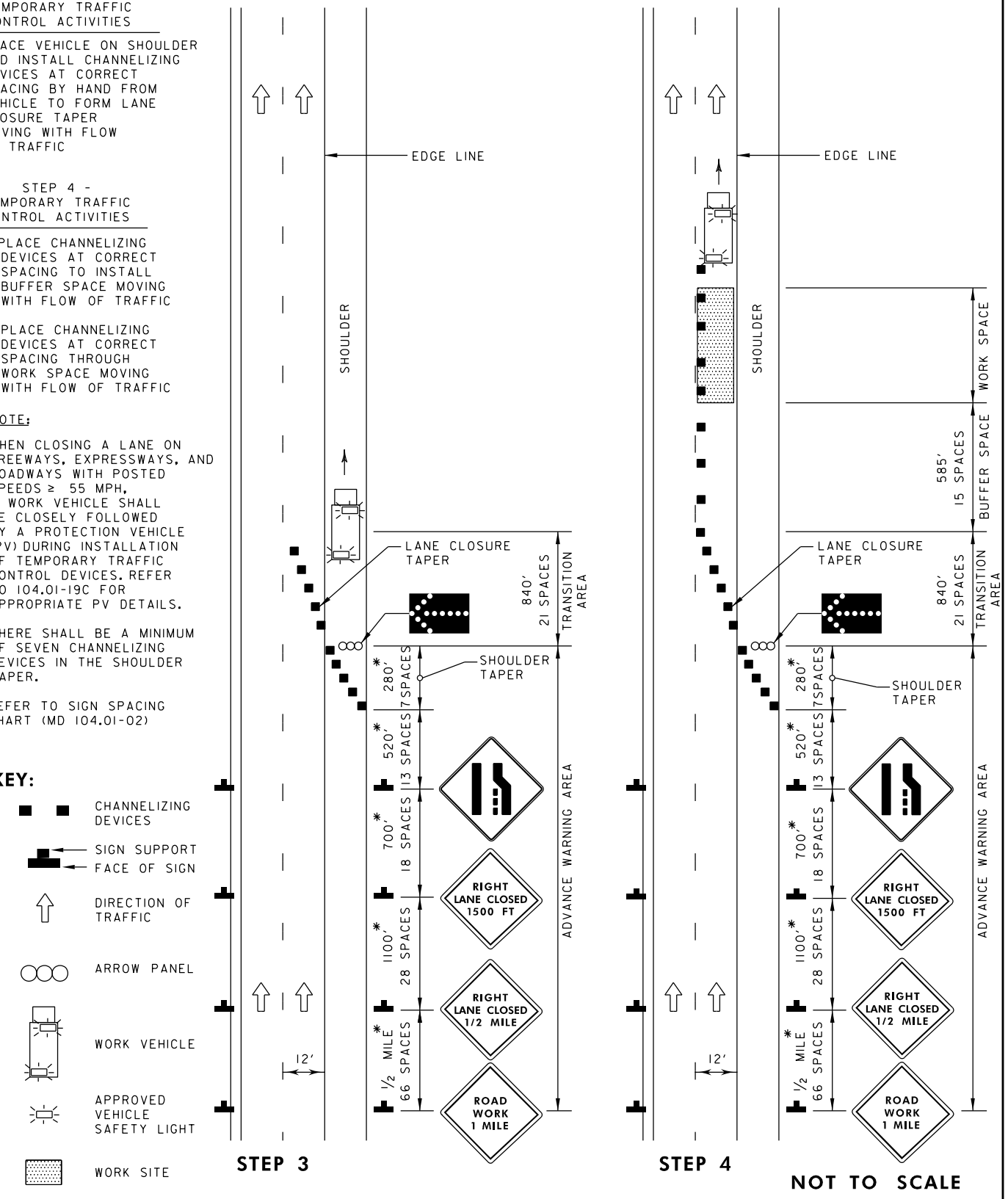
1. PLACE CHANNELIZING DEVICES AT CORRECT SPACING TO INSTALL BUFFER SPACE MOVING WITH FLOW OF TRAFFIC
2. PLACE CHANNELIZING DEVICES AT CORRECT SPACING THROUGH WORK SPACE MOVING WITH FLOW OF TRAFFIC

NOTE:

WHEN CLOSING A LANE ON FREEWAYS, EXPRESSWAYS, AND ROADWAYS WITH POSTED SPEEDS ≥ 55 MPH, A WORK VEHICLE SHALL BE CLOSELY FOLLOWED BY A PROTECTION VEHICLE (PV) DURING INSTALLATION OF TEMPORARY TRAFFIC CONTROL DEVICES. REFER TO 104.01-19C FOR APPROPRIATE PV DETAILS.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

* REFER TO SIGN SPACING CHART (MD 104.01-02)



SPECIFICATION	CATEGORY CODE ITEMS

APPROVED Cedric Ward
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED	9-15-15	REVISED	8-13-15

SHA State Highway Administration — Driven to Excel

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INSTALLING LANE CLOSURE STEPS 3 AND 4

STANDARD NO. MD 104.06-02

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

STEP 5 - TEMPORARY TRAFFIC CONTROL ACTIVITIES

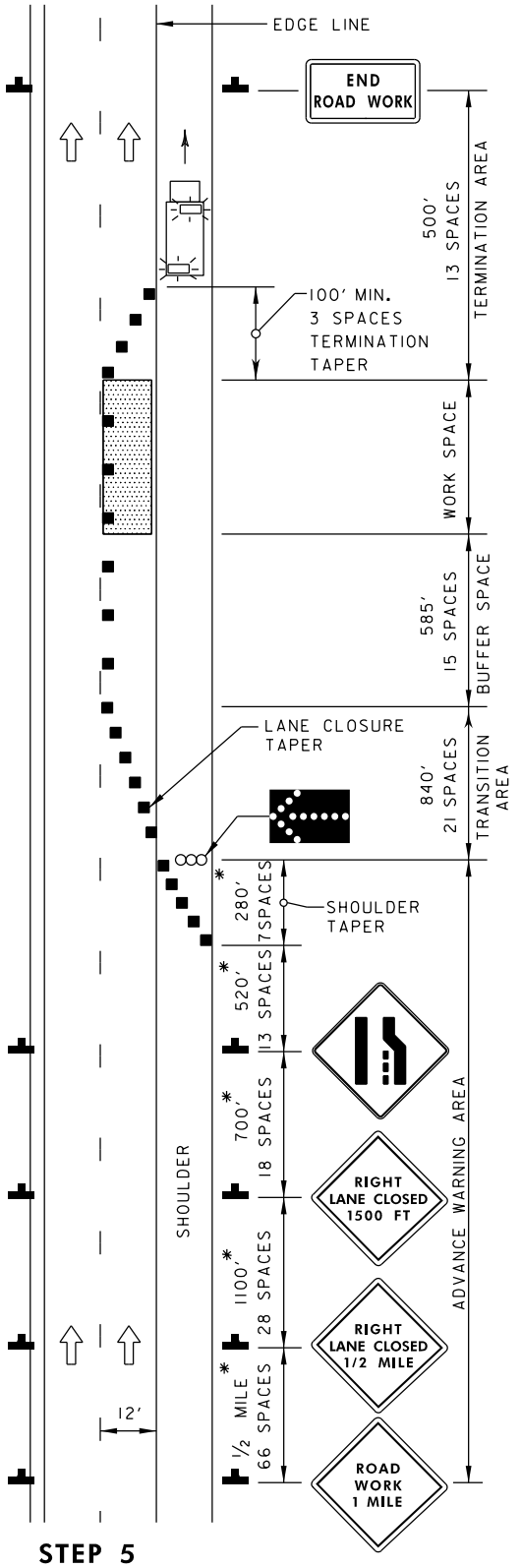
1. PLACE CHANNELIZING DEVICES AT CORRECT SPACING TO FORM TERMINATION TAPER MOVING WITH THE FLOW OF TRAFFIC
2. INSTALL "END ROAD WORK" SIGN APPROXIMATELY 500' FROM LAST DEVICE IN LANE CLOSURE MOVING WITH THE FLOW OF TRAFFIC

STEP 6 - TEMPORARY TRAFFIC CONTROL ACTIVITIES

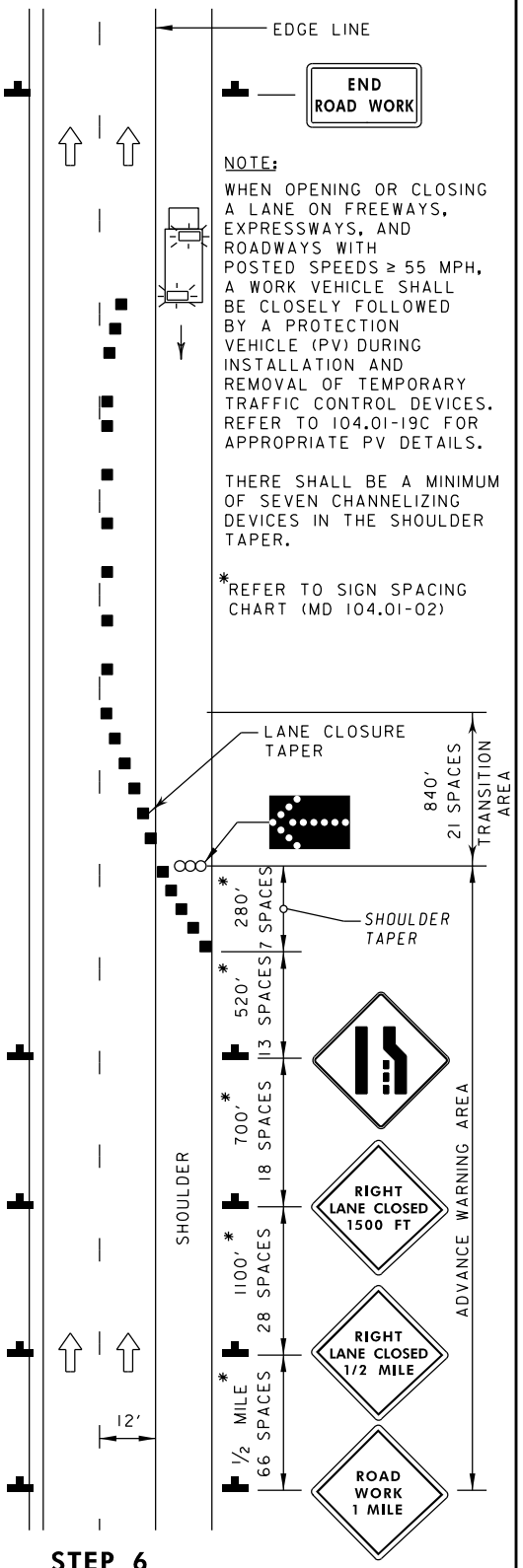
1. CLEANUP WORK SPACE REMOVING ALL DEBRIS, VEHICLES, ETC.
2. REMOVE CHANNELIZING DEVICES FROM END OF CLOSURE BACK TO WIDEST PART OF LANE CLOSURE TAPER AGAINST THE FLOW OF TRAFFIC

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- ARROW PANEL
- WORK VEHICLE
- APPROVED VEHICLE SAFETY LIGHT
- WORK SITE



STEP 5



STEP 6

NOTE:

WHEN OPENING OR CLOSING A LANE ON FREEWAYS, EXPRESSWAYS, AND ROADWAYS WITH POSTED SPEEDS ≥ 55 MPH, A WORK VEHICLE SHALL BE CLOSELY FOLLOWED BY A PROTECTION VEHICLE (PV) DURING INSTALLATION AND REMOVAL OF TEMPORARY TRAFFIC CONTROL DEVICES. REFER TO 104.01-19C FOR APPROPRIATE PV DETAILS.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

*REFER TO SIGN SPACING CHART (MD 104.01-02)

NOT TO SCALE

SPECIFICATION	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED	9-15-15	REVISED	8-13-15

SHA State Highway Administration — Drive to Excel

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

INSTALLING LANE CLOSURE – STEP 5
REMOVING LANE CLOSURE – STEP 6

STANDARD NO. MD 104.06-03

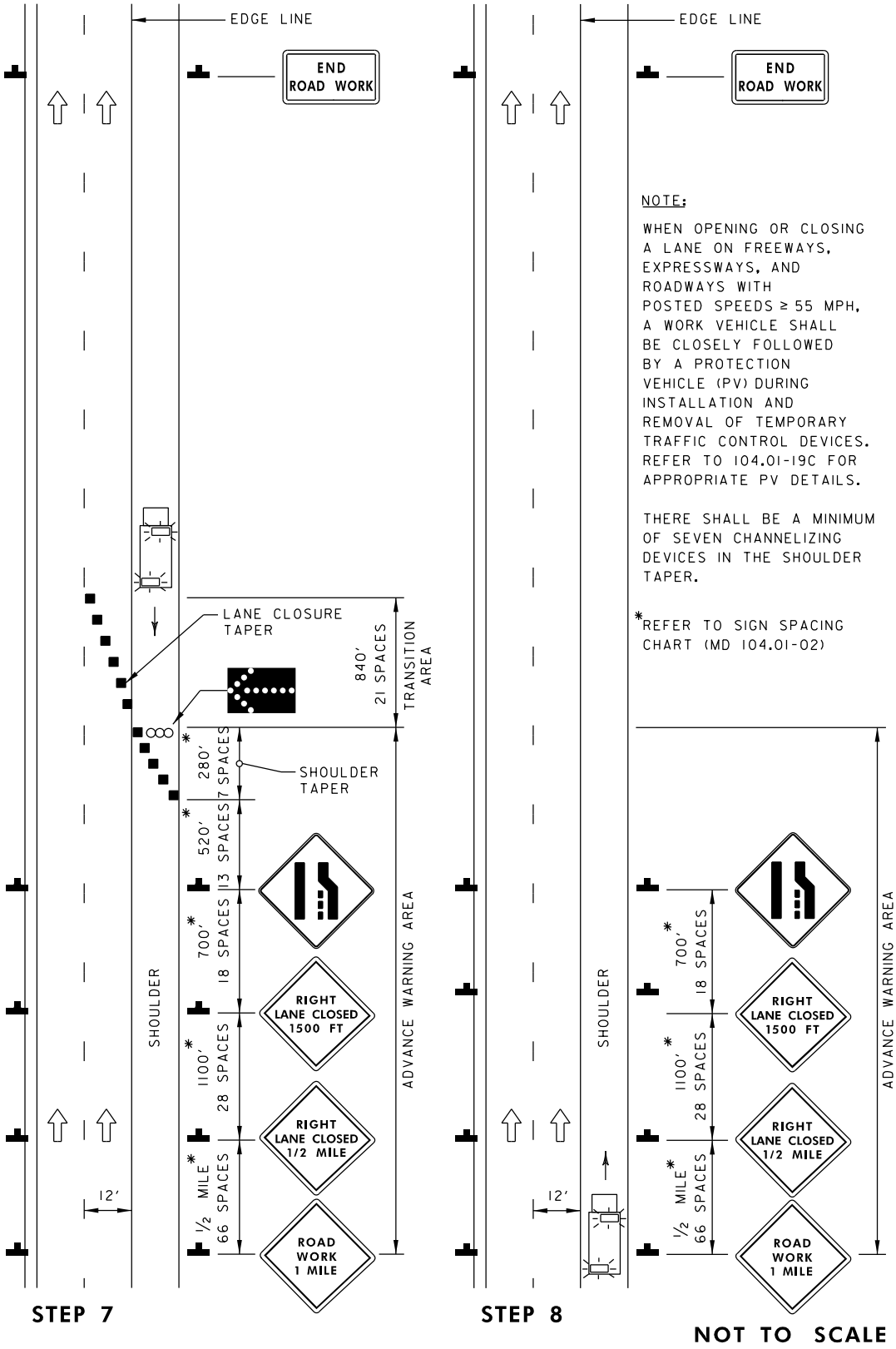
TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

STEP 7 - TEMPORARY TRAFFIC CONTROL ACTIVITIES

1. PLACE REMOVAL VEHICLE ON SHOULDER AND REMOVE CHANNELIZING DEVICES FROM LANE CLOSURE TAPER BY HAND ONTO BACKING VEHICLE
2. REMOVE ARROW PANEL AFTER ENSURING ROADWAY IS CLEAR
3. REMOVE CHANNELIZING DEVICES FROM SHOULDER TAPER

STEP 8 - TEMPORARY TRAFFIC CONTROL ACTIVITIES

1. REMOVE ADVANCE WARNING SIGNS MOVING WITH THE FLOW OF TRAFFIC
2. REMOVE "END ROAD WORK" SIGN MOVING WITH THE FLOW OF TRAFFIC
3. PREFERABLY, TWO WORKERS WALK BACK AND TURN SIGNS AWAY FROM TRAFFIC UNTIL VEHICLE PICKS UP SIGNS.



NOTE:

WHEN OPENING OR CLOSING A LANE ON FREEWAYS, EXPRESSWAYS, AND ROADWAYS WITH POSTED SPEEDS ≥ 55 MPH, A WORK VEHICLE SHALL BE CLOSELY FOLLOWED BY A PROTECTION VEHICLE (PV) DURING INSTALLATION AND REMOVAL OF TEMPORARY TRAFFIC CONTROL DEVICES. REFER TO 104.01-19C FOR APPROPRIATE PV DETAILS.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

*REFER TO SIGN SPACING CHART (MD 104.01-02)

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- ARROW PANEL
- WORK VEHICLE
- APPROVED VEHICLE SAFETY LIGHT

NOT TO SCALE

SPECIFICATION	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	8-20-14	REVISED	8-11-14
REVISED	9-15-15	REVISED	8-13-15

SHA State Highway Administration — Drive to Excel

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

REMOVING LANE CLOSURE STEPS 7 AND 8

STANDARD NO. MD 104.06-04

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

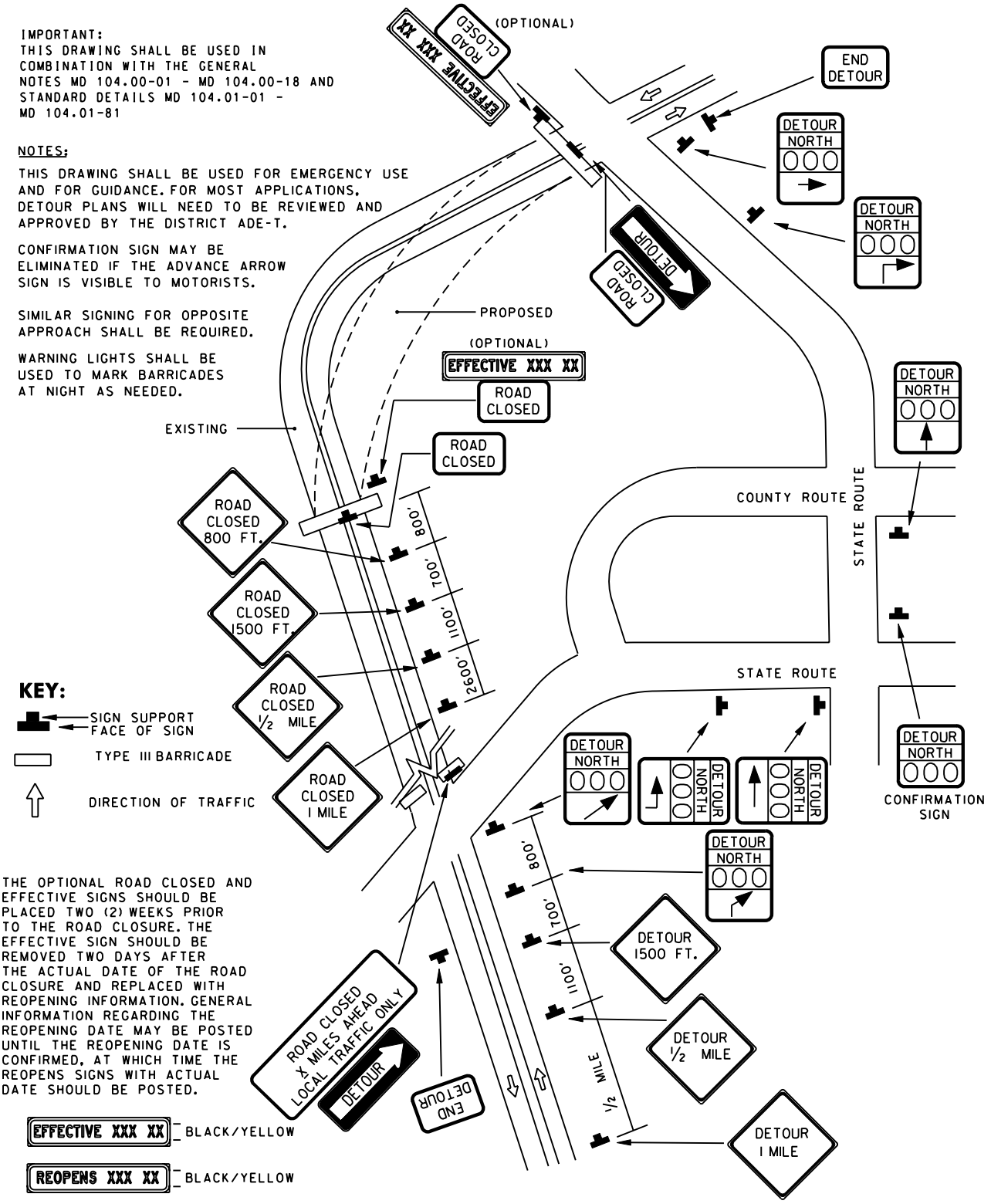
NOTES;

THIS DRAWING SHALL BE USED FOR EMERGENCY USE AND FOR GUIDANCE. FOR MOST APPLICATIONS, DETOUR PLANS WILL NEED TO BE REVIEWED AND APPROVED BY THE DISTRICT ADE-T.

