


<p>OS-299 (7-08)</p> 	<p>TRANSMITTAL LETTER</p>	<p>PUBLICATION:</p> <p>Publication 111M May 2007 Edition Change 3</p>
		<p>DATE:</p> <p>July 7, 2009</p>
<p>SUBJECT:</p> <p>Publication 111M Traffic Control – Pavement Markings and Signing Standards TC-8600 and TC-8700 Series</p>		
<p>INFORMATION AND SPECIAL INSTRUCTIONS:</p> <p>The attached Standard Drawings shall be used by Department personnel and consultants whenever applicable for the design, details, and installation of traffic control Pavement Markings and Signs.</p> <p>The following is a summary of the major changes that have been incorporated into this edition.</p> <p>TC-8600 - Railroad Marking moved to page 7 and crosswalk markings move to new pages 5 & 6; new decorative crosswalks added page 6; sheets have been renumbered</p> <p>TC-8602 - Multi-Lane detail added page 1; legend changes on all pages; note 4 changed on page 2</p> <p>TC-8604 - note added on page 1 and 2 for types of approved sheeting ; nomenclature change in note 4</p> <p>TC-8700 - Revised headings for Upper/Lower Case (5W) spacing charts ; Lower Case Clearview Highway 5W spacing charts Upper/Lower Case Clearview Highway 5WR spacing charts to clarify sizes.</p> <p>TC-8701A - General Motorist Service Signs added to Sign Details Freeway and Expressway Guide Signs</p> <p>TC-8716 - Change 300 (12") to 500 (20") Type III Baricade in note 5</p> <p>TC-8717 - Change 300 (12") to 500 (20") Temporary Portable Sign Posts "H" Base and "X" Base in note 3</p>		
<p>CANCEL AND DESTROY THE FOLLOWING:</p> <p>The following standards are replaced:</p> <p>Index Page</p> <p>TC-8600 Pages - 7, 5, 6, 8, 9, 10, 11</p> <p>TC-8602 Pages - 1, 3, 4</p> <p>TC-8604 Pages - 1, 2, 3, 4</p> <p>TC-8700 Pages - 8, 9, 10, 11</p> <p>TC-8701A Page - 7</p> <p>TC-8716 Page - 1</p> <p>TC-8717 Page - 1</p>	<p>ADDITIONAL COPIES ARE AVAILABLE FROM:</p> <p><input checked="" type="checkbox"/> PennDOT SALES STORE (717) 787-6746 phone (717) 787-8779 fax ra-penndotsalesstore.state.pa.us</p> <p><input checked="" type="checkbox"/> PennDOT website - www.dot.state.pa.us <i>Click on Forms, Publications & Maps</i></p> <p><input checked="" type="checkbox"/> DGS warehouse (PennDOT employees ONLY)</p>	

APPROVED FOR ISSUANCE BY:

Allen D. Biehler, P.E.
Secretary of Transportation
By:

A handwritten signature in black ink that reads "Glenn C. Rowe". The signature is written in a cursive style with a large, stylized initial "G".

Glenn C. Rowe, P.E.
Acting Director, Bureau of Highway Safety
and Traffic Engineering



**TRANSMITTAL
LETTER**

Publication 111M
May 2007 Edition
Change 2

DATE: July 25, 2008

SUBJECT: Publication 111M Traffic Control - Pavement Markings and Signing Standards TC-8600 and TC-8700 Series

INFORMATION AND SPECIAL INSTRUCTIONS:

The attached Standard Drawings shall be used by Department personnel and consultants whenever applicable for the design, details, and installation of traffic control Pavement Markings and Signs. The previous Publication 111M, issued May 2007, and any changes thereto shall be replaced by this new edition.

The following is a summary of the major changes that have been incorporated into this edition.

General:

- Added following standards as part of this publication:
TC-8717 – Temporary Portable Sign Post, "H" Base and "X" Base

TC-8701S:

- 2 – Added new detail for Extruded Aluminum Stiffeners for use on Flat Sheeting Aluminum Signs

TC-8716:

- Made changes to conform to the MUTCD

TC-8717:

- This is a new standard drawing for a portable sign post for PENNDOT that was approved by FHWA.

CANCEL AND DESTROY THE FOLLOWING:

The following standards are replaced:

Index Sheet

TC-8701S dated May 25, 2007

TC-8716 dated May 25, 2007

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APPROVED FOR ISSUANCE BY:

**Allen D. Biehler, P.E.
Secretary of Transportation
By:**

**Daryl R. St. Clair, P.E.
Acting Director, Bureau of Highway Safety
and Traffic Engineering**



**TRANSMITTAL
LETTER**

Publication 111M
May 2007 Edition
Change 1

DATE: March 18, 2008

SUBJECT: Publication 111M Traffic Control - Pavement Markings and Signing Standards TC-8600 and TC-8700 Series

INFORMATION AND SPECIAL INSTRUCTIONS:

This change involves making corrections to clarify the use of Clearview Font for upper case/lower case font on guide signs and correct a metric dimension for when sign lighting is required for overhead guide signs.

CANCEL AND DESTROY THE FOLLOWING:

THE FOLLOWING STANDARDS ARE REPLACED: TC-8701A and TC-8701D dated May 25, 2007

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**Allen D. Biehler, P.E.
Secretary of Transportation
BY:**

A handwritten signature in black ink, appearing to read "Daryl St. Clair". The signature is written in a cursive, flowing style.

**Daryl St. Clair, P.E.
Acting Director, Bureau of Highway Safety
and Traffic Engineering**



**TRANSMITTAL
LETTER**

Publication 111M

DATE: May 25, 2007

SUBJECT: Publication 111M Traffic Control - Pavement Markings and Signing Standards TC-8600 and TC-8700 Series

INFORMATION AND SPECIAL INSTRUCTIONS:

The attached Standard Drawings shall be used by Department personnel and consultants whenever applicable for the design, details, and installation of traffic control Pavement Markings and Signs. The previous Publication 111M, issued August 1997, and any changes thereto shall be replaced by this new edition.

The following is a summary of the major changes that have been incorporated into this edition.

General:

- Added following standards as part of this publication:
TC-8600 - Pavement Markings
TC-8602 - Snowplowable Raised Pavement Markings
TC-8604 - Delineation
- Standards shown in dual units, metric and English
- Standards developed in conformance with 2001 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals and the 2002 Interim revisions.

TC-8700:

- 8 thru 11 – Added English unit spacing charts for clearview highway fonts 5W & 5WR
- 12 thru 17 – Added English unit spacing charts

TC-8701A:

- 1 of 7 – Note 3 under signing plans revised to indicate if 800' min. clear tangent sight distance is not available, sign lighting is required.

TC-8701D:

- 4 of 9 – Added new diagrammatic sign standard
- 5 of 9 – Added two new alternate designs for gore signs in restricted lateral clearance areas
- 9 of 9 – Revised color specifications for Turnpike shields

TC-8701E:

- 1 of 2 – Added 6" sections at top & bottom of extruded aluminum channel sign

TC-8701R:

- 1 & 2 – Added "Next Rest Area" supplemental plaque detail

TC-8701S:

- 1 of 3 – Removed medium flanged section detail

TC-8702A:

- 2, 3 & 4 of 8 – Added W18X35 & W18X40 post sizes to post selection charts
- 7 of 8 – Added W18 bracket selection table
- Deleted W310 bracket selection table
- 8 of 8 – Added W18 to footing selection table
- Added soil properties note

TC-8702B:

- General – Deleted steel square posts (System B)
- 5 of 9 – Deleted universal spacer detail
- 8 of 9 – Added socket system for concrete installations

TC-8702D:

- 1 of 2 – New anchor detail and parapet attachment method

TC-8702E:

- General – Removed composite post selection tables and erection details
- 1 of 5 – Added "one post" selection table

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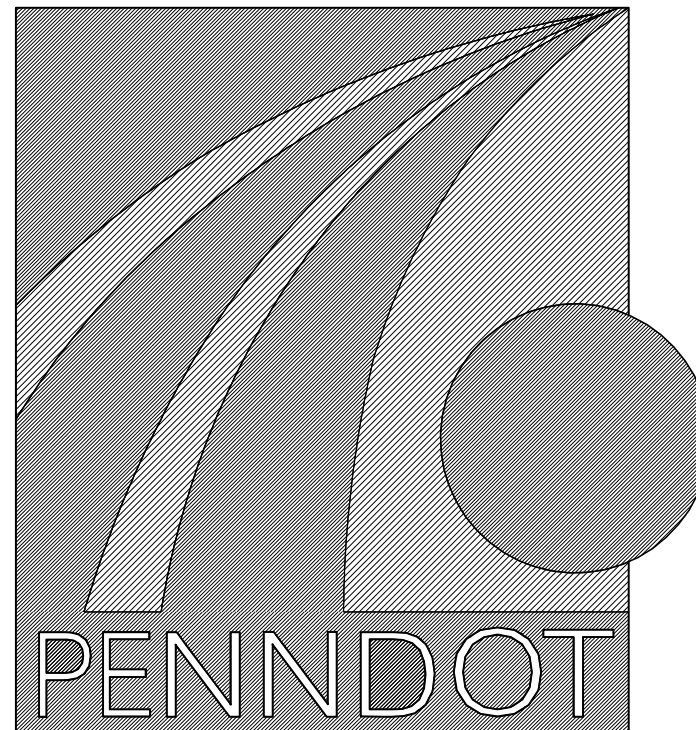
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APPROVED FOR ISSUANCE BY:

**Allen D. Biehler, P.E.
Secretary of Transportation
By:**

**M. G. Patel, P.E.
Chief Engineer, Highway Administration**

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION**



**TRAFFIC CONTROL – PAVEMENT MARKINGS AND SIGNING STANDARDS
PUBLICATION 111M
TC-8600 AND TC-8700 SERIES**

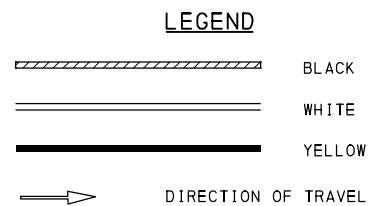
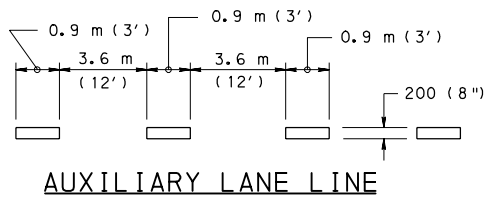
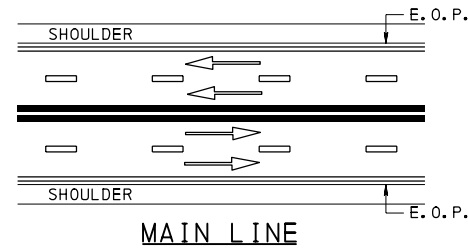
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MAY 2007

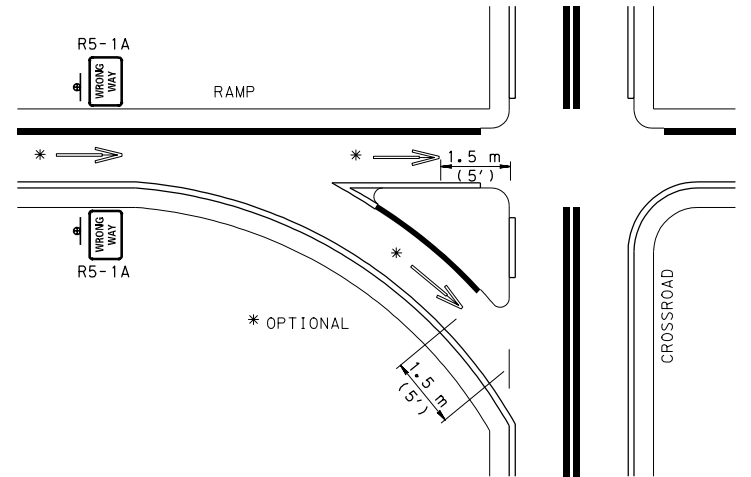
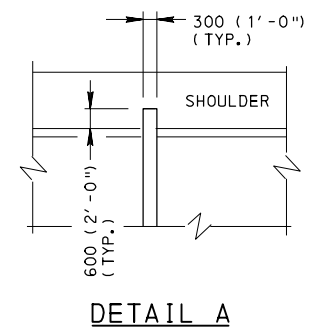
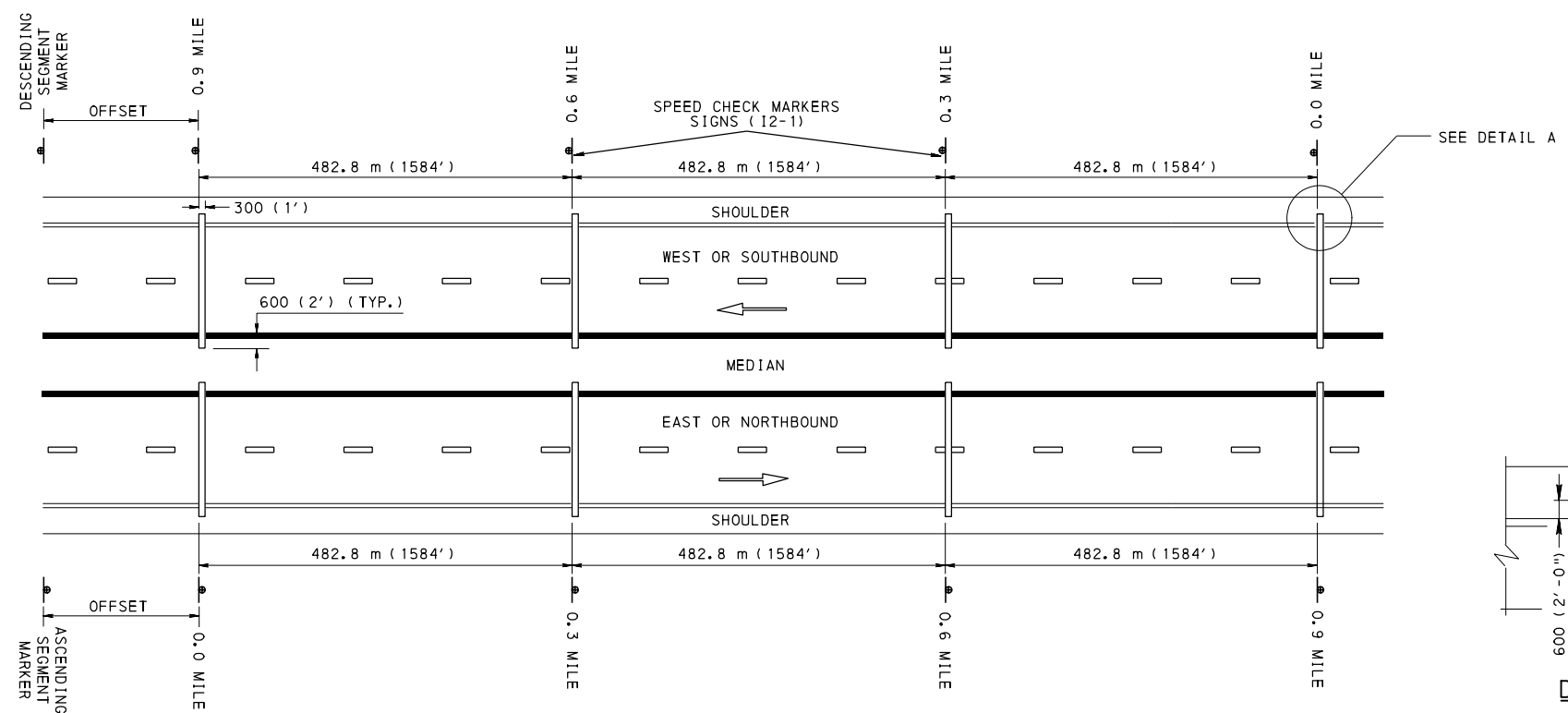
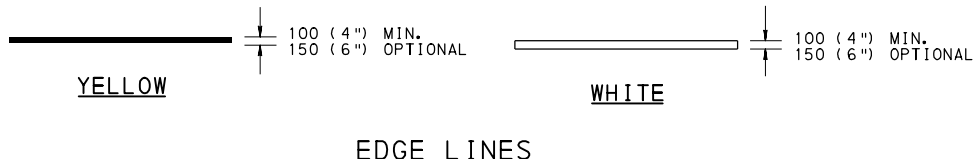
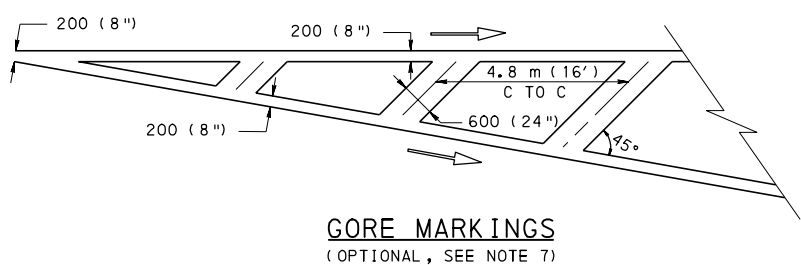
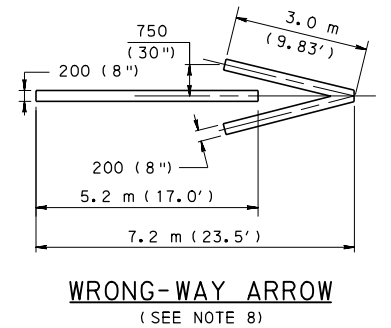
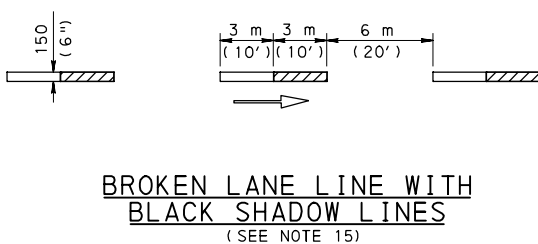
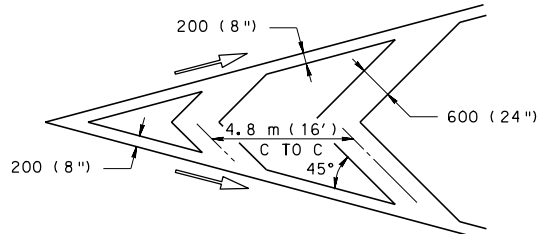
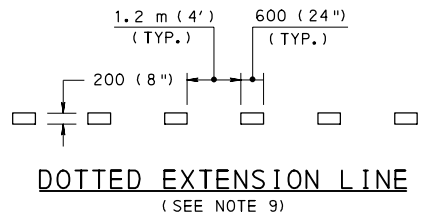
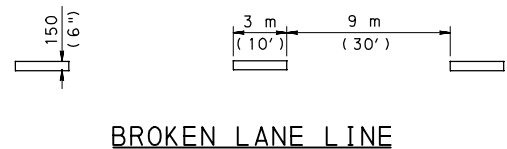
INDEX OF TRAFFIC CONTROL – PAVEMENT MARKINGS AND SIGNING STANDARDS

<u>STANDARD DRAWING NO.</u>	<u>DATE</u>	<u>DESCRIPTION</u>
* TC-8600 (11 SHEETS)	JUN. 23, 2009	PAVEMENT MARKINGS (EXPRESSWAY / FREEWAY, CONVENTIONAL, LEGENDS & SYMBOLS)
* TC-8602 (4 SHEETS)	JUN. 23, 2009	SNOWPLOWABLE RAISED PAVEMENT MARKERS
* TC-8604 (4 SHEETS)	JUN. 23, 2009	DELINEATION
* TC-8700C (18 SHEETS)	JUN. 23, 2009	SPACING CHARTS / DIRECT APPLIED LETTERS, NUMERALS & ARROWS
* TC-8701A (7 SHEETS)	JUN. 23, 2009	ADVANCE SIGNING FOR INTERCHANGES
TC-8701D (9 SHEETS)	MAR. 18, 2008	SIGN DETAILS / FREEWAY & EXPRESSWAY GUIDE SIGNS
TC-8701E (2 SHEETS)	MAY 25, 2007	EXTRUDED ALUMINUM CHANNEL SIGNS
TC-8701P (2 SHEETS)	MAY 25, 2007	FREEWAY & EXPRESSWAY ADVANCE SIGNING FOR PARKING AREAS
TC-8701R (2 SHEETS)	MAY 25, 2007	FREEWAY & EXPRESSWAY ADVANCE SIGNING FOR REST AREAS
TC-8701S (4 SHEETS)	JUL. 18, 2008	FLAT SHEET ALUMINUM SIGNS WITH EXTRUDED ALUMINUM STIFFENERS
TC-8701W (2 SHEETS)	MAY 25, 2007	FREEWAY & EXPRESSWAY ADVANCE SIGNING FOR WELCOME CENTERS
TC-8702A (8 SHEETS)	MAY 25, 2007	POST-MOUNTED SIGNS, TYPE A
TC-8702B (9 SHEETS)	MAY 25, 2007	POST-MOUNTED SIGNS, TYPE B
TC-8702C (2 SHEETS)	MAY 25, 2007	POST-MOUNTED SIGNS, TYPE C
TC-8702D (2 SHEETS)	MAY 25, 2007	POST-MOUNTED SIGNS, TYPE D
TC-8702E (5 SHEETS)	MAY 25, 2007	POST-MOUNTED SIGNS, TYPE E
TC-8710 (1 SHEET)	MAY 25, 2007	DISTANCE MARKERS
TC-8715 (5 SHEETS)	MAY 25, 2007	SIGN LIGHTING
* TC-8716 (1 SHEET)	JUN. 23, 2009	TYPE III BARRICADE
* TC-8717 (1 SHEET)	JUN. 23, 2009	TEMPORARY PORTABLE SIGN POST, "H" BASE AND "X" BASE

PUB. 111M, MAY 2007 EDITION
 SEE CHANGE #1 FOR MAR. 18, 2008 STANDARD REVISIONS
 SEE CHANGE #2 FOR JUL. 18, 2008 STANDARD REVISIONS
 * SEE CHANGE #3 FOR JUN. 23, 2009 STANDARD REVISIONS

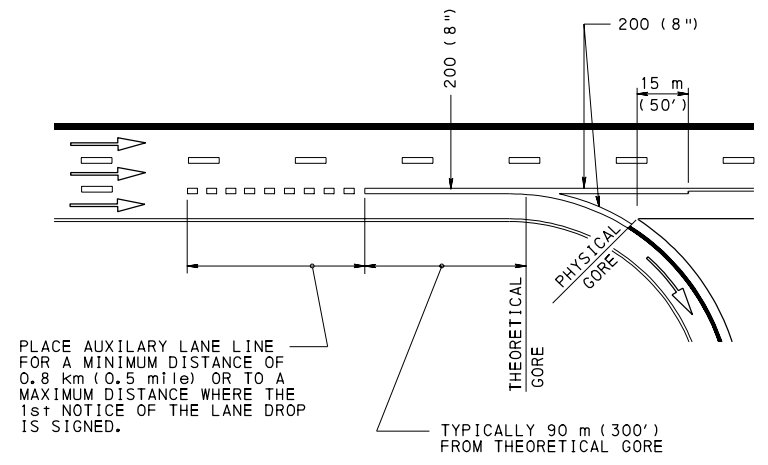


- NOTES:**
1. MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION'S PUBLICATION 408, UNLESS NOTED OTHERWISE.
 2. REFLECTORIZE ALL NON-BLACK PAVEMENT MARKINGS.
 3. EDGE LINES SHOULD BE 100 mm (4") MINIMUM WIDE SOLID LINE OF THE COLOR INDICATED AND PLACED 100 mm (4") INSIDE THE EDGE OF THE PAVEMENT SHOULDER.
 4. ON EXPRESSWAYS / FREEWAYS MAKE BROKEN LANE LINES 150 mm (6") WIDE AND LOCATE 100 mm (4") TO THE RIGHT OF THE PAVEMENT JOINT OR SEAM.
 5. APPLY ALL PAINTED CENTER LINES, LANE LINES AND LEGENDS AT 380 μm (15 MILS) MINIMUM WET THICKNESS.
 6. APPLY PAINTED EDGE LINES AT 300 μm (12 MILS) MINIMUM WET THICKNESS.
 7. USE CROSSHATCHING AT EXIT GORE AREAS WHEN VISIBILITY OR SIGHT DISTANCE OF THE GORE IS RESTRICTED.
 8. PLACE OPTIONAL WRONG-WAY ARROWS IN CENTER OF EACH LANE OF AN EXIT RAMP, 1.5 m (5') FROM STOP BAR OR PAVEMENT EDGE AND ACROSS FROM WRONG-WAY SIGNS.
 9. DOTTED EXTENSION LINES ON EXPRESSWAY/FREEWAYS SHALL BE USED TO EXTEND RAMP, LANE DROP, MAIN LINE, AND INTERSECTION EDGE LINES IN ORDER TO PROVIDE GUIDANCE.
 10. TYPICAL S.P.A.R.E. ZONE LENGTH IS 1.44 km (0.9 MILE), MINIMUM IS 0.96 km (0.6 MILE).
 11. FOR ADDITIONAL DETAILS REFER TO MARKINGS, CHAPTER 3, MUTCD.
 12. FOR CONVENTIONAL HIGHWAY PAVEMENT MARKINGS, SEE TC-8600 SHEETS 3 AND 4 OF 8.
 13. FOR LEGENDS & SYMBOLS PAVEMENT MARKINGS, SEE TC-8600 SHEETS 6, 7 AND 8 OF 8.
 14. FOR LOCATION AND INSTALLATION OF SNOWFLOWABLE RAISED PAVEMENT MARKERS, SEE TC-8602.
 15. BLACK SHADOW LINES REQUIRED FOR CONCRETE ROADWAY SURFACES WITH EPOXY MARKINGS ONLY.
 16. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
 17. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

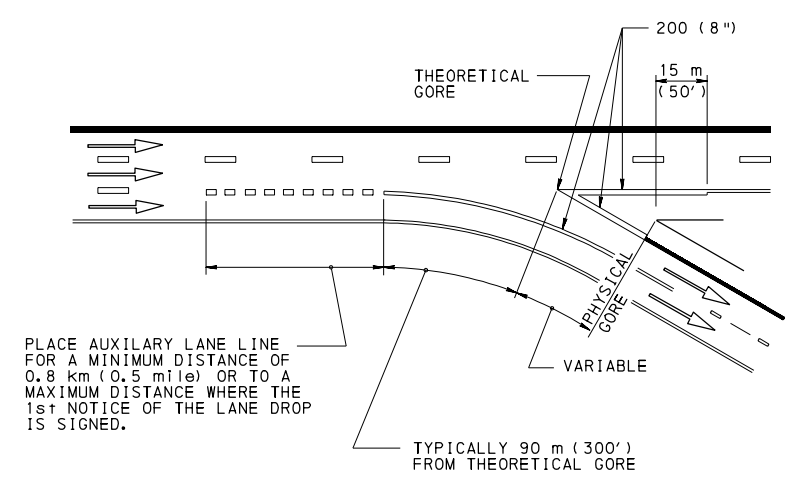


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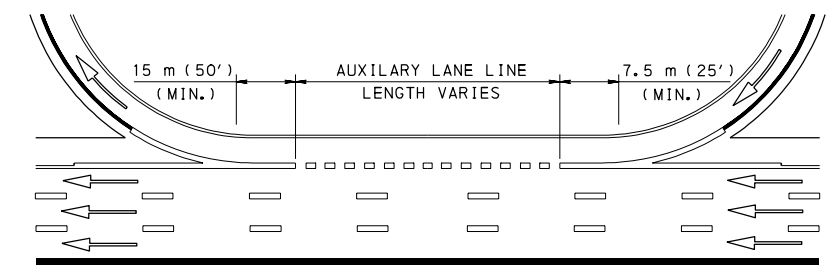
PAVEMENT MARKINGS
EXPRESSWAY / FREEWAY



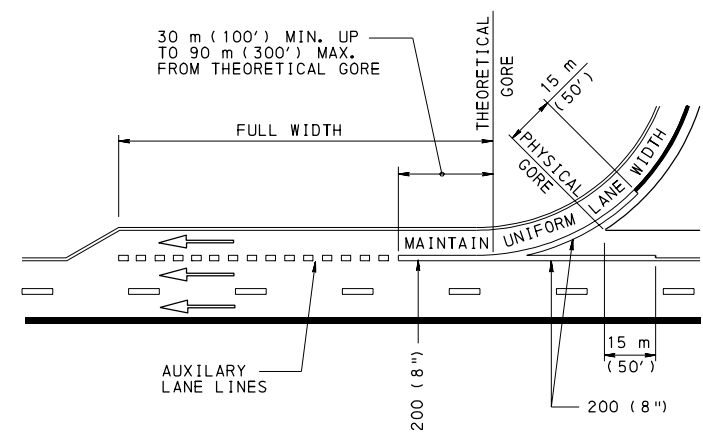
EXIT ONLY LANE DROP



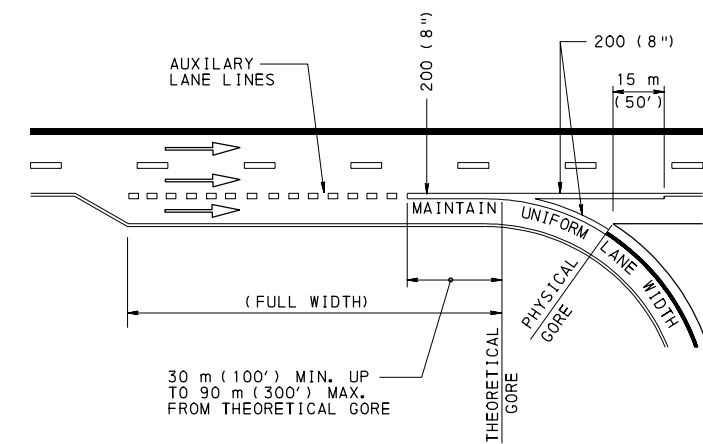
MULTIPLE EXIT LANES



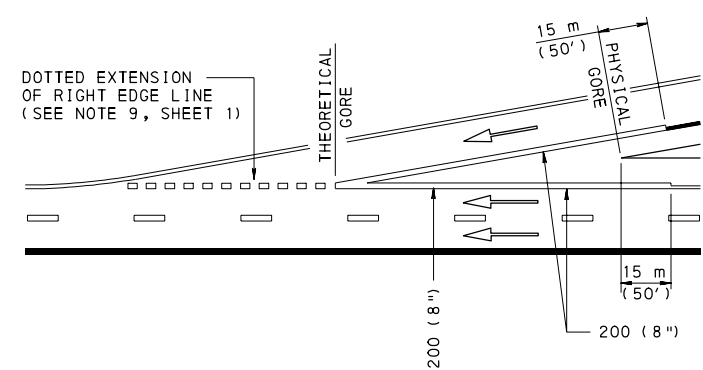
CLOVERLEAF INTERCHANGE



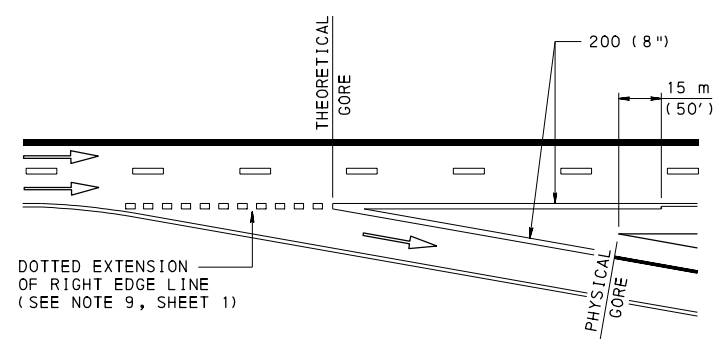
PARALLEL LANE



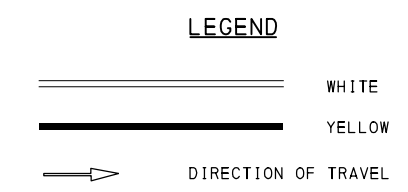
PARALLEL LANE



TAPERED LANE
ACCELERATION LANE



TAPERED LANE
DECELERATION LANE



NOTE:

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

EXPRESSWAY / FREEWAY

RECOMMENDED JUN. 23, 2009 <i>John P. Tompkins</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED JUN. 23, 2009 <i>Dee C. Rome</i> ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 2 OF 11 TC-8600
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NOTES:

LANE, EDGE AND CENTERLINES

1. MAKE ALL LANE LINES, EITHER SOLID OR BROKEN WHITE, 100 mm (4") MINIMUM WIDE ON TWO-LANE, TWO-WAY HIGHWAYS AND 150 mm (6") WIDE ON MULTI-LANE HIGHWAYS.
2. LANE LINES ON AN APPROACH TO A SIGNALIZED INTERSECTION SHALL BE SOLID WHITE FOR A DISTANCE OF 45 m (150') MEASURED FROM THE STOP BAR.
3. LANE LINES THAT DELINEATE THE EDGE OF A TURNING LANE ARE TO BE SOLID WHITE LINES WITH A LENGTH EQUAL 2X/3, BUT NOT LESS THAN 1/3 THE LENGTH OF THE TURN LANE, MEASURED FROM THE STOP BAR.
4. MAKE EDGE LINES SOLID WHITE LINES 100 mm (4") WIDE, EXCEPT USE SOLID YELLOW LINES WHEN ADJACENT TO A MEDIAN WHICH SEPARATES OPPOSING DIRECTIONS OF VEHICULAR TRAFFIC FLOW.
5. ON TWO-LANE, TWO-WAY HIGHWAYS, THE CENTER LINES ARE YELLOW, 100 mm (4") WIDE EITHER SOLID, BROKEN OR A COMBINATION THEREOF. A SOLID BARRIER LINE SHALL PRECEDE ALL CONTROLLED INTERSECTIONS BY THE MINIMUM DISTANCE NOTED IN TABLE A.
6. ON FOUR OR MORE LANE UNDIVIDED HIGHWAYS, FOR CENTER LINES USE THE TWO-WAY BARRIER LINES.
7. "CENTER LANE LEFT TURN ONLY" MARKINGS ARE TWO (2) SETS OF ONE-WAY BARRIER LINES WITH BROKEN YELLOW LINES INSIDE OF THE SOLID YELLOW LINES.
8. EXTEND THE LANE LINES, EDGE LINES AND/OR CENTER LINES A DISTANCE OF 45 m (150') FROM THE STOP BAR ON MINOR APPROACHES, WHERE CONDITIONS PERMIT.

STOP LINE

9. STOP LINES ARE SOLID WHITE LINES THAT COMPLETELY TRAVERSE EACH TRAFFIC LANE. AT AN INTERSECTION WITH A STOP SIGN, THE STOP LINE SHOULD BE PLACED AT A LOCATION NO LESS THAN 1.2 m (4'), OR MORE THAN 9 m (30') FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY TO ENSURE MAXIMUM SIGHT DISTANCE TO VEHICLES ON THE CROSSING ROUTE. WHEN USED ON MULTI-LANE APPROACH TO A SIGNALIZED INTERSECTION, THE STOP LINE MAY BE STAGGERED TO ASSIST TURNING VEHICLES AND TO IMPROVE SIGHT DISTANCE FOR MOTORIST DESIRING TO MAKE A TURN ON RED.
10. LOCATE STOP LINES AT A MINIMUM OF 1.2 m (4') IN ADVANCE OF AND PARALLEL TO THE CROSSWALK LINES UNLESS OTHERWISE NOTED.

YIELD LINE (FOR DETAILS SEE SHEET 5 OF 8)

11. YIELD LINES ARE TO CONSIST OF A ROW OF SOLID WHITE ISOSCELES TRIANGLES POINTING TOWARD APPROACHING VEHICLES EXTENDING ACROSS APPROACH LANES TO INDICATE THE POINT AT WHICH THE YIELD IS INTENDED OR REQUIRED TO BE MADE.

MEDIAN MARKINGS

12. TRANSVERSE MEDIAN MARKINGS ARE 600 mm (24") WIDE YELLOW LINES SPACED AS INDICATED ON SHEET 4, WITHIN TWO (2) SETS OF TWO-WAY BARRIER LINES. USE TRANSVERSE LINES ONLY WHEN REQUIRED TO PROVIDE EMPHASIS IF THE SIGHT DISTANCE OR VISIBILITY IS RESTRICTED.

GORE MARKINGS

13. EDGE LINES ARE 100 mm (4") SOLID WHITE LINES. USE TRANSVERSE OR DIAGONAL LINES ONLY WHEN REQUIRED TO PROVIDE ADDITIONAL EMPHASIS IF THE SIGHT DISTANCE OR VISIBILITY OF GORE IS RESTRICTED.

PAVEMENT LEGENDS

14. WORD AND SYMBOL MARKINGS SHOULD NOT EXCEED THREE LINES OF INFORMATION. IF A PAVEMENT MARKING WORD MESSAGE CONSISTS OF MORE THAN ONE LINE OF INFORMATION, IT SHOULD READ IN THE DIRECTION OF TRAVEL. THE FIRST WORD OF THE MESSAGE SHOULD BE NEAREST TO THE ROAD USER. THE LONGITUDINAL SPACE BETWEEN WORD OR SYMBOL MESSAGE MARKINGS, INCLUDING ARROW MARKINGS, SHOULD BE AT LEAST FOUR TIMES THE HEIGHT OF THE CHARACTERS FOR LOW-SPEED ROADS, BUT NOT MORE THAN TEN TIMES THE HEIGHT OF THE CHARACTERS UNDER ANY CONDITIONS. ON ALL APPROACHES, CENTER THE LEGENDS WITHIN THE LANE.

15. ALIGN THE LEGENDS TRANSVERSELY ACROSS EACH PAVEMENT. THE MINIMUM DISTANCE BETWEEN THE ARROW SYMBOL AND STOP BAR IS 6 m (20').

DOTTED EXTENSION LINES

16. DOTTED EXTENSION LINES MAY BE USED TO DELINEATE TRAVEL PATHS FOR TURNING TRAFFIC MOVEMENTS AT OFFSET, SKEWED OR COMPLEX INTERSECTIONS AND FOR MULTIPLE TURN LANES.





LANE REDUCTION ARROW (LRA)

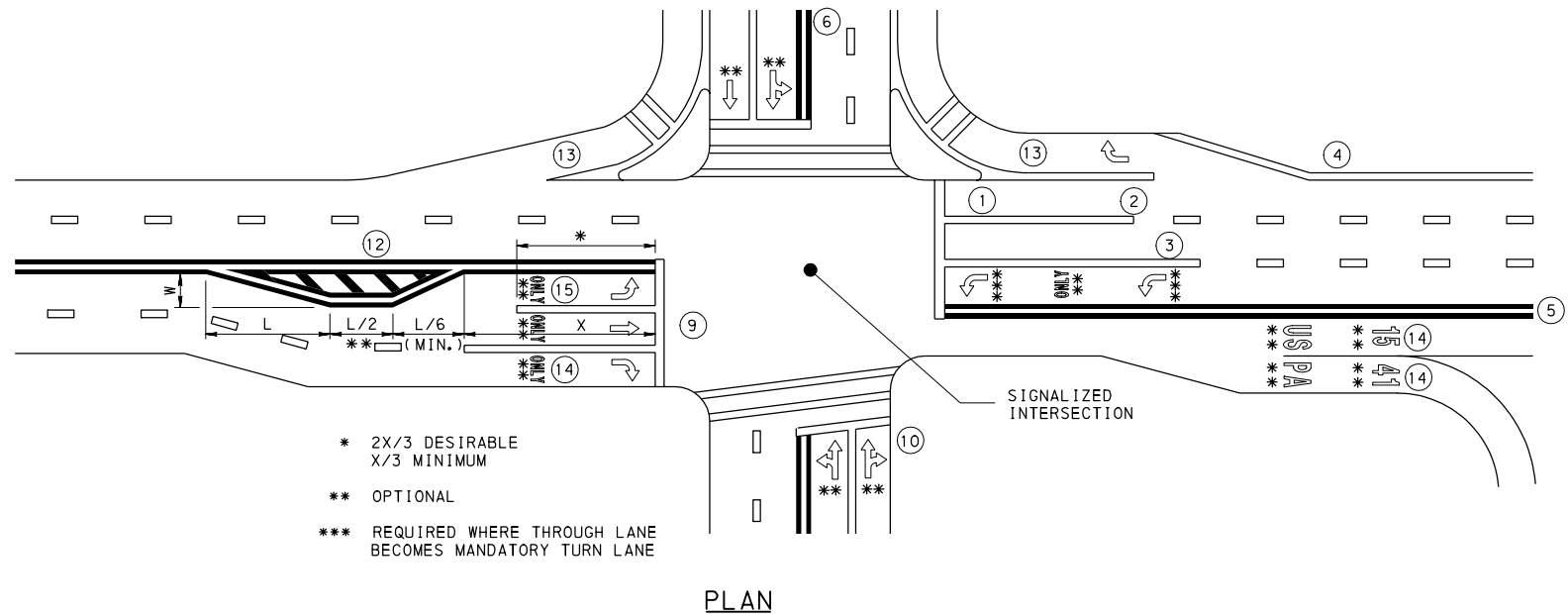
17. FOR DETAILS SEE SHEET 10.

GENERAL

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

LEGEND

-  WHITE
-  YELLOW
-  DIRECTION OF TRAVEL
-  NOTE REFERENCE NUMBER



- * 2X/3 DESIRABLE X/3 MINIMUM
- ** OPTIONAL
- *** REQUIRED WHERE THROUGH LANE BECOMES MANDATORY TURN LANE

METRIC UNITS

$$L = \frac{WS^2}{155}$$

FOR CONVENTIONAL ROADWAYS WHERE THE 85TH PERCENTILE SPEED IS 65 km/h OR LESS

$$L = \frac{WS}{1.6}$$

FOR CONVENTIONAL ROADWAYS WHERE THE 85TH PERCENTILE SPEED IS 70 km/h OR GREATER AND FOR ALL FREEWAYS AND EXPRESSWAYS

WHERE: S = 85TH PERCENTILE SPEED (KMH)
W = OFFSET

X = 7.5 m PER 30 TURNING V.P.H. THE MINIMUM IS 22.5 m

ENGLISH UNITS

$$L = \frac{WS^2}{60}$$

FOR CONVENTIONAL ROADWAYS WHERE THE 85TH PERCENTILE SPEED IS 40 MPH OR LESS

$$L = WS$$

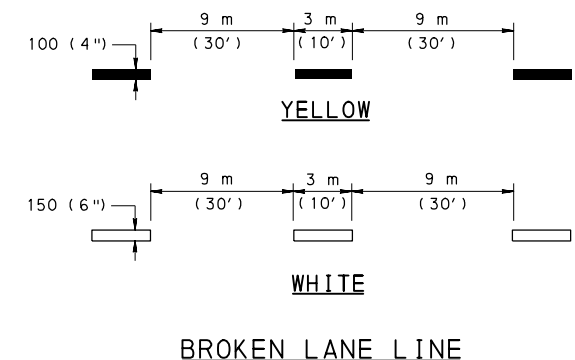
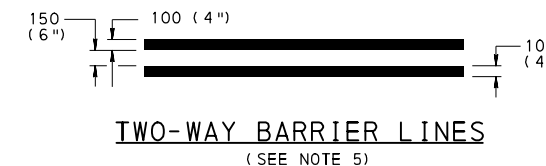
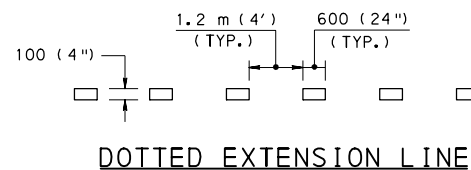
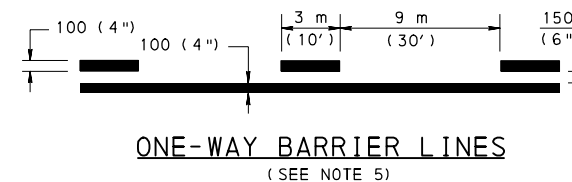
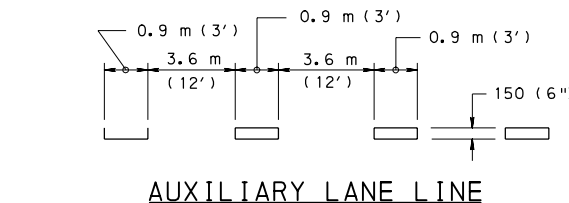
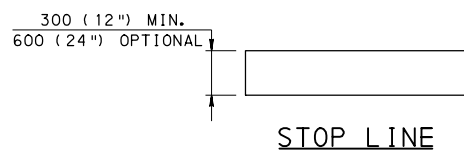
FOR CONVENTIONAL ROADWAYS WHERE THE 85TH PERCENTILE SPEED IS 45 MPH OR GREATER AND FOR ALL FREEWAYS AND EXPRESSWAYS

WHERE: S = 85TH PERCENTILE SPEED (MPH)
W = OFFSET

X = 25' PER 30 TURNING V.P.H. THE MINIMUM IS 75'

SPEED LIMIT OR 85 TH PERCENTILE SPEED km/h (MPH)	DISTANCE m (FT)
60 (35) OR LESS	90 (300)
65 (40)	105 (350)
70 (45)	120 (400)
80 (50)	135 (450)
90 (55)	150 (500)

TABLE A
(SEE NOTE 5)

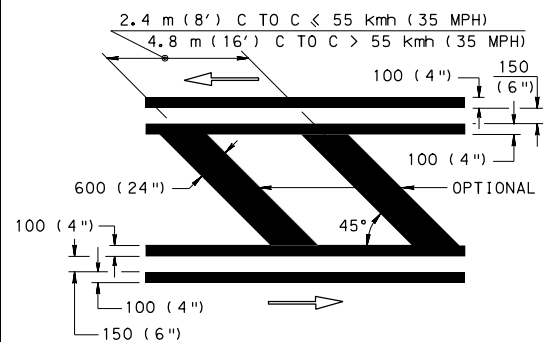


COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

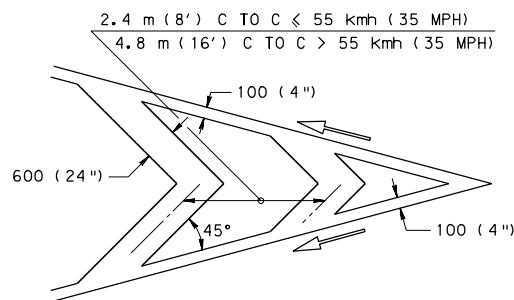
PAVEMENT MARKINGS

CONVENTIONAL

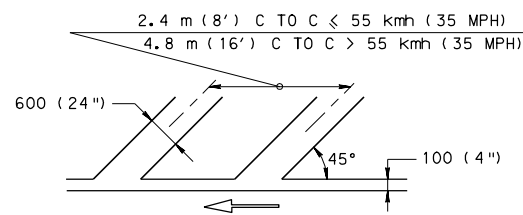
RECOMMENDED JUN. 23, 2009 <i>John P. Tompkins</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED JUN. 23, 2009 <i>Dee C. Rome</i> ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 3 OF 11 TC-8600
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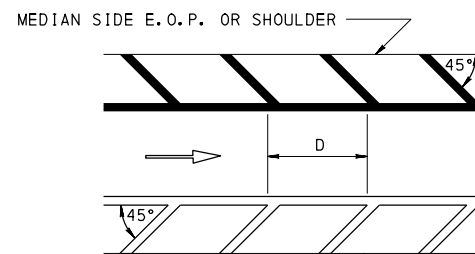
TRANSVERSE MEDIAN MARKING



CHEVRON GORE MARKING
(OPTIONAL)

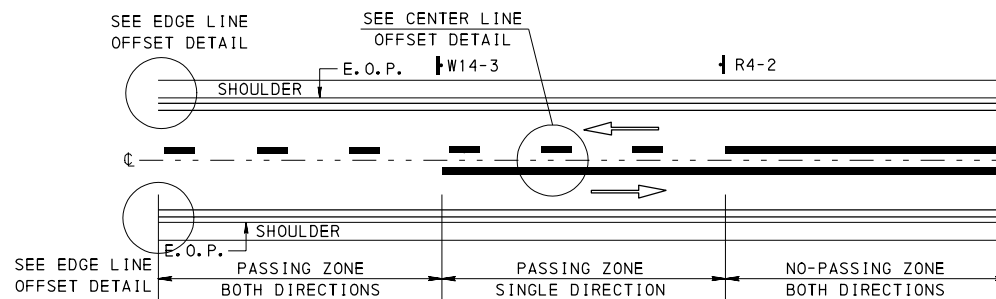


ONE-WAY BARRIER GORE MARKING
(OPTIONAL)

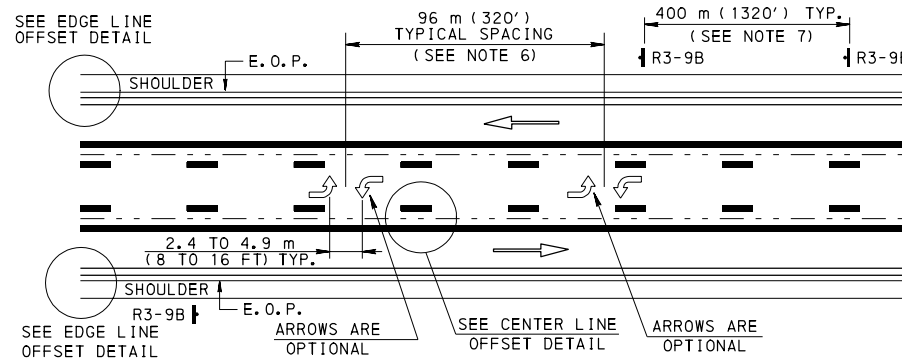


D = SPACING OF DIAGONAL LINES (TYPICALLY EQUAL IN FEET TO THE POSTED SPEED LIMIT). INCREASE SPACING OF DIAGONALS TO 60 m (200') OR MORE ON INTERSTATE ROADWAYS.

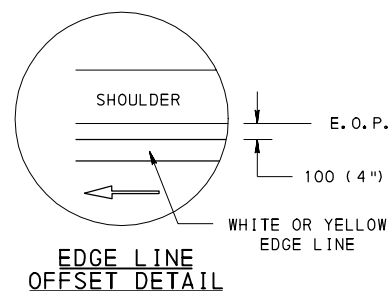
EDGE OF PAVEMENT OR SHOULDER ISLAND



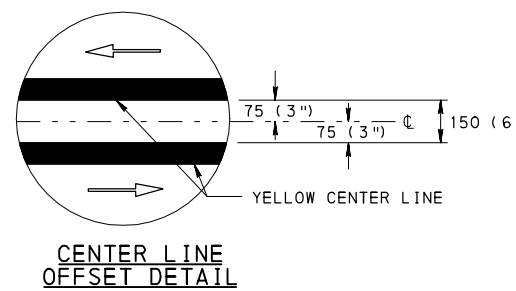
TWO-LANE, TWO-WAY UNDIVIDED ROADWAY



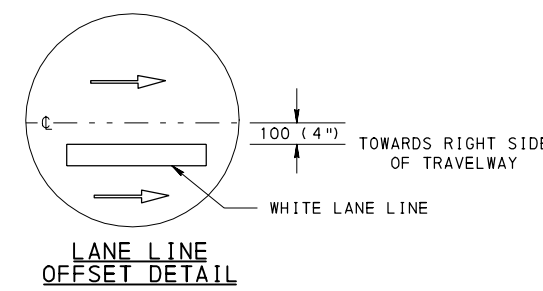
TWO-LANE, TWO-WAY UNDIVIDED ROADWAY WITH TWO-WAY LEFT TURN LANE



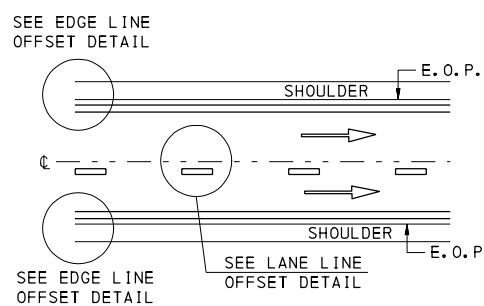
EDGE LINE OFFSET DETAIL



CENTER LINE OFFSET DETAIL



LANE LINE OFFSET DETAIL

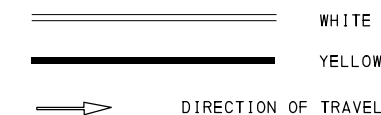


MULTI-LANE ROADWAY

NOTES:

1. OFFSET PAVEMENT MARKING LINES 100 mm (4") FROM LONGITUDINAL PAVEMENT CONSTRUCTION JOINTS, AS DETERMINED BY THE ENGINEER OR AS INDICATED BELOW:
 - YELLOW SKIP LINES ON TWO-LANE, TWO-WAY ROADWAYS (WHERE PASSING IS ALLOWED IN BOTH DIRECTIONS) CAN BE OFFSET 75 mm (3") FROM THE CENTER LINE TO ALLOW FOR FUTURE REPAINTING OF THE LINES WITH COMPATIBLE DEPARTMENT EQUIPMENT.
 - OFFSET DOUBLE YELLOW CENTER LINES 75 mm (3") ON EACH SIDE OF THE CENTER LINE TO ALLOW FOR PLACEMENT OF PAVEMENT MARKERS (PRESENT OR FUTURE PLACEMENT).
2. PASSING - NO PASSING ZONES WILL BE DETERMINED BY THE ENGINEER.
3. EDGE LINES ARE NOT REQUIRED ALONG CURB AND GUTTER LOCATIONS.
4. DO NOT CONTINUE EDGE LINES THRU INTERSECTIONS, AND DO NOT BREAK EDGE LINES AT DRIVEWAYS.
5. PLACE EDGE LINES AT RAISED ISLAND LOCATIONS, OUTLINING THE SHAPE OF THE RAISED ISLAND.
6. 96 m (320') TYPICAL SPACING BETWEEN SETS OF ARROW SYMBOLS CAN BE INCREASED OR DECREASED AS DETERMINED BY THE ENGINEER.
7. 400 m (1320') TYPICAL DISTANCE BETWEEN CENTER LANE - LEFT TURN ONLY SIGNS (R3-9B) CAN BE INCREASED OR DECREASED AS DETERMINED BY THE ENGINEER.
8. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
9. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

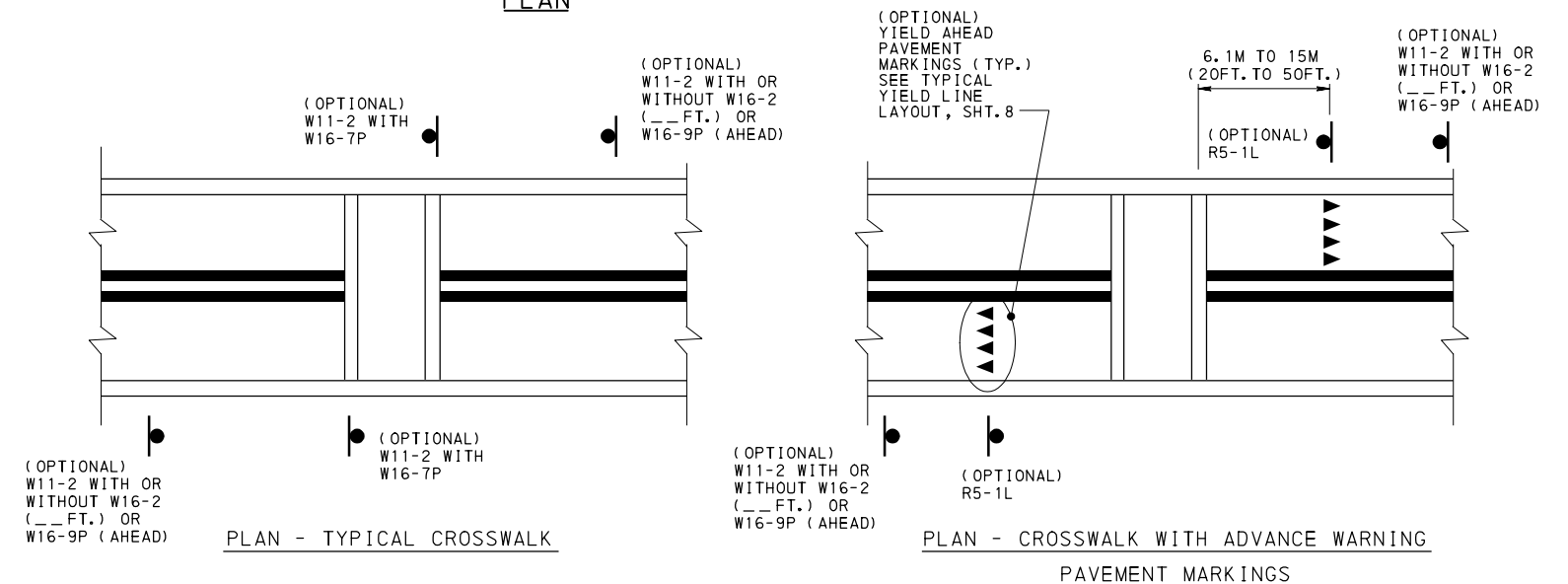
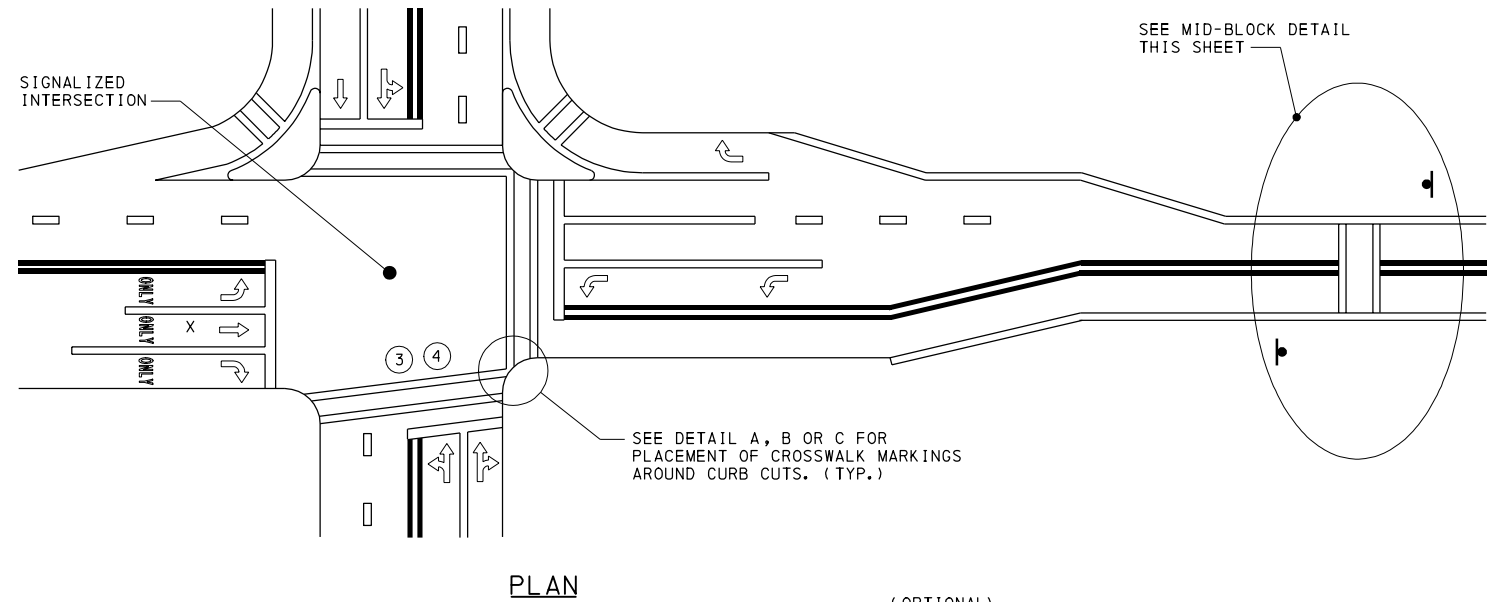
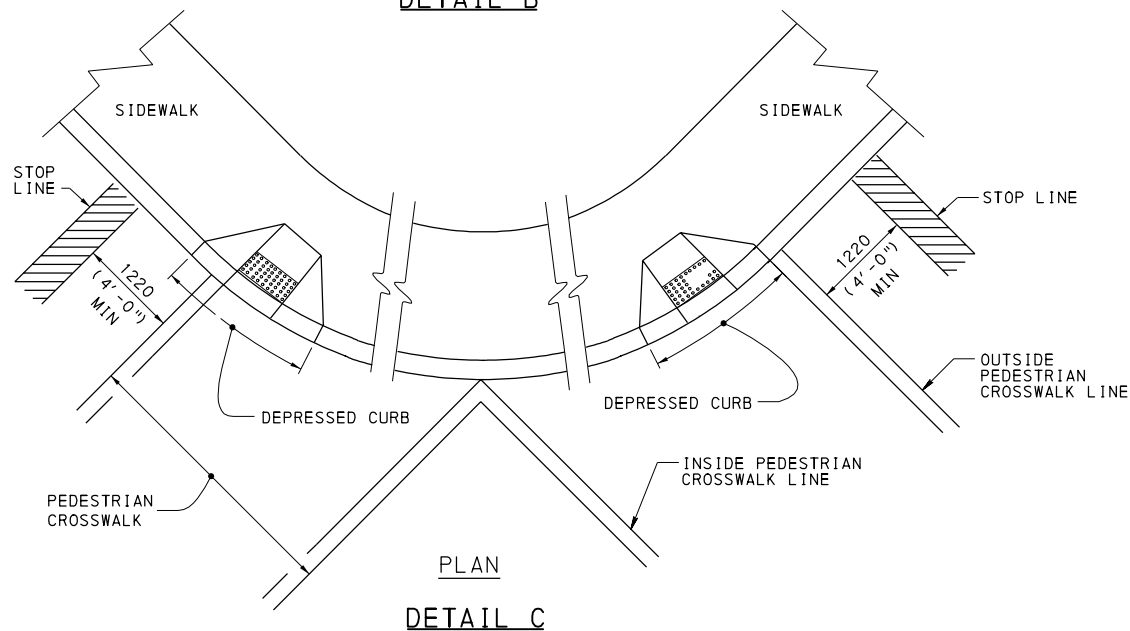
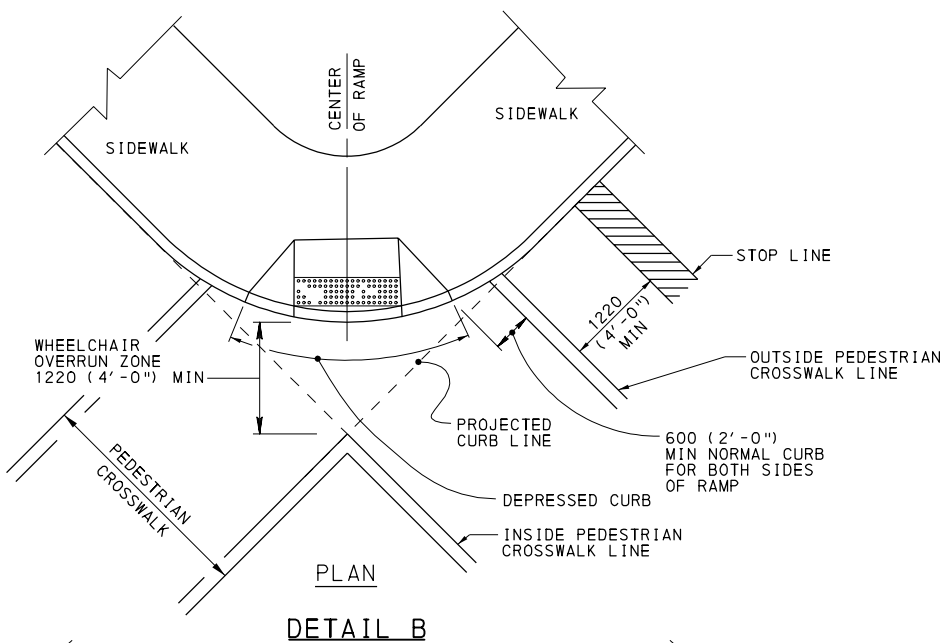
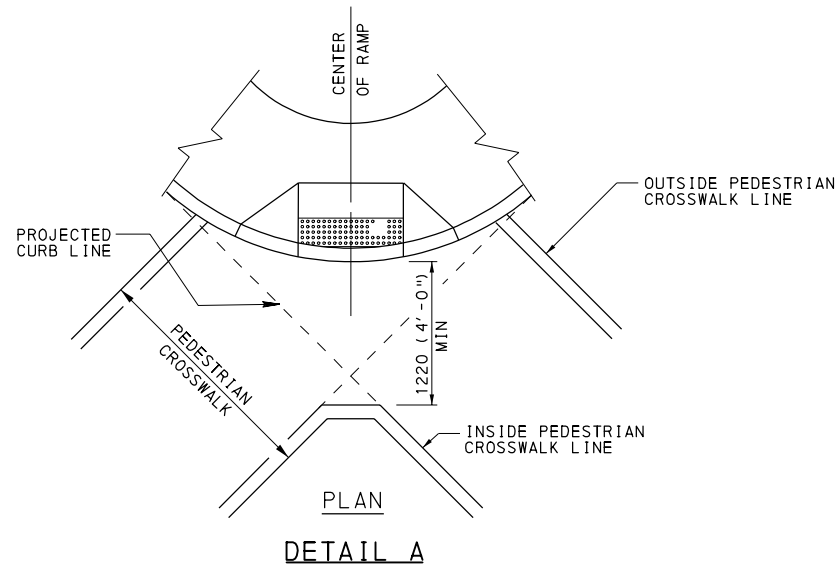
LEGEND



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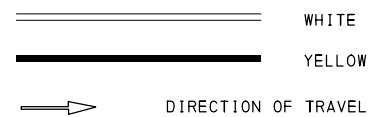
PAVEMENT MARKINGS

CONVENTIONAL



MID-BLOCK CROSSWALK DETAIL
REFER TO PUBLICATION 46 CHAPTER 11.9
AND MUTCD PART 3B.17 FOR MORE DETAILS.

LEGEND



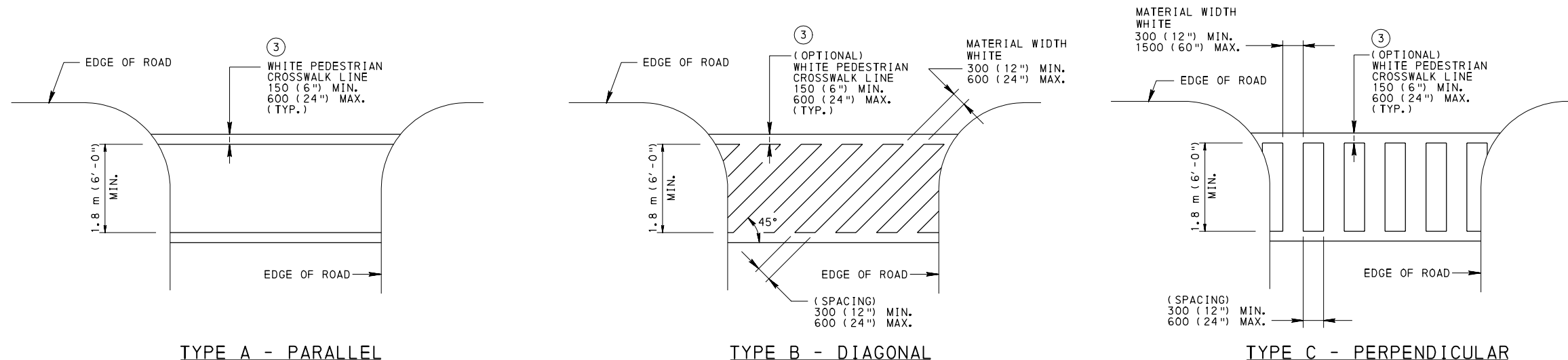
NOTES:

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.
3. THE MINIMUM WIDTH OF CROSSWALKS SHALL BE 1.8 m (6') AND MAKE THE CROSSWALK LINES SOLID WHITE NOT LESS THAN 150 mm (6") WIDE, THE LINES FORMING A CROSSWALK SHALL BE PARALLEL TO EACH OTHER AND EXTEND ACROSS THE ROADWAY FROM FACE OF CURB TO FACE OF CURB OR EDGE OF SHOULDER AS APPLICABLE.
4. FOR STANDARD CROSSWALK MARKINGS AND APPROVED DECORATIVE CROSSWALK PATTERN CONFIGURATION AND COLORS SEE SHEET 6.

COMMONWEALTH OF PENNSYLVANIA
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PAVEMENT MARKINGS

CROSSWALKS

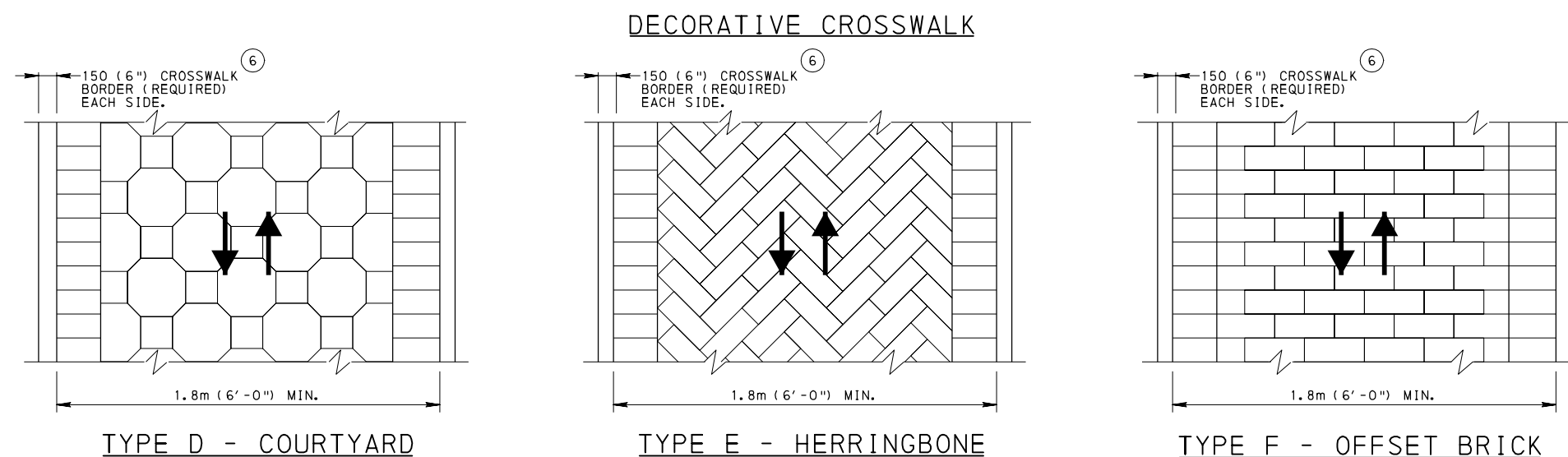


TYPE A - PARALLEL

TYPE B - DIAGONAL

TYPE C - PERPENDICULAR

STANDARD CROSSWALK MARKINGS



TYPE D - COURTYARD

TYPE E - HERRINGBONE

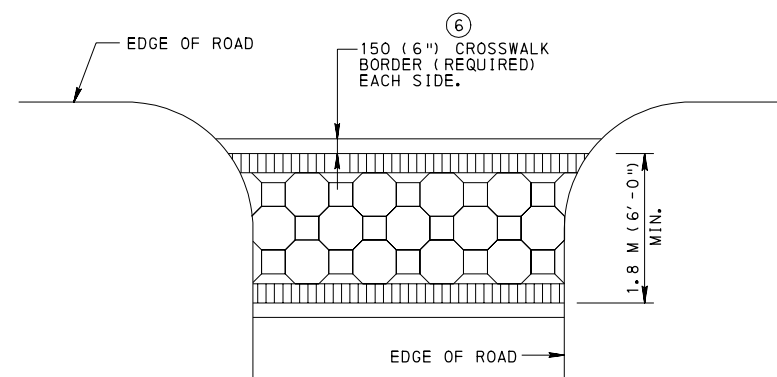
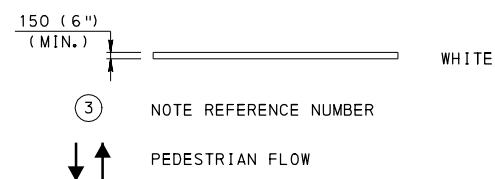
TYPE F - OFFSET BRICK

APPROVED NON-REFLECTIVE COLORS: WHITE, BLACK, BROWN, SILVER-GRAY AND MAROON

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.
3. MAKE THE CROSSWALK LINES SOLID WHITE, NOT LESS THAN 150 (6") WIDE.
4. EXTEND THE CROSSWALK ACROSS THE ROADWAY FROM FACE OF CURB TO FACE OF CURB OR EDGE OF SHOULDER AS APPLICABLE.
5. THE MINIMUM WIDTH OF CROSSWALKS SHALL BE 1.8 m (6').
6. A WHITE BORDER, 150 (6") WIDE, IS REQUIRED ALONG EACH SIDE OF THE DECORATIVE CROSSWALK, THE BORDERS ARE TO BE PARALLEL USING A PENNDOT APPROVED PAVEMENT MARKING MATERIAL AND EXTENDS FROM FACE OF CURB TO FACE OF CURB OR SHOULDER.

LEGEND



PLAN - CROSSWALK WITH DECORATIVE PATTERN

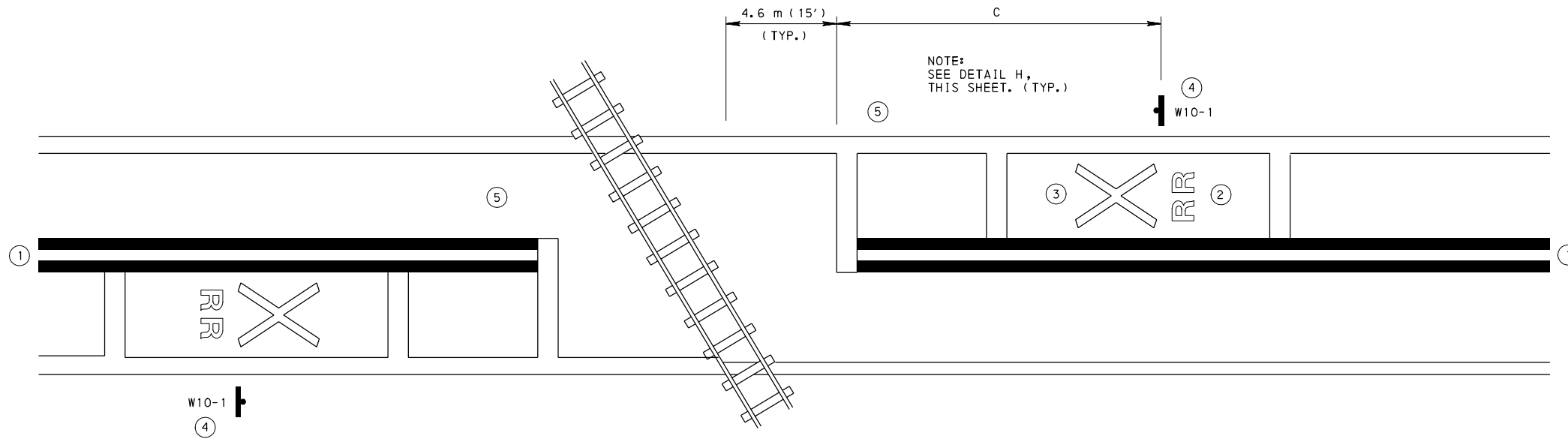
SEE DECORATIVE CROSSWALK PATTERNS. (DECORATIVE CROSSWALK PATTERN MUST BE CONTAINED WITHIN THE 150 (6") WHITE PEDESTRIAN CROSSWALK BORDERS FORMING THE CROSSWALK)

COMMONWEALTH OF PENNSYLVANIA
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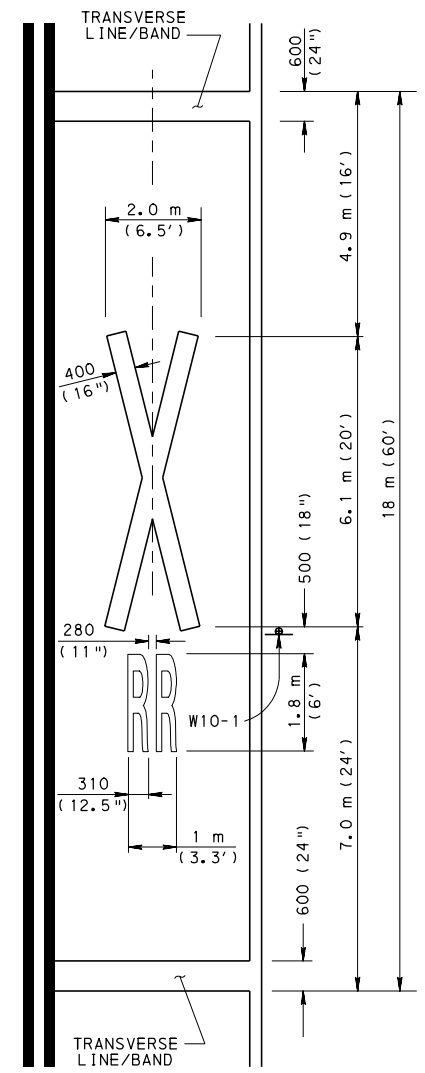
PAVEMENT MARKINGS

CROSSWALKS

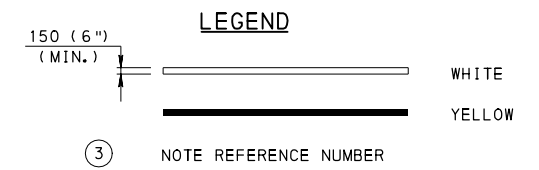
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RAILROAD CROSSING MARKING
 (SEE MUTCD FIG. 8B-6 AND 8B-7 FOR MORE DETAILS)



DETAIL H



SPEED LIMIT OR 85 TH PERCENTILE SPEED km/h (MPH)	DISTANCE m (FT)
60 (35) OR LESS	90 (300)
65 (40)	105 (350)
70 (45)	120 (400)
80 (50)	135 (450)
90 (55)	150 (500)

TABLE A
SEE NOTE 1

POSTED OR 85 TH PERCENTILE SPEED km/h (MPH)	C m (FT)
30 (20)	30 (100)
40 (25)	30 (100)
50 (30)	30 (100)
60 (35)	45 (150)
65 (40)	70 (225)
70 (45)	90 (300)
80 (50)	115 (375)
90 (55)	137 (450)
100 (60)	168 (550)
105 (65)	198 (650)

LOCATION OF RAILROAD CROSSING SIGN
SEE NOTE 4

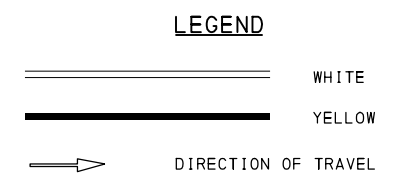
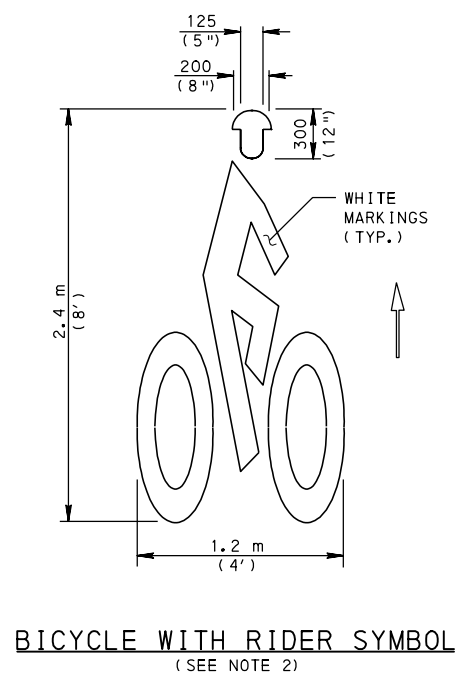
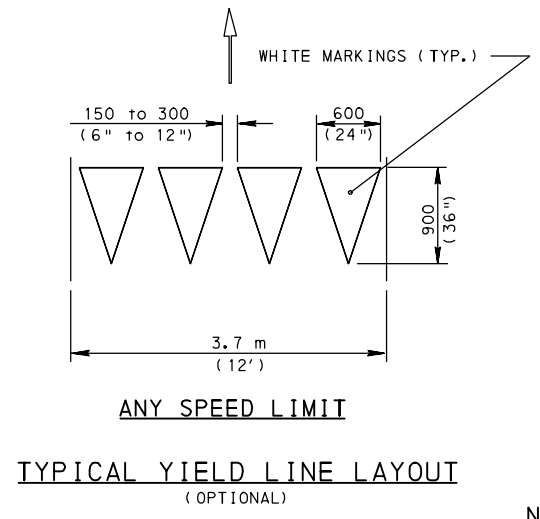
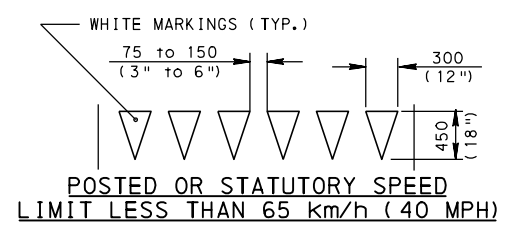
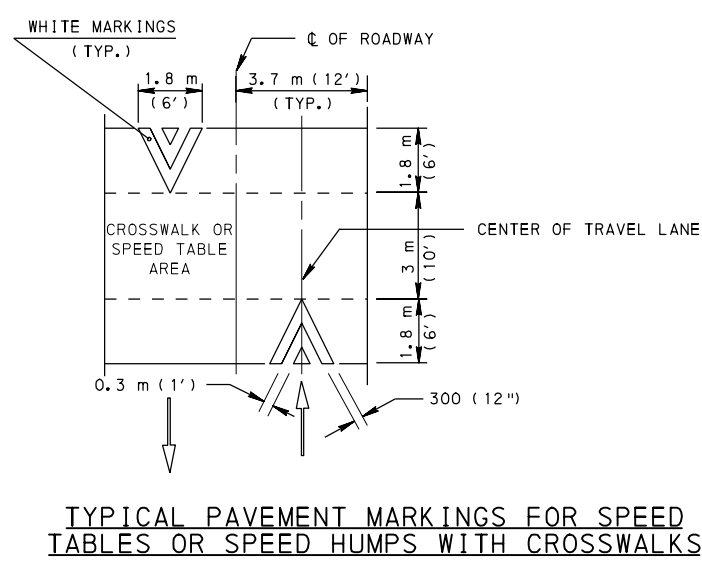
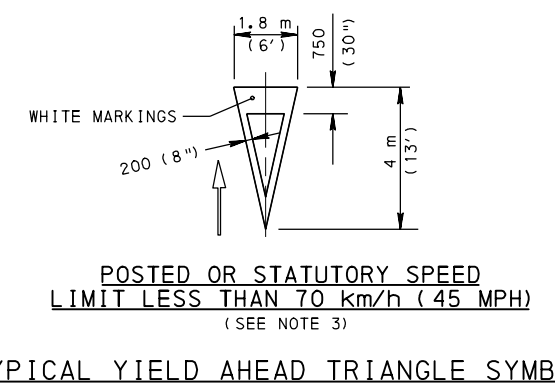
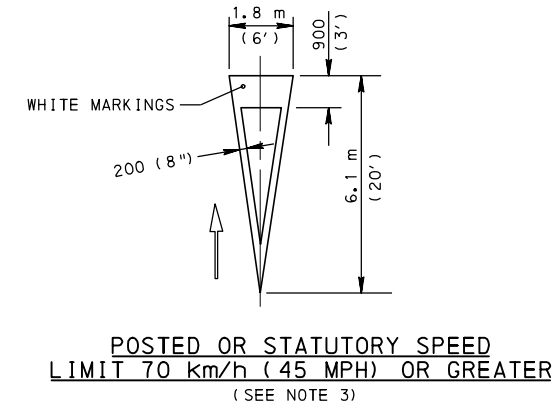
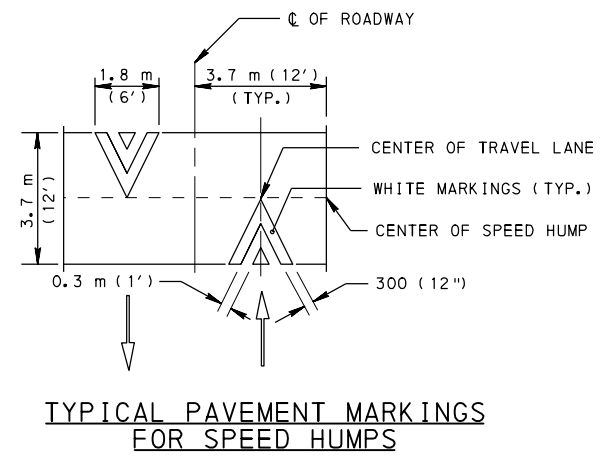
NOTES

- ON TWO-LANE, TWO-WAY HIGHWAYS, THE CENTER LINES ARE YELLOW, 100 mm (4") WIDE EITHER SOLID, BROKEN OR A COMBINATION THEREOF. A SOLID BARRIER LINE SHALL PRECEDE ALL CONTROLLED INTERSECTIONS BY THE MINIMUM DISTANCE NOTED IN TABLE A.
- CENTER THE RAILROAD SYMBOLS WITHIN EACH LANE ON ALL PAVED APPROACHES TO HIGHWAY-RAIL GRADE CROSSINGS. IN THOSE SITUATIONS WHERE THERE IS INADEQUATE SPACE FOR THE PAVEMENT MARKINGS OR WHERE THE INSTALLATION WOULD CREATE OPERATIONAL PROBLEMS WITH TURNING LANES OR OTHER SPECIAL CONDITIONS, PAVEMENT MARKINGS ARE NOT REQUIRED PROVIDING AN ENGINEERING STUDY INDICATES THAT OTHER TRAFFIC CONTROL DEVICES PROVIDE SUITABLE WARNING AND CONTROL.
- ON MULTI-LANE ROADS EXTEND THE TRANSVERSE LINES ACROSS ALL TRAFFIC LANES ON EACH APPROACH AND USE INDIVIDUAL SYMBOLS IN EACH APPROACH LANE.
- LOCATE A PORTION OF RAILROAD PAVEMENT MARKING SYMBOL DIRECTLY OPPOSITE THE ADVANCE WARNING SIGN W10-1. USE DIMENSION "C" FOR PLACEMENT OF ADVANCE WARNING SIGN W10-1.
- LOCATE STOP LINES 2.4 m (8') FROM THE GATE (IF PRESENT), BUT NO CLOSER THAN 4.6 m (15') FROM THE NEAREST RAIL.
- 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.

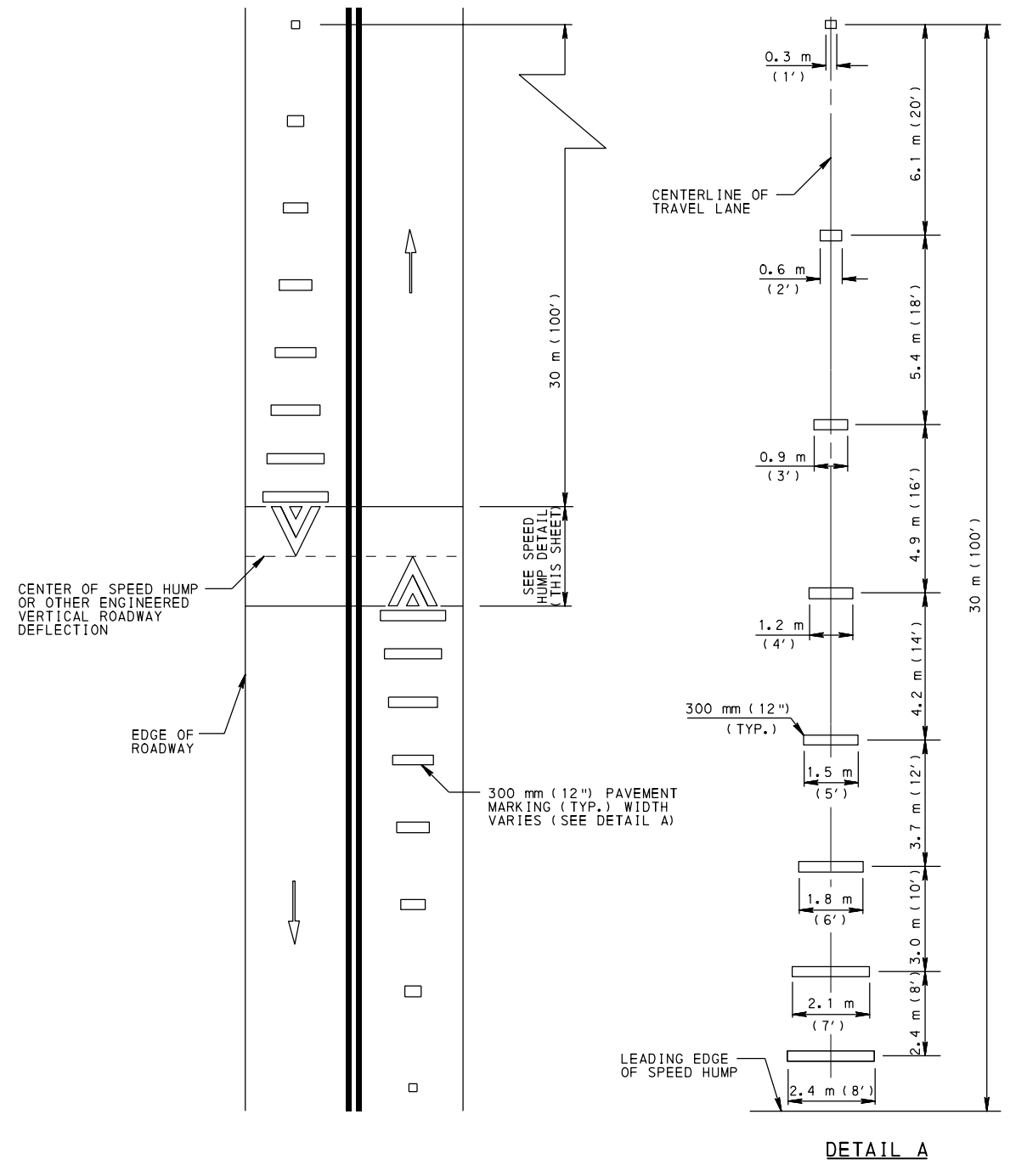
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 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

PAVEMENT MARKINGS

RAILROAD CROSSING



- NOTES:**
1. YIELD LINES MAY BE USED TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO YIELD IN COMPLIANCE WITH A YIELD SIGN.
 2. YIELD LINES AND BICYCLE RIDER SYMBOL MAY BE SMALLER THAN SUGGESTED WHEN INSTALLED ON MUCH NARROWER, SLOW-SPEED FACILITIES SUCH AS SHARED-USE PATHS.
 3. USE MUTCD CHAPTER 2C, TABLE 2C-4, CONDITION "B" FOR ADVANCE PLACEMENT DISTANCE OF YIELD AHEAD TRIANGLE SYMBOL.
 4. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
 5. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

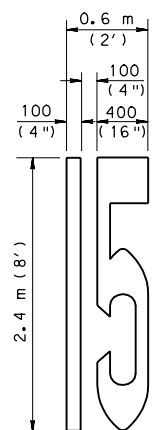
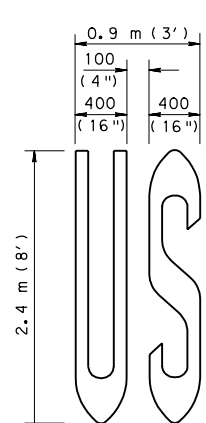
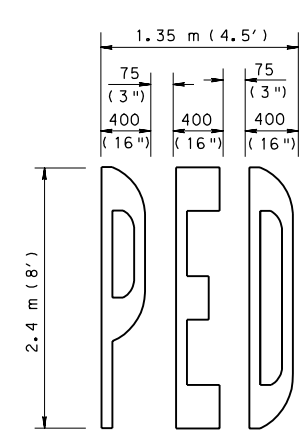
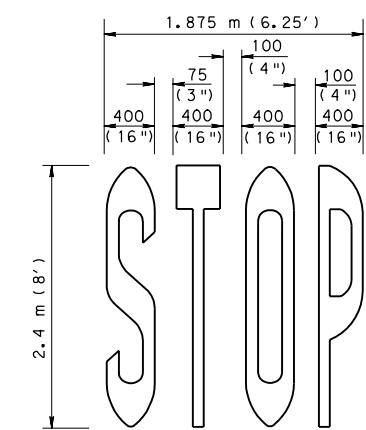
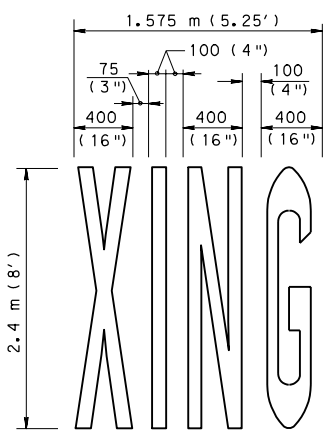
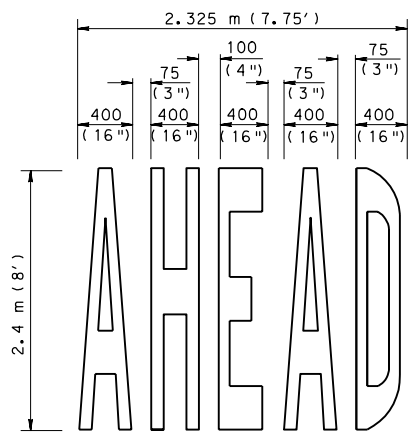
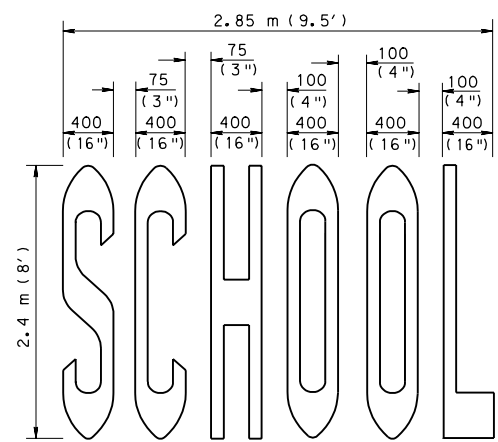
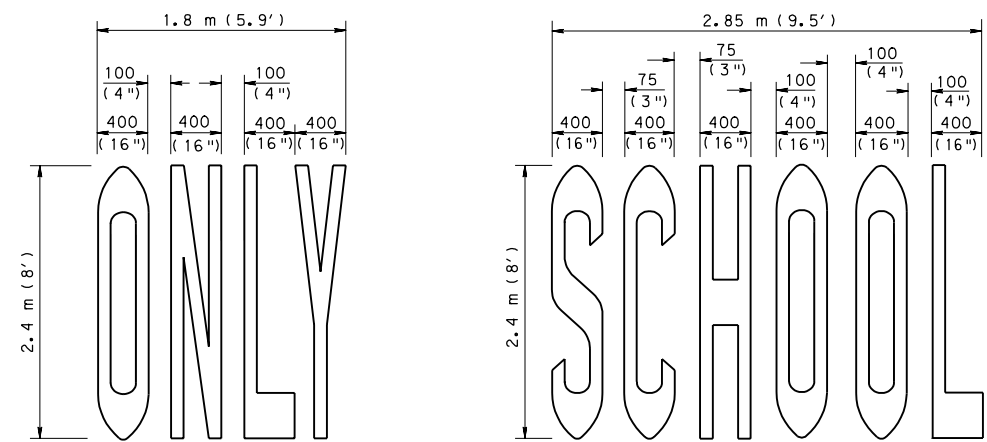


COMMONWEALTH OF PENNSYLVANIA
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PAVEMENT MARKINGS

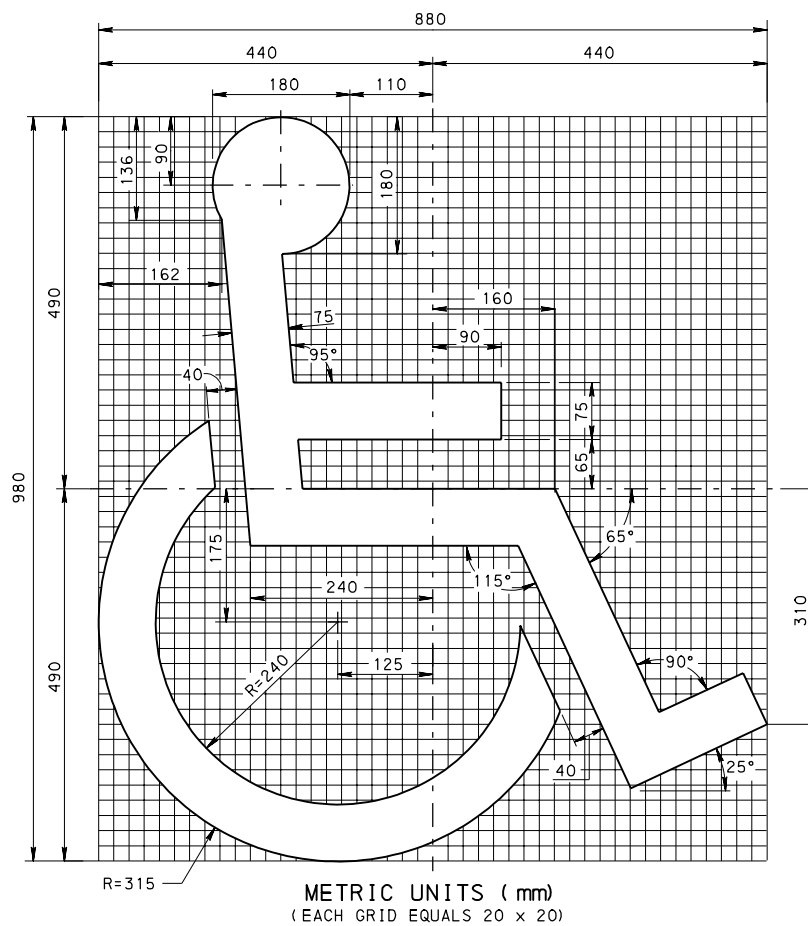
CONVENTIONAL
SPEED HUMPS, YEILD AND BICYCLE

RECOMMENDED JUN. 23, 2009 <i>John P. Tompkins</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED JUN. 23, 2009 <i>Debra C. Rome</i> ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 8 OF 11 TC-8600
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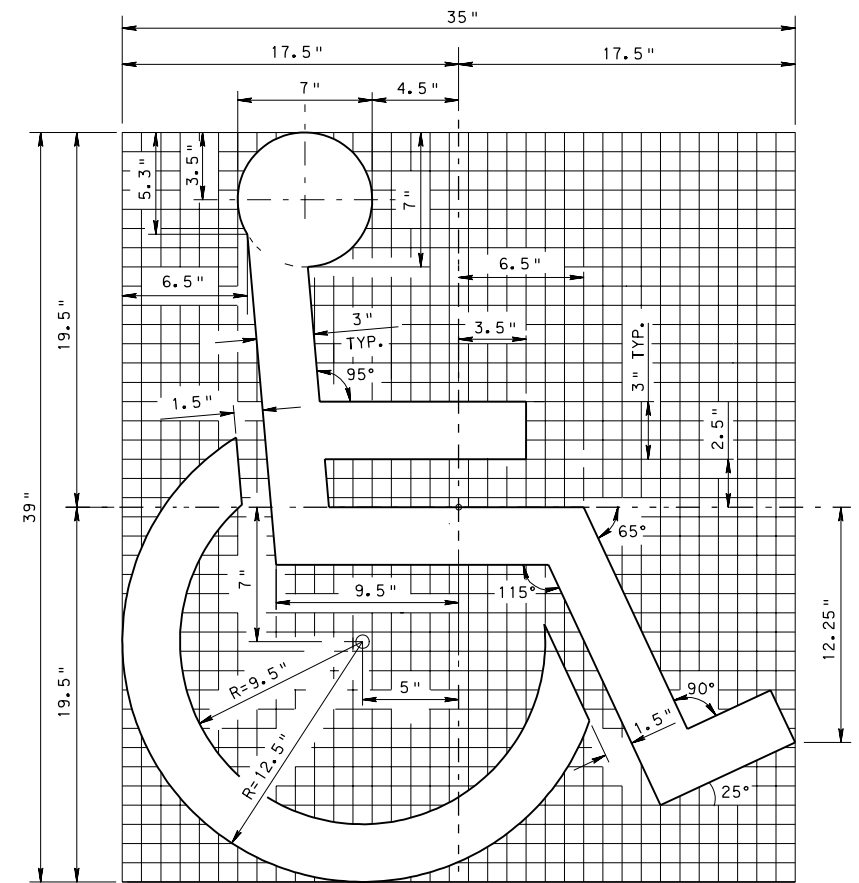


SEE FHWA'S STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS FOR OTHER DETAILS.

