



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION**

ROADWAY DESIGN DIVISION
SUITE 1200 JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-3848
(615) 741-2221

CLAY BRIGHT
COMMISSIONER

BILL LEE
GOVERNOR

INSTRUCTIONAL BULLETIN NO. 20-15

Regarding New and Revised Work Zone Standard Drawings

Effective December 11, 2020 letting (September 30, 2020 Turn-in), the following Work Zone Standard Drawings have been revised or are new. Chapter 10 of the Roadway Design Guidelines has also been revised along with the Index of Standard Drawings. All revised and new standard drawings are available online.

New Standard Drawings:

10-107.00 DESIGN – TRAFFIC CONTROL

10-107.02 WORK ZONES

DRAWING NUMBER	REVISION DATE	DESCRIPTION
T-WZ-56		TRANSVERSE RUMBLE STRIP USE WITHIN WORK ZONES
T-WZ-60		FREEWAY RESURFACING SIGNING LAYOUT

Revised Standard Drawings:

10-107.00 DESIGN – TRAFFIC CONTROL

10-107.02 WORK ZONES

DRAWING NUMBER	REVISION DATE	DESCRIPTION
T-WZ-11	05-01-20	ONE LANE CLOSURE DETAIL FOR DIVIDED HIGHWAYS
T-WZ-12	05-01-20	ONE LANE CLOSURE DETAIL FOR BRIDGES ON DIVIDED HIGHWAYS

T-WZ-13	05-01-20	TWO-OUTSIDE LANE CLOSURE FOR EXPRESSWAYS AND FREEWAYS
T-WZ-14	05-01-20	TWO-OUTSIDE LANE CLOSURE FOR INTERSTATES AND EXPRESSWAYS
T-WZ-15	05-01-20	INTERIOR LANE CLOSURE FOR FREEWAYS
T-WZ-18	05-01-20	SHOULDER CLOSURE DETAIL FOR FREEWAYS AND DIVIDED HIGHWAYS
T-WZ-19	05-01-20	MEDIAN CROSS-OVER DETAIL ON FREEWAYS
T-WZ-21	05-01-20	LANE CLOSURE WITH LEFT HAND MERGE AND LANE SHIFT

IB 19-16 will be voided by IB 20-15 and in Chapter 9 of the Roadside Design Guidelines, Section 170.01 has been removed.

These standard drawings are located on the web site and in Chapter 10 of the Design Guidelines and can be found in the following links.

Standard Drawings:

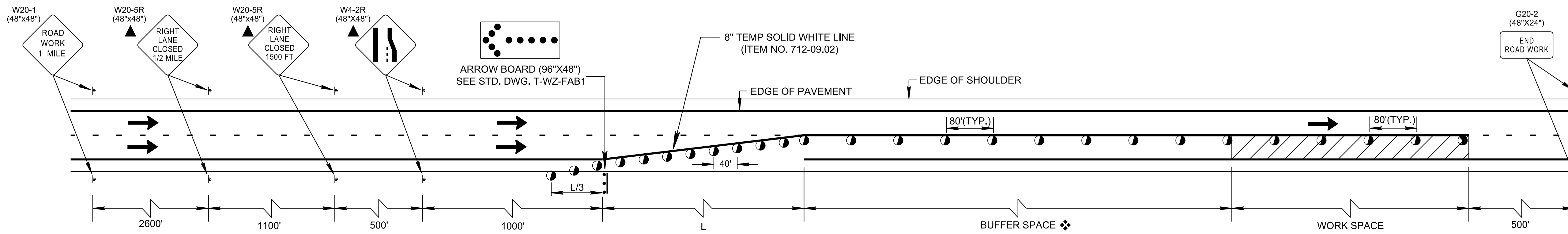
<https://www.tn.gov/content/tn/tdot/roadway-design/standard-drawings-library/standard-roadway-drawings.html>

Chapter 10 - Index of Standard Drawings is available online at this location:

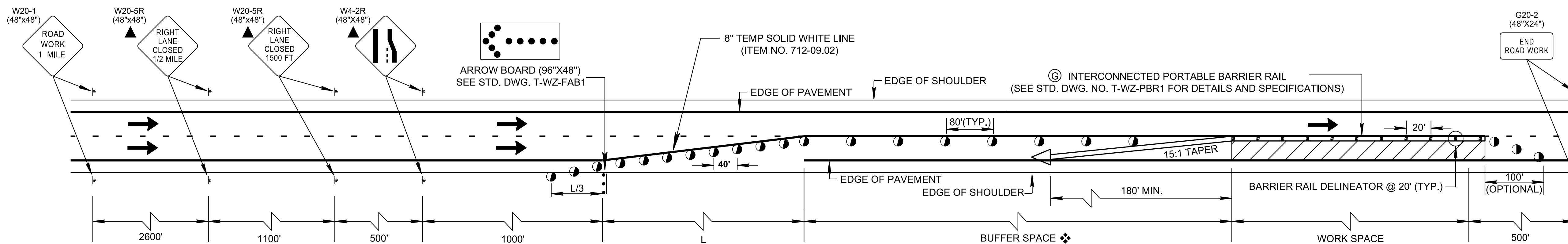
https://www.tn.gov/content/dam/tn/tdot/roadway-design/documents/design_guidelines/DG-C10.pdf



Jennifer Lloyd, PE
Civil Engineering Director
Roadway Design Division



**TRAFFIC CONTROL FOR ONE LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY
(NO PORTABLE BARRIER RAIL SETUP)**



**TRAFFIC CONTROL FOR ONE LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY
(SHOWING PORTABLE BARRIER RAIL SETUP)**

- REV. 12-18-99: MODIFIED GENERAL NOTE (E).
- REV. 7-29-03: CHANGED GENERAL NOTE (E).
- REV. 4-15-04: CHANGED W4-2 SIGN. CHANGED GENERAL NOTE (D) TO COMPLY WITH 2003 MUTCD.
- REV. 9-1-05: REMOVED TYPE "C" WARNING LIGHTS FROM FLEXIBLE DRUMS IN TAPER.
- REV. 5-12-06: REPLACED VERTICAL PANEL WITH BARRIER RAIL DELINEATORS. ADDED GENERAL NOTES (G) & (H).
- REV. 10-06-06: CHANGED ITEM NO. FOR BARRIER RAIL DELINEATOR. ADDED GENERAL NOTE (I). CHANGED GENERAL NOTE (E).
- REV. 03-13-09: CHANGED GENERAL NOTE (E).
- REV. 03-05-17: ADDED ITEM NO. 716-05.02 OR 712-09.02.
- REV. 06-28-19: ADDED REFERENCED STD DWG S-CC-1 TO LEGEND FOR TEMPORARY CRASH CUSHION. ADDED ITEM NUMBER FOR FLEXIBLE DRUMS. DELETED GENERAL NOTE (D). REORGANIZED AND MODIFIED GENERAL NOTES FOR CLARITY. ADDED TABLE FOR BUFFER SPACE AND OPTIONAL BARRELS TO THE DOWN STREAM END OF THE WORK ZONE. RENAMED AND REDREW SHEET.
- REV. 05-01-20: ADDED SPECIAL NOTES. ADDED BUFFER SPACE TABLE. REMOVED 716-05.02 PAY ITEM. CHANGED CALCULATION FOR DISTANCE L.

▲ FOR LEFT LANE CLOSURE USE SIGNS W20-5L AND W4-2L

❖ BUFFER SPACE BASED ON PRE-CONSTRUCTION POSTED SPEED

SPEED	DISTANCE
45	360
50	425
55	495
60	570
65	645
70	730
75	820

COMPUTATION FOR DISTANCE L

$L = W \times S$

L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = 10 MPH OVER EXISTING POSTED SPEED LIMIT

CHANNELIZATION DEVICE LEGEND

- FLEXIBLE DRUMS (ITEM NO. 712-04.01, PER EACH)
- ⋮ FLASHING YELLOW ARROW BOARD (SEE STD. DWG. NO. T-WZ-FAB1, FOR DETAILS AND SPECIFICATIONS) (ITEM NO. 712-08.03, PER EACH)
- ▶ SIGN SUPPORT
- ← DIRECTION OF TRAFFIC
- ▨ WORK SPACE
- ⊥ BARRIER RAIL DELINEATOR (ITEM NO. 712-04.50, PER EACH)
- △ ATTENUATOR SEE STD. DWG. S-CC-1 (ITEM NO. 705-20.25, PER EACH)

SPECIAL NOTES

LANE WIDTHS SHALL BE A MINIMUM OF 11FT WITH 2FT SHOULDER. WHEN ALIGNMENT IS IN A HORIZONTAL CURVE WITH A RADIUS LESS THAN 2500FT, LANE WIDTHS SHALL BE A MINIMUM OF 12FT WITH 2FT SHOULDERS.

IF THE MINIMUM DESIGN REQUIREMENTS OF THIS STANDARD DRAWING CANNOT BE MET, A WORK ZONE DESIGN DEVIATION MUST BE SUBMITTED TO AND APPROVED BY THE STATE WORK ZONE ENGINEER.

GENERAL NOTES

(A) THIS STANDARD CAN BE USED FOR THE CLOSURE OF AN INSIDE OR OUTSIDE LANE OF ANY MULTI-LANE DIVIDED HIGHWAY. FOR THE CLOSURE OF AN INTERIOR LANE, SEE STANDARD DRAWING NOS. T-WZ-13, TWZ-14, OR T-WZ-15 FOR DETAILS.

(B) MINIMUM TWO FEET (2') OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER IS REQUIRED. THE MAXIMUM POSSIBLE OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER MUST BE OBTAINED. A 2' MINIMUM OFFSET IS REQUIRED BETWEEN THE TRAVELLED LANE AND BRIDGE PARAPET, PORTABLE BARRIER RAIL, CONCRETE MEDIAN BARRIERS, ETC. EVEN THOUGH MUTCD RECOMMENDS THE TWO FOOT OFFSET, TDOT'S POLICY REQUIRES THE OFFSET. 2' MINIMAL OFFSET IS REQUIRED BETWEEN THE WORK ZONE AND PORTABLE BARRIER RAIL IF RAIL IS UNPINNED.

(C) PORTABLE BARRIER RAIL WILL BE REQUIRED WHERE DROP OFFS EXCEED 18 INCHES. PORTABLE BARRIER RAIL MAY BE USED WHERE DROP OFFS EXCEED 6 INCHES. FOR MORE SPECIFIC INFORMATION SEE TDOT DROP-OFF POLICY.

(D) TAPER LENGTH SHOWN FOR THE PORTABLE BARRIER RAIL IS A MINIMUM. PORTABLE BARRIER RAIL SHOULD BE EXTENDED BEYOND THE CLEAR ZONE OR BE SHIELDED WITH A CRASH CUSHION WHEN IT IS NOT FEASIBLE TO EXTEND THE PORTABLE BARRIER RAIL. SEE STANDARD DRAWING S-CZ-1 FOR CLEAR ZONE DISTANCE.

(E) REFER TO THE QUALIFIED PRODUCT LIST FOR APPROVED BARRIER RAIL DELINEATORS. DELINEATORS SHOULD NOT BE MIXED IN THE SAME LINE. BARRIER RAIL DELINEATORS SHALL BE USED ON PORTABLE BARRIER RAIL.

(F) RAISED PAVEMENT MARKERS SHOULD NOT BE USED ON RIGHT EDGE LINE.

(G) A SECOND ARROW BOARD MAY BE USED WHEN GEOMETRIC CONDITIONS LIMIT THE VISIBILITY OF A LANE CLOSURE.