CONFIRMATION SIGN MAY BE ELIMINATED IF THE ADVANCE ARROW SIGN IS VISIBLE TO MOTORISTS.

SIMILAR SIGNING FOR OPPOSITE APPROACH SHALL BE REQUIRED.

WARNING LIGHTS SHALL BE USED TO MARK BARRICADES AT NIGHT AS NEEDED.



KEY:

- SIGN SUPPORT / FACE OF SIGN
- TYPE III BARRICADE
- DIRECTION OF TRAFFIC

THE OPTIONAL ROAD CLOSED AND EFFECTIVE SIGNS SHOULD BE PLACED TWO (2) WEEKS PRIOR TO THE ROAD CLOSURE. THE EFFECTIVE SIGN SHOULD BE REMOVED TWO DAYS AFTER THE ACTUAL DATE OF THE ROAD CLOSURE AND REPLACED WITH REOPENING INFORMATION. GENERAL INFORMATION REGARDING THE REOPENING DATE MAY BE POSTED UNTIL THE REOPENING DATE IS CONFIRMED, AT WHICH TIME THE REOPENS SIGNS WITH ACTUAL DATE SHOULD BE POSTED.

EFFECTIVE XXX XX — BLACK/YELLOW

REOPENS XXX XX — BLACK/YELLOW

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

DETOUR SIGNING FOR ROADWAY CLOSURE /2-LANE,2-WAY GREATER THAN 40 MPH /OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.06-05

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

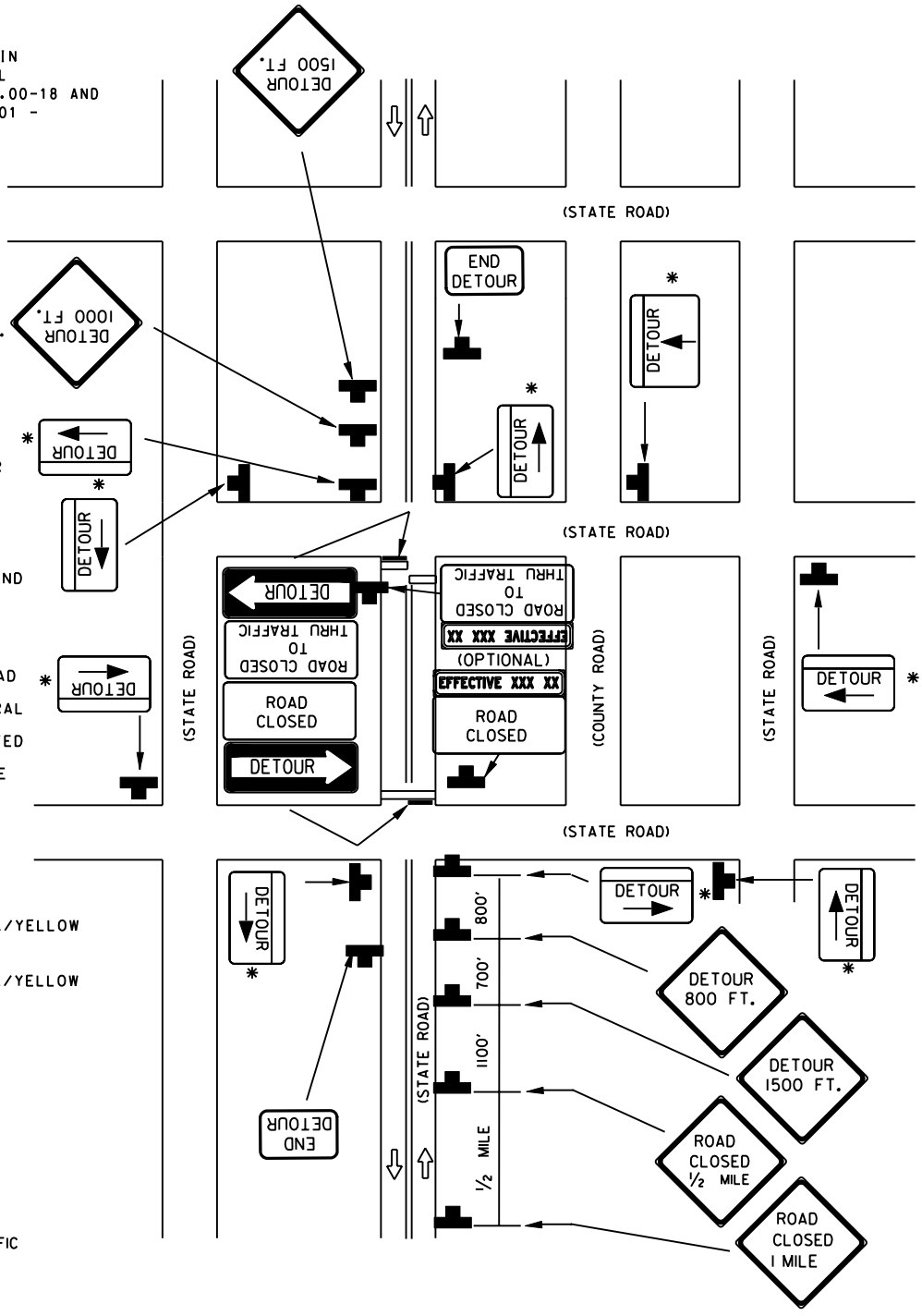
NOTES:

SIMILAR SIGNING FOR OPPOSITE APPROACH SHALL BE REQUIRED.

WARNING LIGHTS SHALL BE USED TO MARK BARRICADES AT NIGHT AS NEEDED.

ROAD NAME PANELS (M4-9(I)) (BLK/WHT) SHALL BE USED FOR DIRECTING DETOURED TRAFFIC; PLACE IN SPACE PROVIDED ABOVE M4-9 SIGNS (*).

THE OPTIONAL ROAD CLOSED AND EFFECTIVE SIGNS SHOULD BE PLACED TWO (2) WEEKS PRIOR TO THE ROAD CLOSURE. THE EFFECTIVE SIGN SHOULD BE REMOVED TWO DAYS AFTER THE ACTUAL DATE OF THE ROAD CLOSURE AND REPLACED WITH REOPENING INFORMATION. GENERAL INFORMATION REGARDING THE REOPENING DATE MAY BE POSTED UNTIL THE REOPENING DATE IS CONFIRMED, AT WHICH TIME THE REOPENS SIGNS WITH ACTUAL DATE SHOULD BE POSTED.



EFFECTIVE XXX XX — BLACK/YELLOW

REOPENS XXX XX — BLACK/YELLOW

KEY:

SIGN SUPPORT
FACE OF SIGN

TYPE III BARRICADE

DIRECTION OF TRAFFIC

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

DETOUR SIGNING FOR CLOSED STREET /2-LANE, 2-WAY GREATER THAN 40 MPH /OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.06-06

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

SIMILAR SIGNING, DENOTED BY A LETTER, FOR THE OPPOSITE APPROACH SHALL BE PLACED.

SIMILAR SIGN SPACINGS SHOULD ALSO BE USED AS SHOWN BELOW.

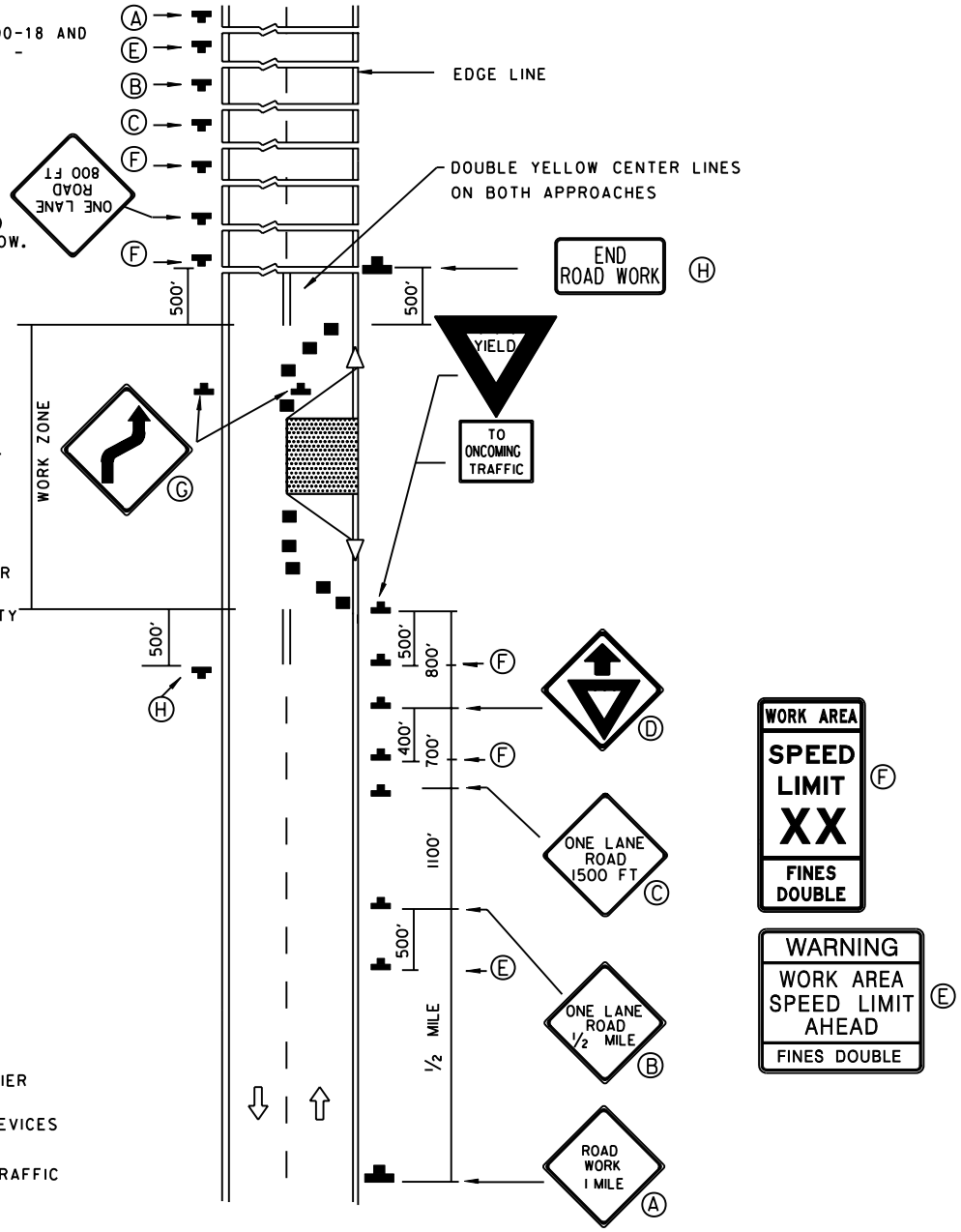
SPEED LIMIT TO BE ESTABLISHED BY THE DISTRICT ENGINEER.

FOR PROPER BARRIER FLARE AND END PROTECTION, SEE STANDARD MD 104.01-23B.

LENGTH OF DOUBLE YELLOW CENTER LINES TO BE DETERMINED BY THE ASSISTANT DISTRICT ENGINEER - TRAFFIC.

PLACE SIGN (G) AS DIRECTED BY THE ENGINEER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- SIGN SUPPORT / FACE OF SIGN
- APPROVED BARRIER
- CHANNELIZING DEVICES
- DIRECTION OF TRAFFIC
- WORK SITE
- CRASH CUSHIONS
- SIGN DESIGNATION A-H

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ONE LANE ROAD (YIELD CONTROLLED) /2-LANE, 2-WAY
GREATER THAN 40 MPH /OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.06-07

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES:

SIMILAR SIGNING, DENOTED BY A LETTER, FOR THE OPPOSITE APPROACH SHALL BE PLACED.

SIMILAR SIGN SPACINGS SHOULD ALSO BE USED AS SHOWN BELOW.

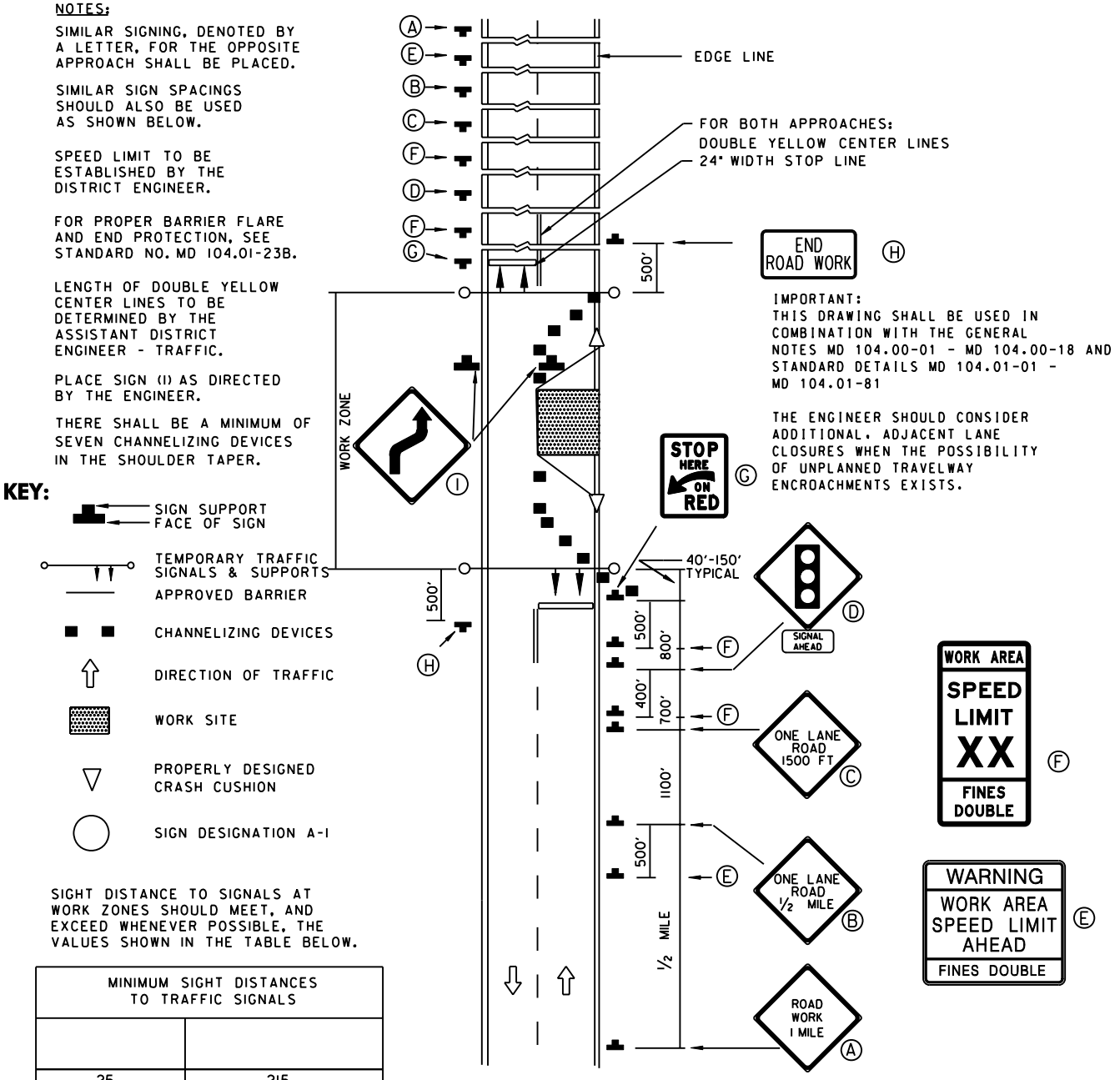
SPEED LIMIT TO BE ESTABLISHED BY THE DISTRICT ENGINEER.

FOR PROPER BARRIER FLARE AND END PROTECTION, SEE STANDARD NO. MD 104.01-23B.

LENGTH OF DOUBLE YELLOW CENTER LINES TO BE DETERMINED BY THE ASSISTANT DISTRICT ENGINEER - TRAFFIC.

PLACE SIGN (I) AS DIRECTED BY THE ENGINEER.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.



KEY:

- SIGN SUPPORT / FACE OF SIGN
- TEMPORARY TRAFFIC SIGNALS & SUPPORTS
- APPROVED BARRIER
- CHANNELIZING DEVICES
- DIRECTION OF TRAFFIC
- WORK SITE
- PROPERLY DESIGNED CRASH CUSHION
- SIGN DESIGNATION A-I

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

SIGHT DISTANCE TO SIGNALS AT WORK ZONES SHOULD MEET, AND EXCEED WHENEVER POSSIBLE, THE VALUES SHOWN IN THE TABLE BELOW.

