



ROAD CLOSURE WITH DIVERSION (BYPASS)
MULTI-LANE DIVIDED ROAD

POSTED SPEED LIMIT PRIOR TO WORK STARTING	SPACING OF CHANNELIZING DEVICES (G)	SPACING OF ADVANCE WARNING SIGNS (A)	DECISION SIGHT DISTANCE	TAPER LENGTH (L)	SHIFTING TAPER (L/2)	TYPICAL SHOULDER TAPER (L/3)	BUFFER SPACE (B)
(MPH)	FEET	FEET	FEET	FEET	FEET	FEET	FEET
0 - 30	25	100	550	200	100	75	200
35 - 40		325	700	325	175	125	305
45 - 50	50	600	900	600	300	200	425
55		750	1200	700	350	250	500
60 - 65		1000	1400	800	400	275	650
70 - 75		1200	1600	900	450	300	820

DESIGNER NOTES:
TYPICAL APPLICATION FOR REFERENCE ONLY. NOT TO BE INSERTED INTO PLAN.
ALL DISTANCES BASED ON 12 FT. LANE WIDTHS.

1. INSERT SPACING CHART DISTANCES INTO LAYOUTS.
2. DETERMINE IF "END ROAD WORK" SIGNS ARE NEEDED.
3. CONSIDER THE INSTALLATION OF A PCMS AND/OR G20-X2 OR SPECIAL SIGN, IF CONGESTION IS EXPECTED, IF ADVANCE SIGNING TO DIVERT TRAFFIC IS NEEDED OR OTHER CONDITIONS DETERMINED BY THE DESIGNER.
4. CONSIDER THE INSTALLATION OF A PCMS AND/OR G20-X1 SIGN (MODIFIED) OR G20-X2 SIGN FOR SEVEN DAY ADVANCE WARNING OF RESTRICTION.
5. FOR ANY EXCAVATION OR DROP-OFF IN EXCESS OF 12 IN., SEE THE MINNESOTA DEPARTMENT OF TRANSPORTATION "TEMPORARY BARRIER GUIDANCE MANUAL".
6. LIST ALL DIRECTIONAL SIGNING THAT MUST BE COVERED, REMOVED OR MODIFIED BECAUSE OF RESTRICTION.
7. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE WET REFLECTIVE MATERIAL.
8. MASK OR REMOVE CONFLICTING MARKINGS. DETERMINE MATERIAL TYPE AND QUANTITY OF MARKINGS TO BE MASKED OR REMOVED FOR PAY ITEM QUANTITIES.
9. SUPPLEMENTAL DELINEATION (SUCH AS CHEVRONS, DOWN ARROWS, ETC.) MAY BE REQUIRED ON THE BYPASS.
10. IF 48"x48" ADVANCE WARNING SIGNS WILL NOT FIT ON THE LEFT SIDE BECAUSE OF A NARROW MEDIAN (LESS THAN 6 FT.)
A. REDUCE THE LEFT SIDE SIGN SIZES TO 36"x36" OR
B. ELIMINATE THE LEFT SIDE SIGNING, USE AN ADDITIONAL "RIGHT LANE CLOSED" SIGN ON THE RIGHT, AND DISPLAY THE FLASHING ARROWBOARD ON THE SHOULDER.
11. IF BYPASS IS LESS THAN 600' USE THE BYPASS SIGN. IF BYPASS IS GREATER THAN 600' USE THE REVERSE CURVE SIGNS.
12. IF TANGENT IS 600' OR LESS INSTALL 6" SOLID LINE WHITE STRIPING THROUGH THE ENTIRE LENGTH OF THE TANGENT. IF TANGENT IS GREATER THAN 600' INSTALL 4" BROKEN LINE WHITE STRIPING FOR THE ENTIRE LENGTH OF THE TANGENT. CONSIDER 8" ON SHARP CURVES, PAVEMENT COLOR CONFLICTS, REDUCTION OF SPEED (10-15 MPH BELOW POSTED), OR IF OVER WINTER.
13. THE MINIMUM LANE WIDTH SHOULD BE 11 FEET AND SHALL BE NOT LESS THAN BE 10 FEET. IF LANE WIDTH IS LESS THAN 11 FEET FURNISH AND INSTALL ADDITIONAL (REDUCED WIDTH) W20-X11 SIGNS.
14. CONSIDER THE ADDITION OF A W13-1P ADVISORY SPEED PLAQUE. PLAQUE SHOULD BE PLACED DIRECTLY BELOW OR ON LOWER TRAFFIC SIDE OF THE WARNING SIGN. AVOID PLACING SIGN WITH ADVISORY SPEED PLAQUE NEAR AN INPLACE SPEED LIMIT SIGN. EXPERIENCE AND ENGINEERING JUDGEMENT SHOULD BE USED TO DETERMINE THE APPROPRIATE ADVISORY SPEED AND VERIFIED IN THE FIELD ONCE INSTALLED AND ADJUSTED AS NEEDED.
15. WHEN A W13-1P ADVISORY SPEED PLAQUE IS USED CONSIDER THE ADDITION OF A "VEHICLE SPEED FEEDBACK SYSTEM" LONG TERM TYPICAL APPLICATION 77, OR "VEHICLE SPEED FEEDBACK" TRAFFIC RESPONSIVE SYSTEM TR-7 IN THE IWZ TOOL BOX.
16. MAY ADD A W21-X3 AT 45 DEGREE DOWN ANGLE TO DRUMS ON THE APPROPRIATE SIDE IN SHIFTING AREA FOR ADDED ENHANCEMENT.

— 4SY = 4 INCH SOLID LINE YELLOW WET REFLECTIVE
 — 4SW = 4 INCH SOLID LINE WHITE WET REFLECTIVE
 — 6SW = 6 INCH SOLID LINE WHITE WET REFLECTIVE
 — 6SY = 6 INCH SOLID LINE YELLOW WET REFLECTIVE

● DRUMS, TYPE I OR TYPE II BARRICADE OR VERTICAL PANEL.

— — — TEMPORARY WET REFLECTIVE PAVEMENT MARKING.