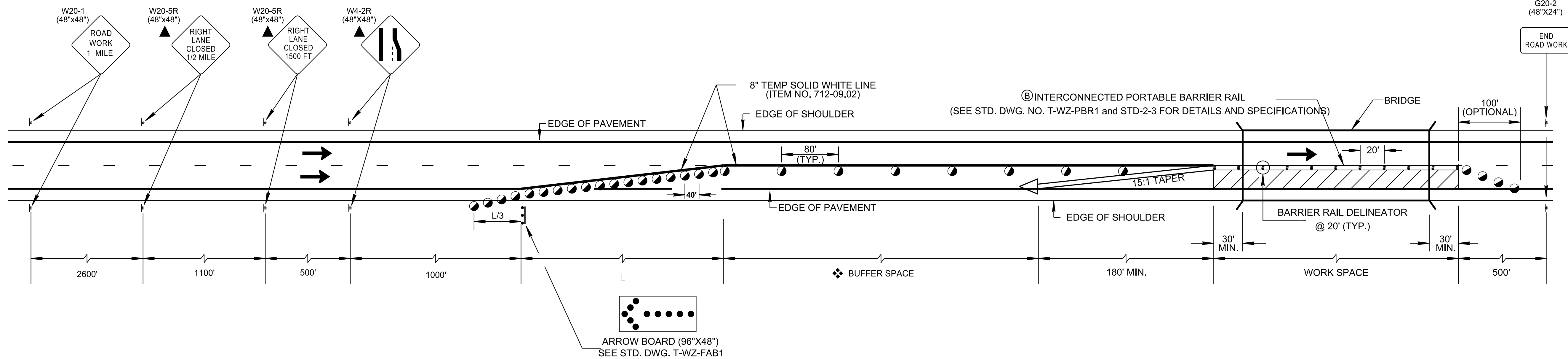
APPROVED BY FHWA
(ALL OTHERS APPROVED BY TDOT)

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

**ONE LANE CLOSURE
DETAIL FOR
DIVIDED
HIGHWAYS**

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NOT TO SCALE



TRAFFIC CONTROL FOR ONE LANE (RIGHT OR LEFT) CLOSURE FOR BRIDGES ON DIVIDED HIGHWAYS

- REV. 4-15-99: ADDED GENERAL NOTE (F).
- REV. 12-18-99: MODIFIED GENERAL NOTE (E).
- REV. 7-29-03: CHANGED GENERAL NOTE (E).
- REV. 4-15-04: CHANGED W4-2 SIGN. CHANGED GENERAL NOTE (D) TO COMPLY WITH 2003 MUTCD.
- REV. 9-1-05: REMOVED TYPE "C" WARNING LIGHTS FROM FLEXIBLE DRUMS IN TAPER.
- REV. 5-12-06: REPLACED VERTICAL PANEL WITH BARRIER RAIL DELINEATORS. ADDED GENERAL NOTES (C) & (H).
- REV. 10-06-06: CHANGED ITEM NO. FOR BARRIER RAIL DELINEATOR. ADDED GENERAL NOTE (I). CHANGED GENERAL NOTE (E).
- REV. 03-13-09: CHANGED GENERAL NOTE (E) AND ATTENUATOR LEGEND DESCRIPTION.
- REV. 03-05-17: ADDED ITEM NO. 716-05.02 AND 712-09.02.
- REV. 06-28-19: ADDED REFERENCED STD DWG S-CC-1 TO LEGEND FOR TEMPORARY CRASH CUSHION. ADDED ITEM NUMBER FOR FLEXIBLE DRUMS. DELETED GENERAL NOTE (D). REORGANIZED AND MODIFIED GENERAL NOTES FOR CLARITY. ADDED TABLE FOR BUFFER SPACE AND OPTIONAL BARRELS TO THE DOWN STREAM END OF THE WORK ZONE. REDREW SHEET.
- REV. 05-01-20: ADDED SPECIAL NOTES. ADDED BUFFER SPACE TABLE. REMOVED 716-05.02 PAY ITEM. CHANGED CALCULATION FOR DISTANCE L.

▲ FOR LEFT LANE CLOSURE USE SIGNS W20-5L AND W4-2L

❖ BUFFER SPACE BASED ON PRE-CONSTRUCTION POSTED SPEED

SPEED	DISTANCE
45	360
50	425
55	495
60	570
65	645
70	730
75	820

COMPUTATION FOR DISTANCE L

$L = W \times S$

L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = 10 MPH OVER EXISTING POSTED SPEED LIMIT

CHANNELIZATION DEVICE LEGEND

- FLEXIBLE DRUMS (ITEM NO. 712-04.01, PER EACH)
- ⋮ FLASHING YELLOW ARROW BOARD (SEE STD. DWG. NO. T-WZ-FAB1, FOR DETAILS AND SPECIFICATIONS) (ITEM NO. 712-08.03, PER EACH)
- ▶ SIGN SUPPORT
- ← DIRECTION OF TRAFFIC
- ▨ WORK SPACE
- ⊥ BARRIER RAIL DELINEATOR (ITEM NO. 712-04.50, PER EACH)
- ◁ ATTENUATOR SEE STD. DWG. S-CC-1 (ITEM NO. 705-20.25, PER EACH)

SPECIAL NOTES

LANE WIDTHS SHALL BE A MINIMUM OF 11FT WITH 2FT SHOULDER. WHEN ALIGNMENT IS IN A HORIZONTAL CURVE WITH A RADIUS LESS THAN 2500FT, LANE WIDTHS SHALL BE A MINIMUM OF 12FT WITH 2FT SHOULDERS.

IF THE MINIMUM DESIGN REQUIREMENTS OF THIS STANDARD DRAWING CANNOT BE MET, A WORK ZONE DESIGN DEVIATION MUST BE SUBMITTED TO AND APPROVED BY THE STATE WORK ZONE ENGINEER.

GENERAL NOTES

- (A) THIS STANDARD CAN BE USED FOR THE CLOSURE OF AN INSIDE OR OUTSIDE LANE OF ANY MULTI-LANE DIVIDED HIGHWAY. FOR THE CLOSURE OF AN INTERIOR LANE, SEE STANDARD DRAWING NOS.T-WZ-13, TWZ-14, OR T-WZ-15 FOR DETAILS.
- (B) PORTABLE BARRIER RAIL IS REQUIRED FOR BRIDGE DECK AND EXPANSION JOINT WORK. FOR MORE SPECIFIC INFORMATION SEE TDOT DROP-OFF POLICY.
- (C) MINIMUM TWO FEET (2') OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER IS REQUIRED. THE MAXIMUM POSSIBLE OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER MUST BE OBTAINED. A 2' MINIMUM OFFSET IS REQUIRED BETWEEN THE TRAVELLED LANE AND BRIDGE PARAPET, PORTABLE BARRIER RAIL, CONCRETE MEDIAN BARRIERS, ETC. EVEN THOUGH MUTCD RECOMMENDS THE TWO FOOT OFFSET, TDOT'S POLICY REQUIRES THE OFFSET. 2' MINIMAL OFFSET IS REQUIRED BETWEEN THE WORK ZONE AND PORTABLE BARRIER RAIL IF RAIL IS UNPINNED.
- (D) TAPER LENGTH SHOWN FOR THE PORTABLE BARRIER RAIL IS A MINIMUM. PORTABLE BARRIER RAIL SHOULD BE EXTENDED BEYOND THE CLEAR ZONE OR BE SHIELDED WITH A CRASH CUSHION WHEN IT IS NOT FEASIBLE TO EXTEND THE PORTABLE BARRIER RAIL. SEE STANDARD DRAWING S-CZ-1 FOR CLEAR ZONE DISTANCE.
- (E) REFER TO THE QUALIFIED PRODUCT LIST FOR APPROVED BARRIER RAIL DELINEATORS. DELINEATORS SHOULD NOT BE MIXED IN THE SAME LINE. BARRIER RAIL DELINEATORS SHALL BE USED ON PORTABLE BARRIER RAIL.
- (F) RAISED PAVEMENT MARKERS SHOULD NOT BE USED ON RIGHT EDGE LINE.
- (G) A SECOND ARROW BOARD MAY BE USED WHEN GEOMETRIC CONDITIONS LIMIT THE VISIBILITY OF A LANE CLOSURE.

■ APPROVED BY FHWA (ALL OTHERS APPROVED BY TDOT)

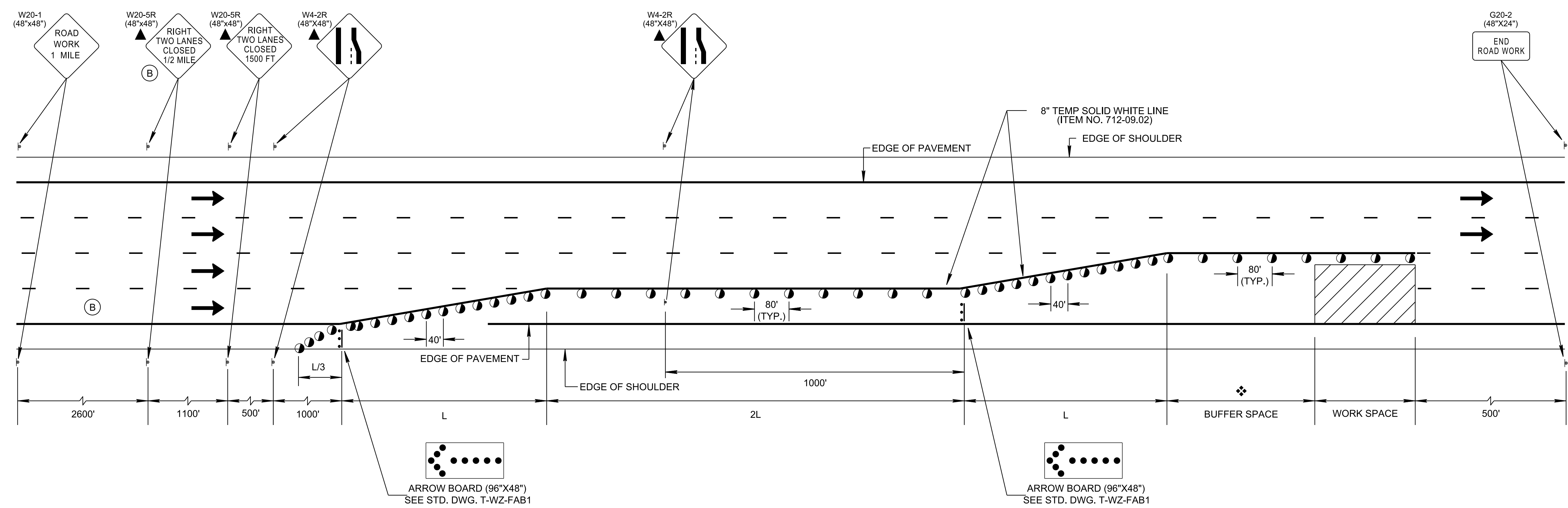
STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

ONE LANE CLOSURE DETAIL FOR BRIDGES ON DIVIDED HIGHWAYS

05-27-1998 T-WZ-12

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- REV. 12-18-99: MODIFIED HEADING AND ADDED BLOCKED IN NOTE FOR TWO LEFT INSIDE LANE CLOSURE.
- REV. 4-15-04: CHANGED W4-2 SIGN. CHANGED GENERAL NOTE C TO COMPLY WITH 2003 MUTCD.
- REV. 9-1-05: REMOVED TYPE "C" WARNING LIGHTS FROM FLEXIBLE DRUMS IN TAPER.
- REV. 03-13-09: MODIFIED FLEXIBLE DRUM SPACING.
- REV. 03-05-17: ADDED ITEM NO. 716-05.02 AND 712-09.02.
- REV. 06-28-19: ADDED TABLE FOR BUFFER SPACE. REPLACED GENERAL NOTE (B) AND ADDED NOTE (C). RENAMED AND REDREW SHEET.
- REV. 05-01-20: ADDED SPECIAL NOTES. ADDED BUFFER SPACE TABLE REMOVED 716-05.02 PAY ITEM. CHANGED CALCULATION FOR DISTANCE L. EDITED GENERAL NOTE A.



TRAFFIC CONTROL FOR TWO RIGHT OUTSIDE (OR TWO LEFT INSIDE) LANE CLOSURE ON FREEWAY OR EXPRESSWAY

▲ FOR LEFT LANE CLOSURE USE SIGNS W20-5L AND W4-2L

❖ BUFFER SPACE BASED ON PRE-CONSTRUCTION POSTED SPEED

SPEED	DISTANCE
45	360
50	425
55	495
60	570
65	645
70	730
75	820

COMPUTATION FOR DISTANCE L

$L = W \times S$

L = TAPER LENGTH IN FEET
 W = WIDTH OF OFFSET IN FEET
 S = 10 MPH OVER EXISTING POSTED SPEED LIMIT

CHANNELIZATION DEVICE LEGEND

- FLEXIBLE DRUMS (ITEM NO. 712-04.01, PER EACH)
- ⋮ FLASHING YELLOW ARROW BOARD (SEE STD. DWG. NO. T-WZ-FAB1, FOR DETAILS AND SPECIFICATIONS) (ITEM NO. 712-08.03, PER EACH)
- ▬ SIGN SUPPORT
- ← DIRECTION OF TRAFFIC
- ▨ WORK SPACE

SPECIAL NOTES

LANE WIDTHS SHALL BE A MINIMUM OF 11FT WITH 2FT SHOULDER. WHEN ALIGNMENT IS IN A HORIZONTAL CURVE WITH A RADIUS LESS THAN 2500FT, LANE WIDTHS SHALL BE A MINIMUM OF 12FT WITH 2FT SHOULDERS.

IF THE MINIMUM DESIGN REQUIREMENTS OF THIS STANDARD DRAWING CANNOT BE MET, A WORK ZONE DESIGN DEVIATION MUST BE SUBMITTED TO AND APPROVED BY THE STATE WORK ZONE ENGINEER.

GENERAL NOTES

(A) THIS STANDARD IS FOR CLOSURE OF TWO RIGHT LANES. THIS STANDARD APPLIES TO FREEWAYS AND EXPRESSWAYS WITH 6 OR MORE LANES.

(B) LANE DROP APPLICATION SHOWN IS ASSUMED TO BE EXISTING THROUGH LANES OF TRAFFIC. WHERE LANE CLOSURES OCCUR ON EXISTING ACCELERATION OR AUXILIARY LANES, DESIGNER SHALL ENSURE ACCEPTABLE SIGNAGE AND DECISION SIGHT DISTANCE IS PROVIDED.

(C) MINIMUM TWO FEET (2') OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER IS REQUIRED. THE MAXIMUM POSSIBLE OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER MUST BE OBTAINED. A 2' MINIMUM OFFSET IS REQUIRED BETWEEN THE TRAVELLED LANE AND BRIDGE PARAPET, PORTABLE BARRIER RAIL, CONCRETE MEDIAN BARRIERS, ETC. EVEN THOUGH MUTCD RECOMMENDS THE TWO FOOT OFFSET, TDOT'S POLICY REQUIRES THE OFFSET. 2' MINIMAL OFFSET IS REQUIRED BETWEEN THE WORK ZONE AND PORTABLE BARRIER RAIL IF RAIL IS UNPINNED.