MINIMUM SIGHT DISTANCES TO TRAFFIC SIGNALS	
25	215
30	270
35	325
40	390
45	460
50	540
55	625
60	715

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

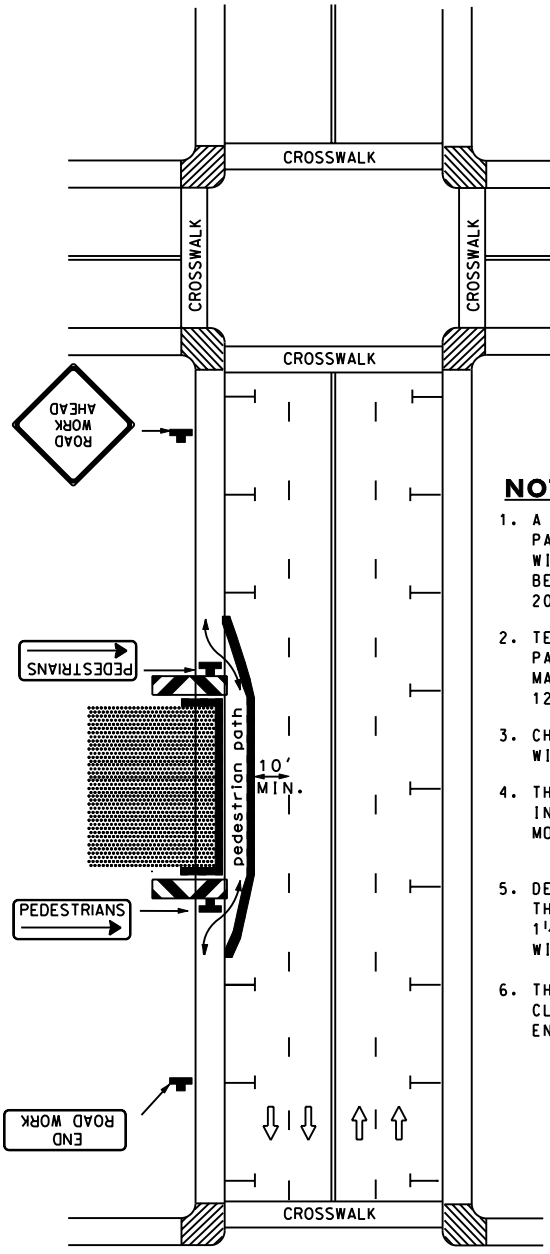
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ONE LANE ROAD (SIGNAL CONTROLLED)/2-LANE, 2-WAY GREATER THAN 40 MPH /OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.06-08

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION FOR SIDEWALK CLOSURE
ALTERNATE PEDESTRIAN ROUTE USING ROADWAY LANE OR SHOULDER



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 THROUGH MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 THROUGH MD 104.01-81

NOTES

1. A 5 FOOT MINIMUM WIDTH PEDESTRIAN PATH / ALTERNATE PEDESTRIAN PATH SHALL BE MAINTAINED WHERE POSSIBLE. WHERE A 5 FOOT MIN WIDTH CANNOT BE ACHIEVED, A MINIMUM WIDTH OF 36 INCHES SHALL BE PROVIDED WITH PASSING ZONES (60 IN X 60 IN) AT LEAST EVERY 200FT.
2. TEMPORARY RAMPS SHALL HAVE A SLOPE OF 12:1 MAX. THE PEDESTRIAN PATH AND RAMP SHALL BE CONSTRUCTED OF HOT MIX ASPHALT OR OTHER MATERIAL THAT CAN PROVIDE SMOOTH, HARD SURFACE & WILL MAINTAIN 12:1 SLOPE.
3. CHANNELIZING DEVICES SHALL BE TEMPORARY CONCRETE BARRIERS WITH THE ADDITION OF CONTINUOUS DETECTABLE EDGING.
4. THE CONTINUOUS DETECTABLE EDGINGS SHALL PROTRUDE AT LEAST 6 INCHES ABOVE THE PATHWAY WITH THE BOTTOM OF THE EDGING NO MORE THAN $1\frac{1}{2}$ INCHES ABOVE THE PATHWAY.
5. DETECTABLE BARRICADES SHALL EXTEND AT LEAST 36" ABOVE THE PATHWAY WITH THE BOTTOM OF THE BARRICADE NO MORE THAN $1\frac{1}{2}$ INCHES ABOVE THE PATHWAY, AND SHALL EXTEND THE FULL WIDTH OF THE CLOSURE
6. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- SIGN
- CHANNELIZING DEVICES WITH DETECTABLE EDGING
- DETECTABLE BARRICADE
- DIRECTION OF TRAFFIC
- WORK SITE
- PARKING SPACES / SHOULDER AREA
- TEMPORARY RAMP (WITH DETECTABLE SURFACE WARNING)
- EXISTING CURB RAMP

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

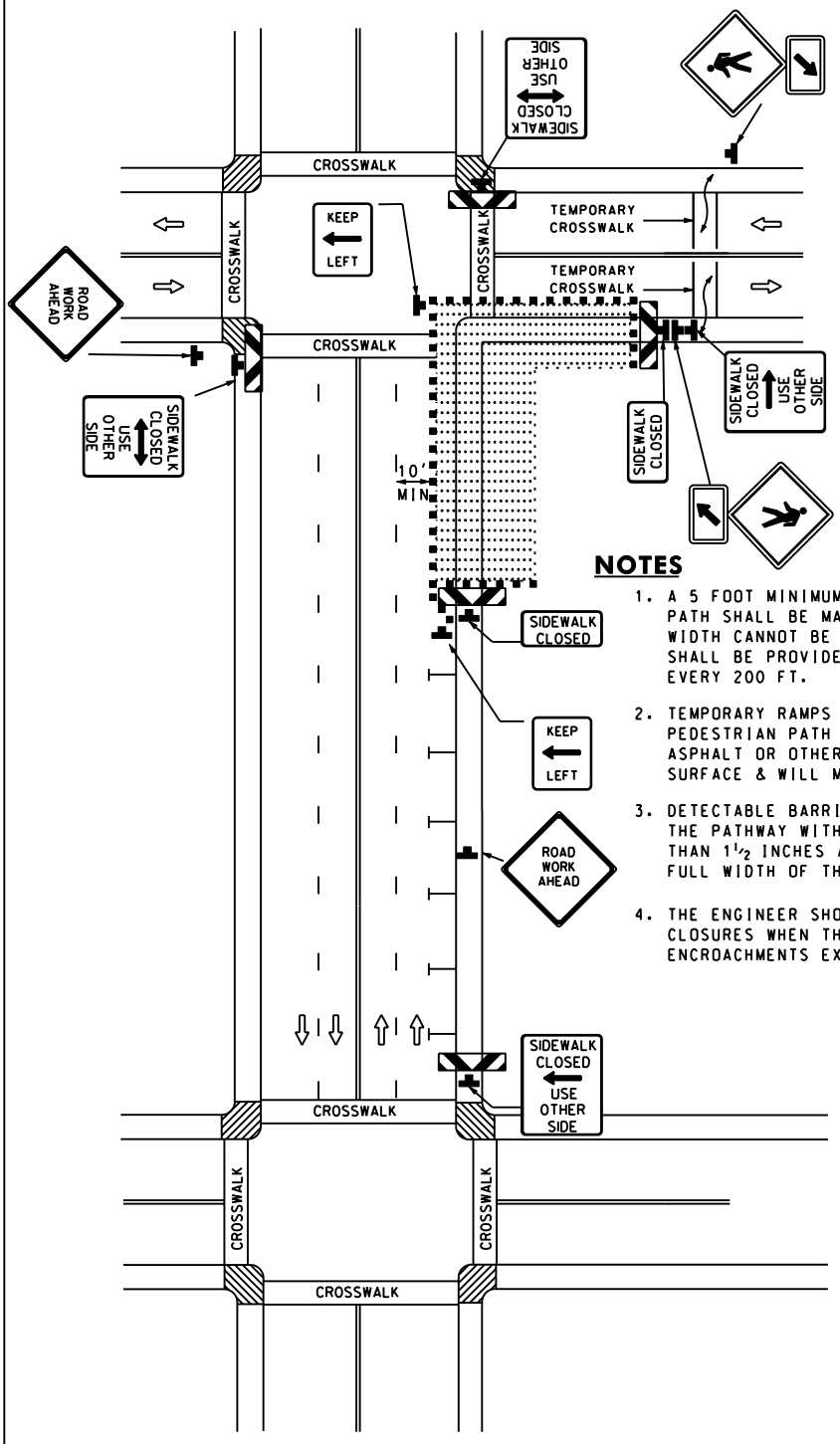
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-14-08	APPROVAL	7-3-08
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
PED AND CURB-LANE CONTROL/MULTILANE UNDIV. SPEED LESS THAN OR EQUAL TO 40 MPH /OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.06-09A

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
ALTERNATE PEDESTRIAN DETOUR ROUTE AT INTERSECTION



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 THROUGH MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 THROUGH MD 104.01-81

NOTES

1. A 5 FOOT MINIMUM WIDTH PEDESTRIAN PATH / ALTERNATE PEDESTRIAN PATH SHALL BE MAINTAINED WHERE POSSIBLE. WHERE A 5 FOOT MIN. WIDTH CANNOT BE ACHIEVED, A MINIMUM WIDTH OF 36 INCHES SHALL BE PROVIDED WITH PASSING ZONES (60 IN X 60 IN) AT LEAST EVERY 200 FT.
2. TEMPORARY RAMPS SHALL HAVE A SLOPE OF 12:1 MAX. THE PEDESTRIAN PATH AND RAMP SHALL BE CONSTRUCTED OF HOT MIX ASPHALT OR OTHER MATERIAL THAT CAN PROVIDE A SMOOTH, HARD SURFACE & WILL MAINTAIN 12:1 SLOPE.
3. DETECTABLE BARRICADES SHALL EXTEND AT LEAST 36" ABOVE THE PATHWAY WITH THE BOTTOM OF THE BARRICADE NO MORE THAN 1 1/2 INCHES ABOVE THE PATHWAY, AND SHALL EXTEND THE FULL WIDTH OF THE CLOSURE.
4. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- DIRECTION OF TRAFFIC
- WORK SITE
- TEMPORARY RAMP (WITH DETECTABLE SURFACE WARNING)
- SIGN
- DETECTABLE BARRICADE
- PARKING SPACES / SHOULDER AREA
- EXISTING CURB RAMPS
- CHANNELIZING DEVICES

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

	APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	7-14-08	7-3-08
REVISED	8-11-10	7-29-10
REVISED		
REVISED		

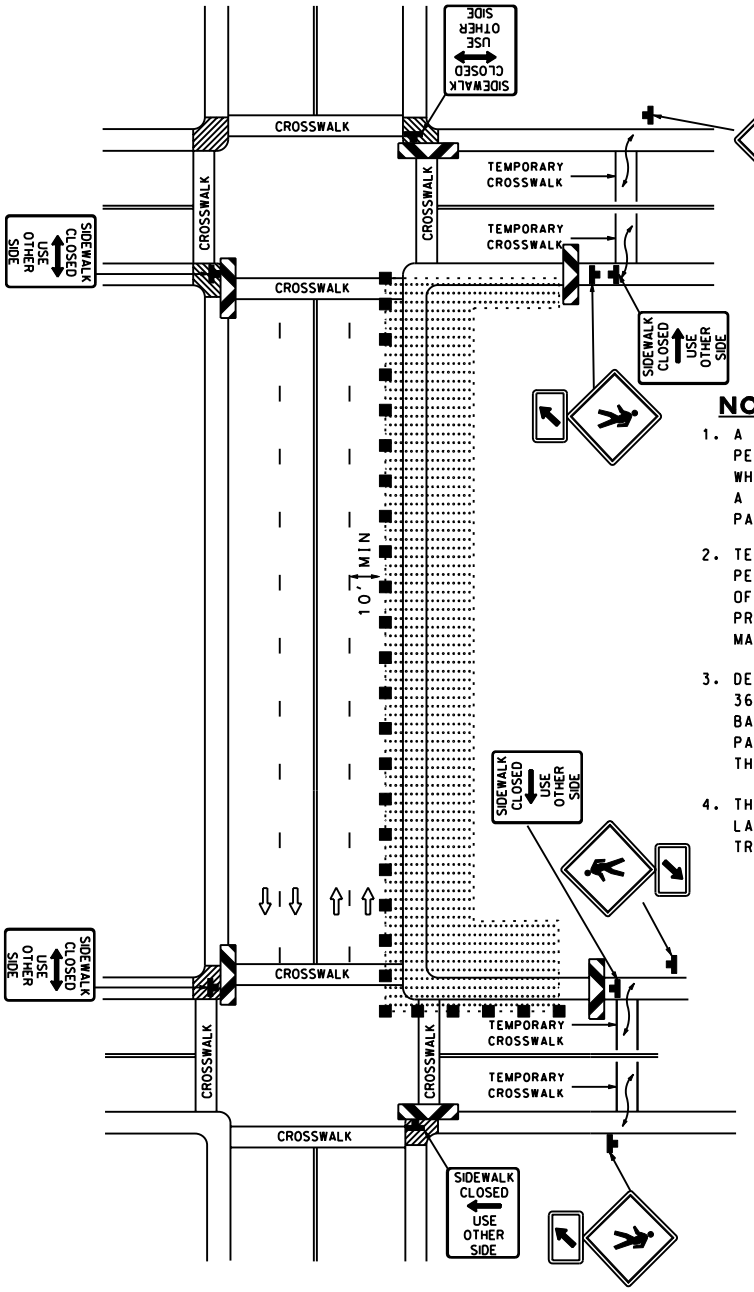
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PED AND CURB-LANE CONTROL / MULTILANE UNDIV. FOR SPEEDS GREATER THAN 40MPH / OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.06-09B

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION FOR SIDEWALK CLOSURE
ALTERNATE PEDESTRIAN DETOUR ROUTE FOR FULL BLOCK CLOSURE



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 THROUGH MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 THROUGH MD 104.01-81

NOTES

1. A 5 FOOT MINIMUM WIDTH PEDESTRIAN PATH / ALTERNATE PEDESTRIAN PATH SHALL BE MAINTAINED WHERE POSSIBLE. WHERE A 5 FOOT MINIMUM WIDTH CANNOT BE ACHIEVED, A MINIMUM WIDTH OF 36 INCHES SHALL BE PROVIDED WITH PASSING ZONES (60 IN X 60 IN) AT LEAST EVERY 200FT.
2. TEMPORARY RAMPS SHALL HAVE A SLOPE OF 12:1 MAX. PEDESTRIAN PATH AND RAMP SHALL BE CONSTRUCTED OF HOT MIX ASPHALT OR OTHER MATERIAL THAT CAN PROVIDE A SMOOTH, HARD SURFACE & WILL MAINTAIN 12:1 SLOPE.
3. DETECTABLE BARRICADES SHALL EXTEND AT LEAST 36" ABOVE THE PATHWAY WITH THE BOTTOM OF THE BARRICADE NO MORE THAN 1½ INCHES ABOVE THE PATHWAY, AND SHALL EXTEND THE FULL WIDTH OF THE CLOSURE.
4. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- TEMPORARY RAMP (WITH DETECTABLE SURFACE WARNING)
- DETECTABLE BARRICADE
- EXISTING CURB RAMPS
- CHANNELIZING DEVICES

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

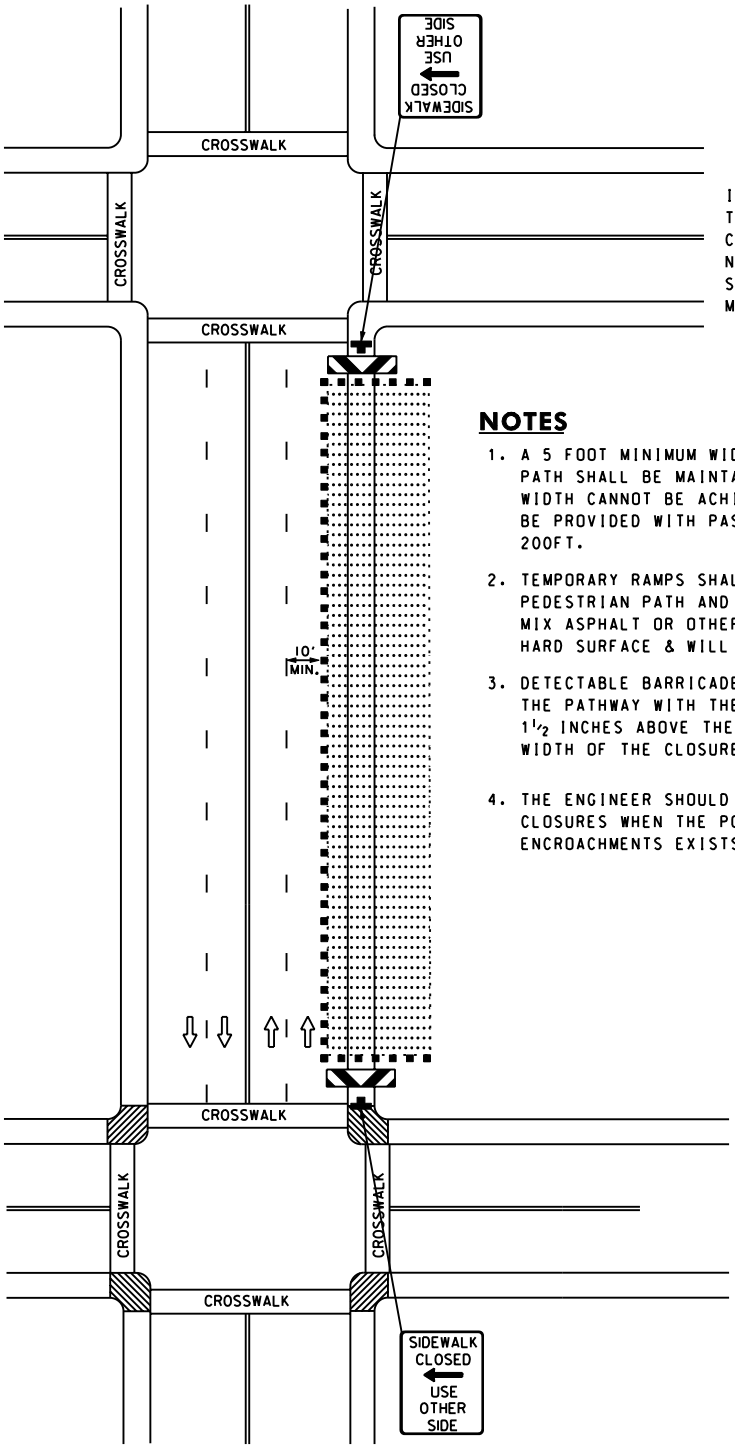
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-14-08	APPROVAL	7-3-08
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
PED AND CURB-LANE CONTROL/MULTILANE UNDIV. SPEED LESS THAN OR EQUAL TO 40 MPH /OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD-104.06-09C

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
ALTERNATE PEDESTRIAN DETOUR ROUTE USING OPPOSITE SIDEWALK



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 THROUGH MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES

1. A 5 FOOT MINIMUM WIDTH PEDESTRIAN PATH / ALTERNATE PEDESTRIAN PATH SHALL BE MAINTAINED WHERE POSSIBLE. WHERE A 5 FOOT MINIMUM WIDTH CANNOT BE ACHIEVED, A MINIMUM WIDTH OF 36 INCHES SHALL BE PROVIDED WITH PASSING ZONES (60 IN X 60 IN) AT LEAST EVERY 200FT.
2. TEMPORARY RAMPS SHALL HAVE A SLOPE OF 12:1 MAX. THE PEDESTRIAN PATH AND RAMP SHALL BE CONSTRUCTED OF HOT MIX ASPHALT OR OTHER MATERIAL THAT CAN PROVIDE A SMOOTH, HARD SURFACE & WILL MAINTAIN 12:1 SLOPE.
3. DETECTABLE BARRICADES SHALL EXTEND AT LEAST 36" ABOVE THE PATHWAY WITH THE BOTTOM OF THE BARRICADE NO MORE THAN 1½ INCHES ABOVE THE PATHWAY, AND SHALL EXTEND THE FULL WIDTH OF THE CLOSURE.
4. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- DIRECTION OF TRAFFIC
- WORK SITE
- SIGN
- DETECTABLE BARRICADE
- EXISTING CURB RAMPS
- CHANNELIZING DEVICES

SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-14-08	APPROVAL	7-3-08
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

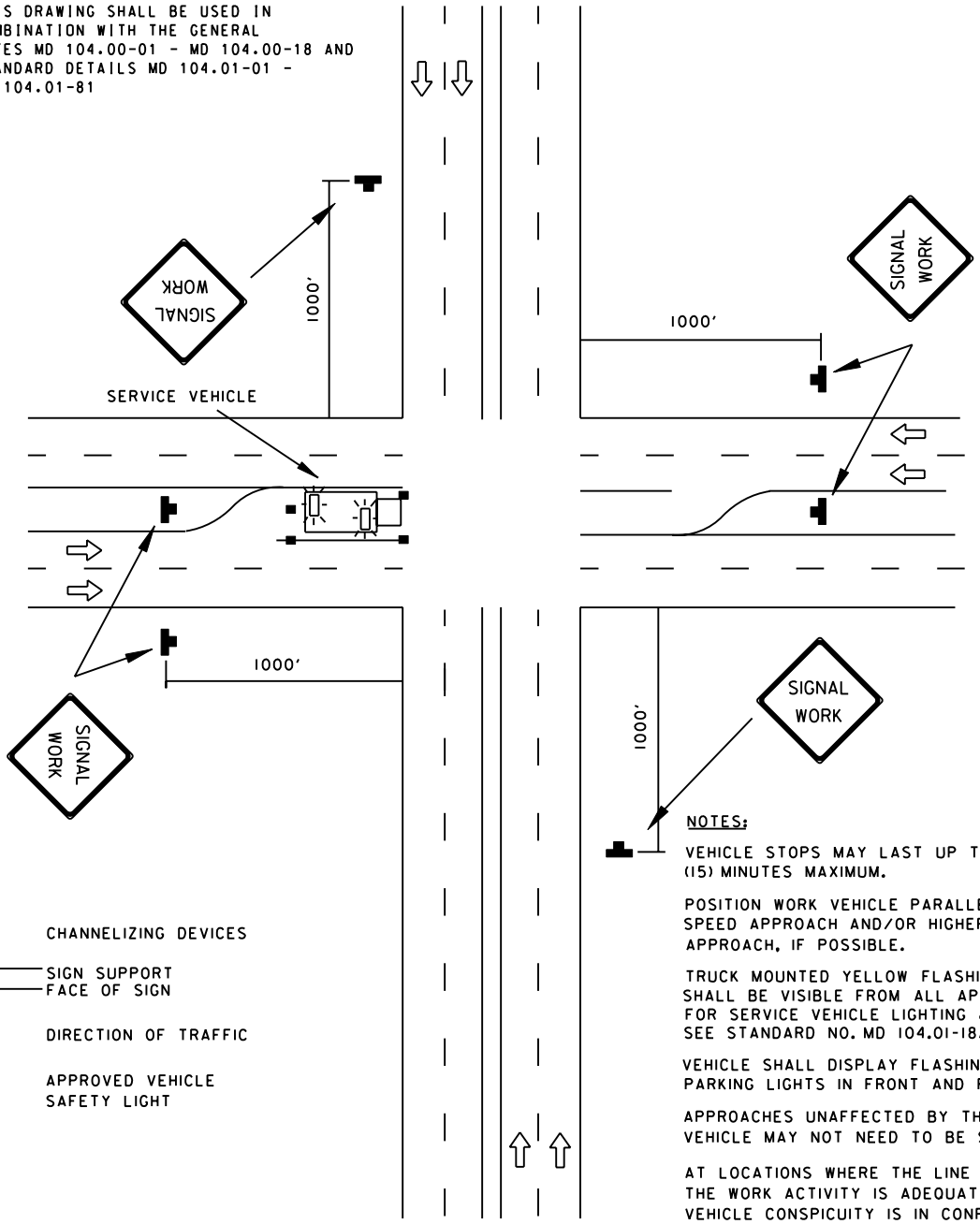
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PED AND CURB-LANE CONTROL /MULTILANE UNDIV. FOR SPEEDS GREATER THAN 40MPH / OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.06-09D

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- APPROVED VEHICLE SAFETY LIGHT

NOTES:

VEHICLE STOPS MAY LAST UP TO FIFTEEN (15) MINUTES MAXIMUM.

