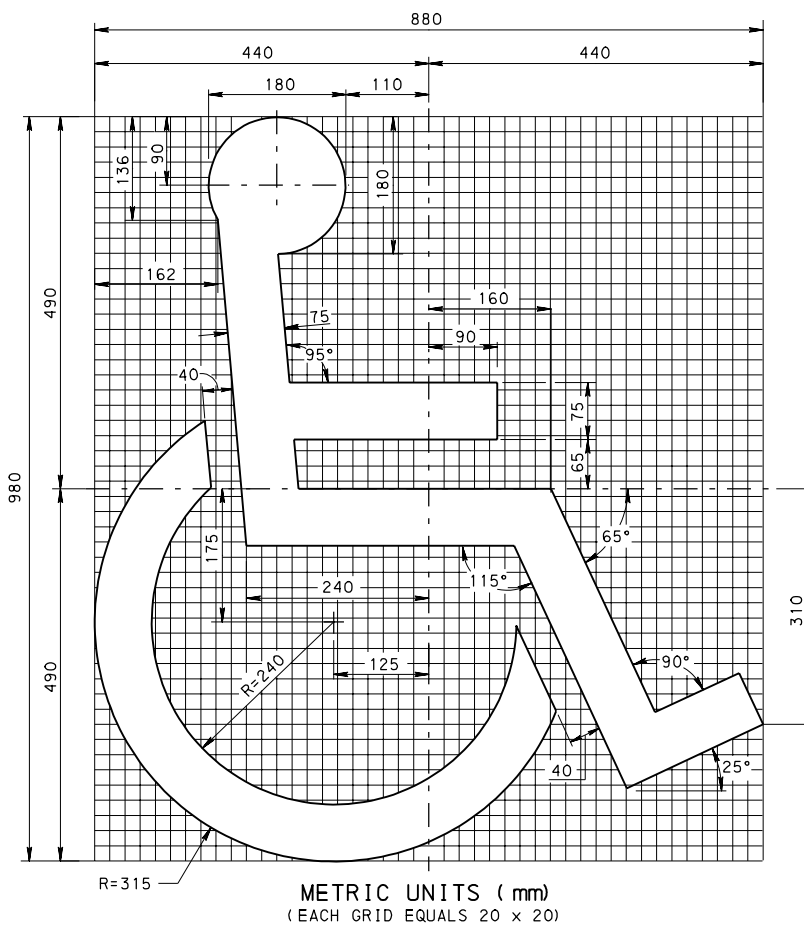
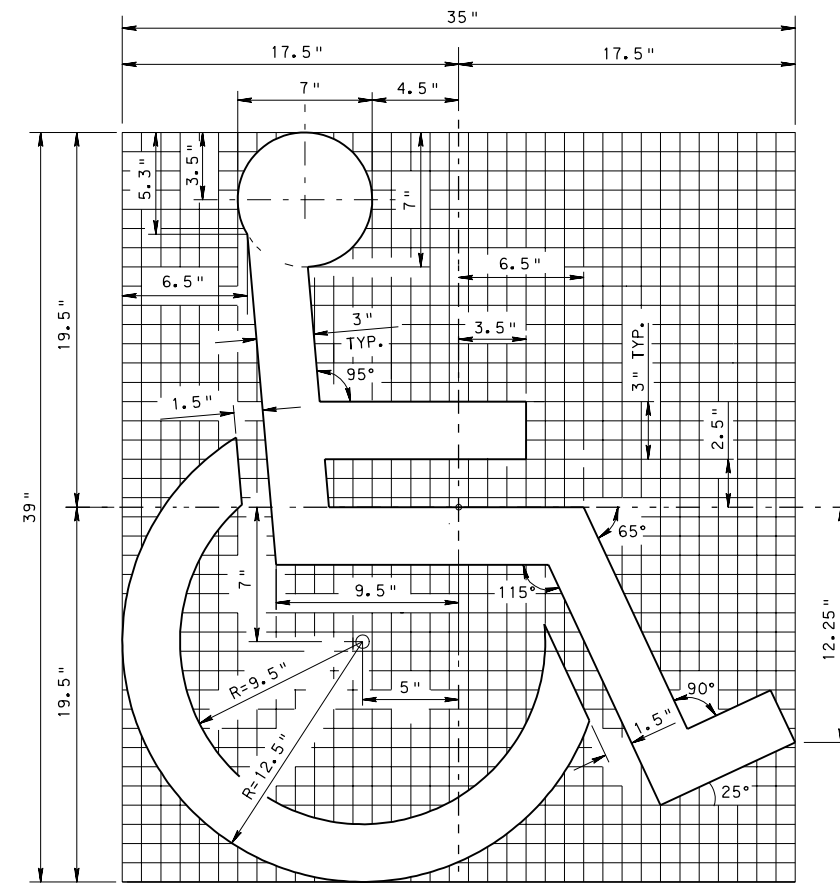


SEE FHWA'S STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS FOR OTHER DETAILS.

**LEGENDS**



METRIC UNITS (mm)  
(EACH GRID EQUALS 20 x 20)



ENGLISH UNITS (INCHES)  
(EACH GRID EQUALS 1" x 1")

**HANDICAPPED MARKING**

**NOTES:**

- HANDICAPPED SYMBOL SHALL BE WHITE. IT MAY BE INSTALLED ALONE OR WITH A BLUE BACKGROUND WHICH EXTENDS A MINIMUM OF 75 mm (3") BEYOND THE SYMBOL. IF MATERIAL THICKNESS OF SYMBOL IS GREATER THAN 500 μm (20 MILS) THE BLUE BACKGROUND MUST BE USED. ANY REDUCTION IN DIMENSIONS MUST BE APPROVED BY THE DEPARTMENT.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ( ).
- EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