▲ APPROVED BY FHWA (ALL OTHERS APPROVED BY TDOT)

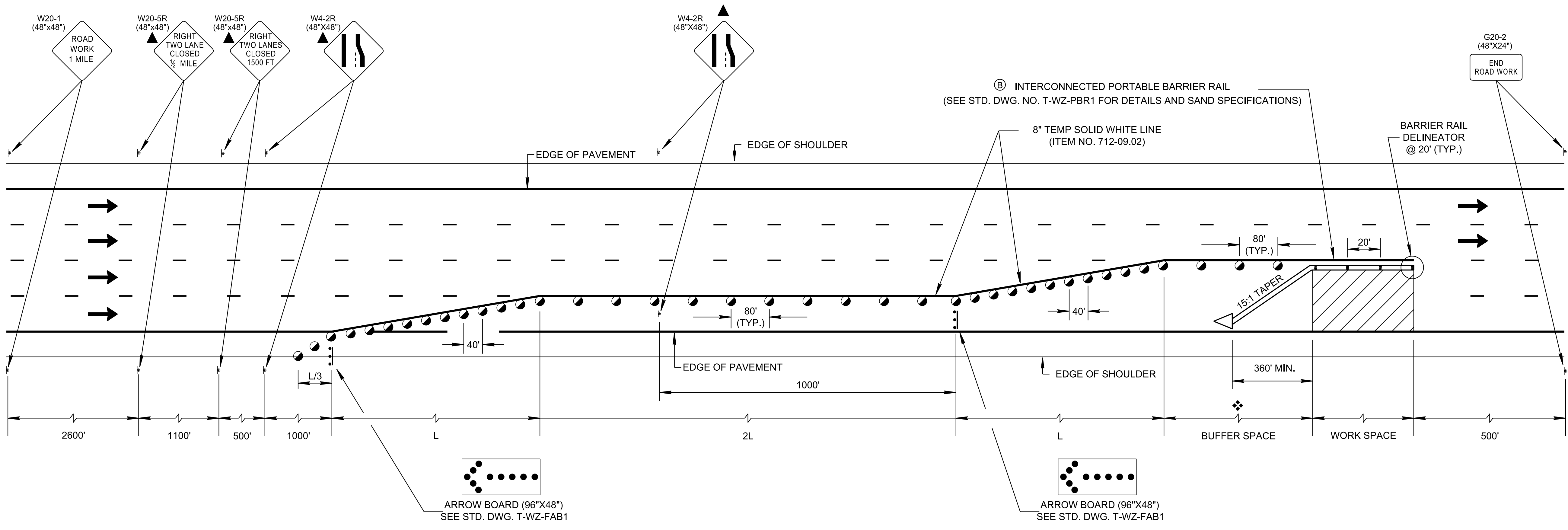
STATE OF TENNESSEE
 STANDARD DRAWING
 DEPARTMENT OF TRANSPORTATION

TWO-OUTSIDE LANE CLOSURE FOR EXPRESSWAYS AND FREEWAYS

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TRAFFIC CONTROL FOR TWO RIGHT OUTSIDE (OR TWO LEFT INSIDE) LANE CLOSURE ON INTERSTATES OR EXPRESSWAYS (WITH INTERCONNECTED PORTABLE BARRIER RAIL)

▲ FOR LEFT LANE CLOSURE USE SIGNS W20-5L AND W4-2L

❖ BUFFER SPACE BASED ON PRE-CONSTRUCTION POSTED SPEED

SPEED	DISTANCE
45	360
50	425
55	495
60	570
65	645
70	730
75	820

COMPUTATION FOR DISTANCE L

$L = W \times S$

L = TAPER LENGTH IN FEET
 W = WIDTH OF OFFSET IN FEET
 S = 10 MPH OVER EXISTING POSTED SPEED LIMIT

CHANNELIZATION DEVICE LEGEND

- FLEXIBLE DRUMS (ITEM NO. 712-04.01, PER EACH)
- ⋮ FLASHING YELLOW ARROW BOARD (SEE STD. DWG. NO. T-WZ-FAB1, FOR DETAILS AND SPECIFICATIONS) (ITEM NO. 712-08.03, PER EACH)
- ▶ SIGN SUPPORT
- ← DIRECTION OF TRAFFIC
- ▨ WORK SPACE
- ⊥ BARRIER RAIL DELINEATOR (ITEM NO. 712-04.50, PER EACH)
- ◁ ATTENUATOR SEE STD. DWG. S-CC-1 (ITEM NO. 705-20.25, PER EACH)

SPECIAL NOTES

LANE WIDTHS SHALL BE A MINIMUM OF 11FT WITH 2FT SHOULDER. WHEN ALIGNMENT IS IN A HORIZONTAL CURVE WITH A RADIUS LESS THAN 2500FT, LANE WIDTHS SHALL BE A MINIMUM OF 12FT WITH 2FT SHOULDERS.

IF THE MINIMUM DESIGN REQUIREMENTS OF THIS STANDARD DRAWING CANNOT BE MET, A WORK ZONE DESIGN DEVIATION MUST BE SUBMITTED TO AND APPROVED BY THE STATE WORK ZONE ENGINEER.

GENERAL NOTES

(A) THIS STANDARD IS FOR CLOSURE OF TWO RIGHT LANES. THIS STANDARD APPLIES TO INTERSTATES AND EXPRESSWAYS WITH 6 OR MORE LANES.

(B) MINIMUM TWO FEET (2') OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER IS REQUIRED. THE MAXIMUM POSSIBLE OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER MUST BE OBTAINED. A 2' MINIMUM OFFSET IS REQUIRED BETWEEN THE TRAVELLED LANE AND BRIDGE PARAPET, PORTABLE BARRIER RAIL, CONCRETE MEDIAN BARRIERS, ETC. EVEN THOUGH MUTCD RECOMMENDS THE TWO FOOT OFFSET, TDOT'S POLICY REQUIRES THE OFFSET. 2' MINIMAL OFFSET IS REQUIRED BETWEEN THE WORK ZONE AND PORTABLE BARRIER RAIL IF RAIL IS UNPINNED..

(C) PORTABLE BARRIER RAIL WILL BE REQUIRED WHERE DROP OFFS EXCEED 18 INCHES. PORTABLE BARRIER RAIL MAY BE USED WHERE DROP OFFS EXCEED 6 INCHES. FOR MORE SPECIFIC INFORMATION SEE TDOT DROP-OFF POLICY.

(D) TAPER LENGTH SHOWN FOR THE PORTABLE BARRIER RAIL IS A MINIMUM. PORTABLE BARRIER RAIL SHOULD BE EXTENDED BEYOND THE CLEAR ZONE OR BE SHIELDED WITH A CRASH CUSHION WHEN IT IS NOT FEASIBLE TO EXTEND THE PORTABLE BARRIER RAIL. SEE STANDARD DRAWING S-CZ-1 FOR CLEAR ZONE DISTANCE.

(E) REFER TO THE QUALIFIED PRODUCT LIST FOR APPROVED BARRIER RAIL DELINEATORS. DELINEATORS SHOULD NOT BE MIXED IN THE SAME LINE. BARRIER RAIL DELINEATORS SHALL BE USED ON PORTABLE BARRIER RAIL.

(F) LANE DROP APPLICATION SHOWN IS ASSUMED TO BE EXISTING THROUGH LANES OF TRAFFIC. WHERE LANE CLOSURES OCCUR ON EXISTING ACCELERATION OR AUXILIARY LANES, DESIGNER SHALL ENSURE ACCEPTABLE DECISION SIGHT DISTANCE IS PROVIDED.

■ APPROVED BY FHWA (ALL OTHERS APPROVED BY TDOT)

STATE OF TENNESSEE
 STANDARD DRAWING
 DEPARTMENT OF TRANSPORTATION

TWO-OUTSIDE LANE CLOSURE FOR INTERSTATES AND EXPRESSWAYS

05-27-1998 T-WZ-14

- REV. 12-18-99: ADDED BLOCKED IN NOTE FOR TWO LEFT INSIDE LANE CLOSURE.
- REV. 7-29-03: CHANGED GENERAL NOTE (C).
- REV. 4-15-04: CHANGED W4-2 SIGN. CHANGED GENERAL NOTE (E) TO COMPLY WITH 2003 MUTCD.
- REV. 9-1-05: REMOVED TYPE "C" WARNING LIGHTS FROM FLEXIBLE DRUMS IN TAPER.
- REV. 5-12-06: REPLACED VERTICAL PANEL WITH BARRIER RAIL DELINEATORS. ADDED GENERAL NOTES (F) & (C).
- REV. 10-06-06: CHANGED ITEM NO. FOR BARRIER RAIL DELINEATOR. ADDED GENERAL NOTE (H). CHANGED GENERAL NOTE (C).
- REV. 03-13-09: CHANGED GENERAL NOTE (C) AND ATTENUATOR LEGEND DESCRIPTION.
- REV. 03-05-17: ADDED ITEM NO. 716-05.02 AND 712-09.02.
- REV. 06-28-19: ADDED REFERENCED STD DWG S-CC-1 TO LEGEND FOR TEMPORARY CRASH CUSHION. ADDED ITEM NUMBER FOR FLEXIBLE DRUMS. DELETE GENERAL NOTE (E). REORGANIZED GENERAL NOTES AND MODIFIED FOR CLARITY. ADDED NOTE (F) AND TABLE FOR BUFFER SPACE. RENAMED AND REDREW SHEET.
- REV. 05-01-20: ADDED SPECIAL NOTES. ADDED BUFFER SPACE TABLE. REMOVED 716-05.02 PAY ITEM. CHANGED CALCULATION FOR DISTANCE L. EDITED GENERAL NOTE A.

NOT TO SCALE

REV. 2-28-98: CHANGED CHANNELIZATION DEVICE LEGEND. CHANGED LEGEND FOR FLEXIBLE DRUMS. MODIFIED HEADING AND SHEET NAME.

REV. 5-27-98: CHANGED DRAWING NO. T-WZ-10 TO T-WZ-15. ADDED GENERAL NOTES.

REV. 4-15-04: CHANGED W4-2 SIGN. CHANGED GENERAL NOTE (A) TO COMPLY WITH 2003 MUTCD.

REV. 9-1-05: REMOVED TYPE "C" WARNING LIGHTS FROM FLEXIBLE DRUMS IN TAPER.

REV. 03-13-09: MODIFIED FLEXIBLE DRUM SPACING.

REV. 03-05-17: ADDED ITEM NO. 716-05.02 AND 712-09.02.

REV. 06-28-19: ADDED TABLE FOR BUFFER SPACE. REPLACED GENERAL NOTE (A). RENAMED AND REDREW SHEET.

REV. 05-01-2020: ALTERED SIGNS TO MATCH 2009 MUTCD. ADDED SPECIAL NOTE. ADDED TMA TRUCK SPECIAL NOTE. ADDED BUFFER SPACE TABLE. REMOVED 716-05.02 PAY ITEM. CHANGED CALCULATION FOR DISTANCE L.

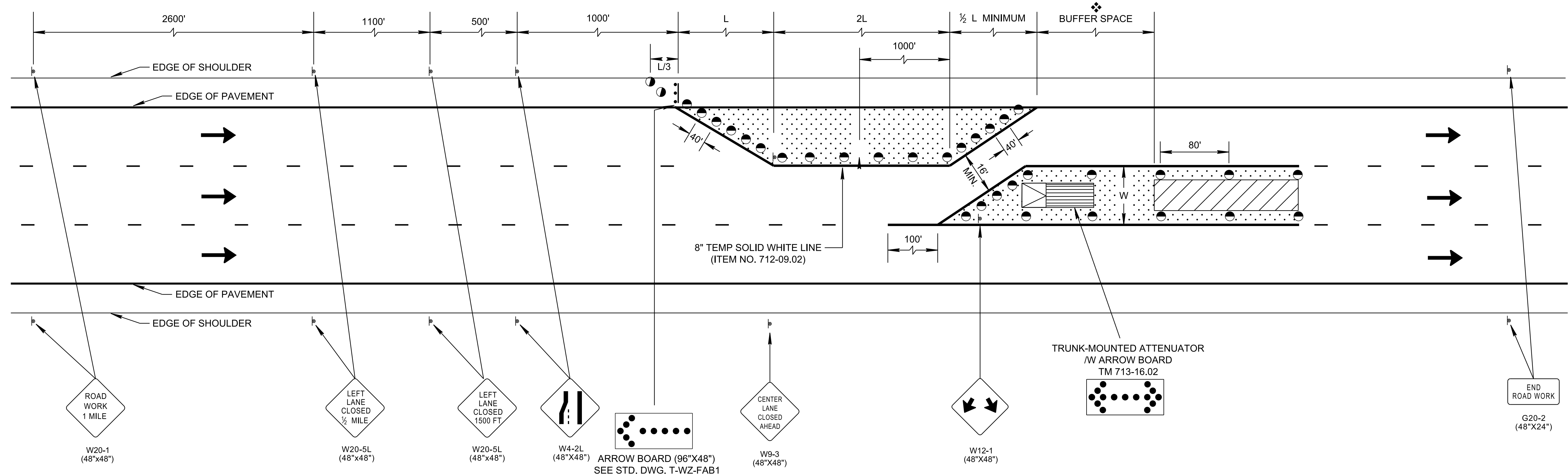
NOTE TO DESIGNER

USE OF THIS SETUP SHOULD BE CONSIDERED ONLY WHEN ABSOUTELY NECESSARY.