POSITION WORK VEHICLE PARALLEL TO HIGHER SPEED APPROACH AND/OR HIGHER VOLUME APPROACH, IF POSSIBLE.

TRUCK MOUNTED YELLOW FLASHING LIGHT SHALL BE VISIBLE FROM ALL APPROACHES. FOR SERVICE VEHICLE LIGHTING & STRIPING, SEE STANDARD NO. MD 104.01-18A & 18B.

VEHICLE SHALL DISPLAY FLASHING HAZARD/ PARKING LIGHTS IN FRONT AND REAR.

APPROACHES UNAFFECTED BY THE SERVICE VEHICLE MAY NOT NEED TO BE SIGNED.

AT LOCATIONS WHERE THE LINE OF SIGHT TO THE WORK ACTIVITY IS ADEQUATE AND THE VEHICLE CONSPICUITY IS IN CONFORMANCE WITH STANDARD NO. MD 104.01-18A, NO ADVANCE SIGNING IS NEEDED.

SPECIFICATION	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE SERVICE WORK/INTERSECTION EQL/LESS THAN 40 MPH/0-15 MIN.

STANDARD NO. MD 104.06-10

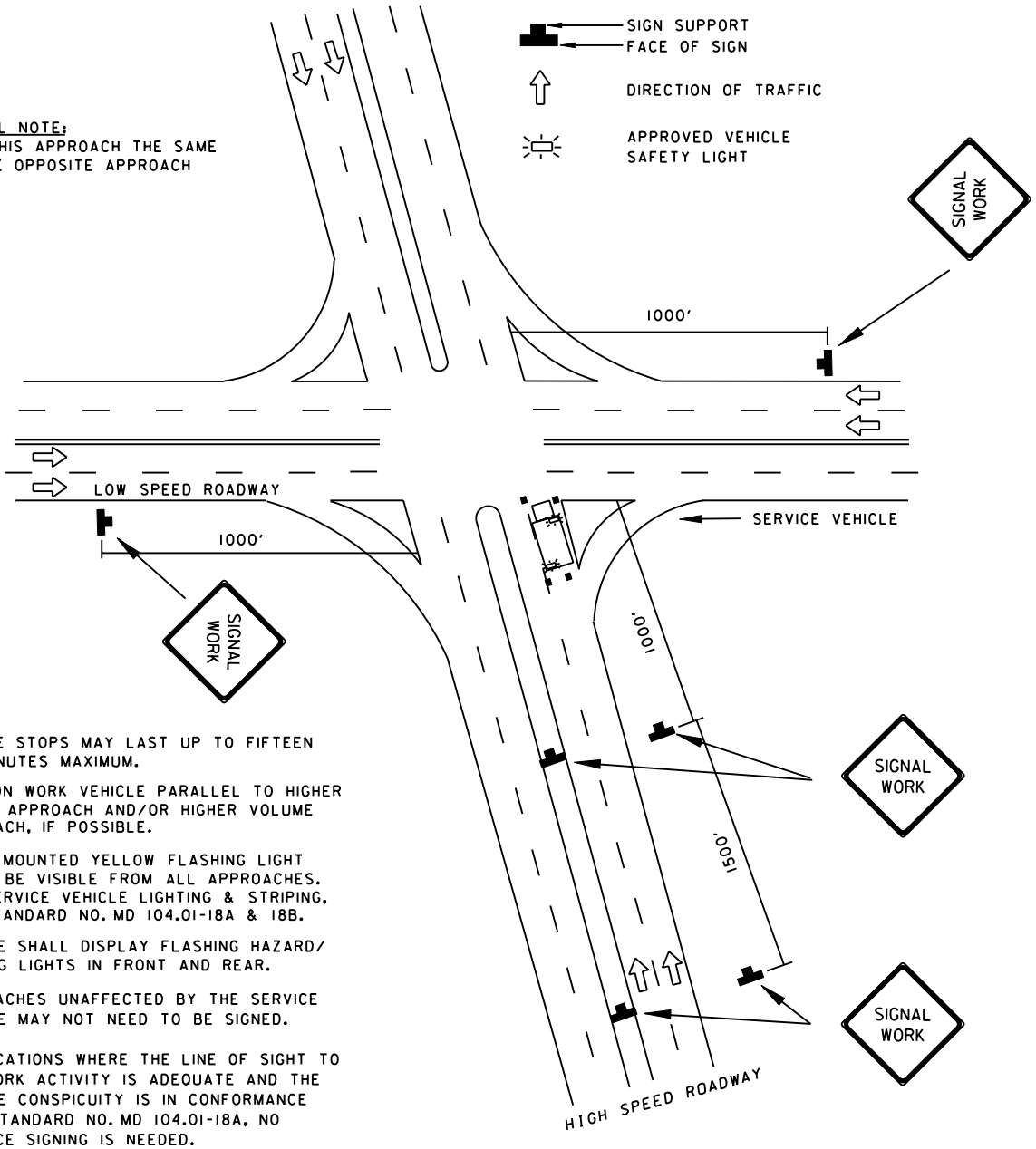
TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- APPROVED VEHICLE SAFETY LIGHT

SPECIAL NOTE:
SIGN THIS APPROACH THE SAME AS THE OPPOSITE APPROACH



NOTES:

VEHICLE STOPS MAY LAST UP TO FIFTEEN (15) MINUTES MAXIMUM.

POSITION WORK VEHICLE PARALLEL TO HIGHER SPEED APPROACH AND/OR HIGHER VOLUME APPROACH, IF POSSIBLE.

TRUCK MOUNTED YELLOW FLASHING LIGHT SHALL BE VISIBLE FROM ALL APPROACHES. FOR SERVICE VEHICLE LIGHTING & STRIPING, SEE STANDARD NO. MD 104.01-18A & 18B.

VEHICLE SHALL DISPLAY FLASHING HAZARD/ PARKING LIGHTS IN FRONT AND REAR.

APPROACHES UNAFFECTED BY THE SERVICE VEHICLE MAY NOT NEED TO BE SIGNED.

AT LOCATIONS WHERE THE LINE OF SIGHT TO THE WORK ACTIVITY IS ADEQUATE AND THE VEHICLE CONSPICUITY IS IN CONFORMANCE WITH STANDARD NO. MD 104.01-18A, NO ADVANCE SIGNING IS NEEDED.

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

	APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL		8-20-03	APPROVAL	9-23-03
REVISED		8-11-10	REVISED	7-29-10
REVISED			REVISED	
REVISED			REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE SERVICE WORK/INTERSECTION GREATER THAN 40 MPH/0-15 MIN.

STANDARD NO. MD 104.06-11

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

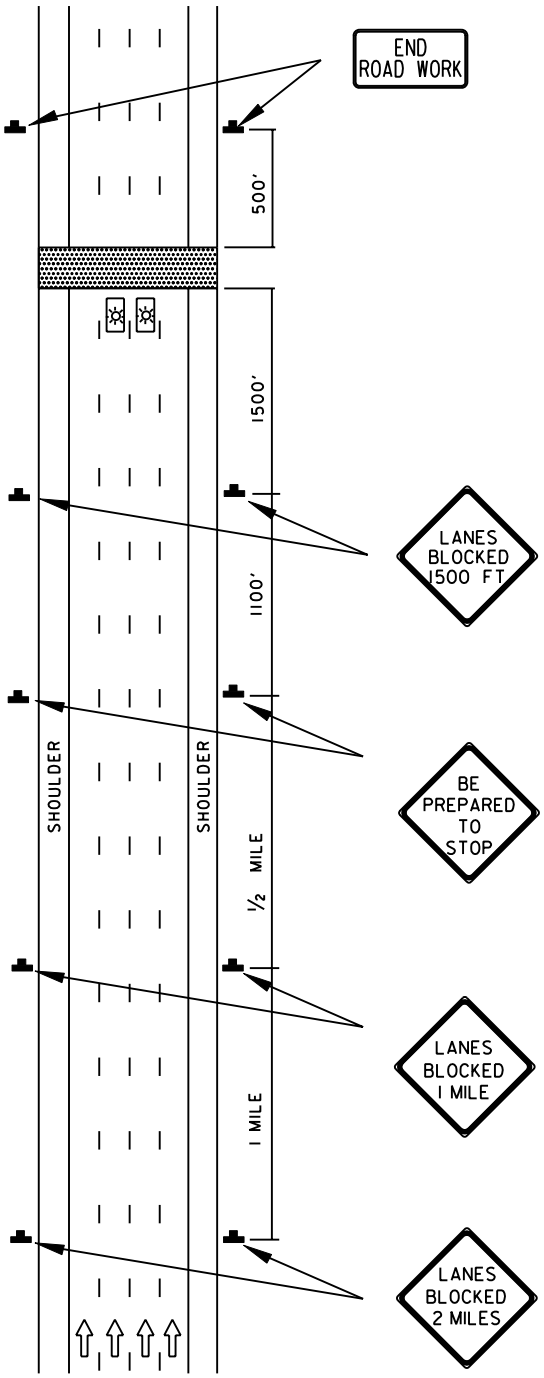
INTERMITTENT ROADWAY CLOSURES SHOULD LAST NO LONGER THAN 15 MINUTES.

THIS TYPICAL ALSO APPLIES TO DIVIDED UNCONTROLLED HIGHWAYS.

A PORTABLE VARIABLE MESSAGE SIGN MAY BE USED IN LIEU OF THE FIRST SET OF ADVANCE WARNING SIGNS, IN CONFORMANCE WITH STANDARD NO. MD 104.01-22.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- POLICE VEHICLE



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
TEMPORARY ROADWAY CLOSURE/EXP-FREEWAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.06-12

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

INTERMITTENT ROADWAY CLOSURES SHOULD LAST NO LONGER THAN 15 MINUTES.

FOR RIGHT LANE CLOSURE, CHANGE SIGNING TO REFLECT A RIGHT LANE CLOSURE, AS WELL AS REPOSITION OTHER SIGNS, TRAFFIC CONTROL DEVICES AND FLAGGER TO REFLECT SAME.

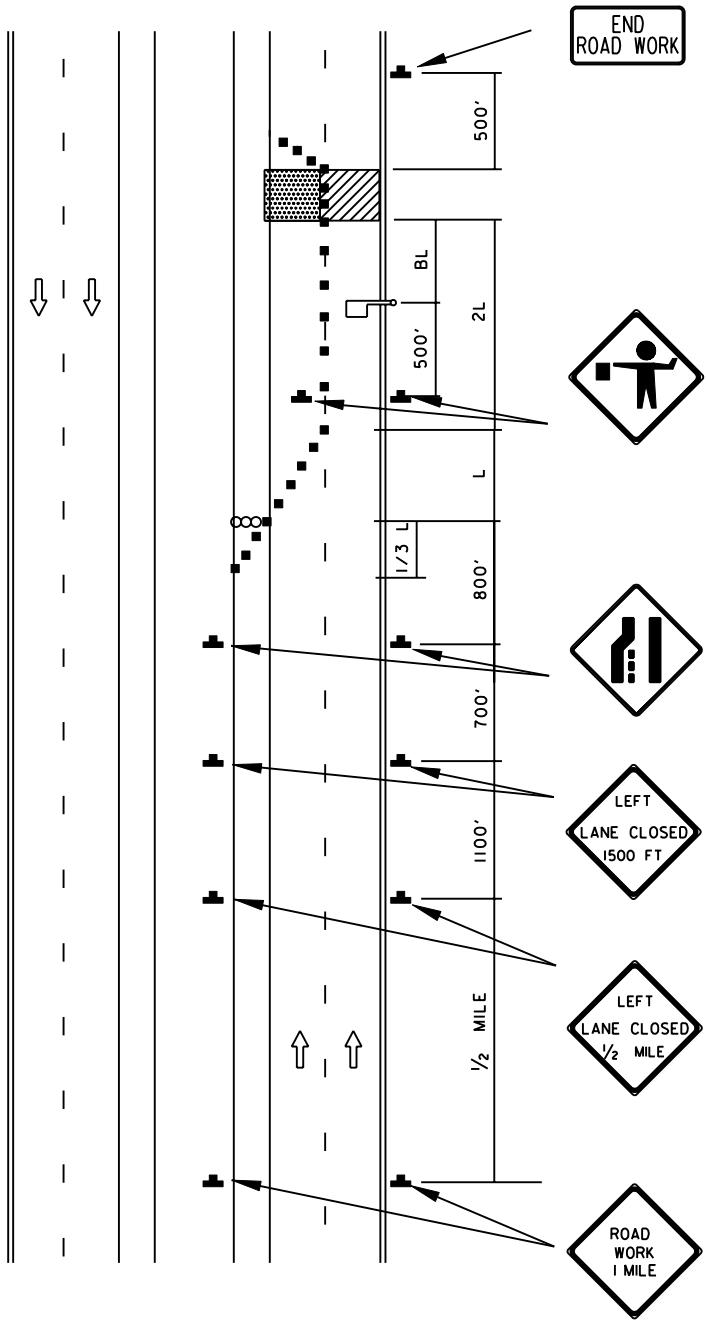
THIS TYPICAL ALSO APPLIES TO MULTILANE UNDIVIDED HIGHWAYS, WITH SIGNS ON ONE SIDE OF THE ROADWAY ONLY.

FLAGGER CONTROL IS RESTRICTED TO ONE OPEN LANE ONLY.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

KEY:

- SIGN SUPPORT / FACE OF SIGN
- CHANNELIZING DEVICES
- DIRECTION OF TRAFFIC
- WORK SITE
- TEMPORARY WORK LOCATION
- ARROW PANEL
- FLAGGER



SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

TEMP. ROADWAY CLOSURE WITH LANE CLOSURE AND FLAGGER CONTROL DIVIDED UNCONTROLLED GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.06-13

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

THIS TYPICAL APPLIES TO TEMPORARY MARKINGS ON FINAL PAVEMENT SURFACES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

** 4' STRIPES, 36' GAP (REDUCED DIMENSION) CENTER LINE AND OR LANE LINE FORMED BY TAPE SHALL BE USED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THESE REDUCED DIMENSION MARKINGS MAY REMAIN IN PLACE NO LONGER THAN SEVEN DAYS WITHIN NO PASSING ZONES.

IF A STANDARD DOUBLE YELLOW CENTER LINE EXISTS ON APPROACH TO THE TEMPORARY MARKED PAVEMENT, THEN THE "NO PASSING ZONE" SIGN SHOULD BE PLACED AT THE BEGINNING OF THE EXISTING DOUBLE YELLOW LINE ON THE LEFT SIDE OF THE ROADWAY-IF ONE IS NOT ALREADY INSTALLED.

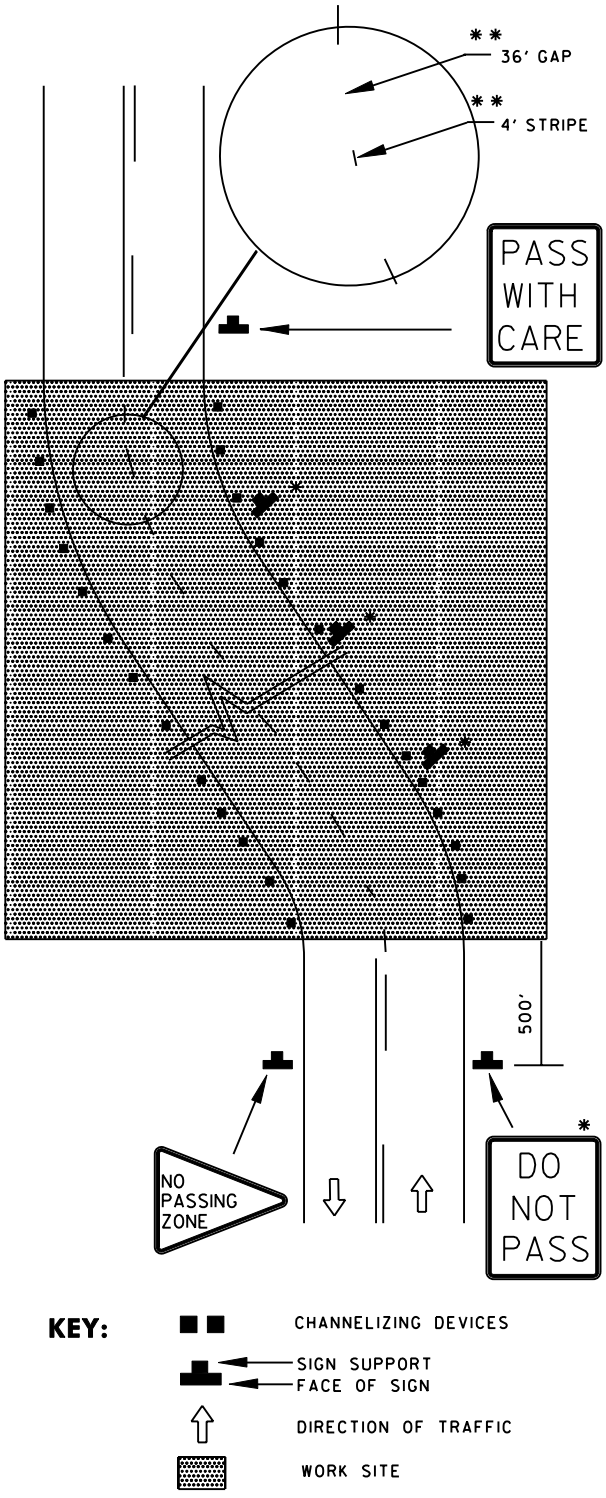
ON STRAIGHT SECTIONS OF ROADWAY WITH FULL DIMENSION CENTER AND/OR LANE LINES BUT WITHOUT EDGE LINES, CHANNELIZING DRUMS SHALL BE USED TO DELINEATE THE EDGE OF THE ROADWAY, EXCEPT AT LOCATIONS AS APPROVED BY THE ENGINEER, SUCH AS WHERE THE EDGE LINE IS DELINEATED BY CURBS, PARKING, BICYCLE LANES, OR OTHER MARKINGS. THE CHANNELIZING DRUMS MAY BE SPACED UP TO 500' APART WHERE NO UNDUE HAZARDS EXIST AND WHEN DIRECTED BY THE ENGINEER. ON CURVE SECTIONS, THIS SPACING SHALL BE REDUCED TO A VALUE EQUAL TO THE POSTED SPEED LIMIT, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

WHEN COMPLETE PAVEMENT MARKINGS ARE NOT IN PLACE, AND PASSING IS PERMITTED, SIGNS SHALL BE ERECTED INDICATING "WARNING: PASSING ZONES UNMARKED" (W14-3(I)) WITH SUPPLEMENTAL PLATE "NEXT____MILES". THESE SIGNS SHALL BE PLACED IN ADVANCE OF THE UNMARKED ZONE AND THROUGHOUT THE UNMARKED ZONE, WHERE PASSING IS PERMITTED, AT THE FOLLOWING DISTANCES.

* SIGN SPACINGS:

(1) WORK AREA UP TO 1 MILE:
SPACE SIGNS AT 1500 FT. INTERVALS.

(2) WORK AREA OVER 1 MILE:
SPACE SIGNS AT ½ MILE INTERVALS.