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.

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BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

PAVEMENT MARKINGS

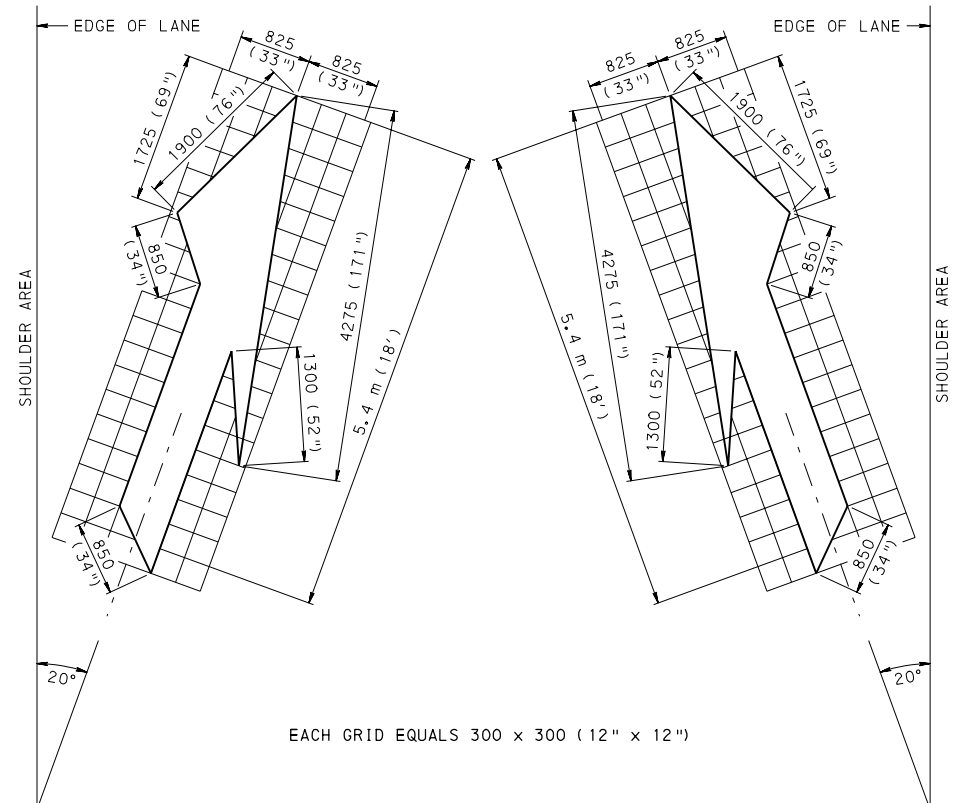
LEGENDS AND SYMBOLS

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John P. Tompkins
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED JUN. 23, 2009
Dee C. Rome
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SHT. 9 OF 11

TC-8600

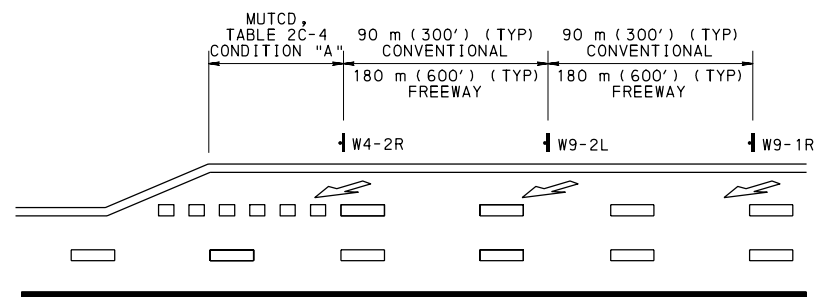


EACH GRID EQUALS 300 x 300 (12" x 12")

LEFT LANE
(MERGE RIGHT)

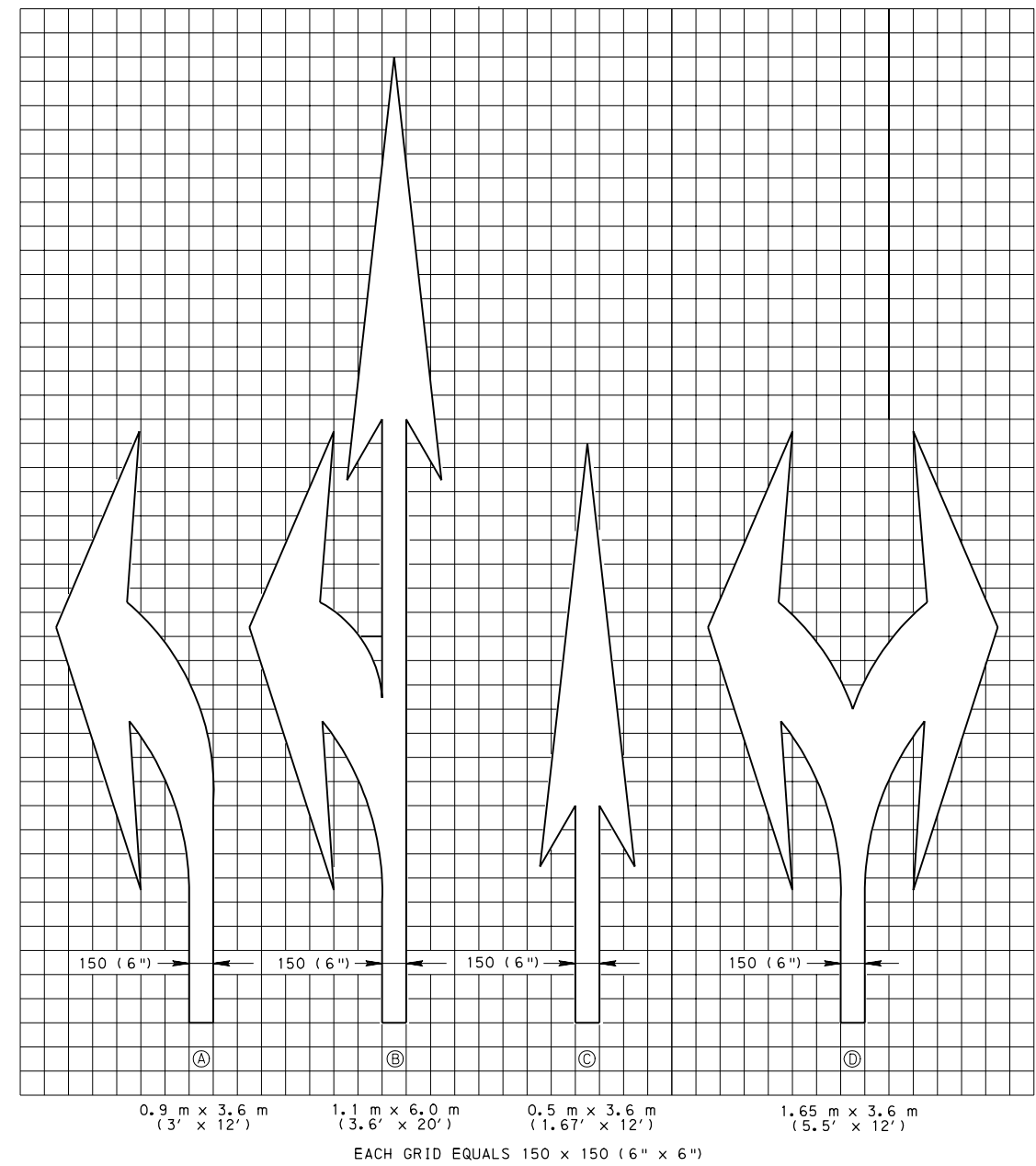
RIGHT LANE
(MERGE LEFT)

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



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

MARKING ARROWS

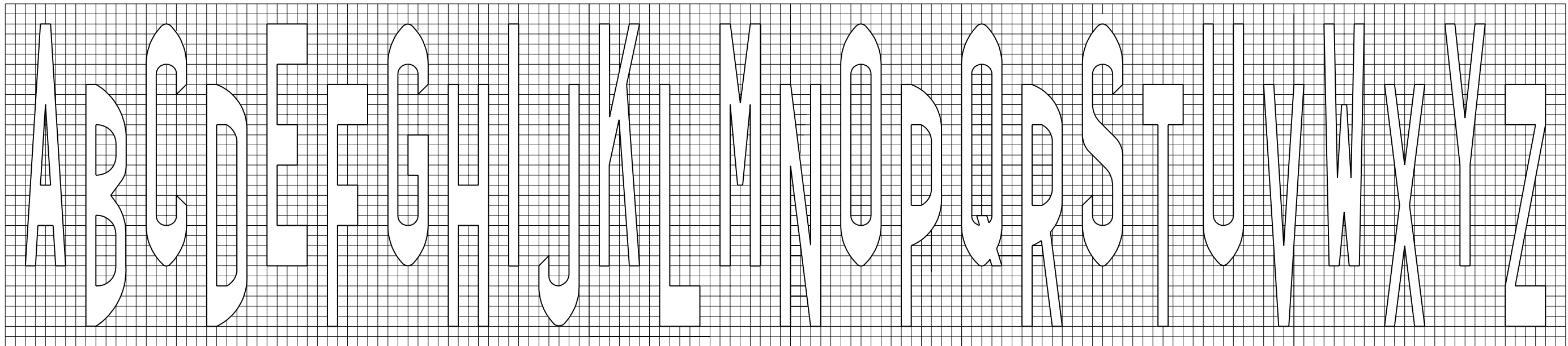
NOTES:

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.

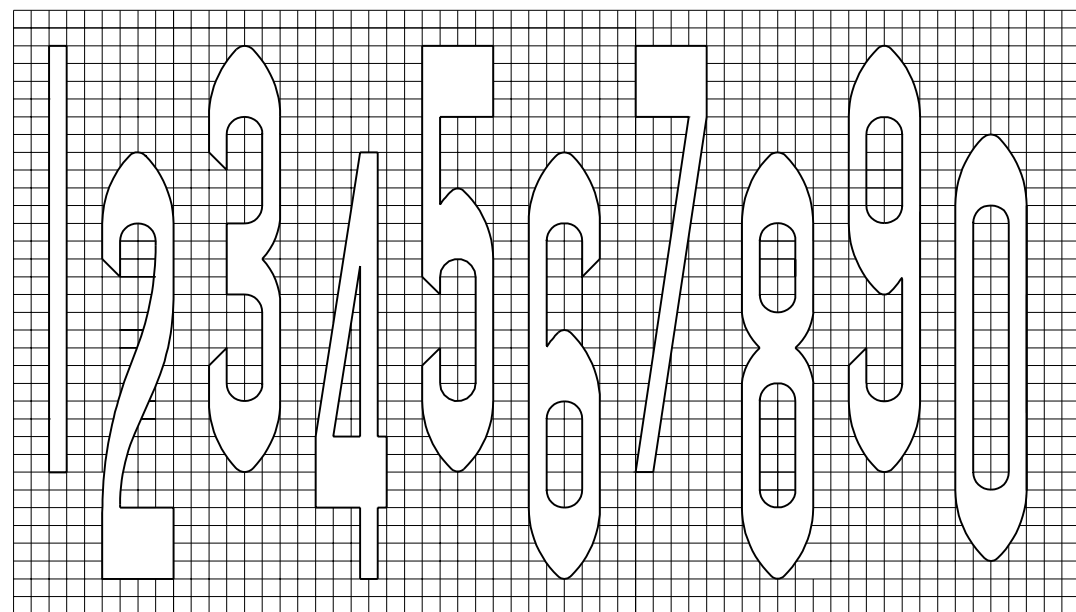
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

PAVEMENT MARKINGS

LEGENDS AND SYMBOLS



STANDARD ALPHABET



STANDARD NUMERALS

NOTES:

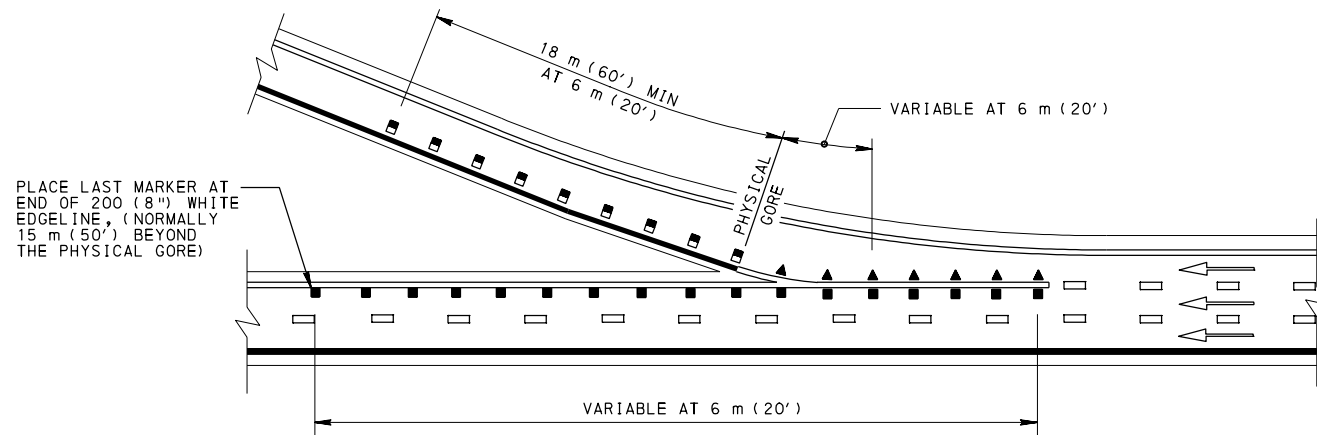
1. STANDARD CHARACTERS ARE 24 GRID UNITS HIGH AND 4 UNITS WIDE (EXCEPT LETTER "I" AND THE NUMBER "1" WHICH ARE 1 UNIT WIDE).
2. VERTICAL STROKES ARE 1 UNIT WIDE, HORIZONTAL STROKES ARE 4 UNITS HIGH.
3. SPACE 1 UNIT (MIN.) BETWEEN CHARACTERS OR AS OTHERWISE SHOWN (OPTICAL SPACING MAY BE USED).
4. STANDARD 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

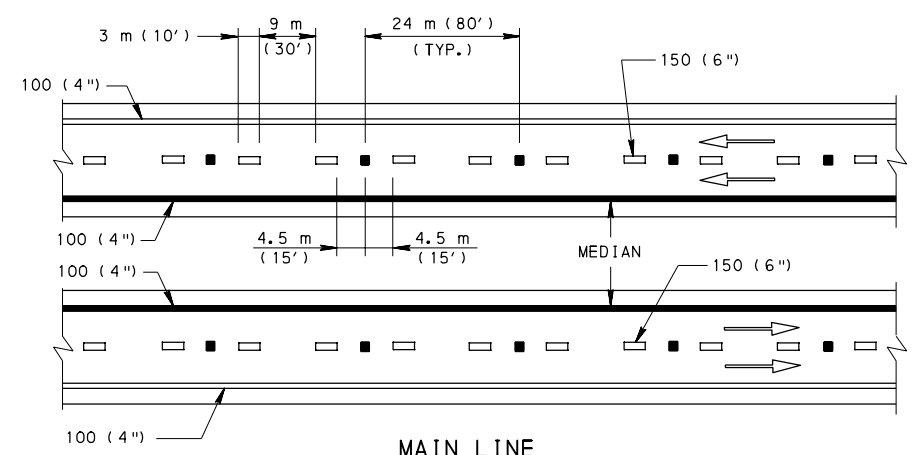
PAVEMENT MARKINGS

LEGEND AND SYMBOLS
(STANDARD ALPHABET & NUMERALS)

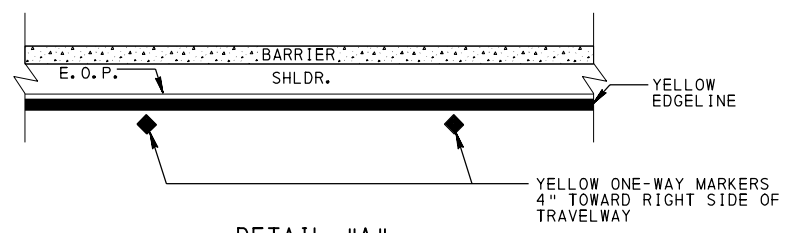
RECOMMENDED JUN. 23, 2009 <i>John P. Tompkins</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED JUN. 23, 2009 <i>Dee C. Rowe</i> ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 11 OF 11 TC-8600
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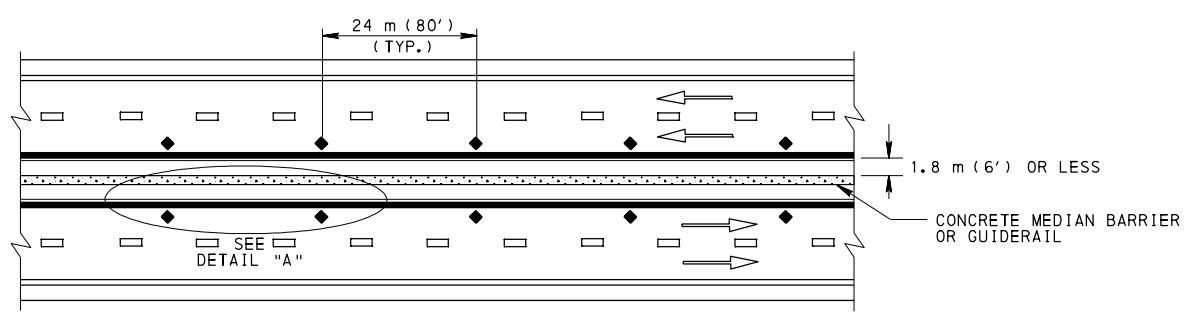
EXIT GORE AREA



MAIN LINE



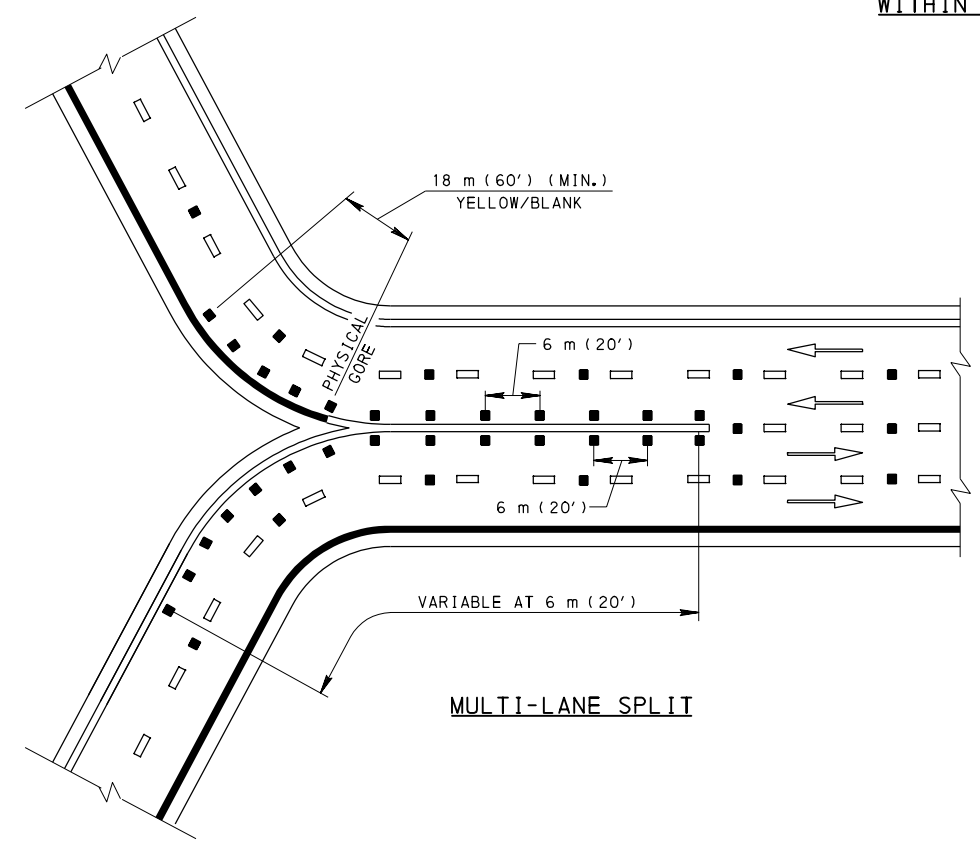
DETAIL "A"



CONCRETE MEDIAN BARRIER OR GUIDERAIL WITHIN 6 FEET OF TRAVEL LANE

LEGEND

- TWO-WAY MARKER WITH WHITE/BLANK REFLECTOR
- ◆ TWO-WAY MARKER WITH YELLOW/BLANK REFLECTOR
- ▲ TWO-WAY MARKER WITH WHITE/RED REFLECTOR
- TWO-WAY MARKER WITH YELLOW/RED REFLECTOR
- WHITE
- YELLOW
- BROKEN WHITE
- DIRECTION OF TRAVEL



MULTI-LANE SPLIT

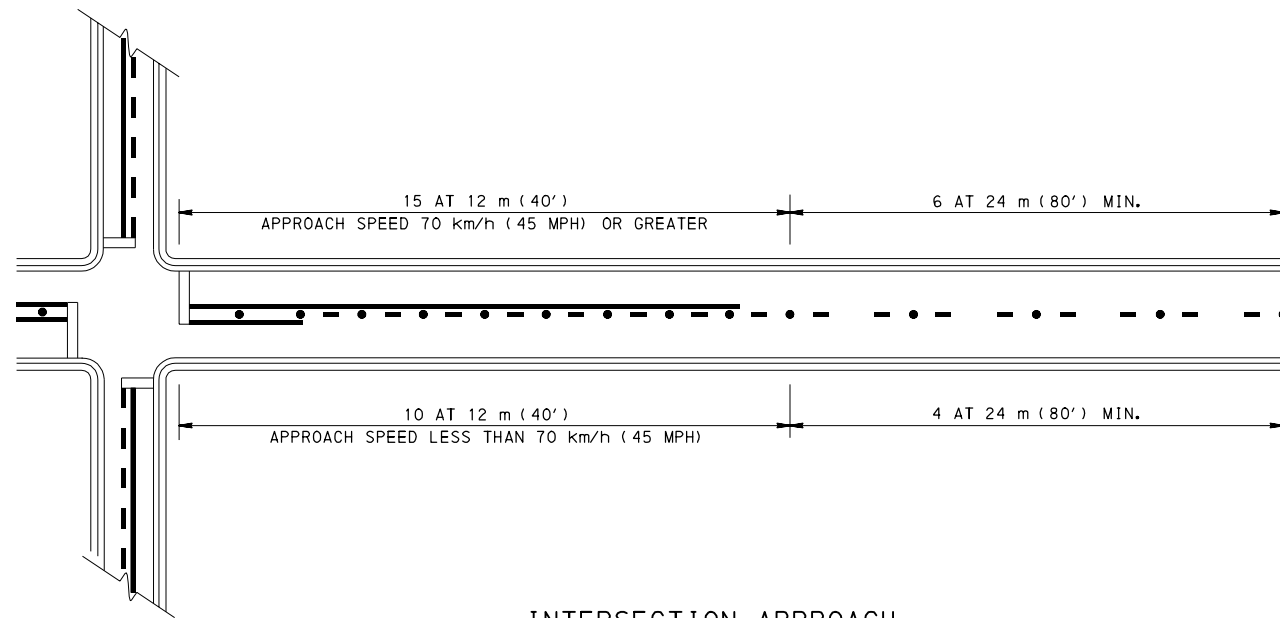
NOTES:

1. MATERIAL AND WORKMANSHIP IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, OR AS INDICATED OR DIRECTED.
2. PLACE MARKERS ALONG A LANE LINE (BROKEN LINE) MIDWAY BETWEEN THE PAINTED PORTIONS.
3. PLACE MARKERS ALONG AN EDGE OR CHANNELIZING LINE WITH NEAR EDGE OF MARKER CASTING 100 mm (4") FROM NEAR EDGE OF PAINTED LINE, WHEN CONCRETE MEDIAN BARRIER OR GUIDERAIL IS WITHIN 1.8 m (6') OF TRAVEL LANE.
4. INSTALL MARKERS 100 mm (4") MIN. FROM ANY PAVEMENT SEAM, JOINT OR EDGE.
5. SEE SHEET 4 OF 4 FOR MARKER DETAILS.
6. FOR MARKER SPACING ON CURVES SEE SHEET 3 OF 4.
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.

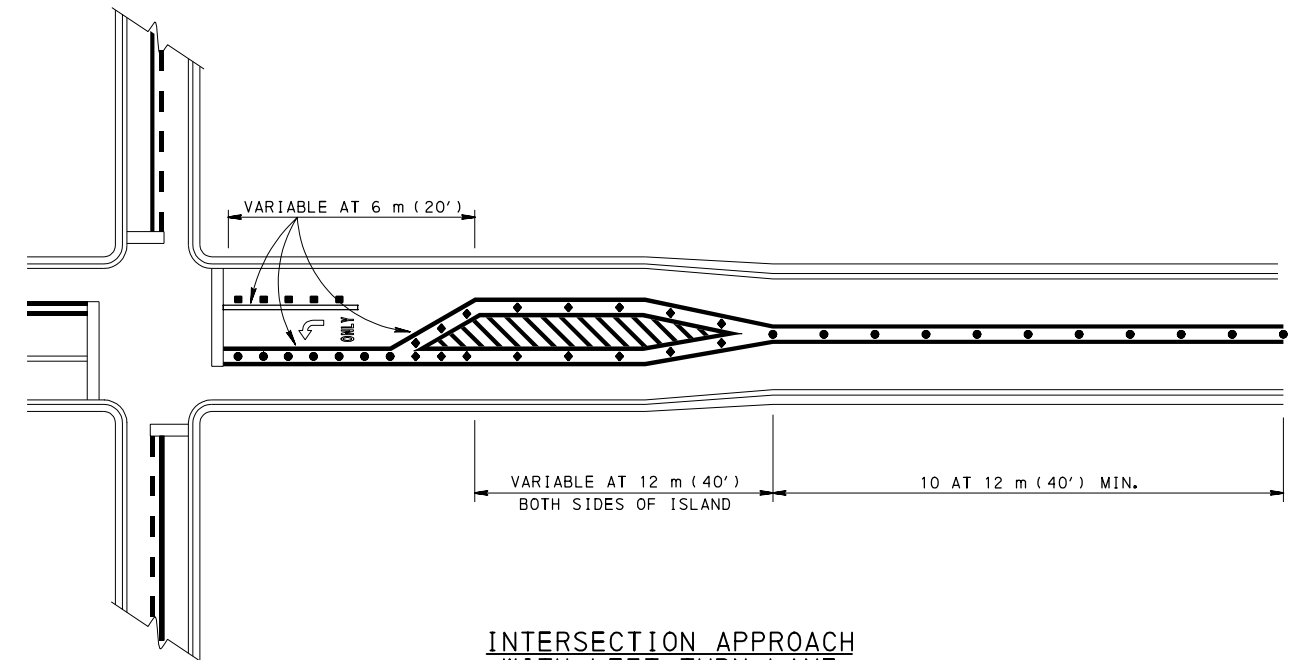
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SNOWPLOWABLE RAISED
PAVEMENT MARKERS

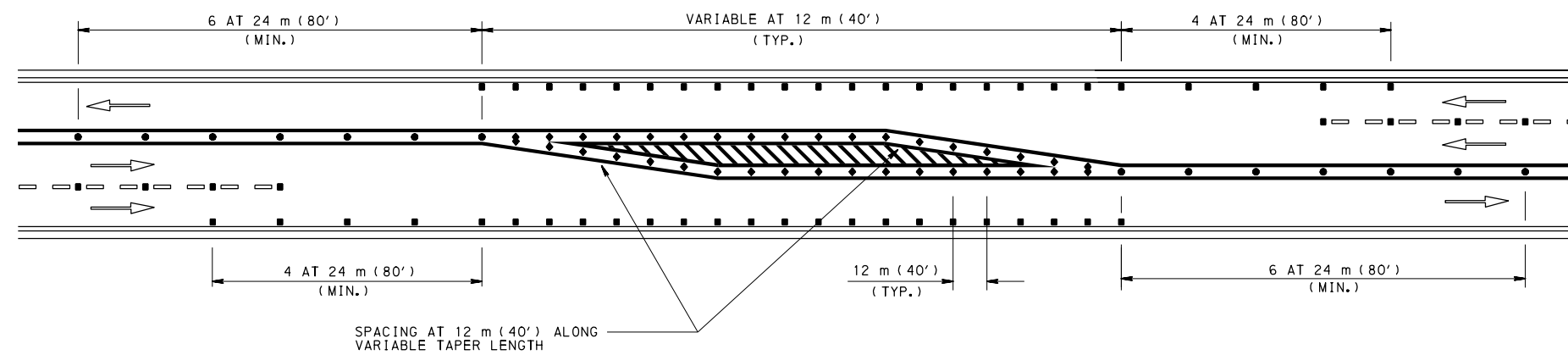
INSTALLATION PATTERNS - FREEWAYS & EXPRESSWAYS



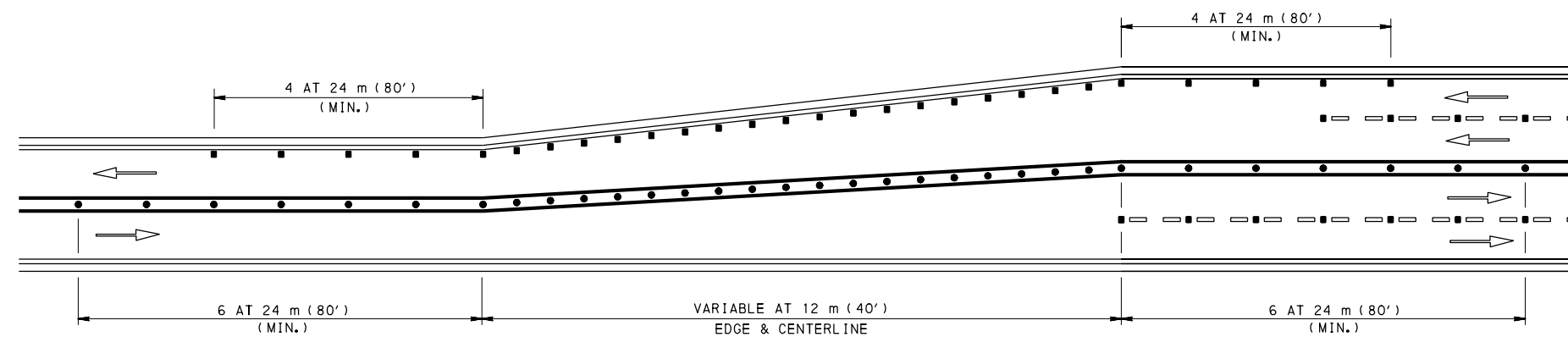
INTERSECTION APPROACH



INTERSECTION APPROACH WITH LEFT-TURN LANE



TWO LANES TO ONE LANE



FOUR LANES TO TWO LANES

TRANSITION

LEGEND

- TWO-WAY MARKER WITH WHITE/BLANK REFLECTOR
- ◆ TWO-WAY MARKER WITH YELLOW/BLANK REFLECTOR
- TWO-WAY MARKER WITH YELLOW/YELLOW REFLECTOR
- ══ WHITE
- ══ YELLOW
- - - BROKEN WHITE
- - - BROKEN YELLOW
- DIRECTION OF TRAVEL

NOTES:

1. SEE SHEET 3 OF 4 FOR ADDITIONAL NOTES.
2. FOR MARKER SPACING ON CURVES SEE SHEET 3 OF 4.
3. 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

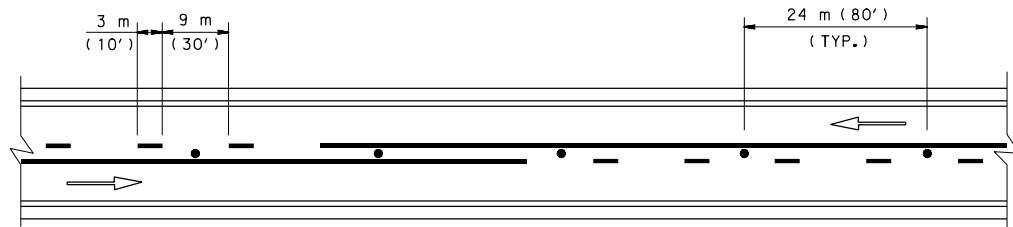
SNOWPLOWABLE RAISED
PAVEMENT MARKERS

RECOMMENDED JUN. 23, 2009
John P. Jung
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

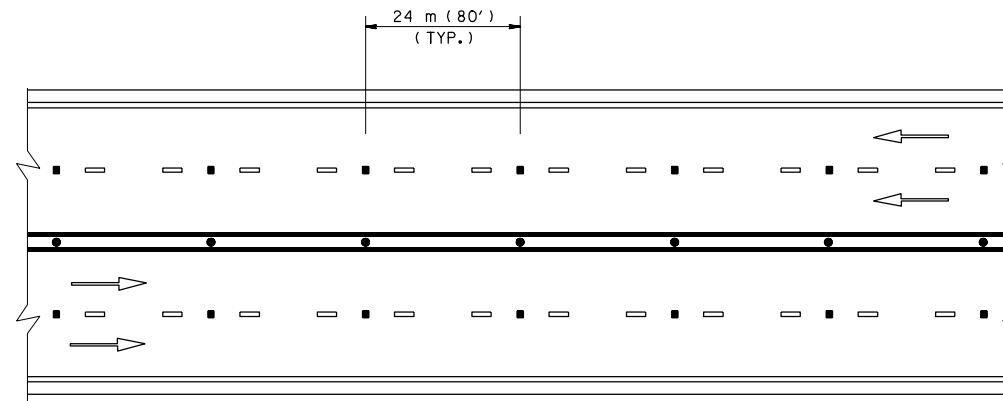
RECOMMENDED JUN. 23, 2009
Dee C. Rowe
ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SHT. 2 OF 4

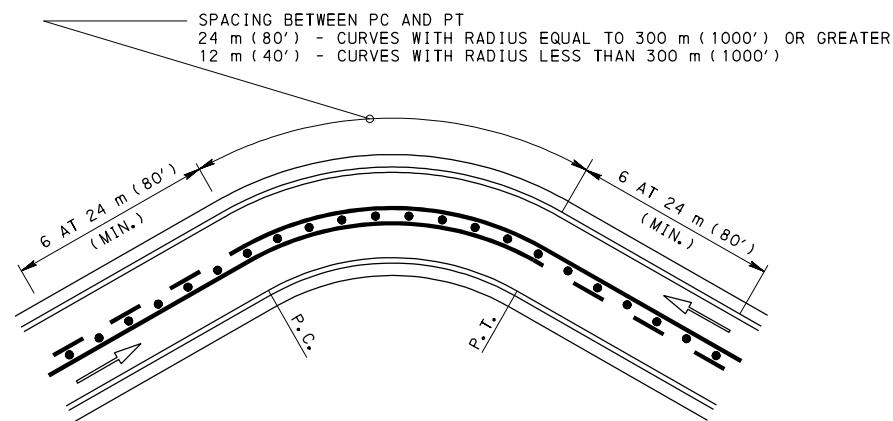
TC-8602



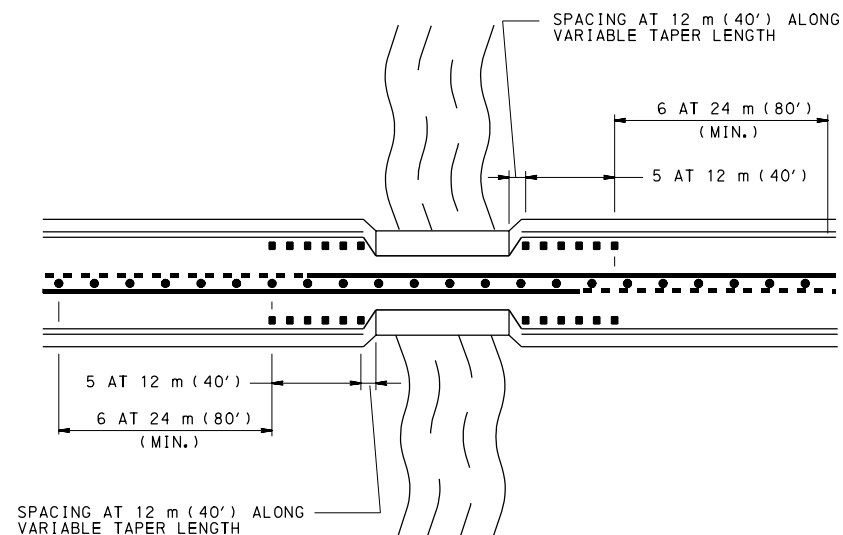
TWO-LANE ROADWAY



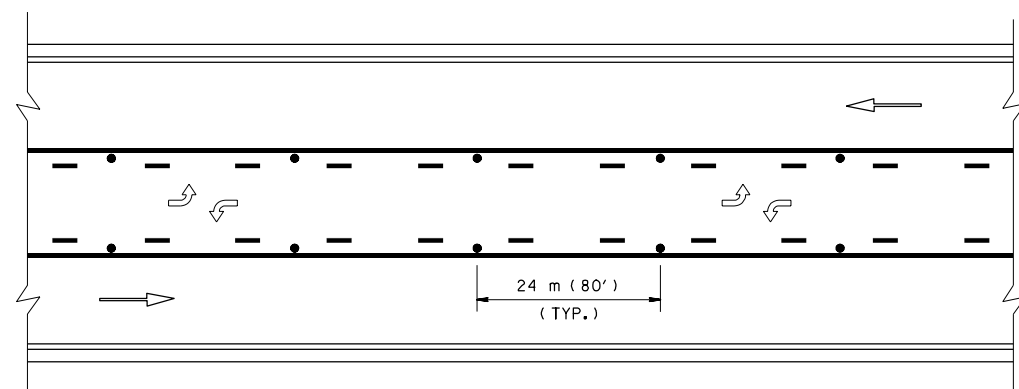
UNDIVIDED FOUR LANES



CURVES



NARROW BRIDGE
ACROSS STRUCTURE USE BARRIER-MOUNT DELINEATORS



CENTER LANE LEFT-TURN ONLY

LEGEND

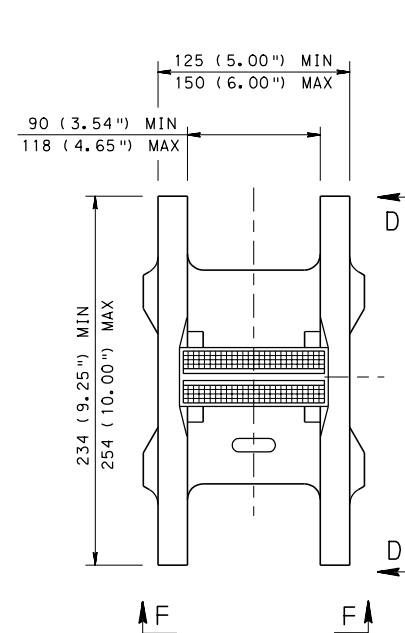
- TWO-WAY MARKER WITH WHITE/BLANK REFLECTOR
- TWO-WAY MARKER WITH YELLOW/YELLOW REFLECTOR
- WHITE
- YELLOW
- - - BROKEN WHITE
- - - BROKEN YELLOW
- DIRECTION OF TRAVEL

NOTES:

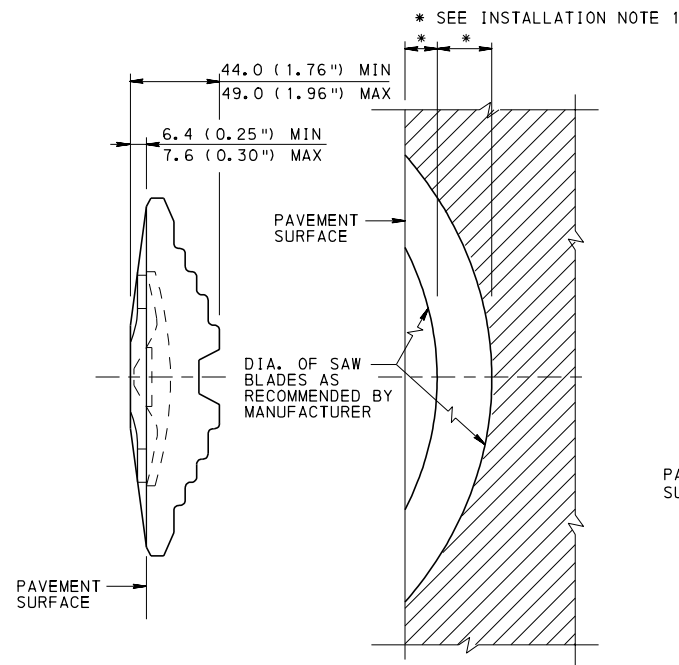
1. MARKERS INSTALLED AT THE DOUBLE YELLOW CENTER LINE SHALL BE PLACED BETWEEN THE TWO PAINTED LINES. MARKERS SHALL NOT BE PLACED WITHIN THE LIMITS OF THE PAINTED LINES EXCEPT WHERE LINES DEVIATE VISIBLY FROM THEIR CORRECT ALIGNMENT, AND THEN ONLY WITH THE APPROVAL OF THE ENGINEER.
2. PLACE MARKERS INSTALLED ALONG A LANE LINE (BROKEN LINE) MIDWAY BETWEEN THE PAINTED PORTION.
3. PLACE MARKERS ALONG AN EDGE OR CHANNELIZING LINE WITH THE NEAR EDGE OF THE MARKER CASTING 25 mm (1") MAXIMUM FROM THE NEAR EDGE OF THE PAINTED LINE.
4. SPACE MARKERS INSTALLED AT THE CENTERLINE AT 24 m (80') UNLESS OTHERWISE SHOWN ON THE DRAWINGS. (AT LOCATIONS IDENTIFIED AS FOG AREAS OR AREAS WITH A HIGH INCIDENCE OF HEAD-ON OR SIDESWIPE CRASHES, SPACE THE CENTERLINE MARKERS AT 12 m (40')).
5. 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

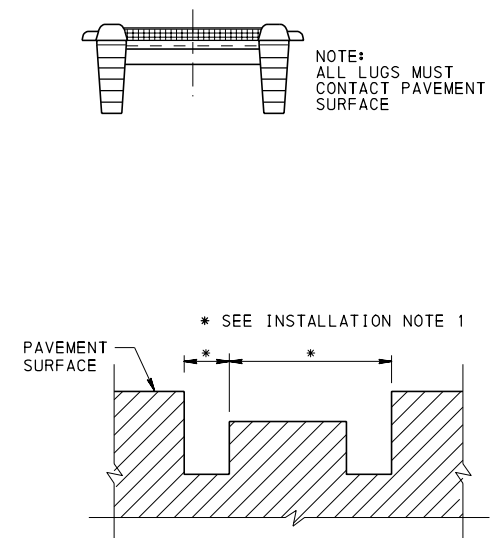
SNOWPLOWABLE RAISED
PAVEMENT MARKERS



PLAN VIEW
TWO-WAY



SECTION D-D

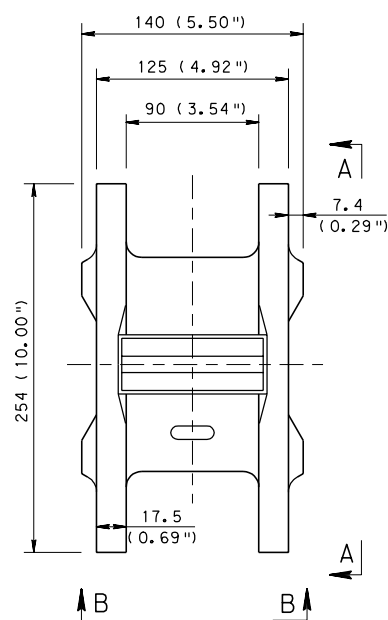


SECTION F-F

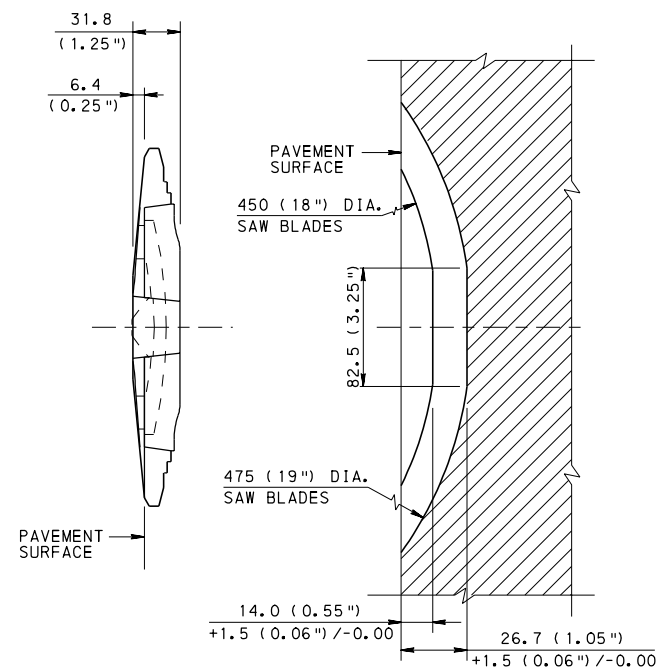
RAISED PAVEMENT MARKERS

INSTALLATION NOTES:

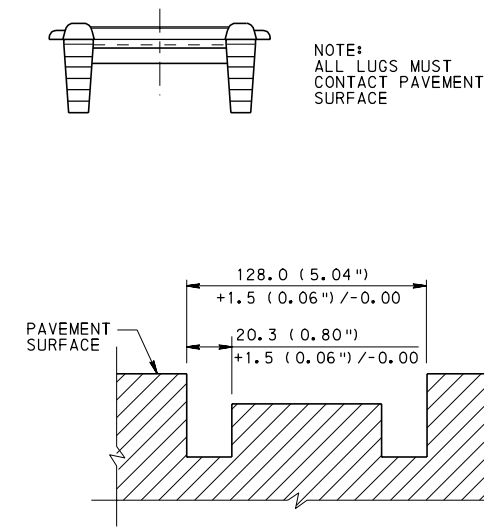
- SAW CUT TO DIMENSIONS RECOMMENDED BY MANUFACTURER.
- INSPECT SAW CUT FOR PROPER FIT OF THE MARKER.
 - PROVIDE APPROXIMATELY 3.2 mm (0.125") CLEARANCE (SIDE-TO-SIDE MOVEMENT) FOR THE CASTING WHEN INSERTED INTO THE CUT.
 - INSTALL MARKER WITH ALL LEVELING LUGS IN CONTACT WITH THE PAVEMENT.
 - INSURE THE LEADING EDGES OF THE CASTING LIE BELOW THE PAVEMENT SURFACE.
- SAW CUT AREAS TO BE DRY AND FREE OF MATERIAL THAT ADVERSELY AFFECTS THE ADHESIVE BOND.
- INSTALL THE MARKERS WITH TWO-COMPONENT EPOXY ADHESIVE THAT MEETS AASHTO STANDARD SPECIFICATION M237 AND CLASSIFIED AS TYPE IV. BY FIRST FILLING THE SAW CUT TO WITHIN APPROXIMATELY 10 mm (0.375") OF PAVEMENT SURFACE AND THEN PLACING THE MARKER BY HAND INTO THE EPOXY FILLED SAW CUT. AFTER PLACEMENT OF MARKER, MAKE THE EPOXY FLUSH OR SLIGHTLY BELOW PAVEMENT SURFACE. NO EPOXY SHOULD OBSCURE OR BLOCK THE LENS.



PLAN VIEW



SECTION A-A



SECTION B-B

BRIDGE DECK MARKER

NOTES:

- 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

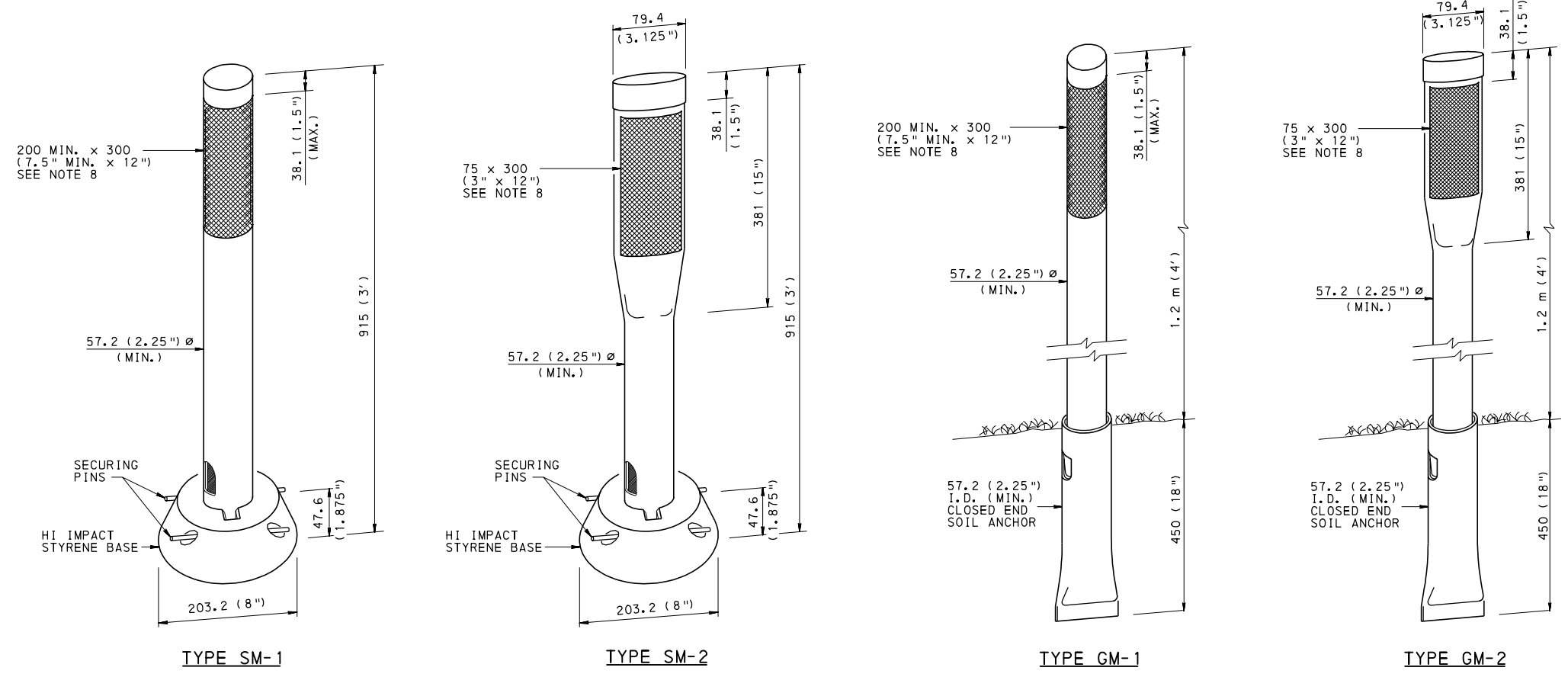
SNOWPLOWABLE RAISED
PAVEMENT MARKERS

RECOMMENDED JUN. 23, 2009
John P. Tunney
CHIEF, TRAFFIC ENGINEERING AND
OPERATIONS DIVISION

RECOMMENDED JUN. 23, 2009
Don C. Rowe
ACTING DIR. BUR. OF HIGHWAY
SAFETY AND TRAFFIC ENGINEERING

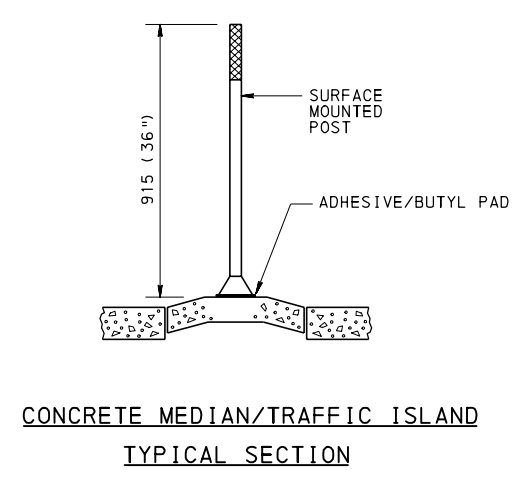
SHT. 4 OF 4

TC-8602

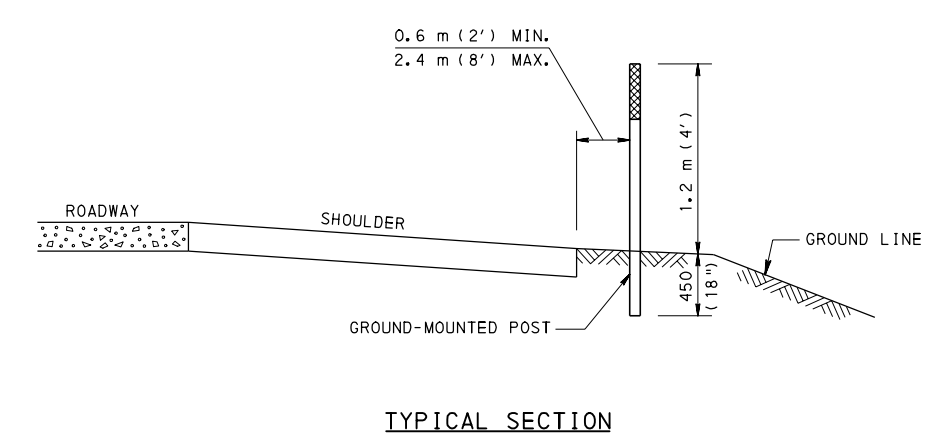


SURFACE-MOUNTED POSTS

GROUND-MOUNTED POSTS



**CONCRETE MEDIAN/TRAFFIC ISLAND
TYPICAL SECTION**



PLACEMENT

TYPICAL SECTION

NOTES:

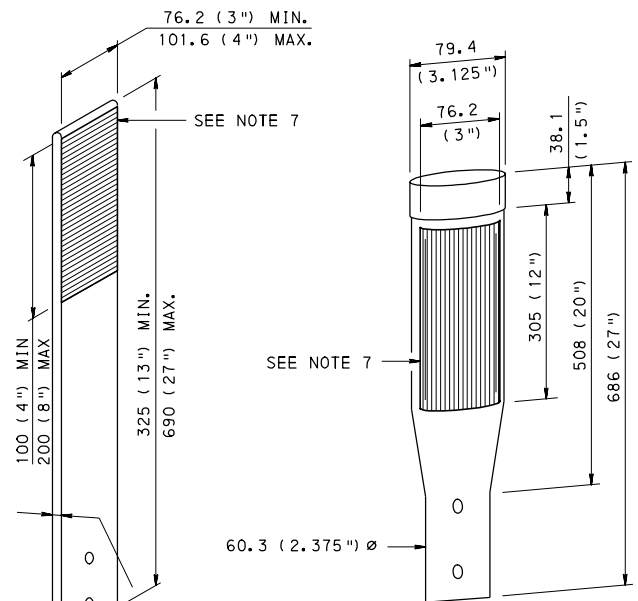
1. USE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PUBLICATION 408.
2. GALVANIZED METAL SOIL ANCHOR, AFTER FABRICATION, IN ACCORDANCE WITH ASTM A 123.
3. FOR GUIDE RAIL AND BARRIER DELINEATORS, SEE SHEET 2 OF 4.
4. FOR INTERCHANGE AREAS LOCATION DETAILS, SEE SHEET 3 OF 4.
5. FOR LOCATION/PLACEMENT NOTES, SEE SHEET 4 OF 4.
6. FOR DELINEATOR SPACING ON CURVES, SEE SHEET 3 OF 4.
7. USE TYPE SM-1 AND GM-1 POSTS IN AREAS WHERE TRAFFIC MOVEMENTS NEED MULTI-DIRECTION DELINEATION, SUCH AS ISLANDS, RADII AT INTERSECTIONS AND THE ENDS OF MEDIANS.
8. ASTM TYPE III, IV, V, VII, VIII, IX OR X RETRO-REFLECTIVE SHEETING.
9. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
10. 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**

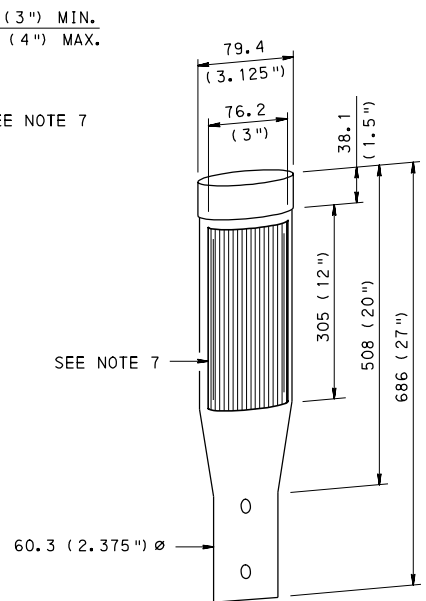
DELINEATION

FLEXIBLE POSTS DETAILS

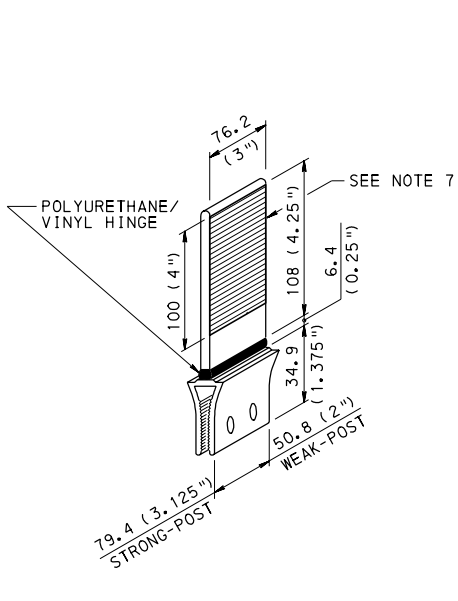
RECOMMENDED JUN. 23, 2009 <i>John P. Tompkins</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED JUN. 23, 2009 <i>Dee C. Rome</i> ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 1 OF 4 TC-8604
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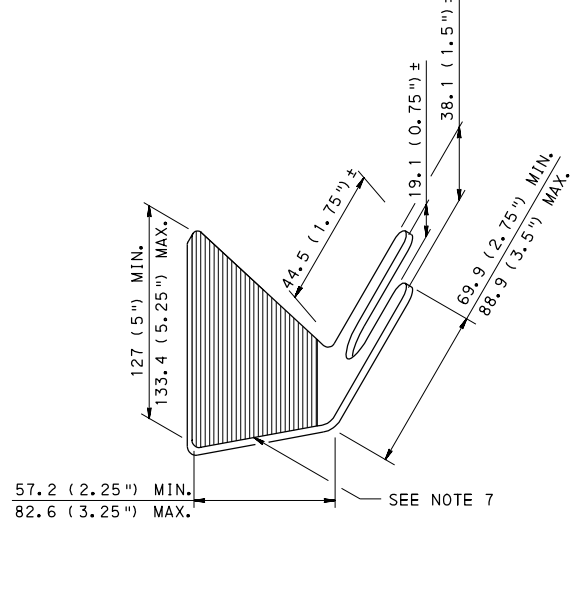
TYPE A



TYPE B



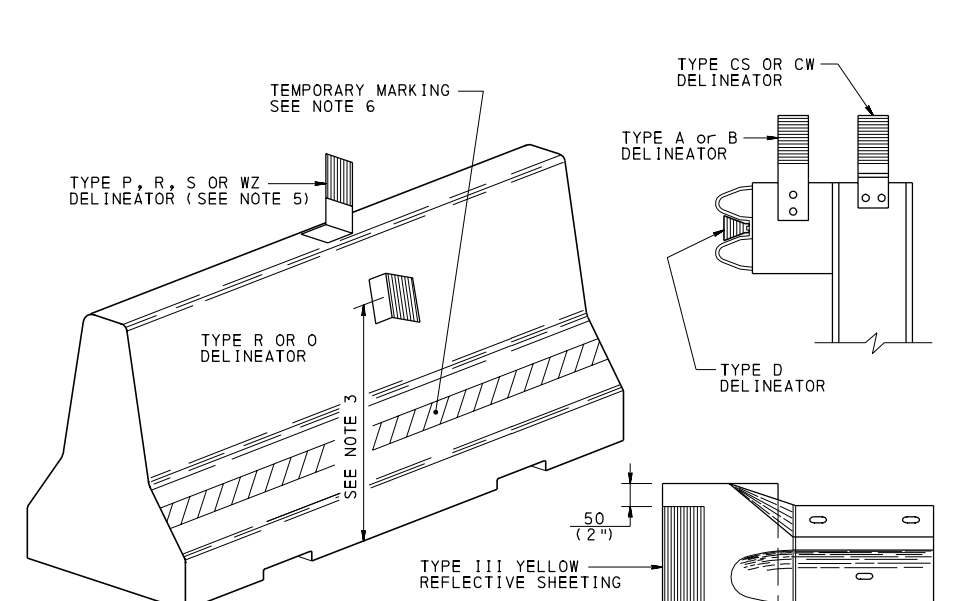
**TYPE CS-STRONG POST
TYPE CW-WEAK POST**



TYPE D

2.5 (.1") - 325 (13") MIN. TO 380 (15") MAX.
9.5 (.375") - 380 (15") TO 690 (27") MAX.

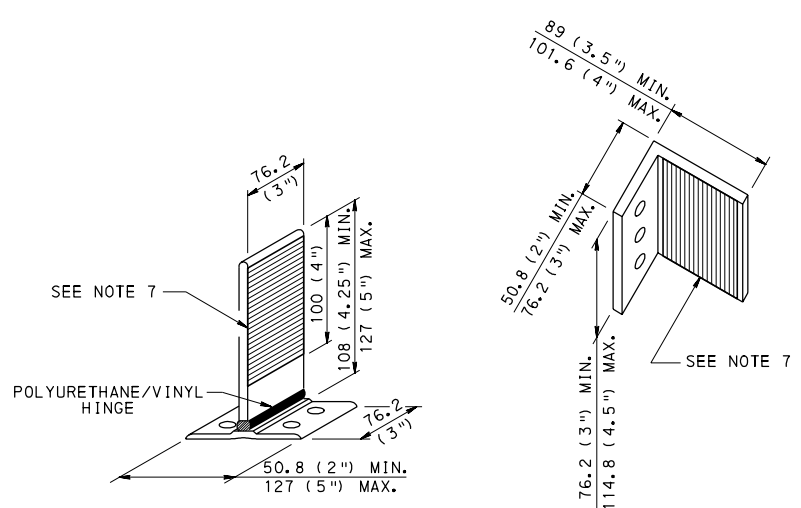
GUIDE-RAIL DELINEATORS



TERMINAL SECTION DETAIL

DELINEATOR PLACEMENT

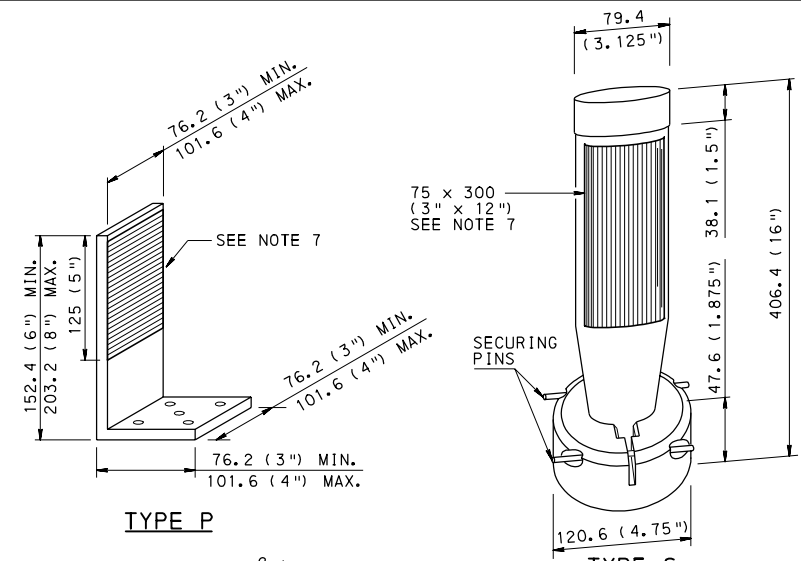
1. SEE PUB. 72M, RC-52M & RC-53M FOR GUIDE RAIL DETAILS.
2. SEE PUB. 72M, RC-57M FOR CONCRETE MEDIAN BARRIER DETAILS.



TYPE R

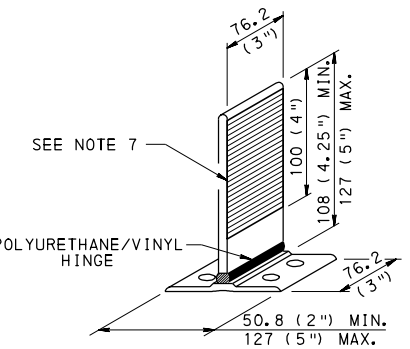
TYPE O

SIDE-MOUNT

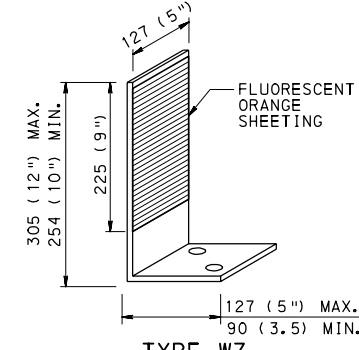


TYPE P

TYPE S



TYPE R



TYPE WZ

TOP-MOUNT

BARRIER DELINEATORS

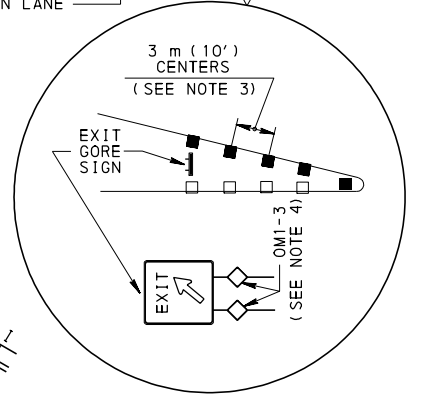
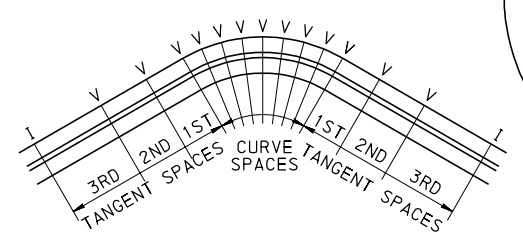
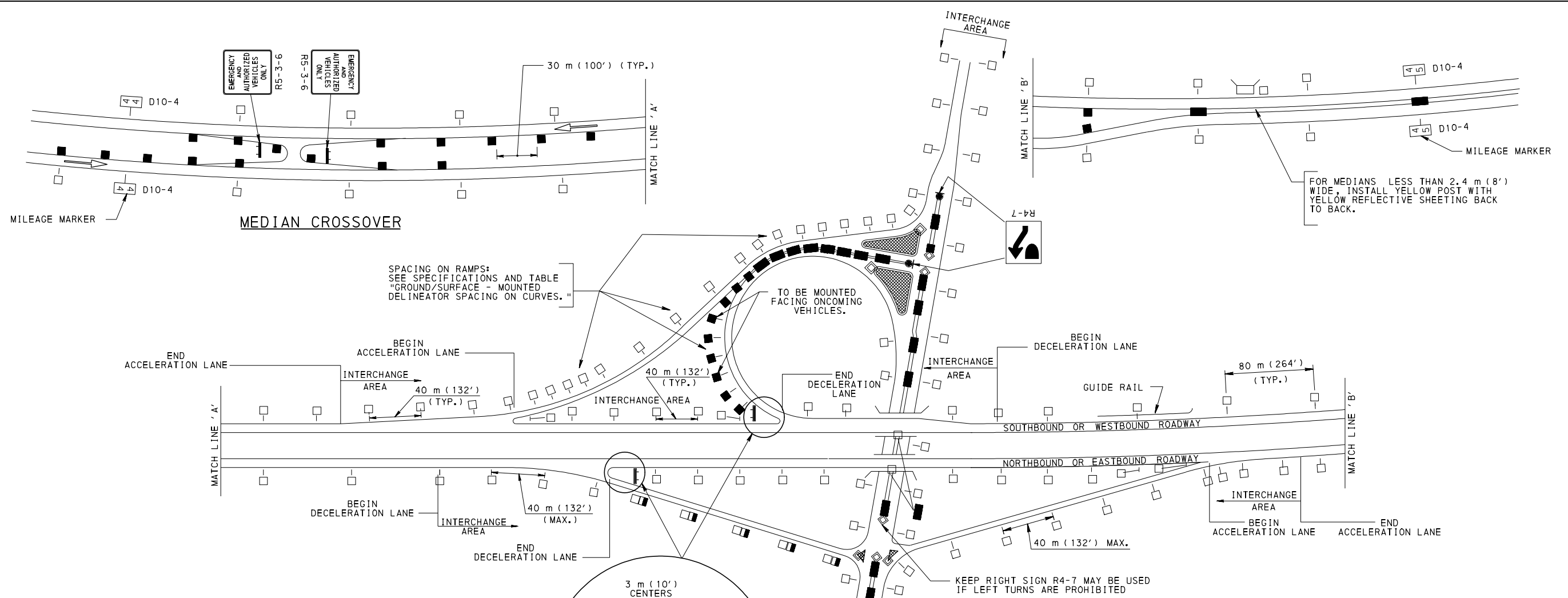
NOTES:

1. USE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PUBLICATION 408.
2. INSTALL DELINEATORS ON GUIDE RAIL AT 11.43 m (37.5') SPACING ON HORIZONTAL CURVES WITH A RADIUS LESS THAN OR EQUAL TO 305 m (1000') AND AT 22.86 m (75') SPACING ON HORIZONTAL CURVES WITH A RADIUS GREATER THAN 305 m (1000') AND TANGENTS. INSTALL 0.092 m (1 FT²) MINIMUM OF TYPE III YELLOW REFLECTIVE SHEETING ON TERMINAL SECTION END TREATMENTS.
3. SIDE-MOUNTED DELINEATORS TYPE "R" OR TYPE "O" SHALL BE LOCATED 660 mm (26") FROM THE PAVEMENT TO THE CENTER OF THE DELINEATOR. AN ADDITIONAL SIDE-MOUNTED DELINEATOR MAY BE LOCATED ON THE LOWER SLOPE OF THE BARRIER WHEN JUSTIFIED BY ENGINEERING JUDGEMENT.
4. MOUNT DELINEATORS ON THE TOP AND/OR SIDE OF BARRIERS OR BRIDGE PARAPETS AS SPECIFIED AT A MAXIMUM LONGITUDINAL SPACING OF 24 m (80') FOR TANGENT SECTIONS AND 12 m (40') FOR CURVE SECTIONS WITH A RADIUS LESS THAN 305 m (1,000').
5. IN WORK ZONES, INSTALL TYPE WZ DELINEATORS ON THE TOP OF ALL TEMPORARY BARRIERS THAT ARE ADJACENT TO TRAVEL LANES AT MAXIMUM 12 m (40') SPACING. USE FLUORESCENT ORANGE SHEETING. USE SHEETING ON BOTH SIDES OF DELINEATOR WHEN USED BETWEEN TRAFFIC TRAVELING IN OPPOSITE DIRECTIONS. TYPE WZ DELINEATORS MAY BE MADE OF ANY LIGHTWEIGHT MATERIALS THAT MAINTAIN A VERTICAL ORIENTATION (±10 DEGREES) AND DO NOT NEED TO BE OF AN APPROVED TYPE LISTED IN BULLETIN 15.
6. IN AN EFFORT TO MINIMIZE ERADICATION IN WORK ZONES, CONTINUOUS WHITE OR YELLOW 150 mm (6") WIDE PAVEMENT MARKINGS MAY BE INSTALLED AS SHOWN ON TEMPORARY BARRIER INSTEAD OF BEING PLACED ON THE ROAD SURFACE. THE LINE MAY BE ANY APPROVED PAINT OR PAVEMENT MARKING TAPE THAT SATISFIES THE MINIMUM RETROREFLECTIVITY REQUIREMENTS.
7. USE ASTM TYPE III, IV, V, VI, VII, VIII, IX OR X RETROREFLECTIVE SHEETING.
8. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
9. 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**

DELINEATION

**GUIDE RAIL AND
BARRIER DETAILS**



METRIC UNITS

RADIUS ON CURVE		SPACING ON CURVE	SPACING IN ADVANCE OF AND BEYOND CURVES		
MAX.	MIN.		FIRST SPACE	SECOND SPACE	THIRD SPACE
m		m	m	m	m
2100	1651	66	80	80	80
1650	1201	60			
1200	881	54			
880	741	48			
740	601	42			
600	471	36	60	54	72
470	351	30			
350	226	24			
225	101	18	36	36	54
100	51	12	24	36	54
50	30	6	12	24	48

ENGLISH UNITS

RADIUS ON CURVE		SPACING ON CURVE	SPACING IN ADVANCE OF AND BEYOND CURVES		
MAX.	MIN.		FIRST SPACE	SECOND SPACE	THIRD SPACE
FEET		FEET	FEET	FEET	FEET
7000	5501	220	264	264	264
5500	4001	200			
4000	2901	180			
2900	2451	160			
2450	2001	140			
2000	1551	120	200	180	240
1550	1151	100			
1150	751	80			
750	351	60	120	180	240
350	151	40	80	120	180
150	100	20	40	80	160

**GROUND/SURFACE-MOUNTED
DELINEATOR SPACING ON CURVES**

- LEGEND**
- WHITE POST AND SHEETING
 - YELLOW POST AND SHEETING
 - ▣ RED POST AND SHEETING
 - YELLOW POST WITH YELLOW SHEETING BACK TO BACK
 - WHITE POST AND SHEETING FACING TRAFFIC WITH RED SHEETING FACING WRONG-WAY MOVEMENT
 - ▣ DELINEATORS LOCATED AS DIRECTED BY THE ENGINEER
 - ◇ W16-1 OR YELLOW FLEXIBLE DELINEATOR POST (FOR NARROW MEDIANS)
 - ➔ DIRECTION OF TRAVEL

- NOTES:**
- INSTALL GROUND/SURFACE-MOUNTED DELINEATORS IN ADVANCE OF POINT WHERE TANGENT MEETS SPIRAL OR POINT OF CURVATURE AND BEYOND POINT WHERE SPIRAL MEETS TANGENT OR POINT OF TANGENCY. SPACE SHOWN IN TABLE, BEGINNING AT MID-POINT OF CURVE.
 - INSTALL GUIDE RAIL AND BARRIER MOUNT DELINEATORS AS INDICATED ON SHEET 2 OF 4.
 - IN GORE AREAS, MAKE THE COLOR OF THE DELINEATORS THE SAME, AS THE ADJACENT EDGE LINE AND RAISED PAVEMENT MARKERS.
 - INSTALL ONLY ONE OMI-3 SIGN ON EACH POST OF GORE EXIT SIGN.
 - 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**

DELINEATION

**LOCATION DETAILS
INTERCHANGE AREAS**

RECOMMENDED JUN. 23, 2009 <i>John P. Tompkins</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED JUN. 23, 2009 <i>Dee C. Rowe</i> ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 3 OF 4 TC-8604
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1. LOCATION:

- A. LIGHTED THROUGH ROADWAYS - DO NOT PLACE DELINEATORS ON THE THROUGH ROADWAY BETWEEN INTERCHANGES WHERE FIXED SOURCE LIGHTING IS INSTALLED UNLESS OTHERWISE SPECIFIED.
- B. UNLIGHTED THROUGH ROADWAYS - ON ROADWAYS WITHOUT FIXED SOURCE LIGHTING, CONTINUOUSLY PLACE DELINEATORS ALONG THE RIGHT SIDE OF THE THROUGH ROADWAYS. PLACE DELINEATORS ON THE LEFT SIDE OF THROUGH ROADWAYS AT THE FOLLOWING LOCATIONS:
 - I. WHERE GUIDE RAIL OR CONCRETE BARRIER IS LOCATED ON THE LEFT WITHIN 1.8 m (6') OF THE EDGE OF SHOULDER.
 - II. ALONG RIGHT-HAND HORIZONTAL CURVES WITH A RADIUS OF 600 m (2000') OR LESS.
 - III. ALONG COMBINATIONS OF OVER-VERTICALS AND RIGHT-HAND HORIZONTAL CURVES WITH A RADIUS LESS THAN 880 m (2900').
 - IV. ON THE APPROACH AND THROUGHOUT LEFT LANE DROPS OR PAVEMENT WIDTH TRANSITIONS.
 - V. WITHIN THE LIMITS OF MEDIAN CROSSOVERS (AS SHOWN ON SHEET 3 OF 4).
 - VI. WITHIN THE LIMITS OF VARIABLE MEDIAN WIDTHS (AS SHOWN ON SHEET 3 OF 4).
 - VII. ALONG PAVED MEDIANS WITH CURBING.
- C. INTERCHANGE AREAS - PLACE DELINEATORS ALONG THE RIGHT SIDE IN ALL INTERCHANGE AREAS AND ALONG THE LEFT SIDE WITHIN THE LIMITS OF ALL LEFT-HAND RAMPS. PLACE DELINEATORS ALONG ACCELERATION, DECELERATION AND SPEED CHANGE LANES; ALONG THE RIGHT SIDE OF THE THROUGH ROADWAY AND ALONG THE OUTSIDE OR BOTH SIDES AS SPECIFIED ON ALL RAMPS.
- D. BRIDGE PARAPETS - PLACE DELINEATORS ON PARAPETS OF ALL BRIDGES WHERE RPMs ARE USED ON APPROACH ROADWAY.
- E. SPECIAL PURPOSE DELINEATION - PLACE OBJECT AND CLEARANCE MARKER GROUP (W16 SERIES) ALONG THE THROUGH ROADWAY AND WITHIN THE INTERCHANGE AREA AS SPECIFIED IN ADDITION TO THE ABOVE SPECIFIED DELINEATORS.
- F. MAINTENANCE MARKERS - PLACE ONE RED FLEXIBLE DELINEATOR POST ADJACENT TO NEAR EDGE OF MAINTENANCE APPURTENANCE (END PIPE, END WALL, INLET, ETC...). MATCH REFLECTIVE SHEETING COLOR WITH THE NEAREST PAVEMENT MARKING EDGE LINE COLOR.

2. LONGITUDINAL SPACING:

- A. RIGHT SIDE OF THROUGH ROADWAYS - INSTALL DELINEATORS AT 80 m (264') EXCEPT IN INTERCHANGE AREAS WITH RIGHT-HAND RAMPS, ACCELERATION OR DECELERATION LANES AND ALONG HORIZONTAL CURVES.
- B. LEFT SIDE OF THROUGH ROADWAYS - WHEN REQUIRED, INSTALL DELINEATORS AT 80 m (264') EXCEPT IN INTERCHANGE AREAS WITH LEFT-HAND RAMPS, ACCELERATION OR DECELERATION LANES, ON MEDIAN BARRIERS AND ALONG HORIZONTAL CURVES.
- C. INTERCHANGE AREAS - SPACE DELINEATORS IN INTERCHANGE AREA AT 40 m (132').
- D. HORIZONTAL CURVES - SPACE DELINEATORS AS INDICATED IN THE TABLE "GROUND/SURFACE-MOUNTED DELINEATOR SPACING ON CURVES," SEE SHEET 3 OF 4.
- E. EXIT GORES, CHANNELIZING ISLANDS AND RAMP TERMINALS - THE DESIGN VARIES SUFFICIENTLY AT THESE LOCATIONS MAKING TYPICAL SPACING UNAVAILABLE FOR EVERY SITUATION. DETERMINE DELINEATOR SPACING AND APPLICATION ON SITE AND AS DIRECTED BY THE ENGINEER. HOWEVER, USE A MINIMUM SPACING OF 6 m (20') EXCEPT AS INDICATED.
- F. SPECIAL PURPOSE DELINEATION - PLACE SPECIAL PURPOSE DELINEATION (W16 SERIES) ALONG THE ROADWAY WITHOUT REGARD TO LONGITUDINAL SPACING. SPACE DELINEATION ON MEDIAN BARRIERS IN ACCORDANCE WITH NOTE 4 ON SHEET 2 OF 4.
- G. MEDIAN CROSSOVERS - PLACE DELINEATORS AT 30 m (100') SPACING AS INDICATED ON SHEET 3 OF 4 WITH A MINIMUM OF FIVE DELINEATORS ON THE APPROACH TO THE CROSSOVER AND THREE DELINEATORS BEYOND THE CROSSOVER.
- H. MAINTENANCE MARKERS - PLACE MAINTENANCE MARKERS ALONG THE ROADWAY WITHOUT REGARD TO LONGITUDINAL SPACING.

3. VERTICAL PLACEMENT:

INSTALL DELINEATORS THAT THE TOPS ARE APPROXIMATELY 1.2 m (4') ABOVE THE GROUND. INSTALL ON CONCRETE BARRIERS OR GUIDE RAIL AS INDICATED ON SHEET 2 OF 4.

4. LATERAL PLACEMENT:

- A. NO GUIDE RAIL - INSTALL DELINEATORS 0.6 m (2') TO 2.4 m (8') BEHIND THE OUTER EDGE OF THE SHOULDER, OR AS DIRECTED.
- B. GUIDE RAIL - INSTALL DELINEATORS IN THE WEB OF GUIDE RAIL OR ON GUIDE RAIL POSTS, AS INDICATED ON SHEET 2 OF 4, IF THE GUIDE RAIL IS LESS THAN 2.4 m (8') FROM THE OUTER EDGE OF SHOULDER. DO NOT USE GROUND-MOUNTED DELINEATORS IN AREAS WITH GUIDE RAIL. IF THE GUIDE RAIL IS MORE THAN 2.4 m (8') FROM THE OUTER EDGE OF THE SHOULDER, INSTALL DELINEATORS AS SPECIFIED IN NOTE 4.A.
- C. CURB IN PLACE - INSTALL DELINEATORS IMMEDIATELY BEHIND CURB PROVIDED PLACEMENT WILL NOT EXCEED 2.4 m (8') BEHIND THE EDGE OF SHOULDER. IF THE CURB IS MORE THAN 2.4 m (8') FROM THE EDGE OF SHOULDER, INSTALL DELINEATORS AS SPECIFIED IN NOTE 4.A.
- D. OBSTRUCTION MARKERS - INSTALL OBSTRUCTION MARKER DELINEATORS ADJACENT TO NEAR EDGE OF THE OBSTRUCTION.
- E. MAINTENANCE MARKERS - INSTALL MARKERS ADJACENT TO NEAR EDGE OF THE APPURTENANCE (END PIPE, END WALL, INLET, ETC...).

5. TYPES OF DELINEATOR:

- A. WHITE DELINEATORS - PLACE ON RIGHT SIDE OF THROUGH ROADWAYS, ALONG RIGHT-HAND ACCELERATION, DECELERATION AND SPEED-CHANGE LANES, RAMPS AND ON CHANNELIZING OR DIVISIONAL ISLANDS WHERE TRAFFIC IN THE SAME DIRECTION MAY PROCEED ON BOTH SIDES OF THE ISLAND.
- B. YELLOW DELINEATORS - PLACE ON LEFT SIDE OF THROUGH ROADWAYS, RAMPS AND ON CHANNELIZING OR DIVISIONAL ISLANDS WHERE TRAFFIC IN THE SAME DIRECTION TRAVELS TO THE RIGHT OF THE ISLAND AND ALONG LEFT-HAND ACCELERATION, DECELERATION AND SPEED CHANGE LANES AND ON FAR SIDE OF MEDIAN CROSSOVERS. ALSO AT EDGE OF OBSTRUCTIONS ADJACENT TO THE ROADWAY AND AT POINT WHERE GUIDE RAIL BECOMES TANGENT TO THE ROADWAY.
- C. RED DELINEATORS - PLACE ON RIGHT, LEFT, OR BOTH SIDES OF ROADWAYS OR RAMPS TO INDICATE WRONG-WAY MOVEMENT. ALSO PLACE ON BOTH SIDES OF RUN-AWAY TRUCK ESCAPE RAMPS.
- D. SPECIAL PURPOSE DELINEATOR (W16-1) MARKERS - PLACE MARKERS AT LOCATIONS SHOWN ON SHEET 3 OF 4.
- E. MAINTENANCE MARKERS - PLACE RED POST WITH WHITE REFLECTIVE SHEETING ON RIGHT SIDE OF THROUGH HIGHWAY. PLACE RED POST WITH YELLOW REFLECTIVE SHEETING ON LEFT SIDE OF THROUGH HIGHWAY.