USE OF LAW ENFORCEMENT SHOULD BE USED WITH THIS CONFIGURATION.

BEFORE THIS STANDARD IS USED, DESIGNER SHOULD EXPLORE OTHER TRAFFIC CONTROL OPTIONS. CONSULTATION WITH ONE OF THE FOLLOWING TDOT PERSONNEL SHOULD BE CONSIDERED BEFORE IMPLEMENTING THIS TRAFFIC CONTOL CONFIGURATION.

REGIONAL TRAFFIC ENGINEER
STATE TRAFFIC ENGINEER
STATE WORK ZONE ENGINEER



TRAFFIC CONTROL FOR INTERIOR LANE CLOSURE ON FREEWAYS OR EXPRESSWAYS

❖ BUFFER SPACE
BASED ON
PRE-CONSTRUCTION
POSTED SPEED

SPEED	DISTANCE
45	360
50	425
55	495
60	570
65	645
70	730
75	820

COMPUTATION FOR DISTANCE L

$L = W \times S$

L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = 10 MPH OVER EXISTING POSTED SPEED LIMIT

CHANNELIZATION DEVICE LEGEND

	FLEXIBLE DRUMS (ITEM NO. 712-04.01, PER EACH)
	FLASHING YELLOW ARROW BOARD (SEE STD. DWG. NO. T-WZ-FAB1, FOR DETAILS AND SPECIFICATIONS) (ITEM NO. 712-08.03, PER EACH)
	SIGN SUPPORT
	DIRECTION OF TRAFFIC
	WORK SPACE
	TRUCK-MOUNTED ATTENUATOR

SPECIAL NOTES

UNLESS SPECIFIED OTHERWISE LANE WIDTHS SHALL BE A MINIMUM OF 11FT WITH 2FT SHOULDER. WHEN ALIGNMENT IS IN A HORIZONTAL CURVE WITH A RADIUS LESS THAN 2500FT, LANE WIDTHS SHALL BE A MINIMUM OF 12FT WITH 2FT SHOULDER.

IF THE MINIMUM DESIGN REQUIREMENTS OF THIS STANDARD DRAWING CANNOT BE MET, A WORK ZONE DESIGN DEVIATION MUST BE SUBMITTED TO AND APPROVED BY THE STATE WORK ZONE ENGINEER.

GENERAL NOTE

(A) THIS STANDARD CAN BE USED FOR THE CLOSURE OF A CENTER LANE ON MULTI-LANE DIVIDED FREEWAYS OR EXPRESSWAYS WHEN THE RIGHT LANE MUST REMAIN OPEN. FOR THE CLOSURE OF OTHER LANES SEE STANDARD DRAWING NOS.T-WZ-13, TWZ-14, OR T-WZ-15 FOR DETAILS.

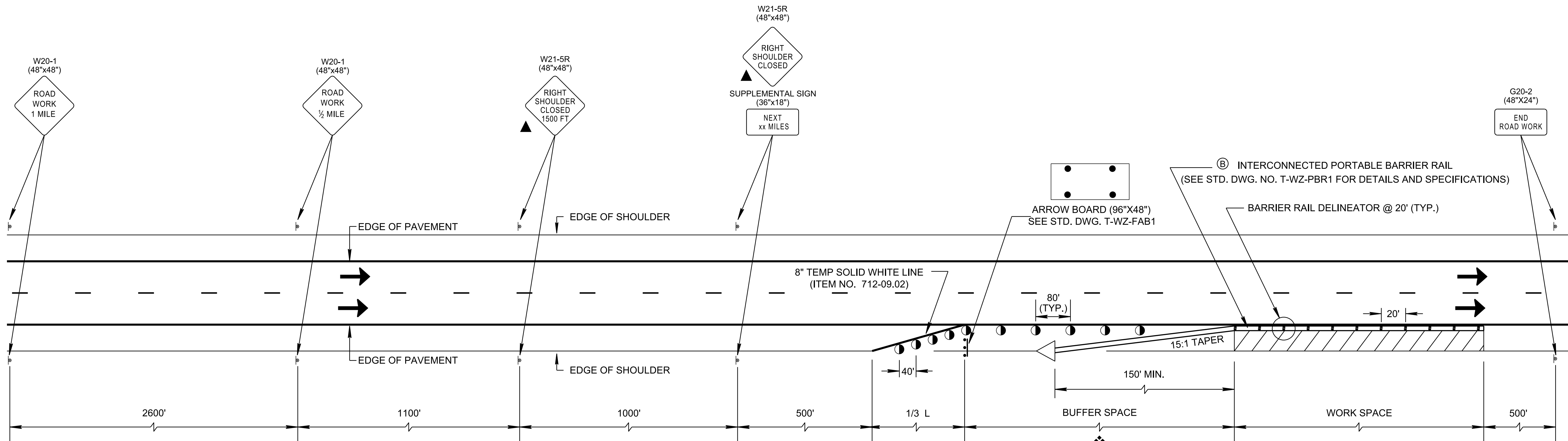
(B) SEE STANDARD DRAWING T-WZ-10 FOR OTHER NECESSARY ADVANCE WARNING SIGNS.

APPROVED BY FHWA
(ALL OTHERS APPROVED BY TDOT)

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

INTERIOR LANE CLOSURE FOR FREEWAYS

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TRAFFIC CONTROL FOR SHOULDER CLOSURE FOR FREEWAYS AND DIVIDED HIGHWAYS

- REV. 4-15-99: MODIFIED CHANNELIZATION DEVICE LEGEND.
- REV. 12-18-99: MODIFIED GENERAL NOTE (E).
- REV. 7-29-03: CHANGED GENERAL NOTE (E).
- REV. 4-15-04: CHANGED GENERAL NOTE (C) TO COMPLY WITH 2003 MUTCD.
- REV. 5-12-06: REPLACED VERTICAL PANEL WITH BARRIER RAIL DELINEATORS. ADDED GENERAL NOTES (E) & (F).
- REV. 10-06-06: CHANGED ITEM NO. FOR BARRIER RAIL DELINEATOR. ADDED GENERAL NOTE (C). CHANGED GENERAL NOTE (E).
- REV. 03-13-09: CHANGED GENERAL NOTE (E) AND ATTENUATOR LEGEND DESCRIPTION.
- REV. 03-05-17: ADDED ITEM NO. 716-05.02 AND 712-09.02.
- REV. 06-28-19: ADDED REFERENCED STD DWG S-CC-1 TO LEGEND FOR TEMPORARY CRASH CUSHION. ADDED ITEM NUMBER FOR FLEXIBLE DRUMS AND BARRIER RAIL DELINEATORS. REORGANIZED AND MODIFIED GENERAL NOTES FOR CLARITY. REVISED REFERENCE TO OTHER STD DWG. REDREW SHEET.
- REV. 05-01-20: ADDED SPECIAL NOTES. ADDED BUFFER SPACE TABLE. CHANGED CALCULATION FOR DISTANCE L.

GENERAL NOTES

(A) THIS STANDARD CAN BE USED FOR THE CLOSURE OF AN INSIDE OR OUTSIDE SHOULDER OF ANY MULTI-LANE DIVIDED HIGHWAY. FOR THE CLOSURE OF AN INTERIOR LANE, SEE STANDARD DRAWING NOS. T-WZ-13, TWZ-14, OR T-WZ-15 FOR DETAILS.

(B) MINIMUM TWO FEET (2') OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER IS REQUIRED. THE MAXIMUM POSSIBLE OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER MUST BE OBTAINED. A 2' MINIMUM OFFSET IS REQUIRED BETWEEN THE TRAVELLED LANE AND BRIDGE PARAPET, PORTABLE BARRIER RAIL, CONCRETE MEDIAN BARRIERS, ETC. EVEN THOUGH MUTCD RECOMMENDS THE TWO FOOT OFFSET, TDOT'S POLICY REQUIRES THE OFFSET. 2' MINIMAL OFFSET IS REQUIRED BETWEEN THE WORK ZONE AND PORTABLE BARRIER RAIL IF RAIL IS UNPINNED.

(C) PORTABLE BARRIER RAIL WILL BE REQUIRED WHERE DROP OFFS EXCEED 18 INCHES. PORTABLE BARRIER RAIL MAY BE USED WHERE DROP OFFS EXCEED 6 INCHES. FOR MORE SPECIFIC INFORMATION SEE TDOT DROP-OFF POLICY.

(D) TAPER LENGTH SHOWN FOR THE PORTABLE BARRIER RAIL IS A MINIMUM. PORTABLE BARRIER RAIL SHOULD BE EXTENDED BEYOND THE CLEAR ZONE OR BE SHIELDED WITH A CRASH CUSHION WHEN IT IS NOT FEASIBLE TO EXTEND THE PORTABLE BARRIER RAIL. SEE STANDARD DRAWING S-CZ-1 FOR CLEAR ZONE DISTANCE.

(E) REFER TO THE QUALIFIED PRODUCT LIST FOR APPROVED BARRIER RAIL DELINEATORS. DELINEATORS SHOULD NOT BE MIXED IN THE SAME LINE. BARRIER RAIL DELINEATORS SHALL BE USED ON PORTABLE BARRIER RAIL.

(F) SEE STANDARD DRAWING T-WZ-10 FOR OTHER NECESSARY ADVANCE WARNING SIGNS.

(G) RAISED PAVEMENT MARKERS SHOULD NOT BE USED ON RIGHT EDGE LINE.

SPECIAL NOTES

LANE WIDTHS SHALL BE A MINIMUM OF 11FT WITH 2FT SHOULDER. WHEN ALIGNMENT IS IN A HORIZONTAL CURVE WITH A RADIUS LESS THAN 2500FT, LANE WIDTHS SHALL BE A MINIMUM OF 12FT WITH 2FT SHOULDERS.

IF THE MINIMUM DESIGN REQUIREMENTS OF THIS STANDARD DRAWING CANNOT BE MET, A WORK ZONE DESIGN DEVIATION MUST BE SUBMITTED TO AND APPROVED BY THE STATE WORK ZONE ENGINEER.

CHANNELIZATION DEVICE LEGEND

- FLEXIBLE DRUMS (ITEM NO. 712-04.01, PER EACH)
- FLASHING YELLOW ARROW BOARD (SEE STD. DWG. NO. T-WZ-FAB1, FOR DETAILS AND SPECIFICATIONS) (ITEM NO. 712-08.03, PER EACH)
- SIGN SUPPORT
- DIRECTION OF TRAFFIC
- WORK SPACE
- BARRIER RAIL DELINEATOR (ITEM NO. 712-04.50, PER EACH)
- ATTENUATOR SEE STD. DWG. S-CC-1 (ITEM NO. 705-20.25, PER EACH)

COMPUTATION FOR DISTANCE L

$L = W \times S$

L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = 10 MPH OVER EXISTING POSTED SPEED LIMIT

FOR LEFT SHOULDER CLOSURE USE SIGNS W21-5L REPLACE THE WORD RIGHT WITH LEFT

BUFFER SPACE
BASED ON PRE-CONSTRUCTION POSTED SPEED

SPEED	DISTANCE
45	360
50	425
55	495
60	570
65	645
70	730
75	820

APPROVED BY FHWA
(ALL OTHERS APPROVED BY TDOT)

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

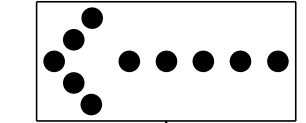
SHOULDER CLOSURE DETAIL FOR FREEWAYS AND DIVIDED HIGHWAYS

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NOT TO SCALE

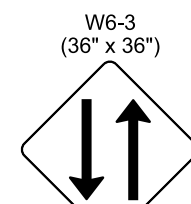
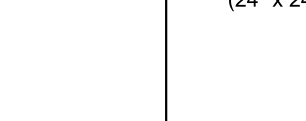
ARROW BOARD (96"X48")
SEE STD. DWG. T-WZ-FAB1



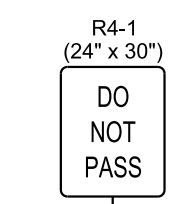
W1-4AL (48" x 48")
W13-1 (24" x 24")
XX MPH



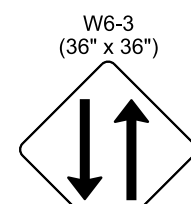
G20-2 (48" x 24")
END ROAD WORK



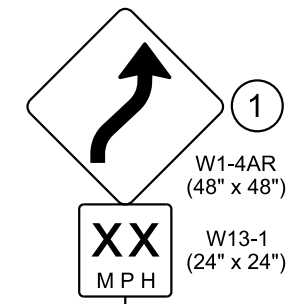
W6-3 (36" x 36")



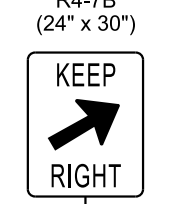
R4-1 (24" x 30")
DO NOT PASS



W6-3 (36" x 36")