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

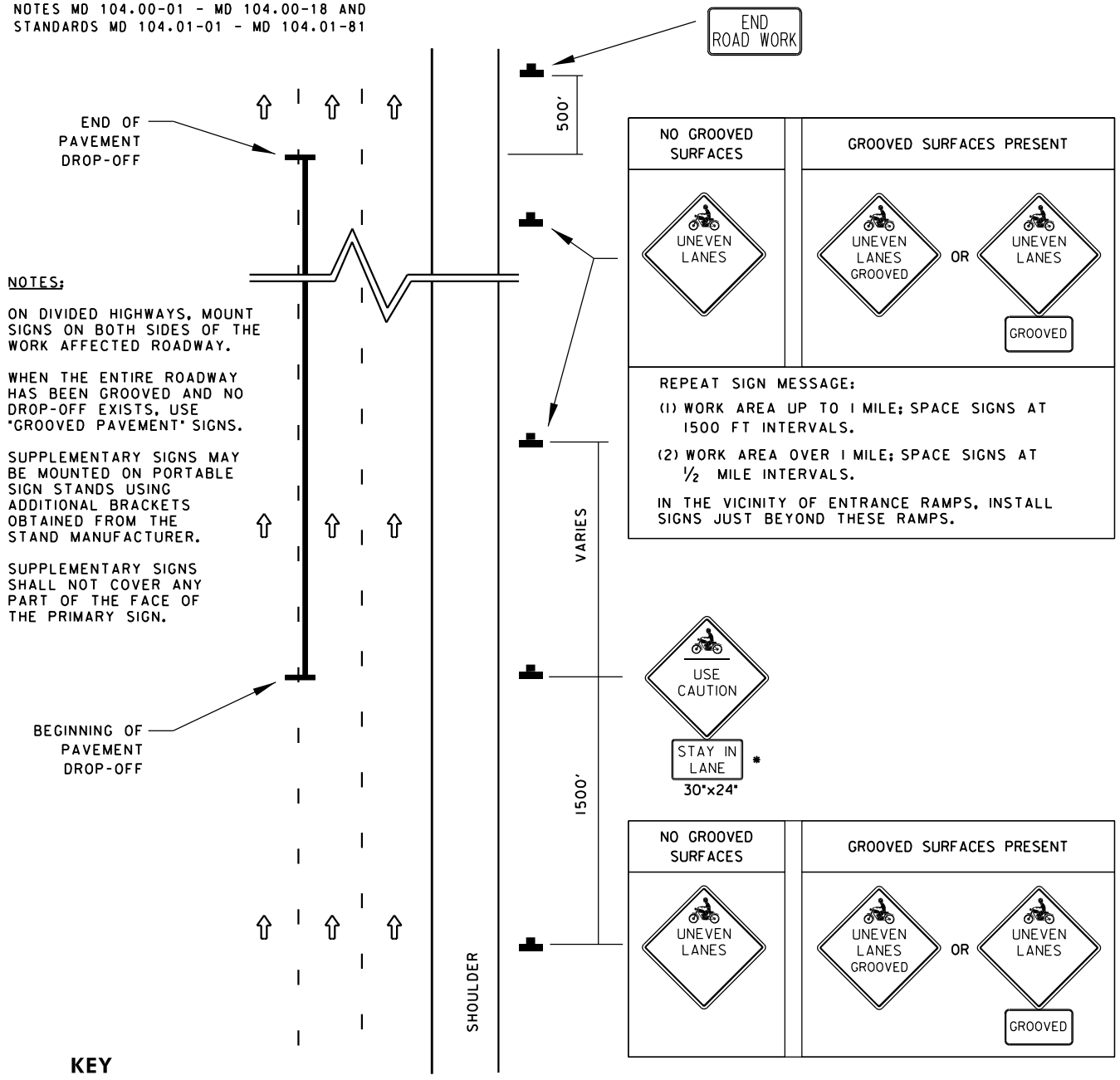
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

UNMARKED NO PASSING ZONES/ 2 OR 3-LANE, 2-WAY ALL SPEEDS

STANDARD NO. MD 104.06-14

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARDS MD 104.01-01 - MD 104.01-81



NOTES:

ON DIVIDED HIGHWAYS, MOUNT SIGNS ON BOTH SIDES OF THE WORK AFFECTED ROADWAY.

WHEN THE ENTIRE ROADWAY HAS BEEN GROOVED AND NO DROP-OFF EXISTS, USE "GROOVED PAVEMENT" SIGNS.

SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER.

SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.

KEY

SIGN SUPPORT
FACE OF SIGN

DIRECTION OF TRAFFIC

* SIGN SHALL HAVE FLUORESCENT ORANGE BACKGROUND AND BLACK LEGEND

SPECIFICATION	CATEGORY CODE ITEMS
104,504,508,509	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	7-1-09	REVISED	7-27-09
REVISED	8-11-10	REVISED	7-29-10
REVISED	1-3-19	REVISED	9-18-17

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

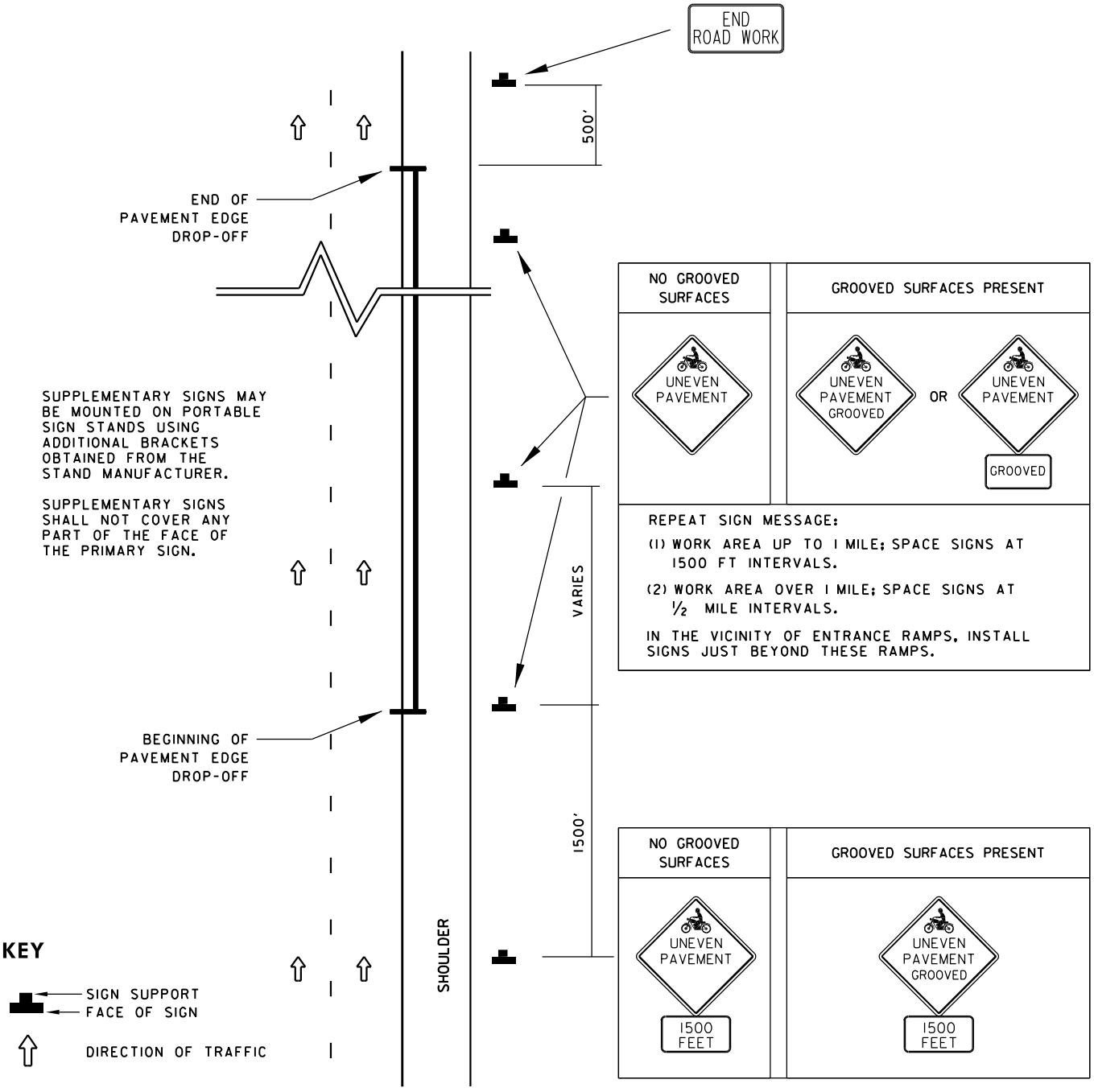
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PAVEMENT DROP-OFF 2.5 INCHES OR LESS (BETWEEN TRAFFIC LANES)

STANDARD NO. MD 104.06-15

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARDS MD 104.01-01 - MD 104.01-81



SPECIFICATION	CATEGORY CODE ITEMS
104,504,508,509	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	1-3-19	REVISED	9-18-17
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PAVEMENT EDGE DROP-OFF 2.5 INCHES OR LESS (BETWEEN TRAFFIC LANES AND SHOULDER)

STANDARD NO. MD 104.06-16

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES;

SHOULDER WORK SIGNS SHALL BE MOUNTED ON THE SIDE OF THE ROADWAY WHERE THE SHOULDER IS AFFECTED. USAGE OF SHOULDER WORK SIGNS ON THE OPPOSITE SIDE OF DIVIDED HIGHWAYS IS OPTIONAL. MOUNT ALL OTHER SIGNS ON BOTH SIDES OF THE WORK-AFFECTED ROADWAY ON DIVIDED HIGHWAYS.

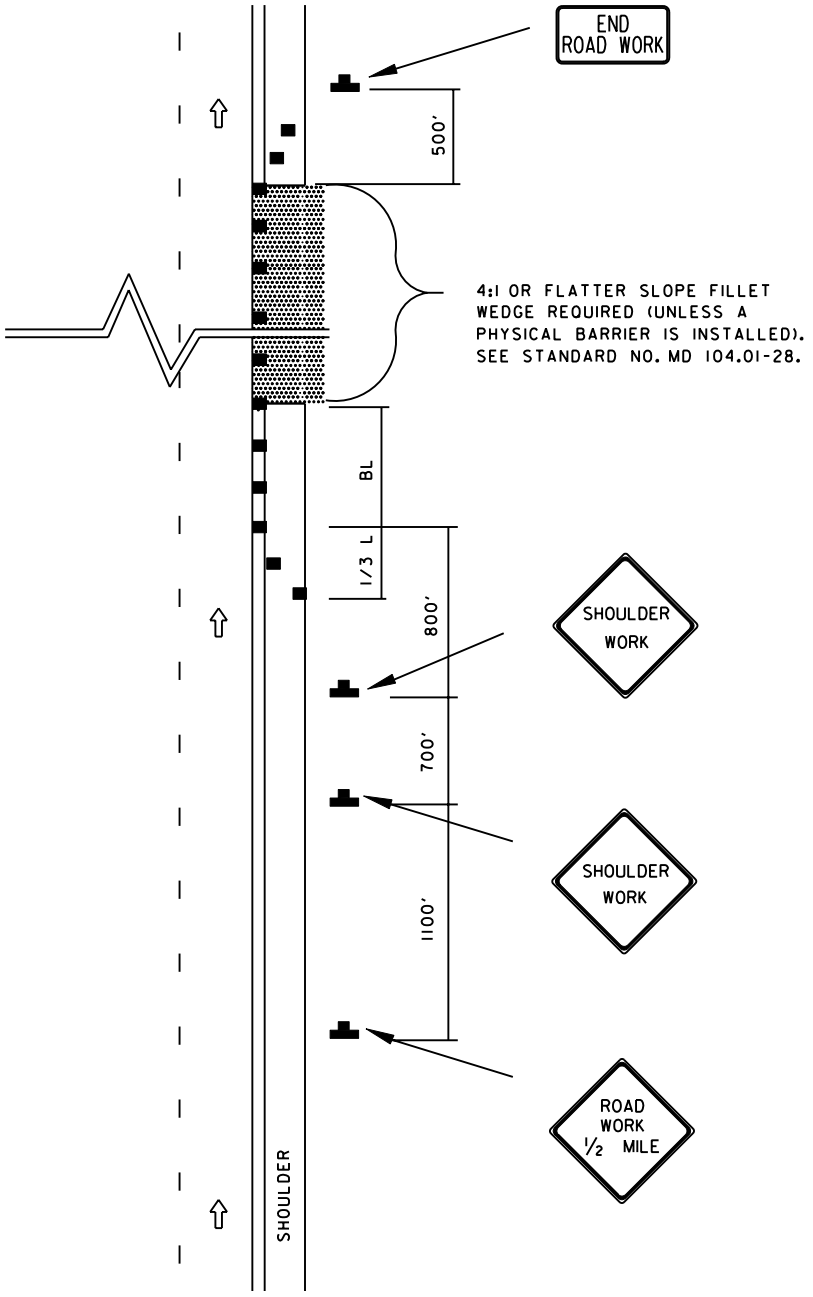
SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION (TEMPORARY CONCRETE BARRIER OR SIMILAR DEVICE). REFER TO STANDARD NO. MD 104.06-18.

ON TWO-LANE, TWO-WAY ROADWAYS, FOR THE OPPOSITE APPROACH, MOUNT A "ROAD WORK AHEAD" SIGN 1000 FEET IN ADVANCE OF WORK AREA. ALSO, MOUNT AN "END ROAD WORK" SIGN 500 FEET PAST THE WORK AREA.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

KEY

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE



SPECIFICATION	CATEGORY CODE ITEMS
104,201,501	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PAVEMENT EDGE DROP-OFF GREATER THAN 2.5 INCHES BUT EQUAL TO OR LESS THAN 5 INCHES (BETWEEN TRAFFIC LANES AND SHOULDER)

STANDARD NO. MD 104.06-17

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

* THE ENGINEER MAY REQUIRE WIDER LANE WIDTHS AS NECESSARY. THIS MAY NECESSITATE A SHIFT IN THE PAVEMENT MARKING LINES.

SHOULDER CLOSED, NO PULL OFF AREA, AND PULL OFF AREA SIGNS SHALL BE MOUNTED ON THE SIDE OF THE ROADWAY WHERE THE SHOULDER IS AFFECTED. USAGE OF THESE SIGNS ON THE OPPOSITE SIDE OF DIVIDED HIGHWAYS IS OPTIONAL. MOUNT ALL OTHER SIGNS ON BOTH SIDES OF THE WORK-AFFECTED ROADWAY ON DIVIDED HIGHWAYS.

ON TWO-LANE, TWO-WAY ROADWAYS, FOR THE OPPOSITE APPROACH, MOUNT A "ROAD WORK AHEAD" SIGN 1000 FEET IN ADVANCE OF WORK AREA. ALSO, MOUNT AN "END ROAD WORK" SIGN 500 FEET PAST THE WORK AREA.

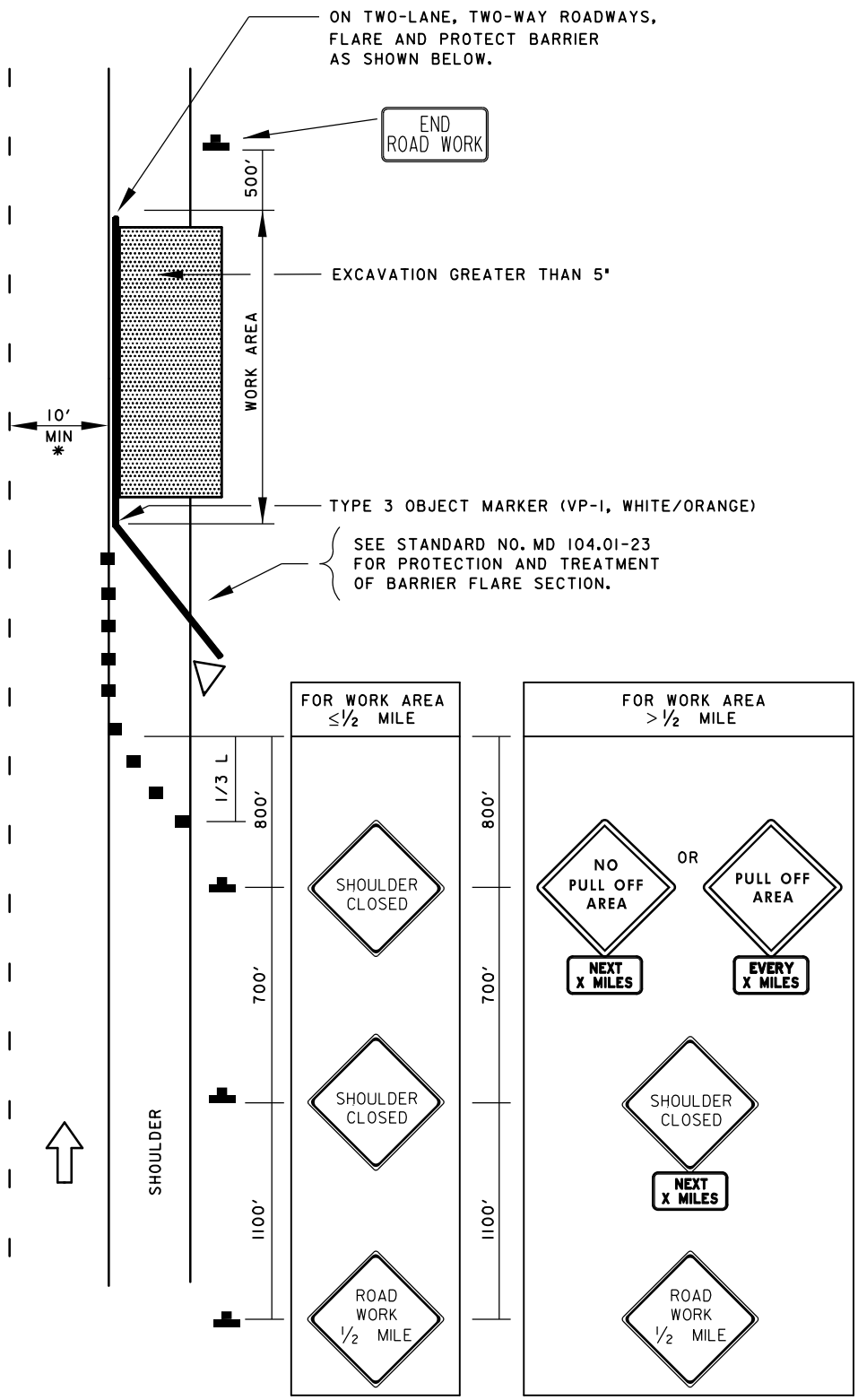
FOR DROP-OFF WITH AN ADJACENT LANE CLOSURE, SEE STANDARD MD 104.06-19.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

SUPPLEMENTARY SIGNS MAY BE MOUNTED ON PORTABLE SIGN STANDS USING ADDITIONAL BRACKETS OBTAINED FROM THE STAND MANUFACTURER. SUPPLEMENTARY SIGNS SHALL NOT COVER ANY PART OF THE FACE OF THE PRIMARY SIGN.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- CRASH CUSHION
- APPROVED BARRIER



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED	2-23-18	REVISED	6-1-17
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PAVEMENT EDGE DROP-OFF GREATER THAN 5 INCHES WITHOUT AN ADJACENT LANE CLOSURE

STANDARD NO. MD 104.06-18

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:
MOUNT SIGNS ON BOTH SIDES OF THE WORK AFFECTED ROADWAY ON DIVIDED HIGHWAYS.

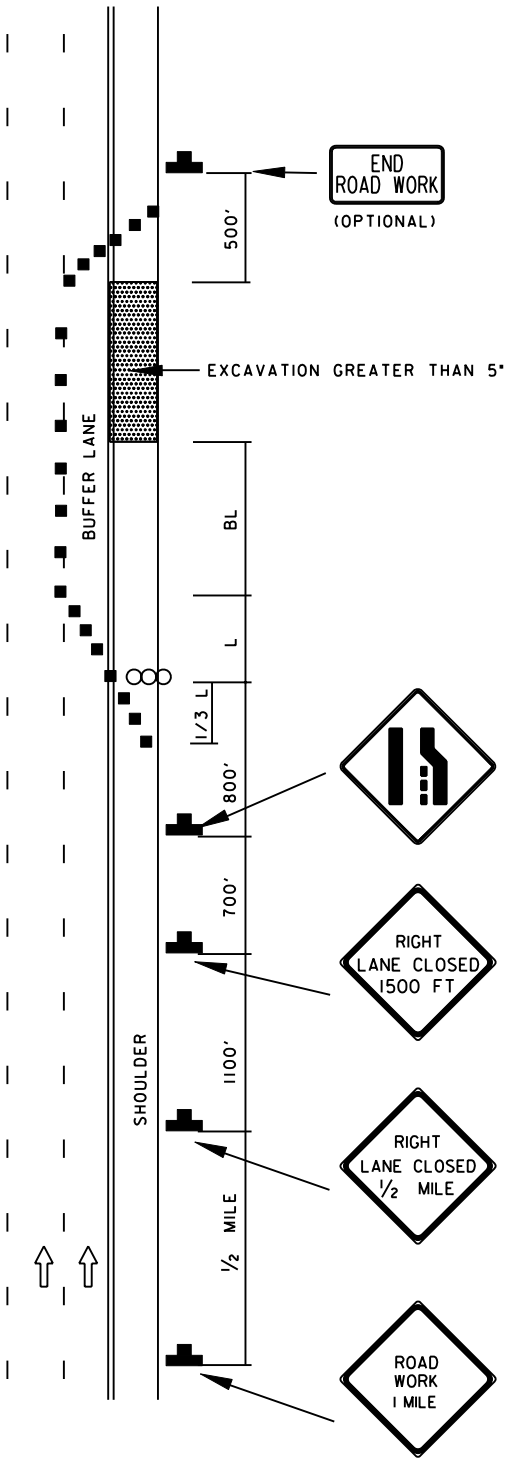
ON TWO-LANE, TWO-WAY ROADWAYS, CLOSE THE LANE ADJACENT TO THE EXCAVATED AREA; CONTROL TRAFFIC WITH FLAGGING OPERATION IN CONFORMANCE WITH STANDARD NO. MD 104.02-09.