NOTES:

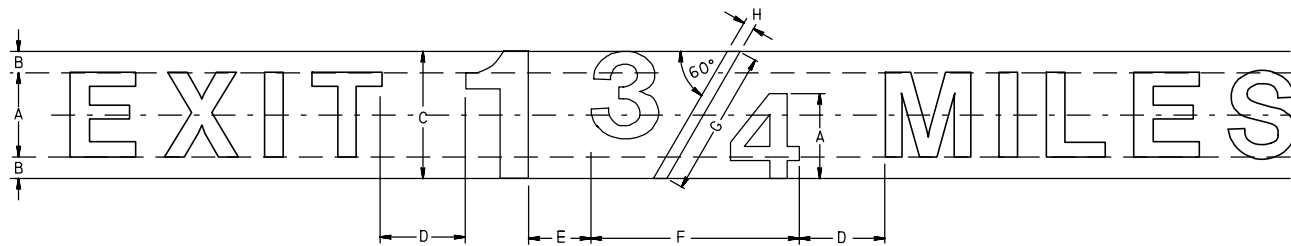
- 1. MAINTENANCE MARKERS ARE RED FLEXIBLE DELINEATOR POSTS INSTALLED TO CALL OUT THE LOCATION OF END PIPES, END WALLS, INLETS, ETC... FOR MAINTENANCE PURPOSES ONLY. ANY MAINTENANCE APPURTENANCE WITHIN OR ADJACENT TO THE ROADWAY THAT IS DEEMED A HAZARD SHOULD BE REMOVED, MODIFIED OR DELINEATED AS SUCH.
- 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

DELINEATION AND MARKERS

LOCATION / PLACEMENT NOTES

RECOMMENDED JUN. 23, 2009 <i>John P. Tompkins</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED JUN. 23, 2009 <i>Del C. Rome</i> ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 4 OF 4 TC-8604
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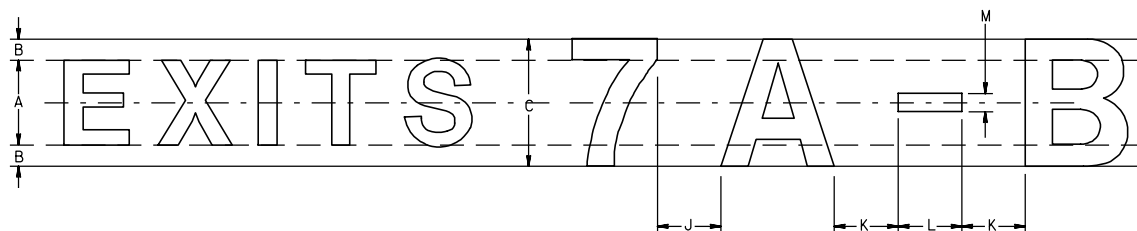
SIZE OF THE FRACTION RECTANGLE IS DETERMINED AS FOLLOWS:

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

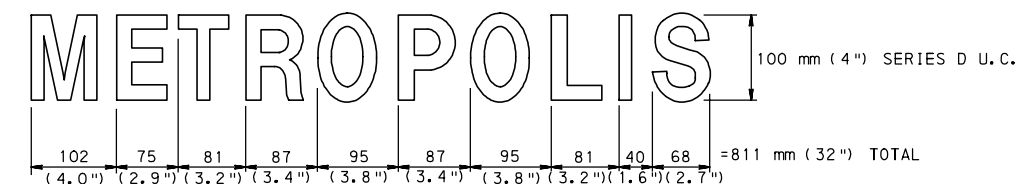
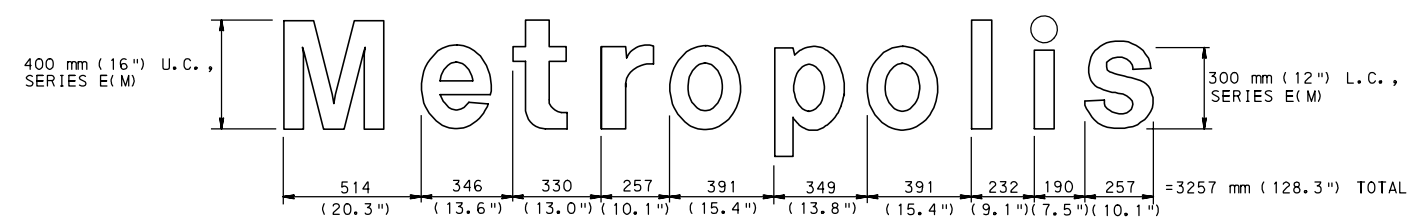
SIZE AND SPACING OF DASHES

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 JUN. 23, 2009 <i>John P. Tompkins</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED JUN. 23, 2009 <i>Dee C. Rome</i> CHIEF HIGHWAY ENGINEER	SHT. 1 OF 18 TC-8700C
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250 330		330 mm UPPER CASE to 250 mm lower case																									
		213	216	219	216	64	213	64	359	216	165	140	333	117	213	168	254	273	264	219							
a	c	d	e	g	o	q	b	h	i	k	l	m	n	p	r	u	f	w	j	s	t	v	y	x	z		
338 A																											
270 B																											
270 C																											
270 D																											
248 E																											
248 F																											
270 G																											
270 H																											
66 I																											
253 J																											
275 K																											
248 L																											
312 M																											
270 N																											
280 O																											
270 P																											
280 Q																											
270 R																											
270 S																											
248 T																											
270 U																											
307 V																											
355 W																											
292 X																											
338 Y																											
270 Z																											

200 265		265 mm UPPER CASE to 200 mm lower case																									
		171	178	171	51	171	51	286	171	133	171	111	270	95	171	136	203	219	210	178							
a	c	d	e	g	o	q	b	h	i	k	l	m	n	p	r	u	f	w	j	s	t	v	y	x	z		
271 A																											
216 B																											
216 C																											
216 D																											
199 E																											
199 F																											
216 G																											
216 H																											
53 I																											
203 J																											
220 K																											
199 L																											
249 M																											
216 N																											
224 O																											
216 P																											
224 Q																											
216 R																											
216 S																											
199 T																											
216 U																											
245 V																											
284 W																											
233 X																											
271 Y																											
216 Z																											

150 200		200 mm UPPER CASE to 150 mm lower case																									
		129	130	134	130	38	129	38	215	130	99	130	83	200	72	129	102	151	164	157	134						
a	c	d	e	g	o	q	b	h	i	k	l	m	n	p	r	u	f	w	j	s	t	v	y	x	z		
203 A																											
162 B																											
162 C																											
162 D																											
149 E																											
149 F																											
162 G																											
162 H																											
40 I																											
152 J																											
165 K																											
149 L																											
187 M																											
162 N																											
168 O																											
162 P																											
168 Q																											
162 R																											
162 S																											
149 T																											
162 U																											
184 V																											
213 W																											
175 X																											
203 Y																											
162 Z																											

250		250 mm lower case to 250 mm lower case																									
		213	216	219	216	64	213	64	359	216	165	140	333	117	213	168	254	273	264	219							
a	c	d	e	g	o	q	b	h	i	k	l	m	n	p	r	u	f	w	j	s	t	v	y	x	z		
213 a																											
216 b																											
213 c																											
216 d																											
216 e																											
140 f																											
216 g																											
216 h																											
64 i																											
117 j																											
213 k																											

450		450 mm UPPER CASE to 450 mm UPPER CASE																																		
		383	286	279	342	401	385	308	279	308	72	315	279	353	308	322	308																			
		A	J	T	V	W	Y	B	D	E	F	H	I	K	L	M	N	P	R	U	C	G	O	Q	S	X	Z									
383	A																										469									
308	B																										416									
308	C																										394									
308	D																										394									
279	E																										365									
279	F																										365									
308	G																										394									
308	H																										416									
72	I																										180									
286	J																										394									
315	K																										401									
279	L																										365									
353	M																										461									
308	N																										416									
322	O																										408									
308	P																										394									
322	Q																										408									
308	R																										394									
308	S																										394									
279	T																										365									
308	U																										416									
342	V																										428									
401	W																										487									
308	X																										394									
385	Y																										471									
308	Z																										394									

450		450 mm DIGIT to 450 mm DIGIT																													
		322	308						110	308	335	308																			
		0	2	3	6	8	9	1	5	4	7																				
322	0											408															430	408			
110	1											218															218	196			
308	2											394															416	394			
308	3											394															416	394			
335	4											421														421	364				
308	5											394														416	394				
308	6											394														416	394				
308	7											394														394	337				
308	8											394														416	394				
308	9											394														416	394				

150		150 mm UPPER CASE to 150 mm UPPER CASE																																		
		128	95	93	114	133	128	102	93	102	24	105	93	118	102	107	102																			
		A	J	T	V	W	Y	B	D	E	F	H	I	K	L	M	N	P	R	U	C	G	O	Q	S	X	Z									
128	A																										138									
102	B																										130									
102	C																										130									
102	D																										130									
93	E																										121									
93	F																										121									
102	G																										130									
102	H																										138									
24	I																										60									
95	J																										131									
105	K																										133									
93	L																										121									
118	M																										154									
102	N																										138									
107	O																										143									
102	P																										130									
107	Q																										143									
102	R																										130									
102	S																										130									
93	T																										121									
102	U																										138									
114	V																										142									
133	W																										161									
102	X																										130									
128	Y																										156									
102	Z																										130									

150		150 mm DIGIT to 150 mm DIGIT																													
		107	102						37	102	112	102																			
		0	2	3	6	8	9	1	5	4	7																				
107	0											135															143	135			
37	1											73															73	65			
102	2											130															138	130			
102	3											130															138	130			
112	4											140														140	122				
102	5											130														138	130				
102	6											130														138	130				
102	7											130														130	112				
102	8											130														138	130				
102	9											130														138	130				

300		300 mm UPPER CASE to 300 mm UPPER CASE																																		
		255	190	186	229	267	257	205	186	205	48	210	186	236	205	214	205																			
		A	J	T	V	W	Y	B	D	E	F	H	I	K	L	M	N	P	R	U	C	G	O	Q	S	X	Z									
255	A																										312									
205	B																										276									
205	C																										262									
205	D																										262									
186	E																										243									
186	F																										243									
205	G																										262									
205	H																										276									
48	I																										119									
190	J																										261									
210	K																										267									
186	L																																			

15 20		20" UPPER CASE to 15" lower case																									
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
18.8	A	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	30.0	30.4	30.8	31.2	31.6	32.0	32.4	32.8	33.2
15.2	B	20.8	21.2	21.6	22.0	22.4	22.8	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	30.0	30.4	30.8
16.4	C	21.2	21.6	22.0	22.4	22.8	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	30.0	30.4	30.8	31.2
16.2	D	22.0	22.4	22.8	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	30.0	30.4	30.8	31.2	31.6	32.0
12.8	E	18.2	18.6	19.0	19.4	19.8	20.2	20.6	21.0	21.4	21.8	22.2	22.6	23.0	23.4	23.8	24.2	24.6	25.0	25.4	25.8	26.2	26.6	27.0	27.4	27.8	28.2
12.2	F	17.4	17.8	18.2	18.6	19.0	19.4	19.8	20.2	20.6	21.0	21.4	21.8	22.2	22.6	23.0	23.4	23.8	24.2	24.6	25.0	25.4	25.8	26.2	26.6	27.0	27.4
17.4	G	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	30.0	30.4	30.8	31.2	31.6	32.0	32.4	32.8	33.2
15.4	H	22.0	22.4	22.8	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	30.0	30.4	30.8	31.2	31.6	32.0
4.0	I	10.6	11.0	11.4	11.8	12.2	12.6	13.0	13.4	13.8	14.2	14.6	15.0	15.4	15.8	16.2	16.6	17.0	17.4	17.8	18.2	18.6	19.0	19.4	19.8	20.2	20.6
11.2	J	17.8	18.2	18.6	19.0	19.4	19.8	20.2	20.6	21.0	21.4	21.8	22.2	22.6	23.0	23.4	23.8	24.2	24.6	25.0	25.4	25.8	26.2	26.6	27.0	27.4	27.8
15.6	K	20.0	20.4	20.8	21.2	21.6	22.0	22.4	22.8	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	30.0
11.8	L	16.8	17.2	17.6	18.0	18.4	18.8	19.2	19.6	20.0	20.4	20.8	21.2	21.6	22.0	22.4	22.8	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8
18.4	M	25.0	25.4	25.8	26.2	26.6	27.0	27.4	27.8	28.2	28.6	29.0	29.4	29.8	30.2	30.6	31.0	31.4	31.8	32.2	32.6	33.0	33.4	33.8	34.2	34.6	35.0
16.6	N	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	30.0	30.4	30.8	31.2	31.6	32.0	32.4	32.8	33.2
18.6	O	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	30.0	30.4	30.8	31.2	31.6	32.0	32.4	32.8	33.2	33.6	34.0	34.4
14.6	P	19.6	20.0	20.4	20.8	21.2	21.6	22.0	22.4	22.8	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6
18.6	Q	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	30.0	30.4	30.8	31.2	31.6	32.0	32.4	32.8	33.2	33.6	34.0	34.4
15.0	R	20.6	21.0	21.4	21.8	22.2	22.6	23.0	23.4	23.8	24.2	24.6	25.0	25.4	25.8	26.2	26.6	27.0	27.4	27.8	28.2	28.6	29.0	29.4	29.8	30.2	30.6
14.4	S	19.6	20.0	20.4	20.8	21.2	21.6	22.0	22.4	22.8	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6
14.4	T	19.0	19.4	19.8	20.2	20.6	21.0	21.4	21.8	22.2	22.6	23.0	23.4	23.8	24.2	24.6	25.0	25.4	25.8	26.2	26.6	27.0	27.4	27.8	28.2	28.6	29.0
15.6	U	22.2	22.6	23.0	23.4	23.8	24.2	24.6	25.0	25.4	25.8	26.2	26.6	27.0	27.4	27.8	28.2	28.6	29.0	29.4	29.8	30.2	30.6	31.0	31.4	31.8	32.2
17.0	V	21.4	21.8	22.2	22.6	23.0	23.4	23.8	24.2	24.6	25.0	25.4	25.8	26.2	26.6	27.0	27.4	27.8	28.2	28.6	29.0	29.4	29.8	30.2	30.6	31.0	31.4
26.6	W	31.2	31.6	32.0	32.4	32.8	33.2	33.6	34.0	34.4	34.8	35.2	35.6	36.0	36.4	36.8	37.2	37.6	38.0	38.4	38.8	39.2	39.6	40.0	40.4	40.8	41.2
17.2	X	21.4	21.8	22.2	22.6	23.0	23.4	23.8	24.2	24.6	25.0	25.4	25.8	26.2	26.6	27.0	27.4	27.8	28.2	28.6	29.0	29.4	29.8	30.2	30.6	31.0	31.4
17.6	Y	21.6	22.0	22.4	22.8	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	30.0	30.4	30.8	31.2	31.6
14.4	Z	19.6	20.0	20.4	20.8	21.2	21.6	22.0	22.4	22.8	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6

12 16		16" UPPER CASE to 12" lower case																									
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
15.0	A	18.6	18.9	19.2	19.5	19.8	20.1	20.4	20.7	21.0	21.3	21.6	21.9	22.2	22.5	22.8	23.1	23.4	23.7	24.0	24.3	24.6	24.9	25.2	25.5	25.8	26.1
12.2	B	16.6	17.0	17.3	17.6	17.9	18.2	18.5	18.8	19.1	19.4	19.7	20.0	20.3	20.6	20.9	21.2	21.5	21.8	22.1	22.4	22.7	23.0	23.3	23.6	23.9	24.2
13.1	C	17.0	17.3	17.6	17.9	18.2	18.5	18.8	19.1	19.4	19.7	20.0	20.3	20.6	20.9	21.2	21.5	21.8	22.1	22.4	22.7	23.0	23.3	23.6	23.9	24.2	24.5
13.0	D	17.6	17.9	18.2	18.5	18.8	19.1	19.4	19.7	20.0	20.3	20.6	20.9	21.2	21.5	21.8	22.1	22.4	22.7	23.0	23.3	23.6	23.9	24.2	24.5	24.8	25.1
10.2	E	14.6	14.9	15.2	15.5	15.8	16.1	16.4	16.7	17.0	17.3	17.6	17.9	18.2	18.5	18.8	19.1	19.4	19.7	20.0	20.3	20.6	20.9	21.2	21.5	21.8	22.1
9.8	F	13.9	14.2	14.6	14.9	15.2	15.5	15.8	16.1	16.4	16.7	17.0	17.3	17.6	17.9	18.2	18.5	18.8	19.1	19.4	19.7	20.0	20.3	20.6	20.9	21.2	21.5
13.9	G	18.6	18.9	19.2	19.5	19.8	20.1	20.4	20.7	21.0	21.3	21.6	21.9	22.2	22.5	22.8	23.1	23.4	23.7	24.0	24.3	24.6	24.9	25.2	25.5	25.8	26.1
12.3	H	17.6	17.9	18.2	18.5	18.8	19.1	19.4	19.7	20.0	20.3	20.6	20.9	21.2	21.5	21.8	22.1	22.4	22.7	23.0	23.3	23.6	23.9	24.2	24.5	24.8	25.1
3.2	I	8.5	8.8	9.1	9.4	9.7	10.0	10.3	10.6	10.9	11.2	11.5	11.8	12.1	12.4	12.7	13.0	13.3	13.6	13.9	14.2	14.5	14.8	15.1	15.4	15.7	16.0
9.0	J	14.2	14.6	14.9	15.2	15.5	15.8	16.1	16.4	16.7	17.0	17.3	17.6	17.9	18.2	18.5	18.8	19.1	19.4	19.7	20.0	20.3	20.6	20.9	21.2	21.5	21.8
12.5	K	16.0	16.3	16.6	16.9	17.2	17.5	17.8	18.1	18.4	18.7	19.0	19.3	19.6	19.9	20.2	20.5	20.8	21.1	21.4	21.7	22.0	22.3	22.6	22.9	23.2	23.5
9.4	L	13.4	13.8	14.1	14.4	14.7	15.0	15.3	15.6	15.9	16.2	16.5	16.8	17.1	17.4	17.7	18.0	18.3	18.6	18.9	19.2	19.5	19.8	20.1	20.4	20.7	21.0
14.7	M	20.0	20.3	20.6	20.9	21.2	21.5	21.8	22.1	22.4	22.7	23.0	23.3	23.6	23.9	24.2	24.5	24.8	25.1	25.4	25.7	26.0	26.3	26.6	26.9	27.2	27.5
13.3	N	18.6	18.9	19.2	19.5	19.8	20.1	20.4	20.7	21.0	21.3	21.6	21.9	22.2	22.5	22.8	23.1	23.4	23.7	24.0	24.3	24.6	24.9	25.2	25.5	25.8	26.1
14.9	O	19.5	19.8	20.2	20.5	20.8	21.1	21.4	21.7	22.0	22.3	22.6	22.9	23.2	23.5	23.8	24.1	24.4	24.7	25.0	25.3	25.6	25.9	26.2	26.5	26.8	27.1
11.7	P	15.7	16.0	16.3	16.6	16.9	17.2	17.5	17.8	18.1	18.4	18.7	19.0	19.3	19.6	19.9	20.2	20.5	20.8	21.1	21.4	21.7	22.0	22.3	22.6	22.9	23.2
14.9	Q	19.5	19.8	20.2	20.5	20.8	21.1	21.4	21.7	22.0	22.3	22.6	22.9	23.2	23.5	23.8	24.1	24.4	24.7	25.0	25.3	25.6	25.9	26.2	26.5	26.8	27.1
12.0	R	16.5	16.8	17.1	17.4	17.7	18.0	18.3	18.6	18.9	19.2	19.5	19.8	20.1	20.4	20.7	21.0	21.3	21.6	21.9	22.2	22.5	22.8	23.1	23.4	23.7	24.0
11.5	S	15.7	16.0	16.3	16.6	16.9	17.2	17.5	17.8	18.1	18.4	18.7	19.0	19.3	19.6	19.9	20.2	20.5	20.8	21.1	21.4	21.7	22.0	22.3	22.6	22.9	23.2
11.5	T	15.2	15.5	15.8	16.1	16.4	16.7	17.0	17.3	17.6	17.9	18.2	18.5	18.8	19.1	19.4	19.7	20.0	20.3	20.6	20.9	21.2	21.5	21.8	22.1	22.4	22.7
12.5	U	17.8	18.1	18.4	18.7	19.0	19.3	19.6	19.9	20.2	20.5	20.8	21.1	21.4	21.7	22.0	22.3	22.6	22.9	23.2	23.5	23.8	24.1	24.4	24.7	25.0	25.3
13.6																											

15		15" lower case to 15" lower case																										
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	
14.8	a	20.0	20.4	20.4	20.8																							
14.4	b	20.0	20.4	20.4	20.8																							
13.6	c	18.2	18.6	18.6	19.0																							
14.6	d	21.0	21.4	21.4	21.8																							
14.8	e	20.4	20.8	20.8	21.2																							
9.6	f	14.2	14.6	14.6	15.0																							
14.6	g	21.0	21.4	21.4	21.8																							
13.8	h	20.2	20.6	20.6	21.0																							
4.6	i	10.6	11.0	11.0	11.4																							
8.8	j	14.8	15.2	15.2	15.6																							
14.2	k	18.2	18.6	18.6	19.0																							
6.4	l	11.2	11.6	11.6	12.0																							
22.6	m	29.0	29.4	29.4	29.8																							
13.8	n	20.2	20.6	20.6	21.0																							
15.4	o	21.0	21.4	21.4	21.8																							
14.6	p	20.2	20.6	20.6	21.0																							
16.0	q	21.0	21.4	21.4	21.8																							
9.2	r	13.8	14.2	14.2	14.6																							
12.8	s	18.0	18.4	18.4	18.8																							
9.8	t	14.6	15.0	15.0	15.4																							
13.6	u	20.0	20.4	20.4	20.8																							
15.2	v	19.2	19.6	19.6	20.0																							
23.2	w	27.4	27.8	27.8	28.2																							
15.4	x	19.2	19.6	19.6	20.0																							
15.6	y	19.6	20.0	20.0	20.4																							
12.2	z	17.2	17.6	17.6	18.0																							

12		12" lower case to 12" lower case																										
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	
11.8	a	16.0	16.3	16.3	16.6																							
11.5	b	16.0	16.3	16.3	16.6																							
10.9	c	14.6	14.9	14.9	15.2																							
11.7	d	16.8	17.1	17.1	17.4																							
11.8	e	16.3	16.6	16.6	17.0																							
7.7	f	11.4	11.7	11.7	12.0																							
11.7	g	16.8	17.1	17.1	17.4																							
11.0	h	16.2	16.5	16.5	16.8																							
3.7	i	8.5	8.8	8.8	9.1																							
7.0	j	11.8	12.2	12.2	12.5																							
11.4	k	14.6	14.9	14.9	15.2																							
5.1	l	9.0	9.3	9.3	9.6																							
18.1	m	23.2	23.5	23.5	23.8																							
11.0	n	16.2	16.5	16.5	16.8																							
12.3	o	16.8	17.1	17.1	17.4																							
12.7	p	16.2	16.5	16.5	16.8																							
12.8	q	16.8	17.1	17.1	17.4																							
7.4	r	11.0	11.4	11.4	11.7																							
10.2	s	14.4	14.7	14.7	15.0																							
7.8	t	11.7	12.0	12.0	12.3																							
10.9	u	16.0	16.3	16.3	16.6																							
12.2	v	15.4	15.7	15.7	16.0																							
18.6	w	21.9	22.2	22.2	22.6																							
12.3	x	15.4	15.7	15.7	16.0																							
12.5	y	15.7	16.0	16.0	16.3																							
9.8	z	13.8	14.1	14.1	14.4																							

10		10" lower case to 10" lower case																										
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	
9.8	a	13.3	13.6	13.6	13.8																							
9.6	b	13.3	13.6	13.6	13.8																							
9.0	c	12.1	12.4	12.4	12.6																							
9.7	d	14.0	14.2	14.2	14.5																							
9.8	e	13.6	13.8	13.8	14.1																							
6.4	f	9.4	9.7	9.7	10.0																							
9.7	g	14.0	14.2	14.2	14.5																							
9.2	h	13.4	13.7	13.7	14.0																							
3.1	i	7.0	7.3	7.3	7.6																							
5.9	j	9.8	10.1	10.1	10.4																							
9.4	k	12.1	12.4	12.4	12.6																							
4.3	l	7.4	7.7	7.7	8.0																							
15.0	m	19.3	19.6	19.6	19.8																							
9.2	n	13.4	13.7	13.7	14.0																							
10.2	o	14.0	14.2	14.2	14.5																							
9.7	p	13.4	13.7	13.7	14.0																							
10.6	q	14.0	14.2	14.2	14.5																							
6.1	r	9.2	9.4	9.4	9.7																							
8.5	s	12.0	12.2	12.2	12.5																							
6.5	t	9.7	10.0	10.0	10.2																							
9.0	u	13.3	13.6	13.6	13.8																							
10.1	v	12.8	13.0	13.0	13.3																							
15.4	w	18.2	18.5	18.5	18.8																							
10.2	x	12.8	13.0	13.0	13.3																							
10.4	y	13.0	13.3	13.3	13.6																							
8.1	z	11.4	11.7	11.7	12.0																							

8		8" lower case to 8" lower case																									
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z

15 20		20" UPPER CASE to 15" lower case																									
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
18.8	A	22.0	22.4	22.4	22.8	23.2	21.6	18.8	21.4	21.2	20.8	21.0	20.6	20.8	21.8												
15.2	B	19.6	20.0	20.4	20.4	20.8	19.2	16.4	19.0	18.8	18.4	18.6	18.2	18.4	19.4												
16.4	C	20.0	20.4	20.8	21.2	21.6	19.6	16.8	19.4	19.2	18.8	19.0	18.6	18.8	19.8												
16.2	D	20.8	21.2	21.6	22.0	22.4	20.4	17.6	20.2	20.0	19.6	19.8	19.4	19.6	20.6												
12.8	E	17.0	17.4	17.8	18.2	18.6	16.6	13.8	16.4	16.2	15.8	16.0	15.6	15.8	16.8												
12.2	F	16.2	16.6	17.0	17.4	17.8	15.8	13.0	15.6	15.4	15.0	15.2	14.8	15.0	16.0												
17.4	G	22.0	22.4	22.8	23.2	23.6	21.6	18.8	21.4	21.2	20.8	21.0	20.6	20.8	21.8												
15.4	H	21.4	21.8	22.2	22.6	23.0	21.0	18.2	20.8	20.6	20.2	20.4	20.0	20.2	21.2												
4.0	I	9.4	9.8	10.2	10.6	11.0	9.0	6.2	8.8	8.6	8.2	8.4	8.0	8.2	9.2												
11.2	J	16.6	17.0	17.4	17.8	18.2	16.2	13.4	16.0	15.8	15.4	15.6	15.2	15.4	16.4												
15.6	K	18.8	19.2	19.6	20.0	20.4	18.4	15.6	18.2	18.0	17.6	17.8	17.4	17.6	18.6												
11.8	L	15.6	16.0	16.4	16.8	17.2	15.2	12.4	15.0	14.8	14.4	14.6	14.2	14.4	15.4												
18.4	M	23.8	24.2	24.6	25.0	25.4	23.4	20.6	23.2	23.0	22.6	22.8	22.4	22.6	23.6												
16.6	N	22.0	22.4	22.8	23.2	23.6	21.6	18.8	21.4	21.2	20.8	21.0	20.6	20.8	21.8												
18.6	O	23.2	23.6	24.0	24.4	24.8	22.8	20.0	22.6	22.4	22.0	22.2	21.8	22.0	23.0												
14.6	P	18.4	18.8	19.2	19.6	20.0	18.0	15.2	17.8	17.6	17.2	17.4	17.0	17.2	18.2												
18.6	Q	23.2	23.6	24.0	24.4	24.8	22.8	20.0	22.6	22.4	22.0	22.2	21.8	22.0	23.0												
15.0	R	19.4	19.8	20.2	20.6	21.0	19.0	16.2	18.8	18.6	18.2	18.4	18.0	18.2	19.2												
14.4	S	18.4	18.8	19.2	19.6	20.0	18.0	15.2	17.8	17.6	17.2	17.4	17.0	17.2	18.2												
14.4	T	17.8	18.2	18.6	19.0	19.4	17.4	14.6	17.2	17.0	16.6	16.8	16.4	16.6	17.6												
15.6	U	21.0	21.4	21.8	22.2	22.6	20.6	17.8	20.4	20.2	19.8	20.0	19.6	19.8	20.8												
17.0	V	20.2	20.6	21.0	21.4	21.8	19.8	17.0	19.6	19.4	19.0	19.2	18.8	19.0	20.0												
26.6	W	30.0	30.4	30.8	31.2	31.6	29.6	26.8	29.4	29.2	28.8	29.0	28.6	28.8	29.8												
17.2	X	20.2	20.6	21.0	21.4	21.8	19.8	17.0	19.6	19.4	19.0	19.2	18.8	19.0	20.0												
17.6	Y	20.4	20.8	21.2	21.6	22.0	20.0	17.2	19.8	19.6	19.2	19.4	19.0	19.2	20.2												
14.4	Z	18.4	18.8	19.2	19.6	20.0	18.0	15.2	17.8	17.6	17.2	17.4	17.0	17.2	18.2												

12 16		16" UPPER CASE to 12" lower case																									
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
15.0	A	17.6	17.9	18.2	18.6	19.0	17.3	15.0	17.1	17.0	16.6	16.8	16.5	16.6	17.4												
12.2	B	15.7	16.0	16.3	16.6	17.0	15.4	13.1	15.2	15.0	14.7	14.9	14.6	14.7	15.5												
13.1	C	16.0	16.3	16.6	17.0	17.4	15.7	13.4	15.5	15.4	15.0	15.2	14.9	15.0	15.8												
13.0	D	16.6	17.0	17.3	17.7	18.1	16.3	14.1	16.2	16.0	15.7	15.8	15.5	15.7	16.5												
10.2	E	13.6	13.9	14.2	14.6	14.9	13.3	11.0	13.1	13.0	12.6	12.8	12.5	12.6	13.4												
9.8	F	13.0	13.3	13.6	13.9	14.2	12.6	10.4	12.5	12.3	12.0	12.2	11.8	12.0	12.8												
13.9	G	17.6	17.9	18.2	18.6	19.0	17.3	15.0	17.1	17.0	16.6	16.8	16.5	16.6	17.4												
12.3	H	17.1	17.4	17.8	18.1	18.5	16.8	14.6	16.6	16.5	16.2	16.3	16.0	16.2	17.0												
3.2	I	7.5	7.8	8.2	8.5	8.9	7.2	5.0	7.0	6.9	6.6	6.7	6.4	6.6	7.4												
9.0	J	13.3	13.6	13.9	14.2	14.6	13.0	10.7	12.8	12.6	12.3	12.5	12.2	12.3	13.1												
12.5	K	15.0	15.4	15.7	16.0	16.4	14.7	12.5	14.6	14.4	14.1	14.2	13.9	14.1	14.9												
9.4	L	12.5	12.8	13.1	13.4	13.8	12.2	9.9	12.0	11.8	11.5	11.7	11.4	11.5	12.3												
14.7	M	19.0	19.4	19.7	20.0	20.4	18.7	16.5	18.6	18.4	18.1	18.2	17.9	18.1	18.9												
13.3	N	17.6	17.9	18.2	18.6	19.0	17.3	15.0	17.1	17.0	16.6	16.8	16.5	16.6	17.4												
14.9	O	18.6	18.9	19.2	19.5	19.9	18.2	16.0	18.1	17.9	17.6	17.8	17.4	17.6	18.4												
11.7	P	14.7	15.0	15.4	15.7	16.1	14.4	12.2	14.2	14.1	13.8	13.9	13.6	13.8	14.6												
14.9	Q	18.6	18.9	19.2	19.5	19.9	18.2	16.0	18.1	17.9	17.6	17.8	17.4	17.6	18.4												
12.0	R	15.5	15.8	16.2	16.5	16.9	15.2	13.0	15.0	14.9	14.6	14.7	14.4	14.6	15.4												
11.5	S	14.7	15.0	15.4	15.7	16.1	14.4	12.2	14.2	14.1	13.8	13.9	13.6	13.8	14.6												
11.5	T	14.2	14.6	15.0	15.4	15.8	13.9	11.7	13.8	13.6	13.3	13.4	13.1	13.3	14.1												
12.5	U	16.8	17.1	17.4	17.8	18.1	16.5	14.2	16.3	16.2	15.8	16.0	15.7	15.8	16.6												
13.6	V	16.2	16.5	16.8	17.1	17.5	15.8	13.6	15.7	15.5	15.2	15.4	15.0	15.2	16.0												
21.3	W	24.0	24.3	24.6	25.0	25.4	23.7	21.4	23.5	23.4	23.0	23.2	22.9	23.0	23.8												
13.8	X	16.2	16.5	16.8	17.1	17.5	15.8	13.6	15.7	15.5	15.2	15.4	15.0	15.2	16.0												
14.1	Y	16.3	16.6	17.0	17.3	17.7	16.0	13.8	15.8	15.7	15.4	15.5	15.2	15.4	16.2												
11.5	Z	14.7	15.0	15.4	15.7	16.1	14.4	12.2	14.2	14.1	13.8	13.9	13.6	13.8	14.6												

10 13.3		13.3" UPPER CASE to 10" lower case																									
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
12.5	A	14.6	14.9	15.2	15.4	15.8	14.4	12.5	14.2	14.1	13.8	14.0	13.7	13.8	14.5												
10.1	B	13.0	13.3	13.6	13.8	14.1	12.8	10.9	12.6	12.5	12.2	12.4	12.1	12.2	12.9												
10.9	C	13.3	13.6	13.8	14.1	14.4	13.0	11.2	12.9	12.8	12.5	12.6	12.4	12.5	13.2												
10.8	D	13.8	14.1	14.4	14.6	14.9	13.6	11.7	13.4	13.3	13.0	13.2	12.9	13.0	13.7												
8.5	E	11.3	11.6	11.8	12.1	12.4	11.0	9.2	10.9	10.8	10.5	10.6	10.4	10.5	11.2												
8.1	F	10.8	11.0	11.3	11.6	11.9	10.5	8.6	10.4	10.2	10.0	10.1	9.8	10.0	10.6												
11.6	G	14.6	14.9	15.2	15.4	15.8	14.4	12.5	14.2	14.1	13.8	14.0	13.7	13.8	14.5												
10.2	H	14.2	14.5	14.8	15.0	15.4	14.0	12.1	13.8	13.7	13.4	13.6	13.3	13.4	14.1												
2.7	I	6.3	6.5	6.8	7.0	7.3	6.0	4.1	5.9	5.7	5.5	5.6	5.3	5.5	6.1												
7.4	J	11.0	11.3	11.6	11.8	12.1	10.8	8.9	10.6	10.5	10.2	10.4	10.1	10.2	10.9												
10.4	K	12.5	12.8	13.0	13.3	13.6	12.2	10.4	12.1	12.0	11.7	11.8	11.6	11.7	12.4												
7.8	L	10.4	10.6	10.9	11.2	11.5	10.1	8.2	10.0	9.8	9.6	9.7	9.4	9.6	10.2												
12.2	M	15.8	16.1	16.4	16.6	16.9	15.6	13.7	15.4	15.3	15.0	15.2	14.9	15.0	15.7												
11.0	N	14.6	14.9	15.2	15.4	15.8	14.4	12.5	14.2	14.1	13.8	14.0	13.7	13.8	14.5												
12.4	O	15.4	15.7	16.0	16.2	16.6	15.2	13.3	15.0	14.9	14.6	14.8	14.5	14.6	15.3												
9.7	P	12.2	12.5	12.8	13.0	13.4	12.0	10.1	11.8	11.7	11.4	11.6	11.3	11.4	12.1												
12.4	Q	15.4	15.7	16.0	16.2	16.6	15.2	13.3	15.0	14.9	14.6	14.8	14.5	14.6	15.3												
10.0	R	12.9	13.2	13.4	13.7	14.0	12.6	10.8	12.5	12.4	12.1	12.2	12.0	12.1	12.8												
9.6	S	12.2	12.5	12.8	13.0	13.4	12.0	10.1	11.8	11.7	11.4	11.6	11.3	11.4	12.1												
9.6	T	11.8	12.1	12.4	12.6	13.0	11.6	9.7	11.4	11.3	11.0	11.2	10.9	11.0	11.7												
10.4	U	14.0	14.2	14.5	14.8	15.1	13.7	11.8	13.6	13.4	13.2	13.3	13.0	13.2	13.8												
11.3	V	13.4	13.7	14.0	14.2	14.6	13.2	11.3	13.0	12.9	12.6	12.8	12.5	12.6	13.3												
17.7	W	20.0	20.2	20.5	20.7	21.0	19.7	17.8	19.6	19.4	19.2	19.3	19.0	19.2	19.8												
11.4	X	13.4	13.7	14.0	14.2	14.6	13.2	11.3	13.0	12.9	12.6	12.8	12.5	12.6	13.3												
11.7	Y	13.6	13.8	14.1	14.4	14.8	13.3	11.4	13.2	13.0	12.8	12.9	12.6	12.8	13.4												
9.6	Z	12.2	12.5	12.8	13.0	13.4	12.0	10.1	11.8	11.7	11.4	11.6	11.3	11.4	12.1												

8 10.6		10.6" UPPER CASE to 8" lower case																									
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
10.0	A	11.7	11.9	12.1	12.3	12.5	11.4	10.0	11.3	11.2	11.0	11.1	10.9	11.0	11.6												

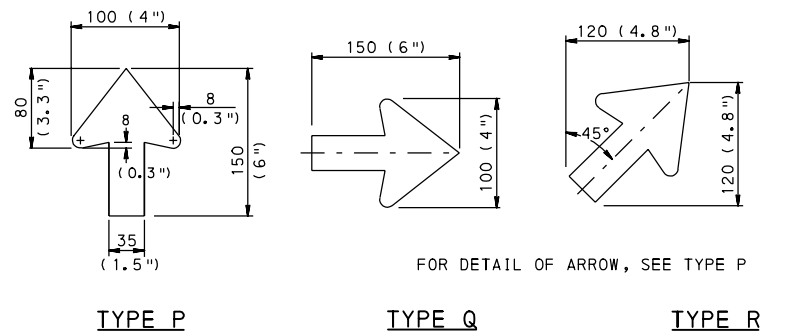
18" UPPER CASE to 18" UPPER CASE																									
18	15.1					11.3					11.0					12.1									
	A	J	T	V	W	B	D	E	F	H	I	K	L	M	N	P	R	U	C	G	O	Q	S	X	Z
15.1	A					16.2																			18.4
12.1	B					15.5																			15.5
12.1	C					14.3																			15.5
12.1	D					15.5																			15.5
11.0	E					13.2																			14.4
11.0	F					13.2																			14.4
12.1	G					15.5																			15.5
12.1	H					15.5																			16.3
2.8	I					6.2																			7.0
11.3	J					14.6																			15.5
12.4	K					14.6																			15.8
11.0	L					12.1																			14.4
13.9	M					17.3																			18.2
12.1	N					15.5																			16.3
12.7	O					16.0																			16.0
12.1	P					15.5																			15.5
12.7	Q					16.0																			16.0
12.1	R					15.5																			15.5
12.1	S					15.5																			15.5
11.0	T					12.1																			14.4
12.1	U					15.5																			16.3
13.5	V					14.6																			16.9
15.8	W					16.9																			19.1
12.1	X					14.3																			15.5
15.2	Y					16.3																			18.6
12.1	Z					14.3																			15.5

18" DIGIT to 18" DIGIT																										
18	12.7		12.1					4.4		12.1																
	0	2	3	6	8	9	1	5	4	7																
12.7	0									16.0																16.0
4.4	1									8.6																7.8
12.1	2									15.5																15.5
12.1	3									15.5																15.5
13.2	4									16.6																14.3
12.1	5									15.5																15.5
12.1	6									15.5																15.5
12.1	7									15.5																13.2
12.1	8									15.5																15.5
12.1	9									15.5																15.5

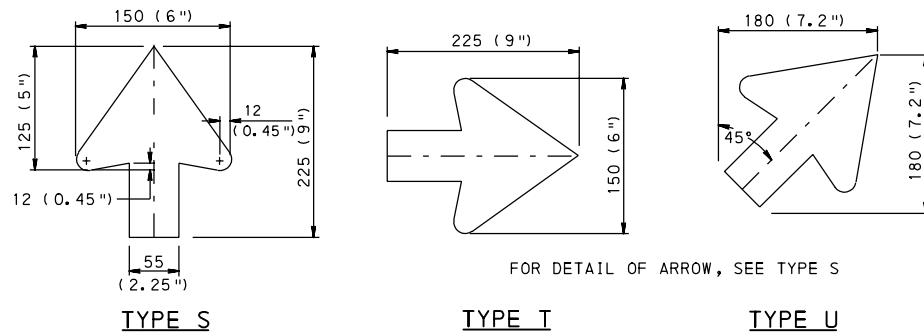
12" UPPER CASE to 12" UPPER CASE																									
12	10.0					7.3					9.0					10.5					10.1				
	A	J	T	V	W	B	D	E	F	H	I	K	L	M	N	P	R	U	C	G	O	Q	S	X	Z
10.0	A					10.8																			12.3
8.1	B					10.3																			10.3
8.1	C					9.6																			10.3
8.1	D					10.3																			10.3
7.3	E					8.8																			9.6
7.3	F					8.8																			9.6
8.1	G					10.3																			10.3
8.1	H					10.3																			10.9
1.9	I					4.1																			4.7
7.5	J					9.8																			10.3
8.3	K					9.8																			10.5
7.3	L					8.1																			9.6
9.3	M					11.5																			12.1
8.1	N					10.3																			10.9
8.4	O					10.7																			10.7
8.1	P					10.3																			10.3
8.4	Q					10.7																			10.7
8.1	R					10.3																			10.3
8.1	S					10.3																			10.3
7.3	T					8.1																			9.6
8.1	U					10.3																			10.9
9.0	V					9.8																			11.3
10.5	W					11.3																			12.8
8.1	X					9.6																			10.3
10.1	Y					10.9																			12.4
8.1	Z					9.6																			10.3

12" DIGIT to 12" DIGIT																										
12	8.4		8.1					2.9		8.1																
	0	2	3	6	8	9	1	5	4	7																
8.4	0									10.7																10.7
2.9	1									5.7																5.2
8.1	2									10.3																10.3
8.1	3									10.3																10.3
8.8	4									11.1																9.6
8.1	5									10.3																10.3
8.1	6									10.3																10.9
8.1	7									10.3																8.8
8.1	8									10.3																10.3
8.1	9									10.3																10.3

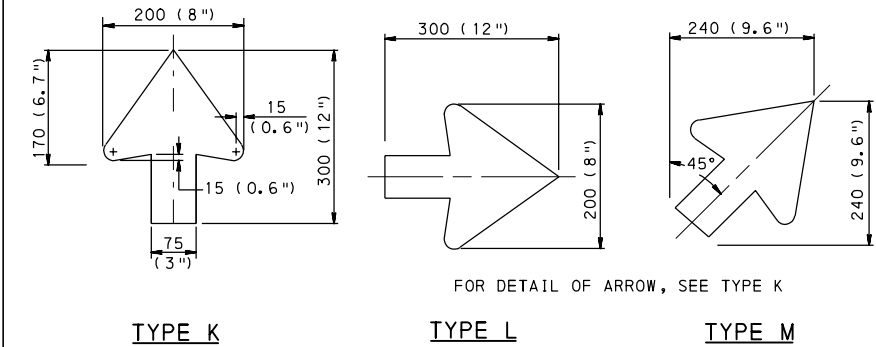
10" UPPER CASE to 10" UPPER CASE																									
10	8.4					6.3					7.5					8.6					6.7				
	A	J	T	V	W	B	D	E	F	H	I	K	L	M	N	P	R	U	C	G	O	Q	S	X	Z
8.4	A					9.0																			10.2
6.7	B					8.6																			8.6
6.7	C					8.0																			8.6
6.7	D					8.6																			8.6
6.1	E					7.3																			8.0
6.1	F					7.3																			8.0
6.7	G					8.6																			8.6
6.7	H					8.6																			9.1
1.6	I					3.4																			3.9
6.3	J					8.1																			8.6
6.9	K					8.1																			8.8
6.1	L					6.7																			8.0
7.7	M					9.6																			10.1
6.7	N					8.6																			9.1
7.0	O					8.9																			8.9
6.7	P					8.6																			8.6
7.0	Q					8.9		</																	



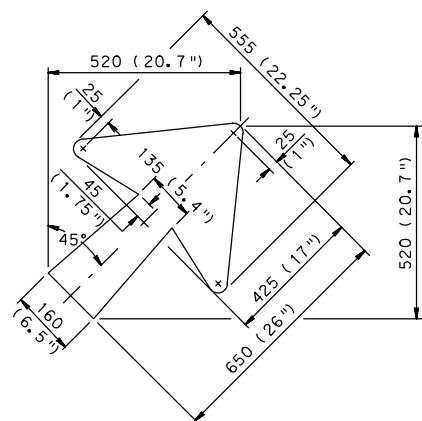
DESTINATION SIGN ARROWS (100 mm (4") LEGEND)



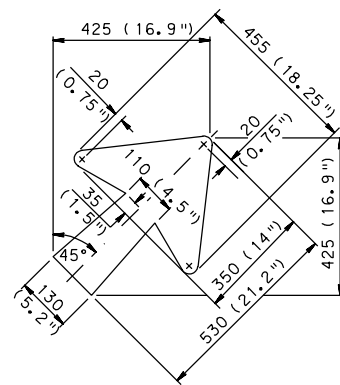
DESTINATION SIGN ARROWS (150 mm (6") LEGEND)



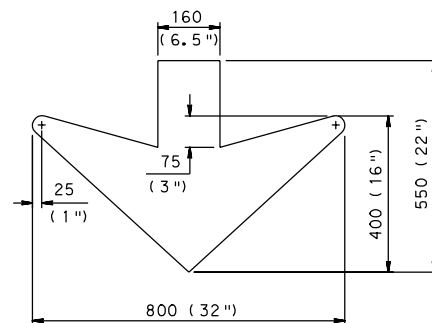
FREEWAY / EXPRESSWAY RAMP SIGNING



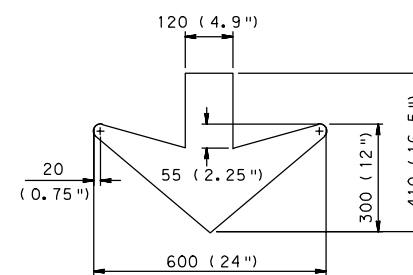
TYPE A



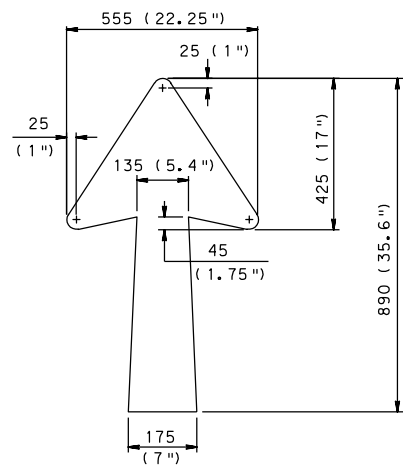
TYPE B



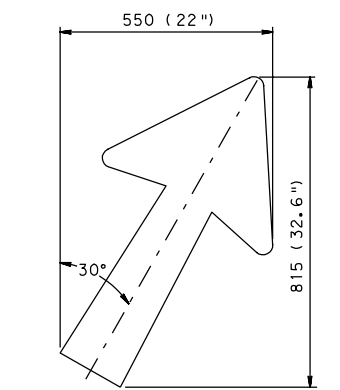
TYPE C



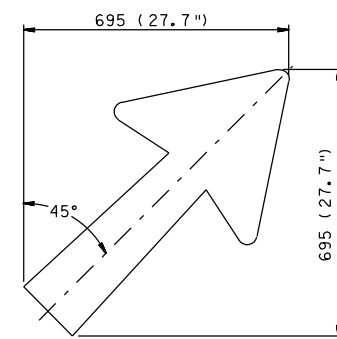
TYPE D



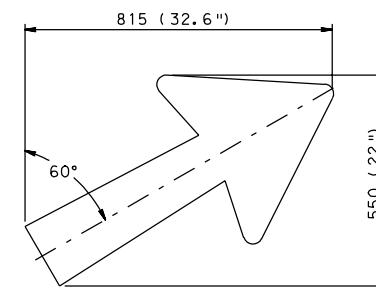
TYPE E



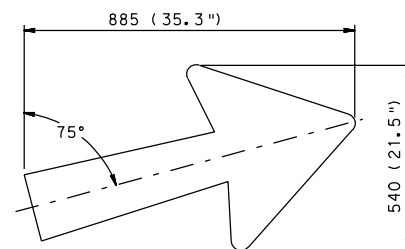
TYPE F



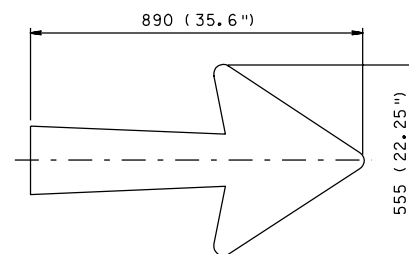
TYPE G



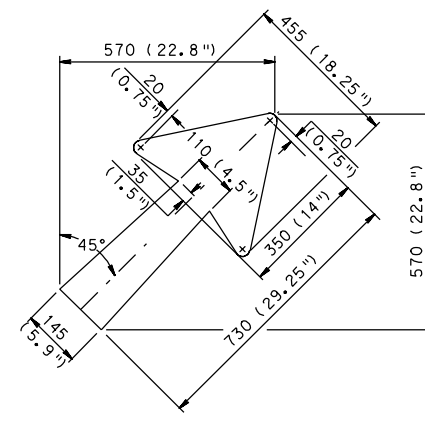
TYPE H



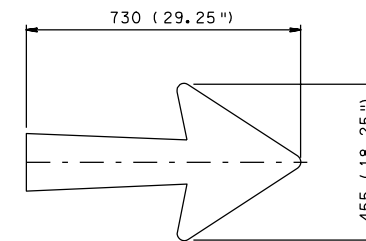
FOR DETAIL OF ARROW, SEE TYPE E.
TYPE I



FOR DETAIL OF ARROW, SEE TYPE E.
TYPE J



TYPE N



FOR DETAIL OF ARROW, SEE TYPE N.
TYPE O

FREEWAY / EXPRESSWAY SIGNING

NOTES:

1. ARROW TYPES A THROUGH J, N AND O ARE FOR USE ON FREEWAY AND EXPRESSWAY SIGNS.
2. ARROW TYPES K, L AND M ARE FOR USE ON FREEWAY AND EXPRESSWAY RAMP SIGNS.
3. ARROW TYPES P, Q AND R ARE FOR USE ON DESTINATION SIGNS WITH 100 mm (4") LEGEND.
4. ARROW TYPES S, T AND U ARE FOR USE ON DESTINATION SIGNS WITH 150 mm (6") LEGEND.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
6. 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

ARROWS

RECOMMENDED JUN. 23, 2009
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED JUN. 23, 2009
CHIEF HIGHWAY ENGINEER

SHT. 18 OF 18

TC-8700C

SIGNING PLANS

1. THE SIGNING PLANS SHOULD BE DRAWN TO A SCALE OF 1 : 1000 (1" = 100'). A PLAN VIEW OF THE SIGNS AND SIGN SUPPORTS SHOULD BE DEPICTED AT THE APPROXIMATE LOCATIONS AND SMALL PICTORIAL DRAWINGS OF THE SIGN FACES SHOULD BE INCLUDED NEAR THE PLAN VIEW, ALONG WITH THE TYPE OF POST AND/OR SUPPORT. A NUMBER SHALL BE ASSIGNED TO EACH SIGN NOT INCLUDED IN THE DEPARTMENT'S PUBLICATION 236M AND CROSS-REFERENCED TO THE SIGN FABRICATION DETAILS.
2. ALL SIGNS SHALL BE DESIGNED IN ACCORDANCE TO THE LAYOUT DETAILS INCLUDED IN TRAFFIC STANDARD TC-8701D.
3. SIGN LIGHTING SHOULD BE INCLUDED FOR ALL OVERHEAD GUIDE SIGNS EXCEPT SIGNS ON TANGENT ROADWAYS WHERE MOTORISTS HAVE A CLEARVIEW OF THE SIGN FOR A MINIMUM OF 240 m (800') AND WHERE THE VERTICAL ALIGNMENT IS SUCH THAT LOW BEAM HEADLIGHTS WILL ILLUMINATE THE SIGNS.

DESCRIPTION OF SIGNS

1. MAJOR GUIDE SIGNS PROVIDE MOTORISTS ADVANCE INFORMATION ON THE PRINCIPAL DESTINATIONS SERVED BY THE INTERCHANGE. TWO OR THREE MAJOR GUIDE SIGNS SHOULD BE USED, WITH TYPICAL PLACEMENT BEING 3.2 km (2 miles), 1.6 km (1 mile) AND 0.8 km (0.5 mile) IN ADVANCE OF THE EXIT. THE FOLLOWING INFORMATION SHOULD BE DISPLAYED ON MAJOR GUIDE SIGNS, BEGINNING FROM THE TOP OF THE SIGN.
 - A. AN EXIT PANEL WHEN THE EXIT IS NUMBERED. THE PANEL SHOULD BE ON THE RIGHT SIDE FOR RIGHT-HAND EXITS, AND ON THE LEFT SIDE FOR LEFT-HAND EXITS.
 - B. A SHIELD FOR EACH NUMBERED TRAFFIC ROUTE ASSIGNED TO THE CROSSING ROUTE OR WHICH IS VERY CLOSE TO THE INTERCHANGE. A CARDINAL DIRECTION SHOULD BE ASSOCIATED WITH EACH ROUTE WHERE TRAFFIC CAN ONLY GO IN ONE DIRECTION, AND THE WORD "TO" SHOULD BE USED ABOVE THE SHIELD OF ROUTES WHICH ARE CLOSE TO THE INTERCHANGE.
 - C. THE NAME OF THE TWO NEAREST COMMUNITIES AS IDENTIFIED ON THE OFFICIAL TRANSPORTATION MAP, ONE TO THE LEFT AND ONE TO THE RIGHT, UNLESS ALTERNATE DESTINATIONS ARE APPROVED IN ACCORDANCE WITH DEPARTMENT POLICY. AT SINGLE EXIT INTERCHANGES, THE COMMUNITY NAME TO THE LEFT SHOULD BE ABOVE THE COMMUNITY NAME TO THE RIGHT; AT DOUBLE EXIT INTERCHANGES, THE TOP NAME SHOULD BE THE COMMUNITY SERVED BY THE FIRST EXIT. IN URBAN AREAS, THE STREET NAME SHOULD BE USED IN LIEU OF COMMUNITY NAMES.
 - D. THE DISTANCE TO THE EXIT IN MILES AND/OR FRACTIONS OF MILES SHOULD BE SHOWN BELOW THE COMMUNITY NAMES OR THE STREET NAME. FRACTIONS SHOULD TYPICALLY BE SHOWN TO THE NEAREST 1/4 MILE, ALTHOUGH THE FRACTIONS "1/8" AND "3/8" ARE ACCEPTABLE. THE WORD "EXIT" OR "EXITS" SHOULD PRECEDE THE DISTANCE IF THE EXIT IS NOT NUMBERED.
2. A SUPPLEMENTAL GUIDE SIGN MAY INCLUDE ONE OR TWO DESTINATIONS, WHICH MAY BE A LARGE COMMUNITY NOT IDENTIFIED ON THE MAJOR GUIDE SIGNS OR ANY OTHER LARGE TRAFFIC GENERATOR IN ACCORDANCE WITH DEPARTMENT POLICY.
3. SERVICE SIGNS ARE USED TO IDENTIFY GAS, FOOD, LODGING, CAMPING, VISITOR INFORMATION, HOSPITAL, DIESEL, AND STATE POLICE. WITH THE EXCEPTION OF STATE POLICE, GENERAL MOTORIST SERVICE SIGNS INSTALLED ON NEW PANELS SHALL BE THE SYMBOL TYPE AS ILLUSTRATED IN TRAFFIC STANDARD TC-8701D.

AS AN ALTERNATE TO GENERAL MOTORISTS SERVICE SIGNS, LOGO SIGNS MAY BE INSTALLED ON SELECTED INTERSTATE HIGHWAYS AND OTHER FREEWAYS IN ACCORDANCE WITH DEPARTMENT POLICY. WHEN LOGO SIGNS ARE INSTALLED, ALL GENERAL MOTORIST SERVICE SIGNS WILL BE REMOVED, UNLESS A SPECIFIC SERVICE IS NOT REPRESENTED BY A LOGO SIGN.
4. EXIT DIRECTION SIGNS SHOULD INCLUDE THE SAME TRAFFIC ROUTES AND DESTINATIONS AS INCLUDED ON THE MAJOR GUIDE SIGNS, AS APPROPRIATE, PLUS AN UPWARD-POINTING OR SLANTING ARROW. THE ALIGNMENT OF THE ARROW SHOULD APPROXIMATE THE ANGLE RELATED TO THE SHARPNESS OF THE TURN.
5. GORE SIGNS SHALL BE LOCATED IN THE AREA BETWEEN THE MAIN ROADWAY AND THE RAMP AT ALL EXITS. THE SIGNS SHALL HAVE THE WORD "EXIT" AND AN ARROW; IF THE EXIT IS NUMBERED, THE NUMBER OR NUMBER AND LETTER SHOULD ALSO BE INCLUDED.
6. CONFIRMATION ROUTE MARKERS SHOULD NOT BE USED BETWEEN CLOSELY SPACED INTERCHANGES OR WHEN A "PULL-THRU SIGN" FOLLOWS THE INTERCHANGE.

7. OFF-RAMP DIRECTIONAL SIGNS ARE USED ON ALL DIAMOND INTERCHANGE OFF-RAMPS, AND SHOULD INCLUDE ALL DESTINATIONS INCLUDED ON THE MAJOR AND SUPPLEMENTAL GUIDE SIGNS. THE DISTANCE IN THE NEAREST NUMBER OF WHOLE MILES TO THE DESTINATION SHOULD BE INCLUDED IF THE DESTINATION IS OVER 3.2 km (2 miles) AWAY, WHERE THE DISTANCE IS THE DISTANCE TO THE CENTER OF THE COMMUNITY OR ENTRANCE TO THE TRAFFIC GENERATOR.
8. POST-INTERCHANGE DISTANCE SIGNS SHOULD BE USED IN RURAL AREAS AND WHERE UNDUE REPETITION OF MESSAGES WILL NOT OCCUR. WHEN USED, IT SHOULD INCLUDE TWO OR THREE DESTINATION POINTS AND THE DISTANCES IN THE NEAREST NUMBER OF WHOLE MILES TO THOSE POINTS. THE FIRST DESTINATION SHOULD BE THE CLOSEST MEANINGFUL COMMUNITY WHICH IS NEAR AN INTERCHANGE; THE LAST DESTINATION IS THE NEAREST NATIONAL CONTROL CITY; AND AN INTERMEDIATE DESTINATION MAY BE INCLUDED BETWEEN THE TWO OTHER DESTINATIONS. CONSIDERATION MAY ALSO BE GIVEN TO INCLUDING MAJOR INTERSECTING HIGHWAY ROUTES AS DESTINATIONS USING THE ROUTE NUMBER (i.e., PA 30, US 30, etc.) EXCEPT PA TURNPIKE MAY BE USED. SHIELDS ARE NOT REQUIRED.
9. NEXT () EXITS AREA SIGNS MAY BE USED IN ADVANCE OF MORE THAN THREE INTERCHANGES SERVING AN URBAN AREA OR HISTORICAL OR RECREATIONAL REGION. INTERCHANGE SEQUENCE SERIES SIGNS MAY BE USED PRIOR TO ALL BUT THE LAST INTERCHANGE.
10. INTERCHANGE SEQUENCE SIGNS ARE USED IN LARGE URBAN AREAS WHEN THE INTERCHANGES ARE CLOSELY SPACED IN ORDER TO IDENTIFY THE NEXT TWO OR THREE INTERCHANGES. WHEN USED, THE INTERCHANGE SEQUENCE SIGNS SHOULD NORMALLY BE INSTALLED IN THE MEDIAN OR ON AN OVERHEAD STRUCTURE. THEY FREQUENTLY CAN BE INSTALLED BACK-TO-BACK, ONE IN EACH DIRECTION.
11. COMMUNITY INTERCHANGES IDENTIFICATION SIGNS MAY BE USED FOR SUBURBAN OR RURAL COMMUNITIES SERVED BY TWO OR THREE INTERCHANGES. THE SIGN IS IDENTICAL TO THE INTERCHANGE SEQUENCE SIGN EXCEPT THE NAME OF THE COMMUNITY AND THE WORD "EXITS" IS SHOWN ON THE TOP OF THE SIGN. THE SIGN SHOULD BE LOCATED IN ADVANCE OF THE FIRST INTERCHANGE FOR THE COMMUNITY.
12. LANE ASSIGNMENT SIGNS MAY BE USED TO ASSIGN A PARTICULAR LANE FOR A GIVEN DESTINATION. A DOWN ARROW IS NORMALLY USED, BUT ALTERNATE MESSAGES SUCH AS "LEFT LANE", "RIGHT LANES", ETC. MAY BE USED.
13. PULL-THRU SIGNS MAY BE USED WHEN THE GEOMETRICS OF THE INTERCHANGE ARE COMPLEX, SUCH AS AT THE JUNCTION OF FREEWAYS AND WHEN IT IS NOT CLEAR TO THE DRIVER WHICH ROADWAY IS THE THROUGH ROADWAY. A NATIONAL OR REGIONAL CONTROL CITY SHOULD BE USED AS THE DESTINATION. DOWN ARROWS MAY BE USED WHEN THE ALIGNMENT AND NUMBER OF THROUGH LANES IS NOT READILY EVIDENT. (PULL-THRU SIGNS ARE SIMILAR TO LANE ASSIGNMENT SIGNS BUT NEVER HAVE DISTANCES OR EXIT PANELS.)
14. EXIT ONLY PANELS SHOULD BE USED FOR ALL INTERCHANGE LANE DROPS AT WHICH THE THROUGH ROUTE IS CARRIED ON THE MAINLINE. EXIT ONLY PANELS SHOULD ALWAYS BE INSTALLED OVERHEAD, IN CONJUNCTION WITH LANE ASSIGNMENT SIGNS, EXIT DIRECTION SIGNS AND DIAGRAMMATIC SIGNS.
15. DIAGRAMMATIC SIGNS PROVIDE A GRAPHIC VIEW OF THE EXIT IN RELATIONSHIP TO THE MAIN HIGHWAY. THEY SHOULD BE USED FOR SPLITS HAVING OFF-RAMP MOVEMENTS TO THE LEFT, OPTIONAL LANE SPLITS, EXITS WITH ROUTE DISCONTINUITY, AND LEFT EXIT LANE DROPS; AND THEY ALSO MAY BE USED AT TWO-LANE EXITS WITH AN OPTIONAL LANE. DIAGRAMMATIC SIGNS SHOULD BE DESIGNED IN ACCORDANCE WITH THE STANDARD HIGHWAY SIGNS BOOK, AS PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
16. EXIT PANELS SHALL BE USED ON ALL MAJOR GUIDE, EXIT DIRECTION, LANE ASSIGNMENT, AND DIAGRAMMATIC SIGNS WHEN EXIT NUMBERS HAVE BEEN ASSIGNED. THE PLURAL "EXITS" SHOULD BE USED IN ADVANCE OF INTERCHANGES WITH MORE THAN ONE EXIT, ALONG WITH THE RAMP DESIGNATIONS "A-B" OR "B-A", DEPENDING UPON WHICH RAMP DESIGNATION IS SERVED FIRST. (WHEN THERE ARE TWO EXITS, THE FIRST ONE IN THE DIRECTION OF INCREASING DISTANCE MARKERS IS DESIGNATED AS "A", THE SECOND ONE AS "B".)
17. ADVISORY EXIT SPEED SIGNS (W13-2) AS DETAILED IN THE DEPARTMENT'S PUBLICATION 236M SHALL BE INSTALLED ALONGSIDE THE DECELERATION LANE, POSITIONED APPROXIMATELY AT THE MID-POINT.
18. NEXT EXIT () MILES SIGN SHOULD BE USED BELOW THE ADVANCE GUIDE SIGN NEAREST THE INTERCHANGE (NORMALLY THE 1 MILE ADVANCE GUIDE SIGN) WHEN THE DISTANCE BETWEEN SUCCESSIVE RURAL INTERCHANGES IS MORE THAN 8 km (5 miles). THIS SIGN MAY BE FABRICATED AS AN INTEGRAL PART OF THE ADVANCE GUIDE SIGN OR MAY BE A SEPARATE SUPPLEMENTARY PANEL, WHEN A SEPARATE PANEL IS USED, ENSURE THAT IT IS INSTALLED ON THE POST ABOVE THE HINGE PLATE.

NOTE:

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

INTERCHANGE ADVANCE SIGNING GENERAL NOTES

RECOMMENDED JUN. 23, 2009

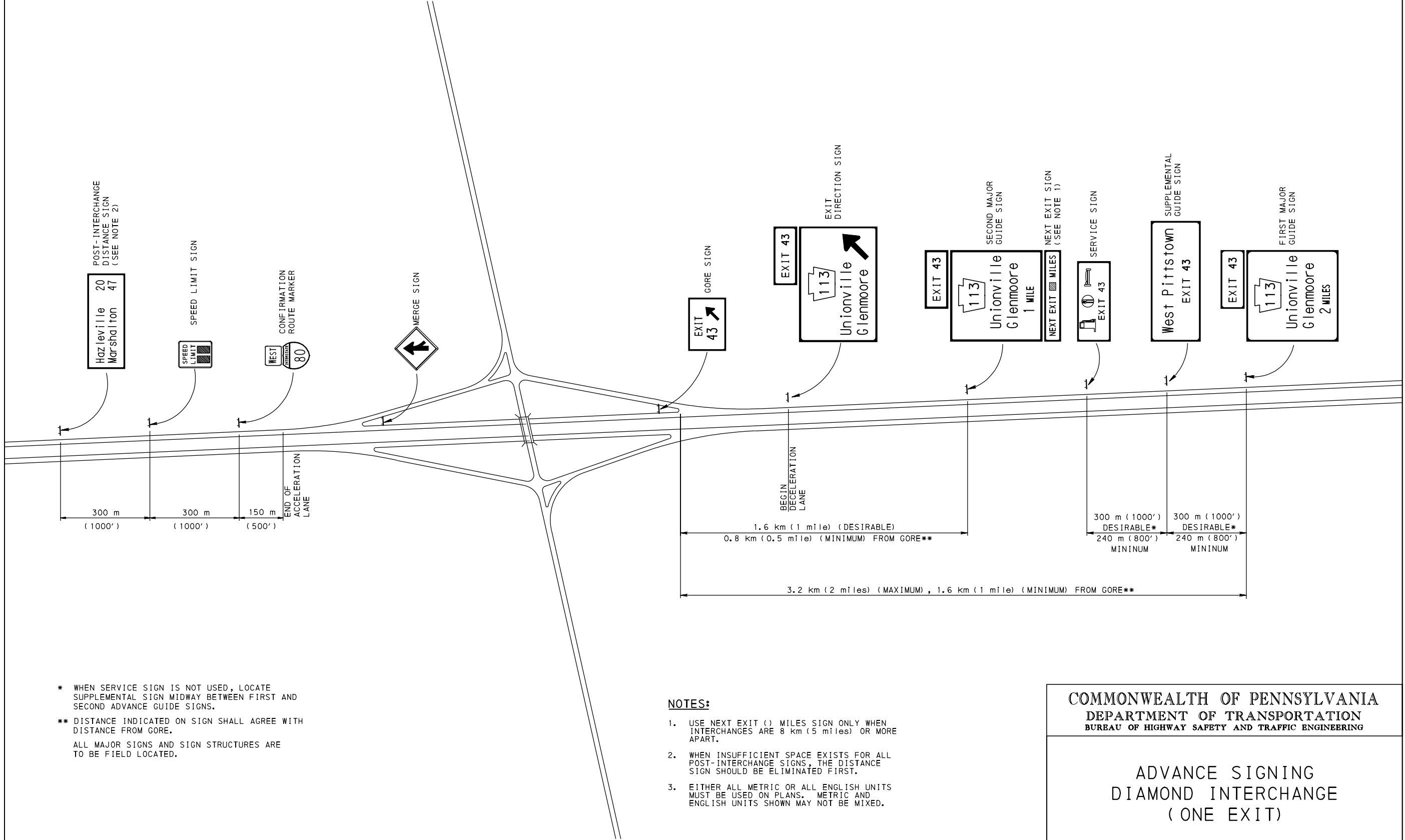
John P. Tunney
CHIEF, TRAFFIC ENGINEERING AND
OPERATIONS DIVISION

RECOMMENDED JUN. 23, 2009

De C. Rome
ACTING DIR. BUR. OF HIGHWAY SAFETY
AND TRAFFIC ENGINEERING

SHT. 1 OF 7

TC-8701A



* WHEN SERVICE SIGN IS NOT USED, LOCATE SUPPLEMENTAL SIGN MIDWAY BETWEEN FIRST AND SECOND ADVANCE GUIDE SIGNS.

** DISTANCE INDICATED ON SIGN SHALL AGREE WITH DISTANCE FROM GORE.

ALL MAJOR SIGNS AND SIGN STRUCTURES ARE TO BE FIELD LOCATED.

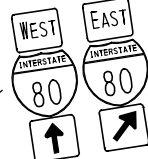
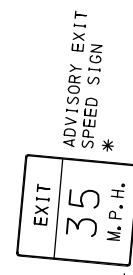
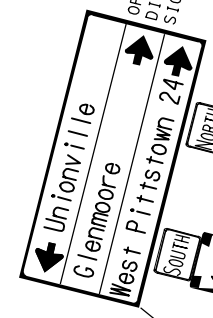
- NOTES:**
1. USE NEXT EXIT () MILES SIGN ONLY WHEN INTERCHANGES ARE 8 km (5 miles) OR MORE APART.
 2. WHEN INSUFFICIENT SPACE EXISTS FOR ALL POST-INTERCHANGE SIGNS, THE DISTANCE SIGN SHOULD BE ELIMINATED FIRST.
 3. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

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

ADVANCE SIGNING
DIAMOND INTERCHANGE
(ONE EXIT)

RECOMMENDED JUN. 23, 2009 <i>John P. Tompkins</i> <small>CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION</small>	RECOMMENDED JUN. 23, 2009 <i>Dee C. Rome</i> <small>ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING</small>	SHT. 2 OF 7 TC-8701A
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YIELD SIGN NOT BE USED IF
(SHOULD NOT BE USED IF
ADEQUATE ACCELERATION
LANE EXISTS).



BEGIN DECELERATION LANE

100 m (300')

100 m (300')

* IF NEEDED.

NOTE:

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

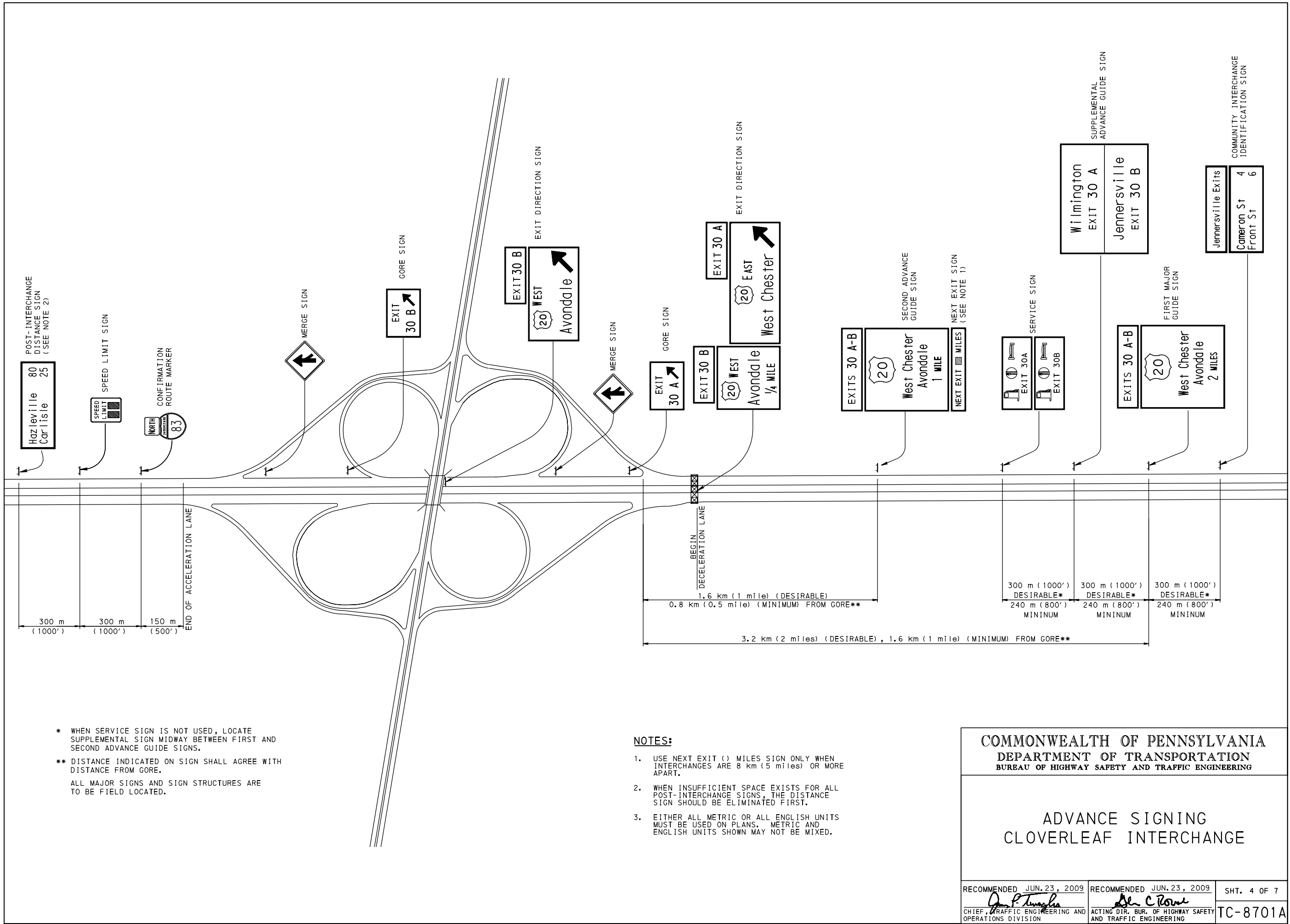
SIGNING
DIAMOND INTERCHANGE

RECOMMENDED JUN. 23, 2009
John P. Tompkins
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED JUN. 23, 2009
Dee C. Rome
ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SHT. 3 OF 7

TC-8701A



POST-INTERCHANGE DISTANCE SIGN (SEE NOTE 2)

Hazleville 80
Carlisle 25

SPEED LIMIT SIGN

SPEED LIMIT 80

CONFIRMATION ROUTE MARKER

NORTH INTERSTATE 83

300 m (1000')
300 m (1000')
150 m (500')

END OF ACCELERATION LANE

* WHEN SERVICE SIGN IS NOT USED, LOCATE SUPPLEMENTAL SIGN MIDWAY BETWEEN FIRST AND SECOND ADVANCE GUIDE SIGNS.

** DISTANCE INDICATED ON SIGN SHALL AGREE WITH DISTANCE FROM GORE.

ALL MAJOR SIGNS AND SIGN STRUCTURES ARE TO BE FIELD LOCATED.

NOTES:

1. USE NEXT EXIT () MILES SIGN ONLY WHEN INTERCHANGES ARE 8 km (5 miles) OR MORE APART.
2. WHEN INSUFFICIENT SPACE EXISTS FOR ALL POST-INTERCHANGE SIGNS, THE DISTANCE SIGN SHOULD BE ELIMINATED FIRST.
3. 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

ADVANCE SIGNING
CLOVERLEAF INTERCHANGE

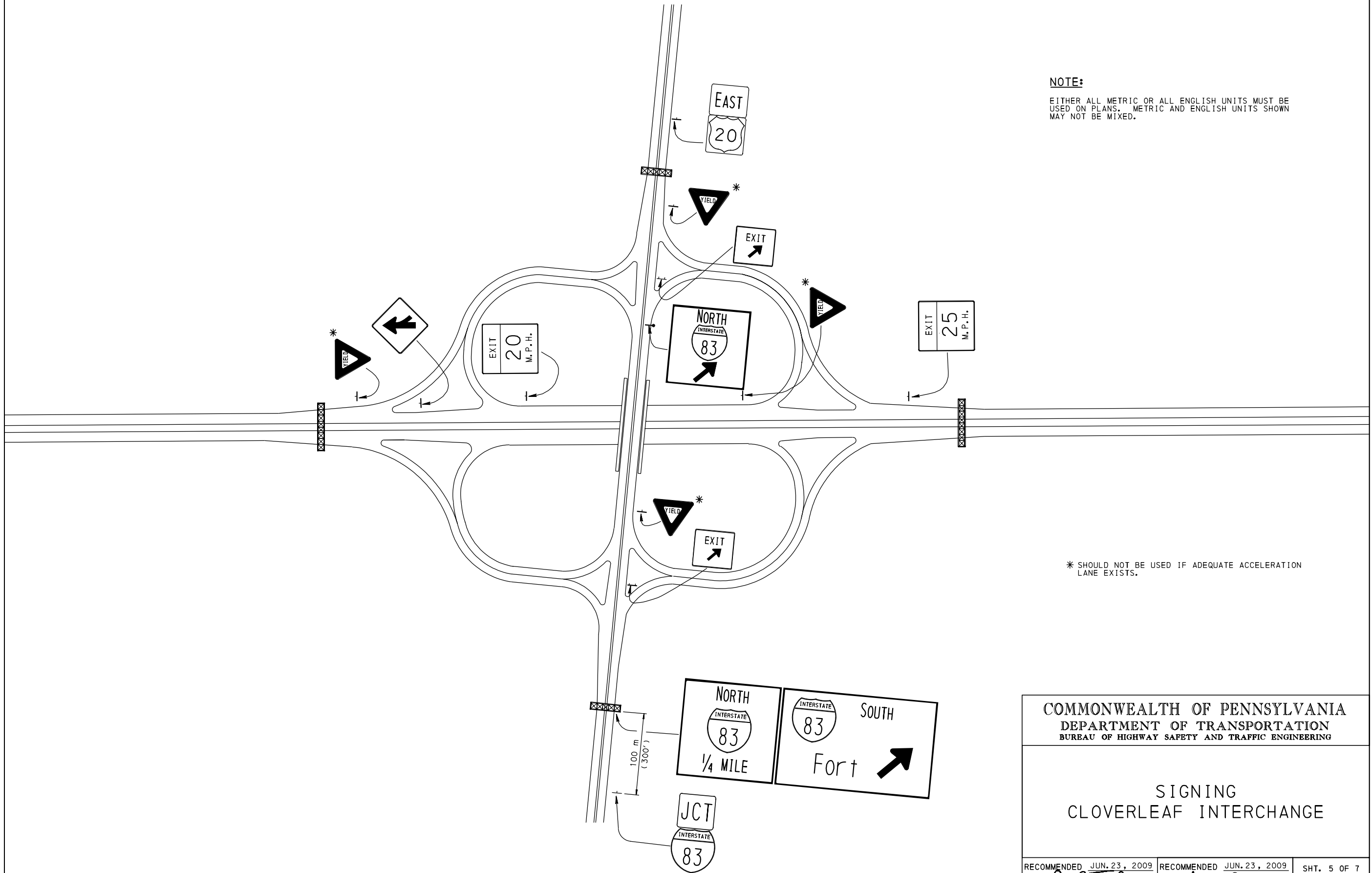
RECOMMENDED JUN. 23, 2009
John P. Tompkins
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED JUN. 23, 2009
De C. Rome
ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SHT. 4 OF 7
TC-8701A

NOTE:

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

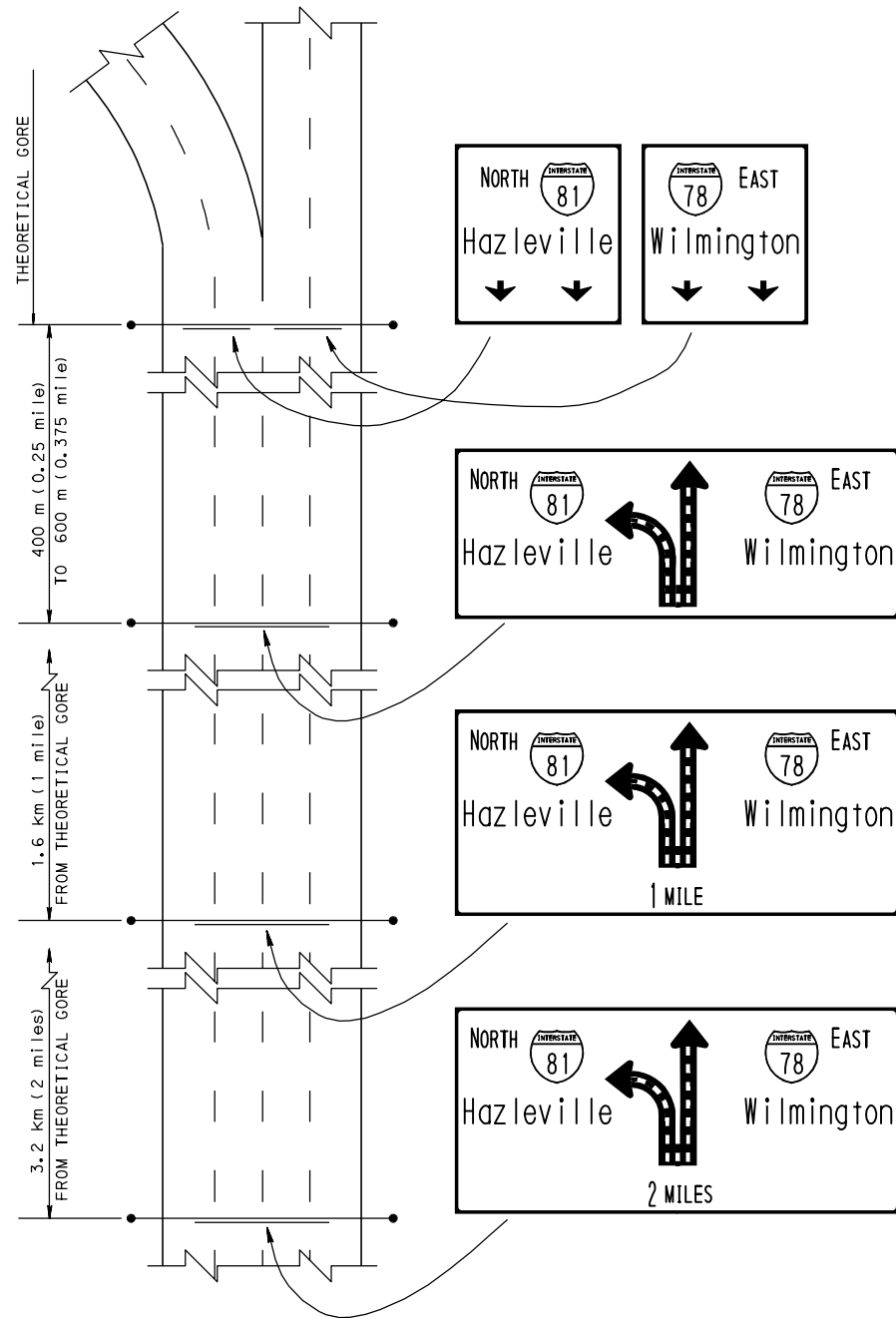
SIGNING
CLOVERLEAF INTERCHANGE

RECOMMENDED JUN. 23, 2009
John P. Tompkins
CHIEF, TRAFFIC ENGINEERING AND
OPERATIONS DIVISION

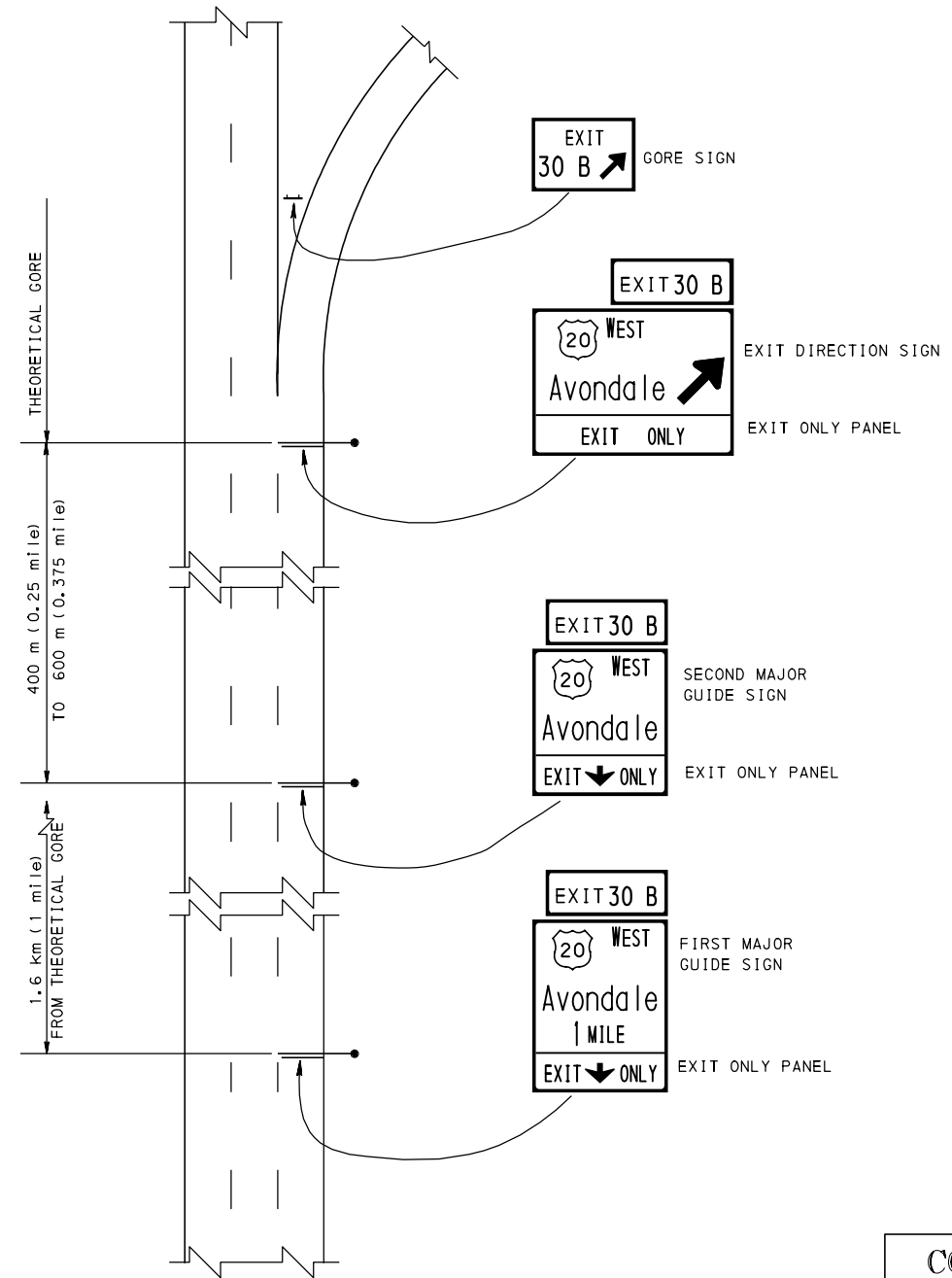
RECOMMENDED JUN. 23, 2009
Dee C. Rome
ACTING DIR. BUR. OF HIGHWAY SAFETY
AND TRAFFIC ENGINEERING

SHT. 5 OF 7

TC-8701A



DIAGRAMMATIC SIGNING



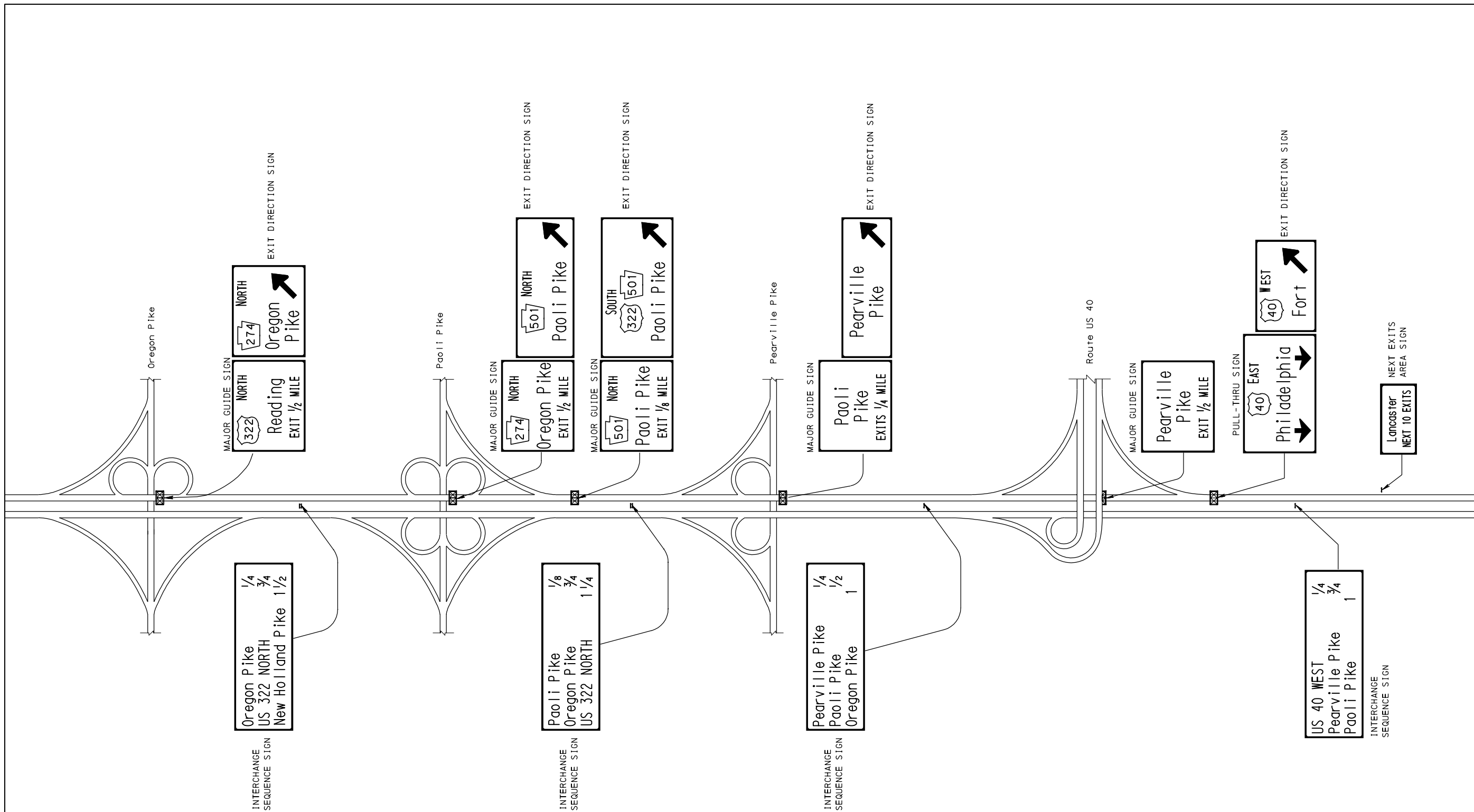
LANE DROP SIGNING

NOTE:

EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

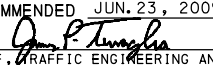
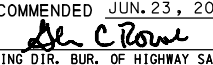
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

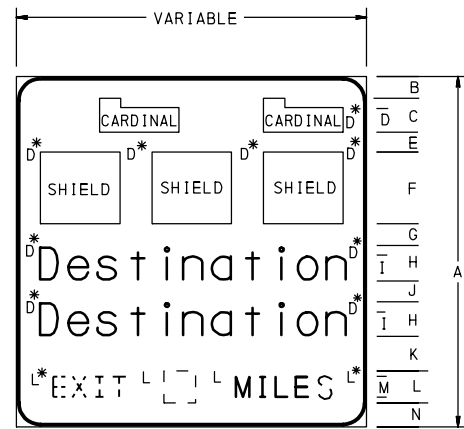
SIGNING
DIAGRAMMATIC & LANE DROP



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

TYPICAL SIGNING
CLOSELY SPACED
INTERCHANGES

RECOMMENDED JUN. 23, 2009  CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED JUN. 23, 2009  ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 7 OF 7 TC-8701A
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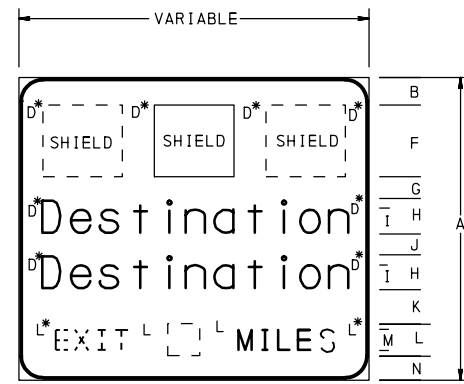


METRIC UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
500/375	1	4200	450	450	375	300	900	350	500	375	375	350	450	300	450
500/375	2	4950	400	450	375	300	900	350	500	375	375	350	450	300	375
400/300	1	3600	335	375	300	250	900	300	400	300	300	325	375	250	340
400/300	2	4200	335	375	300	250	900	275	400	300	300	300	375	250	290
330/250	1	3150	275	300	250	200	900	250	330	250	250	250	375	250	270
330/250	2	3750	290	300	250	200	900	250	330	250	250	250	375	250	275

ENGLISH UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (INCHES)													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
20/15	1	168	18	18	15	12	36	14	20	15	15	14	18	12	18
20/15	2	198	16	18	15	12	36	14	20	15	15	14	18	12	15
16/12	1	144	13.5	15	12	10	36	12	16	12	12	13	15	10	13.5
16/12	2	168	13.5	15	12	10	36	11	16	12	12	12	15	10	11.5
13.3/10	1	126	10.9	12	10	8	36	10	13.3	10	10	10	15	10	10.8
13.3/10	2	150	11.4	12	10	8	36	10	13.3	10	10	10	15	10	11

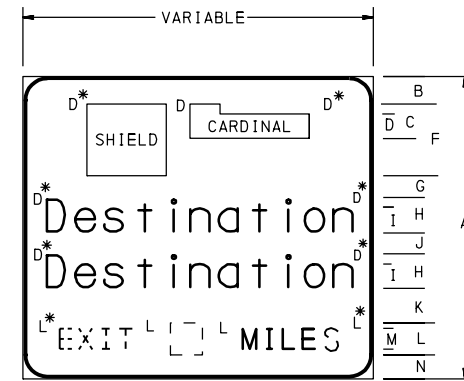


METRIC UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)												
		A	B	D	F	G	H	I	J	K	L	M	N	
500/375	1	3300	375	375	900	350	500	375	375	350	450	300	375	
500/375	2	4200	385	375	900	350	500	375	375	350	450	300	390	
400/300	1	3000	335	300	900	325	400	300	300	325	375	250	340	
400/300	2	3600	310	300	900	300	400	300	300	300	300	375	250	315
330/250	1	2700	295	250	900	250	330	250	250	250	375	250	300	
330/250	2	3300	305	250	900	250	330	250	250	250	375	250	310	

ENGLISH UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (INCHES)												
		A	B	D	F	G	H	I	J	K	L	M	N	
20/15	1	132	15	15	36	14	20	15	15	14	18	12	15	
20/15	2	168	15.5	15	36	14	20	15	15	14	18	12	15.5	
16/12	1	120	13.5	12	36	13	16	12	12	13	15	10	13.5	
16/12	2	144	12.5	12	36	12	16	12	12	12	15	10	12.5	
13.3/10	1	108	11.8	10	36	10	13.3	10	10	10	15	10	11.9	
13.3/10	2	132	12.2	10	36	10	13.3	10	10	10	15	10	12.2	

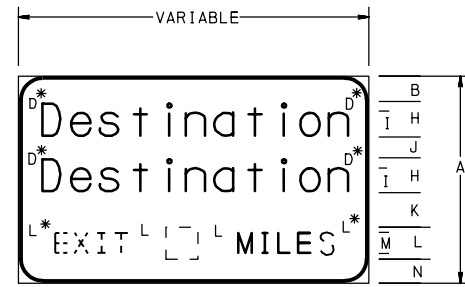


METRIC UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)												
		A	B	C	D	F	G	H	I	J	K	L	M	N
500/375	1	3300	375	450	375	900	350	500	375	375	350	450	300	375
500/375	2	4200	385	450	375	900	350	500	375	375	350	450	300	390
400/300	1	3000	335	375	300	900	325	400	300	300	325	375	250	340
400/300	2	3600	310	375	300	900	300	400	300	300	300	375	250	315
330/250	1	2700	295	300	250	900	250	330	250	250	250	375	250	300
330/250	2	3300	305	300	250	900	250	330	250	250	250	375	250	310

ENGLISH UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (INCHES)												
		A	B	C	D	F	G	H	I	J	K	L	M	N
20/15	1	132	15	18	15	36	14	20	15	15	14	18	12	15
20/15	2	168	15.5	18	15	36	14	20	15	15	14	18	12	15.5
16/12	1	120	13.5	15	12	36	13	16	12	12	13	15	10	13.5
16/12	2	144	12.5	15	12	36	12	16	12	12	12	15	10	12.5
13.3/10	1	108	11.8	12	10	36	10	13.3	10	10	10	15	10	11.9
13.3/10	2	132	12.2	12	10	36	10	13.3	10	10	10	15	10	12.2



METRIC UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)												
		A	B	D	H	I	J	K	L	M	N			
500/375	1	2100	400	375	500	375	375	350	450	300	400			
500/375	2	3000	410	375	500	375	375	350	450	300	415			
400/300	1	1800	350	300	400	300	300	325	375	250	350			
400/300	2	2400	310	300	400	300	300	300	300	375	250	315		
330/250	1	1500	270	250	330	250	250	250	375	250	275			
330/250	2	2100	280	250	330	250	250	250	375	250	285			

ENGLISH UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (INCHES)												
		A	B	D	H	I	J	K	L	M	N			
20/15	1	84	16	15	20	15	15	14	18	12	16			
20/15	2	120	16.5	15	20	15	15	14	18	12	16.5			
16/12	1	72	14	12	16	12	12	13	15	10	14			
16/12	2	96	12.5	12	16	12	12	12	15	10	12.5			
13.3/10	1	60	10.8	10	13.3	10	10	10	15	10	10.9			
13.3/10	2	84	11.2	10	13.3	10	10	10	15	10	11.2			

NOTES:

- SIGN DIMENSIONS: WIDTHS AND HEIGHTS OF SIGNS SHALL BE IN MULTIPLES OF 150 mm (6"). THE SIGN HEIGHTS OF EXTRUDED ALUMINUM PANEL SIGNS ARE ACCEPTABLE IN MULTIPLES OF 152 mm (6"). THE INCREASED HEIGHTS OF SIGNS SHALL BE DISTRIBUTED EQUALLY BETWEEN THE LEGEND CLEARANCE DIMENSIONS AT THE TOP AND BOTTOM OF THE SIGN, WHEN THE USE OF EXTRUDED ALUMINUM PANELS RESULTS IN A VERTICAL SIGN DIMENSION GREATER THAN REQUIRED.
- SINGLE SHIELD: WHEN MOUNTED ALONE, SHIELD SHALL BE CENTERED WITHIN THE WIDTH DIMENSION.
- MULTIPLE SHIELDS: WHEN MULTIPLE SHIELDS ARE USED, THEY SHALL BE EVENLY SPACED WITHIN THE WIDTH DIMENSION AND SHALL BE ON THE SAME VERTICAL ALIGNMENT.
- SINGLE SHIELD WITH CARDINAL DIRECTION: THE CARDINAL DIRECTION SHALL BE MOUNTED ON THE SAME SIDE OF THE SHIELD AS THE EXIT, WITH THE TOP LINE OF THE SHIELD AND THE CARDINAL AT THE SAME ELEVATION. CARDINALS MAY BE CENTERED OVER THE SHIELD WHEN THE SHIELD/CARDINAL BECOMES THE CONTROLLING LINE FOR THE WIDTH DIMENSION.
- MULTIPLE SHIELDS AND CARDINALS: WHEN MULTIPLE SHIELDS ARE USED WITH CARDINALS, THE CARDINALS SHALL BE CENTERED OVER THE APPROPRIATE SHIELDS. A CARDINAL MAY BE CENTERED OVER TWO SHIELDS WHEN APPLICABLE.
- DESTINATION: THE DESTINATION MESSAGE SHOULD ORDINARILY CONSIST OF NOT MORE THAN TWO DESTINATIONS. A DESTINATION MAY BE A CITY, TOWN OR VILLAGE NAME; A STREET NAME; OR THE NAME OF A LARGE TRAFFIC GENERATOR. FOR SUPPLEMENTAL GUIDE SIGNS, THE DESTINATION MAY BE ANY APPROVED SUPPLEMENTAL DESTINATION.
- ACTION MESSAGE: THE ACTION MESSAGE SHALL CONSIST OF EITHER A DISTANCE INDICATION, A DIRECTION INDICATION, OR A LANE ASSIGNMENT ARROW.
- EXIT PANELS: EXIT PANELS SHALL BE USED ON MAJOR GUIDE SIGNS WHENEVER EXIT NUMBERS HAVE BEEN ASSIGNED. WHEN USED, THEY SHALL BE INSTALLED ON THE SAME SIDE OF THE SIGN AS THE EXIT. WHEN EXIT PANELS ARE USED, THE WORD "EXIT" SHALL NOT BE USED IN THE MAIN SIGN'S ACTION MESSAGE.
- EXIT ONLY PANELS: EXIT ONLY PANELS SHALL BE USED ONLY FOR A LANE DROP. THE PANELS SHALL BE YELLOW REFLECTORIZED BACKGROUND WITH BLACK LEGEND, AND SHALL BE DESIGNED TO FIT WITHIN THE WHITE BORDER OF THE COMPLETE SIGN PANEL. THE TOP OF THE EXIT ONLY PANEL SHOULD BE A MINIMUM OF 260 mm (10.5") BELOW THE BOTTOM OF THE LOWEST DESTINATION. SEE SHEET 5 OF THIS STANDARD FOR DETAILS OF EXIT PANELS.
- INTERCHANGE CLASSIFICATION: FOR FREEWAY AND EXPRESSWAY SIGNING PURPOSES, INTERCHANGES ARE CLASSIFIED AS MAJOR OR INTERMEDIATE AS DEFINED BELOW:
 - MAJOR/CATEGORY A -- INTERCHANGES WITH OTHER FREEWAYS OR EXPRESSWAYS.
 - MAJOR/CATEGORY B -- INTERCHANGES WITH HIGH-VOLUME MULTILANE HIGHWAYS, PRINCIPAL URBAN ARTERIALS AND MAJOR RURAL ROUTES WHERE THE INTERCHANGING TRAFFIC IS HEAVY OR INCLUDES MANY DRIVERS UNFAMILIAR WITH THE AREA.
 - INTERMEDIATE -- MOST INTERCHANGES WITH URBAN OR RURAL ROUTES.
- LEGEND SIZES: WITH RESPECT TO NOTE 10, LETTER AND NUMERAL SIZES FOR ADVANCE GUIDE, EXIT DIRECTION, AND OVERHEAD SIGNS ARE:

LEGEND TYPE		FREEWAYS			EXPRESSWAYS			OVER-HEAD SIGNS
		MAJOR		INTER-MEDIATE	MAJOR		INTER-MEDIATE	
		CAT. A	CAT. B		CAT. A	CAT. B		
CARDINAL DIRECTION	FIRST LETTER	450 (18")	450 (18")	375 (15")	450 (18")	375 (15")	300 (12")	375 (15")
	OTHER LETTERS	375 (15")	375 (15")	300 (12")	375 (15")	300 (12")	250 (10")	300 (12")
DESTINATION		500/375 (20"/15")	500/375 (20"/15")	400/300 (16"/12")	500/375 (20"/15")	400/300 (16"/12")	330/250 (13.3"/10")	400/300 (16"/12")
DISTANCE	NUMERAL	450 (18")	450 (18")	375 (15")	450 (18")	375 (15")	300 (12")	375 (15")
	WORD	300 (12")	300 (12")	250 (10")	300 (12")	250 (10")	250 (10")	250 (10")
ACTION MESSAGE		300 (12")	300 (12")	250 (10")	300 (12")	250 (10")	250 (10")	250 (10")

- LEGEND SPACING: LEGEND SPACING SHALL FOLLOW THE PROCEDURES AND CHARTS SHOWN IN TC-8700C. SEE SHEET 9 OF THIS STANDARD FOR DESIGN DETAILS OF SHIELDS AND FOR THE SPACING OF CARDINAL DIRECTIONS.
- SERIES: ALL UPPER CASE/LOWER CASE LEGEND SHALL BE DETAILED WITH CLEARVIEW FONTS AS SHOWN ON TC-8700C SHEETS 8 THROUGH 11. CLEARVIEW 5W SHALL BE USED FOR SIGNS ON NEW SUPPORTS AND INSTALLATIONS WHERE EXISTING SUPPORTS WILL ACCOMMODATE A SIGN SIZED USING CLEARVIEW 5W, OTHERWISE USE CLEARVIEW 5WR. ALL CAPITAL LEGEND AND NUMERALS SHALL BE SERIES E, UNLESS OTHERWISE NOTED.
- COLOR: UNLESS NOTED OTHERWISE, ALL SIGNS SHALL HAVE A GREEN REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED LEGEND AND BORDER OF THE TYPE SPECIFIED IN SECTION 1103 OF PUBLICATION 408.
- BORDERS: ALL SIGNS SHALL HAVE A 50 mm (2") BORDER WITH 300 mm (12") CORNER RADIUS, UNLESS OTHERWISE NOTED.
- MUTCD: SIGN DETAILS SHALL COMPLY WITH THIS STANDARD DRAWING AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- 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.