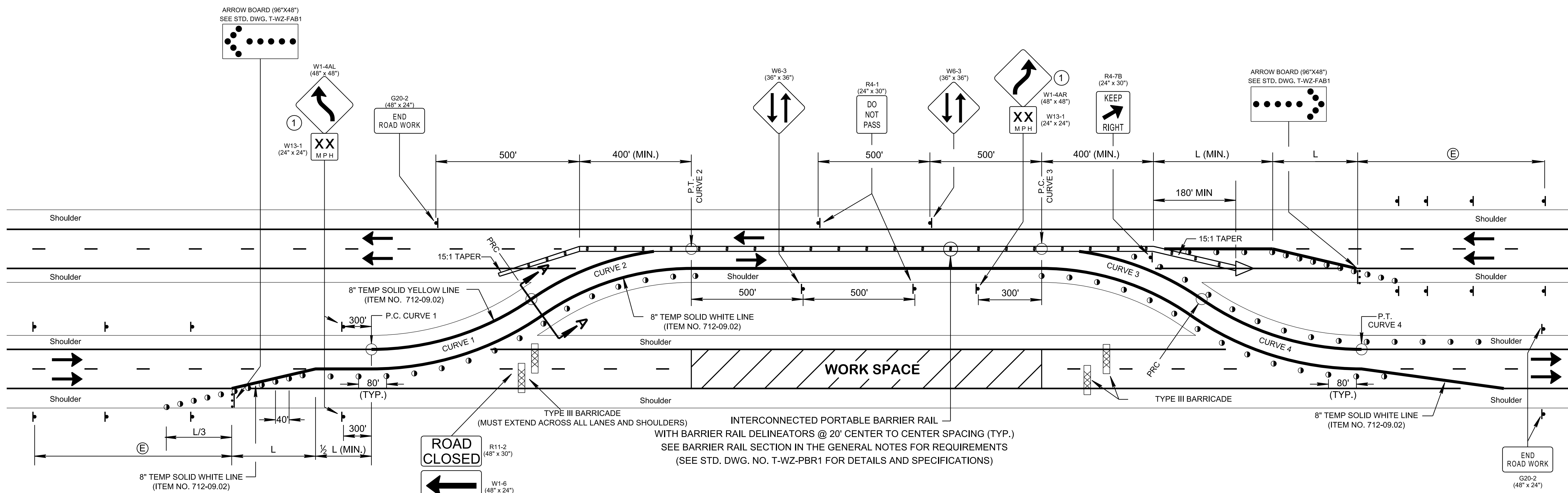
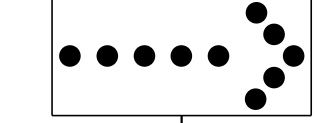


W1-4AR (48" x 48")
W13-1 (24" x 24")
XX MPH



R4-7B (24" x 30")
KEEP RIGHT

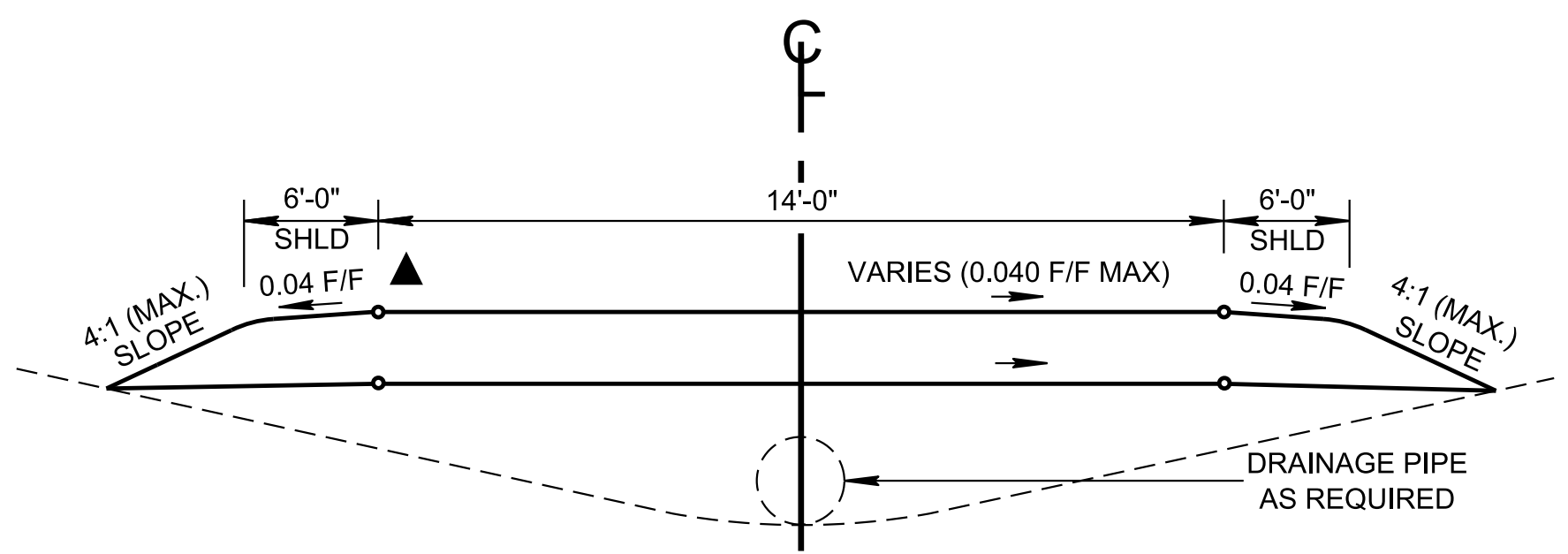
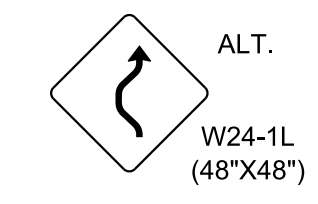
ARROW BOARD (96"X48")
SEE STD. DWG. T-WZ-FAB1



MEDIAN CROSS-OVER DETAIL ON DIVIDED HIGHWAYS AND BRIDGES

SPECIAL NOTE

- ① IF THE TANGENT LENGTH OF THE DIVERSION IS LESS THAN 600', USE ALTERNATE SIGN W24-1L AT BEGINNING OF CROSS OVER IN PLACE OF W1-4AL AND NO SIGN IS REQUIRED AT DOWNSTREAM LOCATION.
 - ② UNLESS REFLECTED DIFFERENT, THE LANE WIDTHS SHALL BE A MINIMUM 11 FT. WIDE WITH 2 FT. SHOULDERS. WHEN EXISTING ROADWAY HORIZONTAL ALIGNMENT IS IN A CURVE AND THE RADIUS IS LESS THAN 2500 FT. THE LANE WIDTHS FOR THE SHIFTING TAPER MUST BE AT LEAST 12 FT. WIDE WITH 2 FT. SHOULDERS.
- IF THE MINIMUM DESIGN REQUIREMENTS OF THIS STANDARD CANNOT BE MET, A WORK ZONE DESIGN DEVIATION MUST BE SUBMITTED TO AND APPROVED BY THE STATE WORK ZONE ENGINEER.



SECTION A-A
TYPICAL SECTION OF TEMPORARY
MEDIAN CROSS-OVER

▲ THE SLOPES OF THE SHOULDER AND THE ROADWAY PAVEMENT SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 0.07 FOOT PER FOOT.

CHANNELIZATION DEVICE LEGEND

- FLEXIBLE DRUMS (ITEM NO. 712-04.01, PER EACH)
- ⋮ FLASHING YELLOW ARROW BOARD (SEE STD. DWG. NO. T-WZ-FAB1, FOR DETAILS AND SPECIFICATIONS) (ITEM NO. 712-08.03, PER EACH)
- ⊥ SIGN SUPPORT
- ← DIRECTION OF TRAFFIC
- ▨ WORK SPACE
- ▬ BARRIER RAIL DELINEATOR (ITEM NO. 712-04.50, PER EACH)
- △ ATTENUATOR SEE STD. DWG. S-CC-1 (ITEM NO. 705-20.25, PER EACH)
- ⊞ TYPE III BARRICADE SEE STD. DWG. T-S-18 (ITEM NO. 713-15.35, PER EACH)

COMPUTATION FOR DISTANCE L

$L = W \times S$

L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = 10 MPH OVER EXISTING POSTED SPEED LIMIT

GENERAL NOTES

- (A) CROSS-OVERS SHALL BE DESIGNED FOR SPEEDS NOT LESS THAN 10 MILES PER HOUR BELOW THE POSTED SPEED. THE GEOMETRY DETAIL FOR CROSS-OVER SHOWN ON STANDARD DRAWING T-WZ-20 IS FOR A TANGENT DIVIDED HIGHWAY SECTION ONLY. THE DESIGNER SHALL PROVIDE GEOMETRIC DETAILS OF CROSS-OVER(S) ON CURVED DIVIDED HIGHWAY SECTIONS.
 - (B) ADVISORY SPEED PLATES ON REVERSE CURVE SIGNS (W1-4) SHALL BE 10 MILES PER HOUR LESS THAN THE DESIGN SPEED OF THE CROSS-OVER.
 - (C) TEMPORARY CROSS DRAINS SHALL BE PROVIDED WHERE CROSS-OVER CROSSES THE LOW POINT OF THE DEPRESSED MEDIAN. THE DESIGNER WILL PROVIDE THE LENGTH AND SIZE OF THESE CROSS DRAINS ON THE PLANS. THESE CROSS DRAINS SHALL BE PAID FOR UNDER ITEM NOS. 621-03.02 THROUGH 621-03.10.
 - (D) PAVEMENT SECTION OF TEMPORARY MEDIAN CROSS-OVER IS SHOWN ON TYPICAL SECTION SHEETS OF PLANS.
 - (E) SEE STANDARD DRAWING T-WZ-11 FOR LANE CLOSURE SIGNING DETAILS
 - (F) TWO-WAY TRAFFIC SYMBOL SIGN (W6-3) AND DO NOT PASS SIGN (R4-1) TO BE PLACED AT 1/2 MILE INTERVALS ON TWO-WAY TEMPORARY TRAFFIC SECTION.
 - (G) A SECOND ARROW BOARD MAY BE USED WHEN GEOMETRIC CONDITIONS LIMITS THE VISIBILITY OF A LANE CLOSURE.
 - (H) RAISED PAVEMENT MARKERS SHOULD NOT BE USED ON RIGHT EDGE LINE.
- BARRIER RAIL**
- (I) TAPER LENGTH SHOWN FOR THE PORTABLE BARRIER RAIL IS A MINIMUM. PORTABLE BARRIER RAIL SHOULD BE EXTENDED BEYOND THE CLEAR ZONE OR BE SHIELDED WITH A CRASH CUSHION WHEN IT IS NOT FEASIBLE TO EXTEND THE PORTABLE BARRIER RAIL. SEE STANDARD DRAWING S-CZ-1 FOR CLEAR ZONE DISTANCE.
 - (J) REFER TO THE QUALIFIED PRODUCT LIST FOR APPROVED BARRIER RAIL DELINEATORS. DELINEATORS SHOULD NOT BE MIXED IN THE SAME LINE. BARRIER RAIL DELINEATORS SHALL BE USED ON PORTABLE BARRIER RAIL.
 - (K) MINIMUM TWO FEET (2') OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER IS REQUIRED. THE MAXIMUM POSSIBLE OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER MUST BE OBTAINED. A 2' MINIMUM OFFSET IS REQUIRED BETWEEN THE TRAVELLED LANE AND BRIDGE PARAPET, PORTABLE BARRIER RAIL, CONCRETE MEDIAN BARRIERS, ETC. EVEN THOUGH MUTCD RECOMMENDS THE TWO FOOT OFFSET, TDOT'S POLICY REQUIRES THE OFFSET. 2' MINIMAL OFFSET IS REQUIRED BETWEEN THE WORK ZONE AND PORTABLE BARRIER RAIL IF RAIL IS UNPINNED.

- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (C).
- REV. 7-29-03: CHANGED GENERAL NOTE (H).
- REV. 9-1-05: REMOVED TYPE "C" WARNING LIGHTS FROM FLEXIBLE DRUMS IN TAPER.
- REV. 5-12-06: REPLACED VERTICAL PANEL WITH BARRIER RAIL DELINEATORS. ADDED GENERAL NOTES (I) & (J).
- REV. 10-06-06: CHANGED ITEM NO. FOR BARRIER RAIL DELINEATOR. ADDED GENERAL NOTE (K). DELETED GENERAL NOTE (J).
- REV. 03-13-09: CHANGED GENERAL NOTE (H) AND ATTENUATOR LEGEND DESCRIPTION.
- REV. 4-2-12: ADDED NOTE (I) AND SIGN W24-1.
- REV. 03-05-17: ADDED ITEM NO. 716-05.02 AND 712-09.02.
- REV. 06-28-19: REORGANIZED GENERAL NOTES AND ADDED NOTE (K). ADDED DRAINAGE PIPE IN SECTION A-A. CORRECTED 8" TEMPORARY PAVEMENT MARKING COLOR TO YELLOW IN TWO INSTANCES. ADDED 8" TEMPORARY SOLID YELLOW LINE IN ONE INSTANCE. ADDED REFERENCED STD DWG S-CC-1 TO LEGEND FOR TEMPORARY CRASH CUSHION. ADDED ITEM NUMBER FOR FLEXIBLE DRUMS. MODIFIED GENERAL NOTE (J) FOR CLARITY. REMOVED VERTICAL PANELS AND REPLACED THEM WITH DRUMS AT THE MEDIAN CROSS-OVER. ADDED SPECIAL NOTE NO. (2). REDREW SHEET.
- REV. 05-01-20: ADDED SPECIAL NOTES. ADDED BUFFER SPACE TABLE. REMOVED 716-05.02 PAY ITEM. CHANGED CALCULATION FOR DISTANCE L.