DROP-OFF SHALL BE PROVIDED WITH A 4:1 OR FLATTER SLOPE FILLET WEDGE AT ALL TIMES WHILE NO WORK IS BEING PERFORMED. SEE AND IMPLEMENT STANDARD NO. MD 104.06-17.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
PAVEMENT EDGE DROP-OFF GREATER THAN 5 INCHES WITH AN ADJACENT LANE CLOSURE

STANDARD NO. MD 104.06-19

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

SEE STANDARD NO. MD 104.06-18 FOR PROTECTION OF SHOULDER WORK SITE.

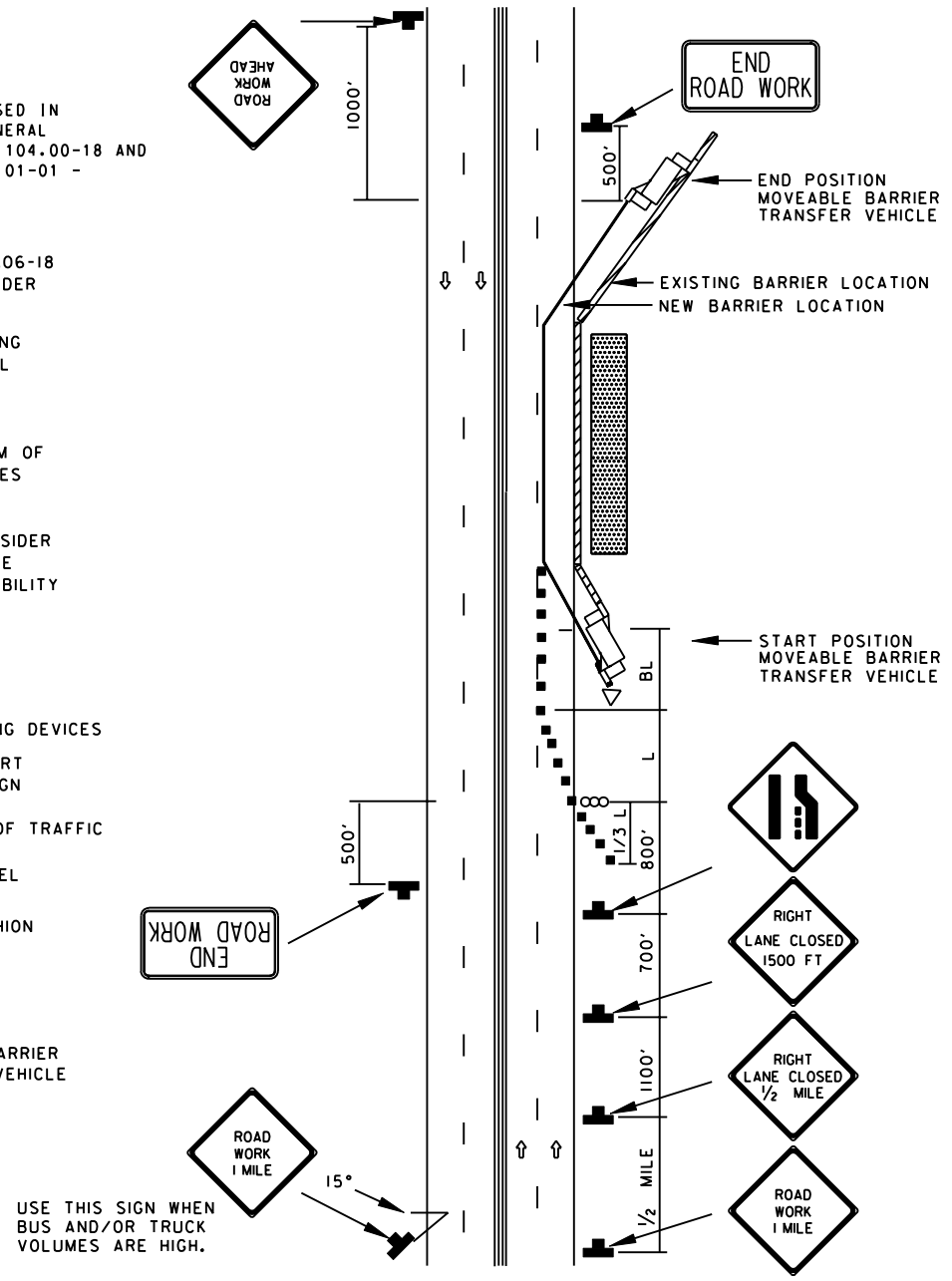
INSTALL SIGNS, CHANNELIZING DEVICES, AND ARROW PANEL BEFORE BARRIER TRANSFER OPERATION BEGINS.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- ARROW PANEL
- CRASH CUSHION
- WORK SITE
- MOVABLE BARRIER TRANSFER VEHICLE



SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

	APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
MOVEABLE BARRIER TRANSFER OPERATION
RIGHT LANE CLOSURE/MULTILANE UNDIV.

STANDARD NO. MD 104.06-20

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:
SEE STANDARD NO. MD 104.06-18 FOR PROTECTION OF SHOULDER WORK SITE.

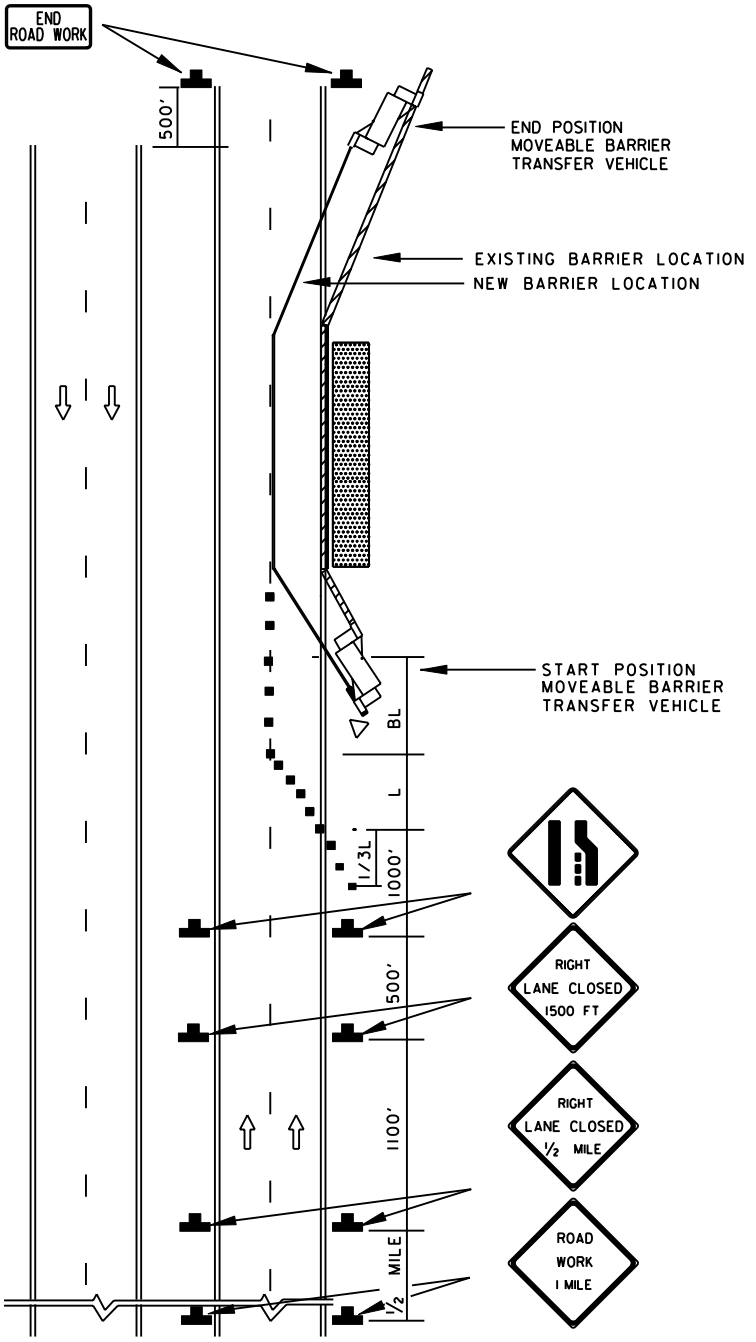
INSTALL SIGNS, CHANNELIZING DEVICES, AND ARROW PANEL BEFORE BARRIER TRANSFER OPERATION BEGINS.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- CRASH CUSHION
- ARROW PANEL
- MOVABLE BARRIER TRANSFER VEHICLE



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	10-5-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
MOVEABLE BARRIER TRANSFER OPERATION
RIGHT LANE CLOSURE
DIVIDED UNCON. OR EXP-FREEWAY

STANDARD NO. MD 104.06-21

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:

SEE STANDARD NOS. MD 104.01-23A AND MD 104.01-23B FOR PROTECTION AND TREATMENT OF BARRIER FLARE SECTIONS.

INSTALL BARRIER POCKETS AT START/END POSITIONS, TO PROTECT BARRIER TRANSFER VEHICLE, AS SHOWN IN CONTRACT DOCUMENT OR AS DIRECTED BY THE ENGINEER.

SEE STANDARD NO. MD 104.06-23.

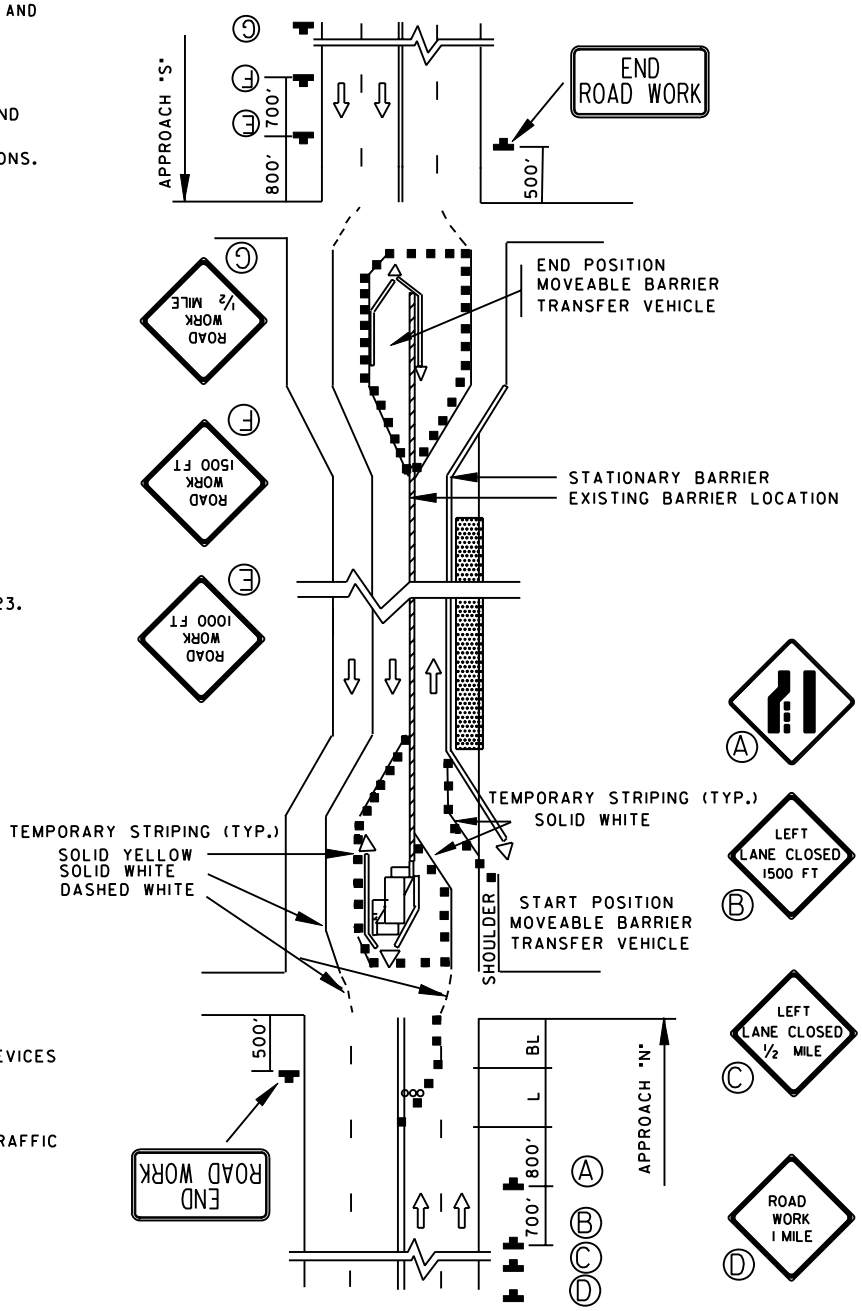
BEFORE BARRIER TRANSFER OPERATION BEGINS, REMOVE/COVER TEMPORARY SIGNS ON APPROACH "S" AND INSTALL STANDARD LEFT LANE CLOSURE SETUP THROUGHOUT TEMPORARY TRAFFIC CONTROL ZONE.

AFTER BARRIER TRANSFER OPERATION IS COMPLETED, REPLACE THE TRAFFIC CONTROL SETUP FOR APPROACH "N" WITH THE SETUP SHOWN ON STANDARD NO. MD 104.06-23.

BARRIER SHALL BE MOVED AS SET FORTH IN THE CONTRACT DOCUMENT OR AS DIRECTED BY THE ENGINEER.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL
- CRASH CUSHION
- MOVEABLE BARRIER TRANSFER VEHICLE

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
MOVEABLE BARRIER TRANSFER OPERATION (STEP 1) MULTILANE UNDIVIDED

STANDARD NO. MD 104.06-22

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

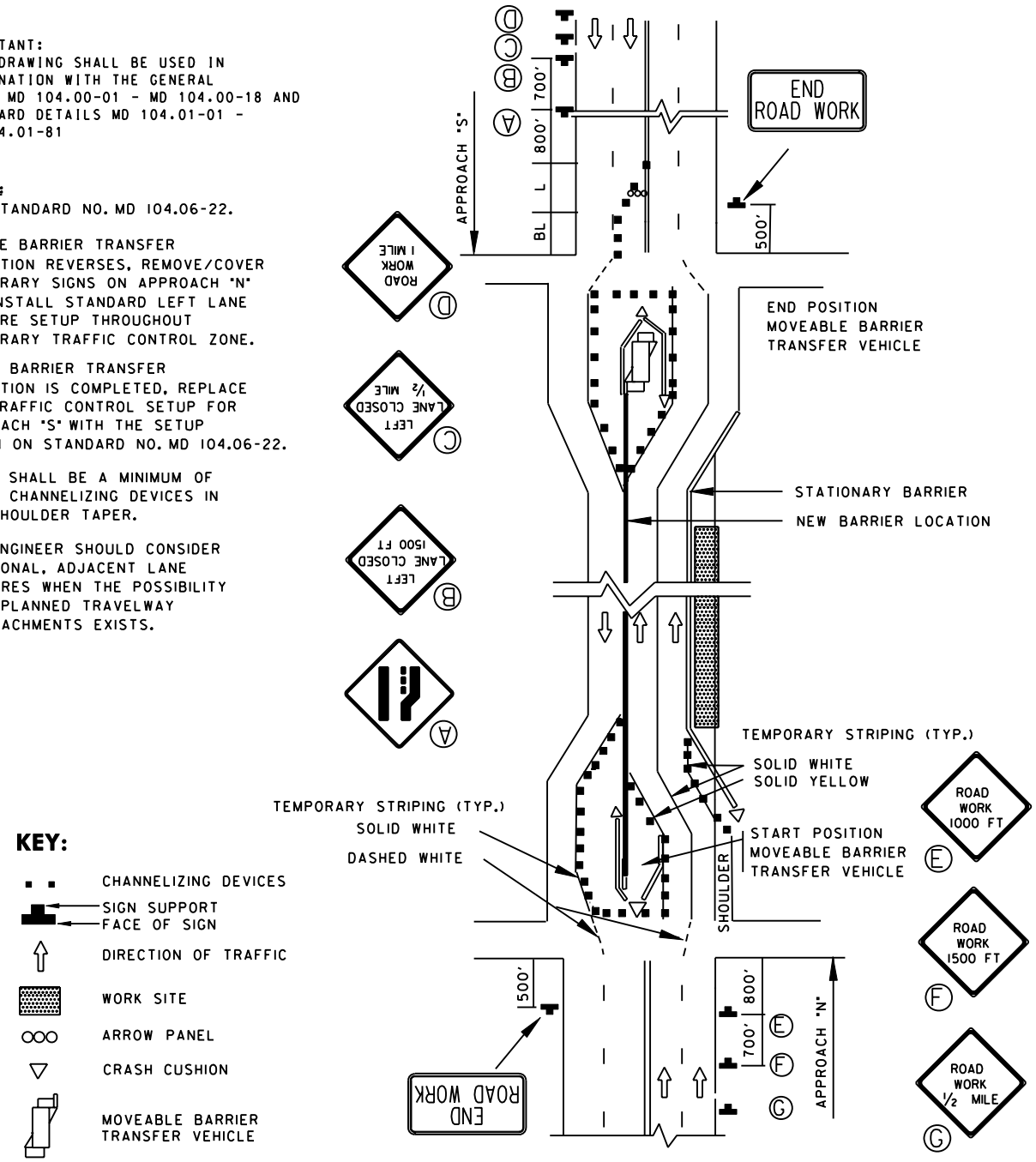
NOTES:
SEE STANDARD NO. MD 104.06-22.

BEFORE BARRIER TRANSFER OPERATION REVERSES, REMOVE/COVER TEMPORARY SIGNS ON APPROACH "N" AND INSTALL STANDARD LEFT LANE CLOSURE SETUP THROUGHOUT TEMPORARY TRAFFIC CONTROL ZONE.

AFTER BARRIER TRANSFER OPERATION IS COMPLETED, REPLACE THE TRAFFIC CONTROL SETUP FOR APPROACH "S" WITH THE SETUP SHOWN ON STANDARD NO. MD 104.06-22.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL
- CRASH CUSHION
- MOVEABLE BARRIER TRANSFER VEHICLE

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
MOVEABLE BARRIER TRANSFER OPERATION (STEP 2) MULTILANE UNDIVIDED

STANDARD NO. MD 104.06-23

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

SEE STANDARD NO. MD 104.02-01
FOR SIGNING OPPOSITE APPROACH.