PAVEMENT MARKINGS

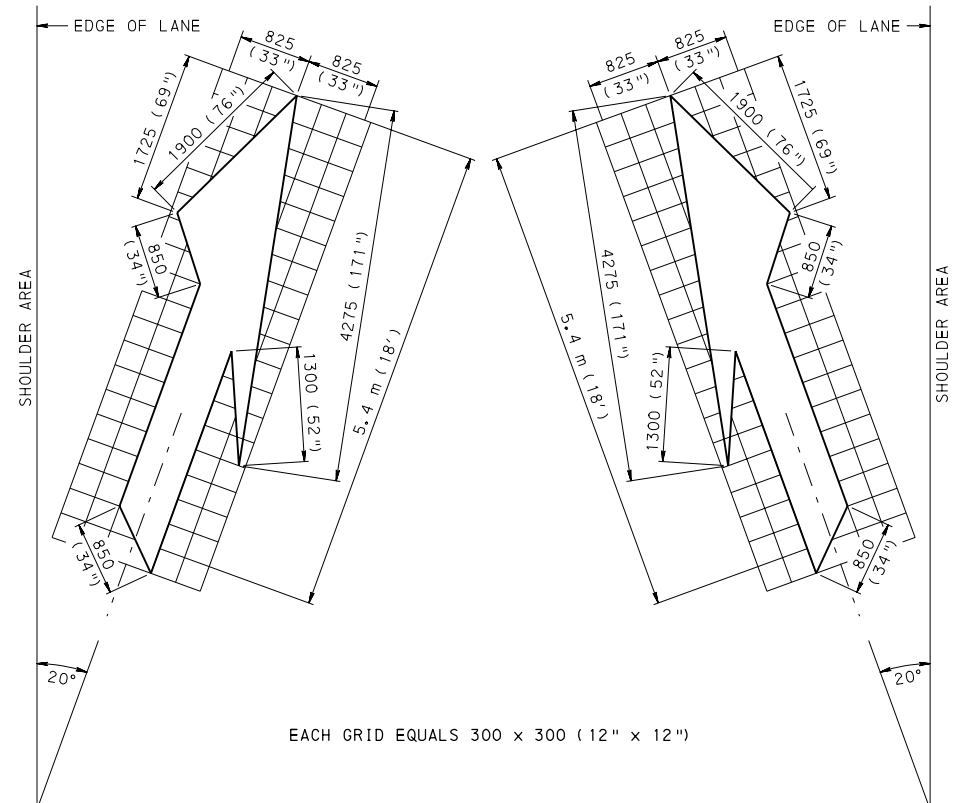
LEGENDS AND SYMBOLS

RECOMMENDED MAY 25, 2007  
*Alan C. Rowe*  
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED MAY 25, 2007  
*M. G. Latel*  
CHIEF HIGHWAY ENGINEER

SHT. 6 OF 8

TC-8600

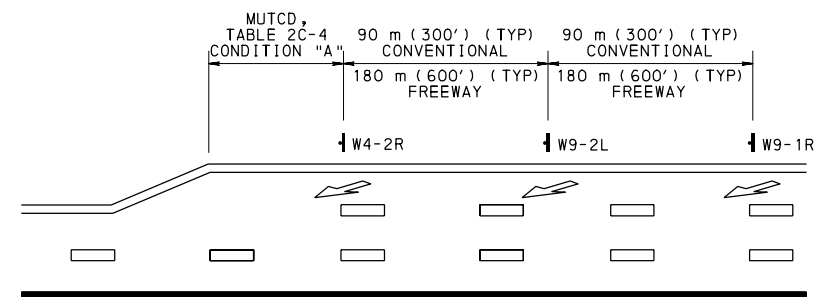


EACH GRID EQUALS 300 x 300 (12" x 12")

**LEFT LANE**  
(MERGE RIGHT)

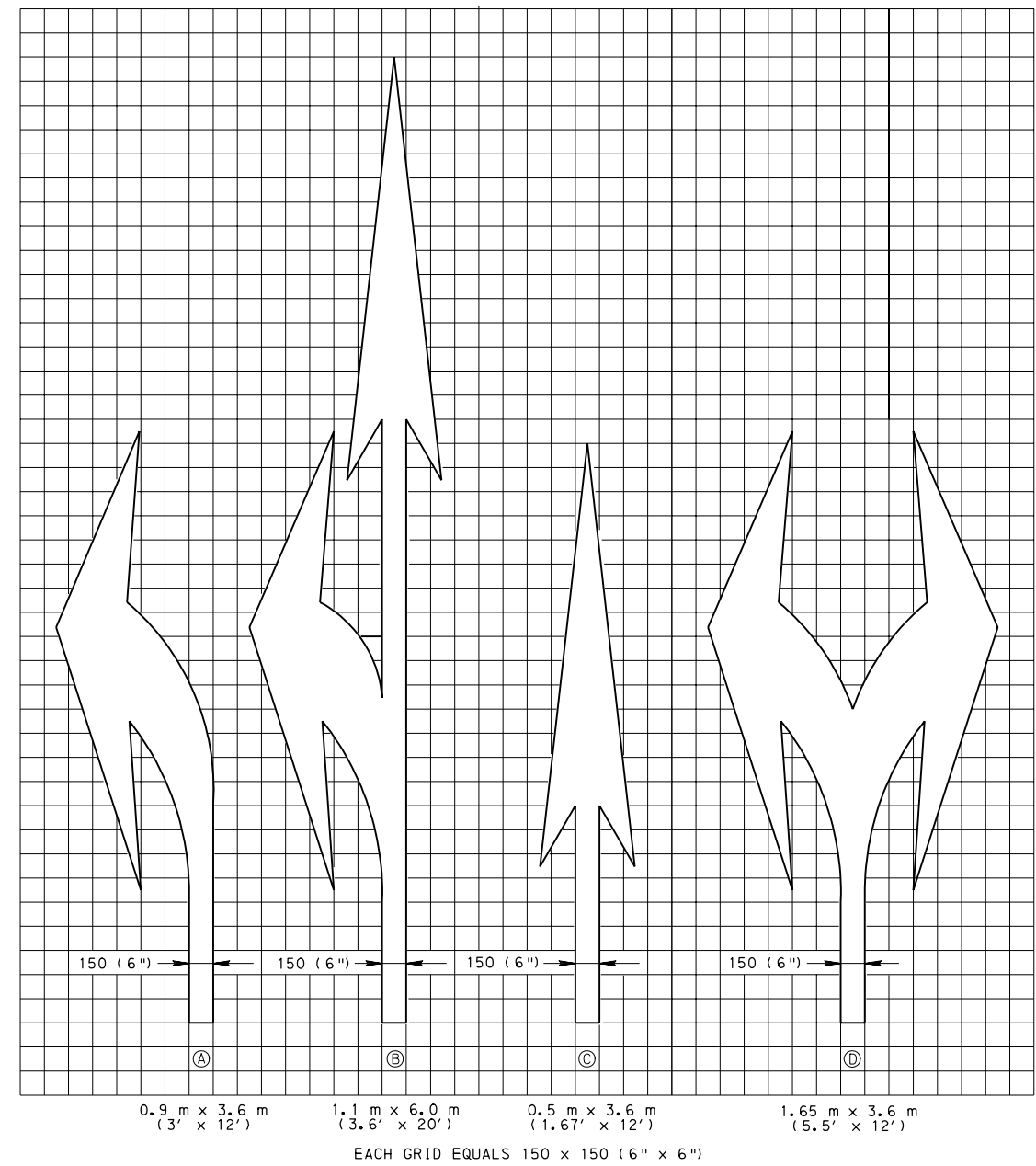
**RIGHT LANE**  
(MERGE LEFT)

**LANE REDUCTION TRANSITION ARROW**



1. LOCATE LRA IN CENTER OF LANE.
  2. PLACE LRAS IN GROUPS OF THREE WHEN CONDITIONS PERMIT.
  3. FOLLOW MUTCD - TABLE 2C-4 (CONDITION A) FOR PLACEMENT OF FIRST LANE REDUCTION ARROW IN ADVANCE OF TAPER.
- INTERSTATE - EXPRESSWAY/FREEWAY**
4. PLACE ADDITIONAL LANE REDUCTION ARROWS AT 180 m (600') INTERVALS.
- CONVENTIONAL ROADWAYS**
5. PLACE ADDITIONAL LANE REDUCTION ARROWS AT 90 m (300') INTERVALS.