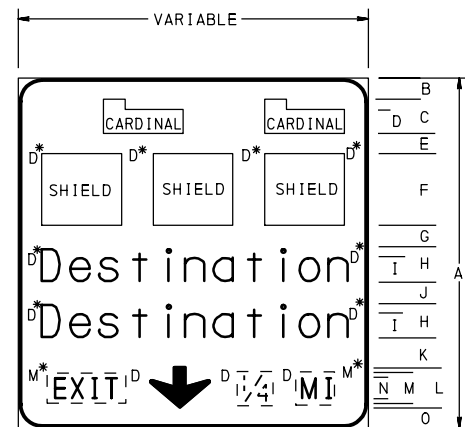
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SIGN DETAILS
FREEWAY AND EXPRESSWAY
GUIDE SIGNS

ADVANCE GUIDE SIGNS

RECOMMENDED MAR. 18, 2008 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAR. 18, 2008 <i>David R. Dilch</i> ACTING DIR. BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 1 OF 9 TC-8701D
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* INDICATES MINIMUM SPACING.

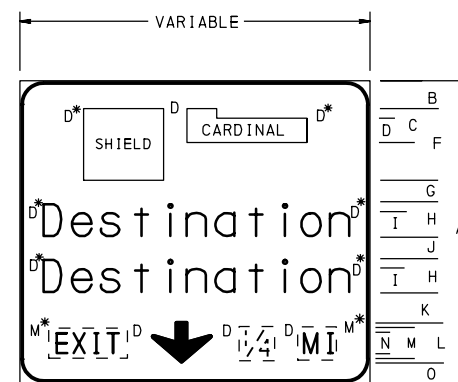


METRIC UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
500/375	1	4200	450	450	375	300	900	350	500	375	*	300	550	450	300	400
500/375	2	4950	400	450	375	300	900	350	500	375	*	300	550	450	300	325
400/300	1	3600	335	375	300	250	900	300	400	300	*	240	550	375	250	250
400/300	2	4200	310	375	300	250	900	275	400	300	*	300	215	550	375	225
330/250	1	3150	295	300	250	200	900	250	330	250	*	215	410	375	250	250
330/250	2	3750	305	300	250	200	900	250	330	250	*	225	410	375	250	250

ENGLISH UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (INCHES)														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
20/15	1	168	18	18	15	12	36	14	20	15	*	12	22	18	12	16
20/15	2	198	16	18	15	12	36	14	20	15	*	12	22	18	12	13
16/12	1	144	13.4	15	12	10	36	12	16	12	*	9.6	22	15	10	10
16/12	2	168	12.4	15	12	10	36	11	16	12	*	8.6	22	15	10	9
13.3/10	1	126	11.6	12	10	8	36	10	13.3	10	*	8.6	16.5	15	10	10
13.3/10	2	150	11.9	12	10	8	36	10	13.3	10	*	9	16.5	15	10	10



METRIC UNITS

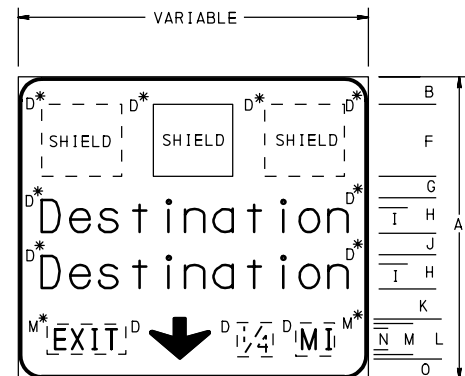
DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)													
		A	B	C	D	F	G	H	I	J	K	L	M	N	O
500/375	1	3300	375	450	375	900	350	500	375	*	300	550	450	300	325
500/375	2	4200	385	450	375	900	350	500	375	*	300	550	450	300	340
400/300	1	3000	335	375	300	900	325	400	300	*	240	550	375	250	250
400/300	2	3600	300	375	300	900	300	400	300	*	300	215	550	375	235
330/250	1	2700	300	300	250	900	250	330	250	*	235	410	375	250	275
330/250	2	3300	310	300	250	900	250	330	250	*	235	410	375	250	285

ENGLISH UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (INCHES)													
		A	B	C	D	F	G	H	I	J	K	L	M	N	O
20/15	1	132	15	18	15	36	14	20	15	*	12	22	18	12	13
20/15	2	168	15.4	18	15	36	14	20	15	*	12	22	18	12	13.6
16/12	1	120	13.4	15	12	36	13	16	12	*	9.6	22	15	10	10
16/12	2	144	12	15	12	36	12	16	12	*	8.6	22	15	10	9.4
13.3/10	1	108	12	12	10	36	10	13.3	10	*	9.4	16.5	15	10	10.8
13.3/10	2	132	12.4	12	10	36	10	13.3	10	*	9.4	16.5	15	10	11.1

NOTES:

- SIGNS ON THIS SHEET ARE TO BE USED OVERHEAD FOR LANE ASSIGNMENTS.
- REFER TO TC-8700C FOR ARROW DETAILS. THE TYPE C ARROW SHALL BE USED FOR THE 500 mm / 375 mm (20"/15") AND 400 mm / 300 mm (16"/12") LEGEND SIZES, AND THE TYPE D ARROW SHALL BE USED FOR THE 330 mm / 250 mm (13.3"/10") LEGEND SIZE.
- LANE ASSIGNMENT ARROW USAGE SHALL COMPLY WITH THE MOST CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

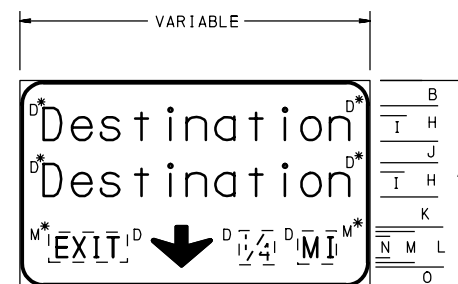


METRIC UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)													
		A	B	D	F	G	H	I	J	K	L	M	N	O	
500/375	1	3300	375	375	900	350	500	375	*	300	550	450	300	325	
500/375	2	4200	385	375	900	350	500	375	*	300	550	450	300	340	
400/300	1	3000	335	300	900	325	400	300	*	240	550	375	250	250	
400/300	2	3600	300	300	900	300	400	300	*	300	215	550	375	235	
330/250	1	2700	300	250	900	250	330	250	*	235	410	375	250	275	
330/250	2	3300	310	250	900	250	330	250	*	235	410	375	250	285	

ENGLISH UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (INCHES)													
		A	B	D	F	G	H	I	J	K	L	M	N	O	
20/15	1	132	15	15	36	14	20	15	*	12	22	18	12	13	
20/15	2	168	15.4	15	36	14	20	15	*	12	22	18	12	13.6	
16/12	1	120	13.4	12	36	13	16	12	*	9.6	22	15	10	10	
16/12	2	144	12	12	36	12	16	12	*	8.6	22	15	10	9.4	
13.3/10	1	108	12	10	36	10	13.3	10	*	9.4	16.5	15	10	10.8	
13.3/10	2	132	12.4	10	36	10	13.3	10	*	9.4	16.5	15	10	11.1	



METRIC UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)													
		A	B	D	H	I	J	K	L	M	N	O			
500/375	1	2100	400	375	500	375	*	300	550	450	300	350			
500/375	2	3000	410	375	500	375	*	300	550	450	300	365			
400/300	1	1800	350	300	400	300	*	240	550	375	250	260			
400/300	2	2400	310	300	400	300	*	300	215	550	375	225			
330/250	1	1500	280	250	330	250	*	235	410	375	250	245			
330/250	2	2100	285	250	330	250	*	235	410	375	250	260			

ENGLISH UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (INCHES)													
		A	B	D	H	I	J	K	L	M	N	O			
20/15	1	84	16	15	20	15	*	12	22	18	12	14			
20/15	2	120	16.4	15	20	15	*	12	22	18	12	14.6			
16/12	1	72	14	12	16	12	*	9.6	22	15	10	10.4			
16/12	2	96	12.4	12	16	12	*	8.6	22	15	10	9			
13.3/10	1	60	11	10	13.3	10	*	9.4	16.5	15	10	9.8			
13.3/10	2	84	11.2	10	13.3	10	*	9.4	16.5	15	10	10.3			

* INDICATES MINIMUM SPACING.

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

SIGN DETAILS
FREEWAY AND EXPRESSWAY
GUIDE SIGNS

OVERHEAD LANE
ASSIGNMENT SIGNS

RECOMMENDED MAR. 18, 2008

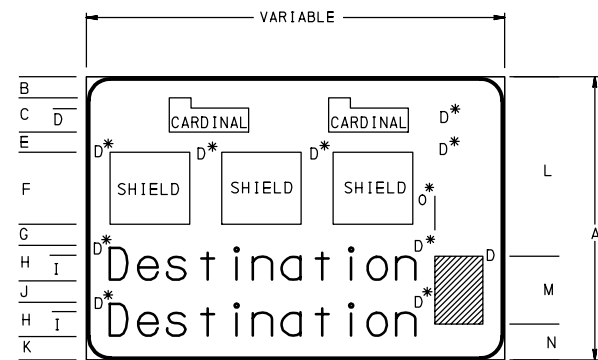
Alan C. Rowe
CHIEF, TRAFFIC ENGINEERING AND
OPERATIONS DIVISION

RECOMMENDED MAR. 18, 2008

Daryl R. Dilch
ACTING DIR. BUREAU OF HIGHWAY SAFETY
AND TRAFFIC ENGINEERING

SHT. 2 OF 9

TC-8701D

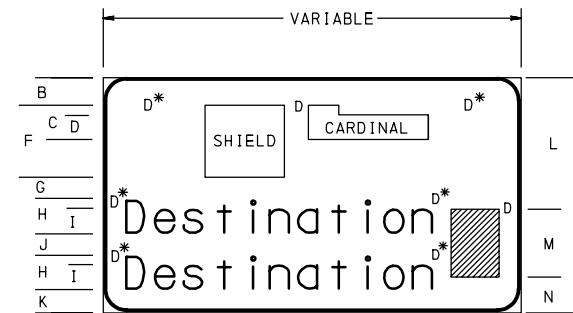


METRIC UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
500/375	1	3300	400	450	375	300	900	350	500	375	400	2085	815	400		
500/375	2	4200	415	450	375	300	900	350	500	375	375	410	2760	815	625	
400/300	1	2850	325	375	300	250	900	275	400	300		325	1710	815	325	200
400/300	2	3600	325	375	300	250	900	300	400	300	300	350	2310	815	475	
330/250	1	2550	285	300	250	200	900	250	330	250		285	1450	815	285	200
330/250	2	3150	295	300	250	200	900	250	330	250	250	295	1935	815	400	

ENGLISH UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (INCHES)														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
20/15	1	132	16	18	15	12	36	14	20	15		16	83.4	32.6	16	
20/15	2	168	16.6	18	15	12	36	14	20	15	15	16.4	110.4	32.6	25	
16/12	1	114	13	15	12	10	36	11	16	12		13	68.4	32.6	13	8
16/12	2	144	13	15	12	10	36	12	16	12	12	14	92.4	32.6	19	
13.3/10	1	102	11.3	12	10	8	36	10	13.3	10		11.4	58	32.6	11.4	8
13.3/10	2	126	11.7	12	10	8	36	10	13.3	10	10	11.7	77.4	32.6	16	

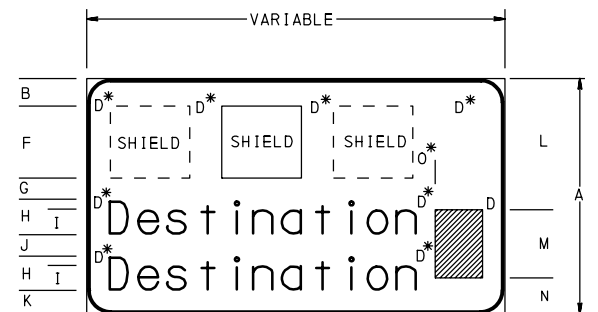


METRIC UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)													
		A	B	C	D	F	G	H	I	J	K	L	M	N	
500/375	1	2550	400	450	375	900	350	500	375		400	1335	815	400	
500/375	2	3450	415	450	375	900	350	500	375	375	410	2010	815	625	
400/300	1	2250	325	375	300	900	300	400	300		325	1110	815	325	
400/300	2	3000	350	375	300	900	300	400	300	300	350	1710	815	475	
330/250	1	2100	300	300	250	900	275	330	250		295	990	815	295	
330/250	2	2700	310	300	250	900	275	330	250	250	305	1485	815	400	

ENGLISH UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (INCHES)													
		A	B	C	D	F	G	H	I	J	K	L	M	N	
20/15	1	102	16	18	15	36	14	20	15		16	53.4	32.6	16	
20/15	2	138	16.6	18	15	36	14	20	15	15	16.4	80.4	32.6	25	
16/12	1	90	13	15	12	36	12	16	12		13	44.4	32.6	13	
16/12	2	120	14	15	12	36	12	16	12	12	14	68.4	32.6	19	
13.3/10	1	84	12	12	10	36	11	13.3	10		11.7	39.6	32.6	11.8	
13.3/10	2	108	12.4	12	10	36	11	13.3	10	10	12	59.4	32.6	16	

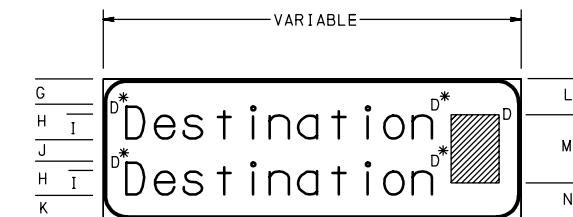


METRIC UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)													
		A	B	D	F	G	H	I	J	K	L	M	N	O	
500/375	1	2550	400	375	900	350	500	375	400	1335	815	400			
500/375	2	3450	415	375	900	350	500	375	375	410	2010	815	625		
400/300	1	2250	325	300	900	300	400	300		325	1110	815	325	200	
400/300	2	3000	350	300	900	300	400	300	300	350	1710	815	475		
330/250	1	2100	300	250	900	275	330	250		295	990	815	295	200	
330/250	2	2700	310	250	900	275	330	250	250	305	1485	815	400		

ENGLISH UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (INCHES)													
		A	B	D	F	G	H	I	J	K	L	M	N	O	
20/15	1	102	16	15	36	14	20	15		16	53.4	32.6	16		
20/15	2	138	16.6	15	36	14	20	15	15	16.4	80.4	32.6	25		
16/12	1	90	13	12	36	12	16	12		13	44.4	32.6	13	8	
16/12	2	120	14	12	36	12	16	12	12	14	68.4	32.6	19		
13.3/10	1	84	12	10	36	11	13.3	10		11.7	39.6	32.6	11.8	8	
13.3/10	2	108	12.4	10	36	11	13.3	10	10	12	59.4	32.6	16		



METRIC UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (MILLIMETERS)													
		A	D	G	H	I	J	K	L	M	N				
500/375	1	1350	375	425	500	375		425	270	815	265				
500/375	2	2250	375	440	500	375	375	435	720	815	715				
400/300	1	1350	300	475	400	300		475	270	815	265				
400/300	2	1800	300	350	400	300	300	350	495	815	490				
330/250	1	1350	250	510	330	250		510	270	815	265				
330/250	2	1500	250	295	330	250	250	295	345	815	340				

ENGLISH UNITS

DEST. SIZE	DEST. LINES	DIMENSIONS (INCHES)													
		A	D	G	H	I	J	K	L	M	N				
20/15	1	54	15	17	20	15		17	10.8	32.6	10.6				
20/15	2	90	15	17.6	20	15	15	17.4	28.8	32.6	28.6				
16/12	1	54	12	19	16	12		19	10.8	32.6	10.6				
16/12	2	72	12	14	16	12	12	14	19.8	32.6	19.6				
13.3/10	1	54	10	20.4	13.3	10		20.3	10.8	32.6	10.6				
13.3/10	2	60	10	11.7	13.3	10	10	11.7	13.8	32.6	13.6				

NOTES:

- REFER TO TC-8700C FOR ARROW DETAILS. TYPE F ARROW DIMENSIONS ARE SHOWN FOR ILLUSTRATIVE PURPOSES, BUT TYPE E THROUGH TYPE J ARROWS MAY ALSO BE USED FOR THE SIGNS SHOWN ON THIS SHEET.
- 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

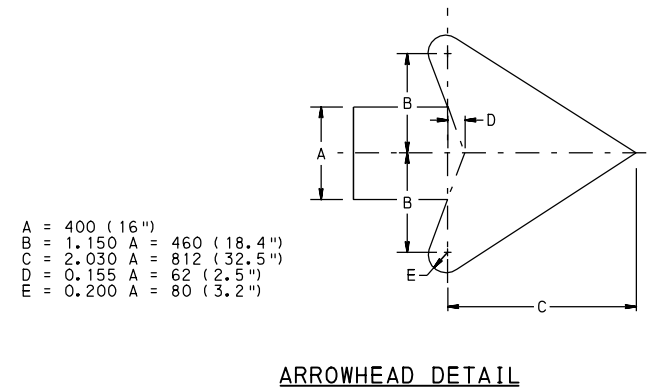
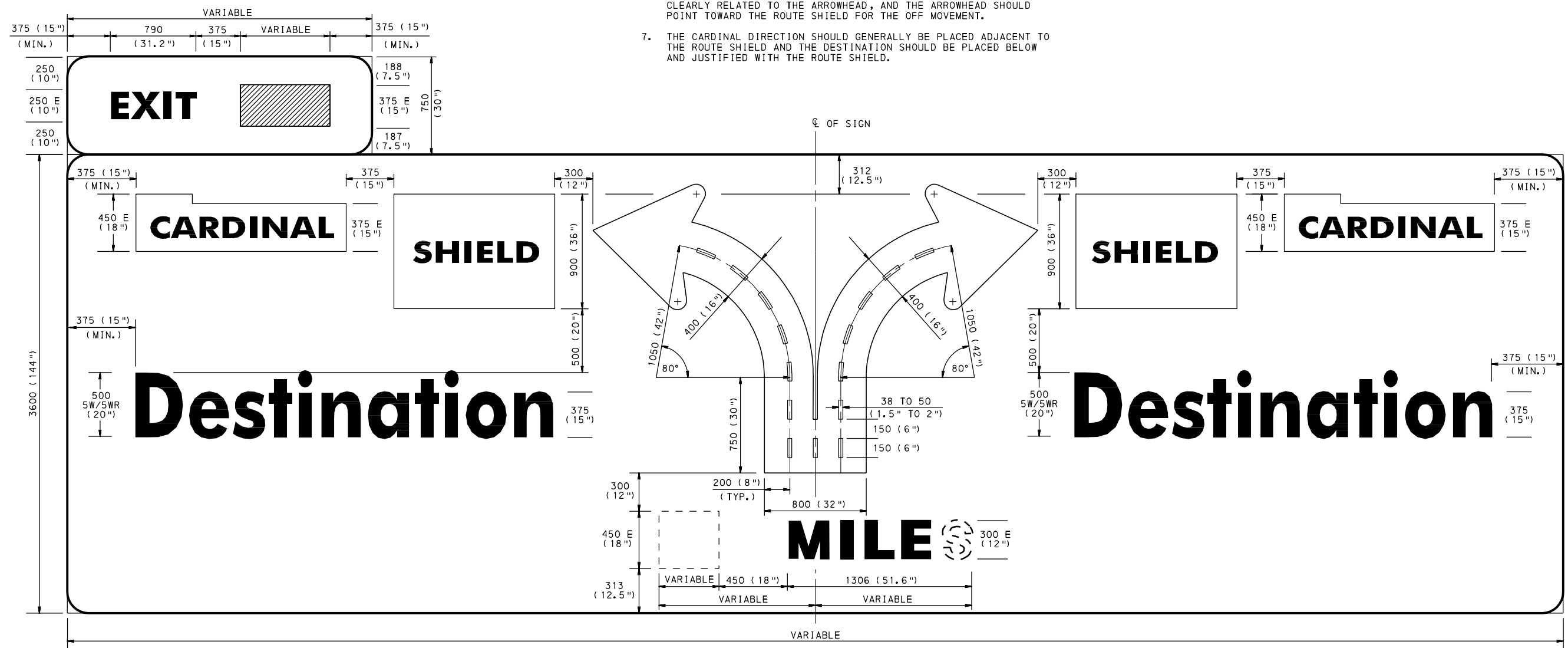
SIGN DETAILS
FREEWAY AND EXPRESSWAY
GUIDE SIGNS

EXIT DIRECTION SIGNS

* INDICATES MINIMUM SPACING.

- 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 PARENTHESES ().
13. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

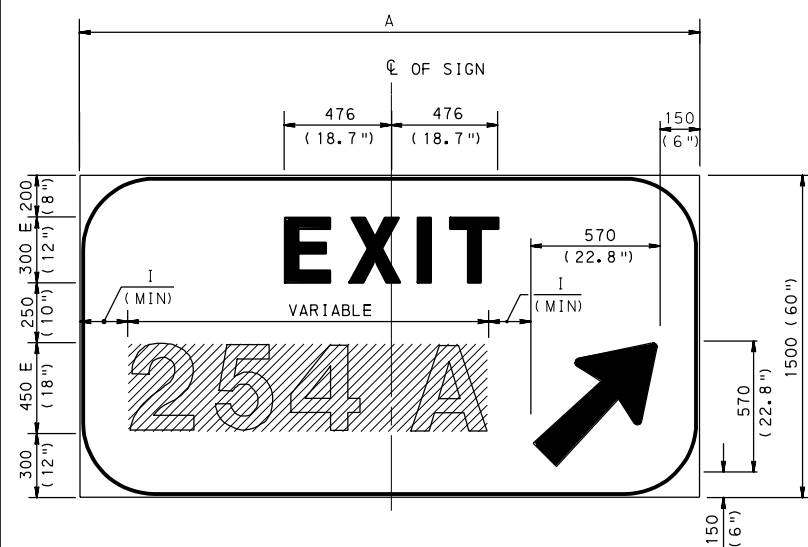


COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

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>Daryl R. Dilts</i> ACTING DIR. BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 4 OF 9 TC-8701D
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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

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

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



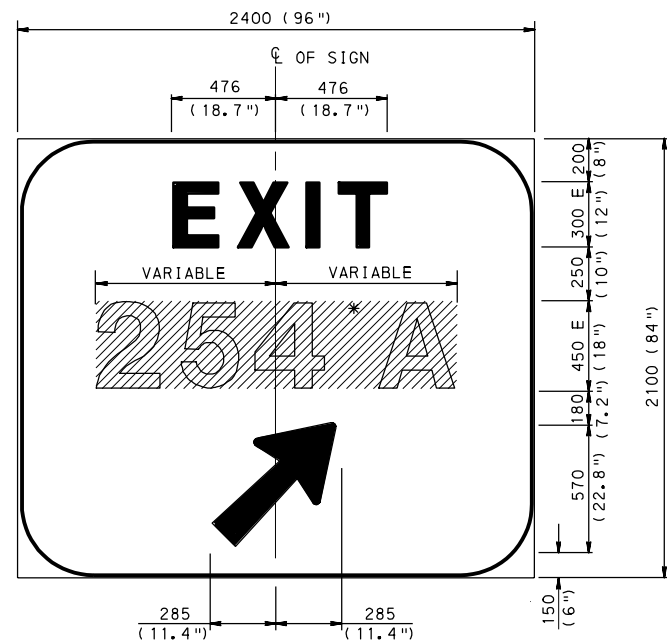
BORDER: 35 (1.4")
CORNER RADII: 100 (4")

NUMBER OF DIGITS	LETTERS	A (mm)	A (INCHES)
1	0	72	900 (36)
2	0	90	900 (36)
1	1**	96	900 (36)
3	0	96	900 (36)
2	1**	120	1200 (48)
3	1**	135	1350 (54)

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

TYPE I
(STANDARD)

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



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

TYPE II

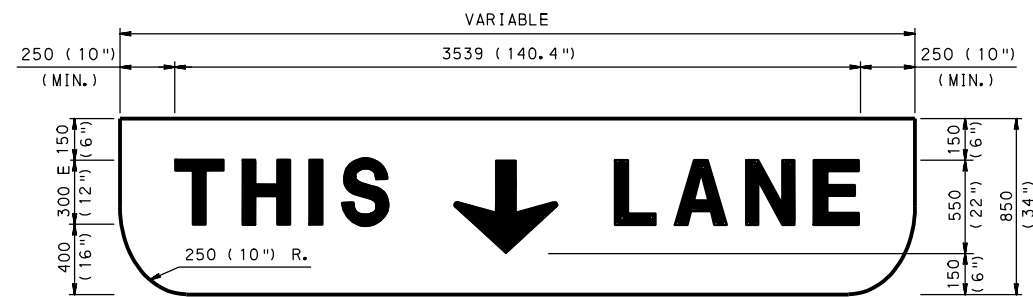
(SPECIAL CASE - USE ONLY WHEN LATERAL SPACING PROHIBITS THE USE OF TYPE I)



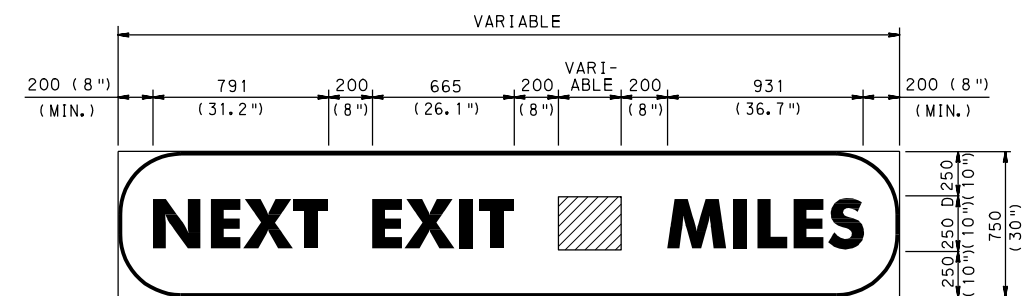
TYPE IV

(USE FOR UNNUMBERED EXITS ONLY)

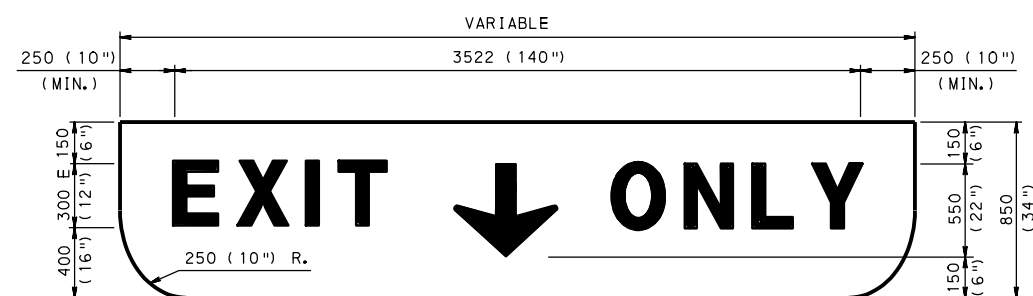
GORE SIGNS



THIS LANE PANEL



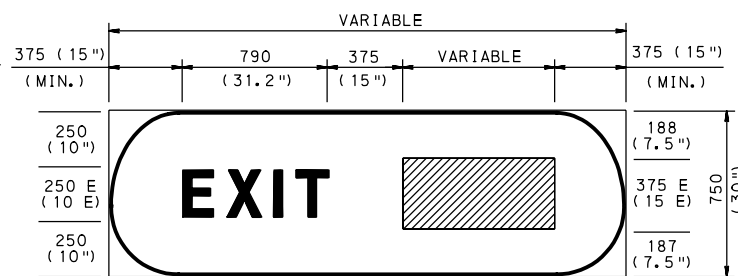
NEXT EXIT PANEL



EXIT ONLY PANEL



EXIT ONLY PANEL



EXIT PANEL

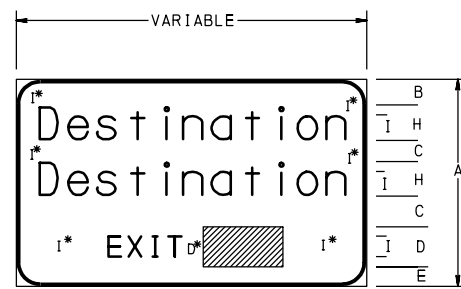
NOTES:

- 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.

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

SIGN DETAILS
FREEWAY AND EXPRESSWAY
GUIDE SIGNS

GORE SIGNS, EXIT PANELS
& NEXT EXIT SIGNS



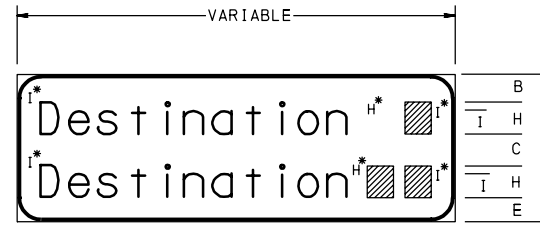
METRIC UNITS

TYPE FACILITY	DESTINATION LINES	DIMENSIONS (MILLIMETERS)						
		A	B	C	D	E	H	I
EXPRESSWAY	1	1200	205	225	300	205	265	200
	2	1800	235	250	300	235	265	200
FREEWAY	1	1500	260	275	375	260	330	250
	2	2100	260	275	375	255	330	250

ENGLISH UNITS

TYPE FACILITY	DESTINATION LINES	DIMENSIONS (INCHES)						
		A	B	C	D	E	H	I
EXPRESSWAY	1	48	8.2	9	12	8.2	10.6	8
	2	72	9.4	10	12	9.4	10.6	8
FREEWAY	1	60	10.4	11	15	10.3	13.3	10
	2	84	10.2	11	15	10.2	13.3	10

SINGLE EXIT SUPPLEMENTAL GUIDE SIGN



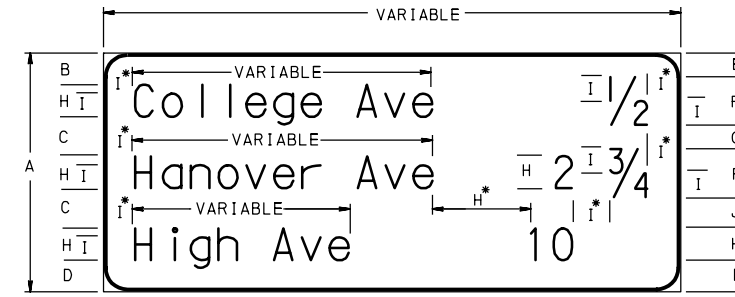
METRIC UNITS

TYPE FACILITY	DESTINATION LINES	DIMENSIONS (MILLIMETERS)					
		A	B	C	E	H	I
EXPRESSWAY	2	1200	275	250	275	200	150
	3	1500	250	200	250	200	150
FREEWAY	2	1350	275	270	275	265	200
	3	1800	245	255	265	265	200

ENGLISH UNITS

TYPE FACILITY	DESTINATION LINES	DIMENSIONS (INCHES)					
		A	B	C	E	H	I
EXPRESSWAY	2	48	11	10	11	8	6
	3	60	10	8	10	8	6
FREEWAY	2	54	11	10.8	11	10.6	8
	3	72	10.1	10	10.1	10.6	8

POST INTERCHANGE DISTANCE SIGN



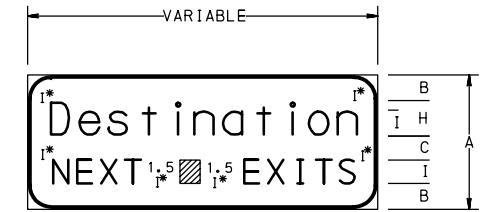
METRIC UNITS

TYPE FACILITY	DESTINATION LINES	DIMENSIONS (MILLIMETERS)									
		A	B	C	D	E	F	G	H	I	J
EXPRESSWAY	2	1350	285	250	285	270	300	215	265	200	230
	3	1800	250	250	255	235	300	215	265	200	230
FREEWAY	2	1500	285	275	280	265	375	230	330	250	250
	3	2100	280	275	280	260	375	230	330	250	250

ENGLISH UNITS

TYPE FACILITY	DESTINATION LINES	DIMENSIONS (INCHES)									
		A	B	C	D	E	F	G	H	I	J
EXPRESSWAY	2	54	11.4	10	11.4	10.7	12	8.6	10.6	8	9.3
	3	72	10.1	10	10.1	9.4	12	8.6	10.6	8	9.3
FREEWAY	2	60	11.2	11	11.2	10.4	15	9.2	13.3	10	10.1
	3	84	11	11	11.1	10.2	15	9.2	13.3	10	10.2

INTERCHANGE SEQUENCE SIGN



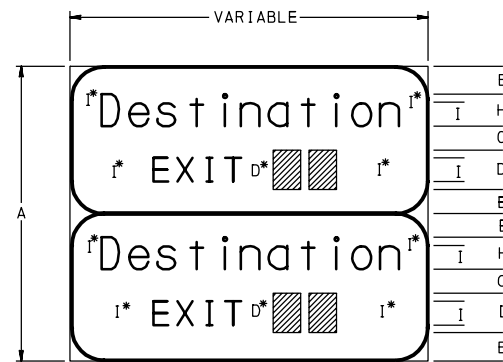
METRIC UNITS

TYPE FACILITY	DIMENSIONS (MILLIMETERS)				
	A	B	C	H	I
EXPRESSWAY	1200	245	245	265	200
FREEWAY	1350	260	250	330	250

ENGLISH UNITS

TYPE FACILITY	DIMENSIONS (INCHES)				
	A	B	C	H	I
EXPRESSWAY	48	9.8	9.8	10.6	8
FREEWAY	54	10.3	10.1	13.3	10

NEXT (NUMBER) EXITS AREA SIGN



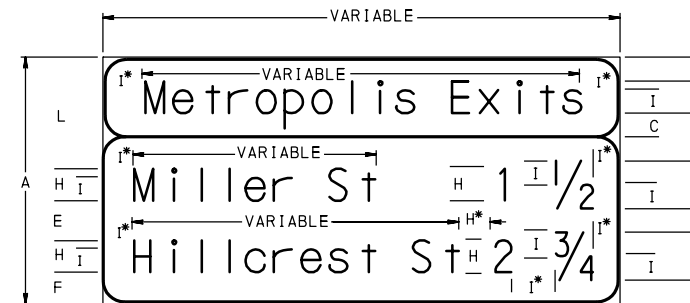
METRIC UNITS

TYPE FACILITY	DIMENSIONS (MILLIMETERS)						
	A	B	C	D	E	H	I
EXPRESSWAY	2400	220	200	300	215	265	200
FREEWAY	3000	275	250	375	270	330	250

ENGLISH UNITS

TYPE FACILITY	DIMENSIONS (INCHES)						
	A	B	C	D	E	H	I
EXPRESSWAY	96	8.8	8	12	8.6	10.6	8
FREEWAY	120	10.9	10	15	10.8	13.3	10

DOUBLE EXIT SUPPLEMENTAL GUIDE SIGN



METRIC UNITS

TYPE FACILITY	DESTINATION LINES	DIMENSIONS (MILLIMETERS)											
		A	B	C	D	E	F	G	H	I	J	K	L
EXPRESSWAY	2	1950	255	205	400	235	250	300	265	200	200	230	935
	3	2400	255	205	400	210	250	300	265	200	175	230	935
FREEWAY	2	2400	310	260	500	295	285	375	330	250	250	260	1160
	3	3000	285	260	500	295	285	375	330	250	250	260	1135

ENGLISH UNITS

TYPE FACILITY	DESTINATION LINES	DIMENSIONS (INCHES)											
		A	B	C	D	E	F	G	H	I	J	K	L
EXPRESSWAY	2	78	10.2	8.2	16	9.4	10	12	10.6	8	8	9.2	37.4
	3	96	10.2	8.2	16	8.4	10	12	10.6	8	7	9.2	37.4
FREEWAY	2	96	12.3	10.4	20	11.7	11.3	15	13.3	10	10	10.4	46.4
	3	120	11.3	10.4	20	11.7	11.3	15	13.3	10	10	10.4	45.4

COMMUNITY INTERCHANGES IDENTIFICATION SIGN

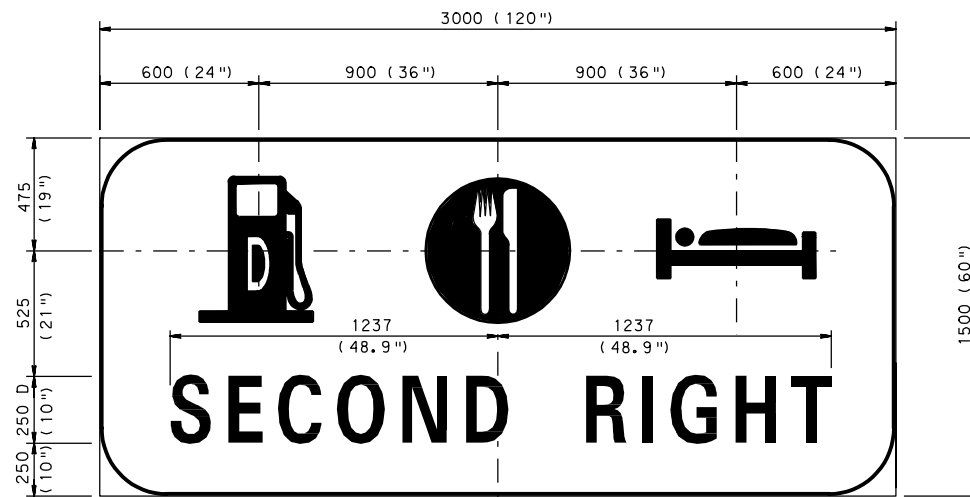
* INDICATES MINIMUM SPACING.

NOTES:

- SEE TC-8700C, SHEET 1 FOR LAYOUT OF FRACTIONS.
- EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

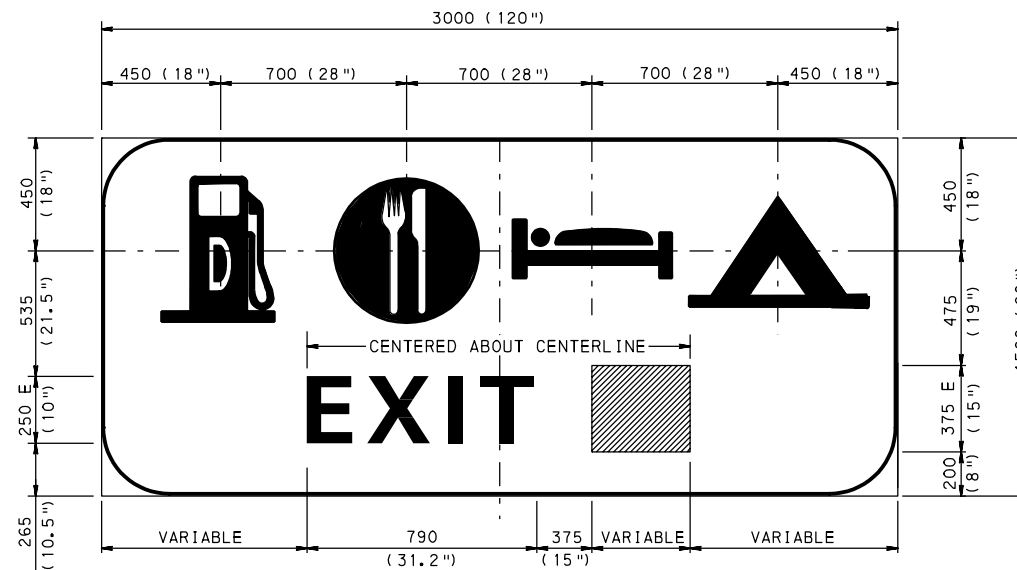
**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING**

**SIGN DETAILS
FREEWAY AND EXPRESSWAY
GUIDE SIGNS
SUPPLEMENTAL GUIDE SIGNS
& MISCELLANEOUS
INTERCHANGE SIGNS**



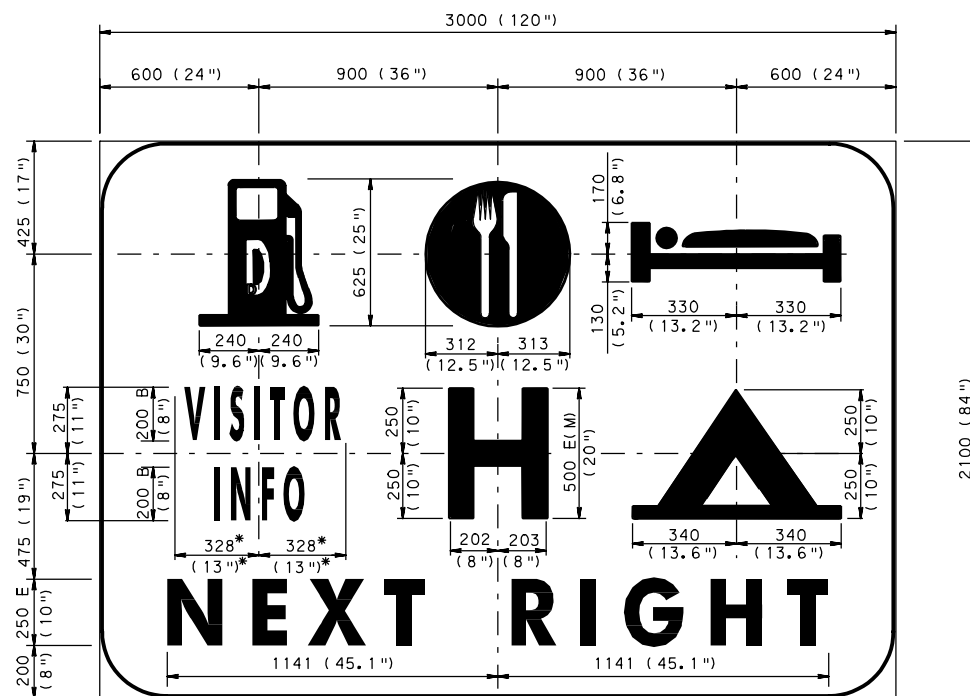
SEE 6-SERVICE SIGN FOR SERVICE SYMBOL DIMENSIONS

3-SERVICE SIGN



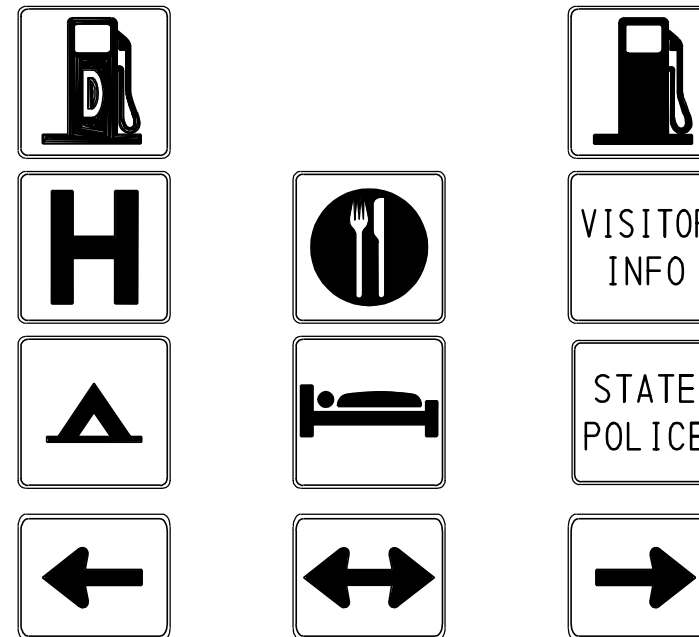
SEE 6-SERVICE SIGN FOR SERVICE SYMBOL DIMENSIONS

4-SERVICE SIGN



* - 15% REDUCED SPACING

6-SERVICE SIGN



RAMP SIGNING

NOTES:

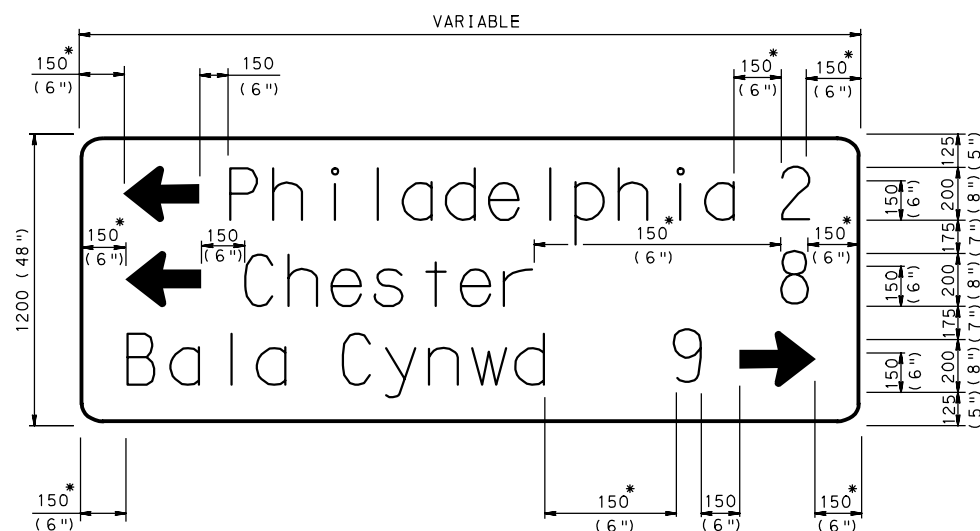
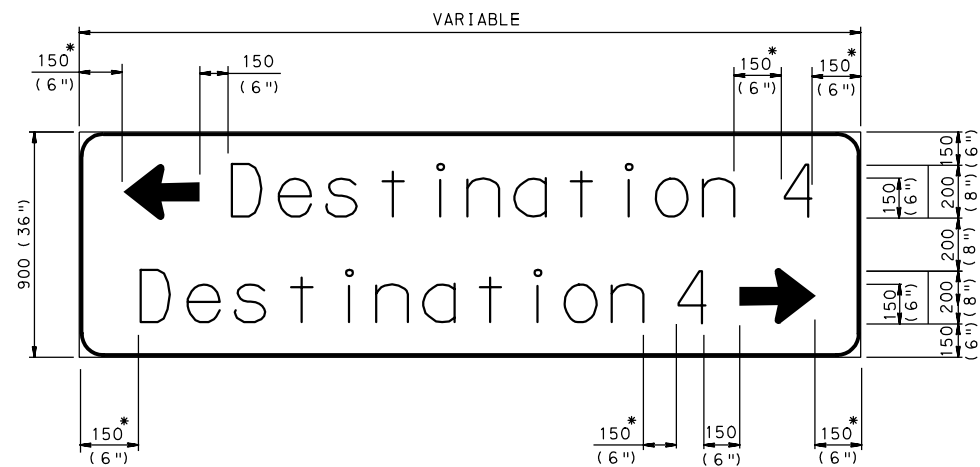
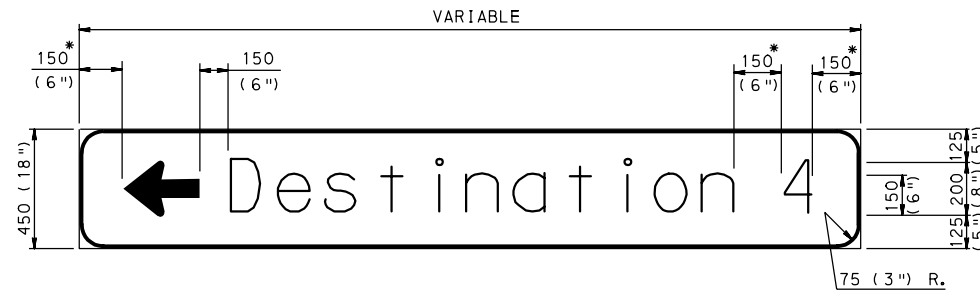
1. ALL SERVICE SIGNS SHALL HAVE A BLUE REFLECTORIZED BACKGROUND AND WHITE REFLECTORIZED SYMBOLS, LEGENDS, AND BORDERS. UNLESS NOTED OTHERWISE, THE TYPE OF REFLECTIVE SHEETING SHALL COMPLY WITH DEPARTMENT PUBLICATION 408.
2. ALL MAINLINE SERVICE SIGNS SHALL HAVE A 50 mm (2") BORDER WITH 225 mm (9") CORNER RADIUS.
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

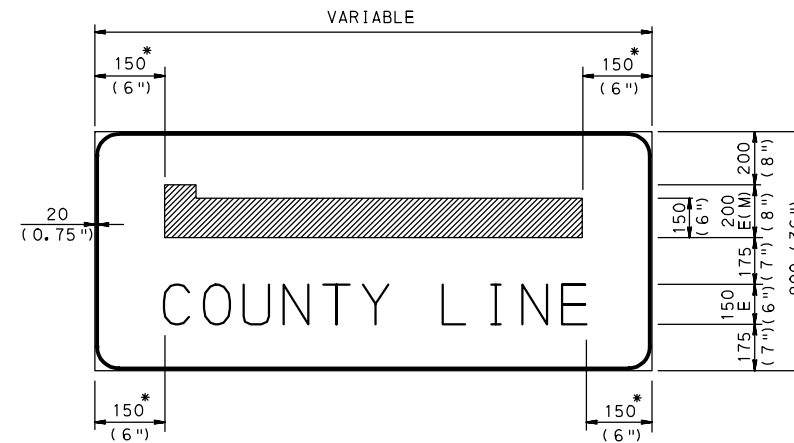
GENERAL MOTORIST
SERVICE SIGNS

RECOMMENDED MAR. 18, 2008 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAR. 18, 2008 <i>Daryl R. Dilch</i> ACTING DIR. BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 7 OF 9 TC-8701D
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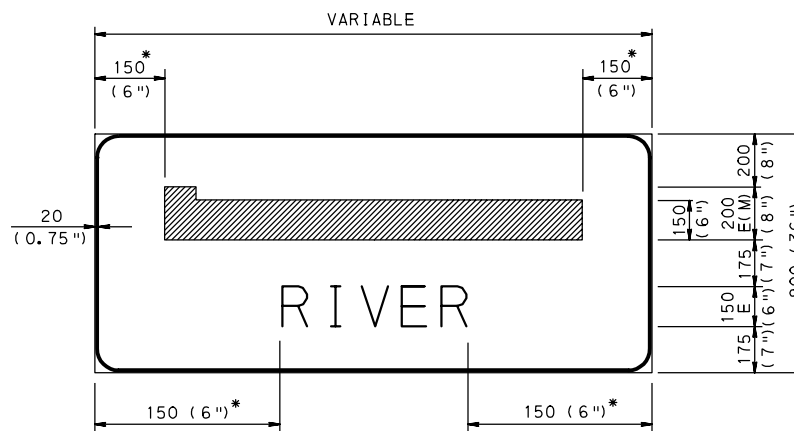


RAMP DESTINATION SIGNS

* INDICATES MINIMUM SPACING



COUNTY BOUNDARY SIGNS



WATERWAY SIGNS

NOTES:

1. ALL SIGNS ON THIS SHEET SHALL HAVE A 30 mm (1.25") BORDER WITH 150 mm (6") CORNER RADII, UNLESS OTHERWISE NOTED.
2. REFER TO TC-8700C FOR ARROW DETAILS. TYPE K, TYPE L OR TYPE M ARROWS SHALL BE USED FOR THE RAMP DESTINATION SIGNS.
3. BOUNDARY AND WATERWAY SIGNS SHALL HAVE WHITE REFLECTORIZED BACKGROUND AND BLUE REFLECTORIZED LEGEND AND BORDER. UNLESS NOTED OTHERWISE, THE TYPE OF REFLECTIVE SHEETING SHALL COMPLY WITH DEPARTMENT PUBLICATION 408.
4. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
5. 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

RAMP DESTINATION
AND BOUNDARY SIGNS

RECOMMENDED MAR. 18, 2008

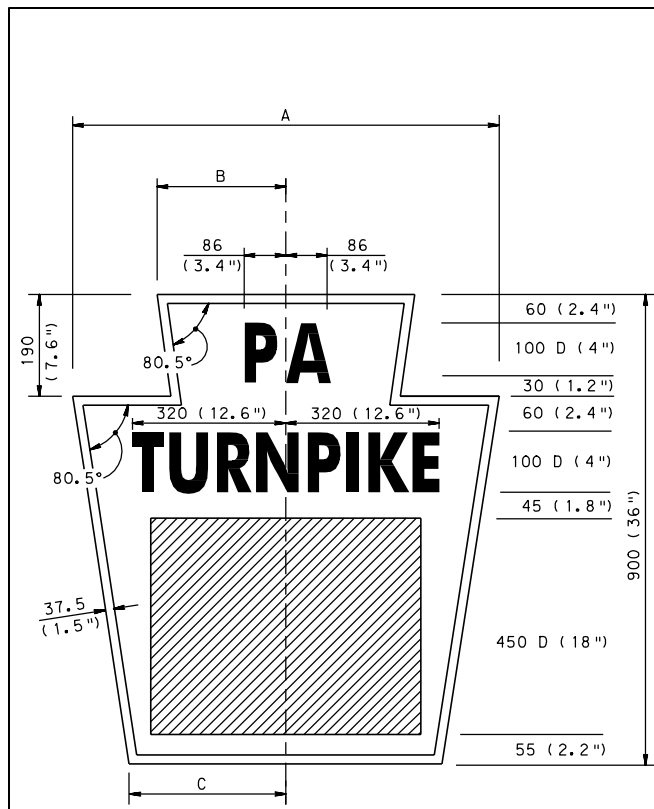
Alan C. Rowe
CHIEF, TRAFFIC ENGINEERING AND
OPERATIONS DIVISION

RECOMMENDED MAR. 18, 2008

Daryl R. Dilch
ACTING DIR. BUREAU OF HIGHWAY SAFETY
AND TRAFFIC ENGINEERING

SHT. 8 OF 9

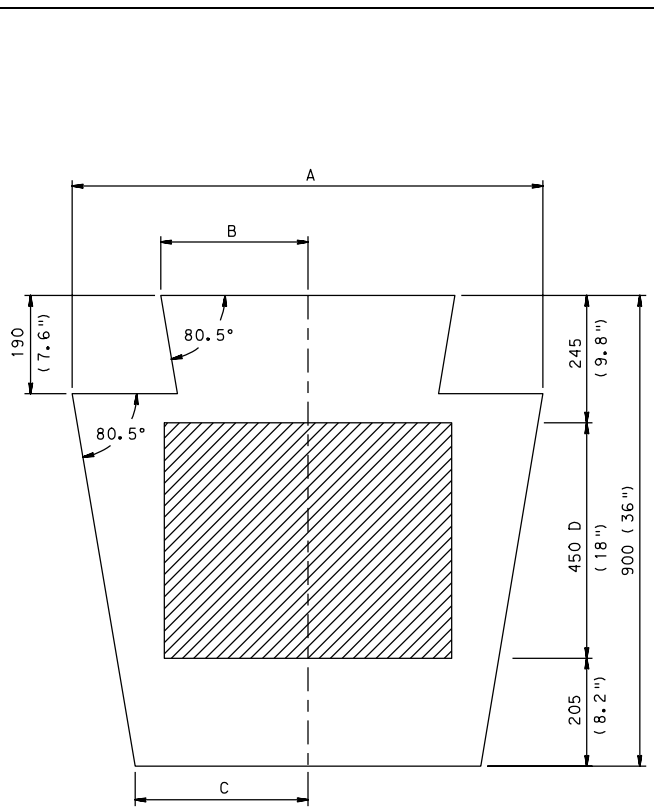
TC-8701D



COLOR: GREEN REFLECTORIZED BACKGROUND
WHITE REFLECTORIZED LEGEND AND BORDER

METRIC UNITS			ENGLISH UNITS				
NUMBER OF DIGITS	DIMENSIONS (mm)		NUMBER OF DIGITS	DIMENSIONS (")			
	A	B		A	B	C	
1 or 2	900	260	330	36	10.5	13.3	
3	1125	375	445	3	45	15	17.8

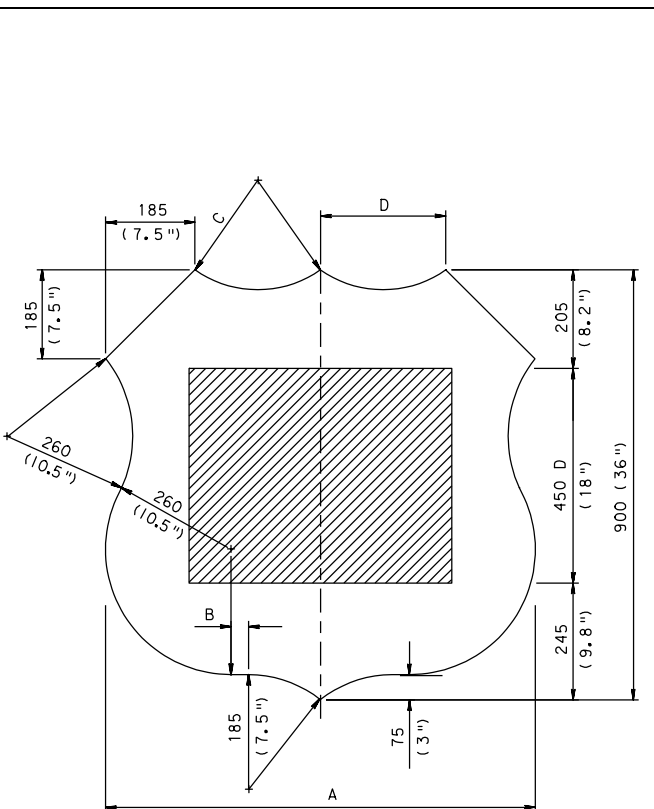
PA. TURNPIKE ROUTE SHIELD



COLOR: WHITE REFLECTORIZED BACKGROUND
BLACK NONREFLECTORIZED LEGEND

METRIC UNITS			ENGLISH UNITS				
NUMBER OF DIGITS	DIMENSIONS (mm)		NUMBER OF DIGITS	DIMENSIONS (")			
	A	B		C	A	B	C
1 or 2	900	260	330	36	10.5	13.3	
3	1125	375	445	3	45	15	17.8

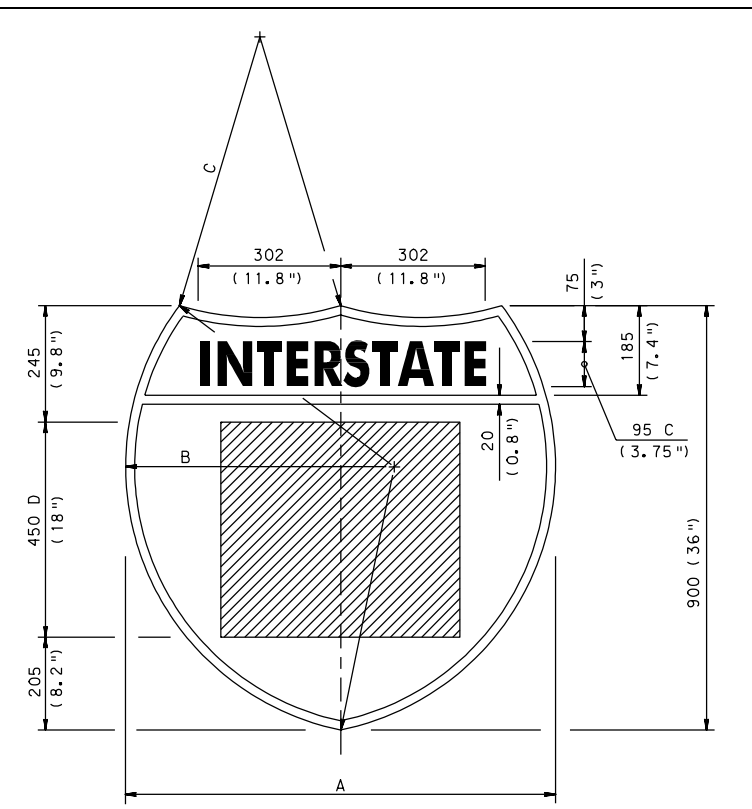
PA. SHIELD



COLOR: WHITE REFLECTORIZED BACKGROUND
BLACK NONREFLECTORIZED LEGEND

METRIC UNITS				ENGLISH UNITS					
NUMBER OF DIGITS	DIMENSIONS (mm)			NUMBER OF DIGITS	DIMENSIONS (")				
	A	B	C		D	A	B	C	D
1 or 2	900	35	185	260	36	1.5	7.5	10.5	
3	1125	135	335	375	3	45	5.5	13.5	15

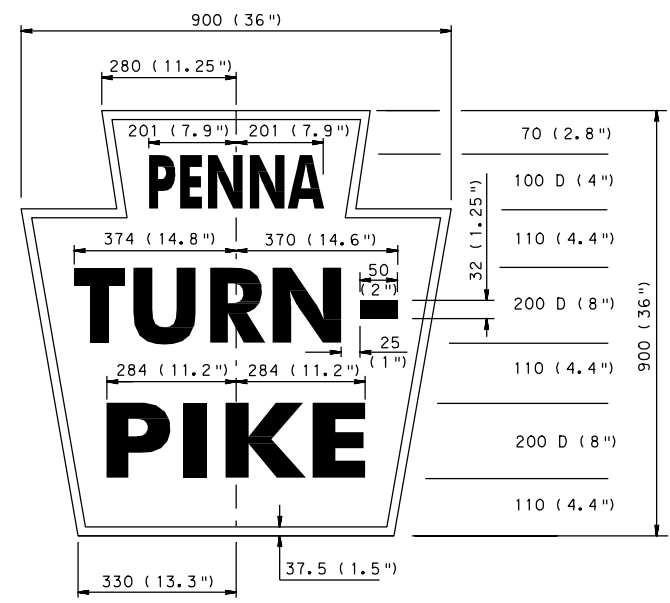
U.S. SHIELD



COLOR: WHITE REFLECTORIZED LEGEND AND BORDER
RED REFLECTORIZED TOP BACKGROUND
BLUE REFLECTORIZED BOTTOM BACKGROUND

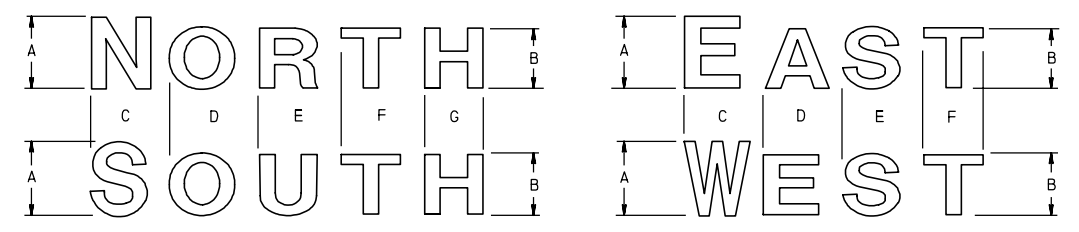
METRIC UNITS			ENGLISH UNITS				
NUMBER OF DIGITS	DIMENSIONS (mm)		NUMBER OF DIGITS	DIMENSIONS (")			
	A	B		C	A	B	C
1 or 2	900	571	571	36	22.5	22.5	
3	1125	647	914	3	45	25.5	36

INTERSTATE SHIELD



COLOR: GREEN REFLECTORIZED BACKGROUND
WHITE REFLECTORIZED LEGEND AND BORDER

PENNA. TURNPIKE SHIELD



SERIES E CAPITAL

	METRIC UNITS							TOTAL
	A	B	C	D	E	F	G	
NORTH	450	375	472	413	383	358	304	1930
	375	300	392	330	306	287	243	1558
SOUTH	300	250	315	276	254	238	202	1285
	450	375	452	413	383	358	304	1910
EAST	375	300	375	330	306	287	243	1541
	300	250	301	276	254	238	202	1271
WEST	450	375	393	460	383	279	224	1515
	375	300	326	368	306	224	186	1224
TOTAL	300	250	263	306	254	186	1009	1009
	450	375	566	358	383	279	224	1586
	375	300	470	287	306	224	1287	1287
	300	250	377	238	254	186	1055	1055

	ENGLISH UNITS							TOTAL
	A	B	C	D	E	F	G	
NORTH	18	15	18.6	16.3	15.0	14.1	12.0	76.0
	15	12	15.4	13.0	12.0	11.3	9.6	61.3
SOUTH	12	10	12.4	10.9	10.0	9.4	8.0	50.7
	18	15	17.7	16.3	15.0	14.1	12.0	75.1
EAST	15	12	14.7	13.0	12.0	11.3	9.6	60.6
	12	10	11.8	10.9	10.0	9.4	8.0	50.1
WEST	18	15	15.5	18.1	15.0	11.0	8.0	59.6
	15	12	12.9	14.5	12.0	8.8	7.3	48.2
TOTAL	12	10	10.3	12.1	10.0	7.3	5.9	39.7
	18	15	22.2	14.1	15.0	11.0	8.0	62.3
	15	12	18.5	11.3	12.0	8.8	7.3	50.6
	12	10	14.8	9.4	10.0	7.3	5.9	41.5

CARDINALS AND SHIELDS

NOTES:

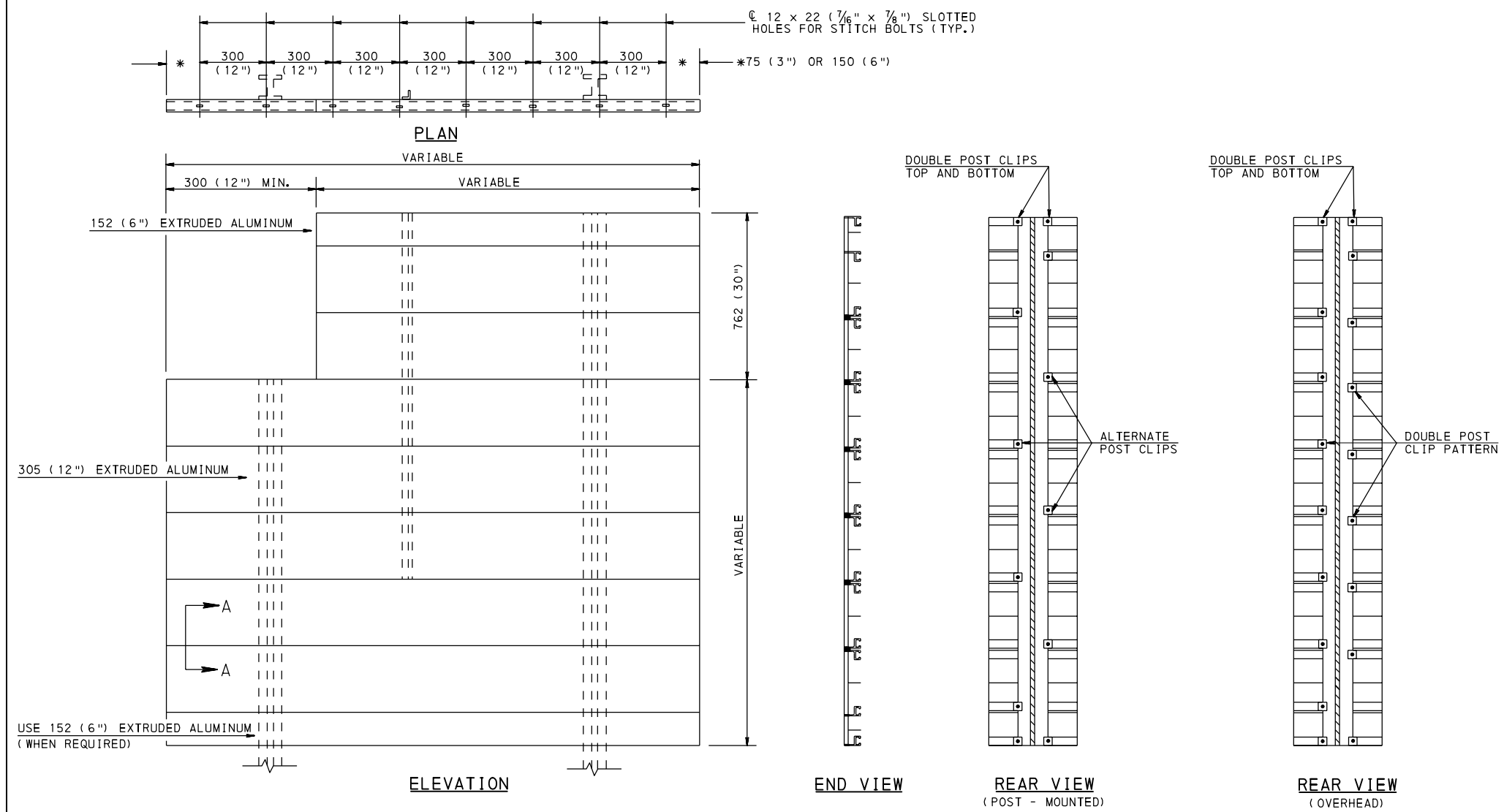
1. THESE IRREGULAR-SHAPED SHIELDS SHALL BE FABRICATED FROM TYPE III OR IV REFLECTIVE SHEETING AND SHALL BE USED ON ALL GUIDE SIGNS IN LIEU OF THOSE SHIELDS DEPICTED IN PUBLICATION 236M.
2. THE PA TURNPIKE ROUTE SHIELD SHALL ONLY BE USED WITH PA NUMBERED TRAFFIC ROUTES, I.E., NOT WITH INTERSTATE ROUTES SUCH AS I-76, I-276, I-476, ETC.
3. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
4. 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

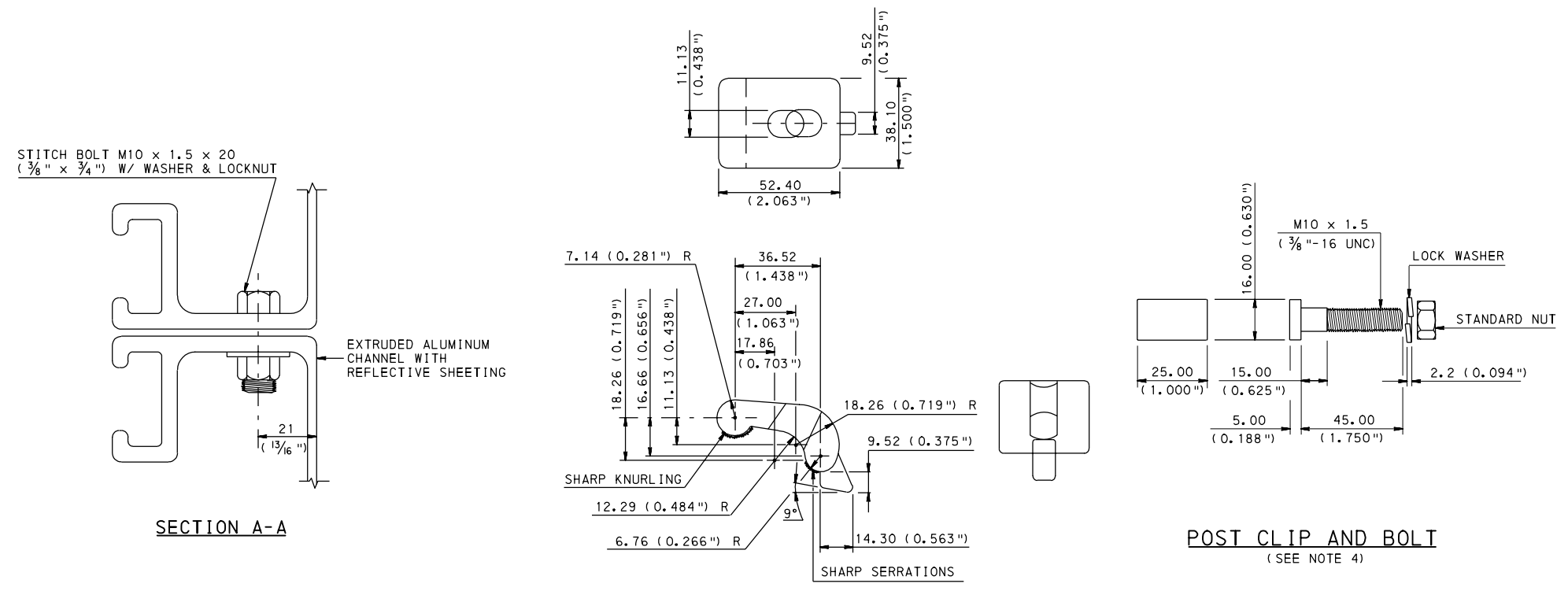
CARDINALS AND SHIELDS

RECOMMENDED MAR. 18, 2008 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAR. 18, 2008 <i>Daryl R. Dilch</i> ACTING DIR. BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 9 OF 9 TC-8701D
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- NOTES:**
- IF A 152 (6") SECTION IS REQUIRED, IT SHOULD BE PLACED AT THE TOP AND/OR THE BOTTOM OF THE SIGN.
 - STITCH BOLTS TO BE USED AT 300 (12") CENTERS THROUGHOUT THE SIGN PANEL.
 - A DOUBLE POST CLIP PATTERN IS REQUIRED FOR ALL OVERHEAD SIGNS.
 - A LOCK NUT AND M10 ($\frac{3}{8}$ ") WASHER MAY BE USED IN LIEU OF LOCK WASHER AND STANDARD NUT FOR POST CLIPS.
 - SEE TC-8702E FOR INSTALLATION ON WOOD POSTS.
 - 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.