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTES:
REPEAT SIGN MESSAGE:

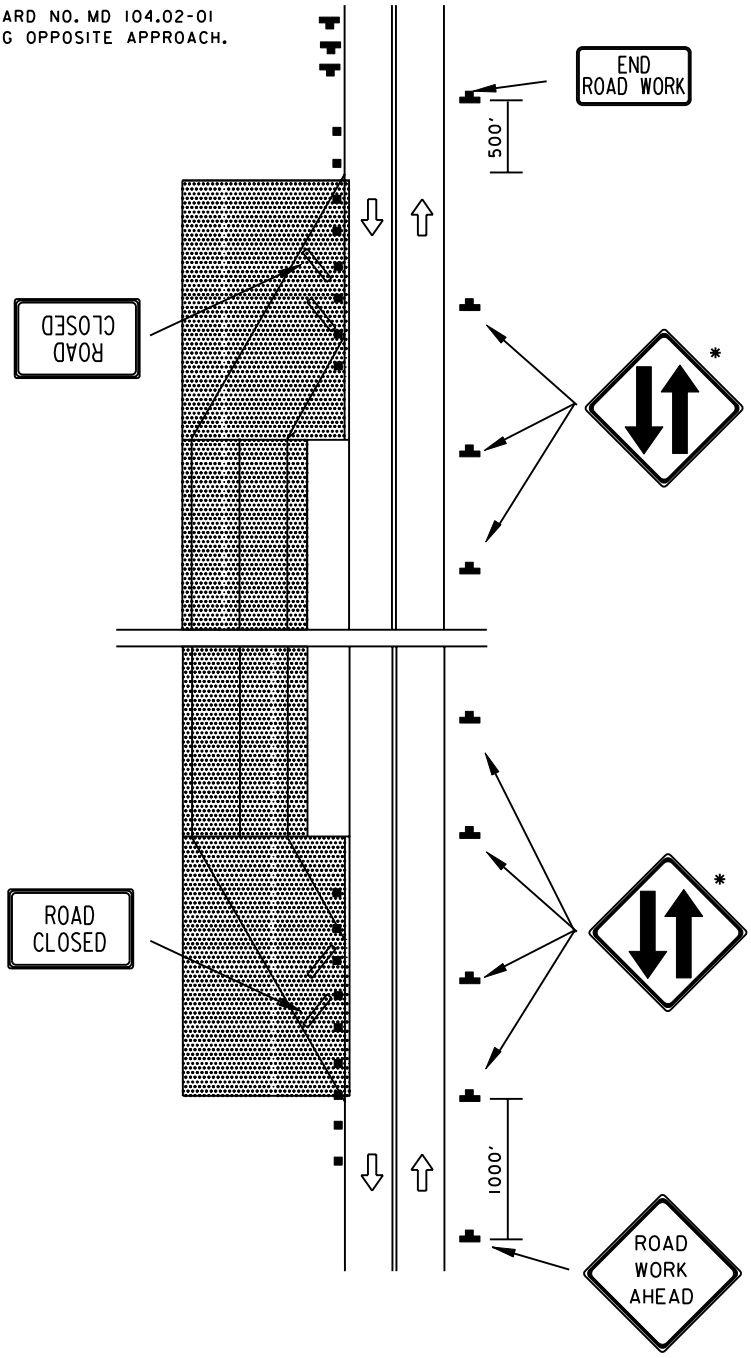
(1) WORK AREA UP TO 1 MILE:
SPACE SIGNS AT 1500 FT. INTERVALS.
(2) WORK AREA OVER 1 MILE:
SPACE SIGNS AT ½ MILE INTERVALS.

* THE TWO-WAY TRAFFIC SIGNS SHALL BE ERECTED WHEN FINAL PAVEMENT MARKINGS ARE INSTALLED. UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- TYPE III BARRICADE



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED	8-11-10	REVISED	7-29-10
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
DUAL HIGHWAY CONSTRUCTION /2-LANE, 2-WAY GREATER THAN 40 MPH/OVER 12 HRS. OR NIGHTTIME USE

STANDARD NO. MD 104.06-24

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

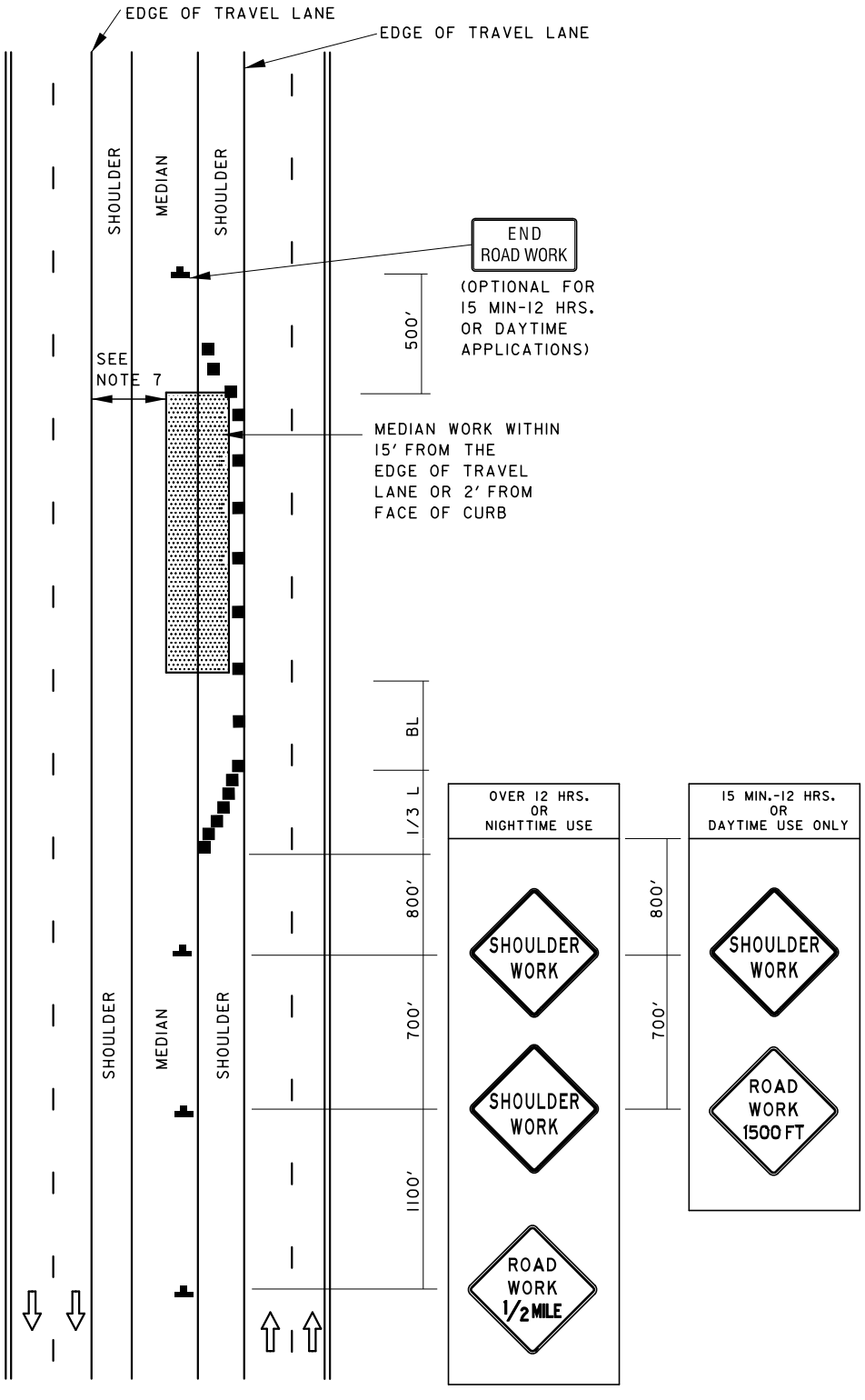
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81.

NOTES:

1. FOR WORK ALONG ROADWAY MEDIANS, SHOULDER WORK SIGNS SHALL BE MOUNTED ON THE SIDE OF THE ROADWAY WHERE THE MEDIAN SHOULDER IS AFFECTED.
2. SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION (TEMPORARY CONCRETE BARRIER OR SIMILAR DEVICE). REFER TO STANDARD NO. MD 104.06-18.
3. WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-15 TO MD 104.06-19.
4. THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.
5. THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF WORK ENCROACHMENT TO THE TRAVELWAY EXISTS.
6. FOR SAFETY, A MINIMUM OF 2 FEET LATERAL CLEARANCE SHALL BE MAINTAINED BETWEEN ANY VEHICLE AND/OR EQUIPMENT POSITIONED ON THE SHOULDER AND THE ADJACENT OPEN TRAVEL LANE. THE ENGINEER SHOULD CONSIDER ADDITIONAL SAFETY MEASURES.
7. IF THERE IS NO POSITIVE PROTECTION IN THE MEDIAN, THE PROXIMITY OF THE WORK ZONE TO THE OPPOSITE APPROACH SHOULD BE EVALUATED. IF THE WORK AREA IS WITHIN 15 FEET FROM THE EDGE LINE OR WITHIN 2 FEET FROM FACE OF CURB, SIGNING AND CHANNELIZING DEVICE PLACEMENT WILL BE THE SAME FOR BOTH APPROACHES.
8. REFER TO MD 104.01-11A FOR THE USE OF A PV.
9. REFER TO MD 104.01-30B AND 30C FOR THE POSITIONING OF A PV.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-11-10	APPROVAL	7-29-10
REVISED	2-19-24	REVISED	11-16-23
REVISED		REVISED	
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MEDIAN WORK ALL SPEEDS

STANDARD NO. MD 104.06-25

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
PLACEMENT OF AUTOMATED SPEED ENFORCEMENT SIGNS AND EQUIPMENT

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL
- SPEED MONITORING VEHICLE
- SPEED DISPLAY TRAILER
- APPROVED BARRIER
- CRASH CUSHION

NOTES:

LOCATIONS OF SPEED MONITORING VEHICLE, SPEED DISPLAY TRAILER AND LOCATIONS AND SIZES OF ALL AUTOMATED SPEED ENFORCEMENT SIGNS SHALL BE DETERMINED AS DIRECTED BY THE ASE REPRESENTATIVE IN THE OFFICE OF TRAFFIC AND SAFETY. THESE ARE ESTABLISHED AFTER THE ASE REPRESENTATIVE HAS VISITED THE WORK SITE.

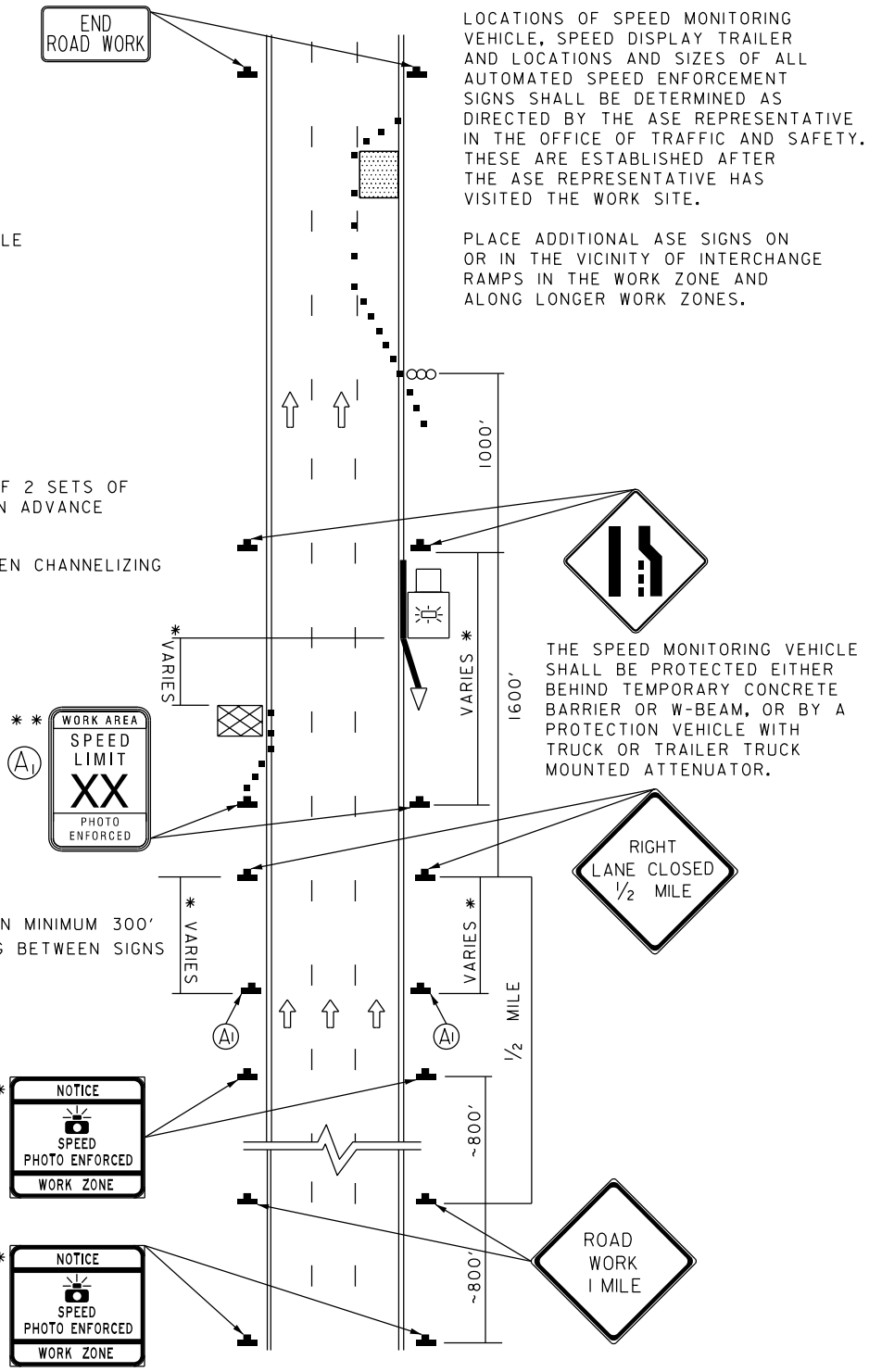
PLACE ADDITIONAL ASE SIGNS ON OR IN THE VICINITY OF INTERCHANGE RAMPS IN THE WORK ZONE AND ALONG LONGER WORK ZONES.

NOTE: THERE SHALL BE A MINIMUM OF 2 SETS OF 2 (4 TOTAL) ASE SIGNS DISPLAYED IN ADVANCE OF THE SPEED MONITORING VEHICLE

THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

** UPPER PANEL OF SIGN SHALL HAVE FLUORESCENT ORANGE BACKGROUND WITH BLACK LEGEND AND LOWER PANEL OF SIGN SHALL HAVE WHITE BACKGROUND WITH BLACK LEGEND

*** UPPER PANEL OF SIGN SHALL HAVE FLUORESCENT YELLOW BACKGROUND WITH BLACK LEGEND, MIDDLE PANEL SHALL HAVE WHITE BACKGROUND WITH BLACK LEGEND AND LOWER PANEL OF SIGN SHALL HAVE FLUORESCENT ORANGE BACKGROUND WITH BLACK LEGEND



SPECIFICATION	CATEGORY CODE ITEMS
	SECTION 100

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	3-7-12	APPROVAL	3-7-12
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

AUTOMATED SPEED ENFORCEMENT TYPICAL LAYOUT

STANDARD NO. MD 104.06-26

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

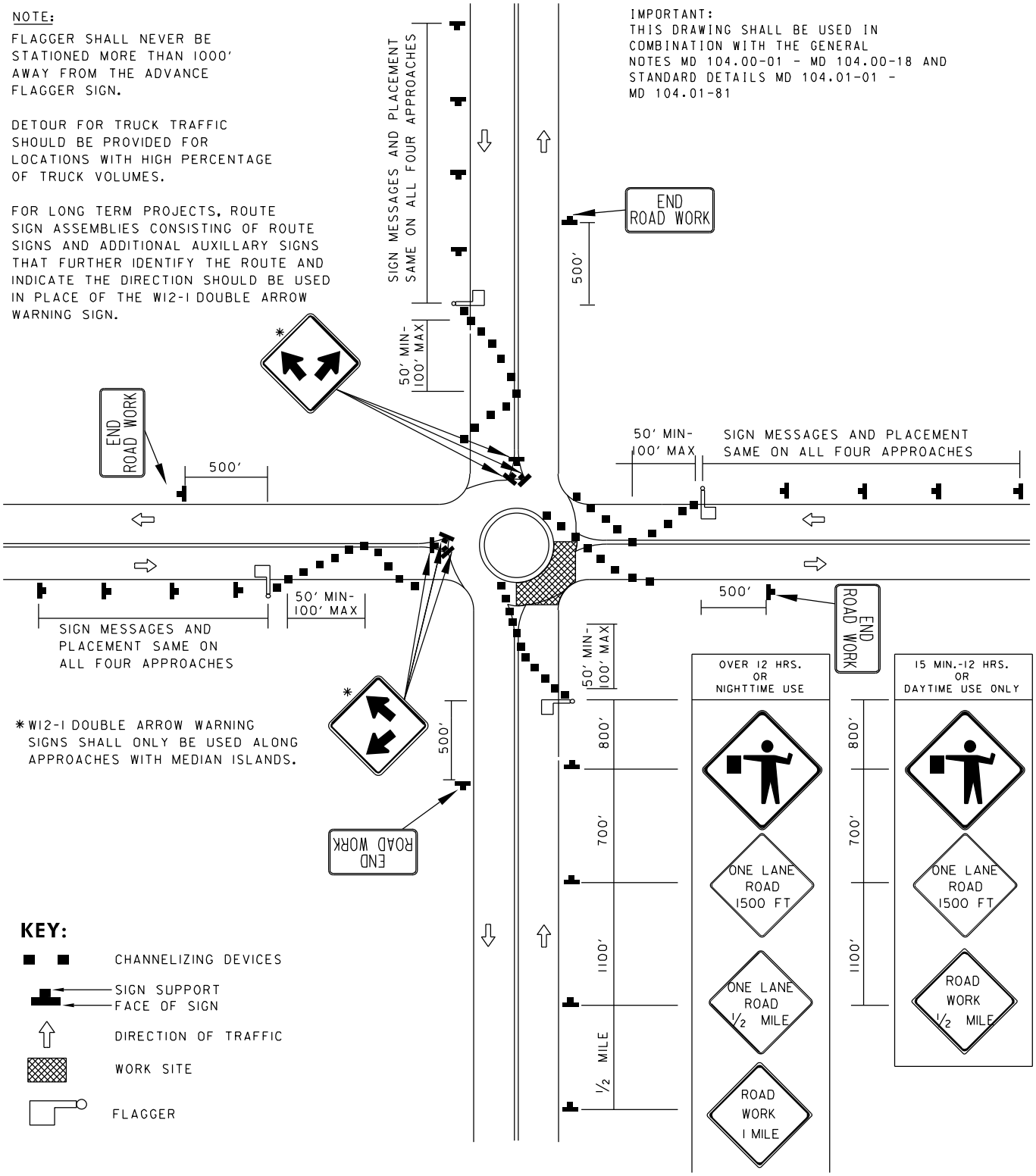
NOTE:

FLAGGER SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

DETOUR FOR TRUCK TRAFFIC SHOULD BE PROVIDED FOR LOCATIONS WITH HIGH PERCENTAGE OF TRUCK VOLUMES.

FOR LONG TERM PROJECTS, ROUTE SIGN ASSEMBLIES CONSISTING OF ROUTE SIGNS AND ADDITIONAL AUXILLARY SIGNS THAT FURTHER IDENTIFY THE ROUTE AND INDICATE THE DIRECTION SHOULD BE USED IN PLACE OF THE W12-1 DOUBLE ARROW WARNING SIGN.

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81



*W12-1 DOUBLE ARROW WARNING SIGNS SHALL ONLY BE USED ALONG APPROACHES WITH MEDIAN ISLANDS.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- FLAGGER

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 03-08-14	APPROVAL 02-04-14
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

ROUNDABOUT FLAGGING OPERATION 2-LANE, 2-WAY ALL SPEEDS

STANDARD NO. MD-104.06-27

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES

1. REFER TO GENERAL NOTES 19.1 AND 19.2 FOR THE USE OF TPRS.
2. REFER TO "RECOMMENDED TPRS SPACING IN ARRAY" TABLE FOR SPACING BETWEEN RUMBLE STRIPS IN ARRAY.