**LANE REDUCTION ARROW PLACEMENT**



EACH GRID EQUALS 150 x 150 (6" x 6")

ARROW	QUANTITY FOR PAVEMENT MARKING REMOVAL
(A)	1.11 m <sup>2</sup> (20 FT <sup>2</sup> )
(B)	2.04 m <sup>2</sup> (32 FT <sup>2</sup> )
(C)	0.84 m <sup>2</sup> (13 FT <sup>2</sup> )
(D)	1.95 m <sup>2</sup> (32 FT <sup>2</sup> )

**MARKING ARROWS**

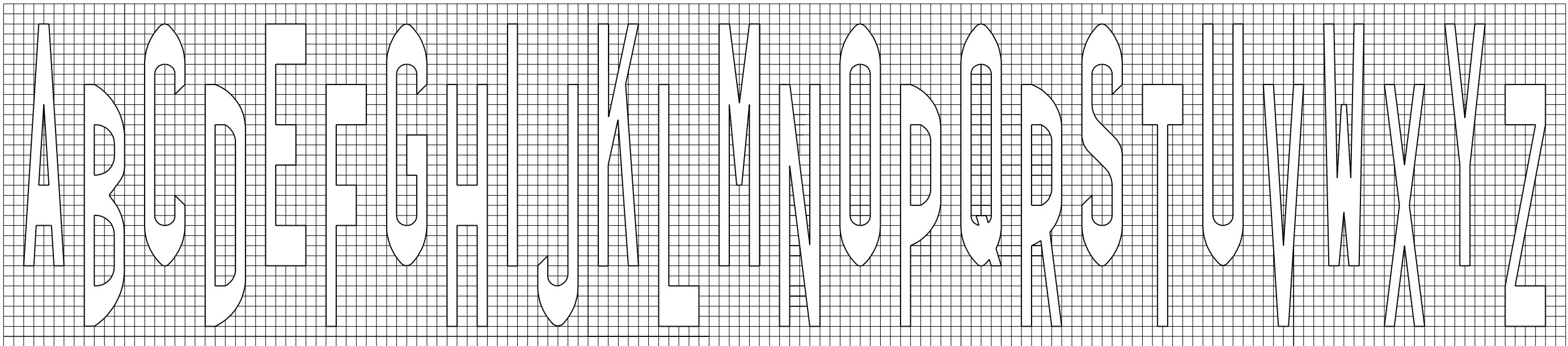
**NOTES:**

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ( ).
2. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

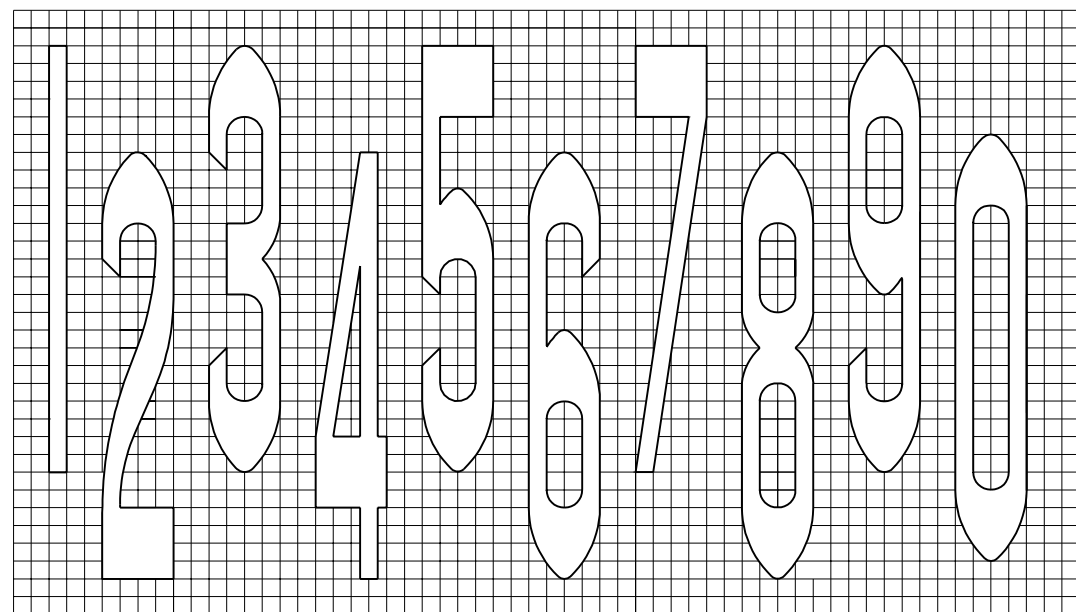
COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

**PAVEMENT MARKINGS**

**LEGENDS AND SYMBOLS**



STANDARD ALPHABET



STANDARD NUMERALS

**NOTES:**

1. STANDARD CHARACTERS ARE 24 GRID UNITS HIGH AND 4 UNITS WIDE (EXCEPT LETTER "I" AND THE NUMBER "1" WHICH ARE 1 UNIT WIDE).
2. VERTICAL STROKES ARE 1 UNIT WIDE, HORIZONTAL STROKES ARE 4 UNITS HIGH.
3. SPACE 1 UNIT (MIN.) BETWEEN CHARACTERS OR AS OTHERWISE SHOWN (OPTICAL SPACING MAY BE USED).
4. STANDARD CHARACTER HEIGHTS ARE 2.4 m (8'), EXCEPT FOR THE 1.8 m (6') RAILROAD "R" SYMBOL.
5. FOR 2.4 m (8') HIGH CHARACTERS, THE WIDTH IS 400 mm (16") (USE 100 mm (4") FOR EACH GRID SQUARE).
6. FOR 3.0 m (10') HIGH CHARACTERS, THE WIDTH IS 500 mm (20") (USE 125 mm (5") FOR EACH GRID SQUARE).
7. FOR 1.8 m (6') HIGH CHARACTERS, THE WIDTH IS 300 mm (12") (USE 75 mm (3") FOR EACH GRID SQUARE).

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

PAVEMENT MARKINGS

LEGEND AND SYMBOLS  
(STANDARD ALPHABET & NUMERALS)

RECOMMENDED MAY 25, 2007

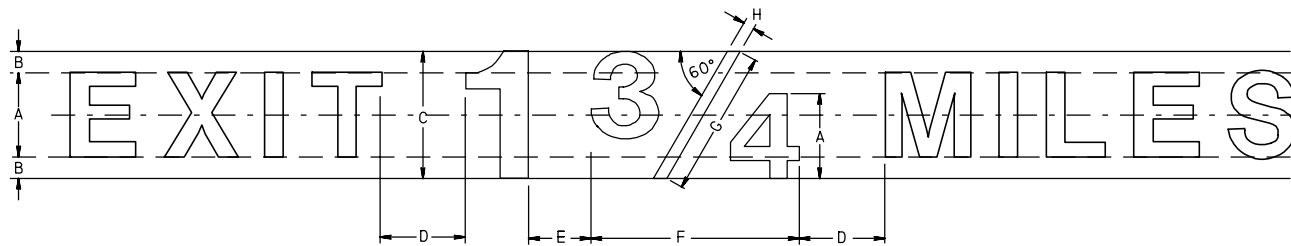
*Alan C. Rowe*  
CHIEF, TRAFFIC ENGINEERING AND  
OPERATIONS DIVISION