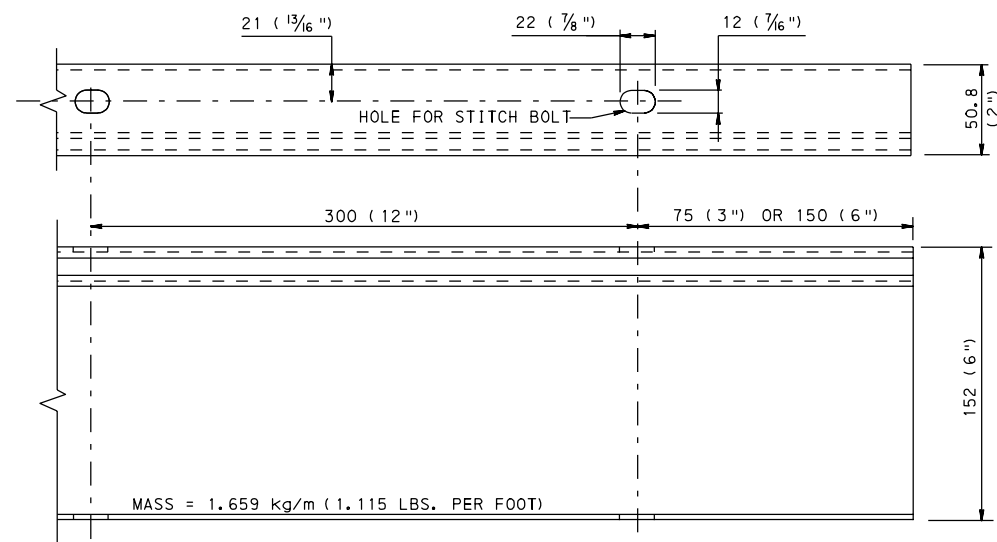
EXTRUDED ALUMINUM CHANNEL SIGN



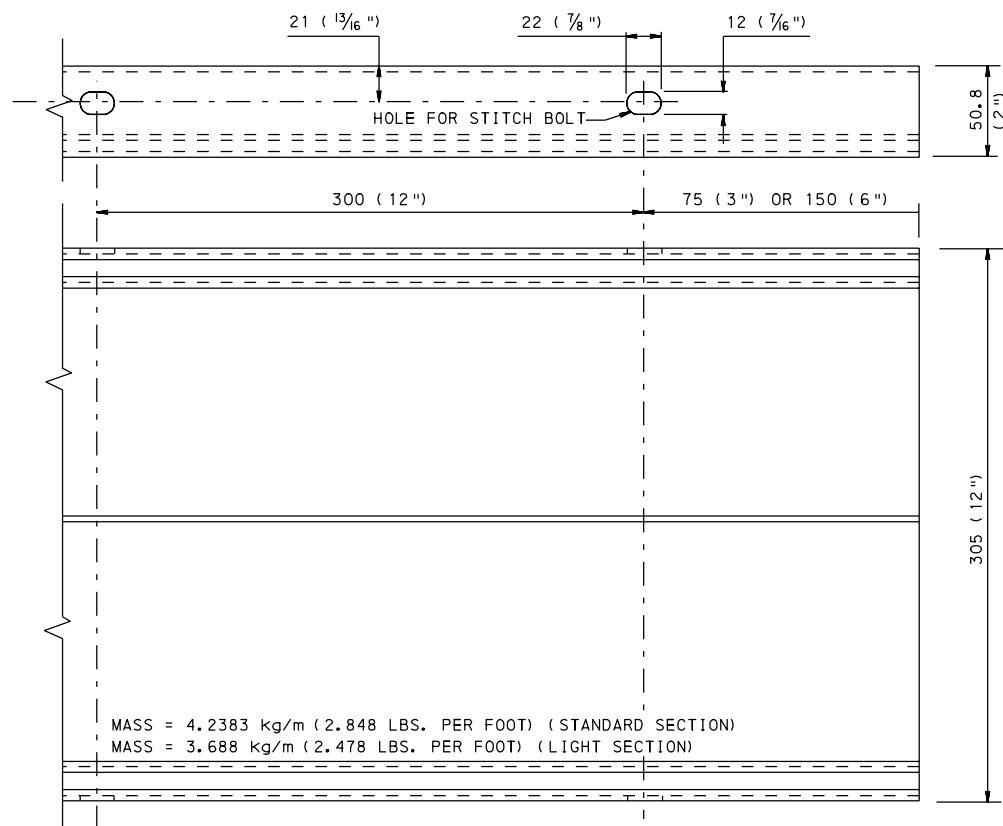
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

EXTRUDED ALUMINUM CHANNEL SIGN

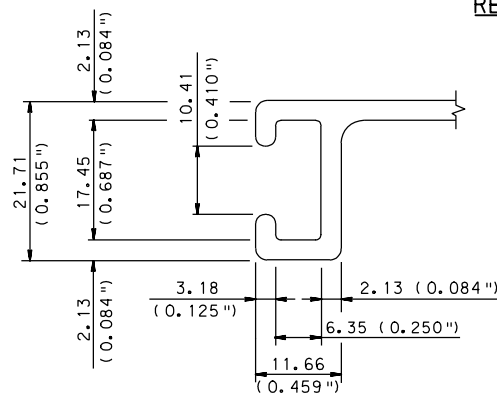
RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>m. G. Patel</i> CHIEF HIGHWAY ENGINEER	SHT. 1 OF 2 TC-8701E
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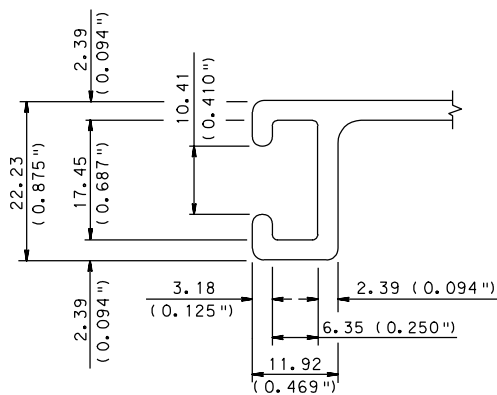
152 (6") EXTRUDED ALUMINUM CHANNEL
REAR VIEW



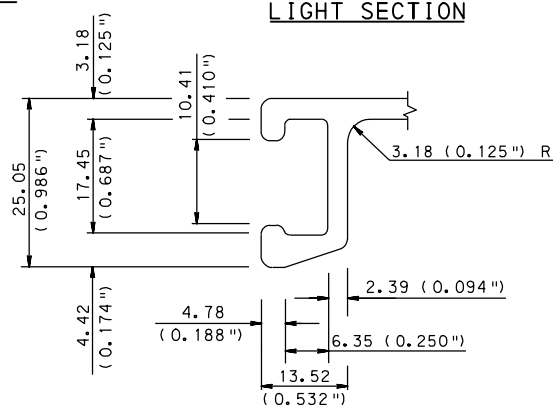
305 (12") EXTRUDED ALUMINUM CHANNEL
REAR VIEW



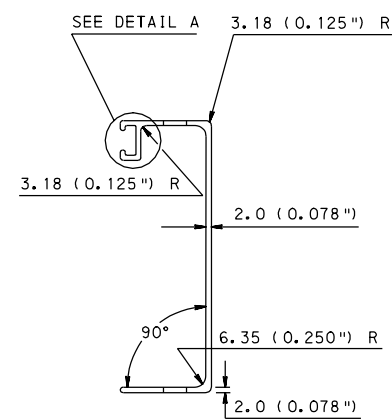
DETAIL A



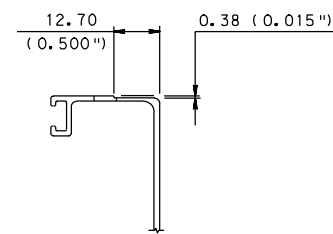
DETAIL B



DETAIL C

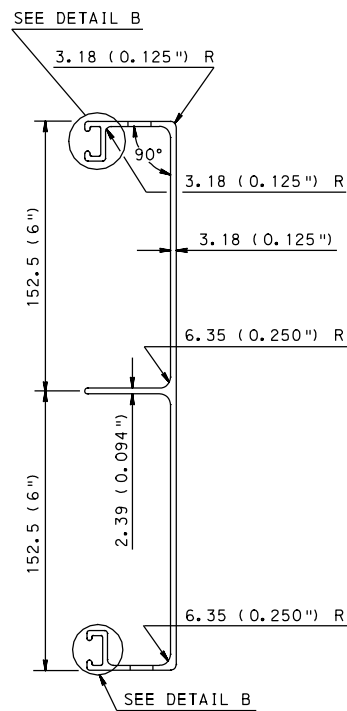


END VIEW

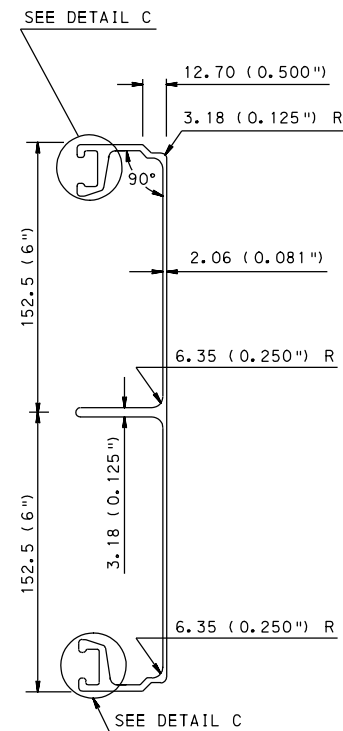


APPROVED ALTERNATE
CORNER DETAIL

DIMENSIONS NOT SHOWN ARE
SAME AS END VIEW



END VIEW



END VIEW
LIGHT SECTION

NOTES:

1. USE EITHER THE STANDARD SECTION (28008) OR THE LIGHT SECTION (401771).
2. FOR DETAILS A, B, AND C USE 1.6 (0.062") R ON ALL OUTSIDE CORNERS AND 0.8 (0.031") R ON ALL INSIDE CORNERS UNLESS OTHERWISE SPECIFIED.
3. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
4. 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

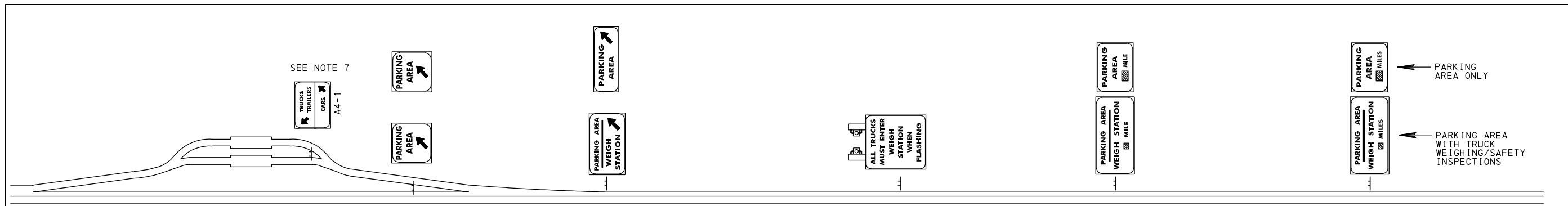
EXTRUDED ALUMINUM CHANNEL SIGN

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

RECOMMENDED MAY 25, 2007
m. G. Patel
CHIEF HIGHWAY ENGINEER

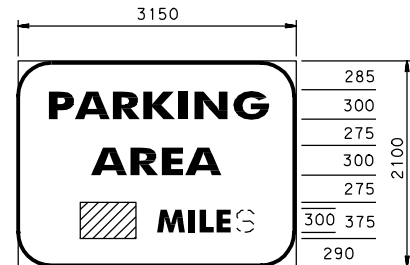
SHT. 2 OF 2

TC-8701E

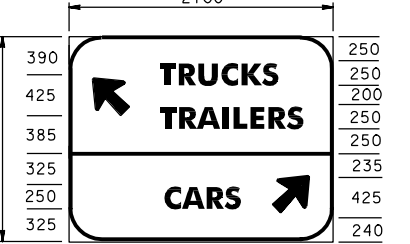


TYPE N ARROW

267	592	840	
262--P	312--A	570--ARROW	
312--A	276--R	840	
276--R	224--E	2250	
267--K	255--A		
119--I	591		
276--N	2250		
205--G			
266			
2250			

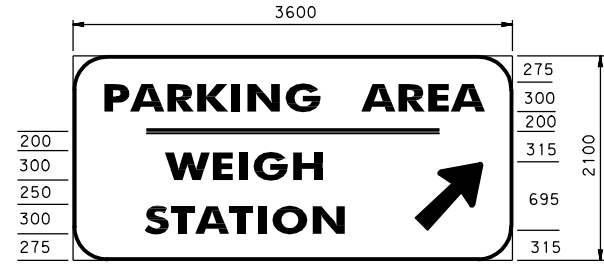


717	1042	--	--
262--P	312--A	450	450
312--A	276--R	307--M	307--M
276--R	224--E	119--I	119--I
267--K	255--A	243--L	243--L
119--I	1041	186--E	243--L
276--N	3150		205--S
205--G			
716			
3150			



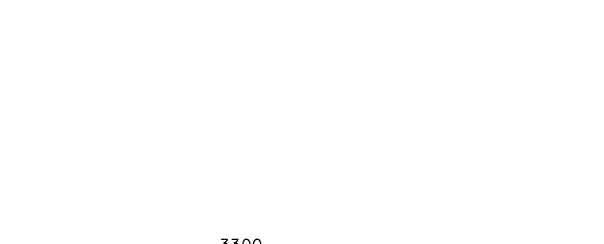
50 mm BAR 250 mm SERIES D LEGEND TYPE B ARROWS

224	224	899
425--ARROW	425--ARROW	203--C
250	250	260--A
203--T	203--T	219--R
230--R	219--R	171--S
230--U	260--A	299
219--C	99--I	425--ARROW
223--K	203--L	224
171--S	203--E	2700
525	219--R	
2700	171--S	
	224	
	2700	



50 mm BAR TYPE G ARROW

258	550	719	506
262--P	2500--(BAR LENGTH)	324--W	262--S
312--A	550	243--E	205--T
276--R	3600	119--I	274--A
267--K		276--G	243--T
119--I		205--H	119--I
276--N		719	285--O
205--G		695--ARROW	205--N
300		300	506
312--A		3600	695--ARROW
276--R			300
224--E			3600
255--A			
258			
3600			



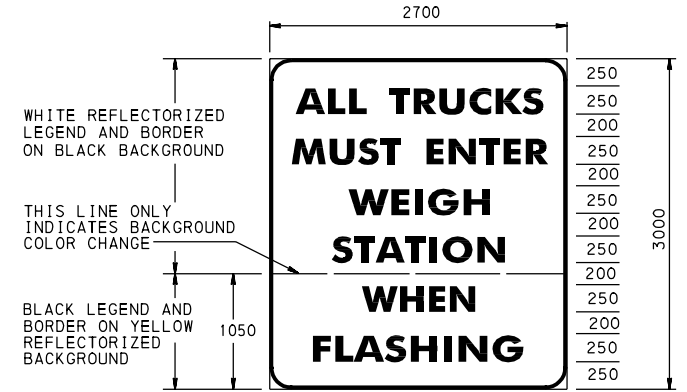
TYPE G ARROW

294	619
262--P	312--A
312--A	276--R
276--R	224--E
267--K	255--A
119--I	619
276--N	695--ARROW
205--G	300
294	3300
695--ARROW	
300	
3300	



50 mm BAR

258	550	270	--	--
262--P	2500--(BAR LENGTH)	324--W	450	450
312--A	550	243--E	307--M	307--M
276--R	3600	119--I	119--I	119--I
267--K		276--G	243--L	243--L
119--I		205--H	186--E	243--L
276--N		300		205--S
205--G		262--S		
300		205--T		
312--A		274--A		
276--R		243--T		
224--E		119--I		
255--A		285--O		
258		205--N		
3600		270		
		3600		



250 mm SERIES D LEGEND

278	296	864	686	913	553
260--A	255--M	270--W	219--S	270--W	203--F
203--L	230--U	203--E	171--T	230--H	171--L
155--L	219--S	99--I	228--A	203--E	260--A
250	155--T	230--G	203--T	171--N	230--S
203--T	250	171--H	99--I	913	230--H
230--R	203--E	863	238--O	2700	99--I
230--U	219--N	2700	171--N		230--N
219--C	203--T		685		171--G
223--K	203--E		2700		553
171--S	171--R				2700
278	296				
2700	2700				

- NOTES:**
- DEFINITION:** PARKING AREAS DO NOT HAVE PERMANENT REST ROOM FACILITIES.
 - DISTANCE:** USE DISTANCE FROM THEORETICAL GORE FOR DISTANCE INDICATED ON SIGNS.
 - COLOR:** USE BLUE REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED DIRECT APPLIED LEGEND AND BORDER, UNLESS OTHERWISE NOTED.
 - BORDERS:** USE 50 mm WIDE BORDER WITH 300 mm CORNER RADIUS, UNLESS OTHERWISE NOTED.
 - LEGEND AND SIGN WIDTH:** UNLESS OTHERWISE NOTED, USE 300 mm SERIES D UPPER CASE FOR LEGEND, AND 375 mm SERIES D FOR DIGITS. SEE TC-8700C FOR LAYOUTS OF ARROWS AND FRACTIONS, AND FOR DETERMINING SIGN WIDTHS.
 - POSTS:** USE POSTS OF AN APPROVED BREAKAWAY DESIGN, EITHER STEEL (TC-8702A OR TC-8702B) OR WOOD (TC-8702E).
 - A4-1 SIGN:** USE ONLY WHEN SEPARATE PARKING AREAS ARE PROVIDED.
 - MINIMUM SIGN SPACING:** MAINTAIN 240 m MINIMUM SPACING FOR ALL SIGNS PRIOR TO DECELERATION LANE.
 - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.**

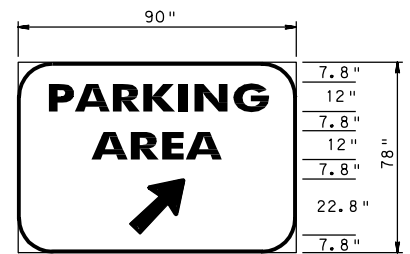
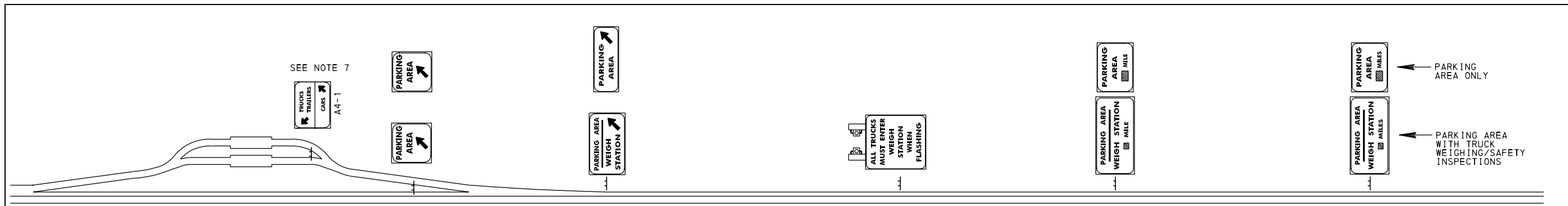
METRIC UNITS

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

FREEWAY AND EXPRESSWAY
ADVANCE SIGNING

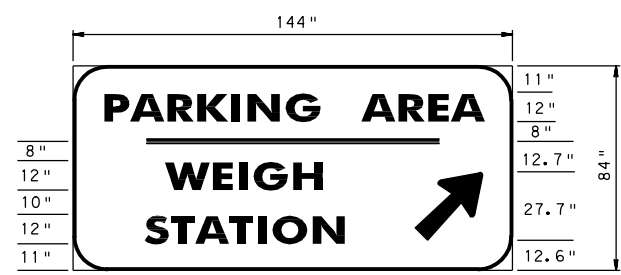
PARKING AREAS

RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>M. G. Patel</i> CHIEF HIGHWAY ENGINEER	SHT. 1 OF 2 TC-8701P
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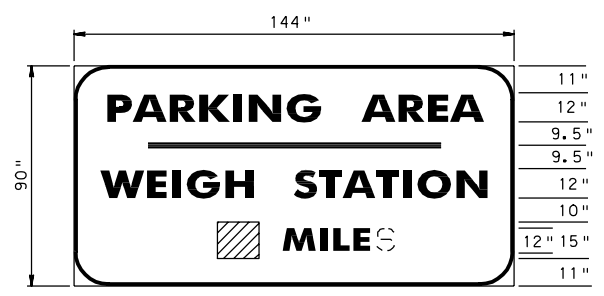
TYPE N ARROW

11.2	24.0	33.6
10.3--P	12.3--A	22.8--ARROW
12.3--A	10.9--R	33.6
10.9--R	8.8--E	90.0"
10.5--K	10.0--A	
4.7--I	24.0	
10.9--N	90.0"	
8.1--G		
11.1		
90.0"		



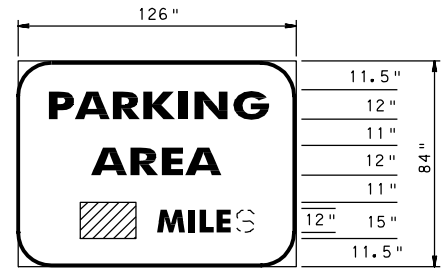
2" BAR TYPE G ARROW

11.2	22.0	29.1	20.7
10.3--P	100.0--(BAR LENGTH)	12.8--W	10.3--S
12.3--A	22.0	9.6--E	8.1--T
10.9--R	144.0"	4.7--I	10.8--A
10.5--K		10.9--G	9.6--T
4.7--I		8.1--H	4.7--I
10.9--N		29.1	11.3--O
8.1--G		27.7--ARROW	8.1--N
12.0		12.0	20.7
12.3--A		144.0"	27.7--ARROW
10.9--R			12.0
8.8--E			144.0"
10.0--A			
11.1			
144.0"			

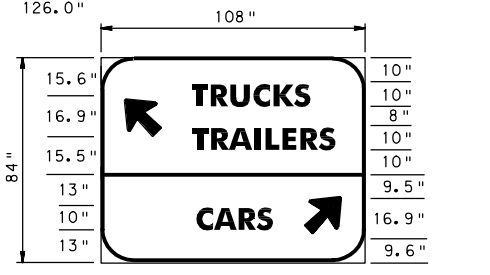


2" BAR

11.2	22.0	11.5	--	--
10.3--P	100.0--(BAR LENGTH)	12.8--W	--	--
12.3--A	22.0	9.6--E	18.0	18.0
10.9--R	144.0"	4.7--I	12.1--M	12.1--M
10.5--K		10.9--G	4.7--I	4.7--I
4.7--I		8.1--H	9.6--L	9.6--L
10.9--N		12.0	7.3--E	8.1--S
8.1--G		10.3--S		
12.0		8.1--T		
12.3--A		10.8--A		
10.9--R		9.6--T		
8.8--E		4.7--I		
10.0--A		11.3--O		
11.1		8.1--N		
144.0"		11.5		
		144.0"		



29.2	42.0	--	--
10.3--P	12.3--A	18.0	18.0
12.3--A	10.9--R	12.1--M	12.1--M
10.9--R	8.8--E	4.7--I	4.7--I
10.5--K	10.0--A	9.6--L	9.6--L
4.7--I	42.0	7.3--E	9.6--E
10.9--N	126.0"		8.1--S
8.1--G			
29.1			
126.0"			



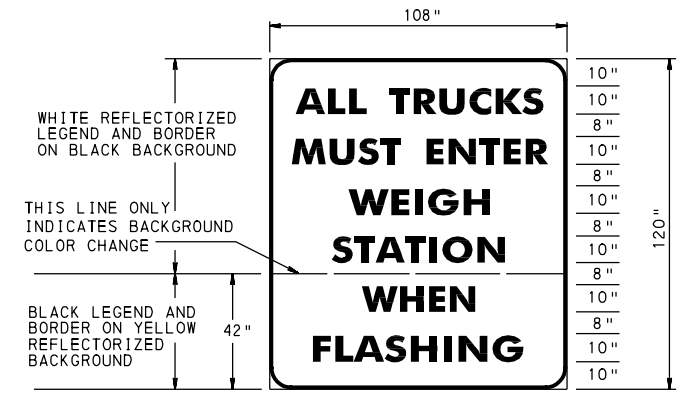
2" BAR 10" SERIES D LEGEND TYPE B ARROWS

9.6	9.6	36.5
16.9--ARROW	16.9--ARROW	8.0--C
10.0	10.0	10.2--A
8.0--T	8.0--T	8.6--R
9.1--R	8.6--R	6.7--S
9.1--U	10.2--A	11.5
8.6--C	3.9--I	16.9--ARROW
8.8--K	8.0--L	9.6
6.7--S	8.0--E	108.0"
21.2	8.6--R	
108.0"	6.7--S	
	9.5	
	108.0"	



TYPE G ARROW

12.3	25.2
10.3--P	12.3--A
12.3--A	10.9--R
10.9--R	8.8--E
10.5--K	10.0--A
4.7--I	25.1
10.9--N	27.7--ARROW
8.1--G	12.0
12.3	
27.7--ARROW	132.0"
12.0	
132.0"	



10" SERIES D LEGEND

11.7	12.4	34.9	27.9	36.8	22.6
10.2--A	10.1--M	10.6--W	8.6--S	10.6--W	8.0--F
8.0--L	9.1--U	8.0--E	6.7--T	9.1--H	6.7--L
6.1--L	8.6--S	3.9--I	9.0--A	8.0--E	10.2--A
10.0	6.1--T	9.1--G	8.0--T	6.7--N	9.1--S
8.0--T	10.0	6.7--H	3.9--I	36.8	9.1--H
9.1--R	8.0--E	34.8	9.4--O	108.0"	3.9--I
9.1--U	8.6--N	108.0"	6.7--N		9.1--N
8.6--C	8.0--T		27.8		6.7--G
8.8--K	8.0--E		108.0"		22.6
6.7--S	6.7--R				108.0"
11.7	12.4				
108.0"	108.0"				

- NOTES:**
- DEFINITION: PARKING AREAS DO NOT HAVE PERMANENT REST ROOM FACILITIES.
 - DISTANCE: USE DISTANCE FROM THEORETICAL GORE FOR DISTANCE INDICATED ON SIGNS.
 - COLOR: USE BLUE REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED DIRECT APPLIED LEGEND AND BORDER, UNLESS OTHERWISE NOTED.
 - BORDERS: USE 2" WIDE BORDER WITH 12" CORNER RADII, UNLESS OTHERWISE NOTED.
 - LEGEND AND SIGN WIDTH: UNLESS OTHERWISE NOTED, USE 12" SERIES D UPPER CASE FOR LEGEND, AND 15" SERIES D FOR DIGITS. SEE TC-8700C FOR LAYOUTS OF ARROWS AND FRACTIONS, AND FOR DETERMINING SIGN WIDTHS.
 - POSTS: USE POSTS OF AN APPROVED BREAKAWAY DESIGN, EITHER STEEL (TC-8702A OR TC-8702B) OR WOOD (TC-8702E).
 - A4-1 SIGN: USE ONLY WHEN SEPARATE PARKING AREAS ARE PROVIDED.
 - MINIMUM SIGN SPACING: MAINTAIN 800' MINIMUM SPACING FOR ALL SIGNS PRIOR TO DECELERATION LANE.
 - ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

ENGLISH UNITS

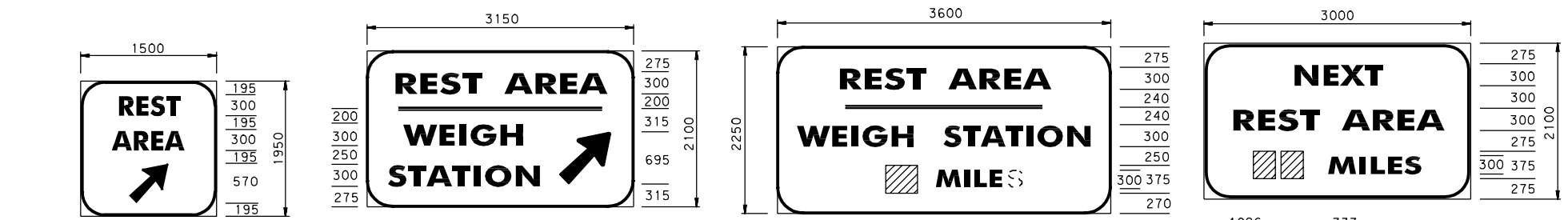
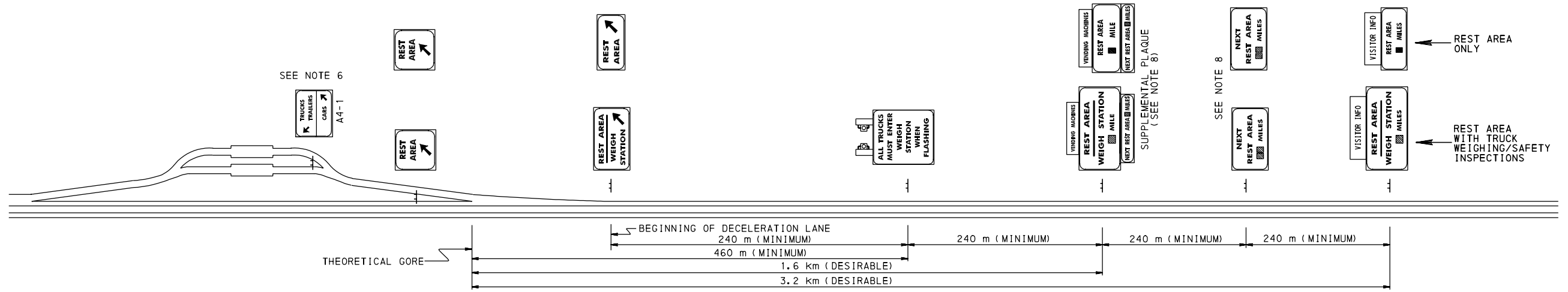
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

FREeway AND EXPRESSWAY
ADVANCE SIGNING

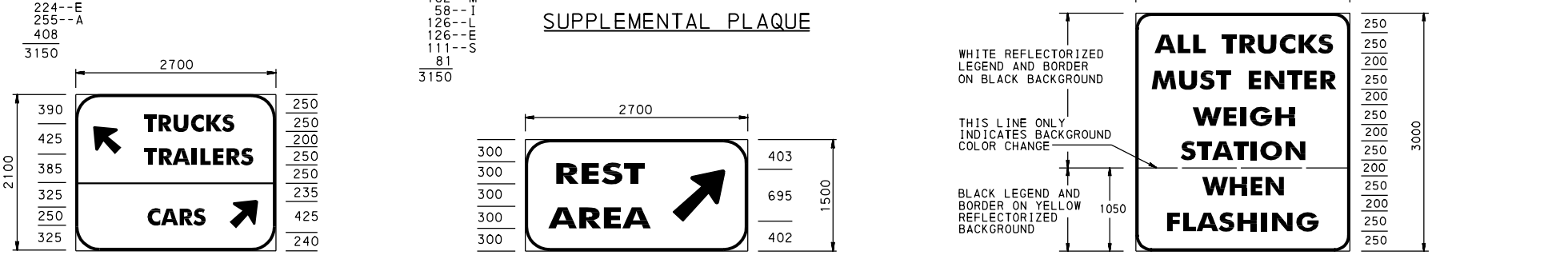
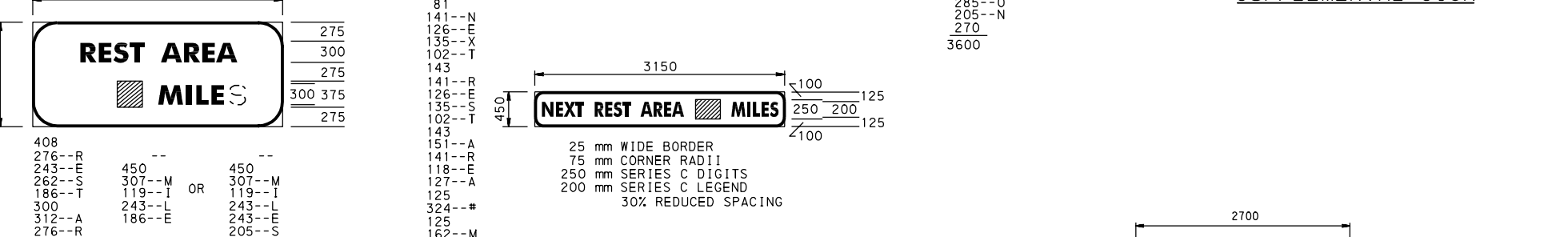
PARKING AREAS

RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>M. Latel</i> CHIEF HIGHWAY ENGINEER	SHT. 2 OF 2 TC-8701P
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A4-1



267	217	465	408	525	494	281	633	700	270	450	450
276--R	312--A	570--ARROW	276--R	2100--(BAR LENGTH)	324--W	262--S	276--R	2200--(BAR LENGTH)	324--W	450--	450--
243--E	276--R	465	243--E	525	243--E	205--T	243--E	700	243--E	307--M	307--M
262--S	224--E	1500	262--S	3150	119--I	274--A	262--S	3600	119--I	119--I	119--I
186--T	255--A		186--T		276--G	243--T	186--T		276--G	243--L	243--L
266	216		300		205--H	119--I	300		205--H	243--E	243--E
1500	1500		312--A		494	285--O	312--A		300	262--S	262--S
			276--R		695--ARROW	205--N	276--R		205--T	274--A	274--A
			224--E		300	281	224--E		274--A	243--T	243--T
			255--A		3150	695--ARROW	255--A		243--T	119--I	119--I
			408		3150	300	633		285--O	205--N	205--N
			1500			3150	3600		270	3600	3600



224	224	899	369	319	278	296	864	686	913	553
425--ARROW	425--ARROW	203--C	276--R	312--A	260--A	255--M	270--W	219--S	270--W	203--F
250	250	260--A	243--E	276--R	203--L	230--U	203--E	171--T	230--H	171--L
203--T	203--T	219--R	262--S	224--E	155--L	219--S	99--I	228--A	203--E	260--A
230--R	219--R	171--S	186--T	255--A	250	155--T	230--G	203--T	171--N	230--S
230--U	260--A	299	369	319	203--T	203--T	171--H	99--I	913	230--H
219--C	99--I	425--ARROW	695--ARROW	695--ARROW	230--R	203--E	863	238--O	2700	99--I
223--K	203--L	224	300	300	230--U	219--N	2700	171--N	2700	230--N
171--S	203--E	2700	2700	2700	219--C	203--T		685		171--C
525	219--R				223--K	203--E		2700		553
2700	171--S				171--S	171--R				2700
	224				278	296				
	2700				2700	2700				

- NOTES:**
- DISTANCE: USE DISTANCE FROM THEORETICAL GORE FOR DISTANCE INDICATED ON SIGNS.
 - COLOR: USE BLUE REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED DIRECT APPLIED LEGEND AND BORDER, UNLESS OTHERWISE NOTED.
 - BORDERS: USE 50 mm WIDE BORDER WITH 300 mm CORNER RADIUS, UNLESS OTHERWISE NOTED.
 - LEGEND AND SIGN WIDTH: UNLESS OTHERWISE NOTED, USE 300 mm SERIES D UPPER CASE FOR LEGEND, AND 375 mm SERIES D FOR DIGITS. SEE TC-8700C FOR LAYOUTS OF ARROWS AND FRACTIONS, AND FOR DETERMINING SIGN WIDTHS.
 - POSTS: USE POSTS OF AN APPROVED BREAKAWAY DESIGN, EITHER STEEL (TC-8702A OR TC-8702B) OR WOOD (TC-8702E).
 - A4-1 SIGN: USE ONLY WHEN SEPARATE PARKING AREAS ARE PROVIDED.
 - MINIMUM SIGN SPACING: MAINTAIN 240 m MINIMUM SPACING FOR ALL SIGNS PRIOR TO DECELERATION LANE.
 - NEXT REST AREA SUPPLEMENTAL SIGN: THIS SIGN MAY BE ELIMINATED IF SUFFICIENT SIGN SPACING DOES NOT EXIST. WHEN THIS SIGN IS ELIMINATED, ONLY THEN INSTALL "NEXT REST AREA -- MILES" SUPPLEMENTAL PLAQUE UNDER SECOND ADVANCE SIGN.
 - VISITOR INFO SIGN (D5-6-1): USE AS SHOWN IF THE REST AREA IS STAFFED TO PROVIDE VISITOR (TOURIST) INFORMATION IN ACCORDANCE WITH DEPARTMENT POLICY. SEE PUBLICATION 236M FOR LAYOUT. IF THE SIGN NEEDS TO BE COVERED PERIODICALLY OR IF A FOLDING SIGN IS USED, IT MAY BE MOUNTED BELOW THE MAIN SIGN, PROVIDED PROPER SIGN HEIGHT IS MAINTAINED AND THE BREAKAWAY FEATURE OF THE POSTS IS UNAFFECTED.
 - VENDING MACHINES SIGN (D5-6-2): USE IF VENDING MACHINES ARE AVAILABLE. SEE PUBLICATION 236M FOR LAYOUT. SEE NOTE 9 CONCERNING ALTERNATE LOCATION FOR FOLDING SIGNS.
 - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

METRIC UNITS

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

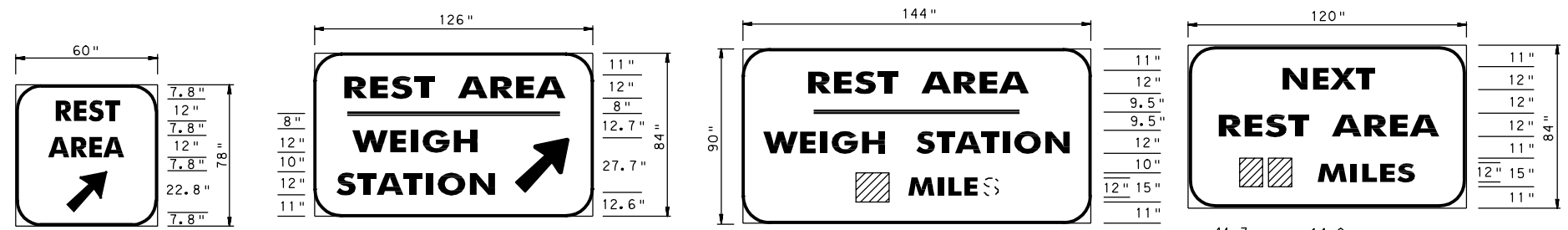
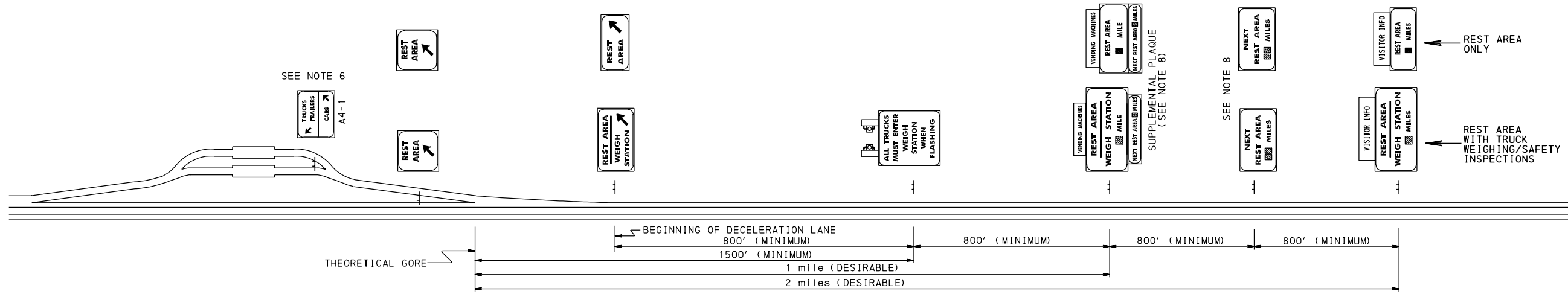
FREEWAY AND EXPRESSWAY
 ADVANCE SIGNING

REST AREAS

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

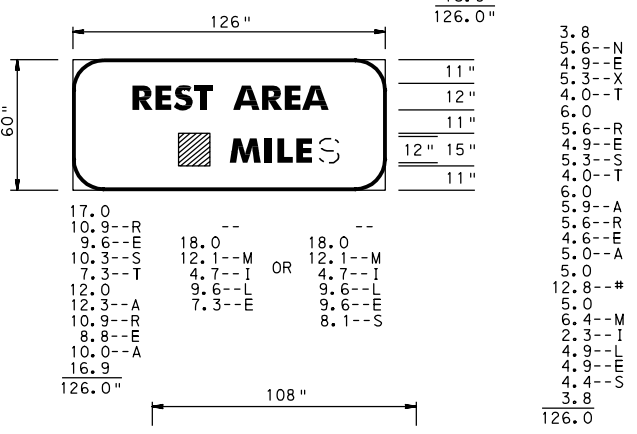
RECOMMENDED MAY 25, 2007
M. G. Patel
 CHIEF HIGHWAY ENGINEER

SHT. 1 OF 2
 TC-8701R

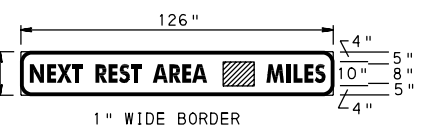


REST AREA			REST AREA WEIGH STATION			NEXT REST AREA		
11.0	9.0	18.6	17.0	21.0	20.1	11.5	14.0	--
10.9--R	12.3--A	22.8--ARROW	10.9--R	84.0--(BAR LENGTH)	12.8--W	10.9--R	10.9--R	--
9.6--E	10.9--R	18.6	9.6--E	21.0	9.6--E	9.6--E	9.6--E	18.0
10.3--S	8.8--E	60.0"	10.3--S	126.0"	4.7--I	12.1--M	10.3--S	12.1--M
7.3--T	10.0--A		7.3--T		10.9--G	4.7--I	7.3--T	4.7--I
10.9	9.0		12.0		8.1--H	9.6--L	12.0	9.6--L
60.0"	60.0"		12.3--A		4.7--I	120.0"	12.0	12.0
			10.9--R		11.3--O			
			8.8--E		27.7--ARROW			
			10.0--A		12.0			
			16.9		126.0"			
			126.0"					

- NOTES:**
- DISTANCE:** USE DISTANCE FROM THEORETICAL GORE FOR DISTANCE INDICATED ON SIGNS.
 - COLOR:** USE BLUE REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED DIRECT APPLIED LEGEND AND BORDER, UNLESS OTHERWISE NOTED.
 - BORDERS:** USE 2" WIDE BORDER WITH 12" CORNER RADIUS, UNLESS OTHERWISE NOTED.
 - LEGEND AND SIGN WIDTH:** UNLESS OTHERWISE NOTED, USE 12" SERIES D UPPER CASE FOR LEGEND, AND 15" SERIES D FOR DIGITS. SEE TC-8700C FOR LAYOUTS OF ARROWS AND FRACTIONS, AND FOR DETERMINING SIGN WIDTHS.
 - POSTS:** USE POSTS OF AN APPROVED BREAKAWAY DESIGN, EITHER STEEL (TC-8702A OR TC-8702B) OR WOOD (TC-8702E).
 - A4-1 SIGN:** USE ONLY WHEN SEPARATE PARKING AREAS ARE PROVIDED.
 - MINIMUM SIGN SPACING:** MAINTAIN 800' MINIMUM SPACING FOR ALL SIGNS PRIOR TO DECELERATION LANE.
 - NEXT REST AREA SUPPLEMENTAL SIGN:** THIS SIGN MAY BE ELIMINATED IF SUFFICIENT SIGN SPACING DOES NOT EXIST. WHEN THIS SIGN IS ELIMINATED, ONLY THEN INSTALL "NEXT REST AREA -- MILES" SUPPLEMENTAL PLAQUE UNDER SECOND ADVANCE SIGN.
 - VISITOR INFO SIGN (D5-6-1):** USE AS SHOWN IF THE REST AREA IS STAFFED TO PROVIDE VISITOR (TOURIST) INFORMATION IN ACCORDANCE WITH DEPARTMENT POLICY. SEE PUBLICATION 236M FOR LAYOUT. IF THE SIGN NEEDS TO BE COVERED PERIODICALLY OR IF A FOLDING SIGN IS USED, IT MAY BE MOUNTED BELOW THE MAIN SIGN, PROVIDED PROPER SIGN HEIGHT IS MAINTAINED AND THE BREAKAWAY FEATURE OF THE POSTS IS UNAFFECTED.
 - VENDING MACHINES SIGN (D5-6-2):** USE IF VENDING MACHINES ARE AVAILABLE. SEE PUBLICATION 236M FOR LAYOUT. SEE NOTE 9 CONCERNING ALTERNATE LOCATION FOR FOLDING SIGNS.
 - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.



17.0	--	--
10.9--R	18.0	18.0
9.6--E	12.1--M	12.1--M
10.3--S	4.7--I	4.7--I
7.3--T	9.6--L	9.6--L
12.0	7.3--E	8.1--S
12.3--A		
10.9--R		
8.8--E		
10.0--A		
16.9		
126.0"		

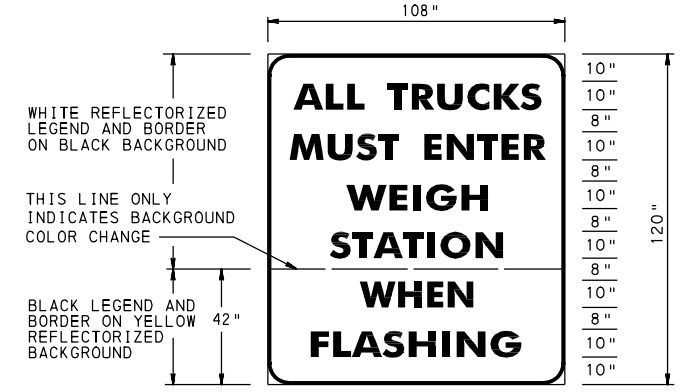


1" WIDE BORDER
3" CORNER RADII
10" SERIES C DIGITS
8" SERIES C LEGEND
30% REDUCED SPACING

SUPPLEMENTAL PLAQUE



15.1	13.2
10.9--R	12.3--A
9.6--E	10.9--R
10.3--S	8.8--E
7.3--T	10.0--A
15.1	13.1
27.7--ARROW	27.7--ARROW
12.0	12.0
108.0"	108.0"



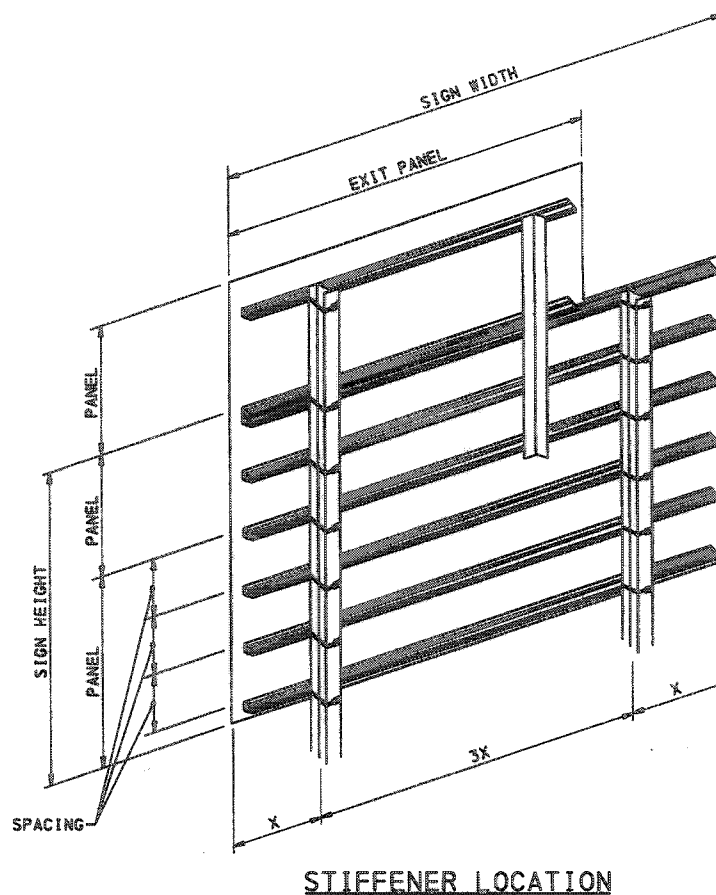
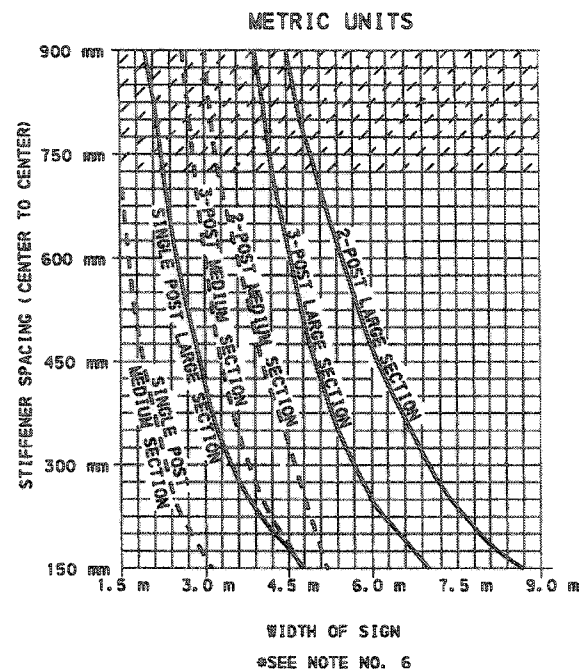
11.7	12.4	34.9	27.9	36.8	22.6
10.2--A	10.1--M	10.6--W	8.6--S	10.6--W	8.0--F
8.0--L	9.1--U	8.0--E	6.7--T	9.1--H	6.7--L
6.1--L	8.6--S	3.9--I	9.0--A	8.0--E	10.2--A
10.0	6.1--T	9.1--G	8.0--T	6.7--N	9.1--S
8.0--T	10.0	6.7--H	3.9--I	36.8	9.1--H
9.1--R	8.0--E	34.8	9.4--O	108.0"	3.9--I
9.1--U	8.6--N	108.0"	6.7--N		9.1--N
8.6--C	8.0--T		27.8		6.7--G
8.8--K	8.0--E		108.0"		22.6
6.7--S	6.7--R				108.0"
11.7	12.4				
108.0"	108.0"				

ENGLISH UNITS

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

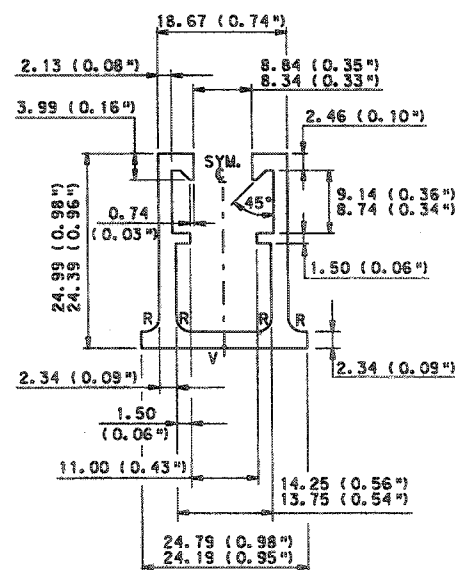
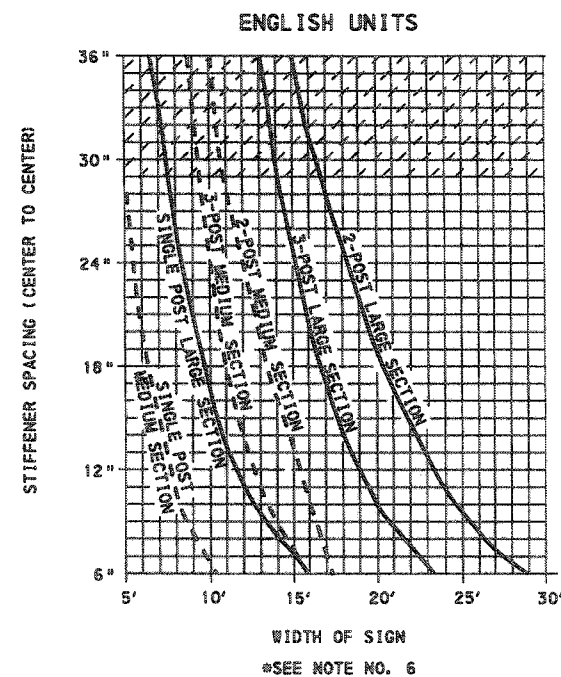
**FREEWAY AND EXPRESSWAY
ADVANCE SIGNING**

REST AREAS

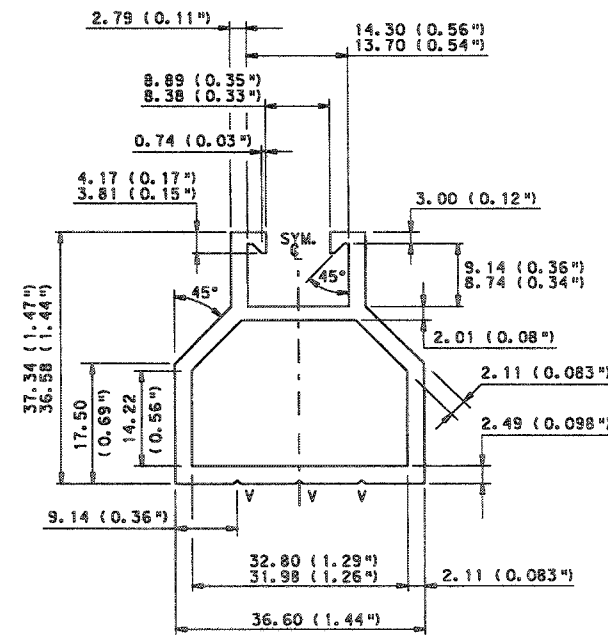


NOTES:

1. THIS STANDARD SHALL APPLY TO LARGE REFLECTORIZED SIGNS MANUFACTURED FROM FLAT SHEET ALUMINUM, BRACED WITH EXTRUDED ALUMINUM STIFFENERS, AND CONNECTED TO A SPECIFIED TYPE OF POST (OR VERTICAL SUPPORT OF A STRUCTURE) BY USE OF TWIST-IN TOGGLE AND BUCKLE STRAPS, OR STAINLESS STEEL POST CLIPS. WHEN POST CLIPS ARE USED, A DOUBLE POST CLIP PATTERN IS REQUIRED FOR BOTH POST MOUNTED AND OVERHEAD SIGN INSTALLATIONS.
2. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THIS STANDARD AND PUB. 408.
3. THE STIFFENER SPACING CHART ON THIS SHEET IS DESIGNED TO ACCOMMODATE "SINGLE-POST" INSTALLATIONS AND "MULTIPLE-POST" INSTALLATIONS WHERE THE SPACING BETWEEN THE POSTS (OR VERTICAL SUPPORTS) IS THREE TIMES THE SIGN OVERHANG BEYOND THE END POSTS. (THE SPACING BETWEEN THE POSTS ON A "TWO-POST" INSTALLATION IS THREE-FIFTHS OF THE SIGN WIDTH, AND SPACING BETWEEN THE POSTS ON A "THREE-POST" INSTALLATION IS ONE-THIRD OF THE SIGN WIDTH.)
4. WHEN SIGNS ARE TO BE INSTALLED AND THE SPACING OF THE POSTS IS OTHER THAN THOSE INDICATED IN NOTE NO. 3, THE FABRICATOR SHOULD CONSULT THE DISTRICT TRAFFIC ENGINEER FOR THE PROPER SPACING OF THE STIFFENERS. HOWEVER, THE SPACING BETWEEN THE STIFFENERS SHALL NOT BE GREATER THAN THE SPACING INDICATED IN THE CHART FOR THE SAME WIDTH OF SIGN.
5. TO USE THE STIFFENER SPACING CHART, START WITH THE SIGN WIDTH AND GO VERTICALLY UPWARD UNTIL INTERSECTING THE CURVED LINE INDICATING THE PROPER NUMBER OF POSTS (OR VERTICAL SUPPORTS) AND THE TYPE OF STIFFENER SECTION TO BE USED. THE MAXIMUM STIFFENER SPACING IS INDICATED HORIZONTALLY TO THE LEFT.
6. THE MAXIMUM STIFFENER SPACING IS NORMALLY 725 (29"). HOWEVER, FOR SIGNS MADE OF A CONTINUOUS SHEET OF ALUMINUM THROUGHOUT THE HEIGHT OF THE SIGN AND ON WHICH THE FLAT SHEET ALUMINUM OVERHANGS BOTH THE TOP AND BOTTOM STIFFENERS BY A DISTANCE EQUAL TO ONE-THIRD OF THE SPACING BETWEEN STIFFENERS, STIFFENERS SPACINGS INDICATED IN THE SHADED PORTION OF THE CHART MAY BE USED. (EXAMPLE: A 3600 x 1500 (144" x 60") SIGN COULD BE INSTALLED ON TWO POSTS USING ONLY TWO LARGE SECTION STIFFENERS SPACED AT THE ULTIMATE 900 (36") SPACING, WITH 300 (12") OF THE SIGN ABOVE THE TOP STIFFENER AND 300 (12") OF THE SIGN BELOW THE BOTTOM STIFFENER.)
7. PANELS MAY BE SPLICED USING ANY OF THREE ARRANGEMENTS SHOWN ON SHEET 2 OF 3 OF THIS STANDARD.
8. SEE TC-8702E FOR INSTALLATION ON WOOD POSTS.
9. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS (").
10. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.



V = VEE GROOVE 0.25 (0.01") DEEP x 90°
R = 2.49 (0.10") RADIUS



V = VEE GROOVE 0.38 (0.015") DEEP x 90°

STIFFENER SPACING CHARTS

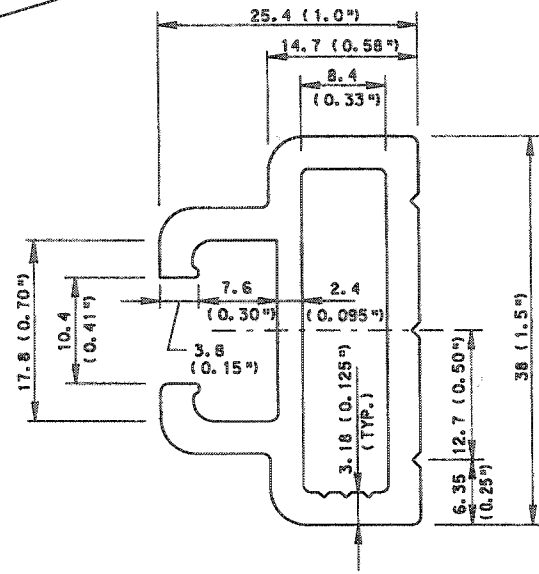
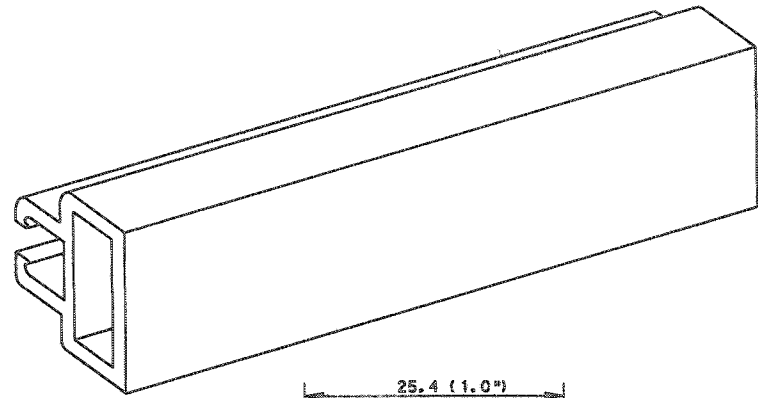
MEDIUM SECTION

LARGE SECTION

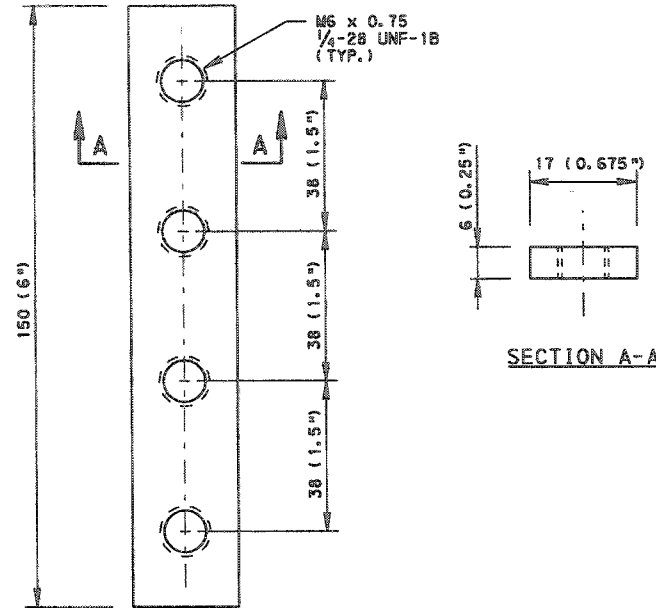
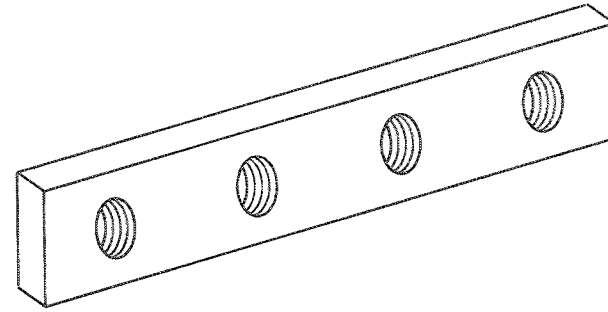
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

FLAT SHEET ALUMINUM SIGNS
WITH EXTRUDED ALUMINUM STIFFENERS

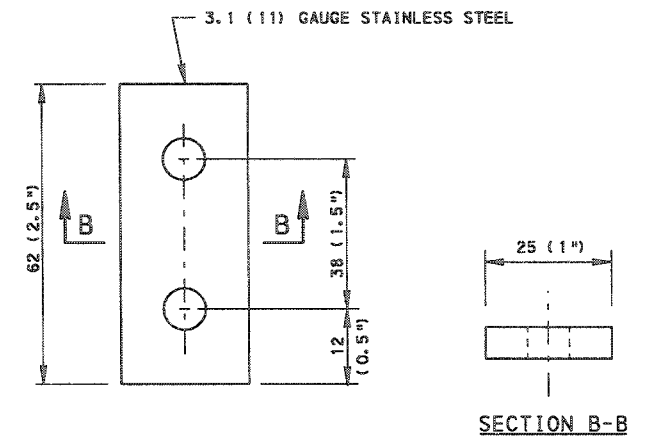
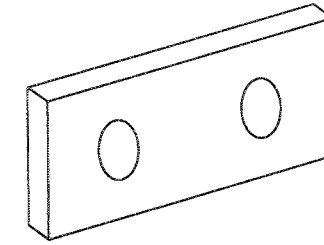
GENERAL INFORMATION



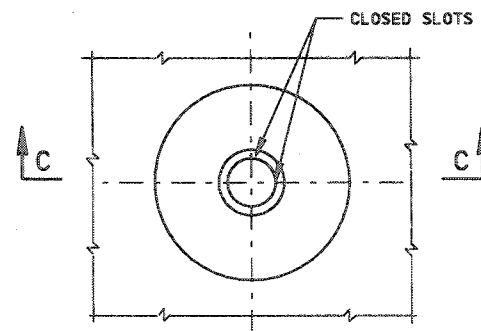
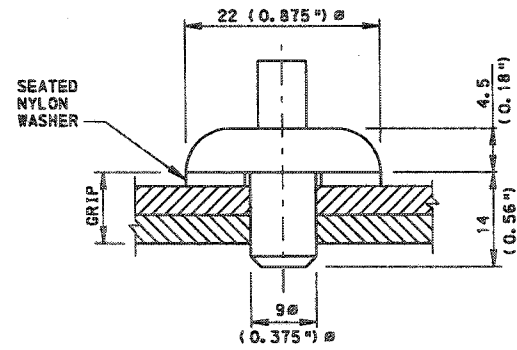
ALUMINUM EXTRUSION SIGN BRACE



SPLICE PLATE



BUTTING PLATE



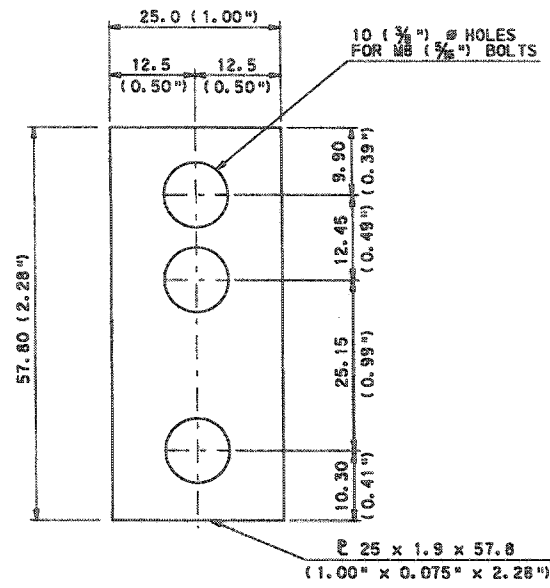
RIVET

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

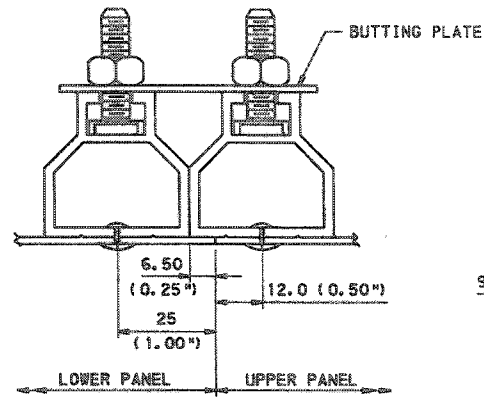
FLAT SHEET ALUMINUM SIGNS
WITH EXTRUDED ALUMINUM STIFFENERS

GENERAL INFORMATION

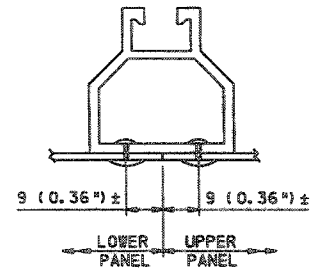
RECOMMENDED JUL. 18, 2008 <i>Alex C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED JUL. 18, 2008 <i>Daryl Hill</i> ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 2 OF 4 TC-8701S
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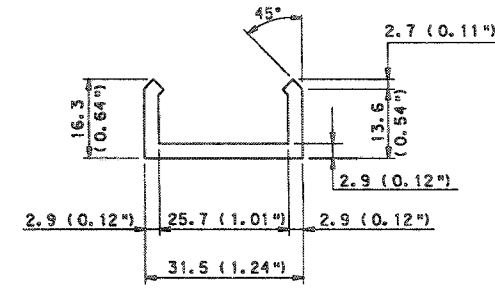
BUTTING PLATE



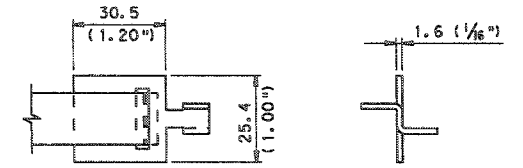
DOUBLE LARGE SECTION PANEL SPLICE



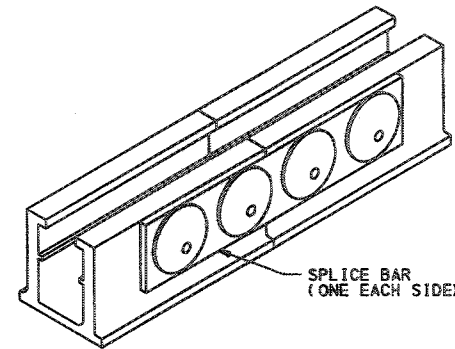
SINGLE LARGE SECTION PANEL SPLICE



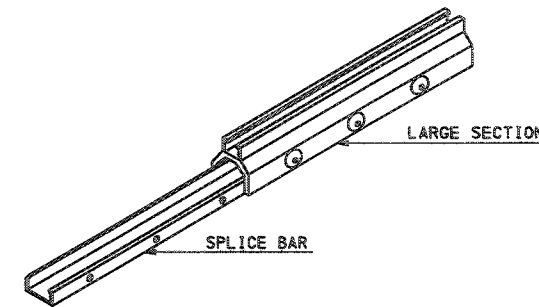
LARGE SECTION SPLICE BAR



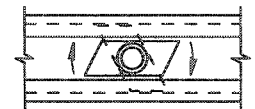
TWIST-IN TOGGLE



MEDIUM SECTION SPLICE

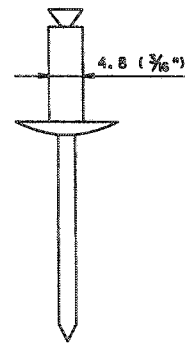


LARGE SECTION SPLICE

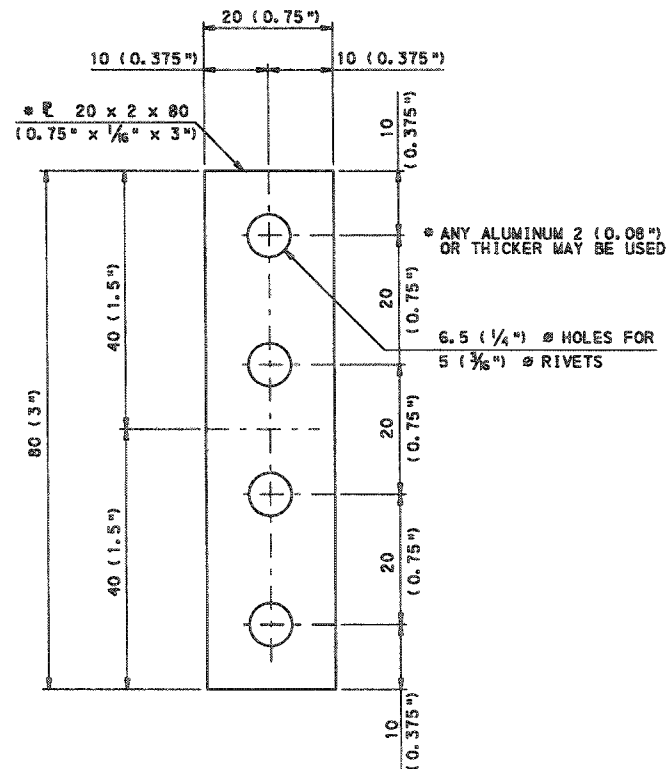


BOLT HEAD LOCKS INTO CHANNEL AS NUT IS TIGHTENED.

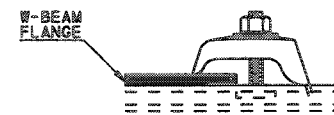
TWIST-IN BOLT



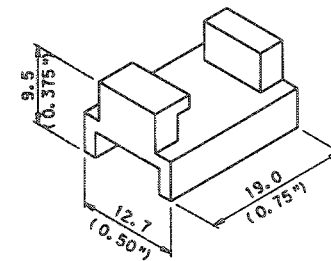
POP RIVET



MEDIUM SECTION SPLICE BAR



POST CLIP SF-VHB



PLASTIC INSERT

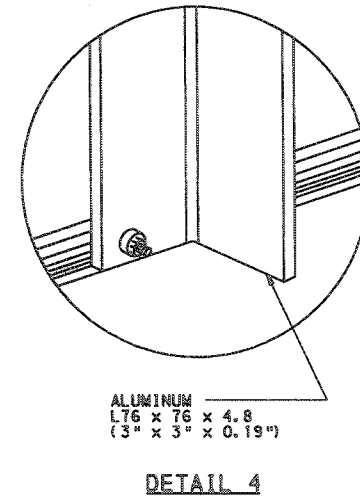
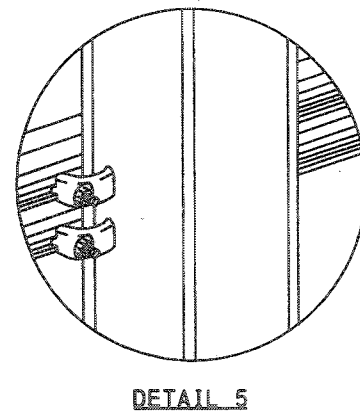
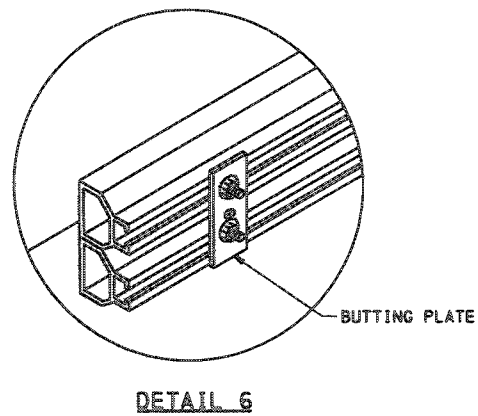
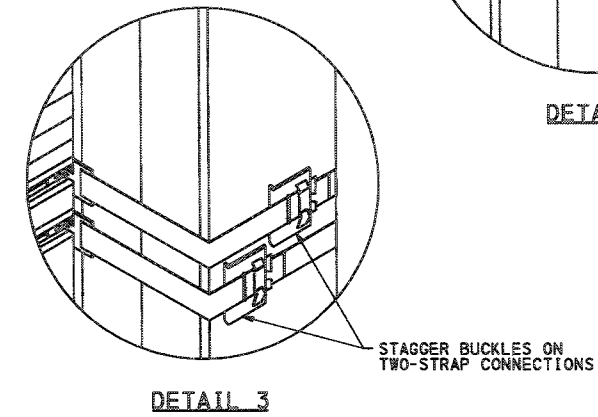
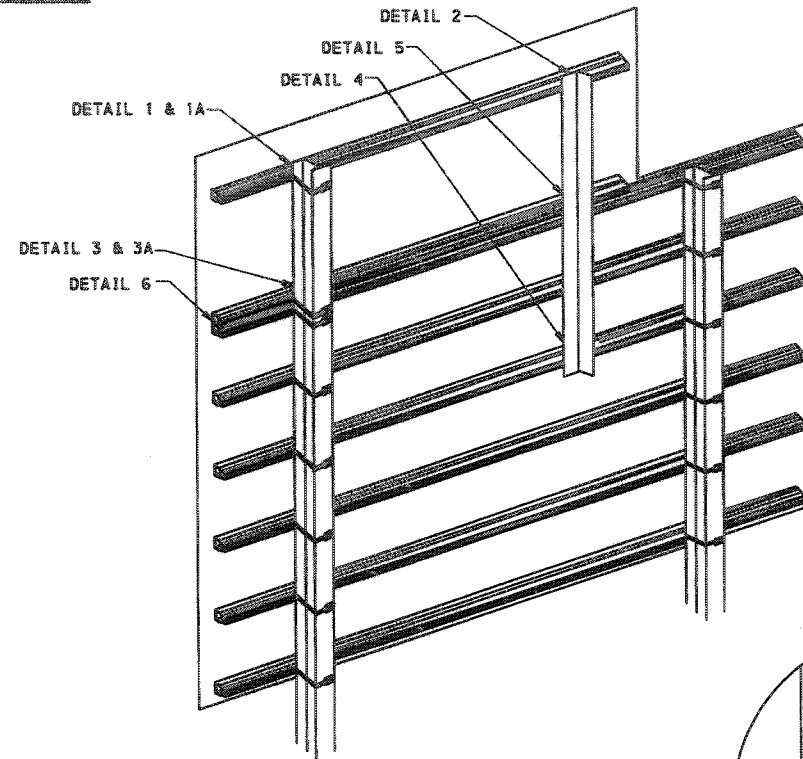
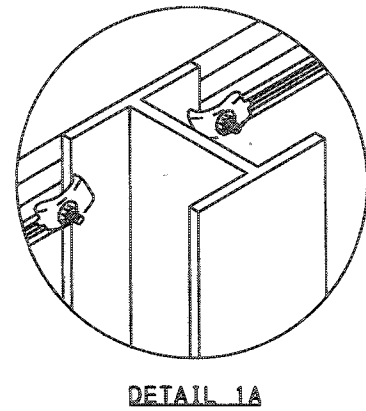
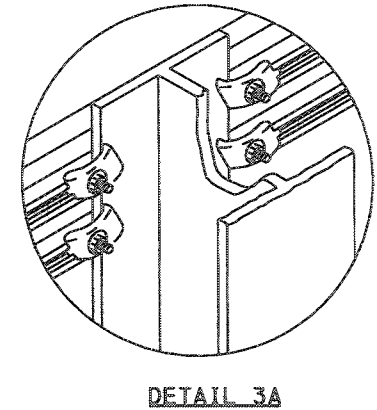
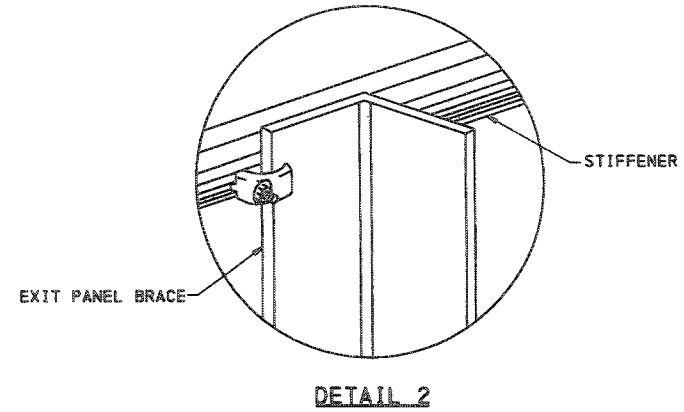
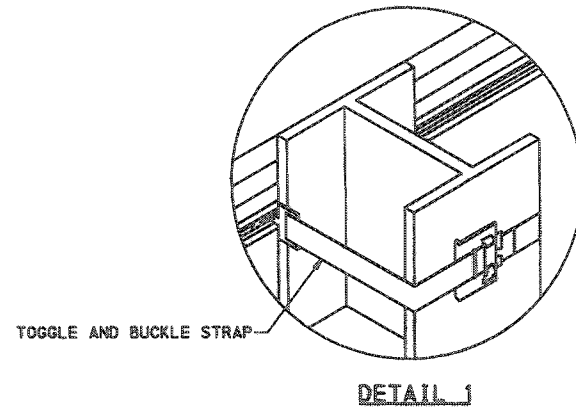
NOTES:

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



FLAT SHEET ALUMINUM SIGNS
WITH EXTRUDED ALUMINUM STIFFENERS

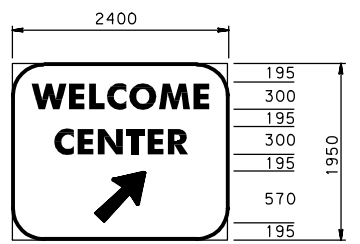
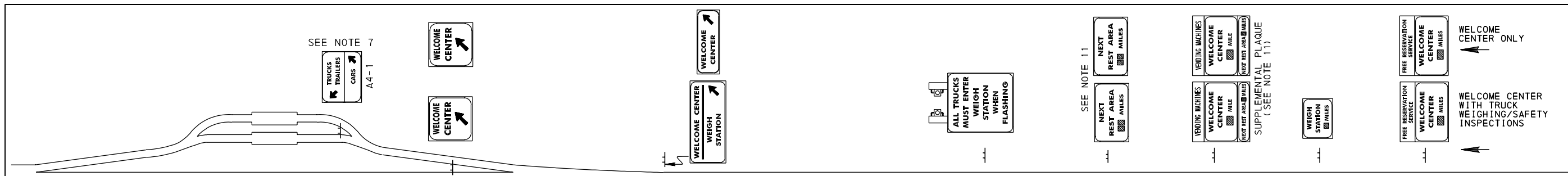
SPLICE AND CONNECTION DETAILS



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
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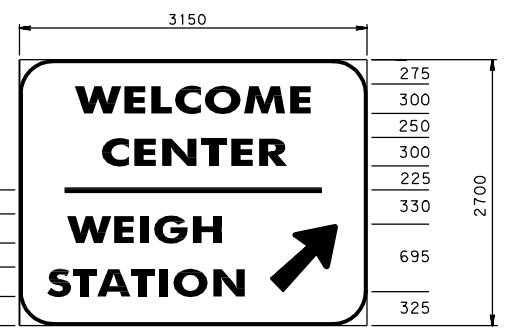
COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING		
FLAT SHEET ALUMINUM SIGNS WITH EXTRUDED ALUMINUM STIFFENERS		
POST & STIFFENER CONNECTIONS		
RECOMMENDED JUL. 18, 2008  CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED JUL. 18, 2008  ACTING DIR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING	SHT. 4 OF 4 TC-8701S



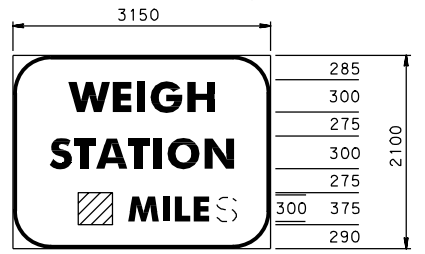
275	471	915
324--W	262--C	570--ARROW
243--E	243--E	915
243--L	262--N	2400
262--C	243--T	
285--O	243--E	
307--M	205--R	
186--E	471	
275	2400	
2400		



296	450	1019	806
324--W	3300--(BAR LENGTH)	324--W	262--S
243--E	450	243--E	205--T
243--L	4200	119--I	274--A
262--C		276--G	243--T
285--O		205--H	119--I
307--M		1019	285--O
186--E		695--ARROW	205--N
300		300	806
262--C		4200	695--ARROW
243--E			300
262--N			4200
243--T			
243--E			
205--R			
296			
4200			



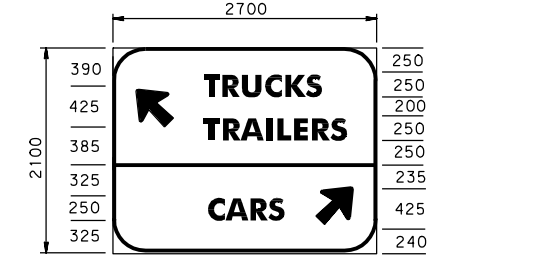
650	846	475	494	281
324--W	262--C	2200--(BAR LENGTH)	324--W	262--S
243--E	243--E	475	243--E	205--T
243--L	262--N	3150	119--I	274--A
262--C	243--T		276--G	243--T
285--O	243--E		205--H	119--I
307--M	205--R		494	285--O
186--E	846		695--ARROW	205--N
650	3150		300	281
3150			3150	695--ARROW
				300
				3150



992	779	--	--
324--W	262--S		
243--E	205--T	450	450
119--I	274--A	307--M	307--M
276--G	243--T	119--I	OR 119--I
205--H	119--I	243--L	243--L
991	285--O	186--E	243--E
3150	205--N		205--S
	778		
	3150		



650	846	450	--	450	--
324--W	262--C	307--M	OR	307--M	
243--E	243--E	119--I		119--I	
243--L	262--N	243--L		243--L	
262--C	243--T	186--E		243--E	
285--O	243--E			243--E	
307--M	205--R			205--S	
186--E	846				
650	3150				
3150					



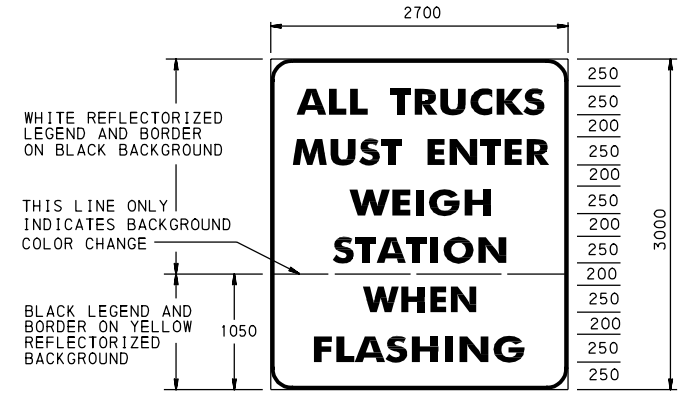
224	224	899
425--ARROW	425--ARROW	203--C
250	250	260--A
203--T	203--T	219--R
230--R	219--R	171--S
230--U	260--A	299
219--C	99--I	425--ARROW
223--K	203--L	224
171--S	203--E	2700
525	219--R	
2700	171--S	
	224	
	2700	



303	499
324--W	262--C
243--E	243--E
243--L	262--N
262--C	243--T
285--O	243--E
307--M	205--R
186--E	498
302	695--ARROW
695--ARROW	300
300	3450
3450	

ALTERNATE WELCOME CENTER/WEIGH STATION EXIT DIRECTION SIGN

NOTE: THIS SIGN MAY BE USED ONLY IF INSUFFICIENT WIDTH IS AVAILABLE TO ERECT THE STANDARD WELCOME CENTER/WEIGH STATION EXIT DIRECTION SIGN.



278	296	864	686	913	553
260--A	255--M	270--W	219--S	270--W	203--F
203--L	230--U	203--E	171--T	230--H	171--L
155--L	219--S	99--I	228--A	203--E	260--A
250	155--T	230--G	203--T	171--N	230--S
203--T	250	171--H	99--I	913	230--H
230--R	203--E	863	238--O	2700	99--I
230--U	219--N	2700	171--N		230--N
219--C	203--T		685		171--G
223--K	203--E		2700		553
171--S	171--R				2700
278	296				
2700	2700				

NOTES:

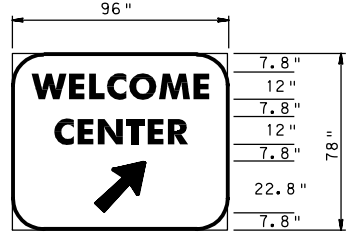
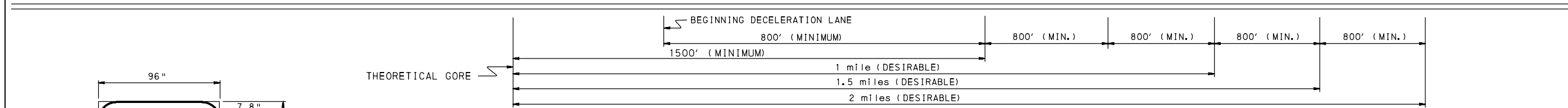
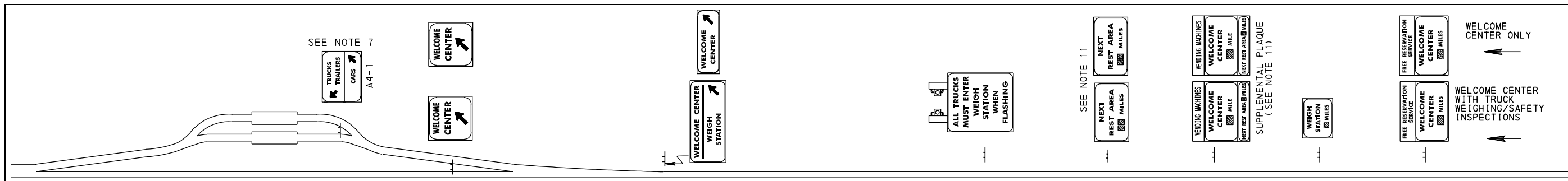
- DEFINITION: USE INDICATED SIGNING FOR WELCOME CENTERS THAT ARE OFFICIALLY RECOGNIZED BY THE PA DEPARTMENT OF TRANSPORTATION.
- DISTANCE: USE DISTANCE FROM THEORETICAL GORE FOR DISTANCE INDICATED ON SIGNS.
- COLOR: USE BLUE REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED DIRECT APPLIED LEGEND AND BORDER, UNLESS OTHERWISE NOTED.
- BORDERS: USE 50 mm WIDE BORDER WITH 300 mm CORNER RADIUS, UNLESS OTHERWISE NOTED.
- LEGEND AND SIGN WIDTH: UNLESS OTHERWISE NOTED, USE 300 mm SERIES D UPPER CASE FOR LEGEND, AND 375 mm SERIES D FOR DIGITS. SEE TC-8700C FOR LAYOUTS OF ARROWS AND FRACTIONS, AND FOR DETERMINING SIGN WIDTHS.
- POSTS: USE POSTS OF AN APPROVED BREAKAWAY DESIGN, EITHER STEEL (TC-8702A OR TC-8702B) OR WOOD (TC-8702E).
- A4-1 SIGN: USE ONLY WHEN SEPARATE PARKING AREAS ARE PROVIDED.
- MINIMUM SIGN SPACING: MAINTAIN 240 m MINIMUM SPACING FOR ALL SIGNS PRIOR TO DECELERATION LANE.
- VENDING MACHINES SIGN (D5-6-2): USE IF VENDING MACHINES ARE AVAILABLE. SEE PUBLICATION 236M FOR LAYOUT. IF A FOLDING SIGN IS USED, IT MAY ALSO BE MOUNTED BELOW THE MAIN SIGN, PROVIDED PROPER SIGN HEIGHT IS MAINTAINED AND THE BREAKAWAY FEATURE OF THE POSTS IS UNAFFECTED.
- FREE RESERVATION SERVICE: USE IF RESERVATION SERVICE IS AVAILABLE. SEE PUBLICATION 236M FOR LAYOUT. SEE NOTE 9 CONCERNING ALTERNATE LOCATION FOR FOLDING SIGNS.
- NEXT REST AREA SUPPLEMENTAL SIGN: THIS SIGN MAY BE ELIMINATED IF SUFFICIENT SIGN SPACING DOES NOT EXIST. WHEN THIS SIGN IS ELIMINATED, ONLY THEN INSTALL "NEXT REST AREA -- MILES" SUPPLEMENTAL PLAQUE UNDER SECOND ADVANCE SIGN. SEE TC-8701R FOR SIGN FABRICATION DETAILS.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

METRIC UNITS

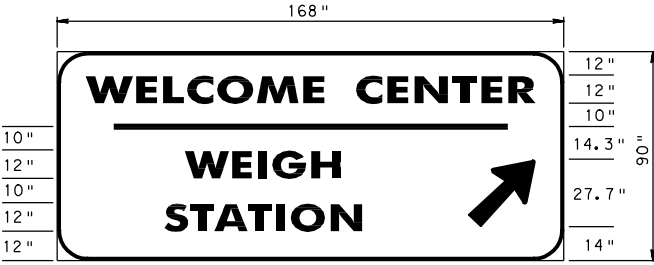
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

FREeway AND EXPRESSWAY
ADVANCE SIGNING

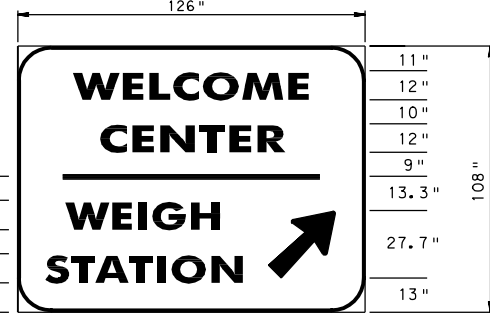
WELCOME CENTERS



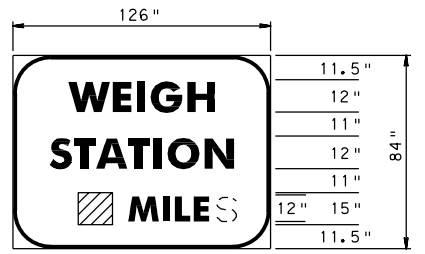
11.5	19.3	36.6
12.8--W	10.3--C	22.8--ARROW
9.6--E	9.6--E	36.6
9.6--L	10.3--N	96.0"
10.3--C	9.6--T	
11.3--O	9.6--E	
12.1--M	8.1--R	
7.3--E	19.2	
11.5	96.0"	
96.0"		



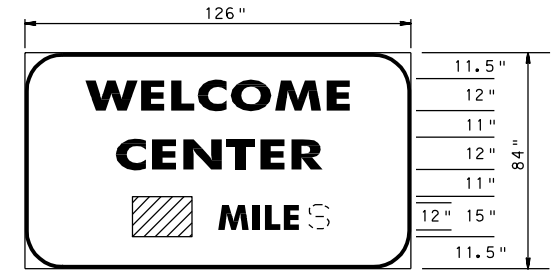
10"	12"	12"	10"	14.3"	90"
10"	10"	12"	10"	27.7"	14"
12"	12"	12"	12"	14"	



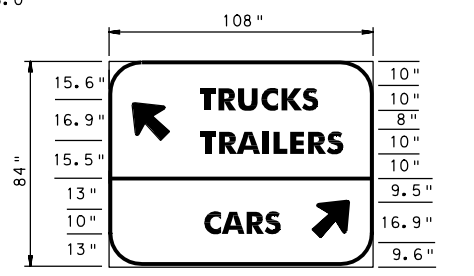
26.5	34.3	19.0	20.1	11.7
12.8--W	10.3--C	88.0--(BAR LENGTH)	12.8--W	10.3--S
9.6--E	9.6--E	19.0	9.6--E	8.1--T
9.6--L	10.3--N	126.0"	4.7--I	10.8--A
10.3--C	9.6--T		10.9--G	9.6--T
11.3--O	9.6--E		8.1--H	4.7--I
12.1--M	8.1--R		20.1	11.3--O
7.3--E	34.2		27.7--ARROW	8.1--N
26.5	126.0"		12.0	11.7
126.0"			126.0"	27.7--ARROW
				12.0
				126.0"



40.0	31.6	--	--
12.8--W	10.3--S	18.0	18.0
9.6--E	8.1--T	12.1--M	12.1--M
4.7--I	10.8--A	4.7--I	OR 4.7--I
10.9--G	9.6--T	9.6--L	9.6--L
8.1--H	4.7--I	7.3--E	9.6--E
39.9	11.3--O	8.1--N	9.6--E
126.0"	8.1--N	31.5	8.1--S
	126.0"		



26.5	34.3	18.0	--	18.0	--
12.8--W	10.3--C	12.1--M	OR	4.7--I	
9.6--E	9.6--E	4.7--I		9.6--L	
9.6--L	10.3--N	7.3--E		9.6--E	
10.3--C	9.6--T	8.1--R		8.1--S	
11.3--O	9.6--E	34.2			
12.1--M	8.1--R	126.0"			
7.3--E	34.2				
26.5	126.0"				
126.0"					



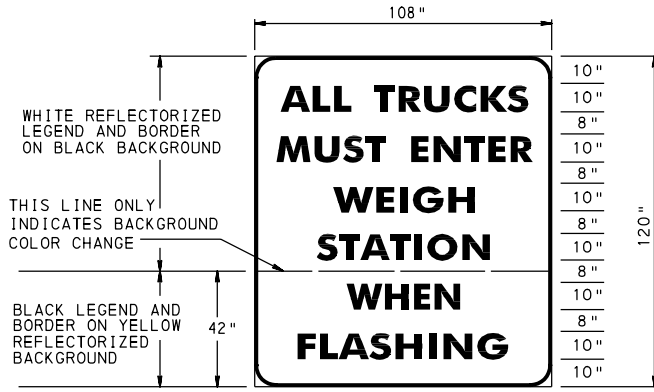
2" BAR	10" SERIES D LEGEND	TYPE B ARROWS
9.6	9.6	36.5
16.9--ARROW	16.9--ARROW	8.0--C
10.0	10.0	10.2--A
8.0--T	8.0--T	8.6--R
9.1--R	8.6--R	6.7--S
9.1--U	10.2--A	11.5
8.6--C	3.9--I	16.9--ARROW
8.8--K	8.0--L	9.6
6.7--S	8.0--E	108.0"
21.2	8.6--R	
108.0"	6.7--S	
	9.5	
	108.0"	



12.7	20.4
12.8--W	10.3--C
9.6--E	9.6--E
9.6--L	10.3--N
10.3--C	9.6--T
11.3--O	9.6--E
12.1--M	8.1--R
7.3--E	20.4
27.7--ARROW	27.7--ARROW
12.0	12.0
138.0"	138.0"

ALTERNATE WELCOME CENTER/WEIGH STATION EXIT DIRECTION SIGN

NOTE: THIS SIGN MAY BE USED ONLY IF INSUFFICIENT WIDTH IS AVAILABLE TO ERECT THE STANDARD WELCOME CENTER/WEIGH STATION EXIT DIRECTION SIGN.



11.7	12.4	34.9	27.9	36.8	22.6
10.2--A	10.1--M	10.6--W	8.6--S	10.6--W	8.0--F
8.0--L	9.1--U	8.0--E	6.7--T	9.1--H	6.7--L
6.1--L	8.6--S	3.9--I	9.0--A	8.0--E	10.2--A
10.0	6.1--T	9.1--G	8.0--T	6.7--N	9.1--S
8.0--T	10.0	6.7--H	3.9--I	36.8	9.1--H
9.1--R	8.0--E	34.8	9.4--O	108.0"	3.9--I
9.1--U	8.6--N	108.0"	6.7--N	108.0"	9.1--N
8.6--C	8.0--T		27.8	6.7--G	6.7--G
8.8--K	8.0--E		108.0"	22.6	
6.7--S	6.7--R			108.0"	
11.7	12.4				
108.0"	108.0"				

NOTES:

- DEFINITION:** USE INDICATED SIGNING FOR WELCOME CENTERS THAT ARE OFFICIALLY RECOGNIZED BY THE PA DEPARTMENT OF TRANSPORTATION.
- DISTANCE:** USE DISTANCE FROM THEORETICAL GORE FOR DISTANCE INDICATED ON SIGNS.
- COLOR:** USE BLUE REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED DIRECT APPLIED LEGEND AND BORDER, UNLESS OTHERWISE NOTED.
- BORDERS:** USE 2" WIDE BORDER WITH 12" CORNER RADIUS, UNLESS OTHERWISE NOTED.
- LEGEND AND SIGN WIDTH:** UNLESS OTHERWISE NOTED, USE 12" SERIES D UPPER CASE FOR LEGEND, AND 15" SERIES D FOR DIGITS. SEE TC-8700C FOR LAYOUTS OF ARROWS AND FRACTIONS, AND FOR DETERMINING SIGN WIDTHS.
- POSTS:** USE POSTS OF AN APPROVED BREAKAWAY DESIGN, EITHER STEEL (TC-8702A OR TC-8702B) OR WOOD (TC-8702E).
- A4-1 SIGN:** USE ONLY WHEN SEPARATE PARKING AREAS ARE PROVIDED.
- MINIMUM SIGN SPACING:** MAINTAIN 800' MINIMUM SPACING FOR ALL SIGNS PRIOR TO DECELERATION LANE.
- VENDING MACHINES SIGN (D5-6-2):** USE IF VENDING MACHINES ARE AVAILABLE. SEE PUBLICATION 236M FOR LAYOUT. IF A FOLDING SIGN IS USED, IT MAY ALSO BE MOUNTED BELOW THE MAIN SIGN, PROVIDED PROPER SIGN HEIGHT IS MAINTAINED AND THE BREAKAWAY FEATURE OF THE POSTS IS UNAFFECTED.
- FREE RESERVATION SERVICE:** USE IF RESERVATION SERVICE IS AVAILABLE. SEE PUBLICATION 236M FOR LAYOUT. SEE NOTE 9 CONCERNING ALTERNATE LOCATION FOR FOLDING SIGNS.
- NEXT REST AREA SUPPLEMENTAL SIGN:** THIS SIGN MAY BE ELIMINATED IF SUFFICIENT SIGN SPACING DOES NOT EXIST. WHEN THIS SIGN IS ELIMINATED, ONLY THEN INSTALL "NEXT REST AREA -- MILES" SUPPLEMENTAL PLAQUE UNDER SECOND ADVANCE SIGN. SEE TC-8701R FOR SIGN FABRICATION DETAILS.
- ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

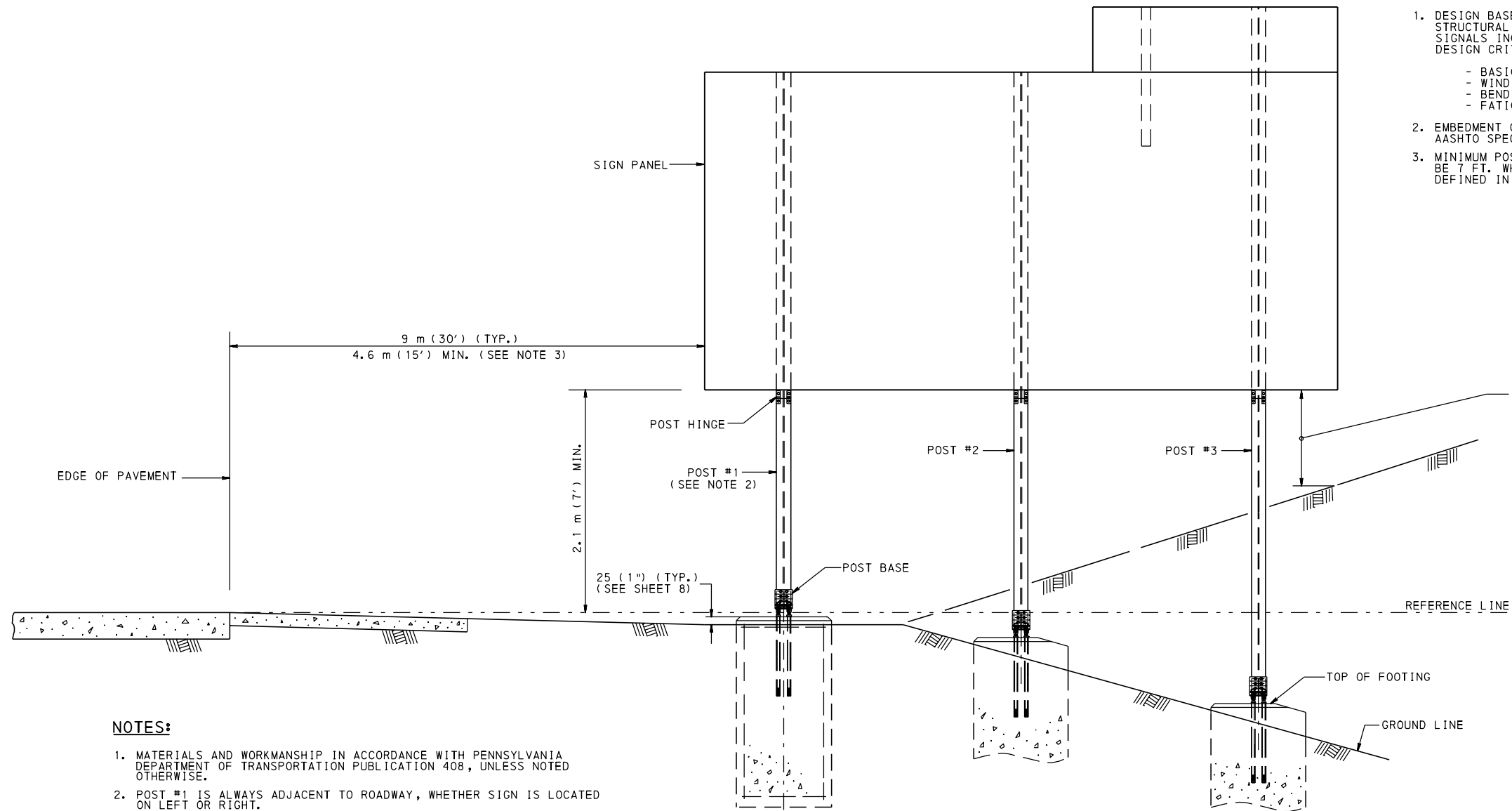
ENGLISH UNITS

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

FREeway AND EXPRESSWAY
ADVANCE SIGNING

WELCOME CENTERS

RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>M. G. Patel</i> CHIEF HIGHWAY ENGINEER	SHT. 2 OF 2 TC-8701W
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DESIGN CRITERIA:

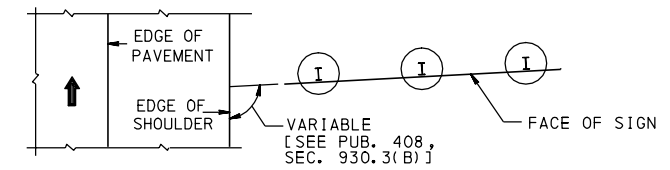
1. DESIGN BASED ON 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS INCLUDING 2002 INTERIM SPECIFICATIONS WITH THE FOLLOWING DESIGN CRITERIA:
 - BASIC WIND SPEED (V) = 40 m/sec (90 MPH) (3-SECOND GUST)
 - WIND IMPORTANCE FACTOR (I_r) = 0.71 (10 YEAR DESIGN LIFE)
 - BENDING COEFFICIENT (C_b) = 1.30
 - FATIGUE IS NOT CONSIDERED FOR ROADSIDE SIGNS.
2. EMBEDMENT OF FOOTINGS IS BASED ON BROMS' METHOD OUTLINED IN THE AASHTO SPECIFICATIONS. SEE SHEET 8 FOR SOIL PROPERTIES.
3. MINIMUM POST HEIGHT BETWEEN GROUND LEVEL AND BOTTOM OF SIGN WILL BE 7 FT. WHENEVER THE POST IS LOCATED IN THE CLEAR ZONE AS DEFINED IN PUBLICATION 13M.

1.5 m (5') MIN.
(EXCEPT 0.3 m (1') MIN. AT LOCATIONS WHERE NO PART OF THE SIGN FACE WILL BE OBSCURED BY VEGETATION AND WHERE THE SIGN IS PROTECTED BY GUIDERAIL OR LOCATED WHERE IT IS VERY UNLIKELY TO BE HIT BY AN ERRANT VEHICLE, e.g., ON A VERY STEEP BANK.)