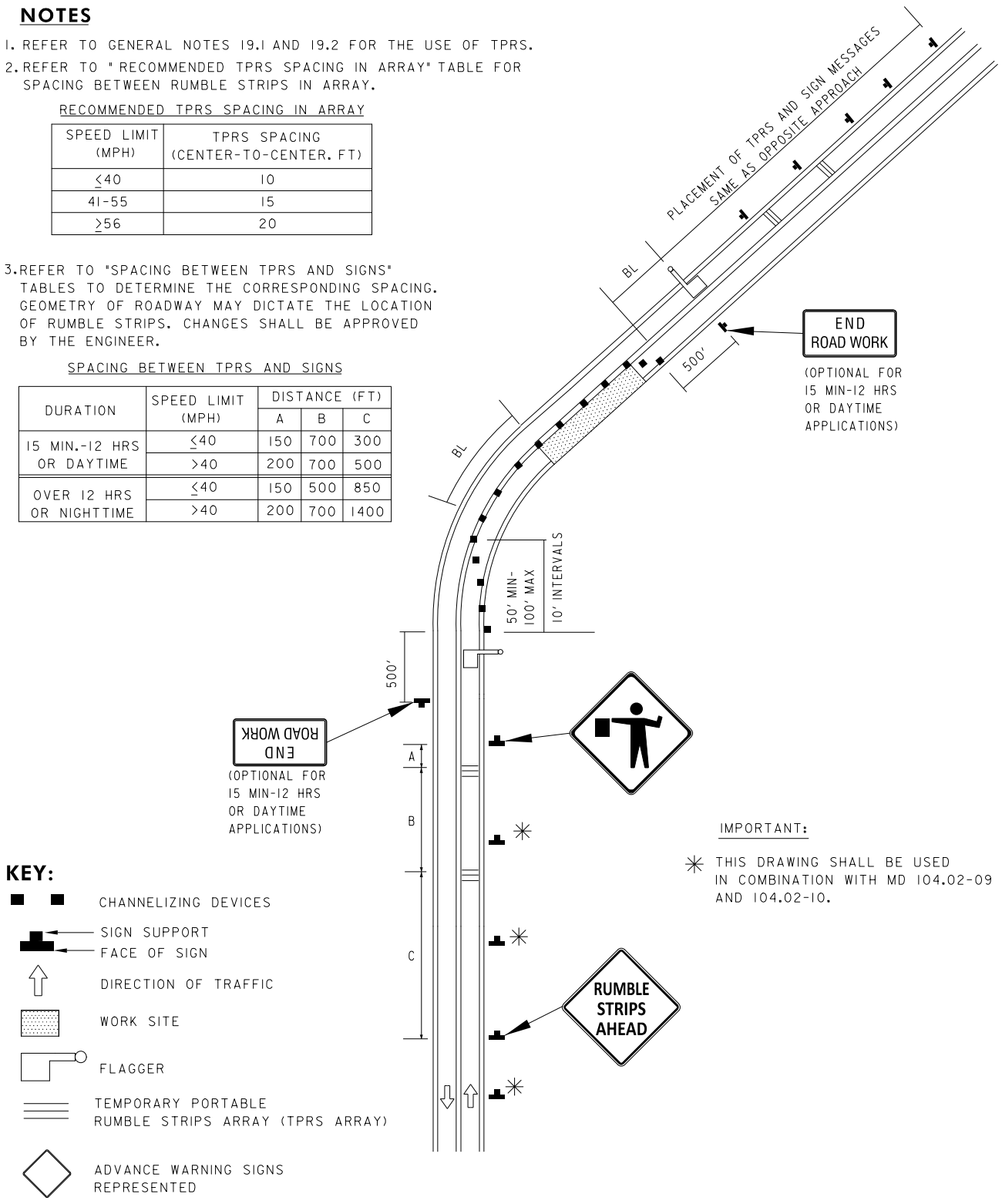
RECOMMENDED TPRS SPACING IN ARRAY

SPEED LIMIT (MPH)	TPRS SPACING (CENTER-TO-CENTER, FT)
≤40	10
41-55	15
≥56	20

3. REFER TO "SPACING BETWEEN TPRS AND SIGNS" TABLES TO DETERMINE THE CORRESPONDING SPACING. GEOMETRY OF ROADWAY MAY DICTATE THE LOCATION OF RUMBLE STRIPS. CHANGES SHALL BE APPROVED BY THE ENGINEER.

SPACING BETWEEN TPRS AND SIGNS

DURATION	SPEED LIMIT (MPH)	DISTANCE (FT)		
		A	B	C
15 MIN.-12 HRS OR DAYTIME	≤40	150	700	300
	>40	200	700	500
OVER 12 HRS OR NIGHTTIME	≤40	150	500	850
	>40	200	700	1400



SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-19-24	APPROVAL	12-06-23
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

FLAGGING OPERATION/2-LANE, 2-WAY W/TEMPORARY PORTABLE RUMBLE STRIPS

STANDARD NO. MD 104.06-28

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES

1. REFER TO GENERAL NOTES 19.1 AND 19.2 FOR THE USE OF TPRS.
2. REFER TO "RECOMMENDED TPRS SPACING IN ARRAY" TABLE FOR SPACING BETWEEN RUMBLE STRIPS IN ARRAY.

RECOMMENDED TPRS SPACING IN ARRAY

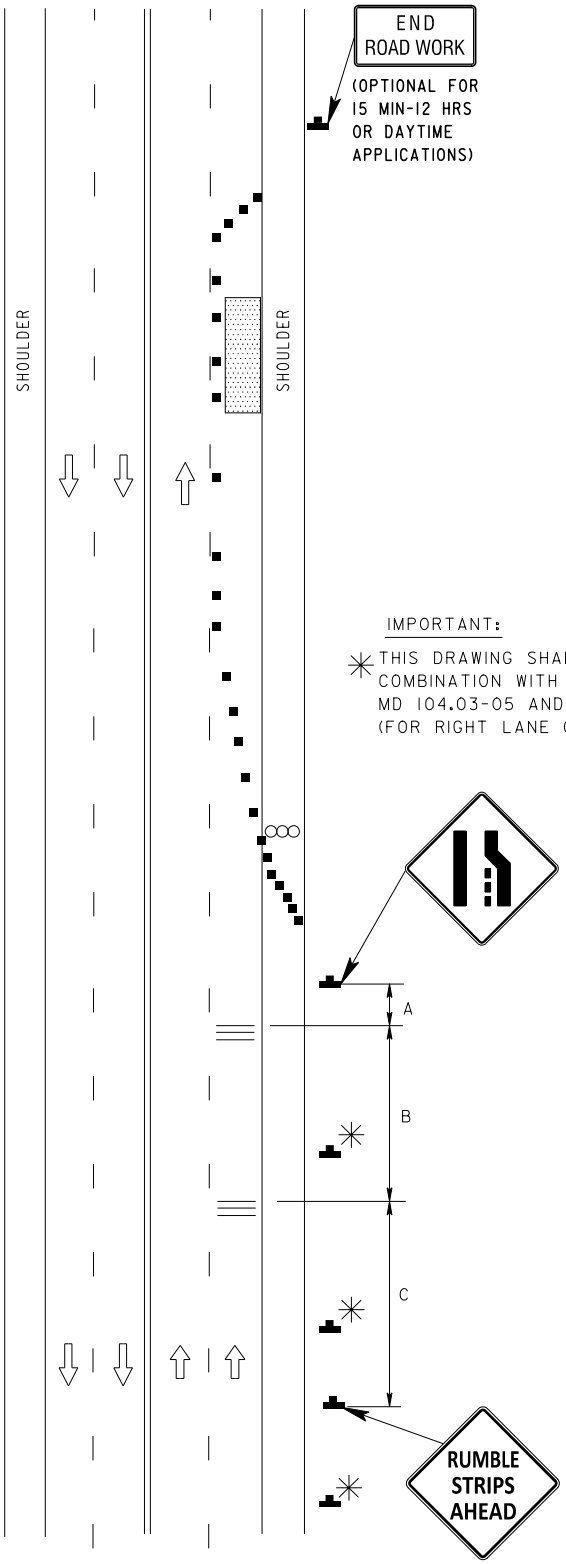
SPEED LIMIT (MPH)	TPRS SPACING (CENTER-TO-CENTER. FT)
≤40	10
41-55	15
≥56	20

3. REFER TO "SPACING BETWEEN TPRS AND SIGNS" TABLE TO DETERMINE THE CORRESPONDING SPACING. GEOMETRY OF THE ROADWAY MAY DICTATE THE LOCATION OF THE RUMBLE STRIPS. CHANGES SHALL BE APPROVED BY THE ENGINEER.

SPACING BETWEEN TPRS AND SIGNS

DURATION	SPEED LIMIT (MPH)	DISTANCE (FT)		
		A	B	C
15 MIN- 12 HRS OR DAYTIME	≤40	150	500	700
	>40	200	700	1300
OVER 12 HRS OR NIGHTTIME	≤40	150	500	900
	>40	200	700	1400

4. SIMILAR PLACEMENT FOR TPRS AND "RUMBLE STRIPS AHEAD" SIGN SHALL BE USED WITH STANDARD DETAILS MD 104.03-03 AND MD 104.03-04 (FOR LEFT LANE CLOSURE(S)).



IMPORTANT:

✳ THIS DRAWING SHALL BE USED IN COMBINATION WITH STANDARDS MD 104.03-05 AND MD 104.03-06 (FOR RIGHT LANE CLOSURE(S)).

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL
- TEMPORARY PORTABLE RUMBLE STRIPS ARRAY (TPRS ARRAY)
- ADVANCE WARNING SIGNS REPRESENTED

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-19-24	APPROVAL	12-06-23
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LANE CLOSURE(S) ON MULTILANE UNDIVIDED W/ TEMPORARY PORTABLE RUMBLE STRIPS

STANDARD NO. MD 104.06-29

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES

1. REFER TO GENERAL NOTES 19.1 AND 19.2 FOR THE USE OF TPRS.
2. REFER TO "RECOMMENDED TPRS SPACING IN ARRAY" TABLE FOR SPACING BETWEEN RUMBLE STRIPS IN ARRAY.

RECOMMENDED TPRS SPACING IN ARRAY

SPEED LIMIT (MPH)	TPRS SPACING (CENTER-TO-CENTER, FT)
≤40	10
41-55	15
≥56	20

3. REFER TO "SPACING BETWEEN TPRS AND SIGNS" TABLE TO DETERMINE THE CORRESPONDING SPACING. GEOMETRY OF THE ROADWAY MAY DICTATE THE LOCATION OF THE RUMBLE STRIPS. CHANGES SHALL BE APPROVED BY THE ENGINEER.

SPACING BETWEEN TPRS AND SIGNS

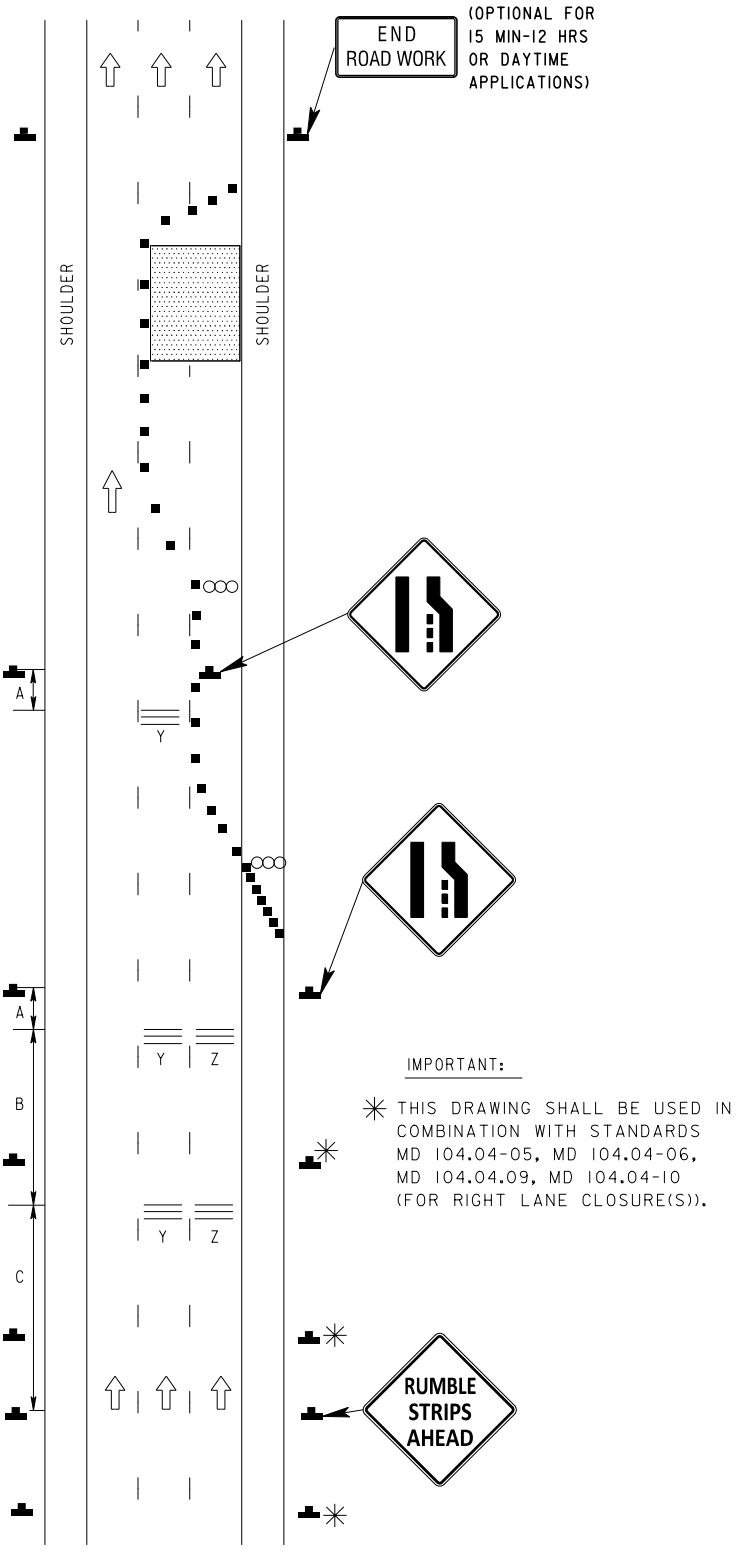
DURATION	SPEED LIMIT (MPH)	DISTANCE (FT)		
		A	B	C
15 MIN- 12 HRS OR DAYTIME	≤40	150	500	700
	>40	200	700	1300
OVER 12 HRS OR NIGHTTIME	≤40	150	500	900
	>40	200	700	1400

4. REFER TO "TPRS ARRAYS TO INSTALL" TABLE TO DETERMINE THE NUMBER OF ARRAYS TO INSTALL BASED ON THE NUMBER OF CLOSED LANES.

TPRS ARRAYS TO INSTALL

NUMBER OF CLOSED LANES	TPRS ARRAYS	
	Y	Z
ONE	NO	YES
TWO	YES	YES

5. SIMILAR PLACEMENT FOR TPRS AND "RUMBLE STRIPS AHEAD" SIGNS SHALL BE USED WITH STANDARD DETAILS MD 104.04-03, MD 104.04-04, MD 104.04.07, MD 104.04.08, MD 104.04.09, AND MD 104.04-10 (FOR LEFT LANE CLOSURE(S)).



IMPORTANT:

✳ THIS DRAWING SHALL BE USED IN COMBINATION WITH STANDARDS MD 104.04-05, MD 104.04-06, MD 104.04.09, MD 104.04-10 (FOR RIGHT LANE CLOSURE(S)).

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL
- TEMPORARY PORTABLE RUMBLE STRIPS ARRAY (TPRS ARRAY)
- ADVANCE WARNING SIGNS REPRESENTED

SPECIFICATION	CATEGORY CODE ITEMS
104	

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-19-24	APPROVAL	12-06-23
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LANE CLOSURE(S) ON MULTILANE DIVIDED UNCONTROLLED W/ TEMPORARY PORTABLE RUMBLE STRIPS

STANDARD NO. MD 104.06-30

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES

1. REFER TO GENERAL NOTES 19.1 AND 19.2 FOR THE USE OF TPRS.
2. REFER TO "RECOMMENDED TPRS SPACING IN ARRAY" TABLE FOR SPACING BETWEEN RUMBLE STRIPS IN AN ARRAY. GEOMETRY OF ROADWAY MAY DICTATE THE LOCATION OF RUMBLE STRIPS. CHANGES SHALL BE APPROVED BY THE ENGINEER.

RECOMMENDED TPRS SPACING IN ARRAY

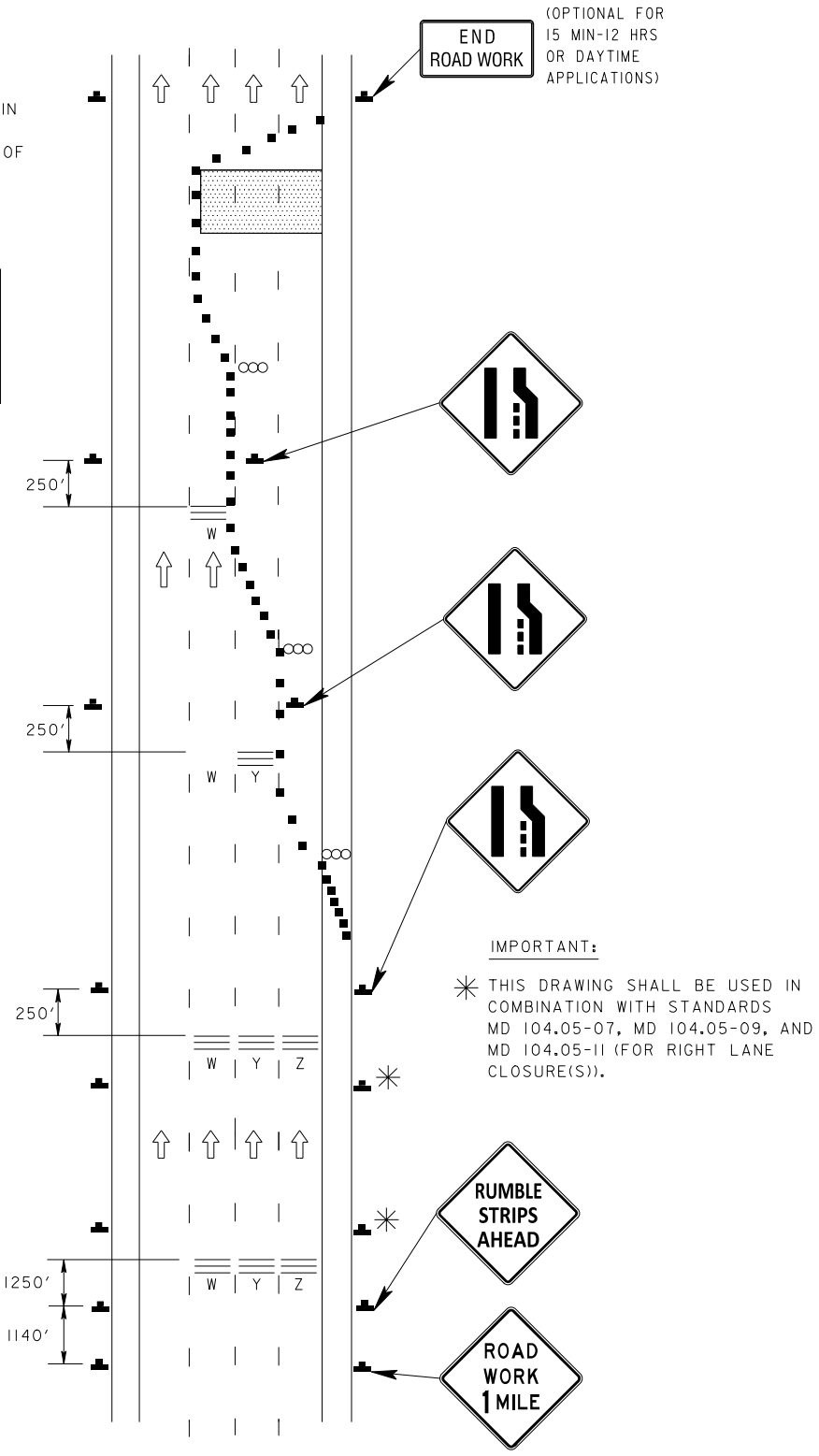
SPEED LIMIT (MPH)	TPRS SPACING (CENTER-TO-CENTER. FT)
≤40	10
41-55	15
≥56	20

3. REFER TO "TPRS ARRAYS TO INSTALL" TABLE TO DETERMINE THE NUMBER OF ARRAYS TO INSTALL BASED ON THE NUMBER OF CLOSED LANES.

TPRS ARRAYS TO INSTALL

NUMBER OF CLOSED LANES	TPRS ARRAYS		
	W	Y	Z
ONE	NO	NO	YES
TWO	NO	YES	YES
THREE	YES	YES	YES

4. SIMILAR PLACEMENT FOR TPRS AND "RUMBLE STRIPS AHEAD" SIGNS SHALL BE USED WITH STANDARD DETAILS MD 104.05-08, MD 104.05-10, MD 104.05-12 (FOR LEFT LANE CLOSURE(S)), MD 104.05-14, 104.05-15, 104.05-16, 104.05-17, 104.05-19.



IMPORTANT:

✳ THIS DRAWING SHALL BE USED IN COMBINATION WITH STANDARDS MD 104.05-07, MD 104.05-09, AND MD 104.05-11 (FOR RIGHT LANE CLOSURE(S)).

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL
- TEMPORARY PORTABLE RUMBLE STRIPS ARRAY (TPRS ARRAY)
- ADVANCE WARNING SIGNS REPRESENTED

SPECIFICATION 104	CATEGORY CODE ITEMS

APPROVED Cedric Ward
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL SHA REVISIONS		APPROVAL FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-19-24	APPROVAL	12-06-23
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

LANE CLOSURE(S) ON DIVIDED CONTROLLED (FREEWAY/EXPRESSWAY) W/TEMPORARY PORTABLE RUMBLE STRIPS

STANDARD NO. MD 104.06-31