APPROVED BY FHWA
(ALL OTHERS APPROVED BY TDOT)

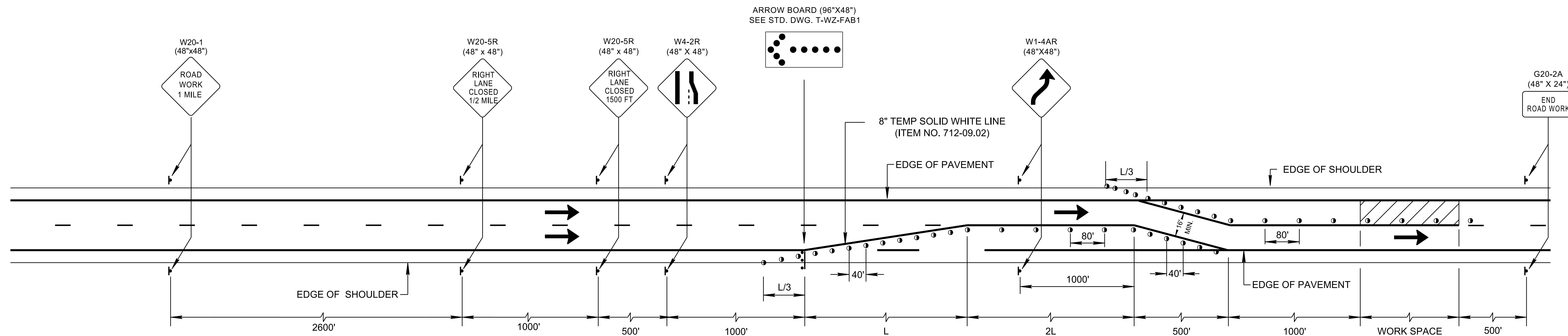
STATE OF TENNESSEE
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MEDIAN CROSS-OVER DETAIL ON FREEWAYS

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- REV. 9-1-05: REMOVED TYPE "C" WARNING LIGHTS FROM FLEXIBLE DRUMS IN TAPER.
- REV. 3-15-11: CHANGED SIGN (R2-5A) TO SIGN (W3-5) AND CHANGED FOOTNOTE (1). REVISED FLEXIBLE DRUM SPACING AND COMPUTATION FOR DISTANCE. REMOVED SIGN R4-1 (MOD).
- REV. 03-05-17: ADDED NOTE (F).
- REV. 06-29-19: REVISED COMPUTATION FOR DISTANCE L. REVISED ALL GENERAL NOTES. REDREW SHEET.

REV. 05-01-20: ADDED SPECIAL NOTES. ADDED BUFFER SPACE TABLE. REMOVED 716-05.02 PAY ITEM. CHANGED CALCULATION FOR DISTANCE L. ADDED LANE WIDTH MINIMUM FOR LANE SHIFT TAPER. CHANGED SIGNING TO MATCH OTHER TDOT LANE CLOSURE STANDARDS AND 2009 MUTCD.



COMPUTATION FOR DISTANCE L

$L = W \times S$

L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = 10 MPH OVER EXISTING POSTED SPEED LIMIT

CHANNELIZATION DEVICE LEGEND	
●	FLEXIBLE DRUMS (ITEM NO. 712-04.01, PER EACH)
⋮	FLASHING YELLOW ARROW BOARD (SEE STD. DWG. NO. T-WZ-FAB1, FOR DETAILS AND SPECIFICATIONS) (ITEM NO. 712-08.03, PER EACH)
▶	SIGN SUPPORT
←	DIRECTION OF TRAFFIC
▨	WORK SPACE
I	CHANGEABLE MESSAGE SIGN (ITEM NO. 713-16.01, PER EACH)

SPECIAL NOTES

LANE WIDTHS SHALL BE A MINIMUM OF 11FT WITH 2FT SHOULDER. WHEN ALIGNMENT IS IN A HORIZONTAL CURVE WITH A RADIUS LESS THAN 2500FT, LANE WIDTHS SHALL BE A MINIMUM OF 12FT WITH 2FT SHOULDERS.

IF THE MINIMUM DESIGN REQUIREMENTS OF THIS STANDARD DRAWING CANNOT BE MET, A WORK ZONE DESIGN DEVIATION MUST BE SUBMITTED TO AND APPROVED BY THE STATE WORK ZONE ENGINEER.

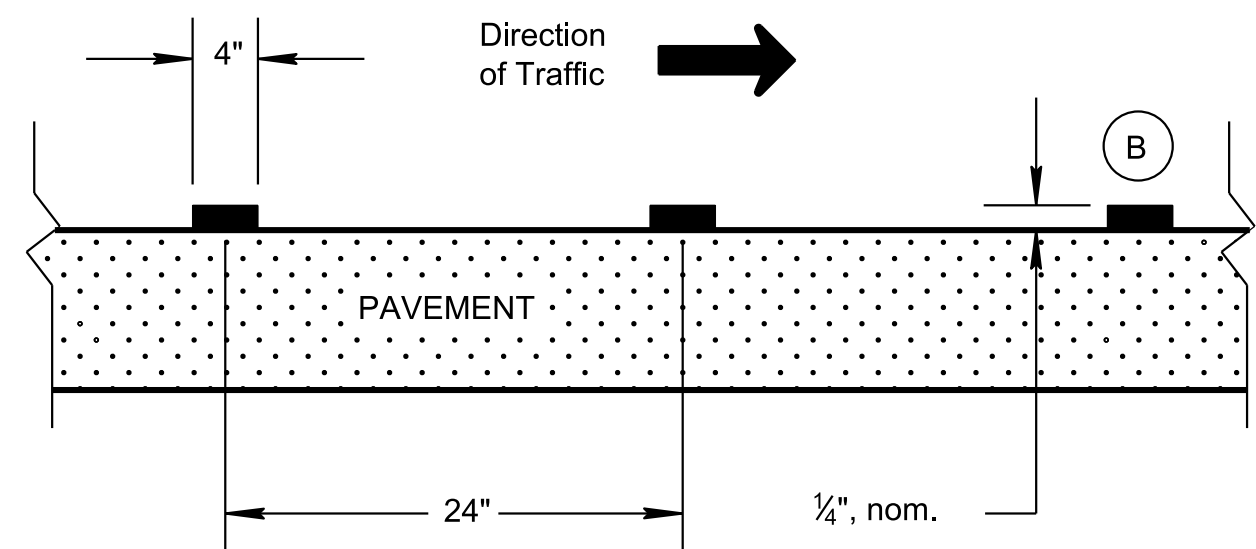
- GENERAL NOTES**
- (A) THIS STANDARD TO BE CONSIDERED ON LONGER TERM PROJECTS WITH WORK PLANNED IN BOTH LANES OF TRAFFIC IN ORDER TO KEEP THE LANE CLOSURE CONSISTENT REGARDLESS OF THE LANE BEING WORKED ON. ALSO ON ROADWAYS WHERE EXCESSIVE SPEED AND VOLUMES ARE A CONCERN, A RIGHT LANE CLOSURE IS A MORE TYPICAL MERGE FOR DRIVERS
 - NOTES B THRU F APPLY IF PORTABLE BARRIER RAIL IS REQUIRED**
 - (B) MINIMUM TWO FEET (2') OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER IS REQUIRED. THE MAXIMUM POSSIBLE OFFSET BETWEEN TRAVEL LANE AND PORTABLE BARRIER MUST BE OBTAINED. A 2' MINIMUM OFFSET IS REQUIRED BETWEEN THE TRAVELLED LANE AND BRIDGE PARAPET, PORTABLE BARRIER RAIL, CONCRETE MEDIAN BARRIERS, ETC. EVEN THOUGH MUTCD RECOMMENDS THE TWO FOOT OFFSET, TDOT'S POLICY REQUIRES THE OFFSET. 2' MINIMAL OFFSET IS REQUIRED BETWEEN THE WORK ZONE AND PORTABLE BARRIER RAIL IF RAIL IS UNPINNED.
 - (C) PORTABLE BARRIER RAIL WILL BE REQUIRED WHERE DROP OFFS EXCEED 18 INCHES. PORTABLE BARRIER RAIL MAY BE USED WHERE DROP OFFS EXCEED 6 INCHES. FOR MORE SPECIFIC INFORMATION SEE TDOT DROP-OFF POLICY.
 - (D) TAPER LENGTH SHOWN FOR THE PORTABLE BARRIER RAIL IS A MINIMUM. PORTABLE BARRIER RAIL SHOULD BE EXTENDED BEYOND THE CLEAR ZONE OR BE SHIELDED WITH A CRASH CUSHION WHEN IT IS NOT FEASIBLE TO EXTEND THE PORTABLE BARRIER RAIL. SEE STANDARD DRAWING S-CZ-1 FOR CLEAR ZONE DISTANCE.
 - (E) REFER TO THE QUALIFIED PRODUCT LIST FOR APPROVED BARRIER RAIL DELINEATORS. DELINEATORS SHOULD NOT BE MIXED IN THE SAME LINE. BARRIER RAIL DELINEATORS SHALL BE USED ON PORTABLE BARRIER RAIL.
 - (F) REFER TO STANDARD DRAWING NO. T-WZ-11 FOR PORTABLE BARRIER RAIL PLACEMENT, TAPERS, AND END TREATMENT.
 - (G) PORTABLE MESSAGE BOARD SHOULD ONLY BE USED ONLY WHEN TRAFFIC CONDITIONS WARRANT.
 - (H) SEE STANDARD DRAWING T-WZ-10 FOR OTHER NECESSARY ADVANCE WARNING SIGNS.
 - (1) SEE TDOT ROADWAY DESIGN GUIDELINES FOR LINE WIDTH AND MATERIAL TYPE.

APPROVED BY FHWA
(ALL OTHERS APPROVED BY TDOT)

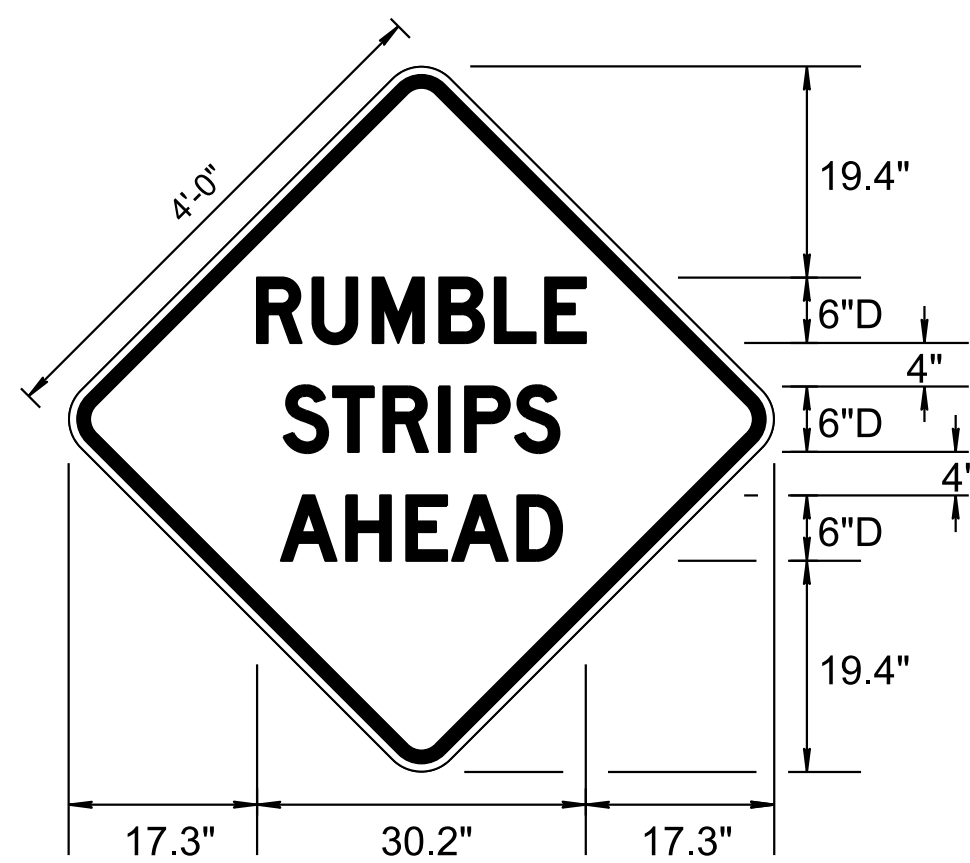
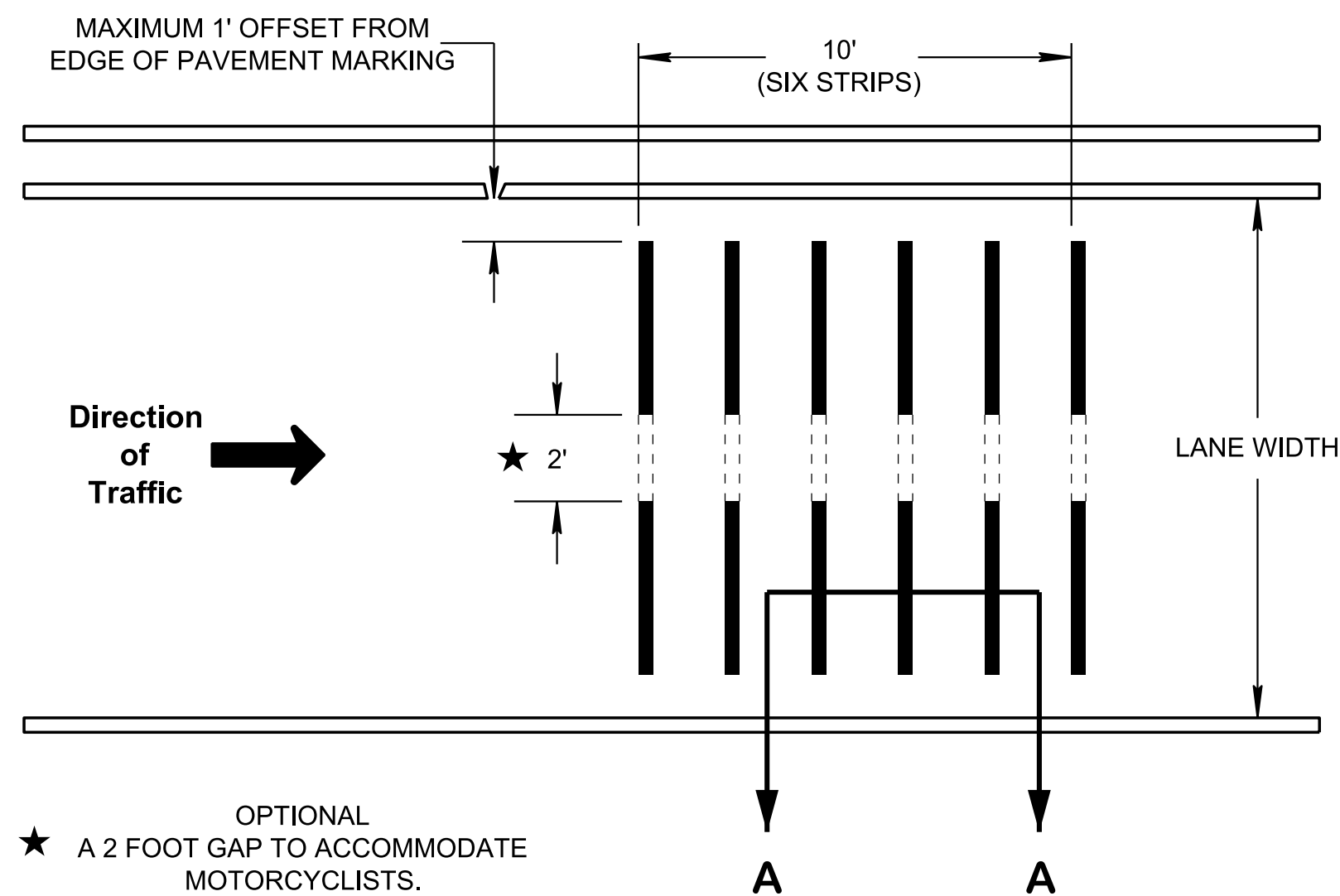
STATE OF TENNESSEE
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LANE CLOSURE WITH LEFT HAND MERGE AND LANE SHIFT