NOTES:

1. MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, UNLESS NOTED OTHERWISE.
2. POST #1 IS ALWAYS ADJACENT TO ROADWAY, WHETHER SIGN IS LOCATED ON LEFT OR RIGHT.
3. AT LOCATIONS WITH UNMOUNTABLE CURB, GUIDE RAIL OR BARRIER, PLACE THE NEAR EDGE OF THE SIGN AT LEAST 0.6 m (2') BEHIND THE CURB FACE, GUIDE RAIL OR BARRIER. AT LOCATIONS WITH GUIDE RAIL OR BARRIER, IT IS DESIRABLE TO PLACE POST #1 BEYOND THE DEFLECTION DISTANCE OF THE GUIDE RAIL OR BARRIER. PRIOR TO FABRICATION, DETERMINE ACTUAL LATERAL PLACEMENT IN THE FIELD WITH THE APPROVAL OF THE ENGINEER.
4. LOCATE SIGNS TO AVOID PLACING SUPPORTS IN DRAINAGE DITCHES.
5. MOUNT ALL SIGN PANELS ABOVE POST HINGES.
6. FOR SELECTION OF POSTS, REFER TO POST SELECTION TABLES ON SHEETS 2 THROUGH 4.
7. FOR POST BASE AND HINGE DETAILS, REFER TO SHEET 5.
8. FOR SELECTION OF FOOTING SIZE AND REINFORCEMENT, REFER TO FOOTING SELECTION TABLE ON SHEET 8.
9. FOR DETAIL OF SIGN PANELS AND ATTACHMENT HARDWARE, SEE TRAFFIC STANDARD TC-8701E OR TC-8701S.
10. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
11. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

SIGN ELEVATION



PLAN VIEW

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING		
POST-MOUNTED SIGNS, TYPE A		
ERECTION DETAILS		
RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>M. G. Latel</i> CHIEF HIGHWAY ENGINEER	SHT. 1 OF 8 TC-8702A

(TABLE CONTINUED FROM SHEET 2)

POST SELECTION TABLE - TWO POSTS

W m (FT)	L _b m (FT)	HEIGHT "H" IN m (FT)														
		1.220 (4')	1.525 (5')	1.830 (6')	2.135 (7')	2.440 (8')	2.745 (9')	3.050 (10')	3.355 (11')	3.660 (12')	3.965 (13')	4.270 (14')	4.575 (15')	4.880 (16')	5.185 (17')	5.490 (18')
4.5 (15')	2.1 (7')	P1	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P7	P8	P10
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P7	P7	P8	P10
	2.7 (9')	P1	P1	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10
	3.0 (10')	P1	P2	P2	P3	P3	P3	P4	P5	P5	P7	P7	P7	P8	P10	P10
	3.3 (11')	P1	P2	P3	P3	P3	P4	P5	P5	P7	P7	P7	P8	P10	P10	P10
	3.6 (12')	P2	P2	P3	P3	P3	P5	P5	P6	P7	P7	P8	P9	P10	P10	-
	3.9 (13')	P2	P3	P3	P3	P4	P5	P5	P7	P7	P7	P8	P9	P10	P10	-
	4.2 (14')	P2	P3	P3	P4	P5	P5	P7	P7	P7	P8	P9	P10	P10	P10	-
	4.5 (15')	P3	P3	P3	P4	P5	P5	P7	P7	P7	P8	P10	P10	P10	-	-
	4.8 (16')	P3	P3	P4	P5	P5	P7	P7	P8	P9	-	-	-	-	-	-
5.1 (17')	P3	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	-	
4.8 (16')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P7	P7	P8	P10
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P5	P5	P6	P7	P7	P8	P10
	2.7 (9')	P1	P2	P2	P3	P3	P3	P4	P5	P5	P7	P7	P8	P9	P10	P10
	3.0 (10')	P1	P2	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10	-
	3.3 (11')	P2	P2	P3	P3	P3	P4	P5	P5	P7	P7	P8	P9	P10	P10	-
	3.6 (12')	P2	P2	P3	P3	P4	P5	P5	P7	P7	P7	P8	P10	P10	P10	-
	3.9 (13')	P2	P3	P3	P4	P4	P5	P6	P7	P7	P8	P10	P10	P10	-	-
	4.2 (14')	P2	P3	P3	P4	P5	P5	P7	P7	P8	P9	P10	P10	P10	-	-
	4.5 (15')	P3	P3	P4	P5	P5	P7	P7	P7	P8	P10	P10	P10	-	-	-
	4.8 (16')	P3	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	-
5.1 (17')	P3	P4	P5	P5	P7	P7	P8	P9	-	-	-	-	-	-	-	
5.1 (17')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P7	P7	P8	P10
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P5	P5	P7	P7	P7	P8	P10
	2.7 (9')	P1	P2	P2	P3	P3	P3	P4	P5	P5	P7	P7	P8	P9	P10	P10
	3.0 (10')	P1	P2	P3	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-
	3.3 (11')	P2	P2	P3	P3	P3	P4	P5	P6	P7	P7	P8	P10	P10	P10	-
	3.6 (12')	P2	P3	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-
	3.9 (13')	P2	P3	P3	P4	P5	P5	P7	P7	P7	P8	P10	P10	P10	-	-
	4.2 (14')	P2	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-
	4.5 (15')	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-	-
	4.8 (16')	P3	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	-
5.1 (17')	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	-	-	
5.4 (18')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P7	P7	P8	P10
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P5	P5	P6	P7	P7	P8	P10
	2.7 (9')	P1	P2	P2	P3	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	-
	3.0 (10')	P1	P2	P2	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-
	3.3 (11')	P2	P2	P3	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-
	3.6 (12')	P2	P2	P3	P3	P4	P4	P5	P6	P7	P7	P8	P10	P10	P10	-
	3.9 (13')	P2	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-
	4.2 (14')	P3	P3	P4	P5	P5	P7	P7	P7	P8	P10	P10	-	-	-	-
	4.5 (15')	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-	-
	4.8 (16')	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	-	-
5.1 (17')	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	-	-	
5.7 (19')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P5	P5	P6	P7	P7	P8	P10
	2.4 (8')	P1	P2	P2	P3	P3	P3	P4	P5	P5	P7	P7	P7	P8	P10	P10
	2.7 (9')	P1	P2	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10	-
	3.0 (10')	P2	P2	P3	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-
	3.3 (11')	P2	P2	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-
	3.6 (12')	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10	P10	-	-
	3.9 (13')	P2	P3	P3	P4	P5	P6	P7	P7	P8	P10	P10	P10	-	-	-
	4.2 (14')	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-	-
	4.5 (15')	P3	P3	P4	P5	P5	P7	P7	P9	P10	P10	-	-	-	-	-
	4.8 (16')	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	-	-
5.1 (17')	P3	P4	P5	P7	P7	P8	P9	-	-	-	-	-	-	-	-	
6.0 (20')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P6	P7	P7	P8
	2.4 (8')	P1	P2	P2	P3	P3	P3	P4	P5	P5	P6	P6	P7	P7	P8	P10
	2.7 (9')	P1	P2	P2	P3	P3	P4	P5	P5	P7	P7	P7	P8	P10	P10	-
	3.0 (10')	P2	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10	P10	-
	3.3 (11')	P2	P3	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-
	3.6 (12')	P2	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-
	3.9 (13')	P3	P3	P3	P4	P5	P5	P7	P7	P8	P9	P10	P10	-	-	-
	4.2 (14')	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-	-
	4.5 (15')	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-	-	-
	4.8 (16')	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	-	-
5.1 (17')	P3	P4	P5	P7	P7	P8	-	-	-	-	-	-	-	-	-	
6.3 (21')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P5	P6	P6	P7	P7	P8	P10
	2.4 (8')	P1	P2	P2	P3	P3	P4	P4	P5	P5	P6	P7	P7	P8	P10	P10
	2.7 (9')	P1	P2	P2	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-
	3.0 (10')	P2	P2	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-
	3.3 (11')	P2	P3	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	-	-	-
	3.6 (12')	P2	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-
	3.9 (13')	P3	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-
	4.2 (14')	P3	P3	P4	P5	P6	P7	P7	P8	P10	P10	P10	-	-	-	-
	4.5 (15')	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-	-	-
	4.8 (16')	P3	P4	P5	P7	P7	P8	-	-	-	-	-	-	-	-	-
5.1 (17')	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	-	-	-	
6.6 (22')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P5	P6	P6	P7	P7	P8	P10
	2.4 (8')	P1	P2	P2	P3	P3	P4	P5	P5	P6	P7	P7	P8	P10	P10	-
	2.7 (9')	P2	P2	P3	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-
	3.0 (10')	P2	P2	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-
	3.3 (11')	P2	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-
	3.6 (12')	P2	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-
	3.9 (13')	P3	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-	-
	4.2 (14')	P3	P3	P4	P5	P7	P7	P8	P10	P10	P10	-	-	-	-	-
	4.5 (15')	P3	P4	P5	P5	P7	P7	P8	P10	P10	P10	-	-	-	-	-
	4.8 (16')	P3	P4	P5	P7	P7	P8	-	-	-	-	-	-	-	-	-
5.1 (17')	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	-	-	-	

LEGEND:

- P1 = W150 x 14 (W6 x 9)
- P2 = W150 x 18 (W6 x 12)
- P3 = W150 x 22 (W6 x 15)
- P4 = W200 x 27 (W8 x 18)
- P5 = W200 x 31 (W8 x 21)
- P6 = W250 x 33 (W10 x 22)
- P7 = W250 x 39 (W10 x 26)
- P8 = W360 x 45 (W14 x 30)
- P9 = W460 x 52 (W18 x 35)
- P10 = W460 x 60 (W18 x 40)

NOTES:

- 1. SEE SHEET 2 FOR SIGN POST SELECTION NOTES AND SHEET 4 FOR SIGNS ON THREE POSTS.
- 2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
- 3. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

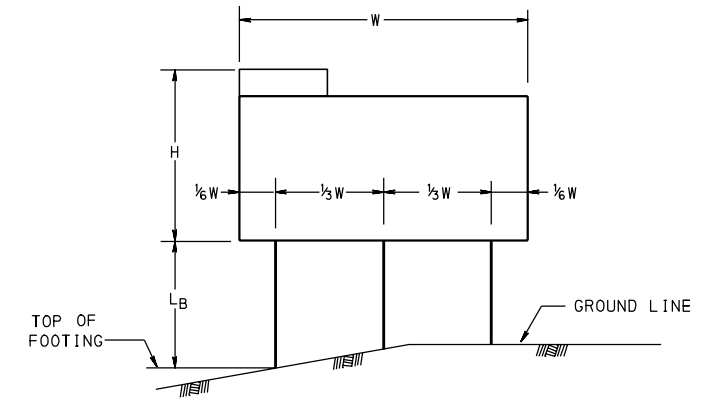
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS,
TYPE A

POST SELECTION TABLE

POST SELECTION TABLE - THREE POSTS														
W m (FT)	L _B m (FT)	HEIGHT "H" IN m (FT)												
		1,220 (4')	1,525 (5')	1,830 (6')	2,135 (7')	2,440 (8')	2,745 (9')	3,050 (10')	3,355 (11')	3,660 (12')	3,965 (13')	4,270 (14')	4,575 (15')	4,880 (16')
6.6 (22')	2.1 (7')	P1	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P7
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7
	2.7 (9')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7
	3.0 (10')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8
	3.3 (11')	P1	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10
	3.6 (12')	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10
	3.9 (13')	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10
	4.2 (14')	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10	P10
	4.5 (15')	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	-	-	-
	4.8 (16')	P3	P3	P4	P4	P5	P5	P7	P7	P8	-	-	-	-
5.1 (17')	P3	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	
6.9 (23')	2.1 (7')	P1	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P7
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7
	2.7 (9')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7	P8
	3.0 (10')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8
	3.3 (11')	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10
	3.6 (12')	P2	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10
	3.9 (13')	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10
	4.2 (14')	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10	P10
	4.5 (15')	P3	P3	P4	P4	P5	P5	P6	P7	P7	P8	-	-	-
	4.8 (16')	P3	P3	P4	P5	P5	P7	P7	P8	P9	-	-	-	-
5.1 (17')	P3	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	
7.2 (24')	2.1 (7')	P1	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P7
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7
	2.7 (9')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7	P8
	3.0 (10')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8
	3.3 (11')	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10
	3.6 (12')	P2	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10
	3.9 (13')	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10
	4.2 (14')	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10	P10
	4.5 (15')	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	-	-	-
	4.8 (16')	P3	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-
5.1 (17')	P3	P4	P5	P5	P7	P7	P8	P9	-	-	-	-	-	
7.5 (25')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P7	P7
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7
	2.7 (9')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7	P8
	3.0 (10')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8
	3.3 (11')	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7	P8	P10
	3.6 (12')	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10
	3.9 (13')	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10	P10
	4.2 (14')	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10	P10
	4.5 (15')	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	-	-	-
	4.8 (16')	P3	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-
5.1 (17')	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	
7.8 (26')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P6	P7
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7
	2.7 (9')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7	P8
	3.0 (10')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8
	3.3 (11')	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10
	3.6 (12')	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10
	3.9 (13')	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10	P10
	4.2 (14')	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10	P10	-
	4.5 (15')	P3	P3	P4	P4	P5	P5	P7	P7	P8	-	-	-	-
	4.8 (16')	P3	P4	P4	P5	P5	P7	P7	P8	P9	-	-	-	-
5.1 (17')	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	
8.1 (27')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P6	P7
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7
	2.7 (9')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7	P8
	3.0 (10')	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10
	3.3 (11')	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10
	3.6 (12')	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10
	3.9 (13')	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10	-
	4.2 (14')	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10	P10	-
	4.5 (15')	P3	P3	P4	P4	P5	P5	P7	P7	P8	-	-	-	-
	4.8 (16')	P3	P4	P4	P5	P5	P7	P7	P8	-	-	-	-	-
5.1 (17')	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	
8.4 (28')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P6	P7
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7
	2.7 (9')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7	P8
	3.0 (10')	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10
	3.3 (11')	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10
	3.6 (12')	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10
	3.9 (13')	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10	P10
	4.2 (14')	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10	P10	-
	4.5 (15')	P3	P3	P4	P4	P5	P5	P7	P7	P8	-	-	-	-
	4.8 (16')	P3	P4	P4	P5	P5	P7	P7	P8	-	-	-	-	-
5.1 (17')	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	
8.7 (29')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P6	P7
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7
	2.7 (9')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7	P8
	3.0 (10')	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10
	3.3 (11')	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10
	3.6 (12')	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10	P10
	3.9 (13')	P2	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10	-
	4.2 (14')	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10	P10	-
	4.5 (15')	P3	P3	P4	P4	P5	P5	P7	P7	P8	-	-	-	-
	4.8 (16')	P3	P4	P4	P5	P5	P7	P7	P8	-	-	-	-	-
5.1 (17')	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	
9.0 (30')	2.1 (7')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P6	P6	P7
	2.4 (8')	P1	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7
	2.7 (9')	P1	P2	P2	P3	P3	P3	P4	P4	P5	P5	P6	P7	P8
	3.0 (10')	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10
	3.3 (11')	P2	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10
	3.6 (12')	P2	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10
	3.9 (13')	P3	P3	P3	P4	P4	P5	P5	P7	P7	P8	P9	P10	P10
	4.2 (14')	P3	P3	P4	P4	P5	P5	P7	P7	P8	P10	P10	P10	-
	4.5 (15')	P3	P3	P4	P4	P5	P5	P7	P7	P8	-	-	-	-
	4.8 (16')	P3	P4	P4	P5	P5	P7	P7	P8	-	-	-	-	-
5.1 (17')	P3	P4	P5	P5	P7	P7	P8	-	-	-	-	-	-	

LEGEND:
P1 = W150 x 14 (W6 x 9)
P2 = W150 x 18 (W6 x 12)
P3 = W150 x 22 (W6 x 15)
P4 = W200 x 27 (W8 x 18)
P5 = W200 x 31 (W8 x 21)
P6 = W250 x 33 (W10 x 22)
P7 = W250 x 39 (W10 x 26)
P8 = W360 x 45 (W14 x 30)
P9 = W460 x 52 (W18 x 35)
P10 = W460 x 60 (W18 x 40)



SIGN ON THREE POSTS
SKETCH B

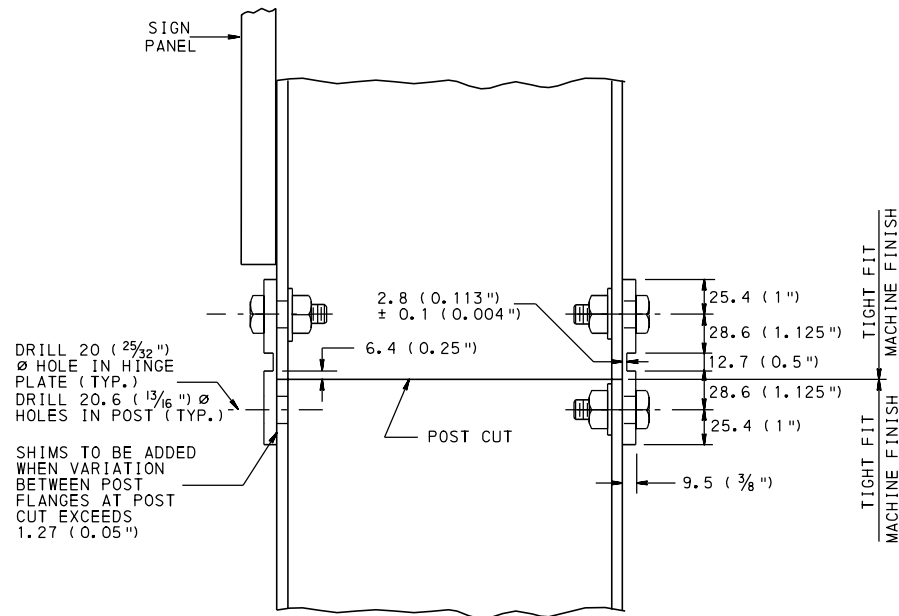
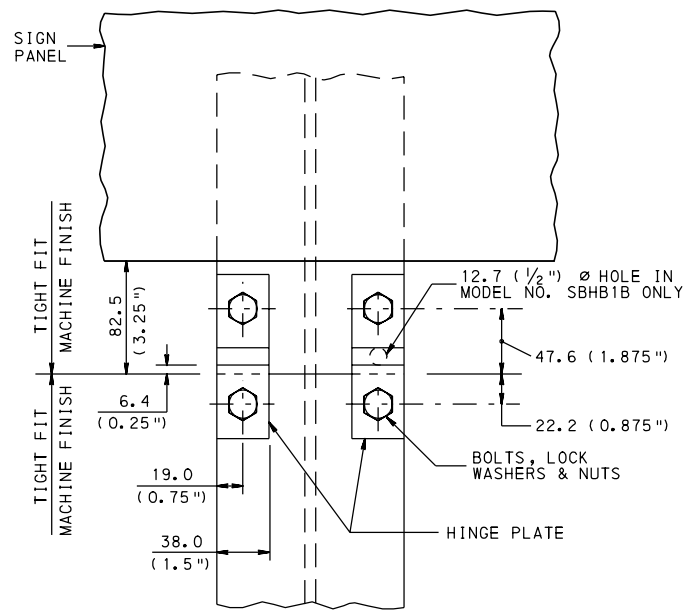
- NOTES:**
- SEE SHEETS 2 AND 3 FOR SIGN POST SELECTION NOTES AND SIGNS ON TWO POSTS.
 - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
 - EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

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

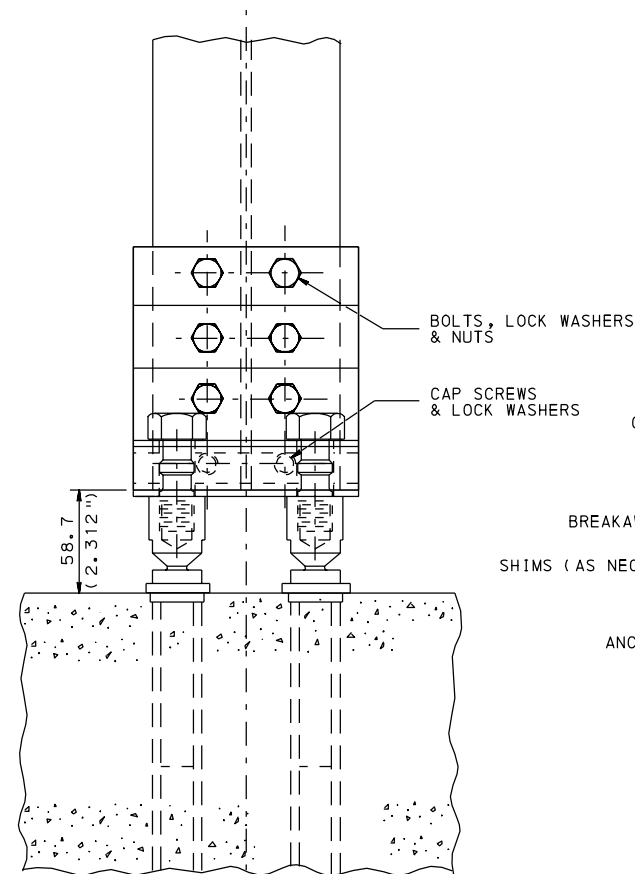
**POST-MOUNTED SIGNS,
TYPE A**

POST SELECTION TABLE

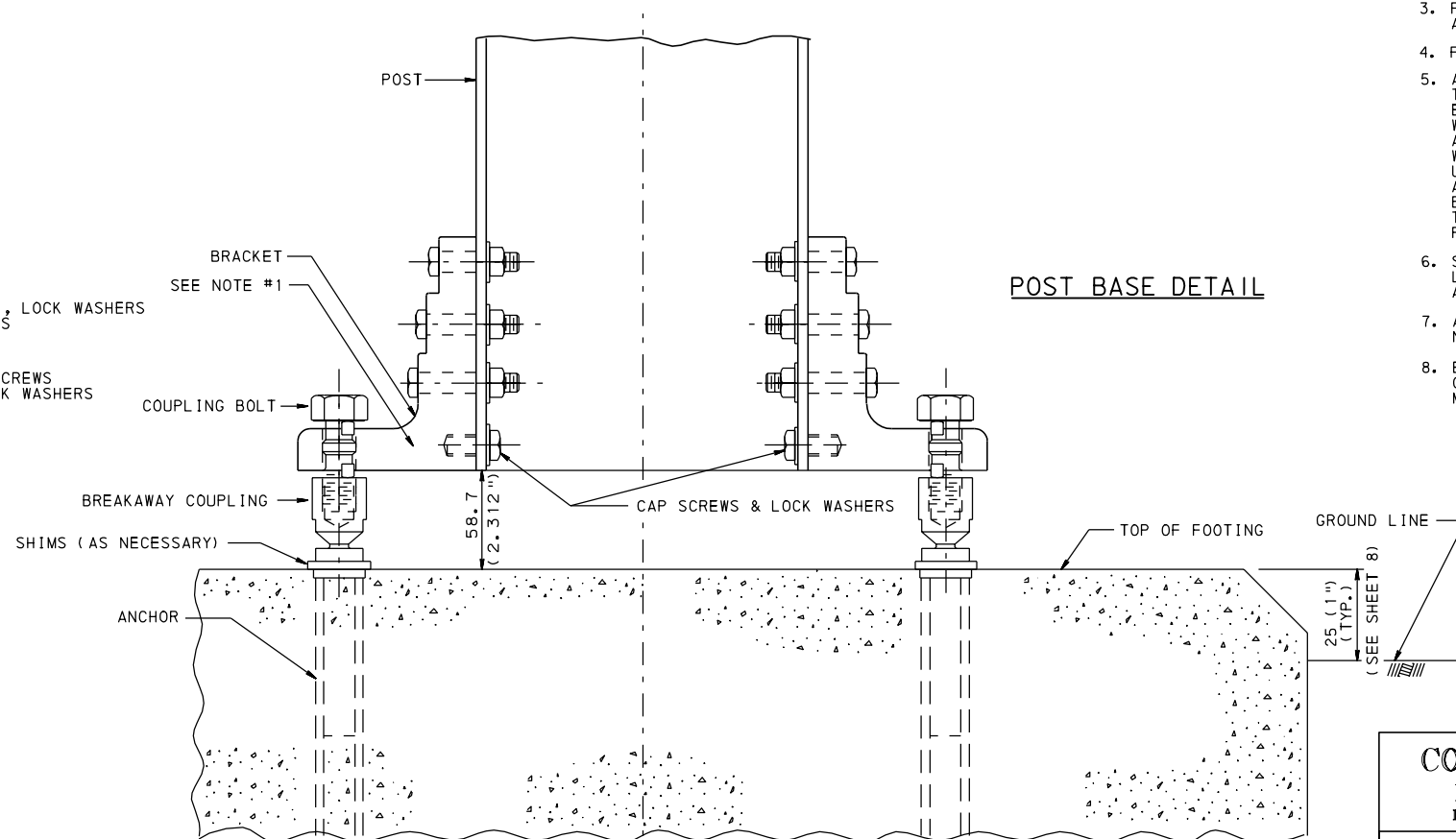
RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>m. G. Latel</i> CHIEF HIGHWAY ENGINEER	SHT. 4 OF 8 TC-8702A
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POST HINGE DETAIL



FRONT VIEW



SIDE VIEW

POST BASE DETAIL

BREAKAWAY ASSEMBLIES

TO BE FROM A SUPPLIER LISTED IN BULLETIN 15.

NOTES:

1. THE BRACKET NUMBER IS STAMPED ON THE BRACKET.
2. BOLT THE BRACKETS TO POST, THEN PLACE POST AND CONNECTED BRACKET TO BREAKAWAY COUPLING.
3. FOR BRACKET, BREAKAWAY COUPLING, COUPLING BOLT, AND SHIM DETAILS, REFER TO SHEET 6.
4. FOR FOOTING AND ANCHOR DETAILS, REFER TO SHEET 6.
5. ALL BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. FASTENERS, EXCEPT FOR SPECIAL BOLT AND COUPLING, ARE INSTALLED WITH LOCKWASHERS. FASTENERS, INCLUDING SPECIAL BOLT AND COUPLING, SHOULD BE SECURED AS TIGHT AS POSSIBLE WITH CONVENTIONAL WRENCHES. DO NOT USE A PIPE WRENCH. USE LOWER WRENCH FLATS TO TIGHTEN COUPLINGS INTO ANCHORS. TIGHTEN SPECIAL BOLTS WHILE HOLDING COUPLINGS BY THE UPPER WRENCH FLATS WITH AN ADDITIONAL WRENCH TO PREVENT AN INDUCED TORQUE STRESS ACROSS THE NECKED PORTION OF THE COUPLING.
6. SHIMS BETWEEN THE COUPLINGS AND ANCHORS SHOULD BE LIMITED TO TWO SHIMS UNDERNEATH ANY ONE COUPLING AND THREE SHIMS UNDERNEATH ANY TWO COUPLINGS.
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

POST-MOUNTED SIGNS,
TYPE A

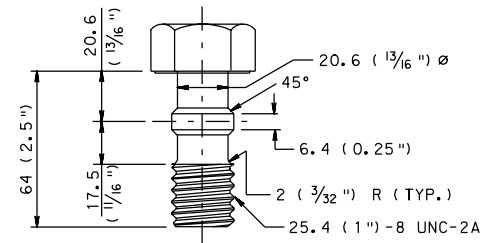
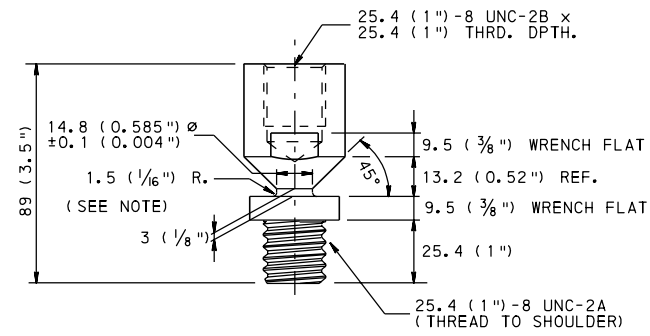
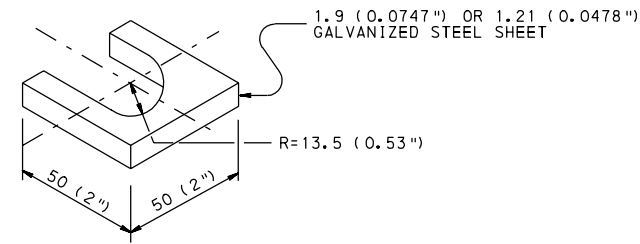
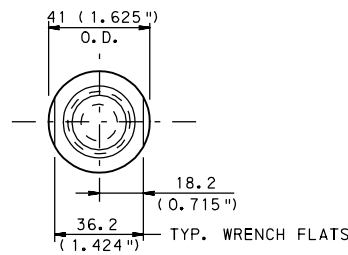
POST BASE AND
HINGE DETAILS

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

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

SHT. 5 OF 8

TC-8702A



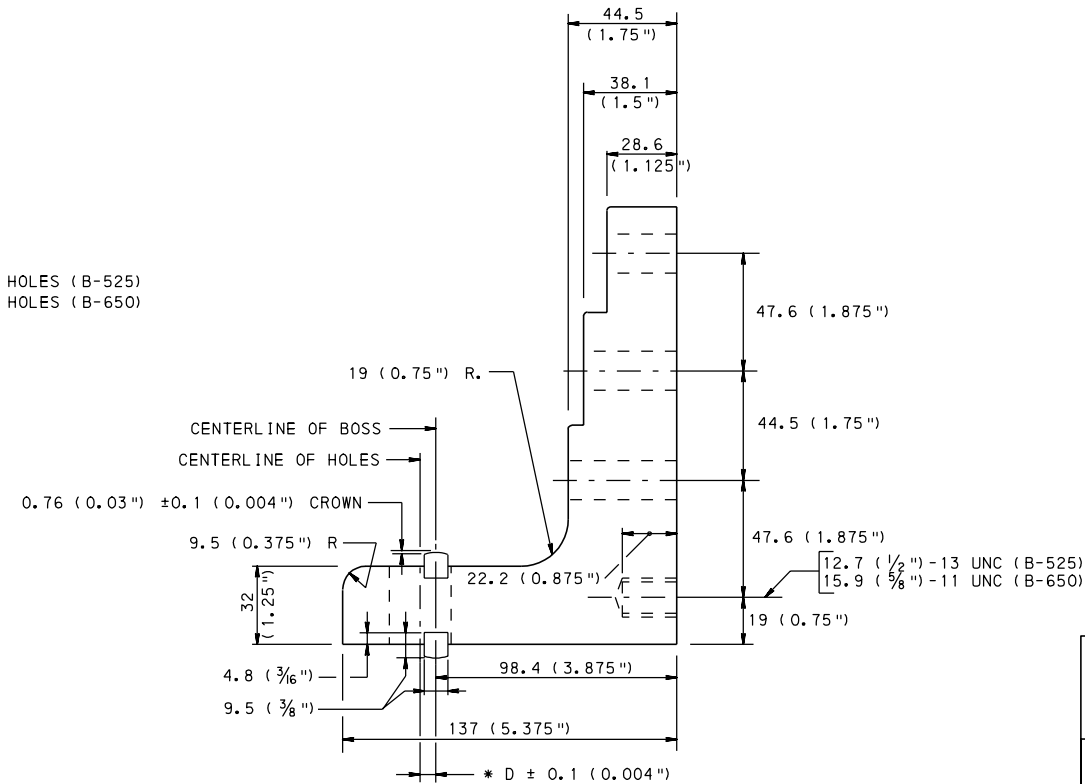
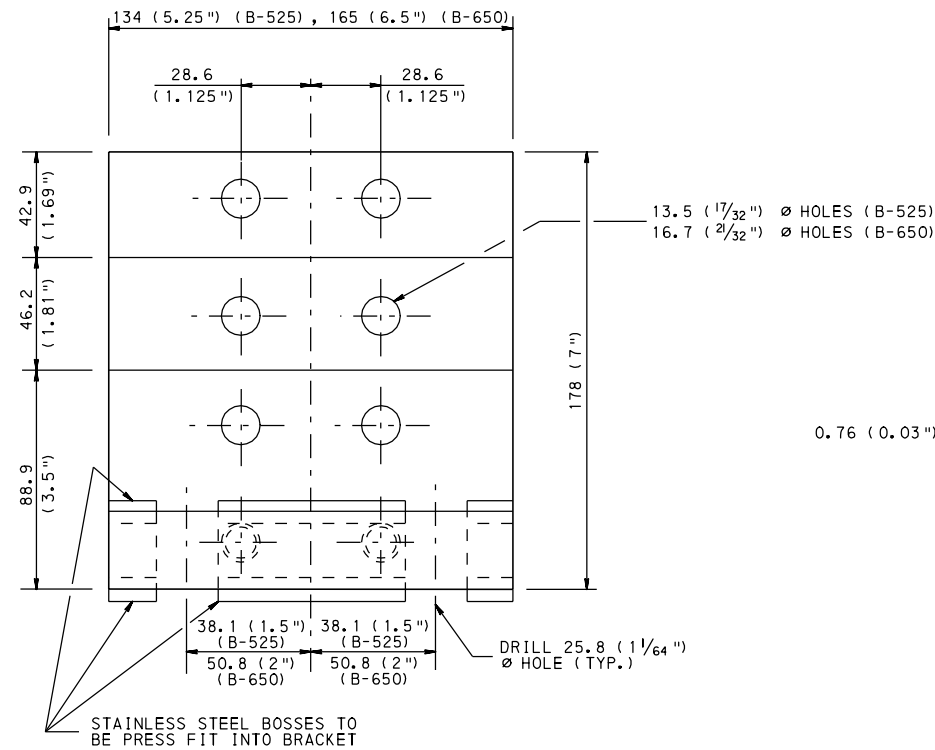
NOTES:

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.

BREAKAWAY COUPLING DETAIL

NOTE: DO NOT PLACE TORQUE ACROSS NECK PORTION OF COUPLING.

COUPLING BOLT DETAIL



BRACKET NO.	D mm (INCHES)
1	2.5 (0.100)
2	3.8 (0.150)
3	5.1 (0.200)

TABLE A

* SELECT BRACKET FROM THE BRACKET SELECTION TABLES ON SHEET 7, THEN SELECT THE VALUE FOR DIMENSION "D" FROM TABLE A.

BRACKET DETAIL

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DEPARTMENT OF TRANSPORTATION
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POST-MOUNTED SIGNS,
TYPE A

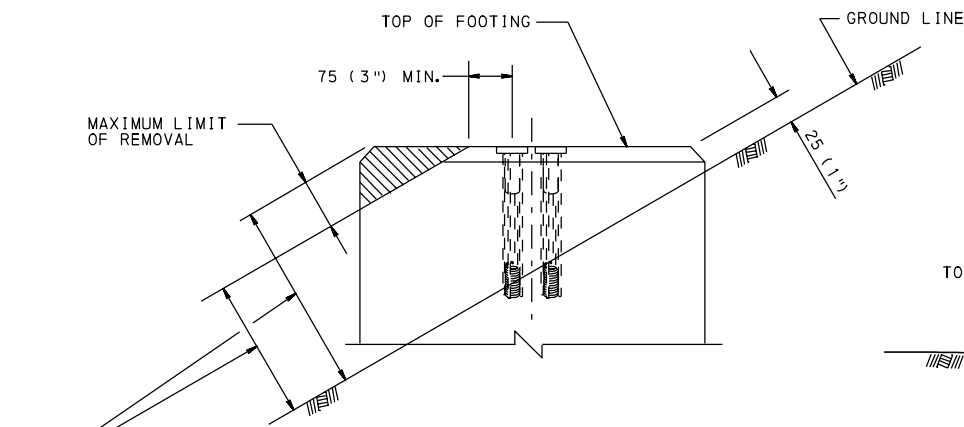
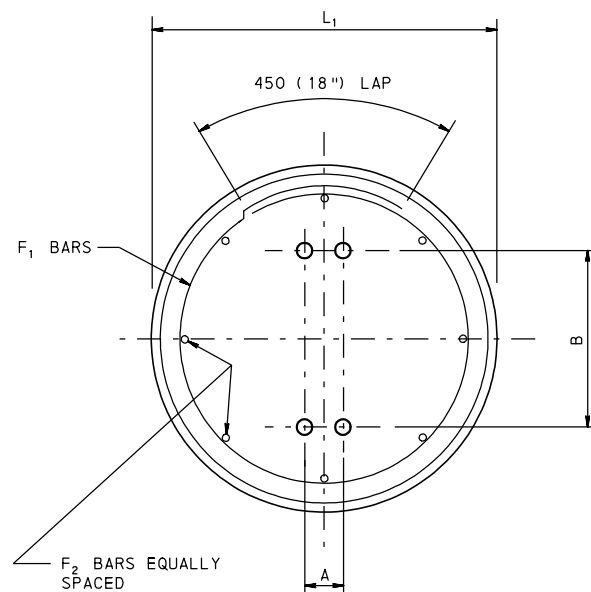
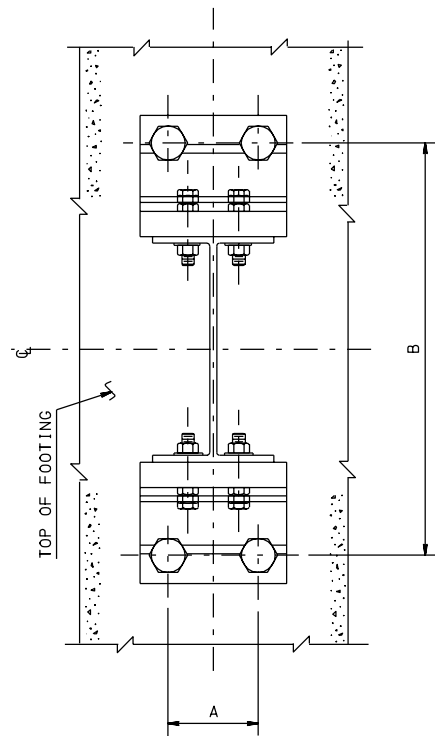
BREAKAWAY COUPLING AND
BRACKET DETAILS

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

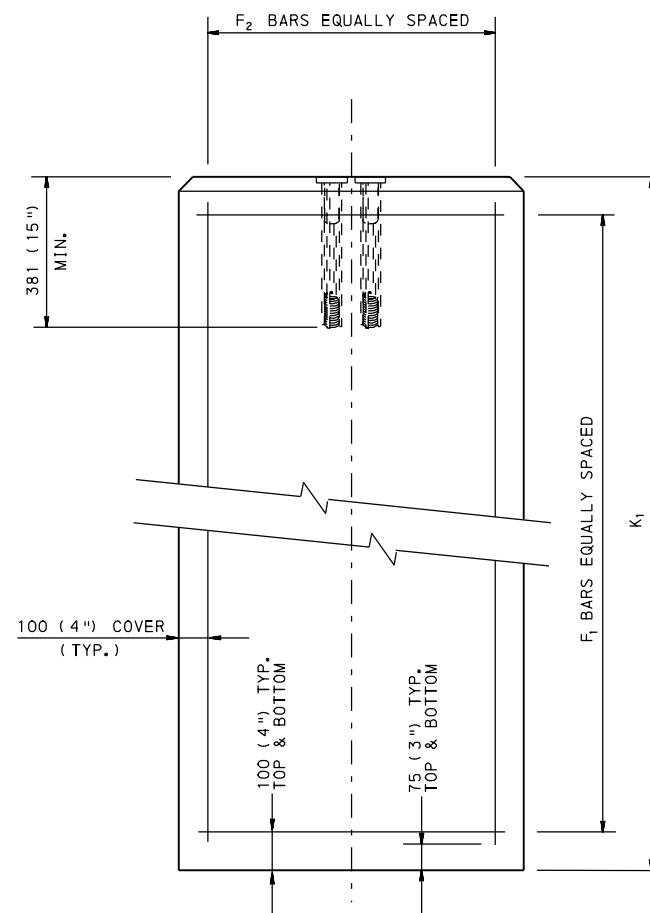
RECOMMENDED MAY 25, 2007
m. G. Patel
CHIEF HIGHWAY ENGINEER

SHT. 6 OF 8

TC-8702A

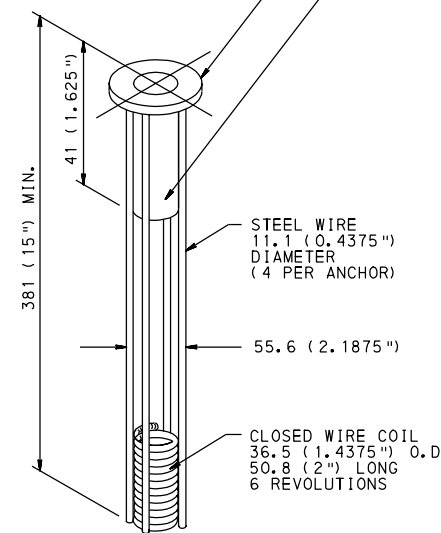


FOOTING PROJECTIONS ABOVE GROUND LINE SHALL BE MINIMIZED. THE MAXIMUM PERMISSIBLE FOOTING PROJECTION SHALL BE 100 (4") ON THE LOWER SLOPE SIDE. WHERE NECESSARY, THE SHADED AREA OF THE FOOTING SHALL BE REMOVED AND REINFORCEMENT SHALL BE BENT TO FIT.



STAINLESS STEEL THREADED FERRULE 25.4 (1") - 8 UNC THREAD DEPTH = 28.6 (1.125"), MINIMUM

STAINLESS STEEL WASHER 63.5 (2.5") O.D., 27 (1.0625") I.D., 3.2 (0.125") THICK



ANCHOR (SEE NOTE 2)

METRIC UNITS

POST SIZE	L ₁ * (m)	DEPTH K ₁ (m)	REINF. STEEL F ₁	REINF. STEEL F ₂
W150	0.75	2.30	8-#13	8-#22
W200		2.60	9-#13	8-#22
W250	0.90	2.75	10-#13	10-#22
W360		2.90	10-#13	12-#22
W460	1.05	2.90	10-#13	12-#22

ENGLISH UNITS

POST SIZE	L ₁ * (FT)	DEPTH K ₁ (FT)	REINF. STEEL F ₁	REINF. STEEL F ₂
W6	2.5	7.50	8-#4	8-#7
W8		8.50	9-#4	8-#7
W10	3.0	9.00	10-#4	10-#7
W14		9.50	10-#4	12-#7
W18	3.5	9.50	10-#4	12-#7

* DIAMETER IF CIRCULAR OR MINIMUM SIDE IF SQUARE OR RECTANGULAR

FOOTING SELECTION TABLE

SOIL PROPERTIES:

FOUNDATION DESIGN IS BASED ON BROMS' METHOD USING THE FOLLOWING SOIL PROPERTIES:

TYPE OF SOIL = LOOSE-MEDIUM SAND
 UNIT WEIGHT OF SOIL (γ) = 18.85 kN/m (120 PCF)
 ANGLE OF INTERNAL FRICTION (φ) = 25°.

NOTES:

- ENTER FOOTING SELECTION TABLE WITH REQUIRED POST SIZE AND FIND REQUIRED FOOTING VALUES AS SHOWN IN DETAILS.
- THE ANCHOR SHALL BE 304 STAINLESS STEEL WITH 1045 STEEL ROD AND 1008 COIL.
- FORM THE TOP 0.3 m (1') OF THE FOOTING.
- USE CLASS "A" CEMENT CONCRETE IN ALL FOOTINGS.
- ACTUAL DIMENSIONS "A" & "B" SHOULD BE OBTAINED FROM THE MANUFACTURER OR MEASURED FROM THE ASSEMBLED BRACKETS PRIOR TO PLACEMENT OF ANCHORS. APPROXIMATE DIMENSIONS ARE AS FOLLOWS:
 - A (LATERAL SPACING OF ANCHORS)
 76.2 (3") FOR B-525 USED ON W150 (W6) & W200 (W8) POSTS.
 101.6 (4") FOR B-650 USED ON W250 (W10), W360 (W14) & W460 (W18) POSTS.
 - B (LONGITUDINAL SPACING OF ANCHORS)
 BRACKET #1 - DEPTH OF POST SECTION PLUS 201.6 (7¹⁵/₁₆").
 BRACKET #2 - DEPTH OF POST SECTION PLUS 204.8 (8¹/₁₆").
 BRACKET #3 - DEPTH OF POST SECTION PLUS 206.4 (8¹/₈").
- TO INSURE PROPER SPACING AND ALIGNMENT OF ANCHORS, IT IS RECOMMENDED THAT ALL ANCHORS BE HELD IN PLACE BY A RIGID MACHINED TEMPLATE WHILE THE CONCRETE IS PLACED AND CURED.
- 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

POST-MOUNTED SIGNS,
 TYPE A

FOOTING DETAILS

RECOMMENDED MAY 25, 2007

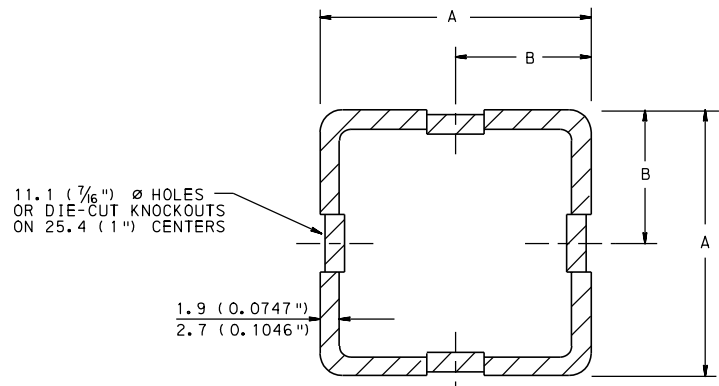
Alan C. Rowe
 CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED MAY 25, 2007

m. Glatel
 CHIEF HIGHWAY ENGINEER

SHT. 8 OF 8

TC-8702A



METRIC UNITS (mm)

SIGN POST				ANCHOR POST				ANCHOR SLEEVE *				SPLICE SLEEVE			
SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.
	A	B			A	B			A	B			A	B	
44.5	44.5	22.2	1.9	50.8	50.8	25.4	2.7	57.2	57.2	28.6	2.7	38.1	38.1	19.0	1.9
50.8	50.8	25.4	1.9	57.2	57.2	28.6	2.7	63.5	63.5	31.8	2.7	44.5	44.5	22.2	1.9
57.2	57.2	28.6	1.9	63.5	63.5	31.8	2.7	76.2	76.2	38.1	4.8	50.8	50.8	25.4	1.9

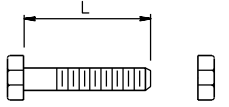
ENGLISH UNITS (INCHES)

SIGN POST				ANCHOR POST				ANCHOR SLEEVE *				SPLICE SLEEVE			
SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.
	A	B			A	B			A	B			A	B	
1.75"	1.75"	0.875"	0.0747"	2.00"	2.00"	1.000"	0.1046"	2.25"	2.25"	1.125"	0.1046"	1.50"	1.50"	0.750"	0.0747"
2.00"	2.00"	1.000"	0.0747"	2.25"	2.25"	1.125"	0.1046"	2.50"	2.50"	1.250"	0.1046"	1.75"	1.75"	0.875"	0.0747"
2.25"	2.25"	1.125"	0.0747"	2.50"	2.50"	1.250"	0.1046"	3.00"	3.00"	1.500"	0.1875"	2.00"	2.00"	1.000"	0.0747"

* ONLY REQUIRED FOR INSTALLATIONS IN CONCRETE.

SQUARE STEEL POSTS SYSTEM A

2.7 mm (0.1046") AND 1.9 mm (0.0747") - 415 MPa (60 KSI)



METRIC UNITS

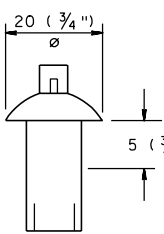
SIGN POST SIZE (mm)	DIMENSION L (mm)
44.5	75
50.8	75
57.2	90

ENGLISH UNITS

SIGN POST SIZE (INCHES)	DIMENSION L (INCHES)
1.75	3.0
2.00	3.0
2.25	3.5

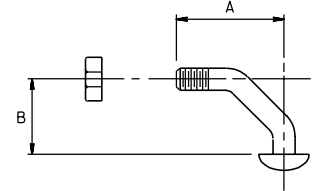
M10 x 1.5 (3/8" - 16 UNC) ANCHOR BOLTS & NUTS

CADMIUM PLATED STEEL, ZINC PLATED STEEL OR ALUMINUM



10 (3/8") DRIVE RIVET

CADMIUM PLATED STEEL, ZINC PLATED STEEL OR ALUMINUM



METRIC UNITS

SIGN POST SIZE (mm)	DIMENSION (mm)	
	A	B
44.5	34.13	24.61
50.8	34.13	24.61
57.2	39.69	30.16

ENGLISH UNITS

SIGN POST SIZE (INCHES)	DIMENSION (INCHES)	
	A	B
1.75	1.343	0.969
2.00	1.343	0.969
2.25	1.562	1.188

M8 x 1.25 (5/16" - 18 UNC) CORNER BOLTS & NUTS

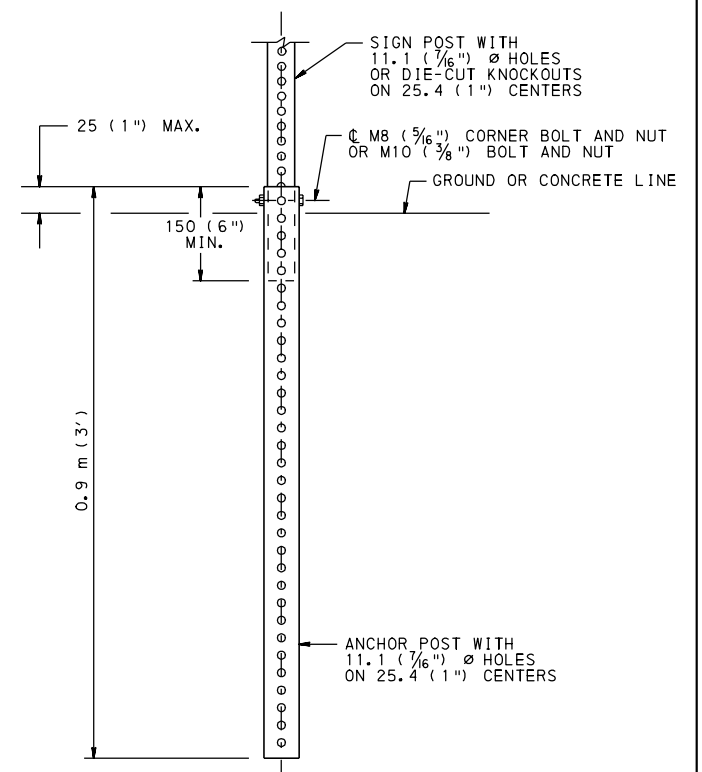
CADMIUM PLATED STEEL, ZINC PLATED STEEL OR ALUMINUM

INSTALLATION INSTRUCTIONS:

1. DETERMINE THE PROPER SIZE AND NUMBER OF SIGN POSTS FROM THE APPROPRIATE GRAPH ON SHEET 2 OF 9.
2. PUNCH OUT APPROPRIATE KNOCKOUTS AND ATTACH THE SIGN.
3. DETERMINE THE PROPER SIZE ANCHOR POST FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.
4. DRIVE THE ANCHOR POST INTO THE GROUND, USING THE APPROPRIATE SIZE DRIVE CAP, UNTIL ONLY ONE HOLE REMAINS ABOVE THE GROUND OR FINISHED ELEVATION OF THE CONCRETE.
5. PUNCH OUT THE SIXTH KNOCKOUTS FROM THE BOTTOM OF THE SIGN POST.
6. SLIDE A MINIMUM OF 150 mm (6") OF THE SIGN POST INTO THE ANCHOR POST.
7. ATTACH THE SIGN POST TO THE ANCHOR POST WITH ONE M8 (5/16") CORNER BOLT AND NUT (OR ALTERNATELY ONE M10 (3/8") BOLT AND NUT) THROUGH THE TOP HOLE OF THE ANCHOR POST.
8. TIGHTEN THE BOLT AND NUT BY THE TURN-OF-NUT METHOD. BRING NUT TO A SNUG CONDITION TO ENSURE THAT ALL PARTS ARE BROUGHT TOGETHER INTO FULL CONTACT WITH EACH OTHER, THEN TIGHTEN AN ADDITIONAL 1/2 TURN.

INSTALLATION IN CONCRETE:

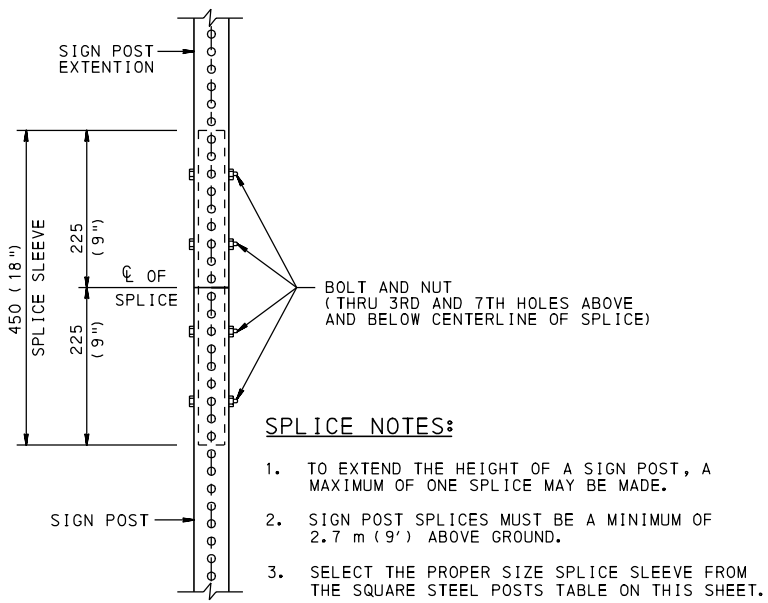
INSTALL AS NOTED ABOVE, BUT PLACE A 450 (18") LONG ANCHOR SLEEVE OUTSIDE THE ANCHOR POST SO THAT THE TOPS OF THE ANCHOR POST AND ANCHOR SLEEVE ARE EVEN. SELECT THE PROPER SIZE ANCHOR SLEEVE FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.



INSTALLATION DETAIL

NOTES:

1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PUB. 408.
2. SIGN POSTS AND SPLICE SLEEVES SHALL HAVE 11.1 mm (7/16") DIAMETER HOLES OR DIE-CUT KNOCKOUTS ON 25.4 mm (1") CENTERS ON ALL FOUR SIDES. ANCHOR POSTS AND ANCHOR SLEEVES SHALL HAVE 11.1 mm (7/16") DIAMETER HOLES ON 25.4 mm (1") CENTERS ON ALL FOUR SIDES.
3. BOLTS AND NUTS SHALL BE ASTM A 307, GRADE B.
4. DRIVE RIVETS MAY BE USED TO FASTEN SIGN BLANKS TO THE SIGN POST.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
6. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.



SPLICE NOTES:

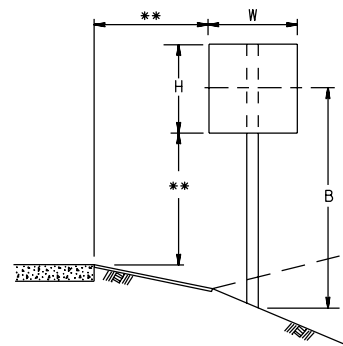
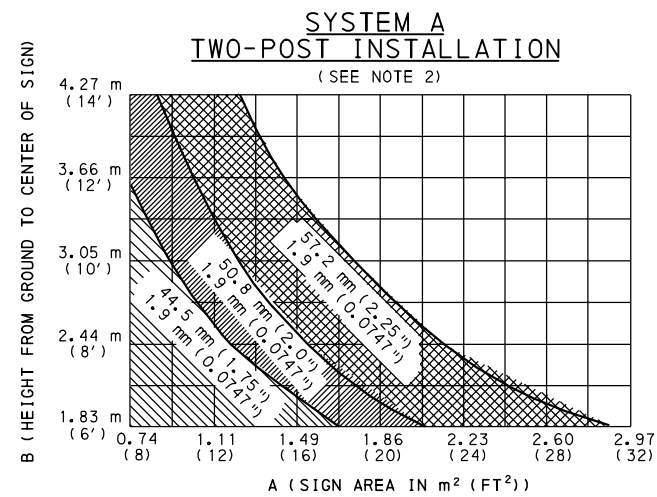
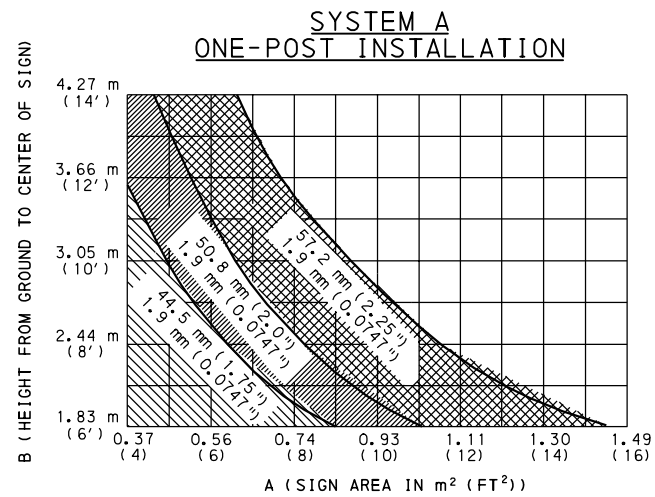
1. TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPLICE MAY BE MADE.
2. SIGN POST SPLICES MUST BE A MINIMUM OF 2.7 m (9') ABOVE GROUND.
3. SELECT THE PROPER SIZE SPLICE SLEEVE FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.

SPLICE DETAIL

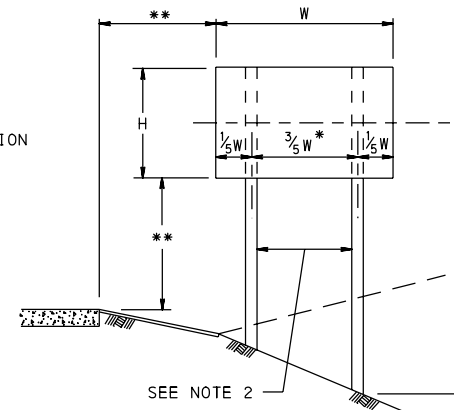
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS,
TYPE B

STEEL SQUARE POSTS (SYSTEM A)
ERECTION DETAILS



* WHEN ERECTING STANDARD WARNING OR REGULATORY SIGNS THAT ARE PREPUNCHED, THIS DISTANCE IS THE DISTANCE BETWEEN THE HORIZONTAL HOLES.
 ** SEE SHEET 9 OF 9 FOR SIGN LOCATION/INSTALLATION DETAILS.



A = SIGN AREA (SEE TABLE).
 A = W x H FOR SQUARE OR RECTANGULAR SIGNS,
 WHERE: W = WIDTH OF SIGN
 H = HEIGHT OF SIGN

METRIC UNITS

SIGN AREA TABLE					
SQUARE OR RECTANGULAR SIGNS			IRREGULAR SHAPED SIGNS		
SIZE (mm x mm)	AREA (m ²)	SIZE (mm x mm)	AREA (m ²)	SIZE (mm x mm)	AREA (m ²)
200x1200	0.24	750x375	0.28	1800x300	0.54
300x450	0.14	750x600	0.45	1800x600	1.08
300x600	0.18	750x750	0.56	1800x900	1.62
300x750	0.22	750x900	0.68	1800x1200	2.16
300x900	0.27	750x1200	0.90	1800x1500	2.70
300x1200	0.36	750x1500	1.12	2400x600	1.44
450x375	0.17	900x900	0.81	2400x1200	2.88
450x450	0.20	900x1200	1.08	3000x300	0.90
450x600	0.27	900x1350	1.22	3000x375	1.12
450x900	0.40	1200x1200	1.44	3000x600	1.80
450x1200	0.54	1200x1500	1.80	3000x750	2.25
525x375	0.20	1500x300	0.45	3600x300	1.08
600x600	0.36	1500x600	0.90	3600x450	1.62
600x900	0.54	1500x1050	1.58	3600x600	2.16
600x1200	0.72	1500x1500	2.25	3600x750	2.70
				YIELD (R1-2) 900 x 900	0.35
				YIELD (R1-2) 1200 x 1200	0.62
				YIELD (R1-2) 1500 x 1500	0.97
				NO PASSING PENNANT (W14-3) 1200 x 900	0.50
				RAILROAD WARNING (W10-1) 900 DIA.	0.64
				SCHOOL (S1-1) 750 x 750	0.42
				SCHOOL (S1-1) 900 x 900	0.61
				STOP (R1-1) 600 x 600	0.30
				STOP (R1-1) 750 x 750	0.47
				STOP (R1-1) 900 x 900	0.67
				STOP (R1-1) 1200 x 1200	1.19
				INTERSTATE ROUTE MARKER (M1-1) 600 x 600	0.29
				INTERSTATE ROUTE MARKER (M1-1) 750 x 600	0.36
				INTERSTATE ROUTE MARKER (M1-1) 900 x 900	0.69
				INTERSTATE ROUTE MARKER (M1-1) 1125 x 900	0.80

ENGLISH UNITS

SIGN AREA TABLE					
SQUARE OR RECTANGULAR SIGNS			IRREGULAR SHAPED SIGNS		
SIZE (in. x in.)	AREA (FT ²)	SIZE (in. x in.)	AREA (FT ²)	SIZE (in. x in.)	AREA (FT ²)
8"x48"	2.7	30"x15"	3.1	72"x12"	6.0
12"x18"	1.5	30"x24"	5.0	72"x24"	12.0
12"x24"	2.0	30"x30"	6.3	72"x36"	18.0
12"x30"	2.5	30"x36"	7.5	72"x48"	24.0
12"x36"	3.0	30"x48"	10.0	72"x60"	30.0
12"x48"	4.0	30"x60"	12.5	96"x24"	16.0
18"x15"	1.9	36"x36"	9.0	96"x48"	32.0
18"x18"	2.3	36"x48"	12.0	120"x12"	10.0
18"x24"	3.0	36"x54"	13.5	120"x15"	12.5
18"x36"	4.5	48"x48"	16.0	120"x24"	20.0
18"x48"	6.0	48"x60"	20.0	120"x30"	25.0
21"x15"	2.2	60"x12"	5.0	144"x12"	12.0
24"x24"	4.0	60"x24"	10.0	144"x18"	18.0
24"x36"	6.0	60"x42"	17.5	144"x24"	24.0
24"x48"	8.0	60"x60"	25.0	144"x30"	30.0
				YIELD (R1-2) 36"x36"	3.9
				YIELD (R1-2) 48"x48"	6.9
				YIELD (R1-2) 60"x60"	10.8
				NO PASSING PENNANT (W14-3) 48"x36"	5.6
				RAILROAD WARNING (W10-1) 36" DIA.	7.1
				SCHOOL (S1-1) 30"x30"	4.7
				SCHOOL (S1-1) 36"x36"	6.8
				STOP (R1-1) 24"x24"	3.3
				STOP (R1-1) 30"x30"	5.2
				STOP (R1-1) 36"x36"	7.4
				STOP (R1-1) 48"x48"	13.2
				INTERSTATE ROUTE MARKER (M1-1) 24"x24"	3.2
				INTERSTATE ROUTE MARKER (M1-1) 30"x24"	4.0
				INTERSTATE ROUTE MARKER (M1-1) 36"x36"	7.2
				INTERSTATE ROUTE MARKER (M1-1) 45"x36"	9.0

NOTES:

- TO DETERMINE THE POST SIZE, ENTER THE GRAPH WITH THE VALUES OF A AND B. THE SHADED AREA INDICATES THE APPROPRIATE POST SIZE REQUIRED.
- 57.2 mm (2.25") POSTS SHALL HAVE 2.1 m (7') CLEARANCE BETWEEN EACH OTHER, MEASURED FROM INSIDE POST EDGE TO INSIDE POST EDGE, WHEN USED IN TWO-POST INSTALLATIONS. 50.8 mm (2") AND 44.5 mm (1.75") POSTS MAY HAVE LESS THAN 2.1 m (7') CLEARANCE BETWEEN EACH OTHER WHEN USED IN TWO-POST INSTALLATIONS.
- 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**

**POST-MOUNTED SIGNS,
TYPE B**

**STEEL SQUARE POSTS (SYSTEM A)
SELECTION TABLES**

RECOMMENDED MAY 25, 2007

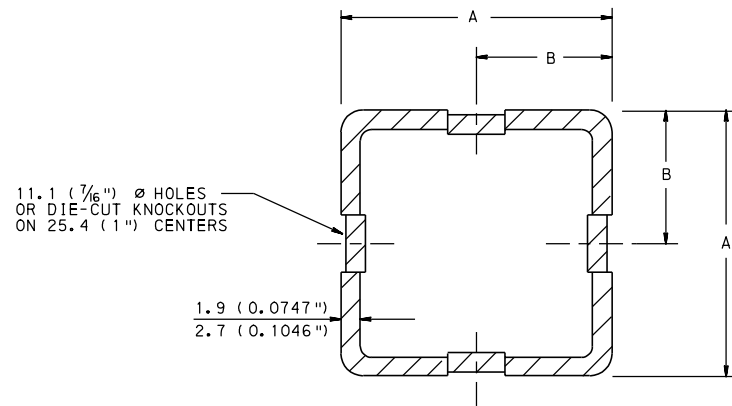
 CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED MAY 25, 2007

 CHIEF HIGHWAY ENGINEER

SHT. 2 OF 9

TC-8702B



METRIC UNITS (mm)

SIGN POST				ANCHOR POST			ANCHOR SLEEVE *				SPLICE SLEEVE				
SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.
	A	B			A	B			A	B			A	B	
44.5	44.5	22.2	1.9	50.8	50.8	25.4	2.7	57.2	57.2	28.6	2.7	38.1	38.1	19.0	1.9
50.8	50.8	25.4	1.9	57.2	57.2	28.6	2.7	63.5	63.5	31.8	2.7	44.5	44.5	22.2	1.9

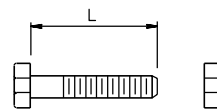
ENGLISH UNITS (INCHES)

SIGN POST				ANCHOR POST			ANCHOR SLEEVE *				SPLICE SLEEVE				
SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.
	A	B			A	B			A	B			A	B	
1.75"	1.75"	0.875"	0.0747"	2.00"	2.00"	1.000"	0.1046"	2.25"	2.25"	1.125"	0.1046"	1.50"	1.50"	0.750"	0.0747"
2.00"	2.00"	1.000"	0.0747"	2.25"	2.25"	1.125"	0.1046"	2.50"	2.50"	1.250"	0.1046"	1.75"	1.75"	0.875"	0.0747"

* REQUIRED FOR ALL POST INSTALLATIONS

SQUARE STEEL POSTS SYSTEM C

1.9 mm (0.0747") - 415 MPa (60 KSI)
2.7 mm (0.1046") - 230 MPa (33 KSI)



METRIC UNITS

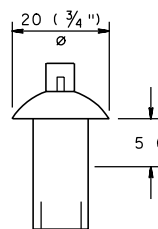
SIGN POST SIZE (mm)	DIMENSION L (mm)
44.5	75
50.8	
57.2	90
63.5	

ENGLISH UNITS

SIGN POST SIZE (INCHES)	DIMENSION L (INCHES)
1.75	3.0
2.00	
2.25	3.5
2.50	

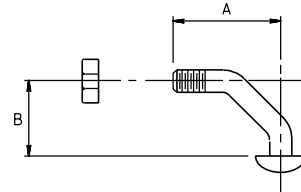
M10 x 1.5 (3/8" - 16 UNC) ANCHOR BOLTS & NUTS

CADMIUM PLATED STEEL, ZINC PLATED STEEL OR ALUMINUM



10 (3/8") DRIVE RIVET

CADMIUM PLATED STEEL, ZINC PLATED STEEL OR ALUMINUM



METRIC UNITS

SIGN POST SIZE (mm)	DIMENSION (mm)	
	A	B
44.5	34.13	24.61
50.8		
57.2	39.69	30.16
63.5		

ENGLISH UNITS

SIGN POST SIZE (INCHES)	DIMENSION (INCHES)	
	A	B
1.75	1.343	0.969
2.00		
2.25	1.562	1.188
2.50		

M8 x 1.25 (5/16" - 18 UNC) CORNER BOLTS & NUTS

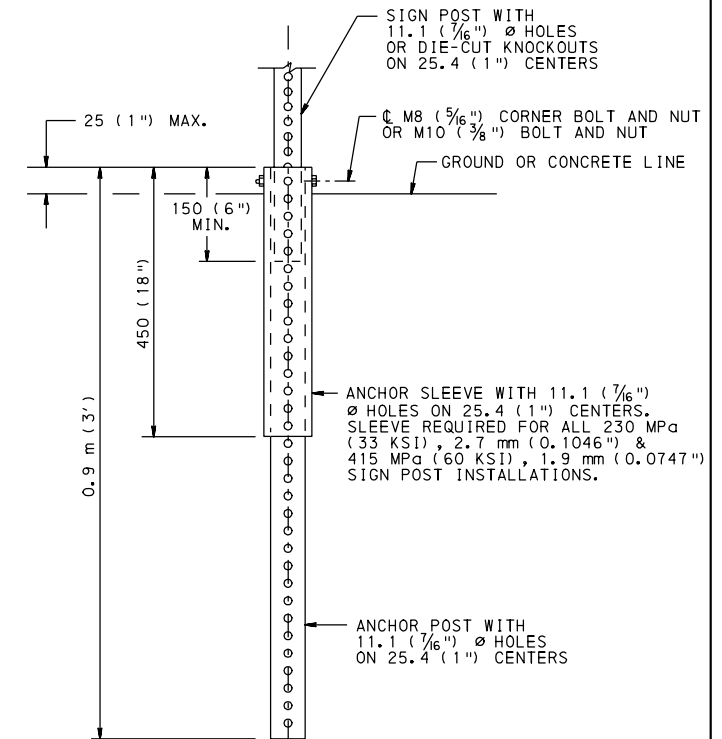
CADMIUM PLATED STEEL, ZINC PLATED STEEL OR ALUMINUM

INSTALLATION INSTRUCTIONS:

1. DETERMINE THE PROPER SIZE AND NUMBER OF SIGN POSTS FROM THE APPROPRIATE GRAPH ON SHEET 4 OF 9.
2. DETERMINE THE PROPER SIZE ANCHOR POST AND ANCHOR SLEEVE FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.
3. DRIVE THE ANCHOR POST AND ANCHOR SLEEVE INTO THE GROUND SIMULTANEOUSLY, USING THE APPROPRIATE SIZE DRIVE CAP, UNTIL ONLY ONE HOLE REMAINS ABOVE THE GROUND OR FINISHED ELEVATION OF THE CONCRETE.
4. SLIDE A MINIMUM OF 150 mm (6") OF THE SIGN POST INTO THE ANCHOR POST.
5. ATTACH THE SIGN POST TO THE ANCHOR POST AND SLEEVE WITH ONE M8 (5/16") CORNER BOLT AND NUT (OR ALTERNATELY ONE M10 (3/8") BOLT AND NUT) THROUGH THE TOP HOLE OF THE ANCHOR POST AND SLEEVE.
6. TIGHTEN THE BOLT AND NUT BY THE TURN-OF-NUT METHOD. BRING NUT TO A SNUG CONDITION TO ENSURE THAT ALL PARTS ARE BROUGHT TOGETHER INTO FULL CONTACT WITH EACH OTHER, THEN TIGHTEN AN ADDITIONAL 1/2 TURN.

INSTALLATION IN CONCRETE:

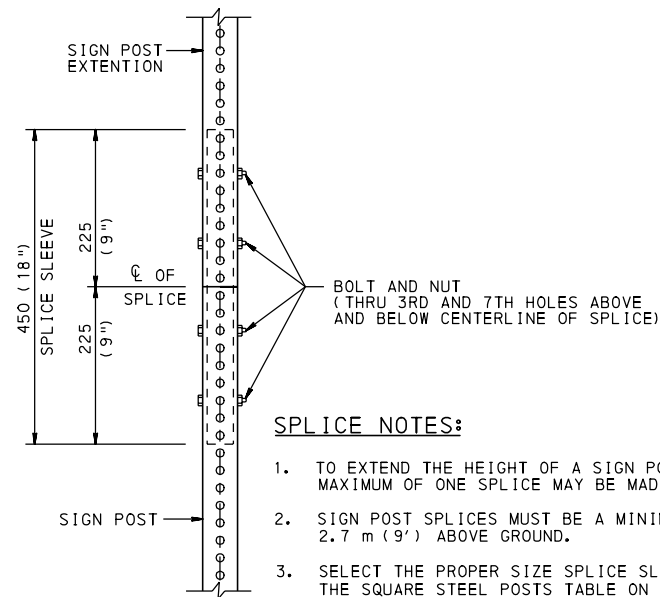
INSTALL AS NOTED ABOVE.



INSTALLATION DETAIL

NOTES:

1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PUB. 408.
2. SIGN POSTS AND SPLICE SLEEVES SHALL HAVE 11.1 mm (7/16") DIAMETER HOLES OR DIE-CUT KNOCKOUTS ON 25.4 mm (1") CENTERS ON ALL FOUR SIDES. ANCHOR POSTS AND ANCHOR SLEEVES SHALL HAVE 11.1 mm (7/16") DIAMETER HOLES ON 25.4 mm (1") CENTERS ON ALL FOUR SIDES.
3. BOLTS AND NUTS SHALL BE ASTM A 307, GRADE B.
4. DRIVE RIVETS MAY BE USED TO FASTEN SIGN BLANKS TO THE SIGN POST.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
6. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.



SPLICE NOTES:

1. TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPLICE MAY BE MADE.
2. SIGN POST SPLICES MUST BE A MINIMUM OF 2.7 m (9') ABOVE GROUND.
3. SELECT THE PROPER SIZE SPLICE SLEEVE FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.

SPLICE DETAIL

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

POST-MOUNTED SIGNS,
TYPE B

STEEL SQUARE POSTS (SYSTEM C)
ERECTION DETAILS

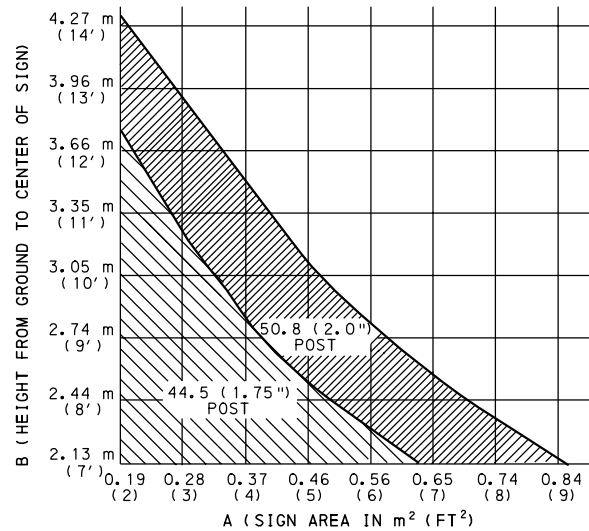
RECOMMENDED MAY 25, 2007
Alan C. Rowe
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED MAY 25, 2007
m. G. Patel
CHIEF HIGHWAY ENGINEER

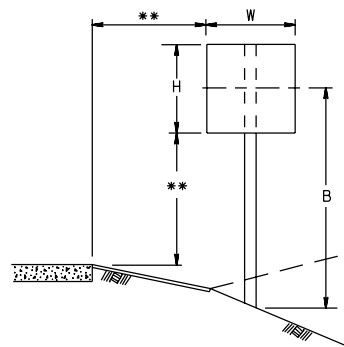
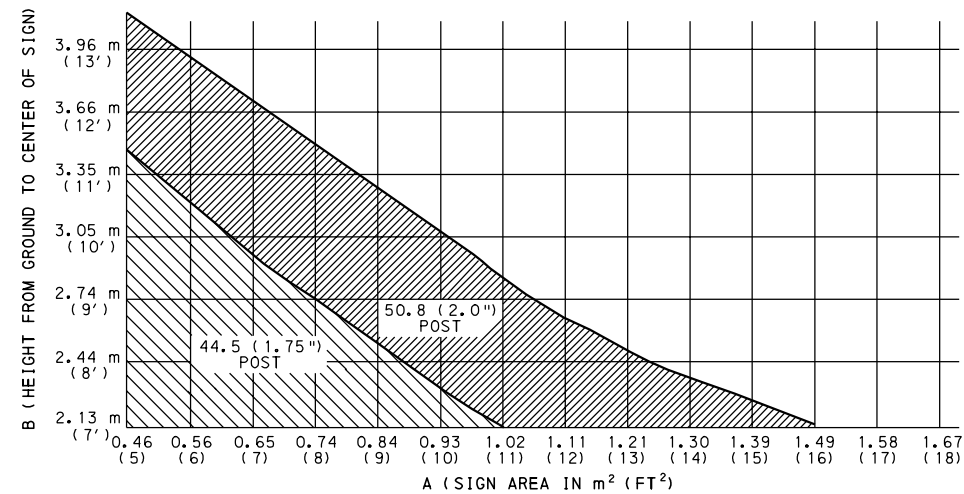
SHT. 3 OF 9

TC-8702B

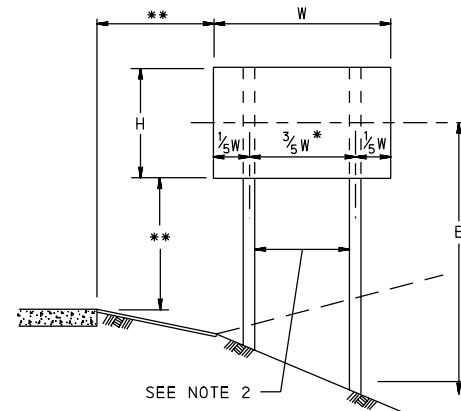
SYSTEM C
ONE-POST INSTALLATION



SYSTEM C
TWO-POST INSTALLATION



* WHEN ERECTING STANDARD WARNING OR REGULATORY SIGNS THAT ARE PREPUNCHED, THIS DISTANCE IS THE DISTANCE BETWEEN THE HORIZONTAL HOLES.
** SEE SHEET 9 OF 9 FOR SIGN LOCATION/INSTALLATION DETAILS.



A = SIGN AREA (SEE TABLE).
A = W x H FOR SQUARE OR RECTANGULAR SIGNS,
WHERE: W = WIDTH OF SIGN
H = HEIGHT OF SIGN

METRIC UNITS

SIGN AREA TABLE

SQUARE OR RECTANGULAR SIGNS				IRREGULAR SHAPED SIGNS			
SIZE (mm x mm)	AREA (m ²)	SIZE (mm x mm)	AREA (m ²)	SIZE (mm x mm)	AREA (m ²)	SIGN (mm x mm)	AREA (m ²)
200x1200	0.24	750x375	0.28	1800x300	0.54	YIELD (R1-2) 900 x 900	0.35
300x450	0.14	750x600	0.45	1800x600	1.08	YIELD (R1-2) 1200 x 1200	0.62
300x600	0.18	750x750	0.56	1800x900	1.62	YIELD (R1-2) 1500 x 1500	0.97
300x750	0.22	750x900	0.68	1800x1200	2.16	NO PASSING PENNANT (W14-3) 1200 x 900	0.50
300x900	0.27	750x1200	0.90	1800x1500	2.70	RAILROAD WARNING (W10-1) 900 DIA.	0.64
300x1200	0.36	750x1500	1.12	2400x600	1.44	SCHOOL (S1-1) 750 x 750	0.42
450x375	0.17	900x900	0.81	2400x1200	2.88	SCHOOL (S1-1) 900 x 900	0.61
450x450	0.20	900x1200	1.08	3000x300	0.90	STOP (R1-1) 600 x 600	0.30
450x600	0.27	900x1350	1.22	3000x375	1.12	STOP (R1-1) 750 x 750	0.47
450x900	0.40	1200x1200	1.44	3000x600	1.80	STOP (R1-1) 900 x 900	0.67
450x1200	0.54	1200x1500	1.80	3000x750	2.25	STOP (R1-1) 1200 x 1200	1.19
525x375	0.20	1500x300	0.45	3600x300	1.08	INTERSTATE ROUTE MARKER (M1-1) 600 x 600	0.29
600x600	0.36	1500x600	0.90	3600x450	1.62	INTERSTATE ROUTE MARKER (M1-1) 750 x 600	0.36
600x900	0.54	1500x1050	1.58	3600x600	2.16	INTERSTATE ROUTE MARKER (M1-1) 900 x 900	0.69
600x1200	0.72	1500x1500	2.25	3600x750	2.70	INTERSTATE ROUTE MARKER (M1-1) 1125 x 900	0.80

ENGLISH UNITS

SIGN AREA TABLE

SQUARE OR RECTANGULAR SIGNS				IRREGULAR SHAPED SIGNS			
SIZE (in. x in.)	AREA (FT ²)	SIZE (in. x in.)	AREA (FT ²)	SIZE (in. x in.)	AREA (FT ²)	SIGN (in. x in.)	AREA (FT ²)
8"x48"	2.7	30"x15"	3.1	72"x12"	6.0	YIELD (R1-2) 36"x36"	3.9
12"x18"	1.5	30"x24"	5.0	72"x24"	12.0	YIELD (R1-2) 48"x48"	6.9
12"x24"	2.0	30"x30"	6.3	72"x36"	18.0	YIELD (R1-2) 60"x60"	10.8
12"x30"	2.5	30"x36"	7.5	72"x48"	24.0	NO PASSING PENNANT (W14-3) 48"x36"	5.6
12"x36"	3.0	30"x48"	10.0	72"x60"	30.0	RAILROAD WARNING (W10-1) 36" DIA.	7.1
12"x48"	4.0	30"x60"	12.5	96"x24"	16.0	SCHOOL (S1-1) 30"x30"	4.7
18"x15"	1.9	36"x36"	9.0	96"x48"	32.0	SCHOOL (S1-1) 36"x36"	6.8
18"x18"	2.3	36"x48"	12.0	120"x12"	10.0	STOP (R1-1) 24"x24"	3.3
18"x24"	3.0	36"x54"	13.5	120"x15"	12.5	STOP (R1-1) 30"x30"	5.2
18"x36"	4.5	48"x48"	16.0	120"x24"	20.0	STOP (R1-1) 36"x36"	7.4
18"x48"	6.0	48"x60"	20.0	120"x30"	25.0	STOP (R1-1) 48"x48"	13.2
21"x15"	2.2	60"x12"	5.0	144"x12"	12.0	INTERSTATE ROUTE MARKER (M1-1) 24"x24"	3.2
24"x24"	4.0	60"x24"	10.0	144"x18"	18.0	INTERSTATE ROUTE MARKER (M1-1) 30"x24"	4.0
24"x36"	6.0	60"x42"	17.5	144"x24"	24.0	INTERSTATE ROUTE MARKER (M1-1) 36"x36"	7.2
24"x48"	8.0	60"x60"	25.0	144"x30"	30.0	INTERSTATE ROUTE MARKER (M1-1) 45"x36"	9.0

NOTES:

- TO DETERMINE THE POST SIZE, ENTER THE GRAPH WITH THE VALUES OF A AND B. THE SHADED AREA INDICATES THE APPROPRIATE POST SIZE REQUIRED.
- 50.8 mm (2") AND 44.5 mm (1.75") POSTS MAY HAVE LESS THAN 2.1 m (7') CLEARANCE BETWEEN EACH OTHER WHEN USED IN TWO-POST INSTALLATIONS.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESES ().
- 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

POST-MOUNTED SIGNS,
TYPE B

STEEL SQUARE POSTS (SYSTEM C)
SELECTION TABLES

RECOMMENDED MAY 25, 2007

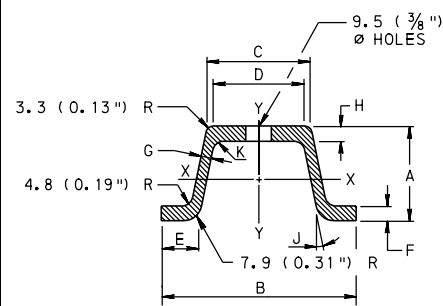
Alan C. Rowe
CHIEF, TRAFFIC ENGINEERING AND
OPERATIONS DIVISION

RECOMMENDED MAY 25, 2007

m. Glatel
CHIEF HIGHWAY ENGINEER

SHT. 4 OF 9

TC-8702B



METRIC UNITS

STEEL POST DIMENSIONS

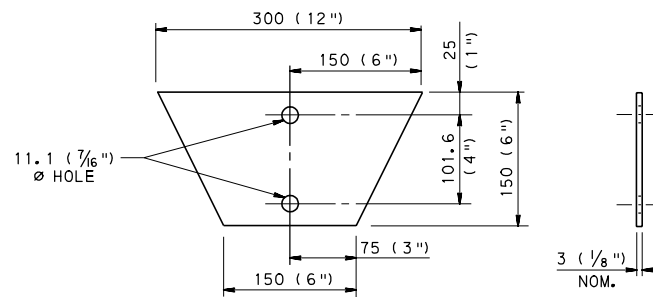
* WEIGHT kg/m	DIMENSIONS (MILLIMETERS)									
	A	B	C	D	E	F	G	H	J	K
3.71	39.6	79.5	31.8	26.9	16.0	4.1	3.3	3.8	12.5°	3.3 R
5.94	44.4	88.9	42.4	35.8	18.3	6.4	4.6	5.8	11.5°	4.8 R

ENGLISH UNITS

STEEL POST DIMENSIONS

* WEIGHT LBS/FT.	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	K
2.5	1.56	3.13	1.25	1.06	0.63	0.16	0.13	0.15	12.5°	0.13 R
4.0	1.75	3.50	1.67	1.41	0.72	0.25	0.18	0.23	11.5°	0.19 R

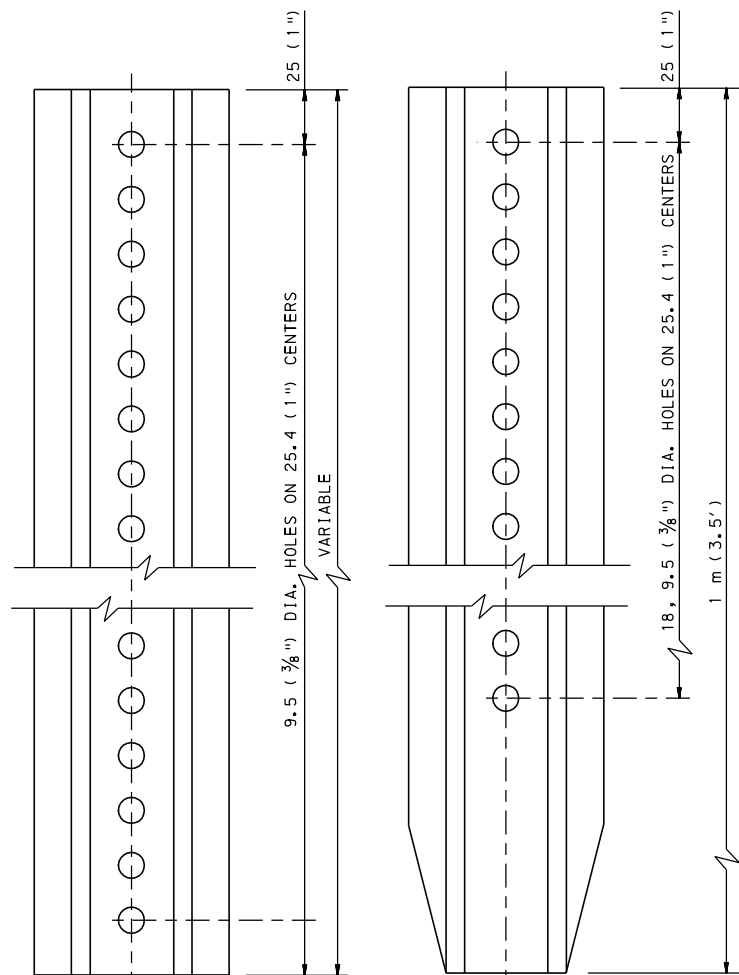
* ±3.5%



ANCHOR PLATE

NOTES:

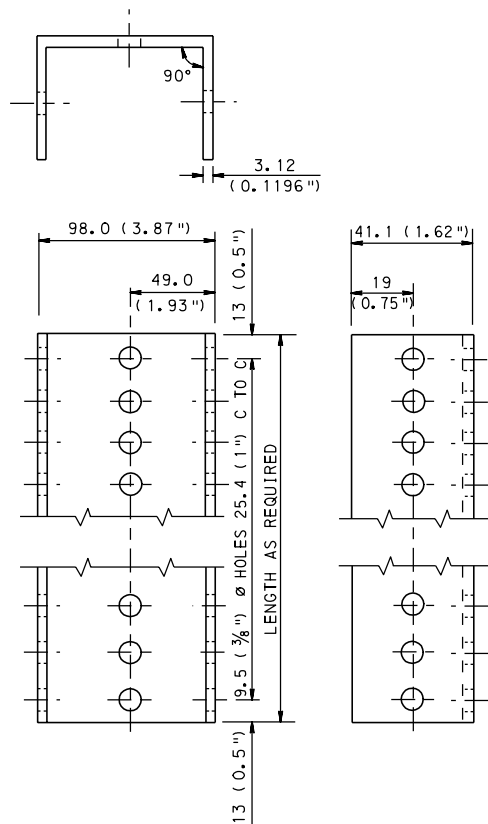
1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PUB. 408.
2. FORMED-CHANNEL SIGN MOUNTS SHALL BE MILD STEEL.
3. ANCHOR BOLTS SHALL BE 7.94 mm (5/16") - 18 UNC x 38 (1.5") FULLY THREADED, GRADE 9 HEX HEAD. A FLANGED ANCHOR BOLT MAY BE SUBSTITUTED FOR THE STANDARD ANCHOR BOLT AND FLAT WASHER.
4. WASHERS SHALL BE 7.94 mm (5/16") GRADE 9 PLATED.
5. LOCKNUTS SHALL BE 7.94 mm (5/16") - 18 UNC THREADS, HEX HEADED.
6. ANY OTHER DEPARTMENT APPROVED BREAKAWAY CONNECTION APPROVED FOR THIS KIND OF POST MAY BE SUBSTITUTED FOR THE UNIVERSAL SPACER.
7. SEE SHEET 6 OF 9 FOR SPACER AND ANCHOR BOLT DETAILS.
8. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
9. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.



SIGN POST

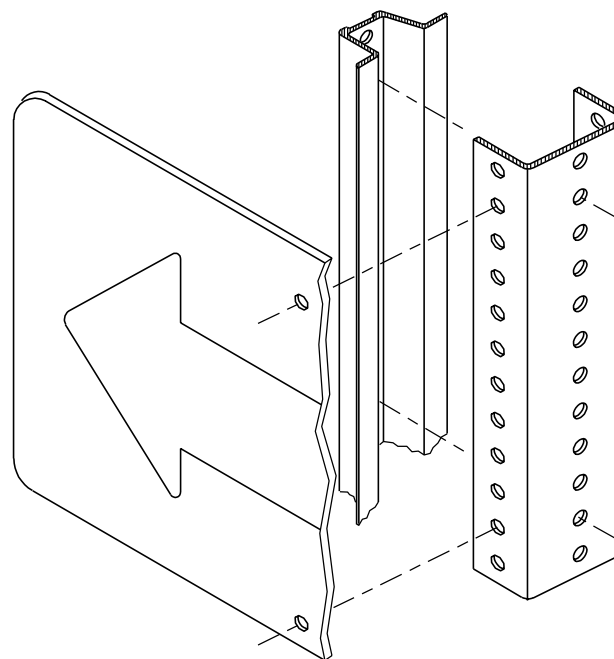
FIRST AND FIFTH HOLES TO BE ELONGATED SLOTS 9.5 x 13 (3/8" x 0.5")

ANCHOR POST



FORMED-CHANNEL SIGN MOUNT

USE WHEN IT IS NECESSARY TO MOUNT SIGNS ON THE SIDE OF A CHANNEL BAR POST IN ADDITION TO THE NORMAL SIGN MOUNTING LOCATION ON THE FLANGED FACE.