RECOMMENDED MAY 25, 2007

*m. Glatel*  
CHIEF HIGHWAY ENGINEER

SHT. 8 OF 8

TC-8600



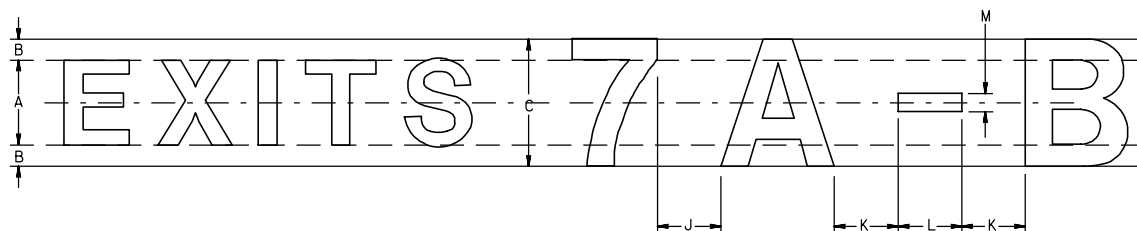
SIZE OF THE FRACTION RECTANGLE IS DETERMINED AS FOLLOWS:

SYMBOL	TITLE	RATIO TO HEIGHT OF UPPER CASE
A	LETTER HEIGHT	1.0 x UPPER CASE
B	SPACE TO TOP OR BOTTOM OF RECTANGLE	0.25 x A
C	HEIGHT OF RECTANGLE	1.5 x A
D	SPACE TO NEXT CHARACTER	1.5 x A
E	SPACE FROM WHOLE NUMBER TO A FRACTION OR DECIMAL POINT	0.75 x A
F	WIDTH OF RECTANGLE	SEE NOTE 2
G	LENGTH OF DIAGONAL	1.7 x A
H	THICKNESS OF DIAGONAL	LETTER STROKE WIDTH

**NOTES:**

- DIAGONAL OF FRACTION TO BE CENTERED OPTICALLY.
- WHEN THE NUMERATOR OF A FRACTION IS 1 (ONE), USE 2.2 x A. FOR ALL OTHER NUMERATORS, USE 2.5 x A.

SIZE AND SPACING OF FRACTIONS  
(EXCEPT SEE SHEET 5 OF 8 OF TC-8701D FOR FRACTIONS ON LINES WITH UPPER/LOWER CASE LEGEND)



SIZE AND SPACING OF DASHES ARE DETERMINED AS FOLLOWS:

SYMBOL	TITLE	RATIO TO HEIGHT OF UPPER CASE
A	LETTER HEIGHT	1.0 x UPPER CASE
B	SPACE TO TOP OR BOTTOM OF RECTANGLE	0.25 x A
C	HEIGHT OF RECTANGLE	1.5 x A
J	SPACE FROM NUMBER TO A CHARACTER	0.75 x A
K	SPACE FROM DASH TO A CHARACTER	0.75 x A
L	LENGTH OF DASH	0.75 x A
M	THICKNESS OF DASH	STROKE WIDTH

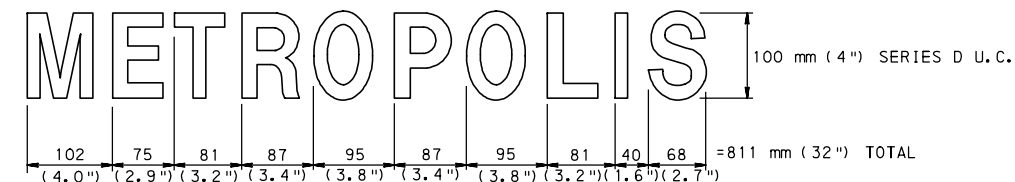
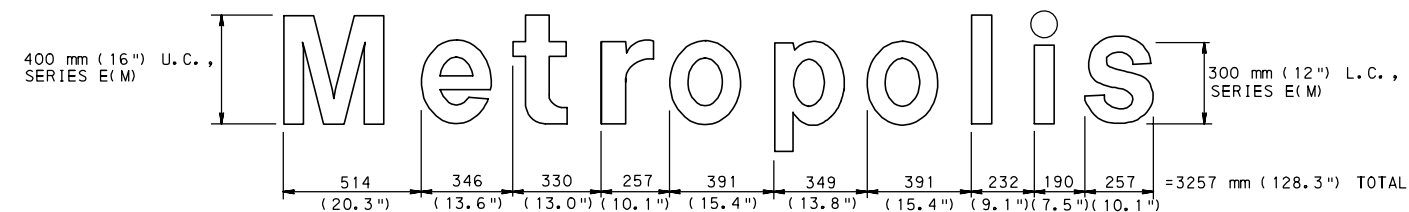
SIZE AND SPACING OF DASHES

**NOTE:**

THE DASH IS TO BE CENTERED OPTICALLY.

**HOW TO USE THE SPACING CHARTS ON THE FOLLOWING SHEETS:**

- SELECT THE PROPER CHART FROM SHEETS 2 THROUGH 17. (FOR LETTER AND NUMERAL SIZES WHERE A SPACING CHART HAS NOT BEEN PROVIDED, USE ONE OR MORE OF THE EXISTING CHARTS TO DETERMINE PROPER SPACING. FOR EXAMPLE, FOR 375 mm (15") SERIES E NUMERALS, USE 1.5 TIMES THE VALUES SHOWN FOR 250 mm (10") SERIES E NUMERALS.)
- IN THE LEFT-HAND VERTICAL COLUMN, LOCATE THE FIRST LETTER OF THE WORD BEING SPACED.
- LOCATE THE NEXT LETTER OF THE WORD BEING SPACED IN THE TOP HORIZONTAL COLUMN.
- THE FIGURE AT THE INTERSECTION OF THE TWO COLUMNS IS THE TOTAL WIDTH IN MILLIMETERS (INCHES) OF THE FIRST LETTER PLUS THE SPACE TO THE LEFT EDGE OF THE NEXT LETTER.
- TO COMPUTE THE LENGTH OF A WORD, ADD THE FIGURES OBTAINED BY REPEATING STEPS a, b, c AND d FOR EACH SUCCESSIVE LETTER PLUS THE LETTER WIDTH ONLY OF THE LAST LETTER. SEE EXAMPLES. (THE LETTER WIDTHS ARE GIVEN IN THE EXTREME LEFT-HAND COLUMN OF EACH CHART.)
- THE MINIMUM SPACING BETWEEN WORDS IN THE SAME LINE SHOULD BE THE HEIGHT OF THE UPPER CASE LETTER USED IN THAT LINE.