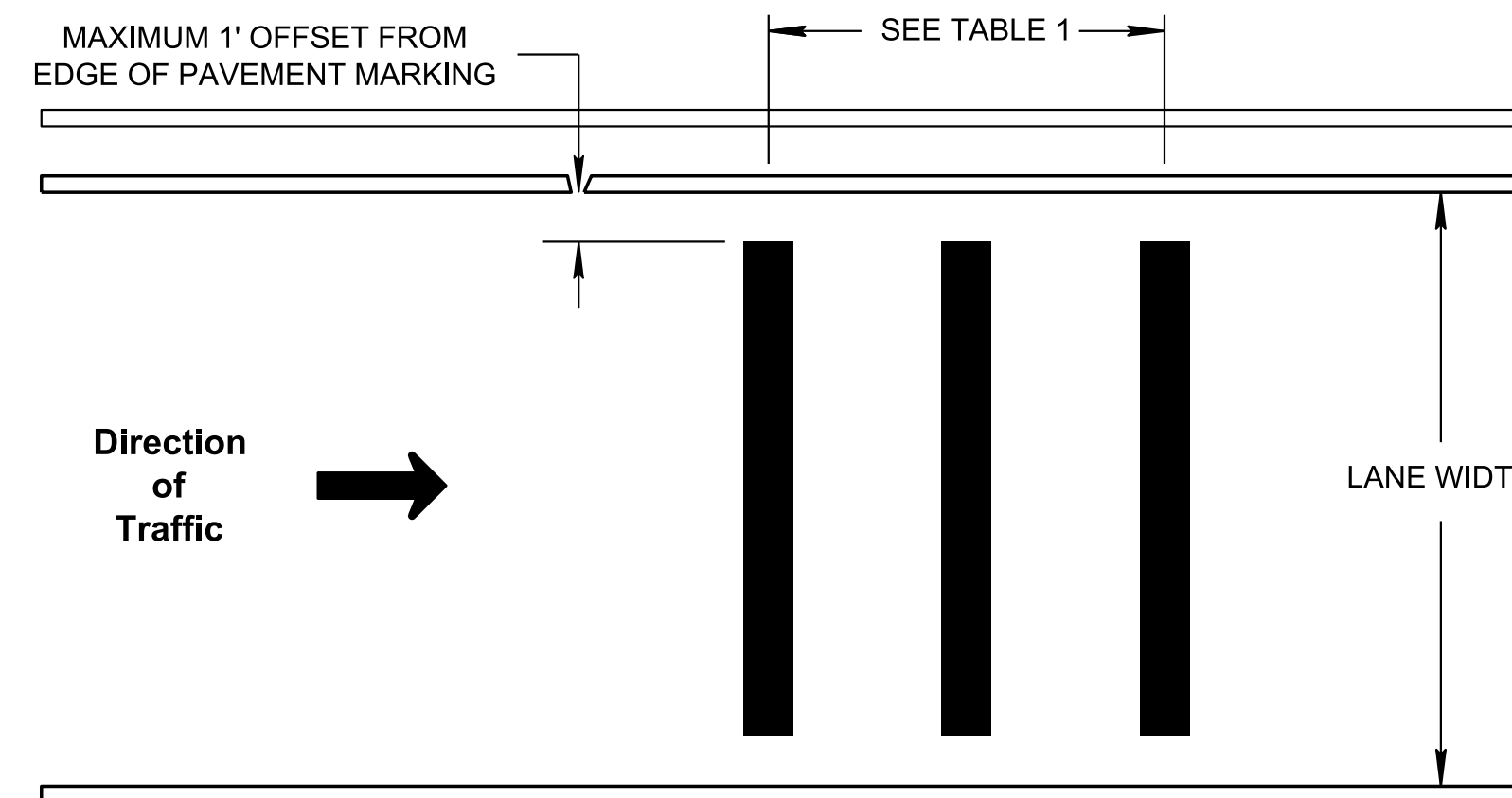
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SECTION A-A



SPECIAL SIGN DETAIL
TN-78 (48" x 48")



TEMPORARY PORTABLE RUMBLE STRIPS
ONLY DEPLOY DURING WORK HOURS (DO NOT LEAVE AFTER WORK HOURS).

SURFACE APPLIED TRANSVERSE RUMBLE STRIPS
PERMANENT / SEMI PERMANENT
THERMOPLASTIC OR APPROVED ADHESIVE PRODUCT

SPECIAL NOTE

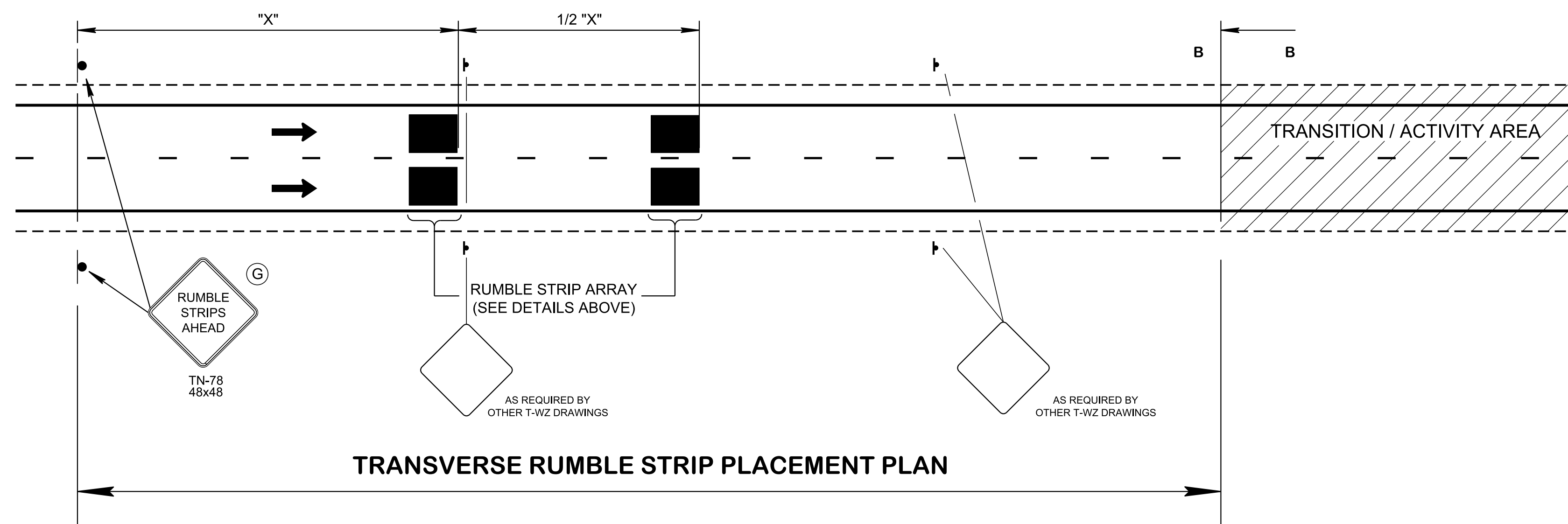
PRECISE PLACEMENT AND SPACING OF ARRAYS AND WARNING SIGN MAY BE ADJUSTED IN ORDER TO BEST ACCOMMODATE PROJECT NEEDS AND SPECIFIC ROAD CONDITIONS. INTENT OF THESE ARRAYS IS TO ALERT DRIVERS OF TEMPORARY ROAD CONDITIONS OF INCREASED RISK SUCH AS TRAFFIC MERGING, REDUCED HORIZONTAL ALIGNMENT, ABRUPT SHIFTS, OR THE LIKE. THESE ARRAYS ARE INTENDED TO LOWER TRAFFIC SPEED AND INCREASE DRIVER AWARENESS.

TABLE 1

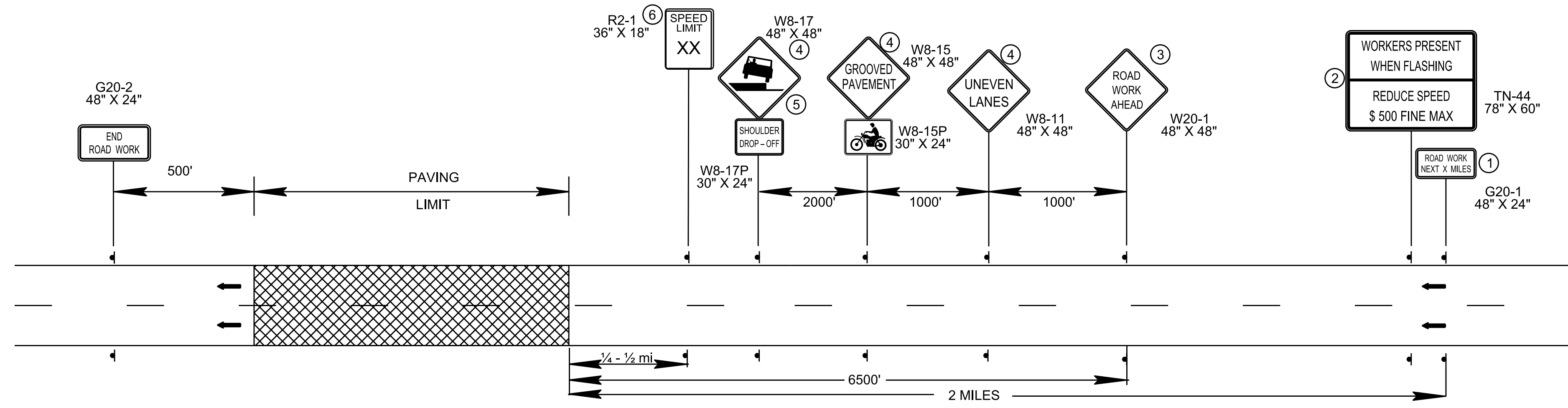
RUMBLE STRIP ARRAY PLACEMENT DISTANCE							
POSTED SPEED (MPH)	40	45	50	55	60	65	70
MINIMUM "X" DISTANCE	200'	400'	600'	800'			
INDIVIDUAL STRIP SPACING FOR PORTABLE RUMBLE STRIP	20'					40'	