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

**POST-MOUNTED SIGNS,
 TYPE B**

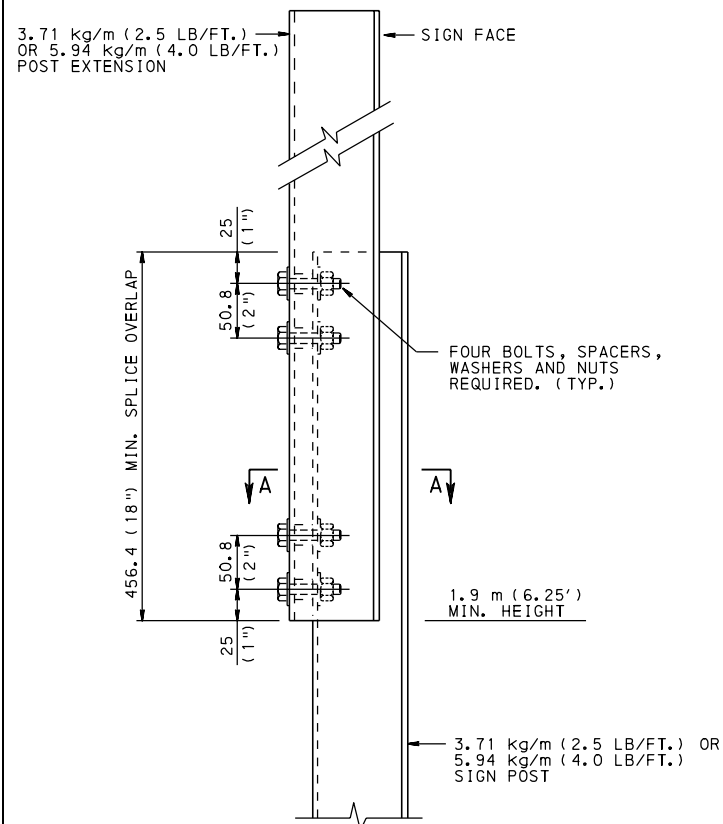
**CHANNEL BAR POSTS
 (ROLLED STEEL RAILS)
 MATERIAL DETAILS**

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

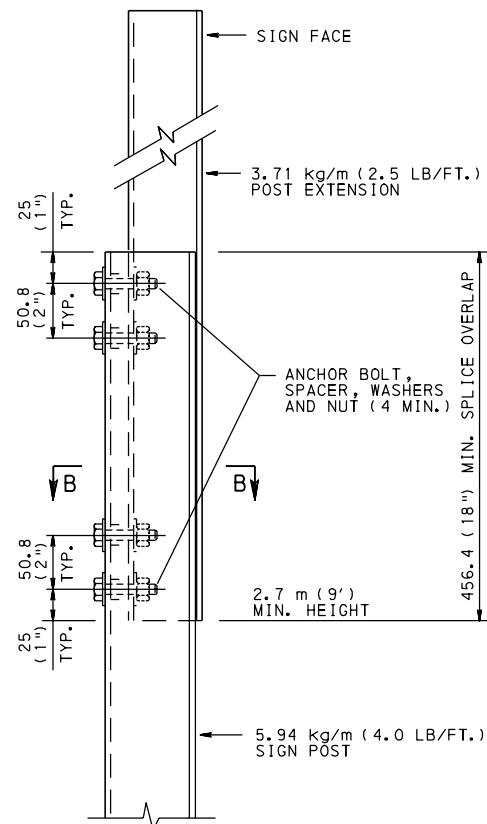
RECOMMENDED MAY 25, 2007
m. G. Latel
 CHIEF HIGHWAY ENGINEER

SHT. 5 OF 9

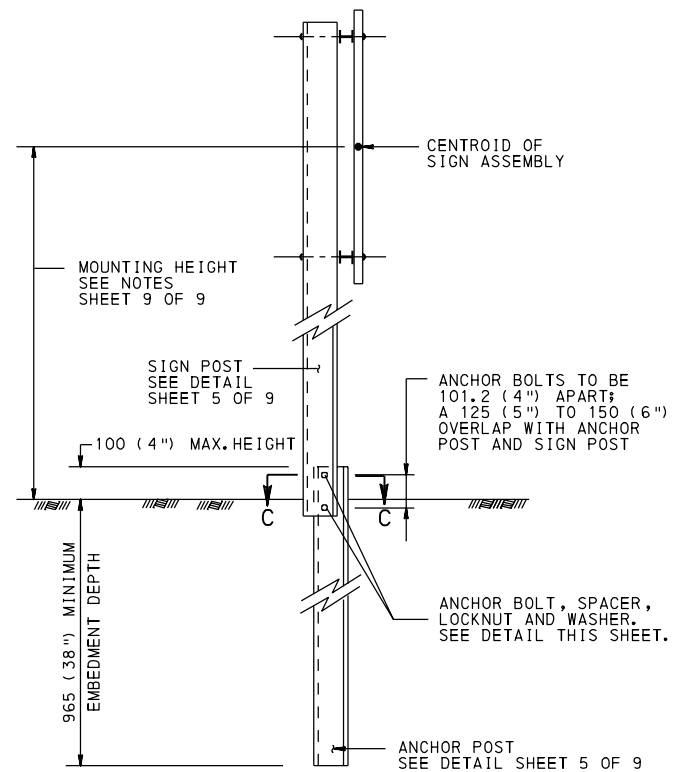
TC-8702B



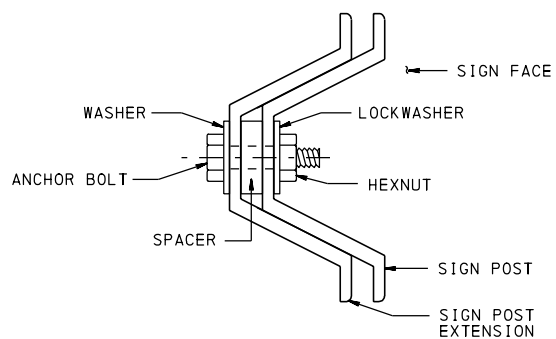
**POST EXTENSION
SPLICE DETAIL A**
FOR USE IN EXTENDING SIGN POSTS



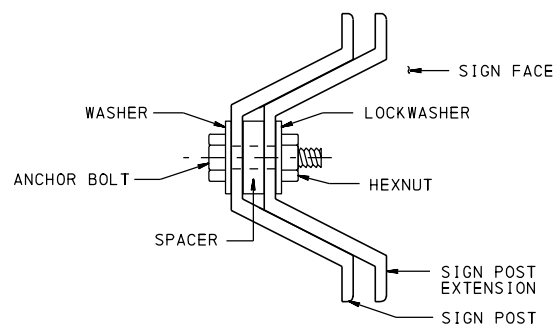
**ALTERNATE POST EXTENSION
SPLICE DETAIL B**
FOR USE IN EXTENDING SIGN POSTS



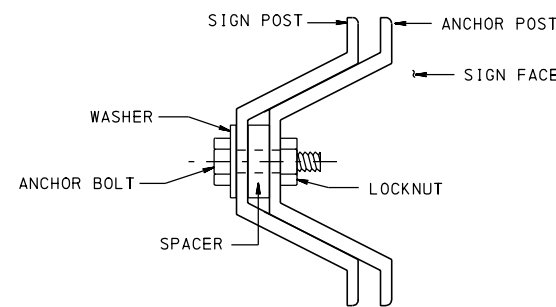
INSTALLATION DETAIL



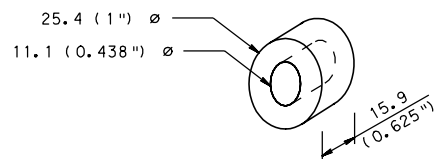
SECTION A-A



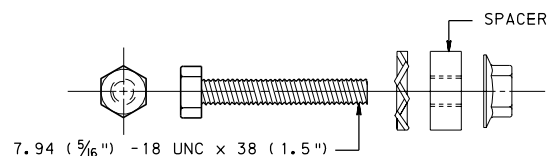
SECTION B-B



SECTION C-C



SPACER DETAIL
ZINC PLATED



**ANCHOR BOLT,
WASHER, SPACER AND LOCKNUT**
ANCHOR BOLTS TO BE 38 (1.5"), GRADE 9, HEX HEAD.

ANCHOR SPLICE INSTALLATION INSTRUCTIONS:

1. DETERMINE THE PROPER SIZE SIGN POST AND ANCHOR POST FROM THE APPROPRIATE GRAPH ON SHEET 7 OF 9. USE 3.71 kg/m (2.5 LB/FT.) ANCHOR POSTS WITH 3.71 kg/m (2.5 LB/FT.) SIGN POSTS AND 5.94 kg/m (4.0 LB/FT.) ANCHOR POSTS WITH 5.94 kg/m (4.0 LB/FT.) SIGN POSTS.
2. REMOVE A SHOVEL OF SOIL AT THE POST LOCATION TO ALLOW FOR FINAL ATTACHMENT OF THE SIGN POST TO THE ANCHOR POST.
3. DRIVE ANCHOR POST WITH A DRIVE CAP TO WITHIN APPROXIMATELY 300 mm (12") ABOVE GROUND LEVEL. PLACE ONE BOLT AND WASHER IN FIFTH HOLE FROM THE END OF THE EXPOSED ANCHOR POST. SECURELY TIGHTEN SPACER ONTO BOLT.
4. DRIVE ANCHOR POST TO 100 mm (4") ABOVE GROUND LEVEL. PLACE REMAINING BOLT AND WASHER IN FIRST HOLE FROM THE END OF POST AND SECURELY TIGHTEN SPACER ONTO BOLT. (BOLTS 101.6 mm (4") APART).
5. NEST TOP SIGN POST OVER PROTRUDING ANCHOR POST BOLTS THROUGH FIRST AND FIFTH HOLES OF TOP SIGN POST. THIS WILL RESULT IN A 125 mm (5") TO 150 mm (6") OVERLAP.
6. PLACE A LOCKNUT ON EACH BOLT (A STANDARD LOCKWASHER AND NUT MAY BE USED IN LIEU OF THE LOCKNUT). TIGHTEN BOLTS AND NUTS BY TURN-OF-NUT METHOD. BRING NUT TO A SNUG TIGHT CONDITION TO ENSURE THAT ALL PARTS ARE BROUGHT TOGETHER INTO FULL CONTACT WITH EACH OTHER, THEN TIGHTEN AN ADDITIONAL 1/2 TURN.
7. RESTORE SOIL AROUND THE ANCHOR POST.

INSTALLATION IN SOFT SOIL:

1. USE THE ANCHOR PLATE IN AREAS WITH SOFT SOIL. BOLT THE TOP ANCHOR BOLT 25.4 mm (1") BELOW THE BOTTOM ANCHOR POST BOLT, (6 TO 7 HOLES FROM THE END OF THE ANCHOR POST).

POST EXTENSION SPLICE NOTES:

1. TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPLICE MAY BE MADE.
2. FOUR ANCHOR BOLTS WITH SPACERS, WASHERS, LOCKWASHERS AND NUTS ARE REQUIRED (LOCKNUTS MAY BE USED IN LIEU OF STANDARD LOCKWASHERS AND NUTS). SEE THIS SHEET FOR ANCHOR BOLT SYSTEM.
3. POST EXTENSION SPLICE DETAIL A IS PREFERRED OVER POST EXTENSION SPLICE DETAIL B. WHEN DETAIL A IS USED, 3.71 kg/m (2.5 LB/FT.) POSTS SHALL USE A 3.71 kg/m (2.5 LB/FT.) POST EXTENSION POST FOR SPLICE EXTENSIONS; 5.94 kg/m (4.0 LB/FT.) POSTS SHALL USE A 5.94 kg/m (4.0 LB/FT.) POST EXTENSION POST FOR SPLICE EXTENSIONS. WHEN DETAIL B IS USED, POST EXTENSION SPLICES SHALL BE MOUNTED ON THE BACK (NON-IMPACT) SIDE OF THE SIGN POST. SPLICES SHALL BE MADE AT A MINIMUM HEIGHT OF 1.9 m (6.25'), MEASURED TO THE BOTTOM OF THE SPLICE.
4. POST EXTENSION SPLICE DETAIL B IS PERMITTED FOR USE TO PROVIDE A FLUSH SIGN MOUNT SURFACE FOR 5.94 kg/m (4.0 LB/FT.) POSTS. WHEN DETAIL B IS USED, 3.71 kg/m (2.5 LB/FT.) POST EXTENSION SPLICES MAY BE NESTED ON THE FRONT OF A 5.94 kg/m (4.0 LB/FT.) POST. SPLICES SHALL BE MADE AT A MINIMUM HEIGHT OF 2.7 m (9'), MEASURED TO THE BOTTOM OF THE SPLICE.

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

POST-MOUNTED SIGNS,
TYPE B

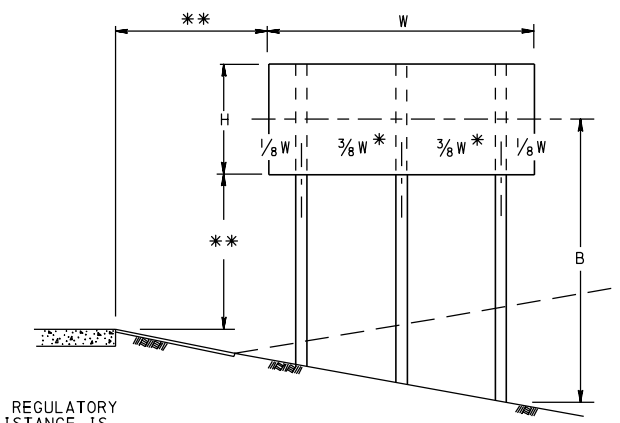
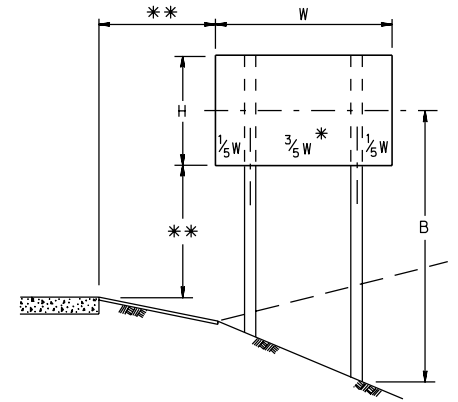
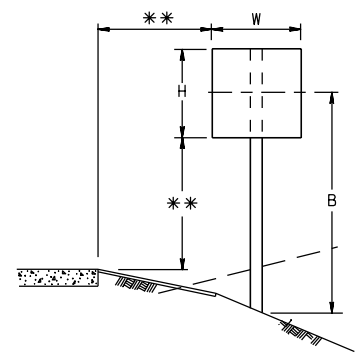
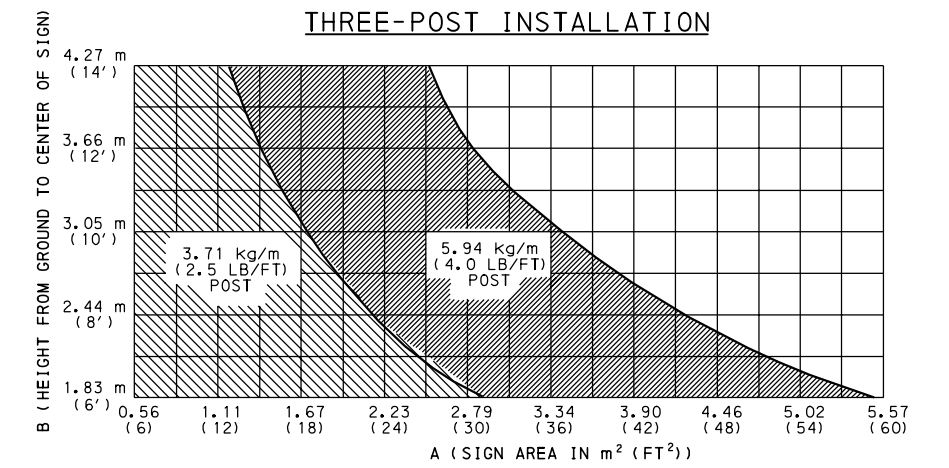
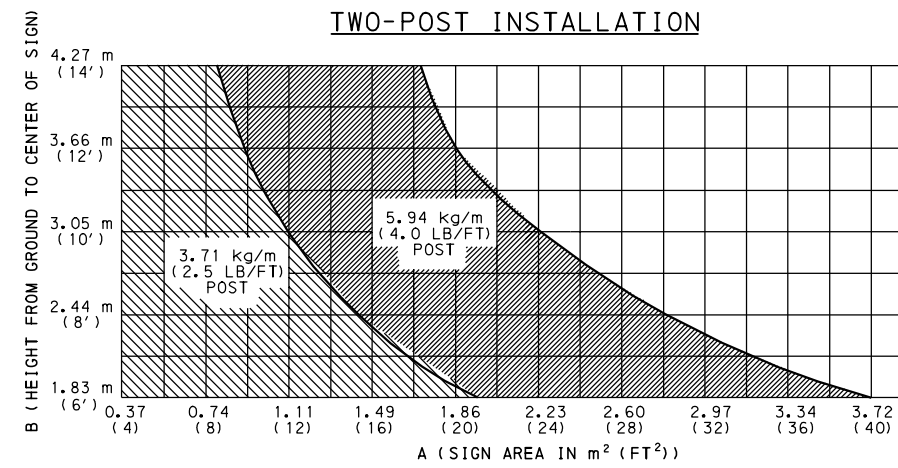
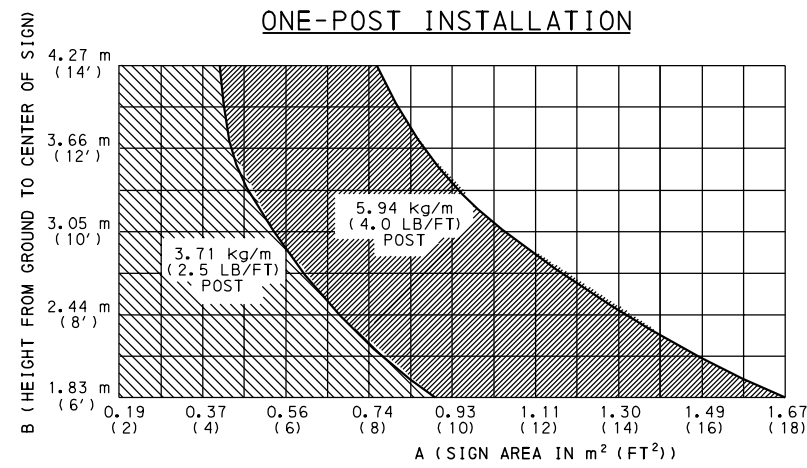
CHANNEL BAR POSTS
ERECTION DETAILS

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 9

TC-8702B



A = SIGN AREA (SEE TABLE).
 A = W × H FOR SQUARE OR RECTANGULAR SIGNS,
 WHERE: W = WIDTH OF SIGN
 H = HEIGHT OF SIGN

* WHEN ERECTING STANDARD WARNING OR REGULATORY SIGNS THAT ARE PREPUNCHED, THIS DISTANCE IS THE DISTANCE BETWEEN THE HORIZONTAL HOLES.
 ** SEE SHEET 9 OF 9 FOR SIGN LOCATION/INSTALLATION DETAILS.

METRIC UNITS

SIGN AREA TABLE							
SQUARE OR RECTANGULAR SIGNS				IRREGULAR SHAPED SIGNS			
SIZE (mm x mm)	AREA (m ²)	SIZE (mm x mm)	AREA (m ²)	SIZE (mm x mm)	AREA (m ²)	SIGN (mm x mm)	AREA (m ²)
200x1200	0.24	750x375	0.28	1800x300	0.54	YIELD (R1-2) 900 x 900	0.35
300x450	0.14	750x600	0.45	1800x600	1.08	YIELD (R1-2) 1200 x 1200	0.62
300x600	0.18	750x750	0.56	1800x900	1.62	YIELD (R1-2) 1500 x 1500	0.97
300x750	0.22	750x900	0.68	1800x1200	2.16	NO PASSING PENNANT (W14-3) 1200 x 900	0.50
300x900	0.27	750x1200	0.90	1800x1500	2.70	RAILROAD WARNING (W10-1) 900 DIA.	0.64
300x1200	0.36	750x1500	1.12	2400x600	1.44	SCHOOL (S1-1) 750 x 750	0.42
450x375	0.17	900x900	0.81	2400x1200	2.88	SCHOOL (S1-1) 900 x 900	0.61
450x450	0.20	900x1200	1.08	3000x300	0.90	STOP (R1-1) 600 x 600	0.30
450x600	0.27	900x1350	1.22	3000x375	1.12	STOP (R1-1) 750 x 750	0.47
450x900	0.40	1200x1200	1.44	3000x600	1.80	STOP (R1-1) 900 x 900	0.67
450x1200	0.54	1200x1500	1.80	3000x750	2.25	STOP (R1-1) 1200 x 1200	1.19
525x375	0.20	1500x300	0.45	3600x300	1.08	INTERSTATE ROUTE MARKER (M1-1) 600 x 600	0.29
600x600	0.36	1500x600	0.90	3600x450	1.62	INTERSTATE ROUTE MARKER (M1-1) 750 x 600	0.36
600x900	0.54	1500x1050	1.58	3600x600	2.16	INTERSTATE ROUTE MARKER (M1-1) 900 x 900	0.69
600x1200	0.72	1500x1500	2.25	3600x750	2.70	INTERSTATE ROUTE MARKER (M1-1) 1125 x 900	0.80

ENGLISH UNITS

SIGN AREA TABLE							
SQUARE OR RECTANGULAR SIGNS				IRREGULAR SHAPED SIGNS			
SIZE (in. x in.)	AREA (FT ²)	SIZE (in. x in.)	AREA (FT ²)	SIZE (in. x in.)	AREA (FT ²)	SIGN (in. x in.)	AREA (FT ²)
8"x48"	2.7	30"x15"	3.1	72"x12"	6.0	YIELD (R1-2) 36"x36"	3.9
12"x18"	1.5	30"x24"	5.0	72"x24"	12.0	YIELD (R1-2) 48"x48"	6.9
12"x24"	2.0	30"x30"	6.3	72"x36"	18.0	YIELD (R1-2) 60"x60"	10.8
12"x30"	2.5	30"x36"	7.5	72"x48"	24.0	NO PASSING PENNANT (W14-3) 48"x36"	5.6
12"x36"	3.0	30"x48"	10.0	72"x60"	30.0	RAILROAD WARNING (W10-1) 36" DIA.	7.1
12"x48"	4.0	30"x60"	12.5	96"x24"	16.0	SCHOOL (S1-1) 30"x30"	4.7
18"x15"	1.9	36"x36"	9.0	96"x48"	32.0	SCHOOL (S1-1) 36"x36"	6.8
18"x18"	2.3	36"x48"	12.0	120"x12"	10.0	STOP (R1-1) 24"x24"	3.3
18"x24"	3.0	36"x54"	13.5	120"x15"	12.5	STOP (R1-1) 30"x30"	5.2
18"x36"	4.5	48"x48"	16.0	120"x24"	20.0	STOP (R1-1) 36"x36"	7.4
18"x48"	6.0	48"x60"	20.0	120"x30"	25.0	STOP (R1-1) 48"x48"	13.2
21"x15"	2.2	60"x12"	5.0	144"x12"	12.0	INTERSTATE ROUTE MARKER (M1-1) 24"x24"	3.2
24"x24"	4.0	60"x24"	10.0	144"x18"	18.0	INTERSTATE ROUTE MARKER (M1-1) 30"x24"	4.0
24"x36"	6.0	60"x42"	17.5	144"x24"	24.0	INTERSTATE ROUTE MARKER (M1-1) 36"x36"	7.2
24"x48"	8.0	60"x60"	25.0	144"x30"	30.0	INTERSTATE ROUTE MARKER (M1-1) 45"x36"	9.0

NOTES:

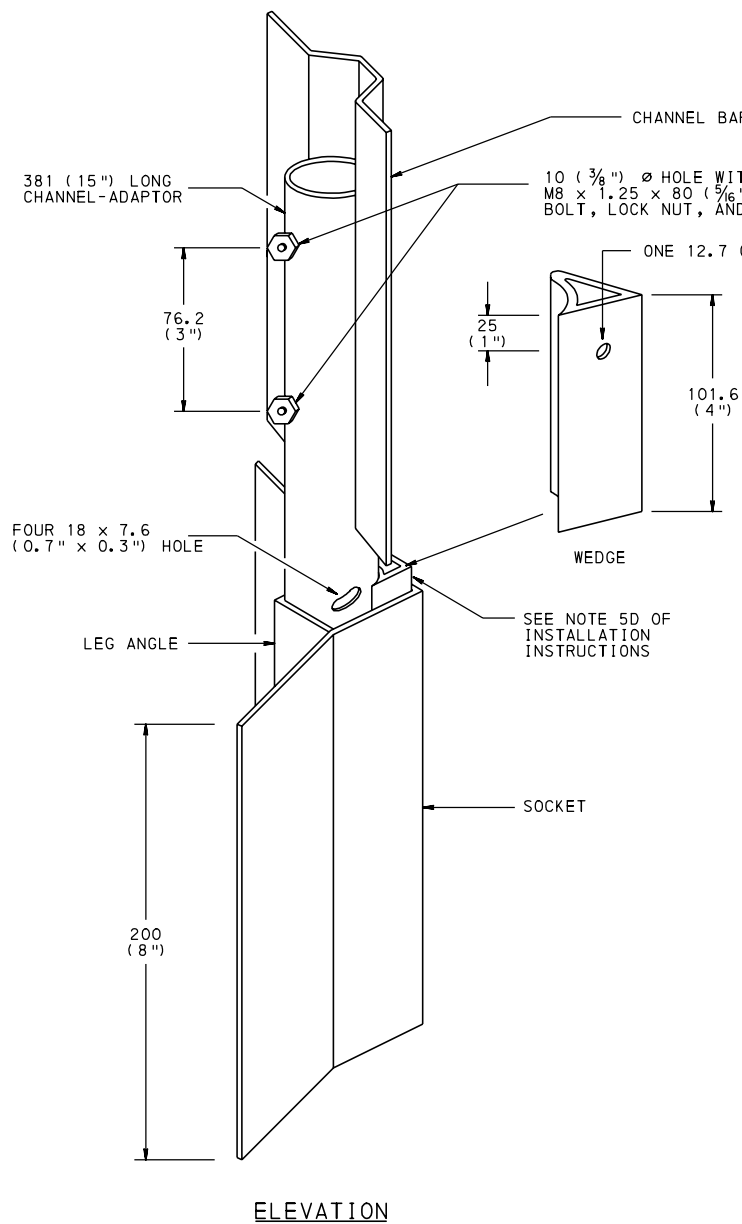
- TO DETERMINE THE POST SIZE, ENTER THE GRAPH WITH THE VALUES OF A AND B. THE SHADED AREA INDICATES THE APPROPRIATE POST SIZE REQUIRED.
- 3.71 kg/m (2.5 LB/FT.) AND 5.94 kg/m (4.0 LB/FT.) POSTS MAY HAVE LESS THAN 2.1 m (7') CLEARANCE BETWEEN EACH OTHER WHEN USED IN TWO-POST AND THREE-POST INSTALLATIONS.
- 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
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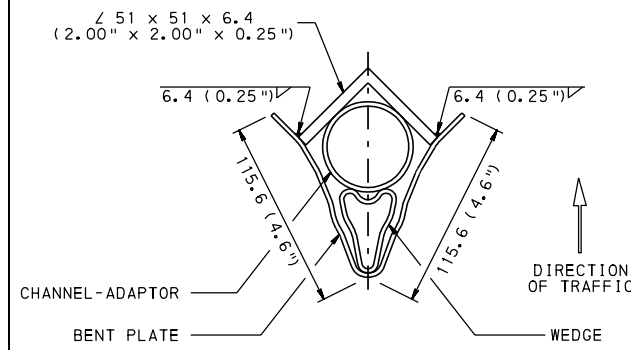
**POST-MOUNTED SIGNS,
TYPE B**

**CHANNEL BAR POSTS
SELECTION TABLES**

RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>M. G. Latel</i> CHIEF HIGHWAY ENGINEER	SHT. 7 OF 9 TC-8702B
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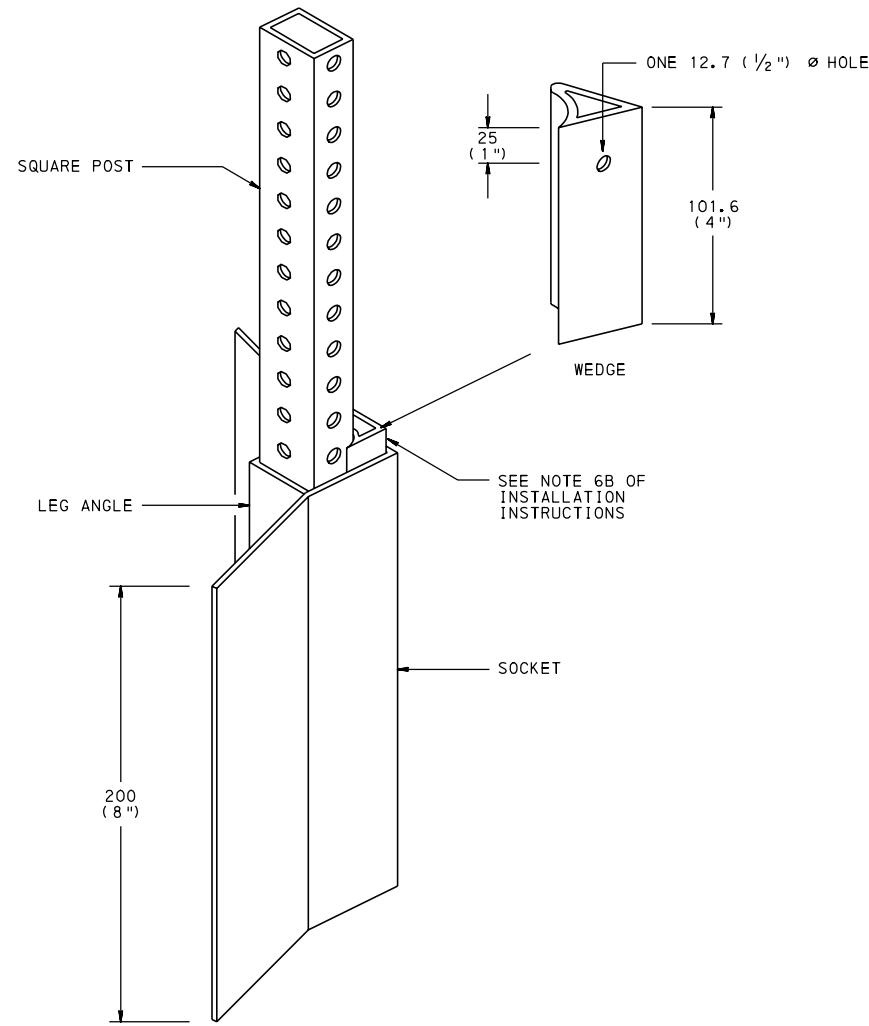


ELEVATION

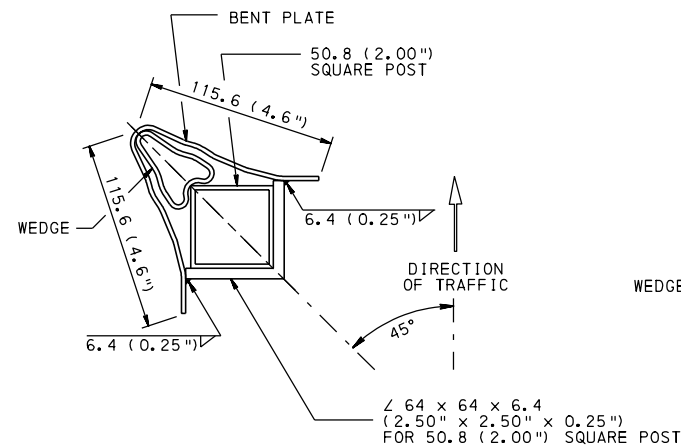


PLAN

CHANNEL BAR POST - SOCKET SYSTEM

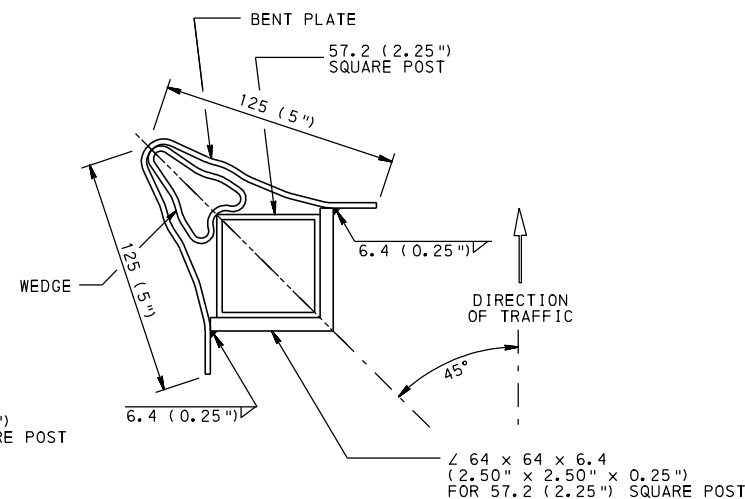


ELEVATION



PLAN

SQUARE POST - SOCKET SYSTEM



PLAN

NOTES:

1. SOCKET SHALL CONSIST OF A BENT PLATE ATTACHED TO A LEG ANGLE BY A MINIMUM OF SIX, 6.4 mm x 38.1 mm (0.25" x 1.5") FILLET WELDS. THE TOP OF THE BENT PLATE SHALL BE FLUSH WITH THE TOP OF THE LEG ANGLE.
2. SOCKET TO BE DIP-COATED WITH A RUST INHIBITING PRIMER MEETING FED. SPEC. TTP636.
3. BENT PLATE SHALL BE 2.7 mm (0.1046") HOT ROLLED CARBON SHEET STEEL, COMMERCIAL QUALITY, ASTM A 569/A 569M.
4. LEG ANGLE SHALL BE ASTM A 36/A 36M.
5. WEDGE SHALL BE STEEL TUBING MADE TO ASTM A 500, GRADE B SPECIFICATIONS.
6. CHANNEL-ADAPTOR SHALL BE GALVANIZED STEEL MADE FROM 48 mm (1.9") OD TUBE WITH 3.0 mm (0.1196") WALL THICKNESS, ASTM A 500, GRADE B.
7. BOLTS TO BE M8 x 1.25 x 80 (5/16" x 3") HEX HEAD, GRADE 5, ZINK PLATED WITH WASHERS.
8. NUTS SHALL BE M8 x 1.25 (5/16" - 18 UNC) THREADS, NYLON INSERT LOCK NUTS.
9. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE. ENGLISH UNITS IN PARENTHESIS ().
10. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

INSTALLATION INSTRUCTIONS:

1. SOCKET SYSTEMS ARE APPROVED FOR CONCRETE INSTALLATIONS.
2. SOCKET SYSTEMS ARE APPROVED FOR USE WITH 3.71 kg/m (2.5 LB/FT.) CHANNEL BAR POSTS AND 50.8 mm (2.00") AND 57.2 mm (2.25") STEEL SQUARE POSTS.
3. PLACE SOCKET IN A HOLE WITH THE TOP OF THE SOCKET FLUSH WITH THE TOPS OF THE ORIGINAL CONCRETE.
4. PLACE CONCRETE AROUND THE SOCKET. DO NOT PLACE CONCRETE INSIDE THE SOCKET WHERE THE WEDGE AND CHANNEL-ADAPTOR OR POST ARE TO BE PLACED.
5. FOR CHANNEL BAR POST INSTALLATIONS - AFTER THE CONCRETE HAS CURED:
 - A. ATTACH THE CHANNEL BAR POST TO THE CHANNEL-ADAPTOR USING TWO BOLTS, LOCK NUTS, AND WASHERS.
 - B. INSERT THE LOWER PORTION OF THE CHANNEL-ADAPTOR INTO THE SOCKET UNTIL THE FOUR PIERCED HOLES ARE AT THE SAME HEIGHT AS THE TOP OF THE SOCKET.
 - C. ROTATE THE TWO UPPER HOLES IN THE CHANNEL-ADAPTOR TOWARD ONCOMING TRAFFIC.
 - D. POSITION THE WEDGE IN THE SOCKET WITH ITS HOLE AT THE TOP, AND DRIVE THE WEDGE INTO THE SOCKET UNTIL THE TOP OF THE WEDGE IS FLUSH WITH THE TOP OF THE SOCKET.
6. FOR STEEL SQUARE POST INSTALLATIONS - AFTER THE CONCRETE HAS CURED:
 - A. INSERT THE SQUARE POST FULLY INTO THE SOCKET.
 - B. POSITION THE WEDGE IN THE SOCKET WITH ITS HOLE AT THE TOP, AND DRIVE THE WEDGE INTO THE SOCKET UNTIL THE TOP OF THE WEDGE IS FLUSH WITH THE TOP OF THE SOCKET.

COMMONWEALTH OF PENNSYLVANIA
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POST-MOUNTED SIGNS,
TYPE B

SOCKET SYSTEM FOR
CONCRETE INSTALLATIONS

RECOMMENDED MAY 25, 2007

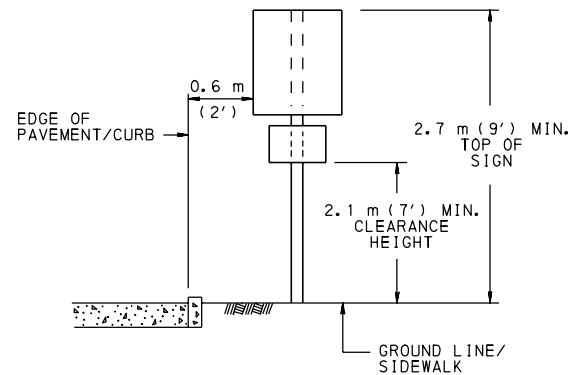
Alan C. Rowe
CHIEF, TRAFFIC ENGINEERING AND
OPERATIONS DIVISION

RECOMMENDED MAY 25, 2007

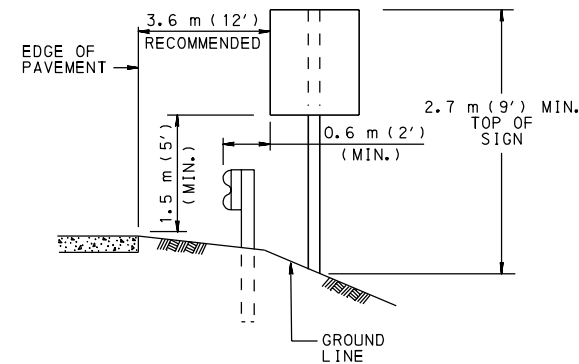
m. G. Patel
CHIEF HIGHWAY ENGINEER

SHT. 8 OF 9

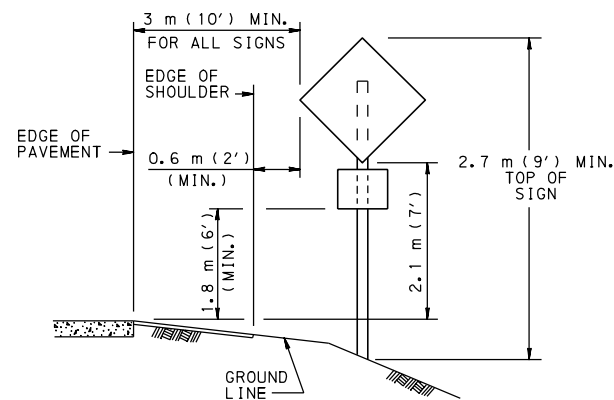
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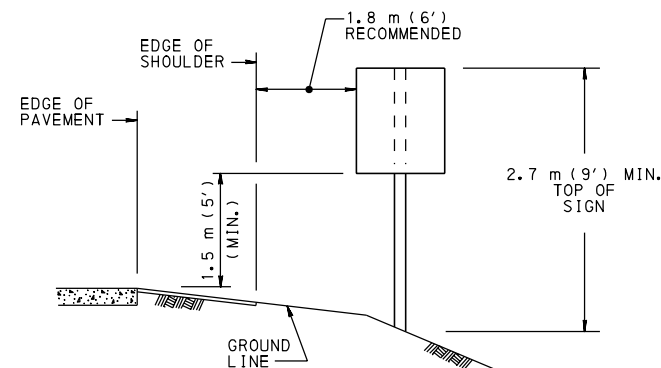
BUSINESS OR RESIDENTIAL AREA



RURAL AREA
CONVENTIONAL HIGHWAY (NO SHOULDER)



FREEWAY / EXPRESSWAYS



RURAL AREA
CONVENTIONAL HIGHWAY (WITH SHOULDER)

NOTES:

SIGN CLEARANCE HEIGHT

- CLEARANCE HEIGHT SHALL BE MEASURED FROM THE BOTTOM OF THE SIGN TO A LEVEL LINE PROJECTED FROM THE NEAR EDGE OF ROADWAY. THIS MAY RESULT IN A SIGN HEIGHT GREATER THAN THE MINIMUM HEIGHT REQUIRED WHEN MEASURED FROM THE GROUND LEVEL TO THE BOTTOM OF THE SIGN. IN BUSINESS AND URBAN AREAS THE CLEARANCE HEIGHT SHALL ALSO BE MEASURED FROM THE BOTTOM OF THE SIGN TO THE GROUND LEVEL OR SIDEWALK AREA TO REDUCE THE POSSIBILITY OF PEDESTRIANS COLLIDING WITH THE SIGN.

LATERAL SIGN CLEARANCE

- SIGNS SHOULD BE PLACED AS FAR AS PRACTICAL FROM THE EDGE OF THE ROADWAY TO REDUCE THE POSSIBILITY OF VEHICLES HITTING THE SIGNS. WHEN GUIDE RAIL IS PRESENT, SIGNS WILL BE PLACED BEHIND THE GUIDERAIL.
- ROUTE MARKER SIGNS WITH AUXILIARY SIGNS (NORTH, SOUTH, ETC.) SHALL BE CONSIDERED A SINGLE SIGN ASSEMBLY. THE CLEARANCE HEIGHT IS MEASURED FROM THE BOTTOM OF THE LOWEST AUXILIARY SIGN TO A LEVEL LINE PROJECTED FROM THE NEAR EDGE OF ROADWAY.
- BUSINESS OR URBAN AREAS
 - IN BUSINESS, COMMERCIAL OR RESIDENTIAL DISTRICTS, OR WHERE PARKING AND/OR PEDESTRIAN MOVEMENTS ARE LIKELY, OR WHERE THE SIGN MAY BLOCK VISIBILITY, THE BOTTOM OF ALL SIGNS (INCLUDING AUXILIARY SIGNS) SHALL BE A MINIMUM OF 2.1 m (7') ABOVE GROUND AND THE NEAR PAVEMENT EDGE.
 - LATERAL CLEARANCE RECOMMENDED IS 0.6 m (2') BEHIND CURB. IF SIDEWALK WIDTH IS LIMITED, OR WHEN EXISTING UTILITY POLES ARE CLOSE TO THE CURB A 0.3 m (1') CLEARANCE IS PERMISSIBLE.
- RURAL AREAS
 - CONVENTIONAL HIGHWAYS. ALTHOUGH 2.1 m (7') MINIMUM SIGN HEIGHT CLEARANCE IS RECOMMENDED, IN RURAL DISTRICTS WHERE THE CONDITIONS LISTED IN NOTE 4A ARE NOT LIKELY, SIGNS MAY BE MOUNTED AT A MINIMUM CLEARANCE HEIGHT OF 1.5 m (5'). IF A SUPPLEMENTAL SIGN IS INSTALLED BELOW THE MAIN SIGN, THE CLEARANCE HEIGHT OF THE SUPPLEMENTAL SIGN MAY BE 1.2 m (4').
 WHEN GUIDERAIL OR CONCRETE BARRIERS ARE PRESENT A 0.6 m (2') LATERAL CLEARANCE IS RECOMMENDED.
 WHEN SHOULDERS ARE NOT PRESENT IT IS RECOMMENDED THAT SIGNS BE PLACED 3.6 m (12') FROM THE EDGE OF ROADWAY. WHERE SHOULDERS ARE PRESENT A 1.8 m (6') LATERAL CLEARANCE IS RECOMMENDED.
 - FREEWAY AND EXPRESSWAYS. DIRECTIONAL SIGNS SHALL BE HAVE A MINIMUM CLEARANCE HEIGHT OF 2.1 m (7'). HOWEVER, IF A SUPPLEMENTAL SIGN IS INSTALLED BELOW THE MAIN SIGN, THE SUPPLEMENTAL SIGN MAY HAVE A CLEARANCE HEIGHT OF 1.8 m (6'), PROVIDED THAT A 2.4 m (8') CLEARANCE HEIGHT IS MAINTAINED FOR THE MAIN SIGN.
 ALL ROUTE MARKER, REGULATORY, AND WARNING SIGN ASSEMBLIES SHALL MAINTAIN A 1.8 m CLEARANCE HEIGHT TO THE BOTTOM OF THE SIGN ASSEMBLY (INCLUDING AUXILIARY SIGNS).
 A 0.6 m (2') MINIMUM LATERAL CLEARANCE IS REQUIRED BEHIND UNMOUNTABLE CURB OR ROADWAY SHOULDER.
 A 3.0 m (10') MINIMUM LATERAL CLEARANCE FROM THE EDGE OF THE NEAREST TRAVEL LANE IS RECOMMENDED.
- 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
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POST-MOUNTED SIGNS,
TYPE B

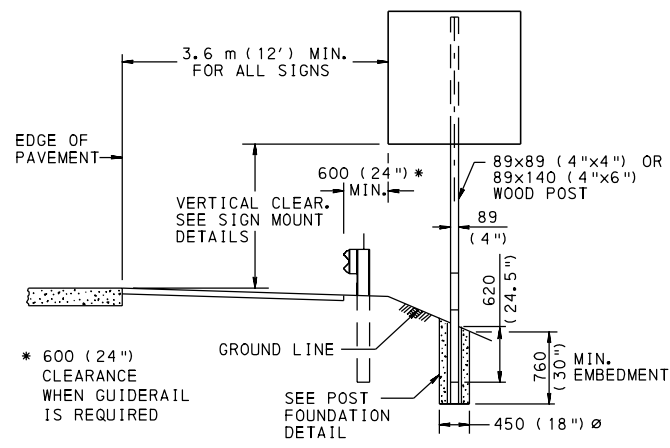
SIGN LOCATION/INSTALLATION
DETAILS

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

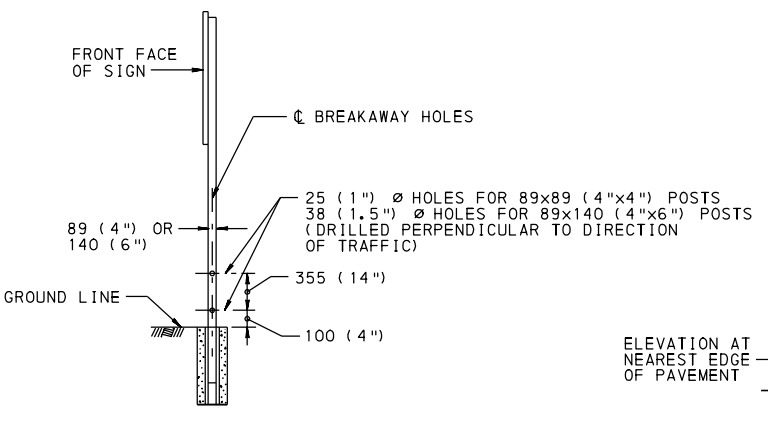
RECOMMENDED MAY 25, 2007
m. G. Latel
CHIEF HIGHWAY ENGINEER

SHT. 9 OF 9

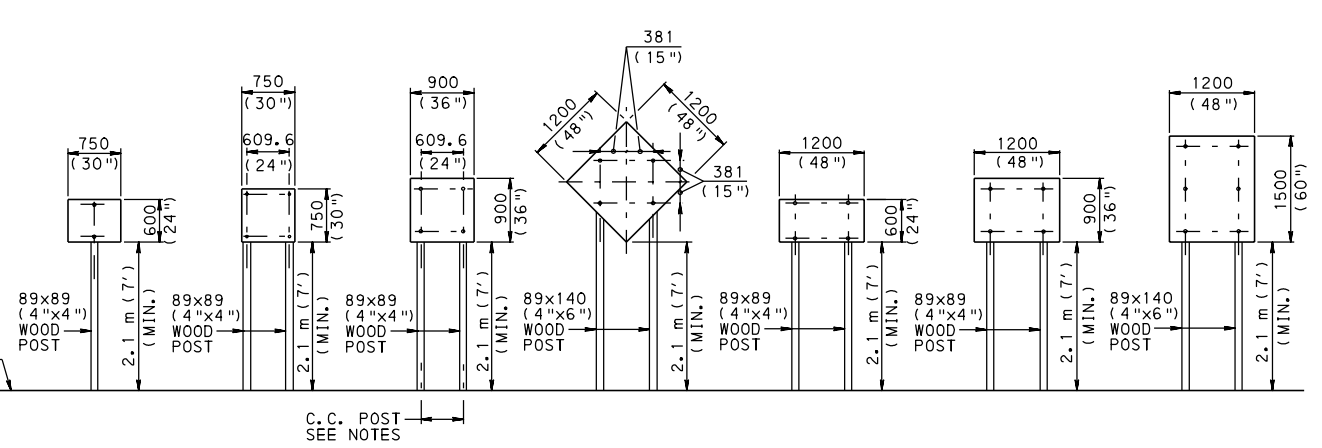
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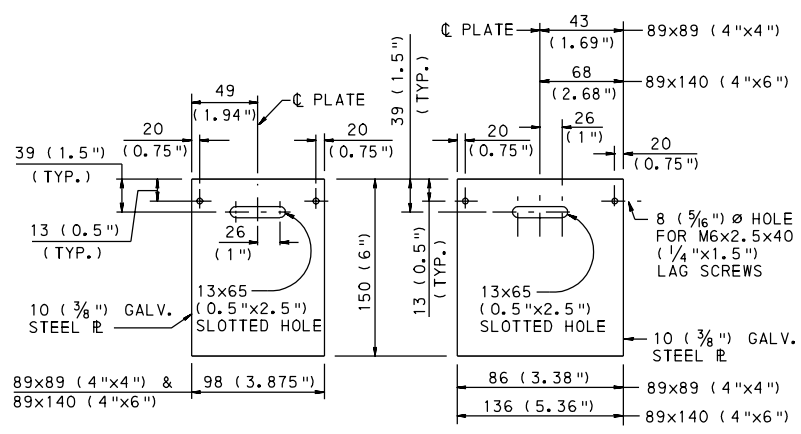
ELEVATION VIEW



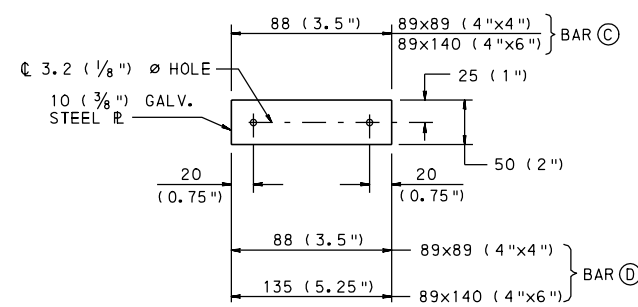
END VIEW



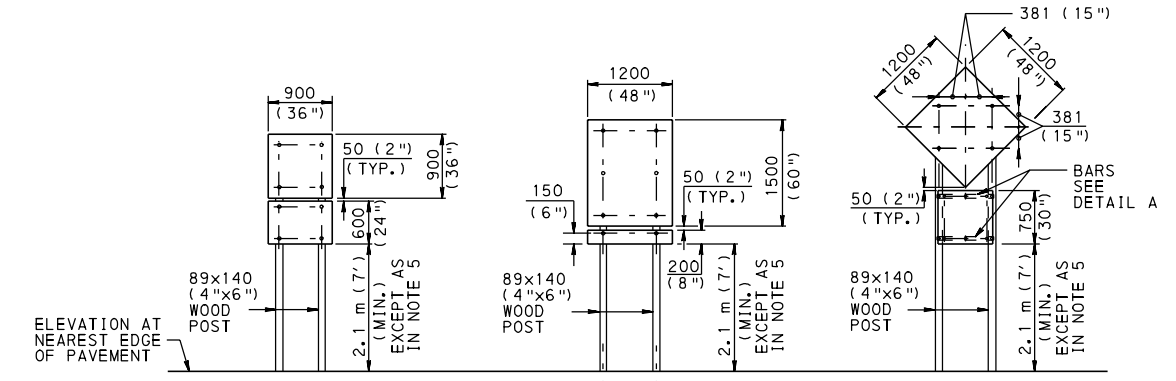
SINGLE MOUNTS



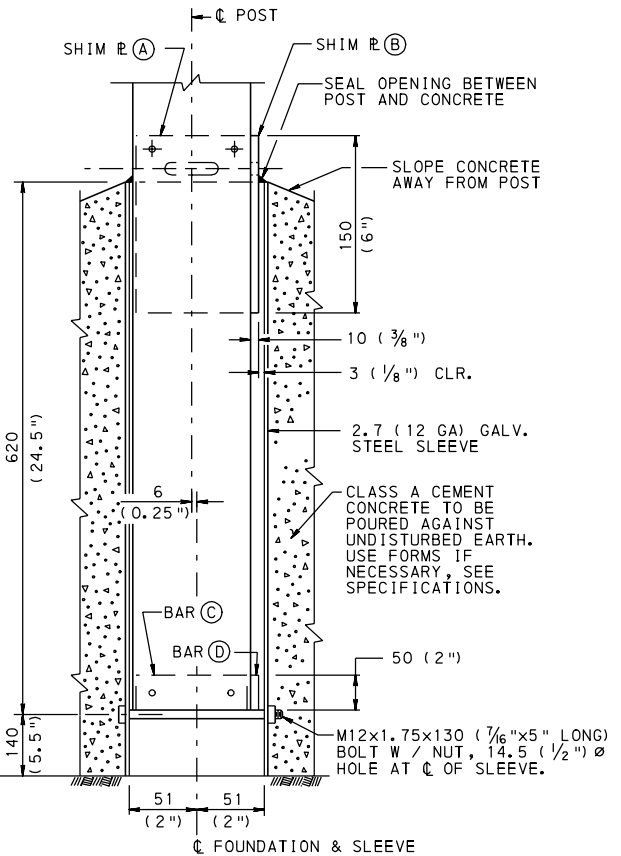
SHIM PLATE A SHIM PLATE B



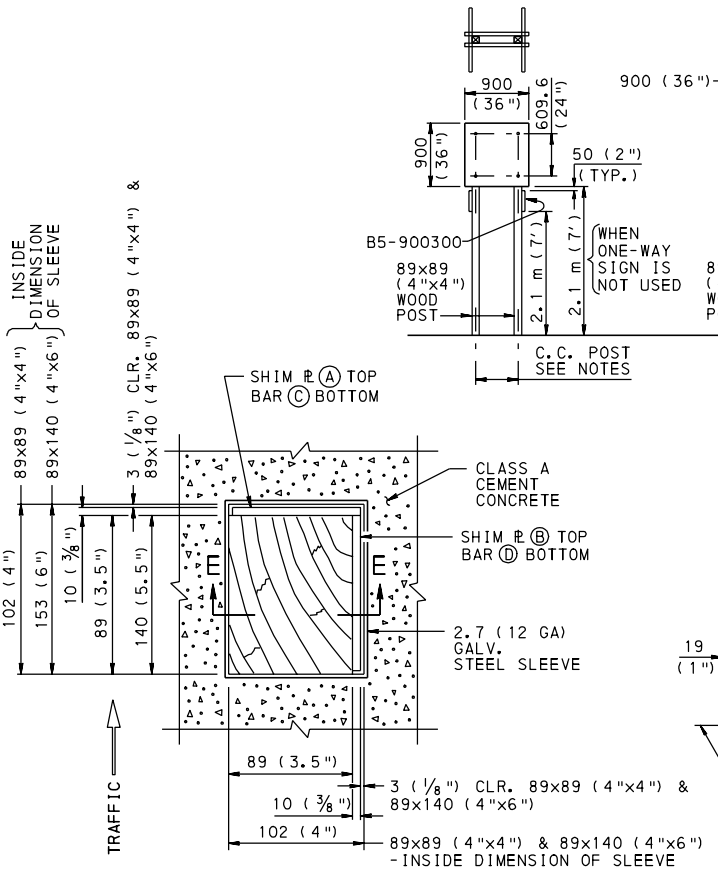
NOTE: NAIL SHIM BARS TO POST TO HOLD BARS IN PLACE WHILE POST IS BEING PLACED.
SHIM PLATE C
SHIM PLATE D



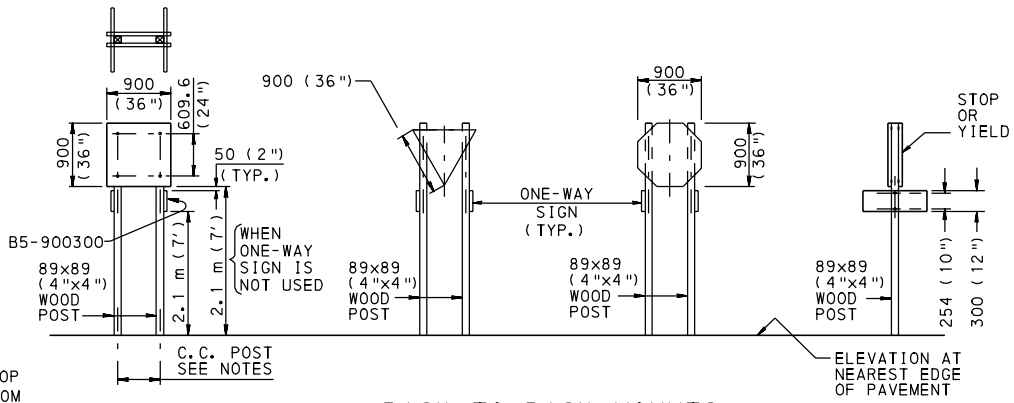
MULTIPLE MOUNTS



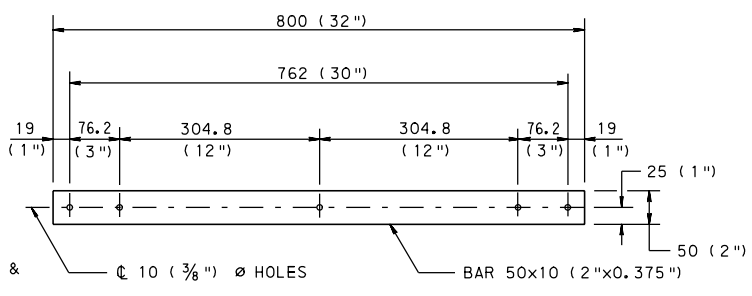
SECTION E-E (SHOWN)



FOUNDATION DETAIL



BACK-TO-BACK MOUNTS



BAR DETAIL A

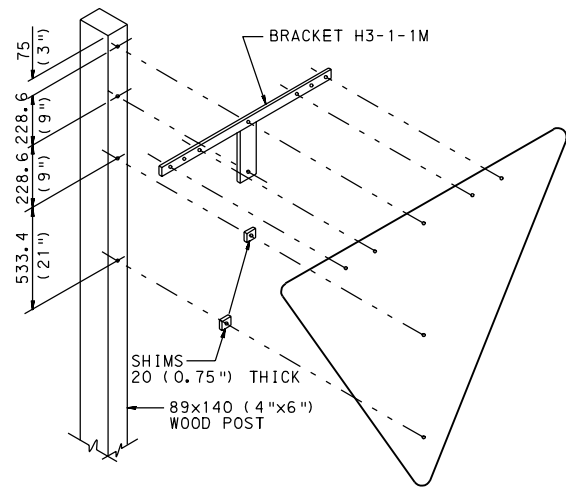
- NOTES:**
1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, UNLESS OTHERWISE NOTED.
 2. DETERMINE THE CENTER TO CENTER POST DIMENSIONS ON TWO-POST INSTALLATIONS BY THE BOLT HOLE SPACING ON THE SIGN BLANKS.
 3. FOR DETAILS OF BOLTS AND SIZE REQUIRED, SEE SHEET 2 OF 2.
 4. GALVANIZE ALL STEEL SLEEVES IN ACCORDANCE WITH ASTM A 123 / A 123M.
 5. STEEL USED FOR SLEEVES AND SHIMS SHALL HAVE A MINIMUM YIELD STRENGTH OF 36 KSI.
 6. IF A SUPPLEMENTAL SIGN IS INSTALLED BELOW THE MAIN SIGN, THE BOTTOM OF THE SIGN ASSEMBLY MAY BE 1.8 m (6') ABOVE THE NEAR EDGE OF THE PAVEMENT. HOWEVER, IN BUSINESS, COMMERCIAL & RESIDENTIAL DISTRICTS, OR WHERE PARKING AND/OR PEDESTRIAN MOVEMENTS ARE LIKELY, OR WHERE THE SIGN MAY BLOCK VISIBILITY, THE BOTTOM OF ALL SIGNS (INCLUDING AUXILIARY SIGNS) SHALL BE A MINIMUM OF 2.1 m (7') ABOVE GROUND.
 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

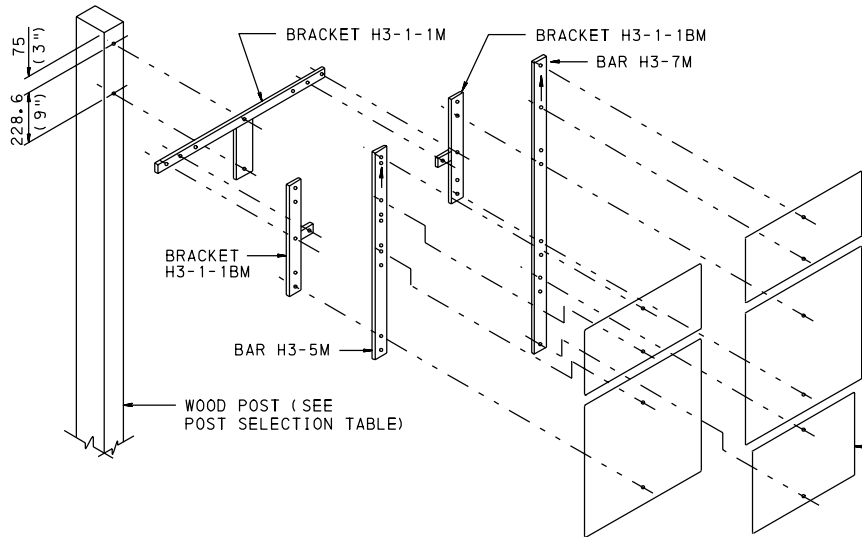
**POST-MOUNTED SIGNS,
 TYPE C**

ERECTION DETAILS

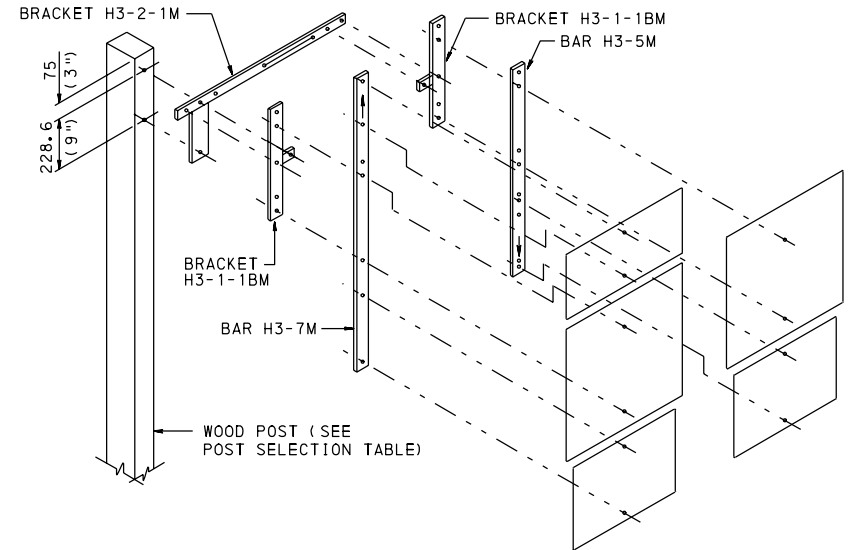
RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>m. G. Patel</i> CHIEF HIGHWAY ENGINEER	SHT. 1 OF 2 TC-8702C
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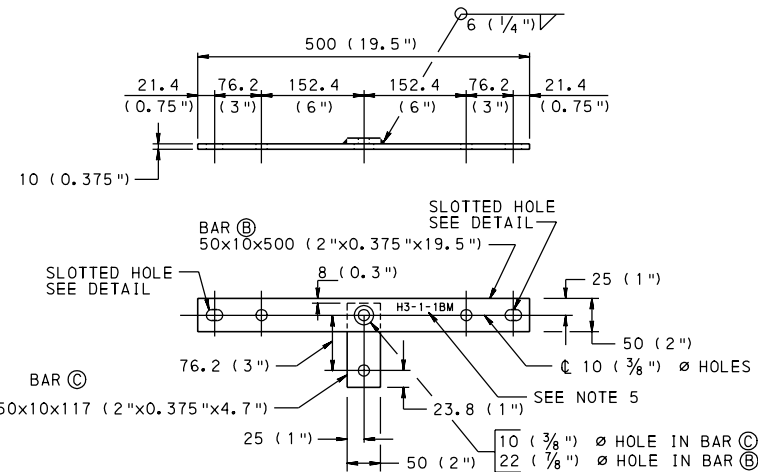
TYPICAL YIELD SIGN ASSEMBLY



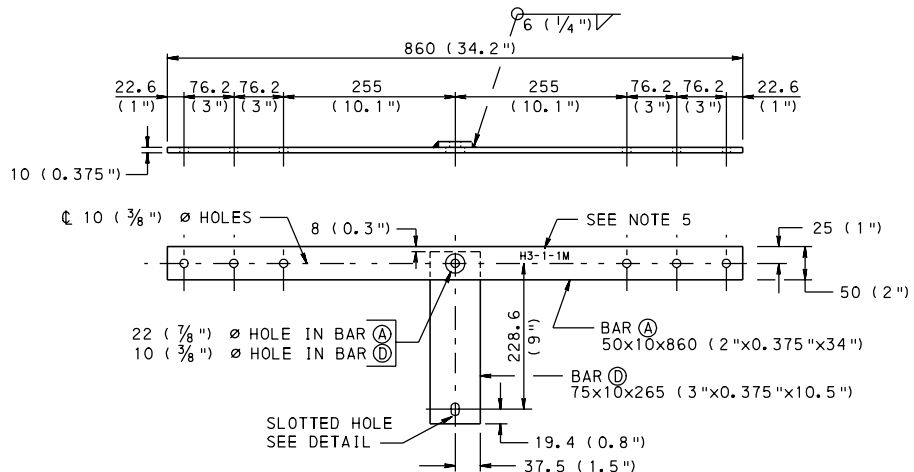
ROUTE MARKER BRACKET ASSEMBLY - TYPE I



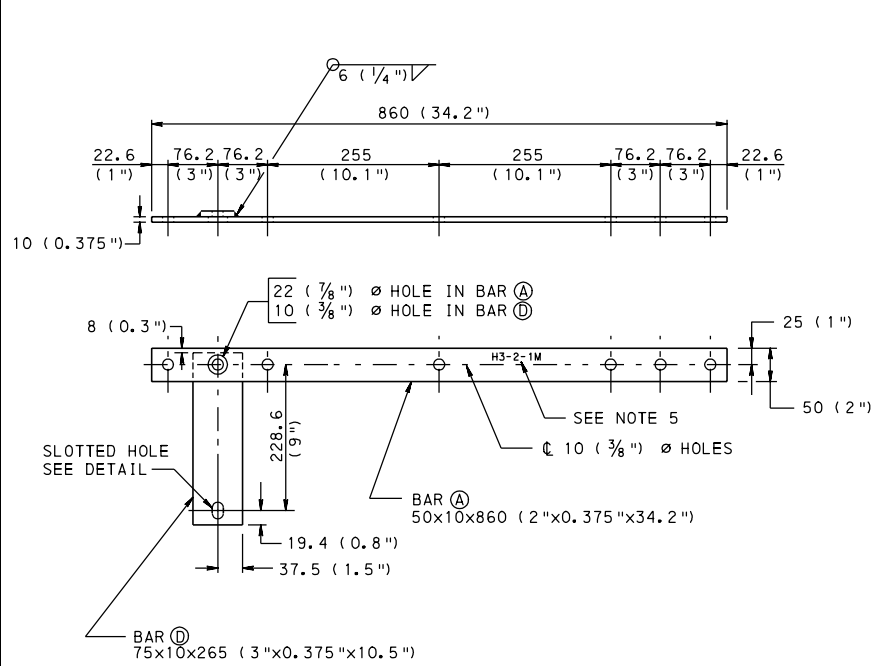
ROUTE MARKER BRACKET ASSEMBLY - TYPE II



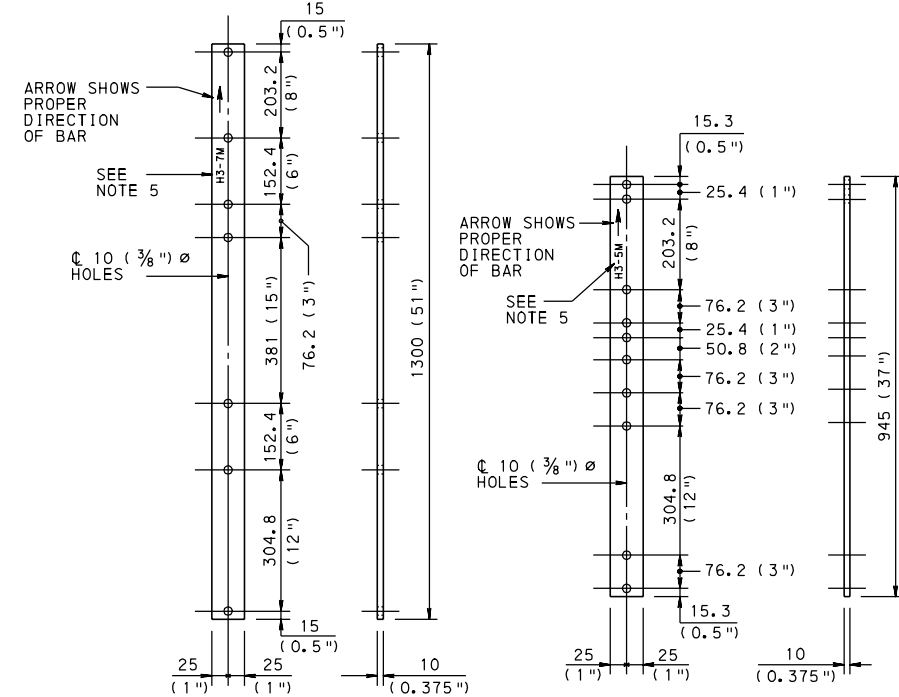
BRACKET H3-1-1BM



BRACKET H3-1-1M

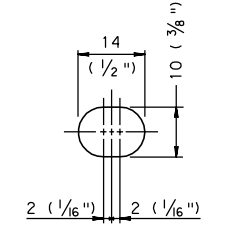


BRACKET H3-2-1M



BAR H3-7M

BAR H3-5M



SLOTTED HOLE

POST SIZE	MAXIMUM SIGN SURFACE AREA
89x140 (4"x6")	1.300 m ² (14.375 FT ²)
140x140 (6"x6") *	1.500 m ² (16.375 FT ²)
140x184 (6"x8") *	3.000 m ² (33.125 FT ²)

* SEE TC-8702E FOR FOUNDATION DETAIL.

LENGTH	DESCRIPTION
25 (1")	SIGN + BRACKET
40 (1.5")	SIGN + BRACKET + BRACKET
40 (1.5")	BRACKET + BRACKET
200 (7.5")	SIGN + BRACKET(S) + 89x140 (4"x6") POST
200 (7.5")	BRACKET(S) + 89x140 (4"x6") POST
170 (6.5")	SIGN + 89x140 (4"x6") POST
120 (4.5")	SIGN + 89x89 (4"x4") POST

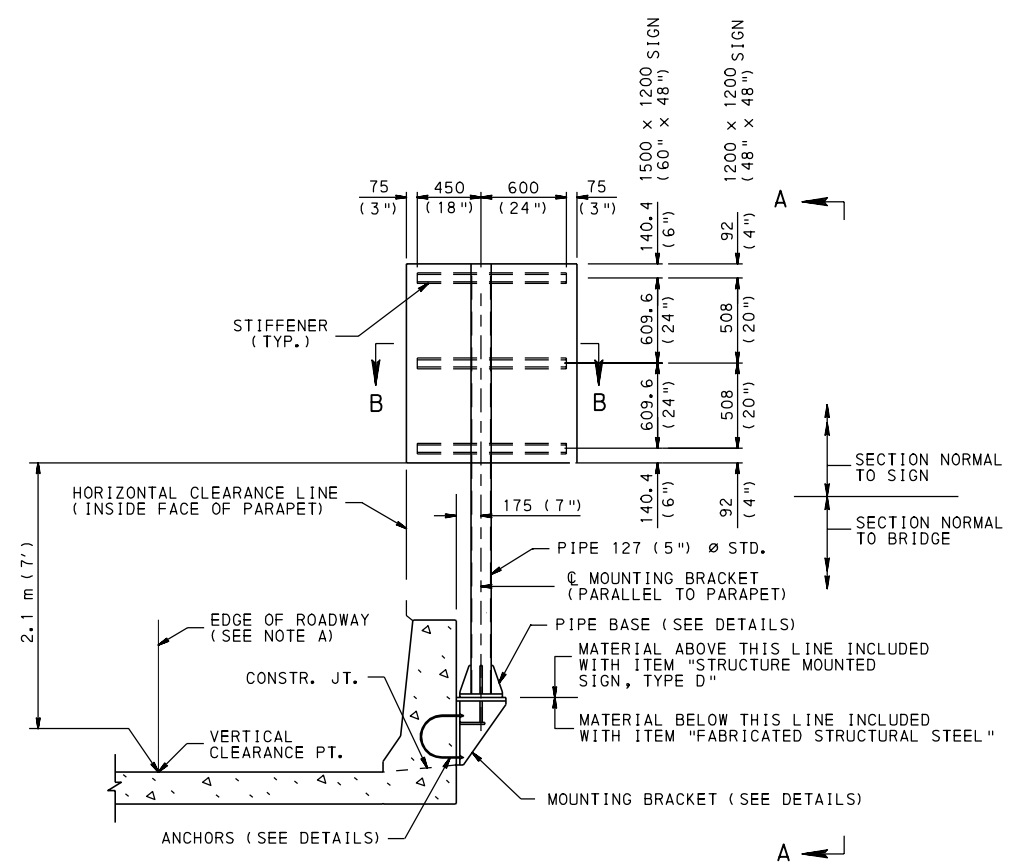
- NOTES:**
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, UNLESS OTHERWISE NOTED.
 - A M8x75 (5/16"x3") LAG SCREW MAY BE USED IN LIEU OF A BOLT THROUGH THE POST AS ILLUSTRATED.
 - USE A FLAT ALUMINUM OR NYLON WASHER ON THE FACE OF ALL SIGNS.
 - DRILL BREAKAWAY HOLES IN POSTS AND ERECT AS SHOWN ON SHEET 1 OF 2.
 - STAMP BRACKET/BAR NUMBER IN 10 mm (0.375") HIGH LETTERS AND NUMBERS IN POSITIONS AS SHOWN.
 - 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

**POST-MOUNTED SIGNS,
 TYPE C**

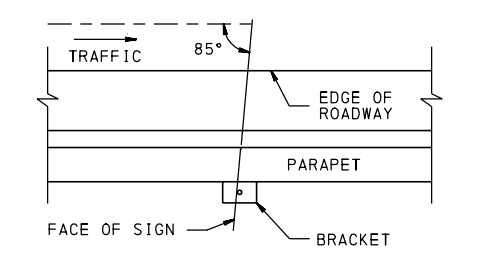
ERECTION DETAILS

RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>m. Glatzel</i> CHIEF HIGHWAY ENGINEER	SHT. 2 OF 2 TC-8702C
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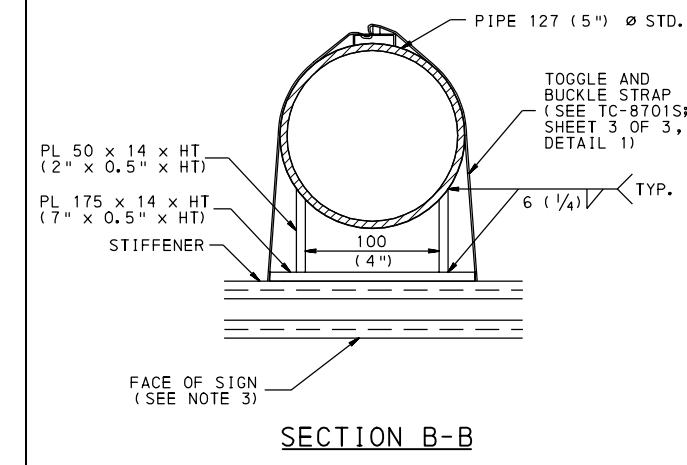


**SECTION THRU BRIDGE
SINGLE RECTANGULAR SIGN**

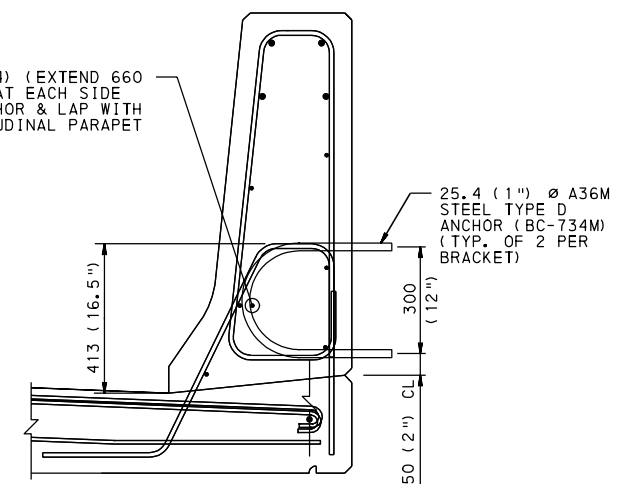
NOTE A:
EDGE OF ROADWAY ON BRIDGE IS THE PROJECTION OF THE EDGE OF ROADWAY ON ADJACENT FILL SECTION OR AS INDICATED BY THE EDGE MARKINGS.



PLAN VIEW

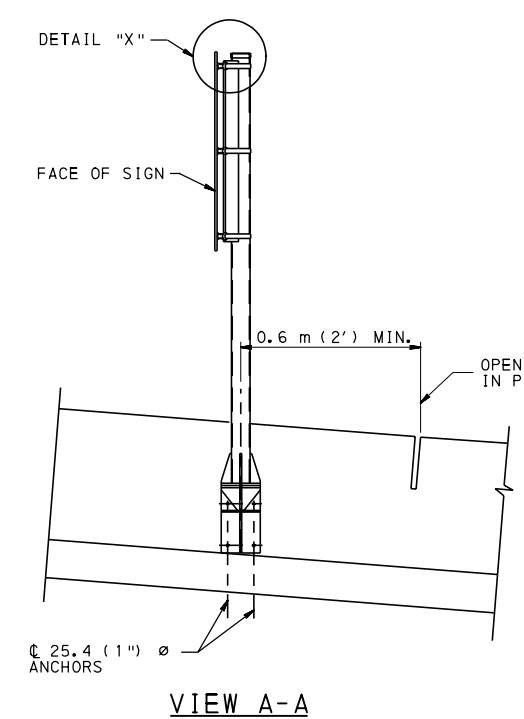


SECTION B-B

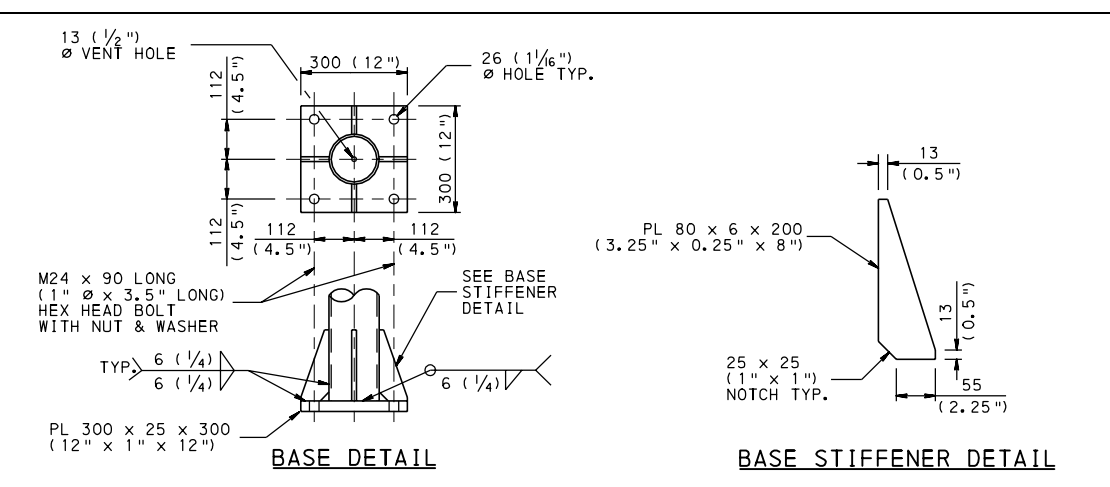


ANCHOR DETAIL

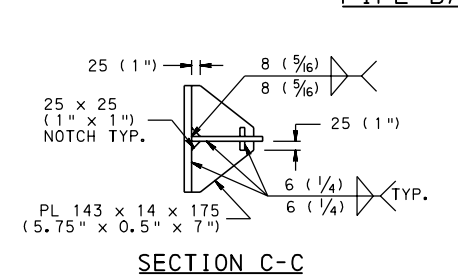
(FOR INSTALLATION ON ALL NEW STRUCTURES)
NOTE:
ANCHOR TO BE INSTALLED A MINIMUM OF 5 FT. FROM DECK JOINT. SEE STRUCTURE PLANS FOR PARAPET REINFORCEMENT DETAILS.



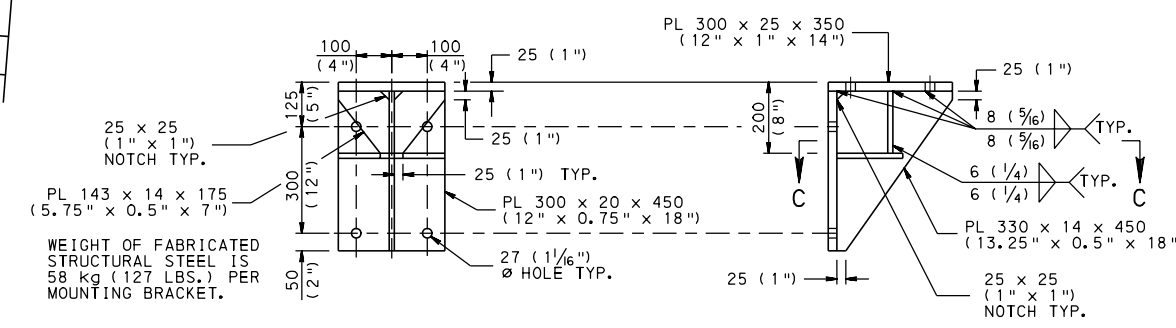
VIEW A-A



PIPE BASE DETAILS

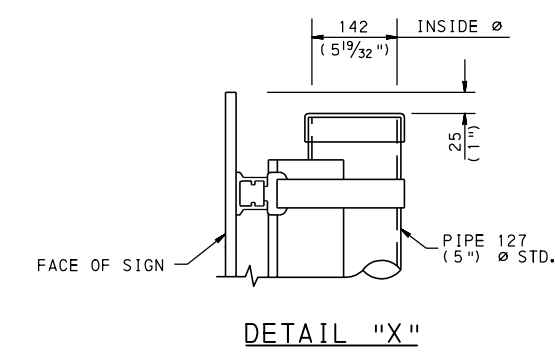


SECTION C-C

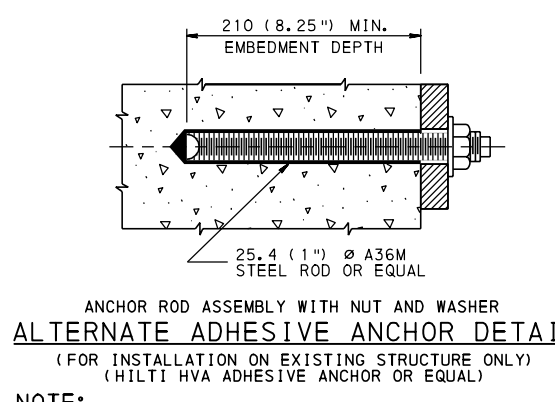


MOUNTING BRACKET DETAILS

- NOTES:**
- MATERIALS AND WORKSMANSHIP SHALL BE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, UNLESS OTHERWISE NOTED.
 - ALL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH PUBLICATION 408.
 - THE STIFFENERS AND STIFFENER HARDWARE SHALL CONFORM TO SECTION 1103.03(d) AND TO STANDARD DRAWING TC-8701S. THE RIVETS USED TO FASTEN THE FLAT SHEET ALUMINUM TO THE STIFFENER SHALL CONFORM TO SECTION 1103.11(g) AND SHALL BE SPACED AS INDICATED IN SECTION 1103.03(e).
 - STEEL PIPE SUPPORTS TO BE ASTM A 53/A 53M, UNLESS OTHERWISE NOTED. ALL OTHER STRUCTURAL STEEL TO BE AASHTO M 270/M 270M (ASTM A 709/A 709M) GRADE 250 (GRADE 36), UNLESS OTHERWISE NOTED. ALL BOLTS TO BE AASHTO M 164 (ASTM A 325), TYPE 1, UNLESS OTHERWISE NOTED.
 - FOR DESIGN OF SIGN PANELS AND ATTACHMENT HARDWARE, SEE TRAFFIC STANDARD.
 - ALL WELDS TO CONFORM TO LATEST ANSI/AASHTO/AWS SPECIFICATIONS.
 - 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.



DETAIL "X"



ALTERNATE ADHESIVE ANCHOR DETAIL

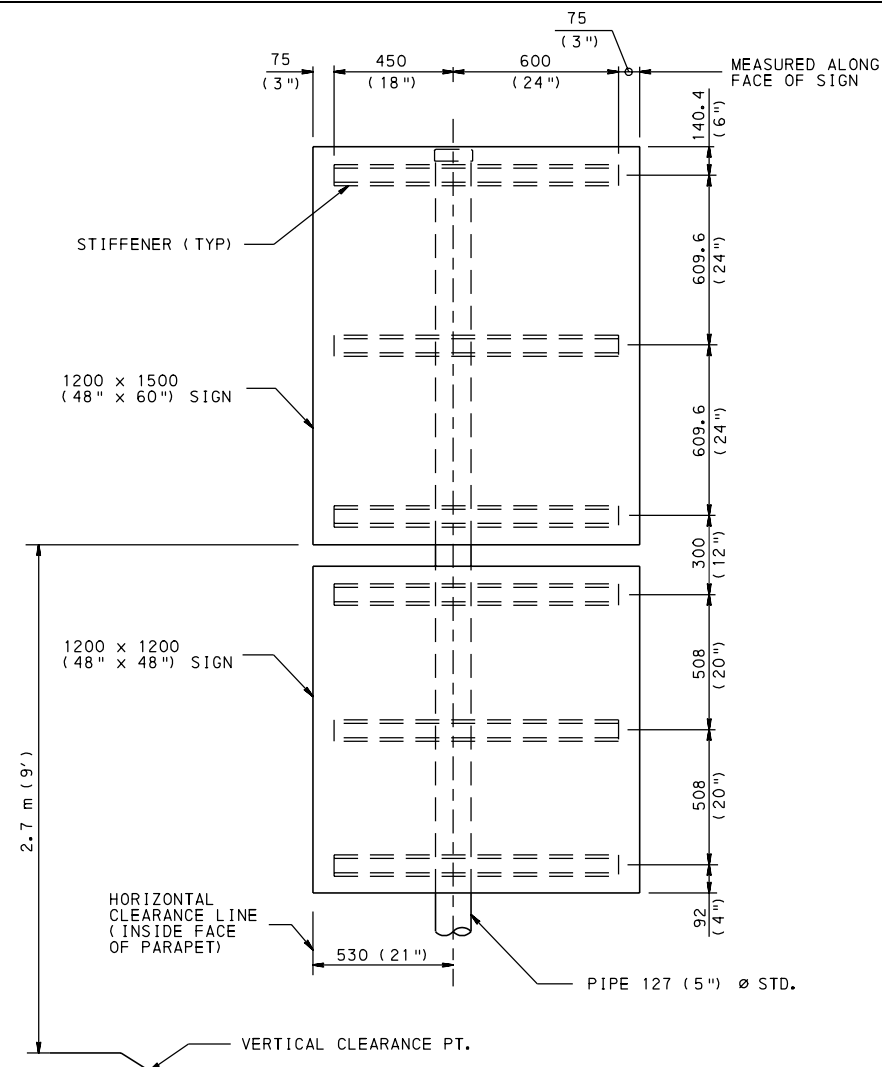
(FOR INSTALLATION ON EXISTING STRUCTURE ONLY)
(HILTI HVA ADHESIVE ANCHOR OR EQUAL)
NOTE:
ANCHOR TO BE INSTALLED A MINIMUM OF 5 FT. FROM DECK JOINT.

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

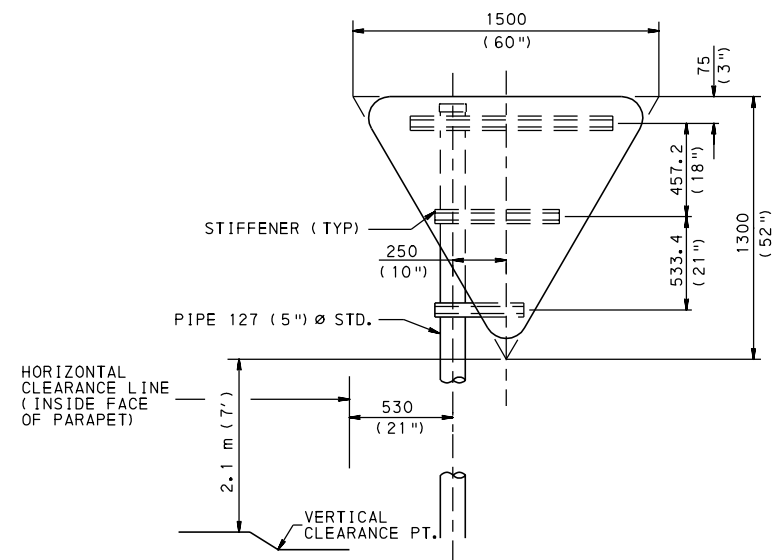
**POST-MOUNTED SIGNS,
TYPE D**

**ERECTION DETAILS
(STRUCTURE CONNECTIONS)**

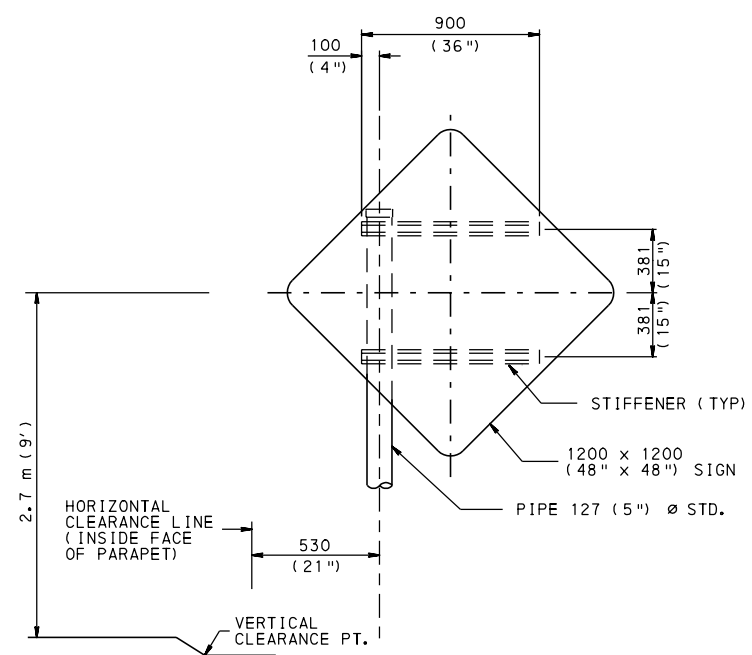
RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>M. Patel</i> CHIEF HIGHWAY ENGINEER	SHT. 1 OF 2 TC-8702D
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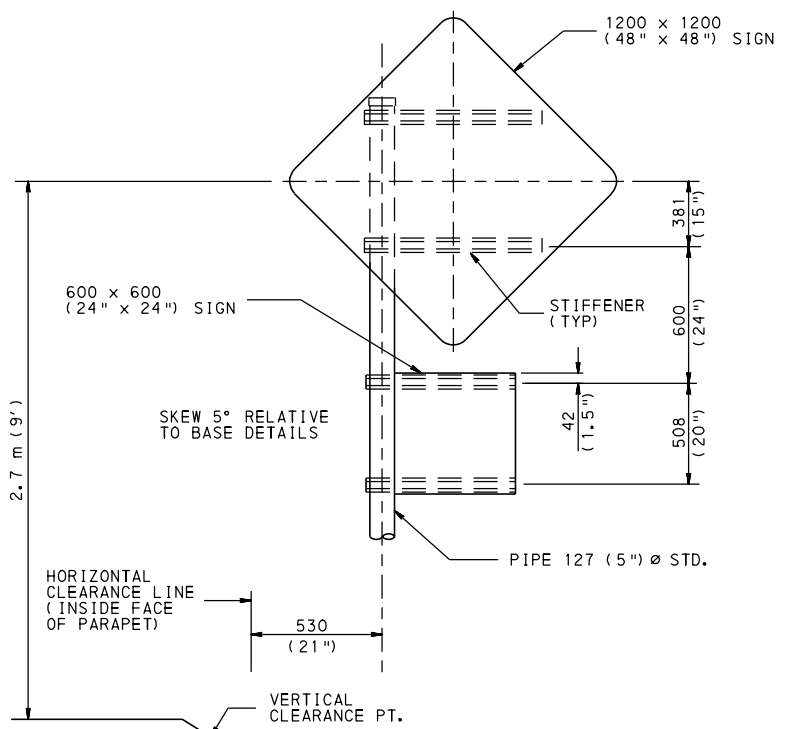
DOUBLE RECTANGULAR SIGN
(PARTS NOT SHOWN ARE SIMILAR TO SINGLE RECTANGULAR SIGN)



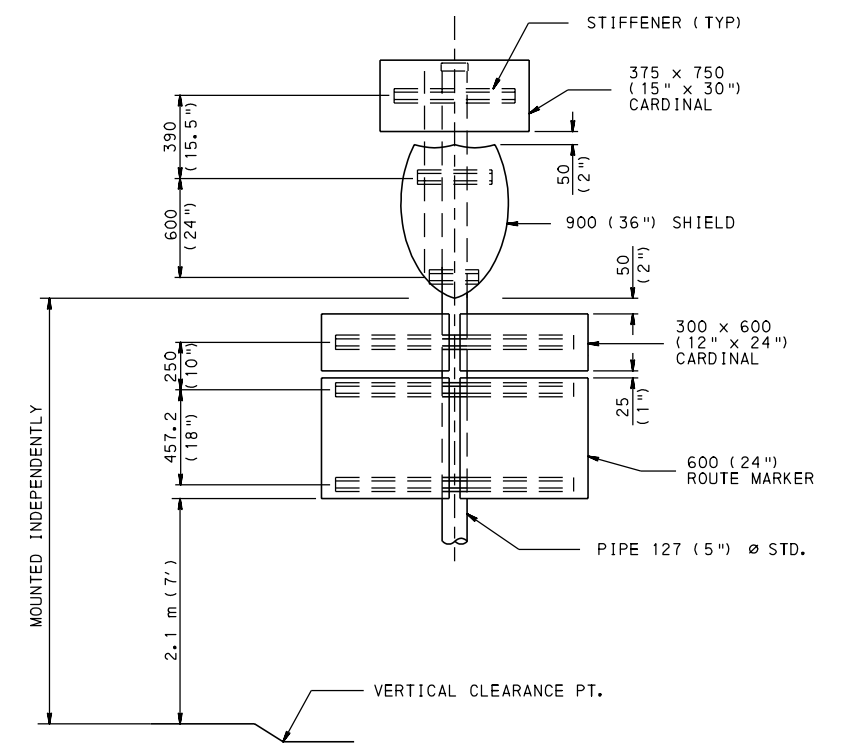
TRIANGULAR SIGN
(PARTS NOT SHOWN ARE SIMILAR TO SINGLE RECTANGULAR SIGN)



DIAMOND SIGN
(PARTS NOT SHOWN ARE SAME AS SINGLE RECTANGULAR SIGN)



DIAMOND SIGN WITH RECTANGULAR SIGN
(PARTS NOT SHOWN ARE SIMILAR TO DIAMOND SIGN AND RECTANGULAR SIGN)



DOUBLE ROUTE MARKER WITH 900 (36\") SHIELD
(PARTS NOT SHOWN ARE SIMILAR TO SINGLE RECTANGULAR SIGN)

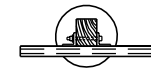
NOTES:

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		
POST-MOUNTED SIGNS, TYPE D		
ERECTION DETAILS (STRUCTURE CONNECTIONS)		
RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>m. G. Latel</i> CHIEF HIGHWAY ENGINEER	SHT. 2 OF 2 TC-8702D

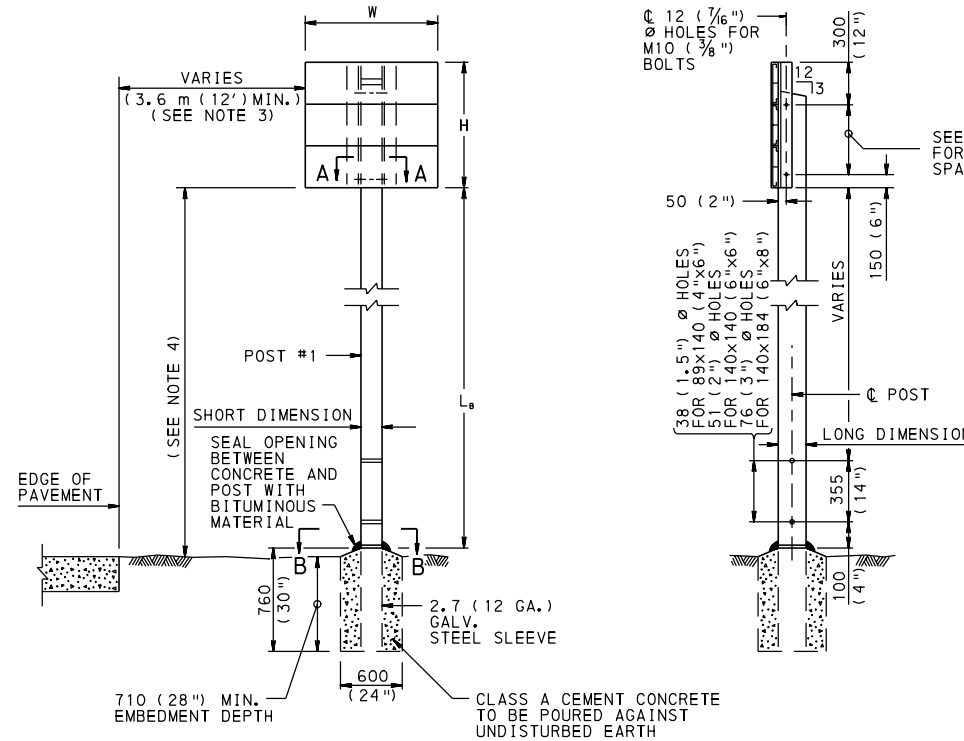
DESIGN CRITERIA:

- DESIGN BASED ON 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS INCLUDING 2002 INTERIM SPECIFICATIONS WITH THE FOLLOWING DESIGN CRITERIA:
 - BASIC WIND SPEED (V) = 40 m/sec (90 MPH) (3-SECOND GUST)
 - WIND IMPORTANCE FACTOR (I_w) = 0.71 (10 YEAR DESIGN LIFE)
 - FATIGUE IS NOT CONSIDERED FOR ROADSIDE SIGNS.
- EMBEDMENT OF FOOTINGS IS BASED ON FIGURES 13-3 AND 13-4 AS OUTLINED IN THE AASHTO SPECIFICATIONS.