**EXAMPLES**

**NOTES:**

- SEE TC-8701D FOR SIGN LAYOUT DETAILS FOR FREEWAY AND EXPRESSWAY SIGNS.
- TO DETERMINE THE PROPER SIZE, SERIES AND TYPE OF LEGEND TO BE USED, SEE THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND TC-8701D.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ( ).
- EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SPACING CHARTS  
DIRECT APPLIED LETTERS & NUMERALS

GENERAL INFORMATION

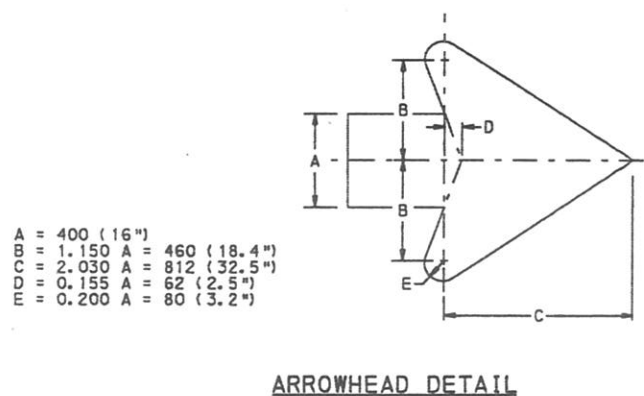
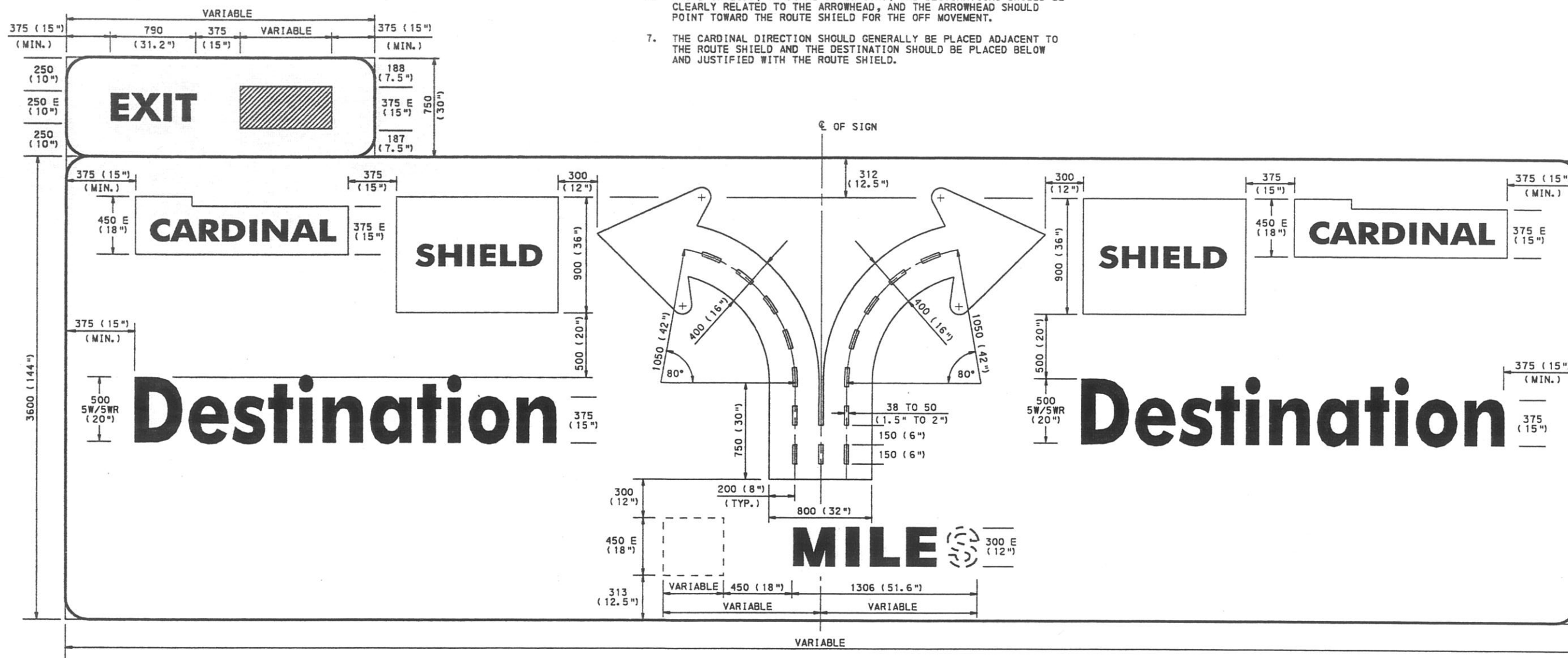
RECOMMENDED MAY 25, 2007  
*Alan C. Rowe*  
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED MAY 25, 2007  
*m. G. Latel*  
CHIEF HIGHWAY ENGINEER

SHT. 1 OF 18  
TC-8700C

- NOTES:**
1. THE GRAPHIC LEGEND SHALL BE OF A PLAN VIEW SHOWING A SIMPLIFIED OFF-RAMP ARRANGEMENT.
  2. ONLY ONE DESTINATION MAY BE SHOWN FOR EACH ARROWHEAD, WITH A MAXIMUM OF TWO DESTINATIONS PER SIGN.
  3. THE GRAPHIC SHOULD NOT DEPICT DECELERATION LANES. A BLACK ON YELLOW "EXIT ONLY" PANEL SHOULD BE USED TO SUPPLEMENT A LANE DROP GRAPHIC.
  4. THE SHAFT FOR THE EXIT RAMP MOVEMENT SHOULD BE SHORTER THAN, BUT NOT SEPARATED FROM, THE THROUGH MOVEMENT GRAPHIC.
  5. ARROW SHAFTS SHOULD CONTAIN LANE LINES WHERE APPROPRIATE AND ROUTE SHIELDS SHALL NOT BE USED AS A SUBSTITUTE FOR ARROWHEADS.
  6. ROUTE SHIELDS, CARDINAL DIRECTIONS, AND DESTINATIONS SHOULD BE CLEARLY RELATED TO THE ARROWHEAD, AND THE ARROWHEAD SHOULD POINT TOWARD THE ROUTE SHIELD FOR THE OFF MOVEMENT.
  7. THE CARDINAL DIRECTION SHOULD GENERALLY BE PLACED ADJACENT TO THE ROUTE SHIELD AND THE DESTINATION SHOULD BE PLACED BELOW AND JUSTIFIED WITH THE ROUTE SHIELD.

8. EXIT NUMBER PANELS SHOULD BE LOCATED TOWARD THE TOP LEFT EDGE OF THE SIGN FOR A LEFT EXIT AND TOWARD THE TOP RIGHT EDGE FOR RIGHT EXITS.
9. SPECIFIC DESIGN STANDARDS FOR GRAPHIC COMPONENTS AND OTHER RECOMMENDED FEATURES ARE SHOWN IN THIS STANDARD.
10. SEE SHEET 9 OF THIS STANDARD FOR SHIELD AND CARDINAL DETAILS.
11. SEE TC-8701A SHEET 6 FOR ADVANCE PLACEMENT OF SIGN.
12. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ( ).
13. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