GENERAL NOTES

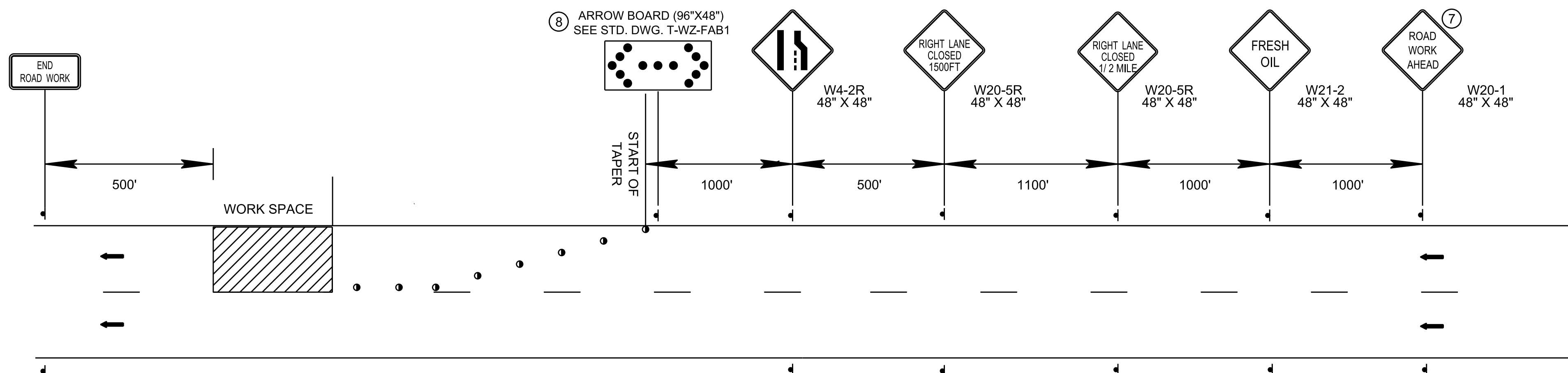
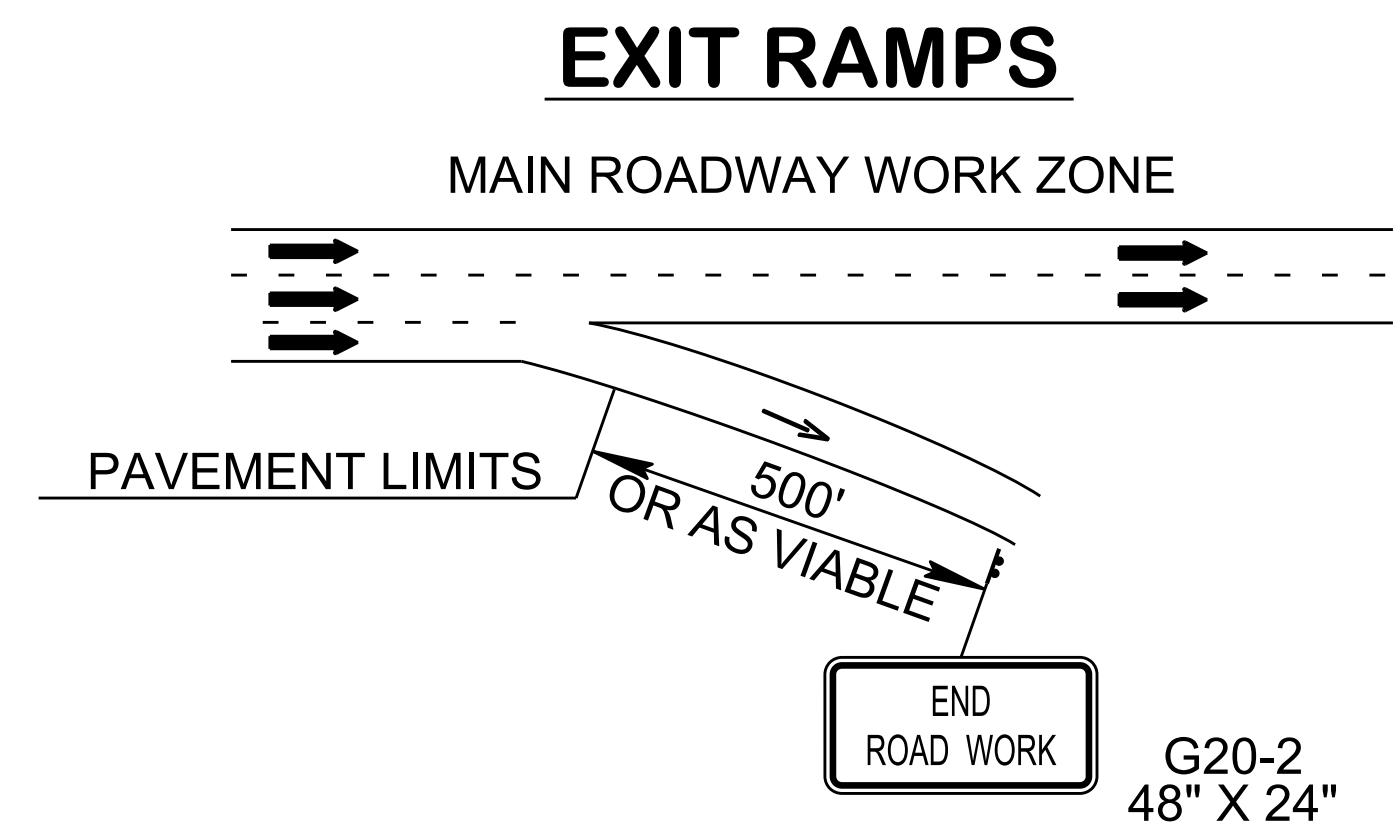
- (A) STATE TRAFFIC ENGINEER APPROVAL IS REQUIRED PRIOR TO INSTALLATION. SEE TDOT TRAFFIC MANUAL FOR FURTHER INFORMATION (SECTION 6.27.3, PAGES 6-59). FOR PLACEMENT DIMENSIONS SEE TABLE.
- (B) WHITE, BLACK AND ORANGE COLORED MATERIAL IS APPROVED FOR TEMPORARY RUMBLE STRIPS (SEE QPL).
- (C) MULTIPLE LANE ROADWAYS SHALL HAVE RUMBLE STRIP ARRAYS IN EACH THRU LANE.
- (D) DO NOT PLACE RUMBLE STRIPS WITHIN LANE SHIFTING OR MERGING TAPER.
- (E) PAYMENT
712-10.02, TEMPORARY TRANSVERSE RUMBLE STRIPS, L.F.
- (F) FOR OTHER SIGN REQUIREMENTS SEE STANDARD DRAWING T-WZ-SERIES AND CURRENT EDITION OF M.U.T.C.D.
- (G) TN-78 SIGN MAY BE ADJUSTED TO ALLOW FOR APPROPRIATE SPACING FROM OTHER SIGNS.



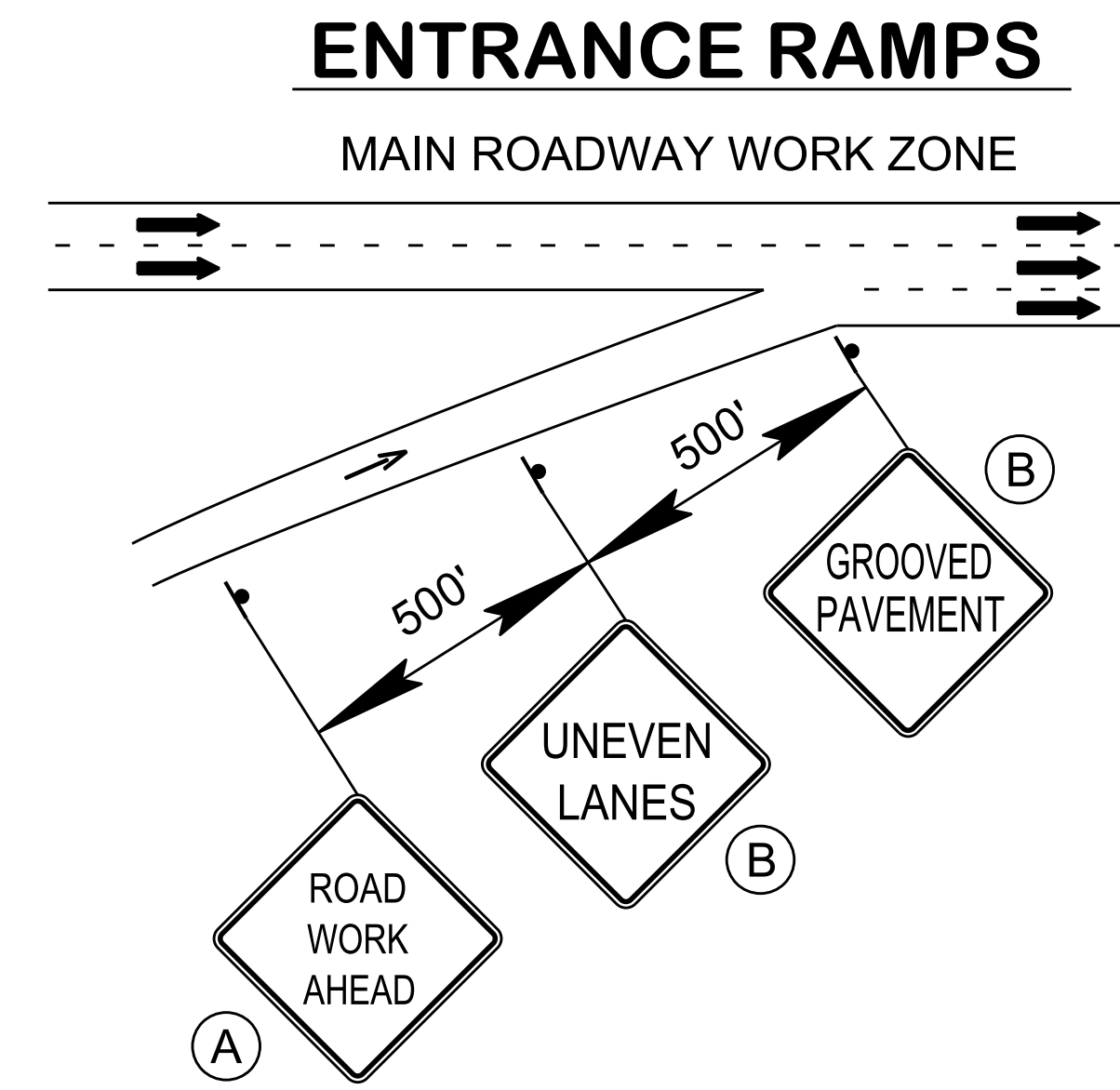
TRANSVERSE RUMBLE STRIP PLACEMENT PLAN



**ADVANCED WARNING SIGNING LAYOUT
(INSTALLED FOR DURATION OF PROJECT)**



**TRAFFIC CONTROL FOR ONE LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY
(TO BE USED DURING ACTIVE WORK AND LANE CLOSURES)**



DESIGN NOTES

- ① SHOULD BE PLACED APPROX. 2 MILES IN ADVANCE OF THE START OF PROJECT LIMITS AND SHALL REFLECT THE DISTANCE FROM THIS SIGN LOCATION UNTIL THE TERMINUS OF THE PAVING LIMITS. DISTANCE SHOWN SHOULD BE ROUNDED OFF TO THE NEAREST MILE.
- ② SHOULD BE INSTALLED AT SUITABLE LOCATION AFTER PREVIOUS SIGN.
- ③ ADDITIONAL DISTANCE TO ALLOW FOR PROPER TAPER AND BUFFER TO BE PROVIDED AHEAD OF PAVING LIMITS.
- ④ SHALL BE COVERED UNTIL CONDITIONS WARRANT - ALSO TO BE PLACED AT 1 MI INCREMENTS THROUGH PROJECT
- ⑤ ONLY TO BE USED WHEN MORE THAN A 2.75 INCH DROP-OFF
- ⑥ SUBSEQUENT SPEED LIMIT SIGNS SHOULD BE POSTED AFTER EACH ENTRANCE RAMP AND PLACED AT INTERVALS THROUGHOUT THE PROJECT LIMITS AT DISTANCES NO GREATER THAN 2 MILES APART.
- ⑦ PLACE 1MI IN ADVANCE OF START OF TAPER. SIGN MAY NOT BE REQUIRED WHEN LANE CLOSURE OCCURS AT START OF PROJECT LIMITS DUE TO PREVIOUSLY INSTALLED ADVANCED WARNING SIGNAGE.
- ⑧ ARROW BOARDS REQUIRED FOR ALL LANE CLOSURES.
- ⑨ FOR FREEWAYS WITH MORE THAN 2 LANES IN ONE DIRECTION, DIFFERENT TRAFFIC CONTROL LAYOUTS MAY BE REQUIRED CONSULT T-WZ SERIES FOR ALTERNATES.

GENERAL NOTES

- (A) PLACED AT OR NEAR BEGINNING OF ENTRANCE RAMP
- (B) SIGNS CONCERNING CONDITION OF ROADWAY SHALL REMAIN COVERED UNTIL CONDITIONS WARRANT
- (C) SIGNS TO BE PAID 712-06 SIGNS (CONSTRUCTION) (SF) EXCEPT FOR TN-44 "WORKERS PRESENT" SIGN WHICH IS PAID 712-06.16 SIGNS (CONSTRUCTION) (REDUCED SPEED WARNING), EA

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