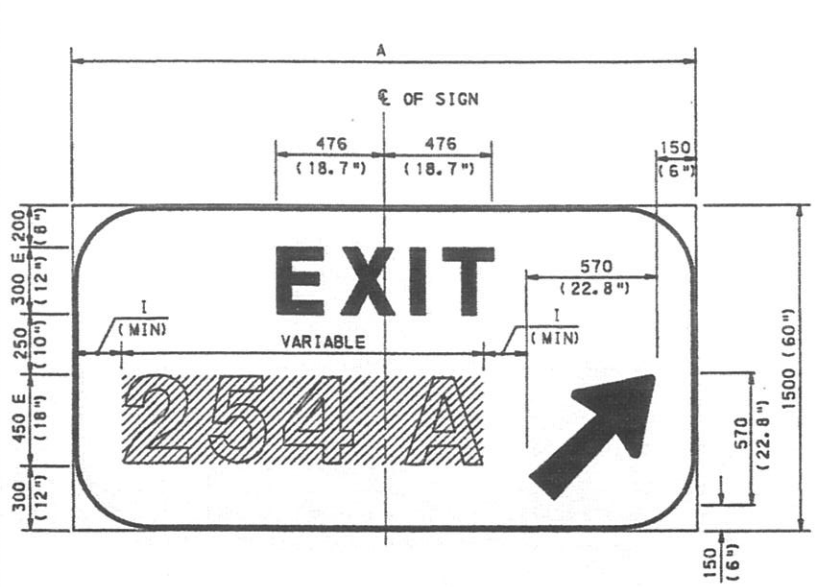


**COMMONWEALTH OF PENNSYLVANIA**  
**DEPARTMENT OF TRANSPORTATION**  
 BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

**SIGN DETAILS**  
**FREEWAY AND EXPRESSWAY**  
**GUIDE SIGNS**

**DIAGRAMMATIC SIGNS**

RECOMMENDED MAR. 18, 2008 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAR. 18, 2008 <i>Daniel R. DeLoe</i> ACTING DIR. BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 4 OF 9 <b>TC-8701D</b>
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**METRIC UNITS**

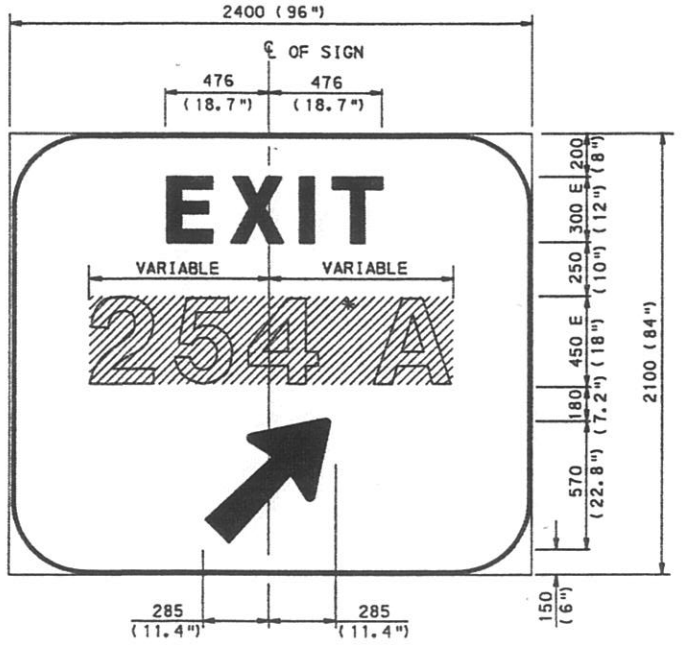
NUMBER OF DIGITS	LETTERS	A (mm)	I (MIN) (mm)
1	0	1800	329
2	0	2100	243
1	1*	2400	288
3	0	2400	158
2	1*	2700	202
3	1*	3000	117

**ENGLISH UNITS**

NUMBER OF DIGITS	LETTERS	A (INCHES)	I (MIN) (INCHES)
1	0	72	13.3
2	0	84	10
1	1*	96	11.8
3	0	96	6.7
2	1*	108	8.5
3	1*	120	5.2

\*USE 225 mm (9") FOR DIGIT TO LETTER SPACING

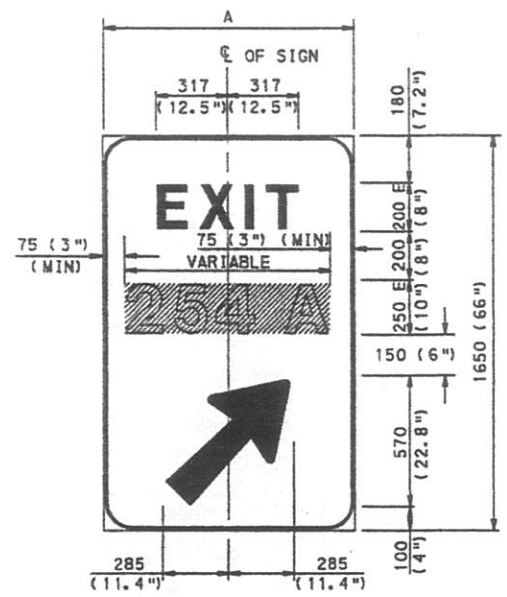
**TYPE I**  
(STANDARD)



\*USE 225 mm (9") FOR DIGIT TO LETTER SPACING

**TYPE II**

(SPECIAL CASE - USE ONLY WHEN LATERAL SPACING PROHIBITS THE USE OF TYPE I)



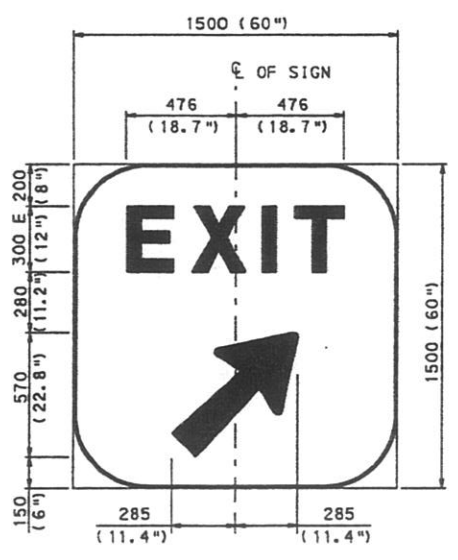
BORDER: 35 (1.4")  
CORNER RADIUS: 100 (4")

NUMBER OF DIGITS	LETTERS	A (INCHES)
1	0	900 (36)
2	0	900 (36)
1	1**	900 (36)
3	0	900 (36)
2	1**	1200 (48)
3	1**	1350 (54)

\*\*USE 125 mm (5") FOR DIGIT TO LETTER SPACING

**TYPE III**

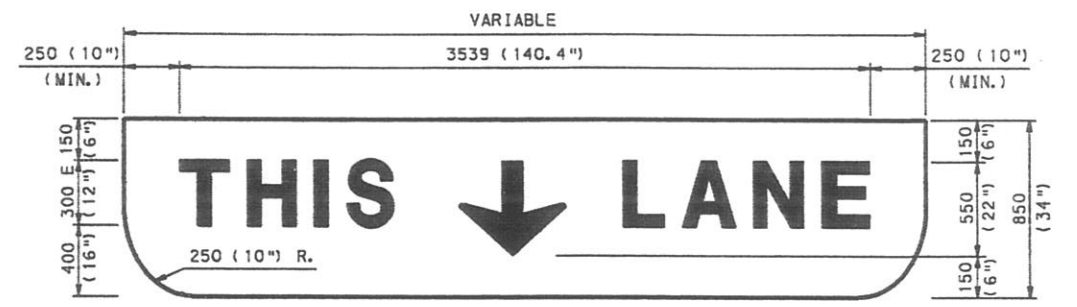
(SPECIAL CASE - USE ONLY WHEN LATERAL SPACING PROHIBITS THE USE OF TYPE II)



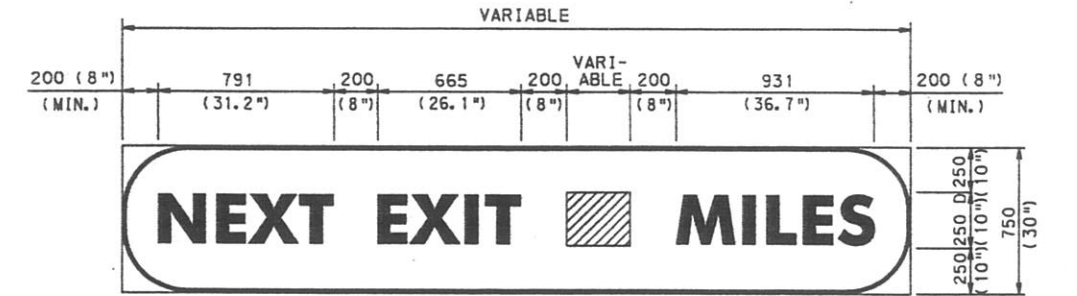
**TYPE IV**

(USE FOR UNNUMBERED EXITS ONLY)

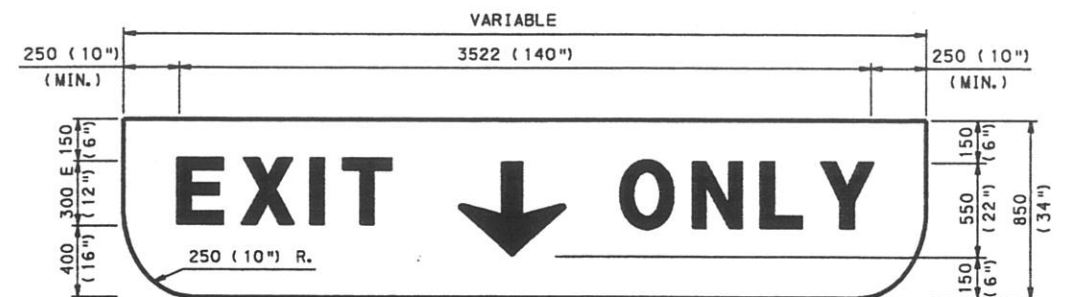
**GORE SIGNS**



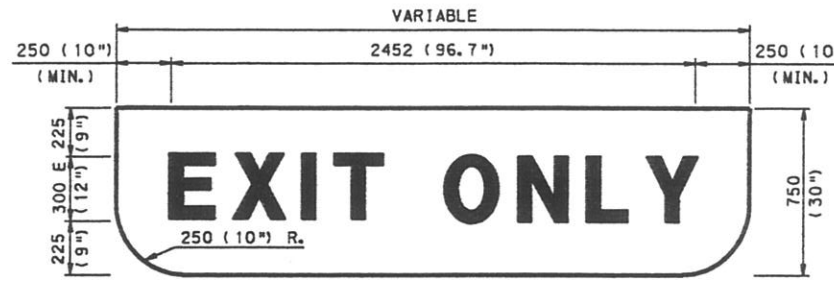
**THIS LANE PANEL**



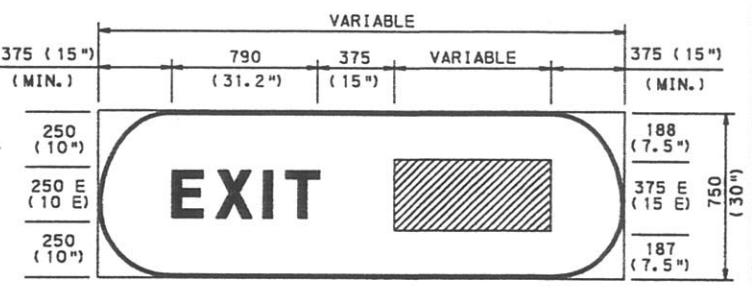
**NEXT EXIT PANEL**



**EXIT ONLY PANEL**



**EXIT ONLY PANEL**



**EXIT PANEL**

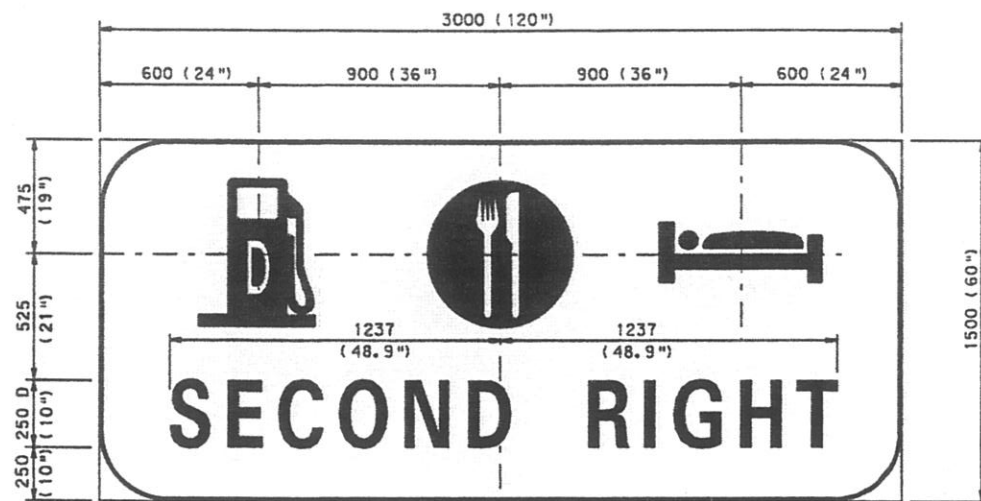
**NOTES:**

- EXIT ONLY AND THIS LANE PANELS SHALL HAVE A YELLOW REFLECTORIZED BACKGROUND AND BLACK NONREFLECTORIZED LEGEND.
- REFER TO TC-8700C FOR ARROW DETAILS. TYPE N ARROW SHALL BE USED ON THE GORE SIGNS, AND TYPE C ARROW SHALL BE USED ON THE EXIT ONLY AND THIS LANE PANELS.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ( ).
- EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

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DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

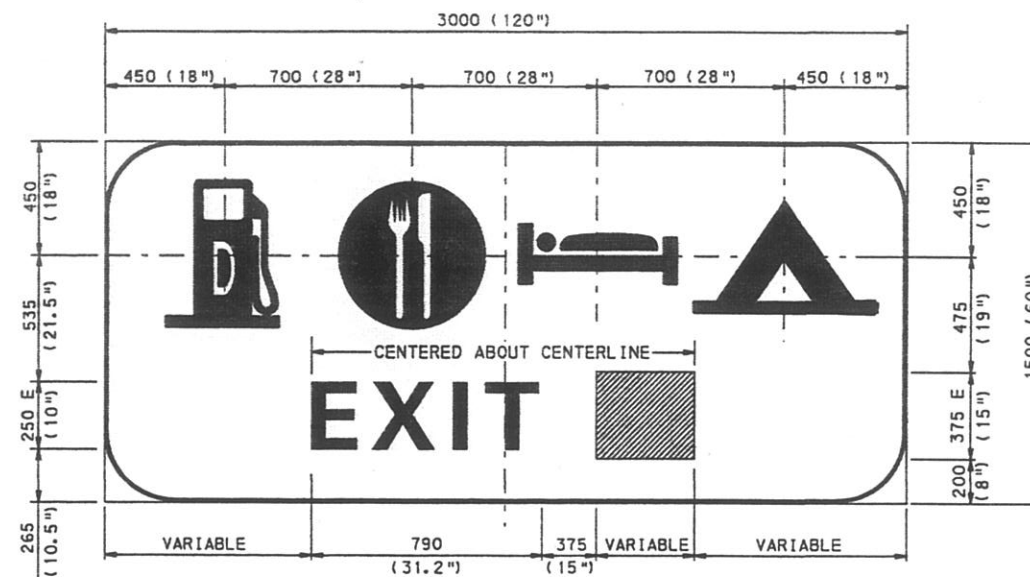
SIGN DETAILS  
FREEWAY AND EXPRESSWAY  
GUIDE SIGNS

GORE SIGNS, EXIT PANELS  
& NEXT EXIT SIGNS



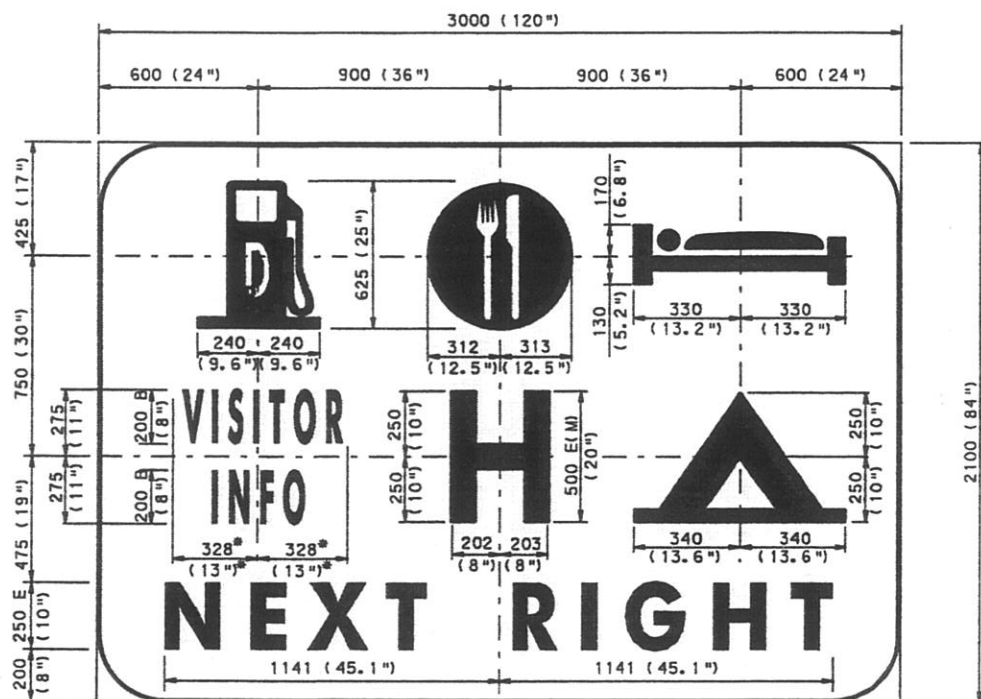
SEE 6-SERVICE SIGN FOR SERVICE SYMBOL DIMENSIONS

3-SERVICE SIGN



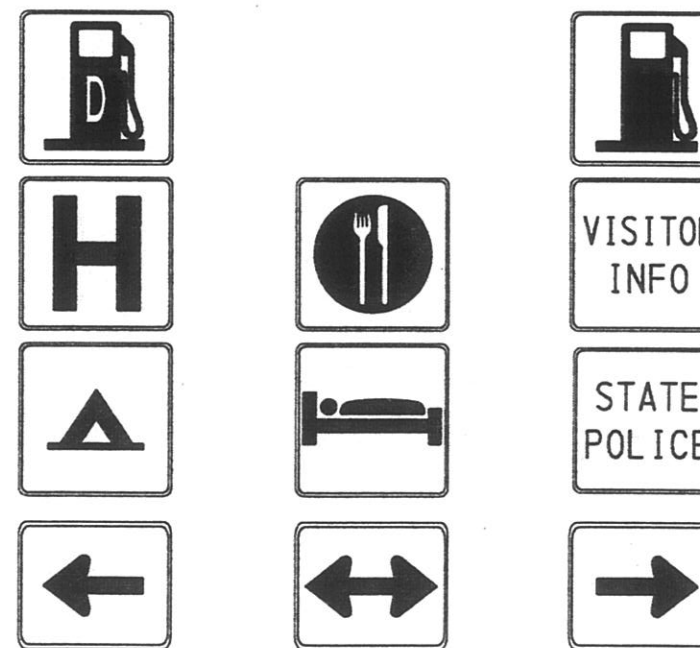
SEE 6-SERVICE SIGN FOR SERVICE SYMBOL DIMENSIONS

4-SERVICE SIGN



\* - 15% REDUCED SPACING

6-SERVICE SIGN



RAMP SIGNING

NOTES:

1. ALL SERVICE SIGNS SHALL HAVE A BLUE REFLECTORIZED BACKGROUND AND WHITE REFLECTORIZED SYMBOLS, LEGENDS, AND BORDERS. UNLESS NOTED OTHERWISE, THE TYPE OF REFLECTIVE SHEETING SHALL COMPLY WITH DEPARTMENT PUBLICATION 408.
2. ALL MAINLINE SERVICE SIGNS SHALL HAVE A 50 mm (2") BORDER WITH 225 mm (9") CORNER RADI.
3. THE STANDARD MAINLINE SERVICE SIGN SHALL USE A 3000 mm x 1500 mm (120" x 60") PANEL AND SHALL USE THE THREE-SYMBOL LAYOUT. IF FOUR SYMBOLS ARE REQUIRED, THE SYMBOLS SHALL BE AS INDICATED. IF MORE THAN FOUR SYMBOLS ARE REQUIRED, A 3000 mm x 2100 mm (120" x 84") PANEL SHALL BE USED.
4. WHEN THE EXIT IS NUMBERED, THE EXIT NUMBER SHOULD BE USED INSTEAD OF "NEXT RIGHT" OR "SECOND RIGHT".
5. FOR THE LAYOUT OF RAMP SIGNING [600 mm x 600 mm (24" x 24")], SEE D9 SERIES IN DEPARTMENT PUBLICATION 236M. USE 600 mm x 300 mm (24" x 12") SERVICES ARROW (D9-2-2) WITH RAMP SIGNING.
6. NORMAL SEQUENCE SHOULD BE GAS (DIESEL), FOOD, LODGING, AND THEN OTHERS.
7. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ( ).
8. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGN DETAILS  
FREEWAY AND EXPRESSWAY  
GUIDE SIGNS  
GENERAL MOTORIST  
SERVICE SIGNS