PLAN VIEW

POST SELECTION TABLE - ONE POST								
W m (FT)	L _B m (FT)	HEIGHT "H" IN m (FT)						
		0.610 (2)	0.915 (3)	1.220 (4)	1.525 (5)	1.830 (6)	2.135 (7)	2.440 (8)
0.6 (2)	1.8 (6)	P1	P1	P1	P1	P1	P2	P2
	2.1 (7)	P1	P1	P1	P1	P1	P2	P3
	2.4 (8)	P1	P1	P1	P1	P2	P2	P3
	2.7 (9)	P1	P1	P1	P1	P2	P3	P3
	3.0 (10)	P1	P1	P1	P2	P3	P3	P3
0.9 (3)	1.8 (6)	P1	P1	P1	P2	P3	P3	P3
	2.1 (7)	P1	P1	P1	P2	P3	P3	P3
	2.4 (8)	P1	P1	P1	P2	P3	P3	P3
	2.7 (9)	P1	P1	P2	P3	P3	P3	P3
	3.0 (10)	P1	P1	P2	P3	P3	P3	-
1.2 (4)	1.8 (6)	P1	P1	P1	P2	P3	P3	P3
	2.1 (7)	P1	P1	P2	P3	P3	P3	-
	2.4 (8)	P1	P1	P2	P3	P3	P3	-
	2.7 (9)	P1	P2	P3	P3	P3	-	-
	3.0 (10)	P1	P2	P3	P3	P3	-	-
1.5 (5)	1.8 (6)	P1	P1	P2	P3	P3	P3	-
	2.1 (7)	P1	P1	P2	P3	P3	-	-
	2.4 (8)	P1	P2	P3	P3	P3	-	-
	2.7 (9)	P1	P2	P3	P3	-	-	-
	3.0 (10)	P1	P3	P3	P3	-	-	-
1.8 (6)	1.8 (6)	*	P2	P3	P3	-	-	-
	2.1 (7)	*	P2	P3	P3	-	-	-
	2.4 (8)	*	P2	P3	P3	-	-	-
	2.7 (9)	*	P3	P3	-	-	-	-
	3.0 (10)	*	P3	P3	-	-	-	-
2.1 (7)	1.8 (6)	*	P3	-	-	-	-	-
	2.1 (7)	*	P3	-	-	-	-	-
	2.4 (8)	*	P3	-	-	-	-	-
	2.7 (9)	*	P3	-	-	-	-	-
	3.0 (10)	*	P3	-	-	-	-	-
2.4 (8)	1.8 (6)	*	P2	P3	P3	-	-	-
	2.1 (7)	*	P3	P3	-	-	-	-
	2.4 (8)	*	P3	P3	-	-	-	-
	2.7 (9)	*	P3	-	-	-	-	-
	3.0 (10)	*	P3	-	-	-	-	-



SIGN ELEVATION

END VIEW

SIGN POST SELECTION NOTES:

- DETERMINE VALUES OF "W", "H", AND "L_B" AS INDICATED IN THE SIGN ELEVATION.
 - W = MAXIMUM WIDTH OF SIGN.
 - H = MAXIMUM HEIGHT OF SIGN.
 - L_B = MAXIMUM DISTANCE BETWEEN TOP OF A FOOTING AND BOTTOM OF SIGN.
- FOR SELECTION OF POSTS, ENTER TABLES WITH VALUES OF "W", "H" AND "L_B".
- FOR A SIGN SIZE BETWEEN THOSE VALUES OF "W", "H" AND "L_B" IN THE TABLE, USE NEXT HIGHEST m (FT) VALUE.
- USE THE LONGEST POST TO SELECT ALL POST SIZES.

NOTES:

- MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, UNLESS NOTED OTHERWISE.
- POST #1 IS ALWAYS ADJACENT TO ROADWAY, WHETHER SIGN IS LOCATED ON LEFT OR RIGHT.
- AT LOCATIONS WITH UNMOUNTABLE CURB, GUIDE RAIL OR BARRIER, PLACE THE NEAR EDGE OF THE SIGN AT LEAST 0.6 m (2') BEHIND THE CURB FACE, GUIDE RAIL OR BARRIER. AT LOCATIONS WITH GUIDE RAIL OR BARRIER, IT IS DESIRABLE TO PLACE POST #1 BEYOND THE DEFLECTION DISTANCE OF THE GUIDE RAIL OR BARRIER. PRIOR TO FABRICATION, DETERMINE ACTUAL LATERAL PLACEMENT IN THE FIELD WITH THE APPROVAL OF THE ENGINEER.
- BUSINESS OR URBAN AREAS
 - A. IN BUSINESS, COMMERCIAL OR RESIDENTIAL DISTRICTS, OR WHERE PARKING AND/OR PEDESTRIAN MOVEMENTS ARE LIKELY, OR WHERE THE SIGN MAY BLOCK VISIBILITY, THE BOTTOM OF ALL SIGNS (INCLUDING AUXILIARY SIGNS) SHALL BE A MINIMUM OF 2.1 m (7') ABOVE GROUND AND THE NEAR PAVEMENT EDGE.
 - RURAL AREAS
 - B. CONVENTIONAL HIGHWAYS. ALTHOUGH 2.1 m (7') MINIMUM SIGN HEIGHT CLEARANCE IS RECOMMENDED, IN RURAL DISTRICTS WHERE THE CONDITIONS LISTED IN NOTE 4A ARE NOT LIKELY, SIGNS MAY BE MOUNTED AT A MINIMUM CLEARANCE HEIGHT OF 1.5 m (5'). IF A SUPPLEMENTAL SIGN IS INSTALLED BELOW THE MAIN SIGN, THE CLEARANCE HEIGHT OF THE SUPPLEMENTAL SIGN MAY BE 1.2 m (4').
 - C. FREEWAY AND EXPRESSWAYS. SIGNS SHALL HAVE A MINIMUM CLEARANCE HEIGHT OF 2.1 m (7'). HOWEVER, IF A SUPPLEMENTAL SIGN IS INSTALLED BELOW THE MAIN SIGN, THE SUPPLEMENTAL SIGN MAY HAVE A CLEARANCE HEIGHT OF 1.8 m (6'), PROVIDED THAT A 2.1 m (7') CLEARANCE HEIGHT IS MAINTAINED FOR THE MAIN SIGN.
- LOCATE SIGNS TO AVOID PLACING SUPPORTS IN DRAINAGE DITCHES.
- SEE SHEET 2 FOR TWO-POST INSTALLATION.
- SEE SHEET 3 FOR THREE-POST INSTALLATION.
- SEE SHEET 4 FOR SECTIONS AND ERECTION DETAILS.
- SEE SHEET 5 FOR TEMPORARY DIRECT BURIAL TWO-POST INSTALLATION.
- FOR DETAIL OF SIGN PANELS AND ATTACHMENT HARDWARE, SEE TRAFFIC STANDARD TC-8701E OR TC-8701S.
- TWIST-IN TOGGLE STRAPS MAY BE USED ON FLAT SHEET ALUMINUM SIGNS WITH STIFFENERS IN ACCORDANCE WITH TC-8701S AND PUB. 408.
- 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.

LEGEND:

- P1 = 89x140 (4"x6")
- P2 = 140x140 (6"x6")
- P3 = 140x184 (6"x8")
- * USE TWO POSTS (SEE SHEET 2)

POST SELECTION EXAMPLE

FOR A SIGN WHERE
 W = 0.6 m (2')
 H = 0.610 m (2')
 L_B = 3.3 m (11')

ONE P1 = 89x140 (4"x6") WOOD POST IS REQUIRED.

METRIC UNITS		ENGLISH UNITS	
H (m)	SPACES	H (FT)	SPACES
0.610	1 AT 160.0 mm	2	1 AT 6"
0.915	2 AT 232.5 mm	3	2 AT 9"
1.220	2 AT 385.0 mm	4	2 AT 15"
1.525	3 AT 358.3 mm	5	3 AT 14"
1.830	3 AT 460.0 mm	6	3 AT 18"
2.135	4 AT 421.3 mm	7	4 AT 16.5"
2.440	6 AT 331.6 mm	8	6 AT 13"

TABLE FOR HOLE SPACING

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

POST-MOUNTED SIGNS, TYPE E

WOOD POSTS
SELECTION TABLES
ERECTION DETAILS

RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>M. Latel</i> CHIEF HIGHWAY ENGINEER	SHT. 1 OF 5 TC-8702E
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POST SELECTION TABLE - TWO POSTS						
W m (FT)	L _B m (FT)	HEIGHT "H" IN m (FT)				
		0.610 (2)	0.915 (3)	1.220 (4)	1.525 (5)	1.830 (6)
1.8 (6)	1.8 (6)	P1	P1	P1	P1	-
	2.1 (7)	P1	P1	P1	-	-
	2.4 (8)	P1	P1	P1	-	-
	2.7 (9)	P1	P1	-	-	-
	3.0 (10)	P1	P1	-	-	-
	3.3 (11)	P1	-	-	-	-
	3.6 (12)	P1	-	-	-	-
	3.9 (13)	P1	-	-	-	-
	4.2 (14)	-	-	-	-	-
4.5 (15)	-	-	-	-	-	
4.8 (16)	-	-	-	-	-	
2.1 (7)	1.8 (6)	P1	P1	P1	-	-
	2.1 (7)	P1	P1	P1	-	-
	2.4 (8)	P1	P1	-	-	-
	2.7 (9)	P1	P1	-	-	-
	3.0 (10)	P1	-	-	-	-
	3.3 (11)	P1	-	-	-	-
	3.6 (12)	P1	-	-	-	-
	3.9 (13)	-	-	-	-	-
	4.2 (14)	-	-	-	-	-
4.5 (15)	-	-	-	-	-	
4.8 (16)	-	-	-	-	-	
2.4 (8)	1.8 (6)	P1	P1	P1	-	-
	2.1 (7)	P1	P1	-	-	-
	2.4 (8)	P1	P1	-	-	-
	2.7 (9)	P1	-	-	-	-
	3.0 (10)	P1	-	-	-	-
	3.3 (11)	P1	-	-	-	-
	3.6 (12)	-	-	-	-	-
	3.9 (13)	-	-	-	-	-
	4.2 (14)	-	-	-	-	-
4.5 (15)	-	-	-	-	-	
4.8 (16)	-	-	-	-	-	
2.7 (9)	1.8 (6)	P1	P1	P2 *	P3 *	P3 *
	2.1 (7)	P1	P1	P2 *	P3 *	P3 *
	2.4 (8)	P1	P2 *	P3 *	P3 *	P3 *
	2.7 (9)	P1	P2 *	P3 *	P3 *	P3 *
	3.0 (10)	P1	P2 *	P3 *	P3 *	-
	3.3 (11)	P1	P3 *	P3 *	P3 *	-
	3.6 (12)	P2 *	P3 *	P3 *	-	-
	3.9 (13)	P2 *	P3 *	P3 *	-	-
	4.2 (14)	P3 *	P3 *	-	-	-
4.5 (15)	P3 *	P3 *	-	-	-	
4.8 (16)	P3 *	-	-	-	-	
3.0 (10)	1.8 (6)	P1	P1	P2 *	P3 *	P3 *
	2.1 (7)	P1	P1	P3 *	P3 *	P3 *
	2.4 (8)	P1	P2 *	P3 *	P3 *	P3 *
	2.7 (9)	P1	P2 *	P3 *	P3 *	-
	3.0 (10)	P1	P3 *	P3 *	P3 *	-
	3.3 (11)	P2 *	P3 *	P3 *	-	-
	3.6 (12)	P2 *	P3 *	P3 *	-	-
	3.9 (13)	P3 *	P3 *	-	-	-
	4.2 (14)	P3 *	P3 *	-	-	-
4.5 (15)	P3 *	-	-	-	-	
4.8 (16)	P3 *	-	-	-	-	

* SEE NOTE 1.

LEGEND:

P1 = 89x140 (4"x6")
P2 = 140x140 (6"x6")
P3 = 140x184 (6"x8")

POST SELECTION EXAMPLE

FOR A SIGN WHERE

W = 1.8 m (6')
H = 0.610 m (2')
L_B = 3.9 m (13')

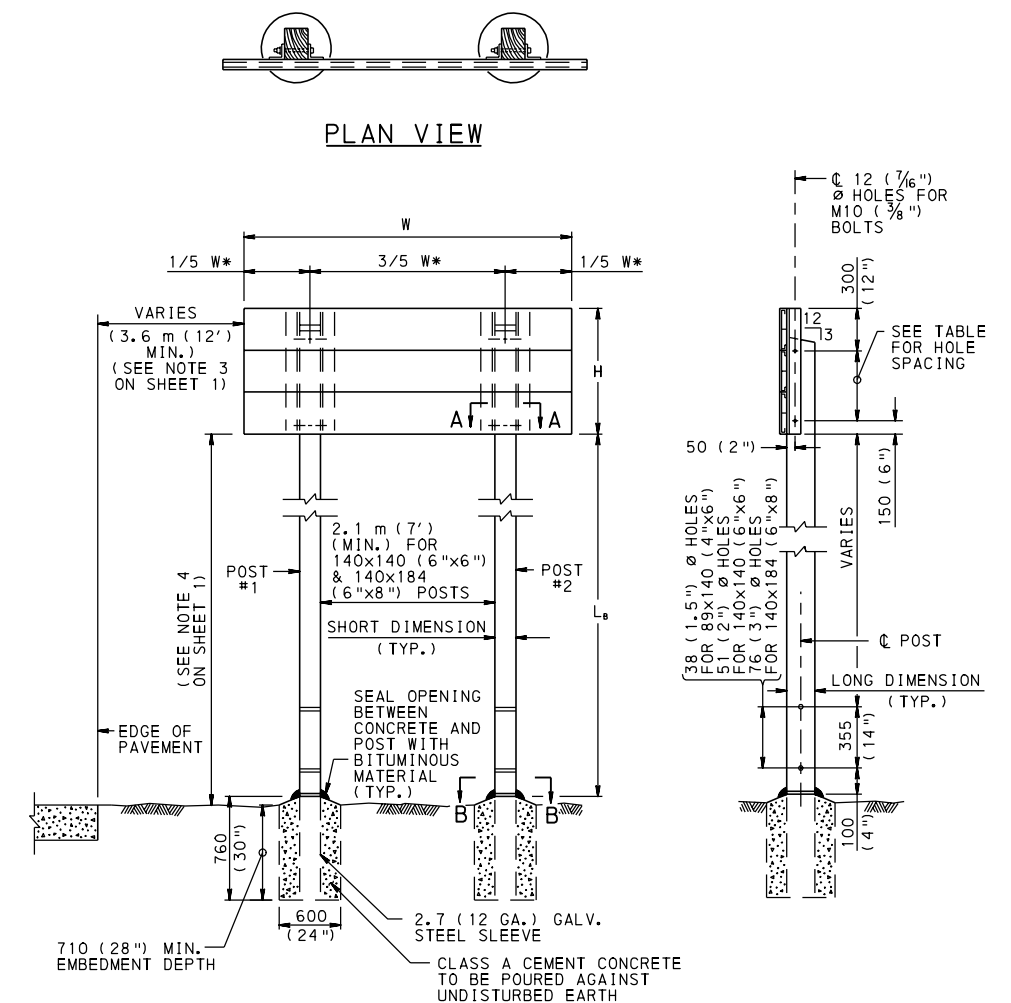
TWO P1 = 89x140 (4"x6") WOOD POSTS ARE REQUIRED.

POST SELECTION TABLE - TWO POSTS						
W m (FT)	L _B m (FT)	HEIGHT "H" IN m (FT)				
		0.610 (2)	0.915 (3)	1.220 (4)	1.525 (5)	1.830 (6)
3.3 (11)	1.8 (6)	P1	P1	P2 *	P3 *	P3 *
	2.1 (7)	P1	P2 *	P3 *	P3 *	P3 *
	2.4 (8)	P1	P2 *	P3 *	P3 *	-
	2.7 (9)	P1	P3 *	P3 *	P3 *	-
	3.0 (10)	P2 *	P3 *	P3 *	-	-
	3.3 (11)	P2 *	P3 *	P3 *	-	-
	3.6 (12)	P3 *	P3 *	-	-	-
	3.9 (13)	P3 *	P3 *	-	-	-
	4.2 (14)	P3 *	P3 *	-	-	-
4.5 (15)	P3 *	-	-	-	-	
4.8 (16)	P3 *	-	-	-	-	
3.6 (12)	1.8 (6)	P1	P2 *	P3 *	P3 *	P3 *
	2.1 (7)	P1	P2 *	P3 *	P3 *	-
	2.4 (8)	P1	P2 *	P3 *	P3 *	-
	2.7 (9)	P2 *	P3 *	P3 *	-	-
	3.0 (10)	P2 *	P3 *	P3 *	-	-
	3.3 (11)	P2 *	P3 *	-	-	-
	3.6 (12)	P3 *	P3 *	-	-	-
	3.9 (13)	P3 *	P3 *	-	-	-
	4.2 (14)	P3 *	-	-	-	-
4.5 (15)	P3 *	-	-	-	-	
4.8 (16)	P3 *	-	-	-	-	
3.9 (13)	1.8 (6)	P1	P2	P3	P3	-
	2.1 (7)	P1	P2	P3	P3	-
	2.4 (8)	P1	P3	P3	-	-
	2.7 (9)	P2	P3	P3	-	-
	3.0 (10)	P2	P3	P3	-	-
	3.3 (11)	P3	P3	-	-	-
	3.6 (12)	P3	P3	-	-	-
	3.9 (13)	P3	P3	-	-	-
	4.2 (14)	P3	-	-	-	-
4.5 (15)	P3	-	-	-	-	
4.8 (16)	P3	-	-	-	-	
4.2 (14)	1.8 (6)	P1	P2	P3	P3	-
	2.1 (7)	P1	P2	P3	P3	-
	2.4 (8)	P2	P3	P3	-	-
	2.7 (9)	P2	P3	P3	-	-
	3.0 (10)	P2	P3	-	-	-
	3.3 (11)	P3	P3	-	-	-
	3.6 (12)	P3	P3	-	-	-
	3.9 (13)	P3	-	-	-	-
	4.2 (14)	P3	-	-	-	-
4.5 (15)	P3	-	-	-	-	
4.8 (16)	P3	-	-	-	-	
4.5 (15)	1.8 (6)	P1	P2	P3	P3	-
	2.1 (7)	P1	P3	P3	-	-
	2.4 (8)	P2	P3	P3	-	-
	2.7 (9)	P2	P3	-	-	-
	3.0 (10)	P3	P3	-	-	-
	3.3 (11)	P3	P3	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-
	4.2 (14)	P3	-	-	-	-
4.5 (15)	P3	-	-	-	-	
4.8 (16)	-	-	-	-	-	

POST SELECTION TABLE - TWO POSTS						
W m (FT)	L _B m (FT)	HEIGHT "H" IN m (FT)				
		0.610 (2)	0.915 (3)	1.220 (4)	1.525 (5)	1.830 (6)
4.8 (16)	1.8 (6)	P1	P2	P3	P3	-
	2.1 (7)	P2	P3	P3	-	-
	2.4 (8)	P2	P3	P3	-	-
	2.7 (9)	P2	P3	-	-	-
	3.0 (10)	P3	P3	-	-	-
	3.3 (11)	P3	P3	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-
	4.2 (14)	P3	-	-	-	-
4.5 (15)	P3	-	-	-	-	
4.8 (16)	-	-	-	-	-	
5.1 (17)	1.8 (6)	P1	P3	P3	-	-
	2.1 (7)	P2	P3	P3	-	-
	2.4 (8)	P2	P3	-	-	-
	2.7 (9)	P3	P3	-	-	-
	3.0 (10)	P3	P3	-	-	-
	3.3 (11)	P3	-	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-
	4.2 (14)	P3	-	-	-	-
4.5 (15)	-	-	-	-	-	
4.8 (16)	-	-	-	-	-	
5.4 (18)	1.8 (6)	P1	P3	P3	-	-
	2.1 (7)	P2	P3	P3	-	-
	2.4 (8)	P2	P3	-	-	-
	2.7 (9)	P3	P3	-	-	-
	3.0 (10)	P3	P3	-	-	-
	3.3 (11)	P3	-	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-
	4.2 (14)	P3	-	-	-	-
4.5 (15)	-	-	-	-	-	
4.8 (16)	-	-	-	-	-	
5.7 (19)	1.8 (6)	P2	P3	P3	-	-
	2.1 (7)	P2	P3	P3	-	-
	2.4 (8)	P2	P3	-	-	-
	2.7 (9)	P3	P3	-	-	-
	3.0 (10)	P3	-	-	-	-
	3.3 (11)	P3	-	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-
	4.2 (14)	-	-	-	-	-
4.5 (15)	-	-	-	-	-	
4.8 (16)	-	-	-	-	-	
6.0 (20)	1.8 (6)	P2	P3	P3	-	-
	2.1 (7)	P2	P3	-	-	-
	2.4 (8)	P3	P3	-	-	-
	2.7 (9)	P3	P3	-	-	-
	3.0 (10)	P3	-	-	-	-
	3.3 (11)	P3	-	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-
	4.2 (14)	-	-	-	-	-
4.5 (15)	-	-	-	-	-	
4.8 (16)	-	-	-	-	-	

NOTES:

1. POSTS IN THE SELECTION TABLE WITH AN "*" MUST HAVE A MINIMUM CLEAR SPACING OF 2.1 m (7') BETWEEN POSTS BY INCREASING THE 3/5 W SPACING. THE REMAINING SIGN WIDTH "W" SHOULD BE EQUALLY DISTRIBUTED TO THE OVERHANGS.
2. SEE SHEET 1 FOR ADDITIONAL NOTES.
3. SEE SHEET 4 FOR SECTIONS AND ERECTION DETAILS.
4. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
5. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.



METRIC UNITS		ENGLISH UNITS	
ANGLE CONNECTION BOLT SPACING			
H (m)	SPACES	H (FT)	SPACES
0.610	1 AT 160.0 mm	2	1 AT 6"
0.915	2 AT 232.5 mm	3	2 AT 9"
1.220	2 AT 385.0 mm	4	2 AT 15"
1.525	3 AT 358.3 mm	5	3 AT 14"
1.830	3 AT 460.0 mm	6	3 AT 18"

TABLE FOR HOLE SPACING

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

POST-MOUNTED SIGNS, TYPE E

WOOD POSTS
SELECTION TABLES
ERECTION DETAILS

RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>M. Latel</i> CHIEF HIGHWAY ENGINEER
SHT. 2 OF 5	
TC-8702E	

POST SELECTION TABLE - THREE POSTS					
W m (FT)	L _B m (FT)	HEIGHT "H" IN m (FT)			
		0.610 (2)	0.915 (3)	1.220 (4)	1.525 (5)
6.6 (22)	1.8 (6)	P1	P2*	P3*	P3*
	2.1 (7)	P1	P3*	P3*	-
	2.4 (8)	P2*	P3*	P3*	-
	2.7 (9)	P2*	P3*	-	-
	3.0 (10)	P3*	P3*	-	-
	3.3 (11)	P3*	-	-	-
	3.6 (12)	P3*	-	-	-
	3.9 (13)	P3*	-	-	-
	4.2 (14)	P3*	-	-	-
	4.5 (15)	P3*	-	-	-
6.9 (23)	1.8 (6)	P1	P2	P3	P3
	2.1 (7)	P2	P3	P3	-
	2.4 (8)	P2	P3	P3	-
	2.7 (9)	P2	P3	-	-
	3.0 (10)	P3	P3	-	-
	3.3 (11)	P3	-	-	-
	3.6 (12)	P3	-	-	-
	3.9 (13)	P3	-	-	-
	4.2 (14)	P3	-	-	-
	4.5 (15)	-	-	-	-
7.2 (24)	1.8 (6)	P1	P2	P3	P3
	2.1 (7)	P2	P3	P3	-
	2.4 (8)	P2	P3	P3	-
	2.7 (9)	P3	P3	-	-
	3.0 (10)	P3	P3	-	-
	3.3 (11)	P3	-	-	-
	3.6 (12)	P3	-	-	-
	3.9 (13)	P3	-	-	-
	4.2 (14)	P3	-	-	-
	4.5 (15)	-	-	-	-
7.5 (25)	1.8 (6)	P1	P3	P3	-
	2.1 (7)	P2	P3	P3	-
	2.4 (8)	P2	P3	-	-
	2.7 (9)	P3	P3	-	-
	3.0 (10)	P3	P3	-	-
	3.3 (11)	P3	-	-	-
	3.6 (12)	P3	-	-	-
	3.9 (13)	P3	-	-	-
	4.2 (14)	P3	-	-	-
	4.5 (15)	-	-	-	-
7.8 (26)	1.8 (6)	P1	P3	P3	-
	2.1 (7)	P2	P3	P3	-
	2.4 (8)	P2	P3	-	-
	2.7 (9)	P3	P3	-	-
	3.0 (10)	P3	P3	-	-
	3.3 (11)	P3	-	-	-
	3.6 (12)	P3	-	-	-
	3.9 (13)	P3	-	-	-
	4.2 (14)	-	-	-	-
	4.5 (15)	-	-	-	-

* SEE NOTE 1.

LEGEND:

P1 = 89x140 (4"x6")
P2 = 140x140 (6"x6")
P3 = 140x184 (6"x8")

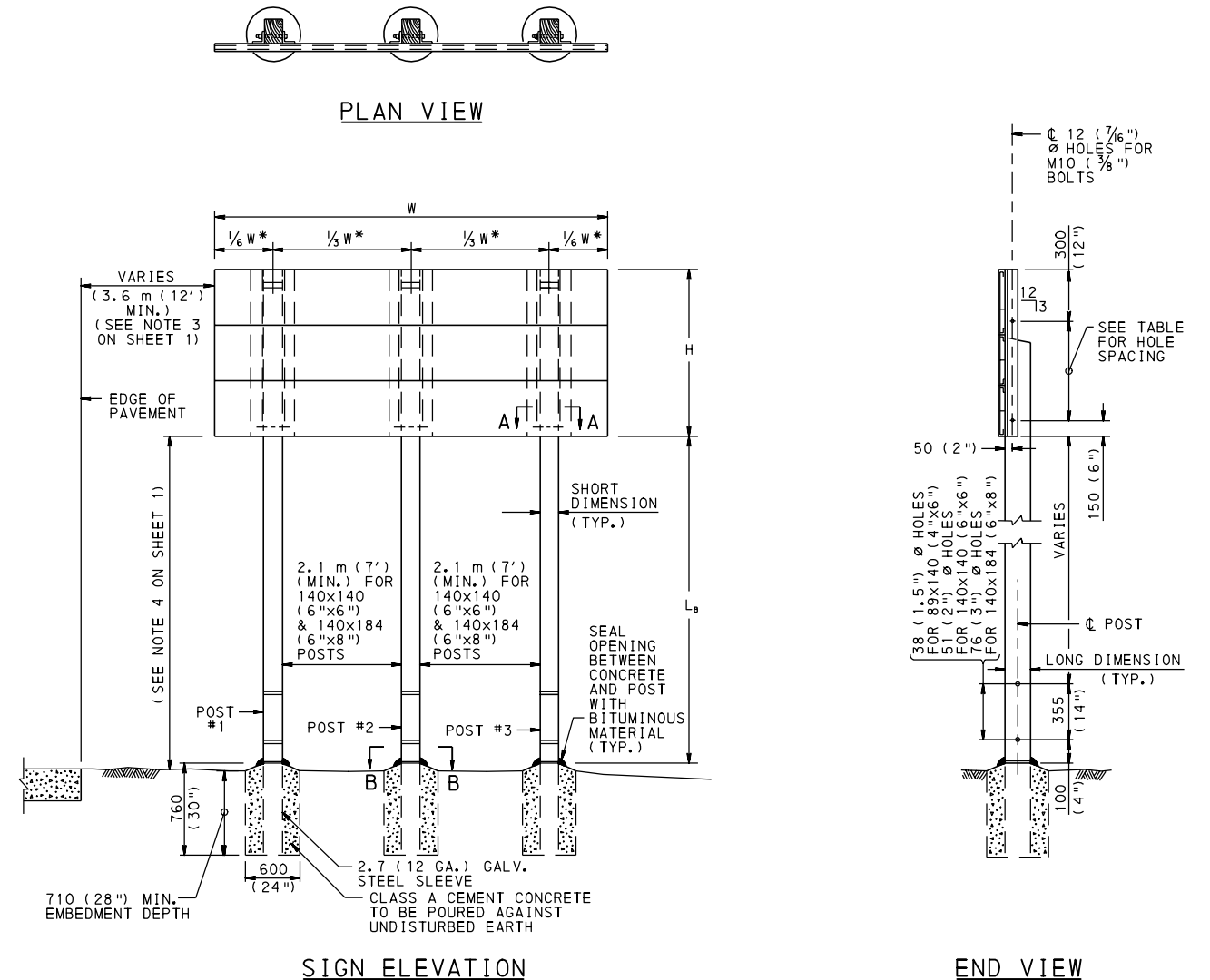
POST SELECTION TABLE - THREE POSTS					
W m (FT)	L _B m (FT)	HEIGHT "H" IN m (FT)			
		0.610 (2)	0.915 (3)	1.220 (4)	1.525 (5)
8.1 (27)	1.8 (6)	P2	P3	P3	-
	2.1 (7)	P2	P3	P3	-
	2.4 (8)	P2	P3	-	-
	2.7 (9)	P3	P3	-	-
	3.0 (10)	P3	-	-	-
	3.3 (11)	P3	-	-	-
	3.6 (12)	P3	-	-	-
	3.9 (13)	P3	-	-	-
	4.2 (14)	-	-	-	-
	4.5 (15)	-	-	-	-
8.4 (28)	1.8 (6)	P2	P3	P3	-
	2.1 (7)	P2	P3	P3	-
	2.4 (8)	P3	P3	-	-
	2.7 (9)	P3	P3	-	-
	3.0 (10)	P3	-	-	-
	3.3 (11)	P3	-	-	-
	3.6 (12)	P3	-	-	-
	3.9 (13)	P3	-	-	-
	4.2 (14)	-	-	-	-
	4.5 (15)	-	-	-	-
8.7 (29)	1.8 (6)	P2	P3	P3	-
	2.1 (7)	P2	P3	-	-
	2.4 (8)	P3	P3	-	-
	2.7 (9)	P3	P3	-	-
	3.0 (10)	P3	-	-	-
	3.3 (11)	P3	-	-	-
	3.6 (12)	P3	-	-	-
	3.9 (13)	-	-	-	-
	4.2 (14)	-	-	-	-
	4.5 (15)	-	-	-	-
9.0 (30)	1.8 (6)	P2	P3	P3	-
	2.1 (7)	P2	P3	-	-
	2.4 (8)	P3	P3	-	-
	2.7 (9)	P3	P3	-	-
	3.0 (10)	P3	-	-	-
	3.3 (11)	P3	-	-	-
	3.6 (12)	P3	-	-	-
	3.9 (13)	-	-	-	-
	4.2 (14)	-	-	-	-
	4.5 (15)	-	-	-	-

POST SELECTION EXAMPLE

FOR A SIGN WHERE

W = 6.6 m (22')
H = 0.610 m (2')
L_B = 4.5 m (15')

THREE P3 = 140x184 (6"x8") WOOD POSTS ARE REQUIRED.



METRIC UNITS		ENGLISH UNITS	
H (m)	SPACES	H (FT)	SPACES
0.610	1 AT 160.0 mm	2	1 AT 6"
0.915	2 AT 232.5 mm	3	2 AT 9"
1.220	2 AT 385.0 mm	4	2 AT 15"
1.525	3 AT 358.3 mm	5	3 AT 14"

TABLE FOR HOLE SPACING

NOTES:

- POSTS IN THE SELECTION TABLE WITH AN "*" MUST HAVE A MINIMUM CLEAR SPACING OF 2.1 m (7') BETWEEN POSTS BY INCREASING THE 3/5 W SPACING. THE REMAINING SIGN WIDTH "W" SHOULD BE EQUALLY DISTRIBUTED TO THE OVERHANGS.
- SEE SHEET 1 FOR ADDITIONAL NOTES.
- SEE SHEET 4 FOR SECTIONS AND ERECTION DETAILS.
- 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.

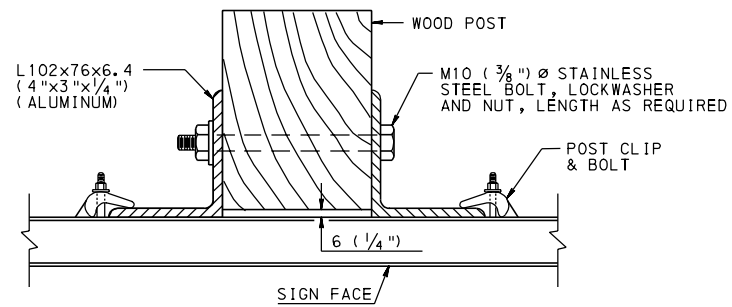
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

POST-MOUNTED SIGNS, TYPE E

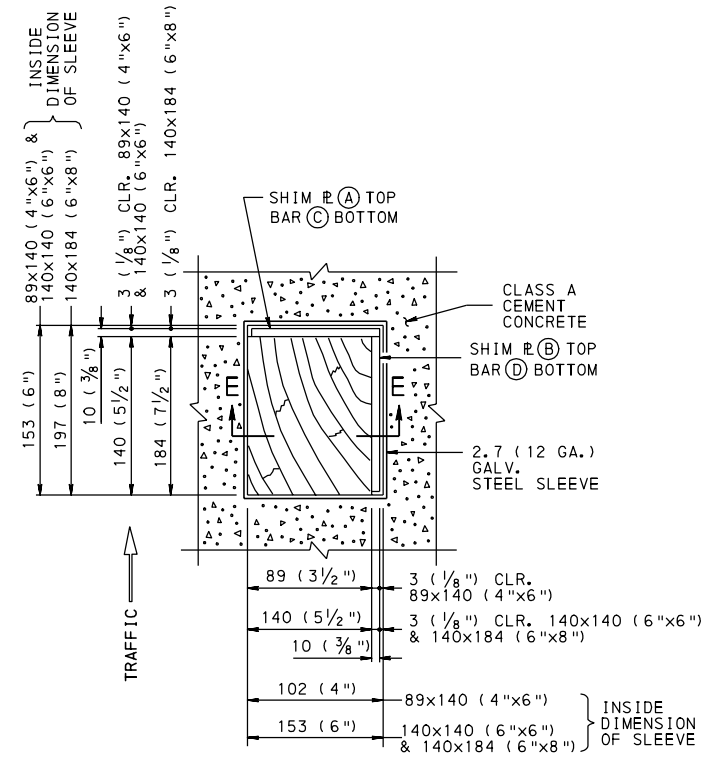
WOOD POSTS
SELECTION TABLES
ERECTION DETAILS

RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>M. G. Latel</i> CHIEF HIGHWAY ENGINEER
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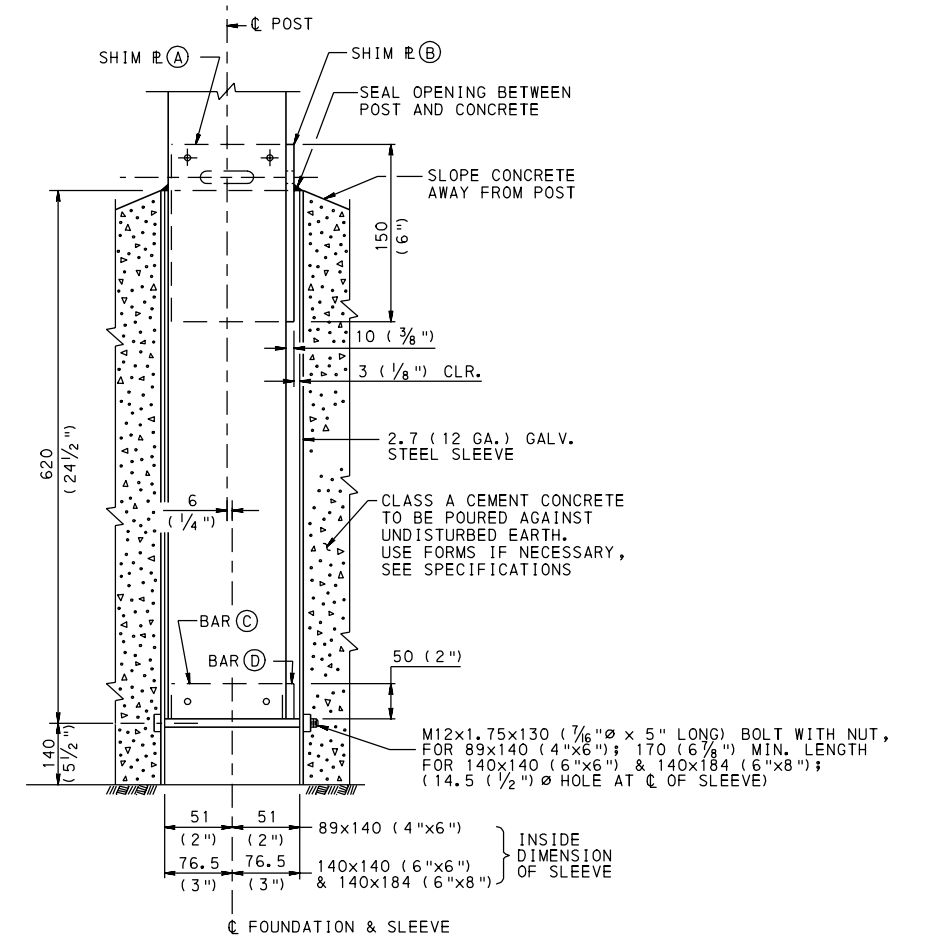
SHT. 3 OF 5
TC-8702E



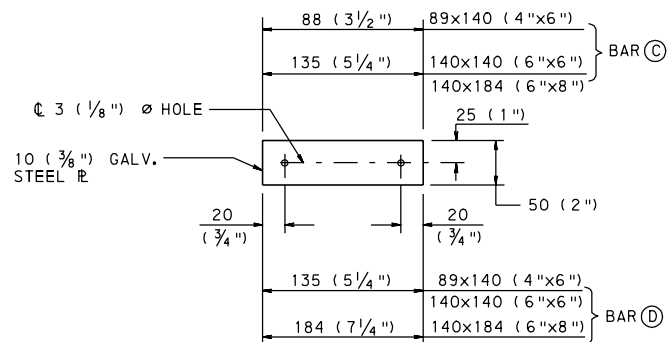
SECTION A-A



SECTION B-B

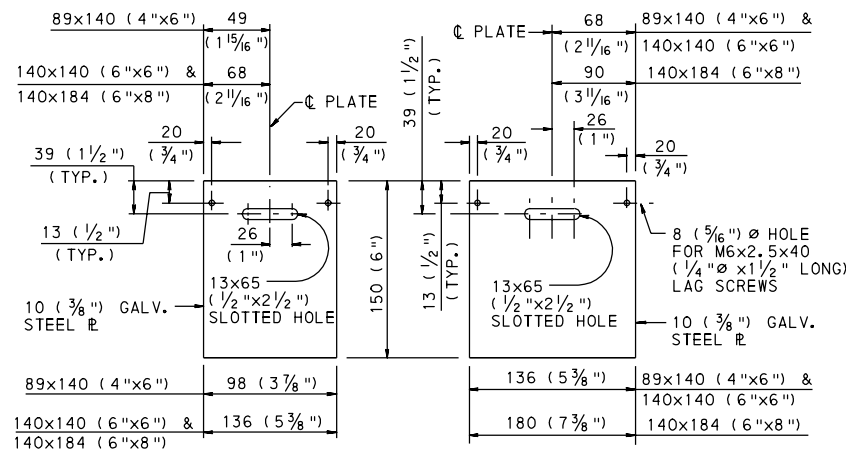


SECTION E-E



NOTE:
NAIL SHIM BARS TO POST TO HOLD BARS IN PLACE WHILE POST IS BEING PLACED.

SHIM BAR C
SHIM BAR D



SHIM PLATE A SHIM PLATE B

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.
3. STEEL USED FOR SLEEVES AND SHIMS SHALL HAVE A MINIMUM YIELD STRENGTH OF 36 KSI.
4. STAINLESS STEEL BOLT, LOCKWASHER AND NUT SHALL BE AISI TYPE 304 STEEL AND MEET ASTM A320.

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

POST-MOUNTED SIGNS,
TYPE E

WOOD POSTS
ERECTION DETAILS

RECOMMENDED MAY 25, 2007

Alan C. Rowe
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED MAY 25, 2007

m. G. Patel
CHIEF HIGHWAY ENGINEER

SHT. 4 OF 5

TC-8702E

POST SELECTION TABLE - TWO POSTS						
W m (FT)	L _B m (FT)	HEIGHT "H" IN m (FT)				
		0.610 (2)	0.915 (3)	1.220 (4)	1.525 (5)	1.830 (6)
1.8 (6)	1.8 (6)	P1	P1	P1	-	-
	2.1 (7)	P1	P1	-	-	-
	2.4 (8)	P1	P1	-	-	-
	2.7 (9)	P1	-	-	-	-
	3.0 (10)	P1	-	-	-	-
	3.3 (11)	P1	-	-	-	-
	3.6 (12)	P1	-	-	-	-
	3.9 (13)	P1	-	-	-	-
2.1 (7)	1.8 (6)	P1	P1	P1	-	-
	2.1 (7)	P1	P1	-	-	-
	2.4 (8)	P1	P1	-	-	-
	2.7 (9)	P1	-	-	-	-
	3.0 (10)	P1	-	-	-	-
	3.3 (11)	P1	-	-	-	-
	3.6 (12)	P1	-	-	-	-
	3.9 (13)	-	-	-	-	-
2.4 (8)	1.8 (6)	P1	P1	P1	-	-
	2.1 (7)	P1	P1	-	-	-
	2.4 (8)	P1	P1	-	-	-
	2.7 (9)	P1	-	-	-	-
	3.0 (10)	P1	-	-	-	-
	3.3 (11)	P1	-	-	-	-
	3.6 (12)	-	-	-	-	-
	3.9 (13)	-	-	-	-	-
2.7 (9)	1.8 (6)	P1	P1	P2 *	P3 *	P3 *
	2.1 (7)	P1	P1	P2 *	P3 *	P3 *
	2.4 (8)	P1	P2 *	P3 *	P3 *	P3 *
	2.7 (9)	P1	P2 *	P3 *	P3 *	P3 *
	3.0 (10)	P1	P2 *	P3 *	P3 *	-
	3.3 (11)	P1	P3 *	P3 *	-	-
	3.6 (12)	P2 *	P3 *	P3 *	-	-
	3.9 (13)	P2 *	P3 *	-	-	-
3.0 (10)	1.8 (6)	P1	P1	P2 *	P3 *	P3 *
	2.1 (7)	P1	P1	P2 *	P3 *	P3 *
	2.4 (8)	P1	P2 *	P3 *	P3 *	P3 *
	2.7 (9)	P1	P2 *	P3 *	P3 *	-
	3.0 (10)	P1	P3 *	P3 *	P3 *	-
	3.3 (11)	P2 *	P3 *	P3 *	-	-
	3.6 (12)	P2 *	P3 *	P3 *	-	-
	3.9 (13)	P3 *	P3 *	-	-	-
3.3 (11)	1.8 (6)	P1	P1	P2 *	P3 *	P3 *
	2.1 (7)	P1	P2 *	P3 *	P3 *	P3 *
	2.4 (8)	P1	P2 *	P3 *	P3 *	-
	2.7 (9)	P1	P3 *	P3 *	P3 *	-
	3.0 (10)	P2 *	P3 *	P3 *	-	-
	3.3 (11)	P2 *	P3 *	P3 *	-	-
	3.6 (12)	P3 *	P3 *	-	-	-
	3.9 (13)	P3 *	P3 *	-	-	-
3.6 (12)	1.8 (6)	P1	P2 *	P3 *	P3 *	P3 *
	2.1 (7)	P1	P2 *	P3 *	P3 *	-
	2.4 (8)	P1	P2 *	P3 *	P3 *	-
	2.7 (9)	P2 *	P3 *	P3 *	-	-
	3.0 (10)	P2 *	P3 *	P3 *	-	-
	3.3 (11)	P2 *	P3 *	-	-	-
	3.6 (12)	P3 *	P3 *	-	-	-
	3.9 (13)	P3 *	P3 *	-	-	-
3.9 (13)	1.8 (6)	P1	P2	P3	P3	-
	2.1 (7)	P1	P2	P3	P3	-
	2.4 (8)	P1	P3	P3	-	-
	2.7 (9)	P2	P3	P3	-	-
	3.0 (10)	P2	P3	P3	-	-
	3.3 (11)	P3	P3	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-

POST SELECTION TABLE - TWO POSTS						
W m (FT)	L _B m (FT)	HEIGHT "H" IN m (FT)				
		0.610 (2)	0.915 (3)	1.220 (4)	1.525 (5)	1.830 (6)
4.2 (14)	1.8 (6)	P1	P2	P3	P3	-
	2.1 (7)	P1	P2	P3	P3	-
	2.4 (8)	P2	P3	P3	-	-
	2.7 (9)	P2	P3	P3	-	-
	3.0 (10)	P2	P3	-	-	-
	3.3 (11)	P3	P3	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-
4.5 (15)	1.8 (6)	P1	P2	P3	P3	-
	2.1 (7)	P1	P3	P3	-	-
	2.4 (8)	P2	P3	P3	-	-
	2.7 (9)	P2	P3	-	-	-
	3.0 (10)	P3	P3	-	-	-
	3.3 (11)	P3	-	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-
4.8 (16)	1.8 (6)	P1	P2	P3	P3	-
	2.1 (7)	P2	P3	P3	-	-
	2.4 (8)	P2	P3	P3	-	-
	2.7 (9)	P2	P3	-	-	-
	3.0 (10)	P3	P3	-	-	-
	3.3 (11)	P3	-	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-
5.1 (17)	1.8 (6)	P1	P3	P3	-	-
	2.1 (7)	P1	P3	P3	-	-
	2.4 (8)	P2	P3	-	-	-
	2.7 (9)	P3	P3	-	-	-
	3.0 (10)	P3	P3	-	-	-
	3.3 (11)	P3	-	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-
5.4 (18)	1.8 (6)	P1	P3	P3	-	-
	2.1 (7)	P2	P3	P3	-	-
	2.4 (8)	P2	P3	-	-	-
	2.7 (9)	P3	P3	-	-	-
	3.0 (10)	P3	P3	-	-	-
	3.3 (11)	P3	-	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-
5.7 (19)	1.8 (6)	P2	P3	P3	-	-
	2.1 (7)	P2	P3	P3	-	-
	2.4 (8)	P3	P3	-	-	-
	2.7 (9)	P3	P3	-	-	-
	3.0 (10)	P3	-	-	-	-
	3.3 (11)	P3	-	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-
6.0 (20)	1.8 (6)	P2	P3	P3	-	-
	2.1 (7)	P2	P3	-	-	-
	2.4 (8)	P3	P3	-	-	-
	2.7 (9)	P3	P3	-	-	-
	3.0 (10)	P3	-	-	-	-
	3.3 (11)	P3	-	-	-	-
	3.6 (12)	P3	-	-	-	-
	3.9 (13)	P3	-	-	-	-

* SEE NOTE 1.

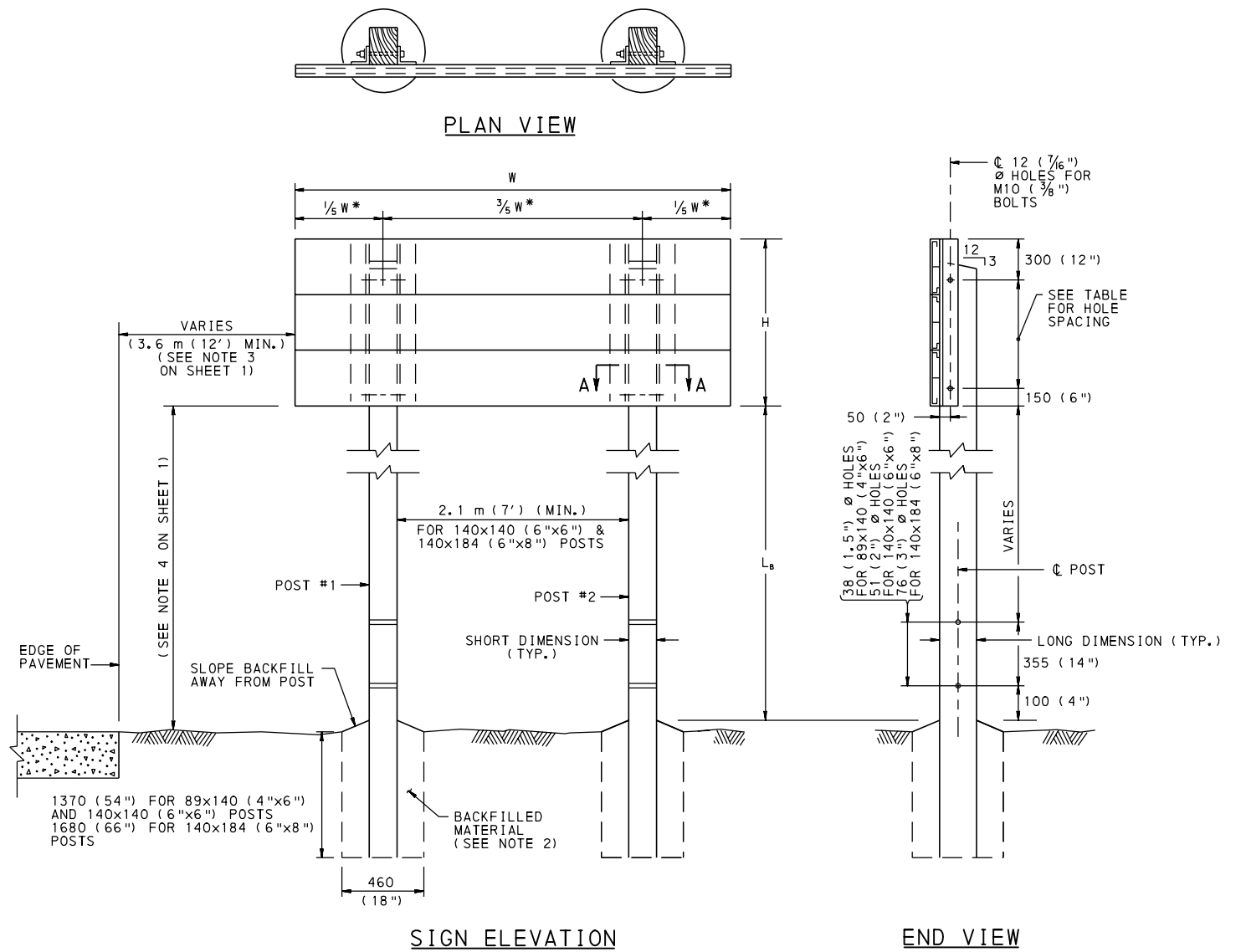
POST SELECTION EXAMPLE

FOR A SIGN WHERE
W = 1.8 m (6')
H = 0.610 m (2')
L_B = 3.9 m (13')

LEGEND:

P1 = 89x140 (4"x6")
P2 = 140x140 (6"x6")
P3 = 140x184 (6"x8")

TWO P1 = 89x140 (4"x6") WOOD POSTS ARE REQUIRED.



METRIC UNITS		ENGLISH UNITS	
ANGLE CONNECTION BOLT SPACING		ANGLE CONNECTION BOLT SPACING	
H (m)	SPACES	H (FT)	SPACES
0.610	1 AT 160.0 mm	2	1 AT 6"
0.915	2 AT 232.5 mm	3	2 AT 9"
1.220	2 AT 385.0 mm	4	2 AT 15"
1.525	3 AT 358.3 mm	5	3 AT 14"
1.830	3 AT 460.0 mm	6	3 AT 18"

TABLE FOR HOLE SPACING

NOTES:

- POSTS IN THE SELECTION TABLE WITH AN "*" MUST HAVE A MINIMUM CLEAR SPACING OF 2.1 m (7') BETWEEN POSTS BY INCREASING THE 3/5 W SPACING. THE REMAINING SIGN WIDTH "W" SHOULD BE EQUALLY DISTRIBUTED TO THE OVERHANGS.
- DRILL OR EXCAVATE A HOLE OF SUITABLE DIMENSIONS AND DEPTH TO PLACE THE POST AT GRADE. SET THE POST AND BACKFILL TO THE GROUND LINE USING ACCEPTABLE EMBANKMENT MATERIAL, THOROUGHLY COMPACTED IN 150 mm (6") LAYERS.
- SEE SHEET 1 FOR ADDITIONAL NOTES.
- SEE SHEET 4 FOR SECTIONS AND ERECTION DETAILS.
- 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.

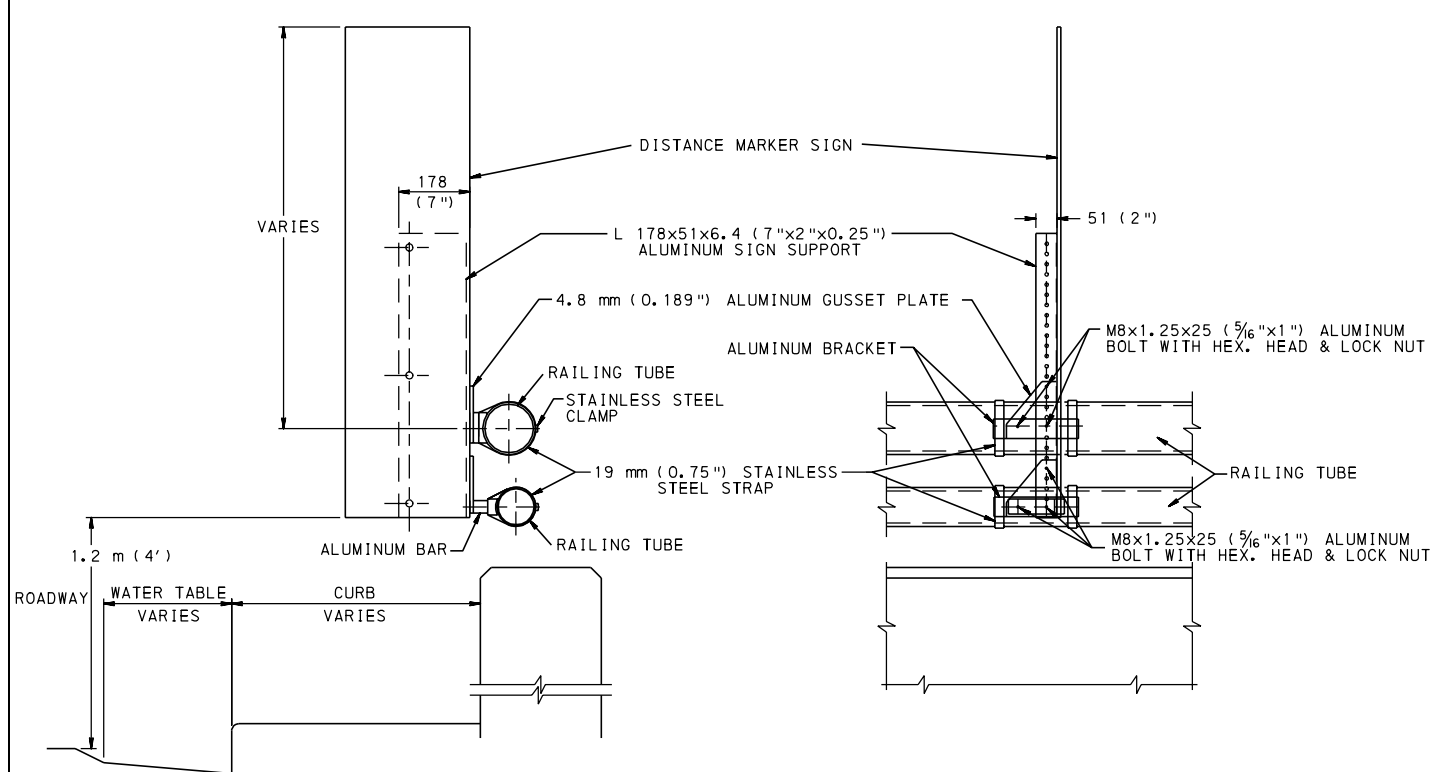
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POST-MOUNTED SIGNS, TYPE E
WOOD POSTS - DIRECT BURIAL
ERECTION DETAILS
TEMPORARY USE ONLY

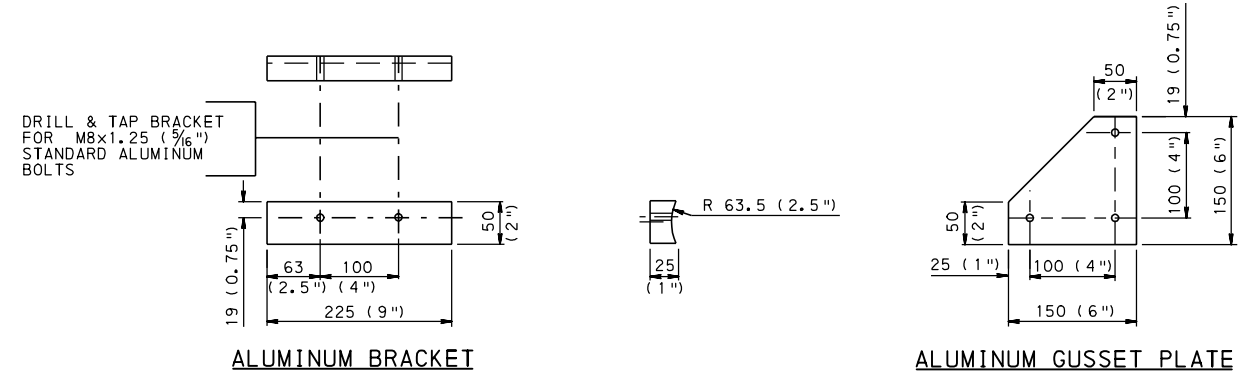
RECOMMENDED MAY 25, 2007
Alan C. Rowe
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED MAY 25, 2007
m. Glatel
CHIEF HIGHWAY ENGINEER

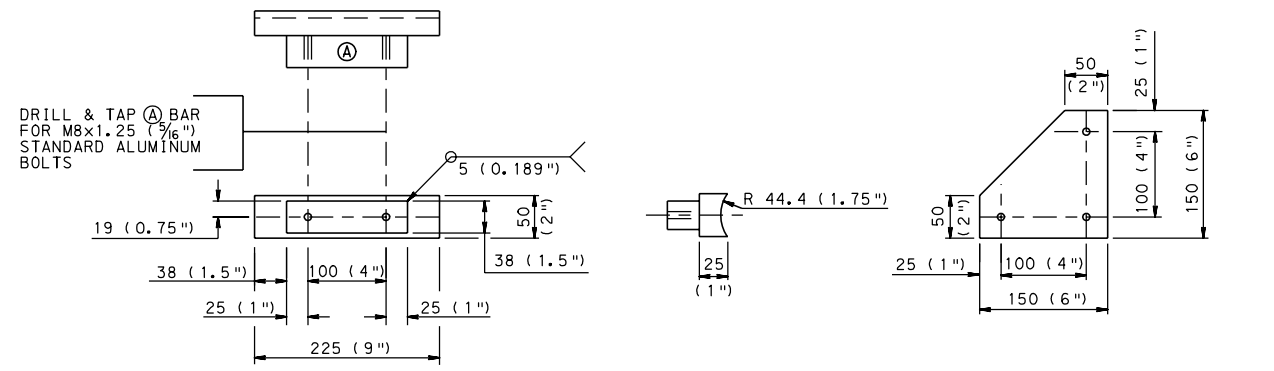
SHT. 5 OF 5
TC-8702E



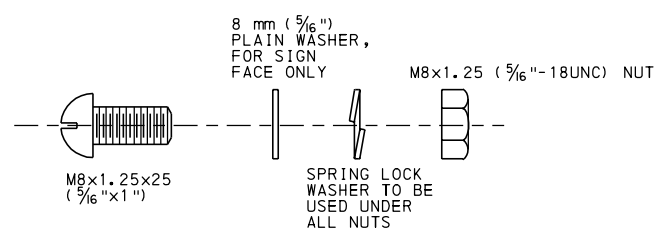
ATTACHMENT OF DISTANCE MARKER ASSEMBLY TO DOUBLE TUBE RAILING



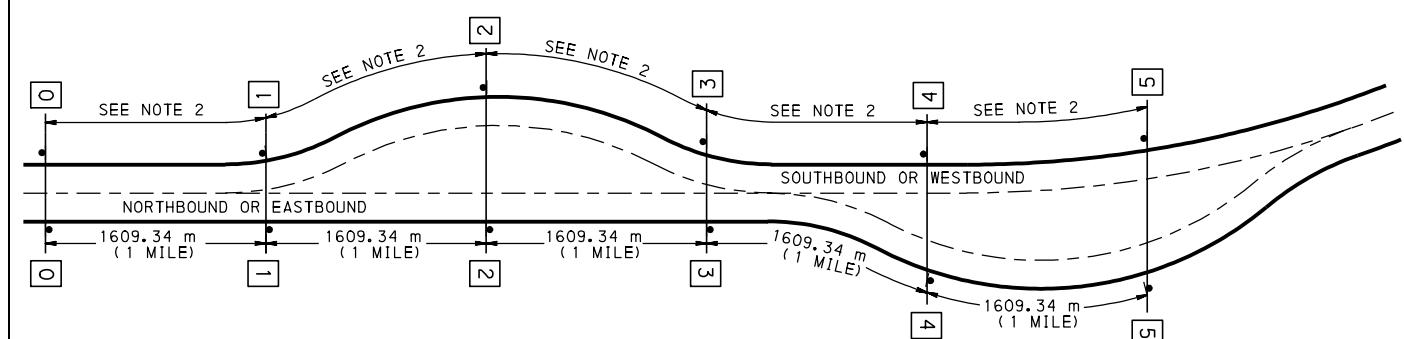
DETAILS FOR TOP RAIL



DETAILS FOR BOTTOM RAIL



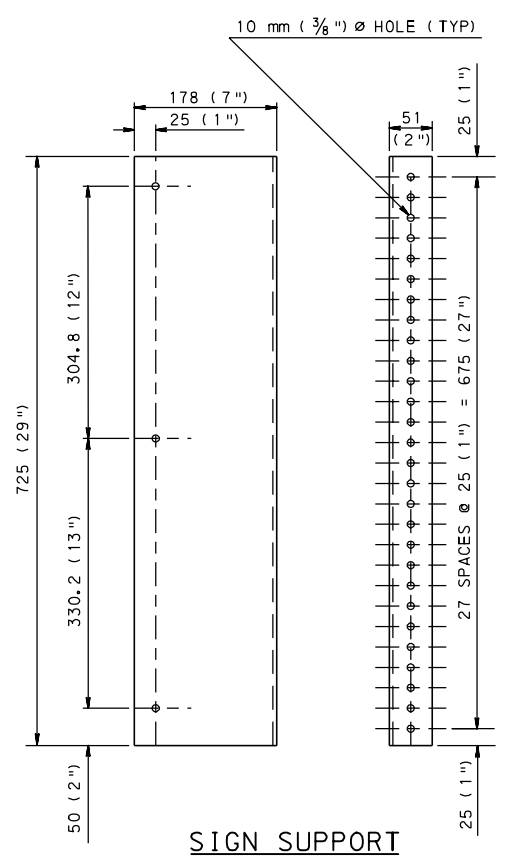
BUTTON HEAD BOLT FOR CONNECTING SIGN TO ANGLE



NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE ENGINEER TO ACCURATELY ESTABLISH THE LOCATION OF EACH DISTANCE MARKER.
2. MEASUREMENTS TO ACCURATELY ESTABLISH THE LOCATION OF DISTANCE MARKERS IN INCREMENTS OF 1609.34 m (1 MILE) WILL BE TAKEN ALONG THE OUTSIDE EDGE OF THE PAVEMENT OF NORTHBOUND OR EASTBOUND ROADWAYS ONLY. DISTANCE MARKERS ON SOUTHBOUND OR WESTBOUND ROADWAYS SHALL BE ERECTED OPPOSITE TO THE DISTANCE MARKER LOCATIONS ESTABLISHED ON THE NORTHBOUND OR EASTBOUND ROADWAYS.

TYPICAL LOCATION OF DISTANCE MARKERS



SIGN SUPPORT

NOTES:

1. ALL MATERIAL SHALL BE ALUMINUM ALLOY, UNLESS OTHERWISE NOTED, AND SHALL CONFORM TO THE APPROPRIATE ASTM DESIGNATION AND TEMPER AS SPECIFIED IN PUBLICATION 408.
2. ALL STAINLESS STEEL STRAPS AND CLAMPS SHALL CONFORM TO ASTM A167.
3. ALL MATERIALS AND WORKSMANSHIP SHALL BE IN ACCORDANCE WITH PUBLICATION 408.
4. DISTANCE MARKERS WHICH ARE NOT ON BRIDGES SHALL BE INSTALLED ON TYPE B SIGN POSTS AT A 1.2 m (4') HEIGHT.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS SHOWN IN PARENTHESIS ().
6. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

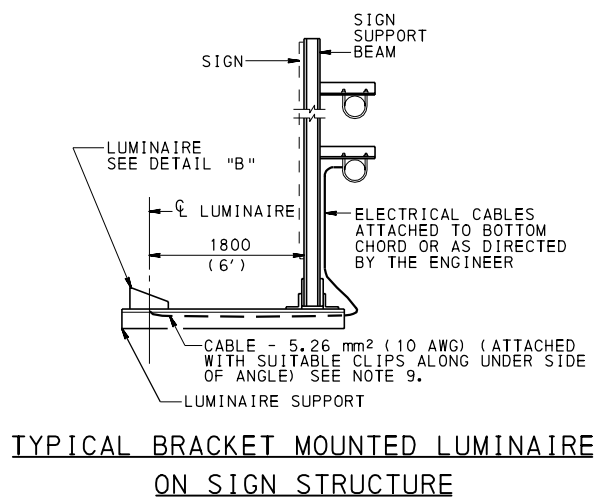
COMMONWEALTH OF PENNSYLVANIA
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DISTANCE MARKERS

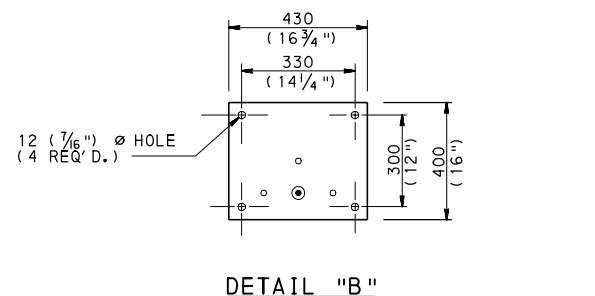
RECOMMENDED MAY 25, 2007
Alan C. Rowe
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

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

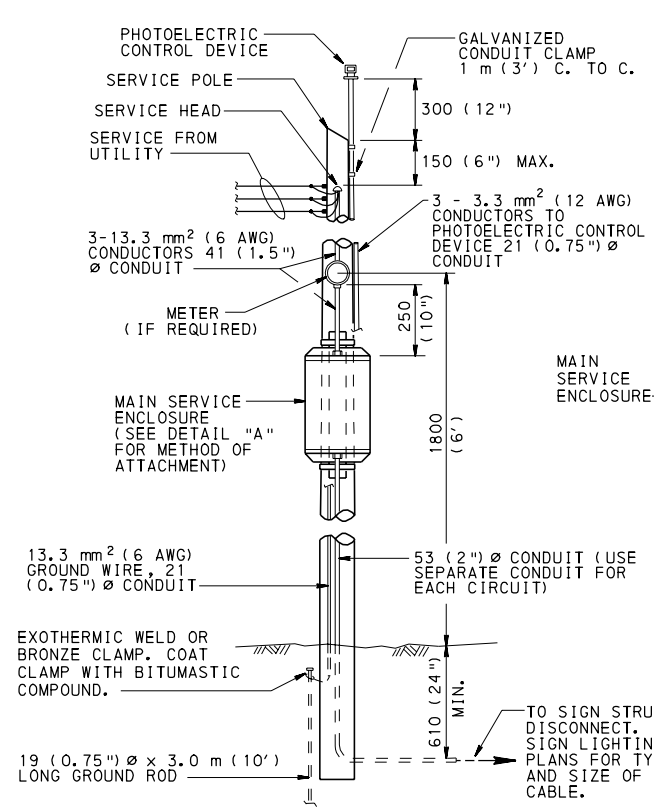
SHT. 1 OF 1
TC-8710



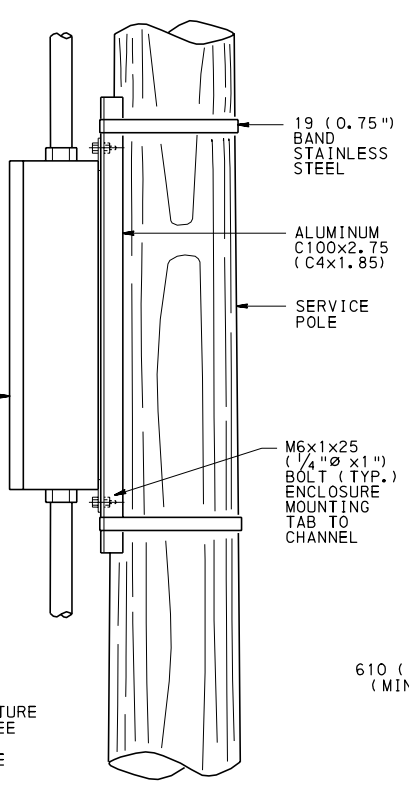
TYPICAL BRACKET MOUNTED LUMINAIRE ON SIGN STRUCTURE



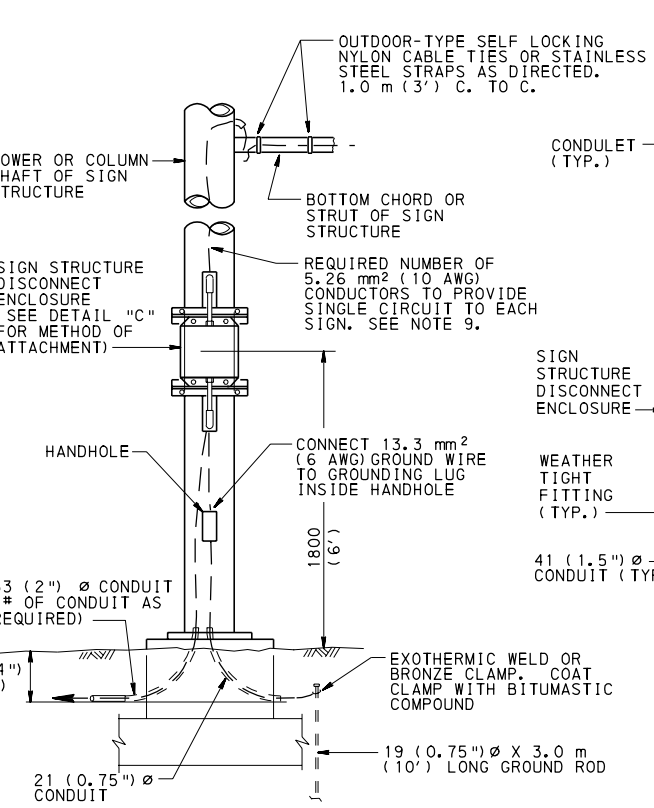
DETAIL "B" LUMINAIRE MOUNTING BRACKET



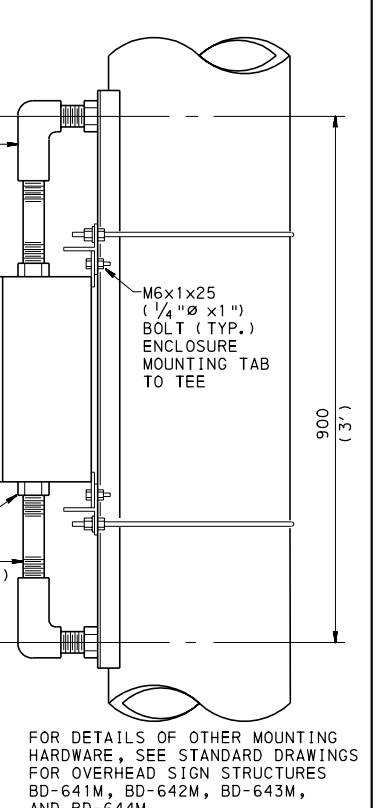
MAIN SERVICE ON SERVICE POLE



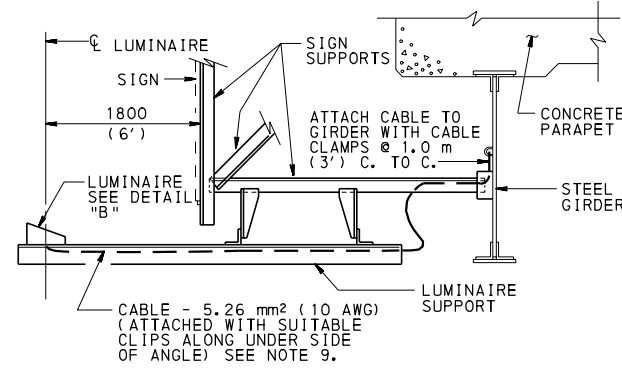
DETAIL "A"



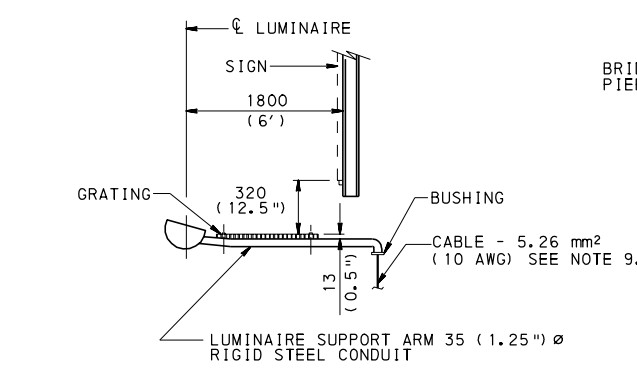
SIGN STRUCTURE DISCONNECT



DETAIL "C"

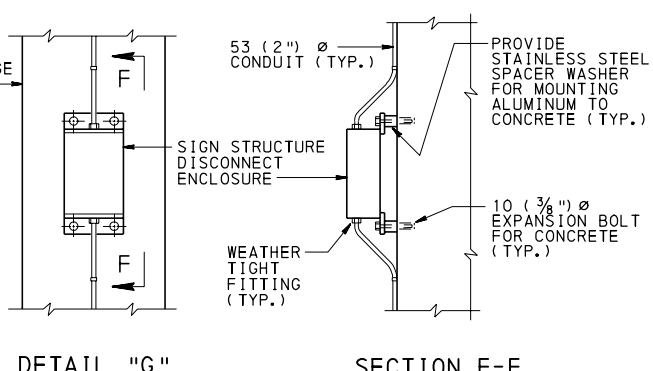


TYPICAL BRACKET MOUNTED LUMINAIRE ON OVERPASS BRIDGE, BRIDGE - MOUNTED SIGN

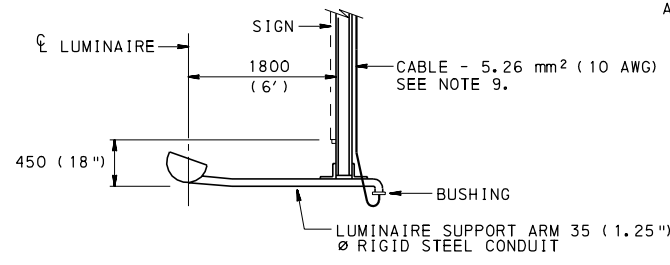


TYPICAL CONDUIT MOUNTED LUMINAIRE ON SIGN STRUCTURE WITH CATWALK*

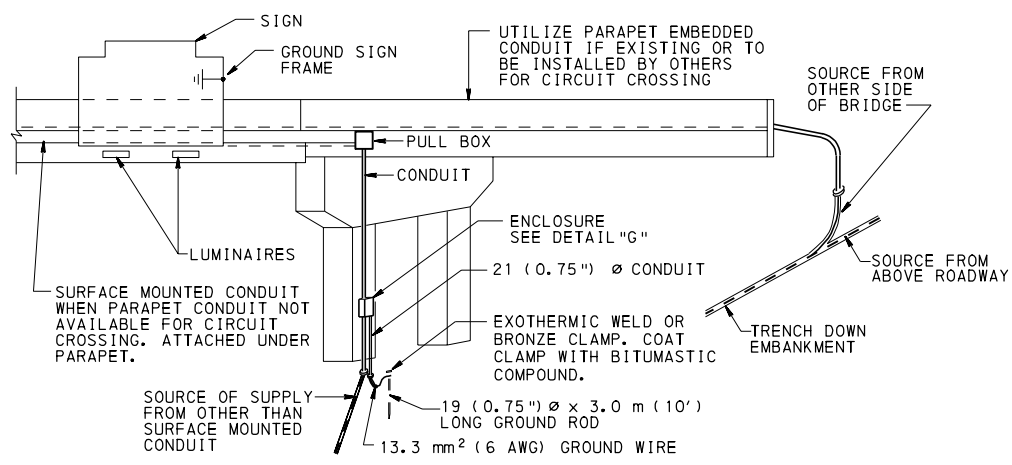
* NOTE:
LUMINAIRE MOUNTED ON CONDUIT NOT PERMITTED IF LUMINAIRE WEIGHT IS GREATER THAN 9 kg (20 lb). OTHERWISE MOUNT LUMINAIRE ON ANGLE SUPPORTS



DETAIL "G" SECTION F-F



TYPICAL CONDUIT MOUNTED LUMINAIRE ON SIGN STRUCTURE*



TYPICAL SERVICE FOR LUMINAIRE ON OVERPASS BRIDGE - MOUNTED SIGN

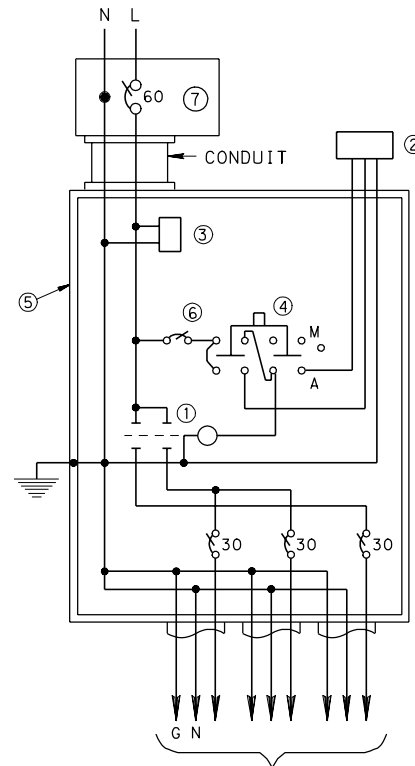
- NOTES:**
1. PROVIDE COPPER ELECTRIC CONDUCTORS. INCLUDE EQUIPMENT GROUNDING CONDUCTOR WITH ALL CIRCUITS. PROVIDE WITH SAME INSULATION AND SIZE AS CIRCUIT CONDUCTORS.
 2. ELECTRIC COMPANY SERVICE DROPS ARE MADE TO THE SERVICE POLE, UNLESS OTHERWISE SPECIFIED, MEETING THE ELECTRIC COMPANY REQUIREMENTS. WHEN SERVICE DROP IS TO SIGN STRUCTURE, THE SIGN STRUCTURE ENCLOSURE WILL CONTAIN ALL NECESSARY SERVICE AND BRANCH CIRCUIT EQUIPMENT.
 3. BOND THE EQUIPMENT GROUNDING CONDUCTOR TO THE GROUNDING LUG PROVIDED IN THE HANDHOLE OF THE SIGN STRUCTURE. DO NOT CONNECT N TO G EXCEPT AT SERVICE LOCATION.
 4. GROUND THE SIGN FRAME OF OVERPASS BRIDGE-MOUNTED SIGNS.
 5. SIGN STRUCTURE DISCONNECT MAY BE OMITTED WHEN THE MAIN SERVICE IS WITHIN 15 m (50') OF THE SIGN STRUCTURE. PROVIDE BRANCH CIRCUIT PROTECTION WITHIN THE MAIN SERVICE ENCLOSURE.
 6. MOUNT EACH REMOTE BALLAST ON THE SIGN SUPPORT STRUCTURE AND IDENTIFY THE SIGN AND LUMINAIRE SERVED. MOUNT OVER SHOULDER WHEN FEASIBLE.
 7. PROVIDE ALUMINUM, STAINLESS STEEL OR GALVANIZED STEEL HARDWARE, CONDUITS, BOLTS, ETC. ASSOCIATED WITH MOUNTING ENCLOSURE FOR MAIN SERVICE AND SIGN STRUCTURE DISCONNECT.
 8. FOR DETAILS OF LUMINAIRE SUPPORTS, SEE STANDARD DRAWINGS BD-641M, BD-642M, BD-643M AND BD-644M.
 9. PROVIDE 5.26 mm² (10 AWG), 2 CONDUCTOR, TYPE TC CABLE FROM THE SIGN ENCLOSURE TO THE LUMINAIRE.
 10. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
 11. 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
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SIGN LIGHTING

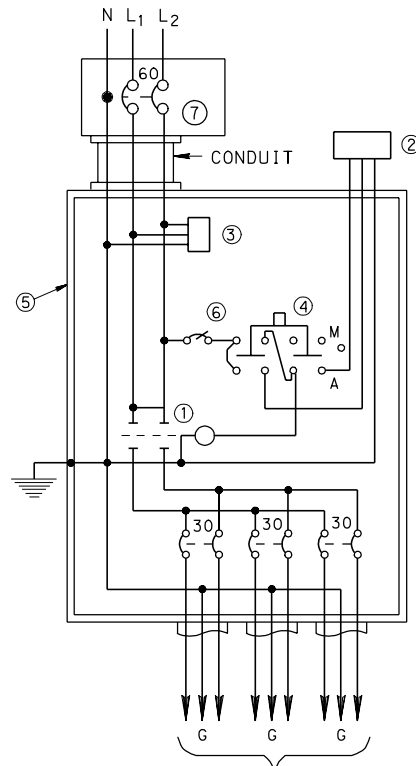
RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>M. Patel</i> CHIEF HIGHWAY ENGINEER	SHT. 1 OF 5 TC-8715
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120 V - 2 WIRE SUPPLY
120 V LUMINAIRE



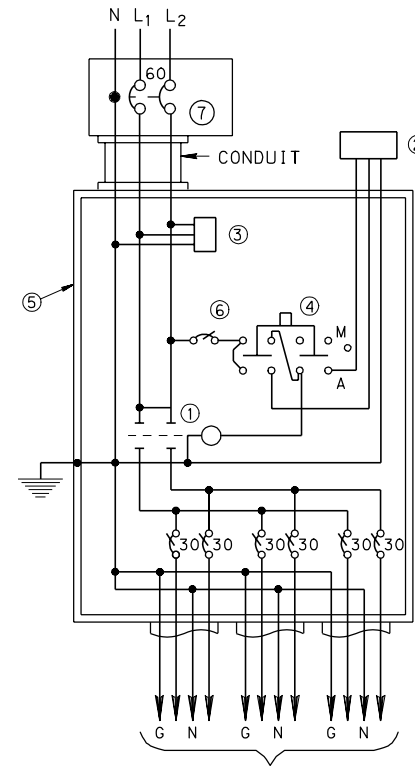
TO SIGN STRUCTURE DISCONNECT SIMILAR TO (A), NOT MORE THAN 8 LUMINAIRES ON EACH 30 A CIRCUIT.

120/240 V - 3 WIRE SUPPLY
240 V LUMINAIRE



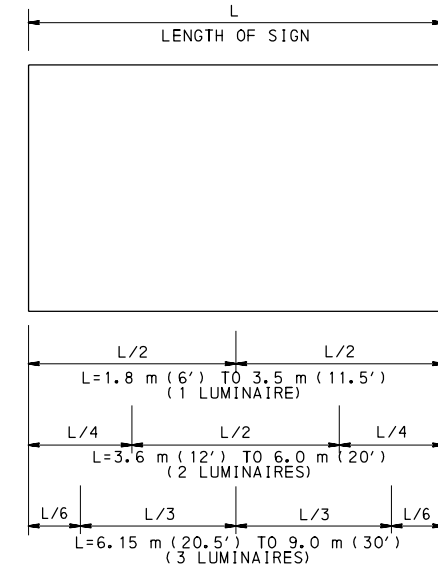
TO SIGN STRUCTURE DISCONNECT SIMILAR TO (B), NOT MORE THAN 17 LUMINAIRES ON EACH 30 A CIRCUIT.

240/480 V - 3 WIRE SUPPLY
240 V LUMINAIRE



TO SIGN STRUCTURE DISCONNECT SIMILAR TO (C), NOT MORE THAN 17 LUMINAIRES PER PHASE LEG ON EACH 30 A CIRCUIT.

- ① TWO POLE, 60 A, LIGHTING CONTACTOR
- ② PHOTOELECTRIC CONTROL DEVICE
- ③ LIGHTNING ARRESTOR
- ④ SELECTOR SWITCH (MANUAL-OFF-AUTO.)
- ⑤ ENCLOSURE
- ⑥ 15 A, SINGLE POLE CIRCUIT BREAKER
- ⑦ SERVICE DISCONNECT



QUANTITY AND LOCATION OF LUMINAIRES

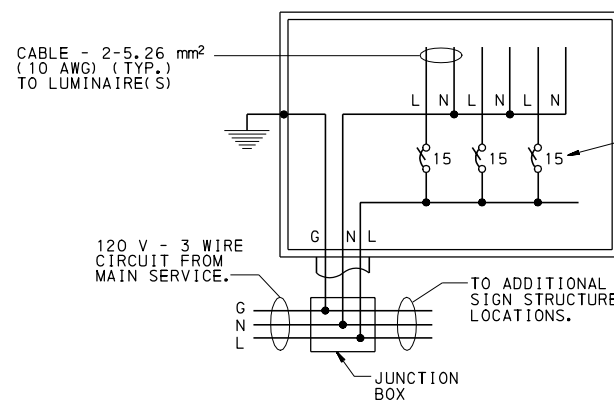
MAIN SERVICE (TYPICAL)

NOTE: MAIN SERVICE NOT REQUIRED WHEN POWER SUPPLY IS FROM HIGHWAY LIGHTING CIRCUIT.

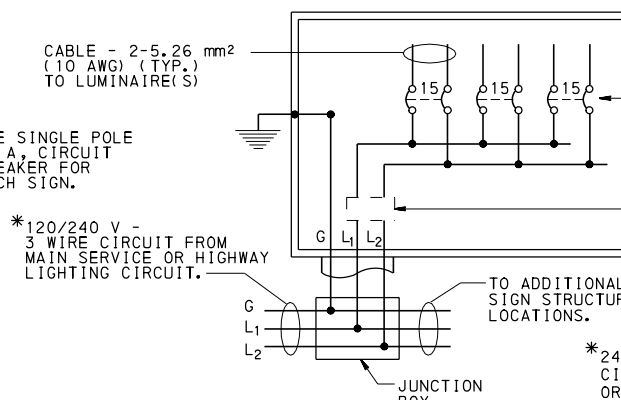
NOTES:

1. PROVIDE A CIRCUIT BREAKER FOR THE MAIN DISCONNECT UNLESS THE POWER COMPANY REQUIRES FUSES.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS IN PARENTHESIS ().
3. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.
4. PROVIDE A MAIN DISCONNECT IN A SEPARATE NEMA 3R OR 4 ENCLOSURE THAT IS LABELED AS "SUITABLE FOR USE AS SERVICE EQUIPMENT". PROVIDE WITH A LOCKABLE COVER AND NO EXTERNAL HANDLE. THE DISCONNECT MAY BE PROVIDED INTEGRAL TO THE CONTROL CABINET IF THE CABINET IS DEAD FRONT AND LABELED AS "SUITABLE FOR USE AS SERVICE EQUIPMENT".

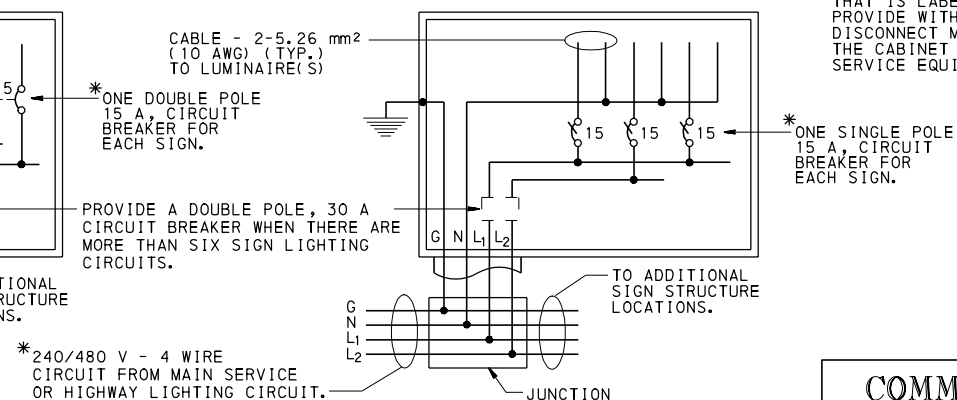
(A) 120 V LUMINAIRE



(B) 240 V LUMINAIRE



(C) 240 V LUMINAIRE

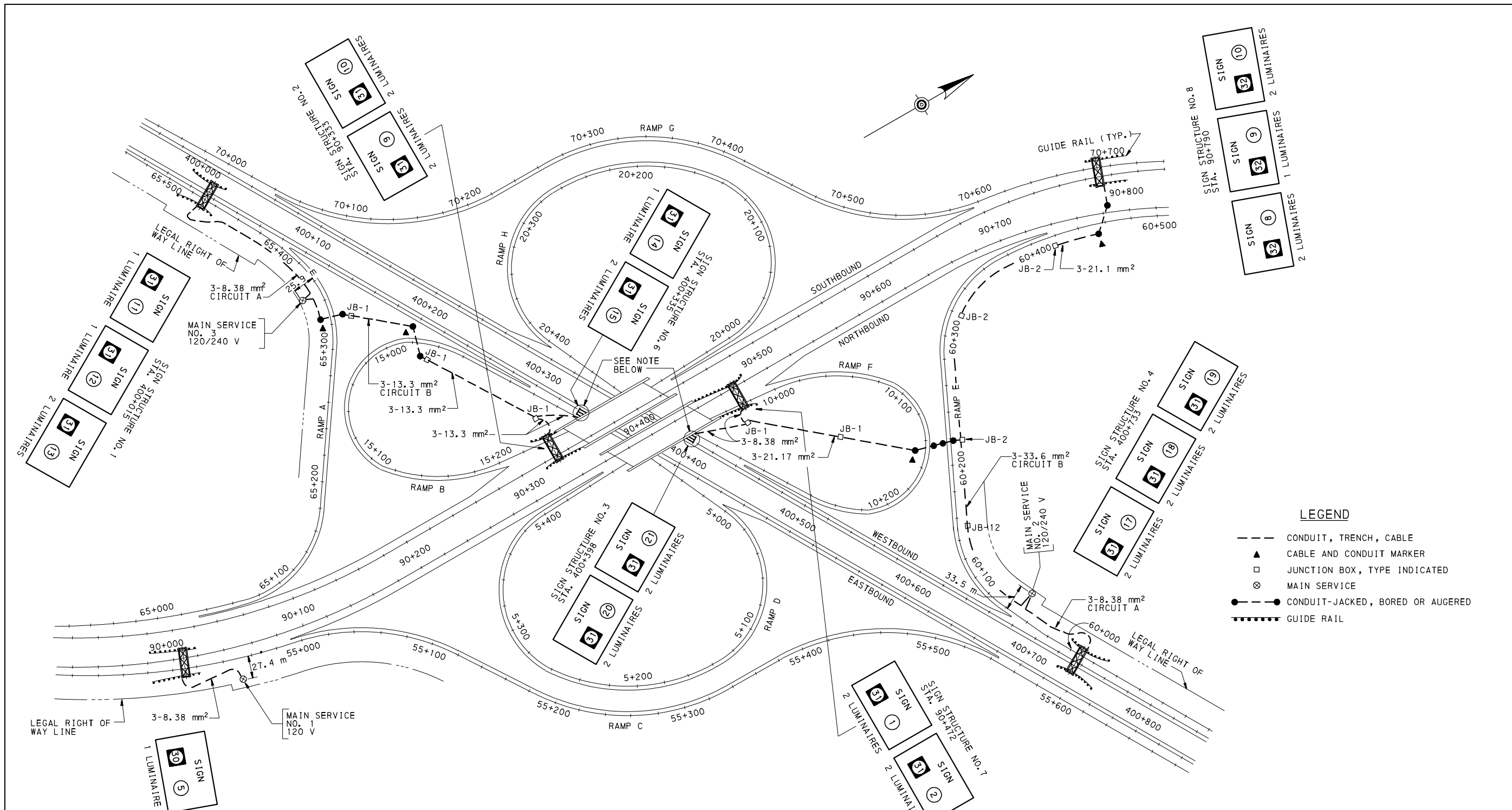


*FOR PROPER PHASE LEG CONNECTION, SEE SIGN LIGHTING PLAN OR HIGHWAY LIGHTING CIRCUIT SCHEMATIC, AS APPLICABLE.

SIGN STRUCTURE DISCONNECT (TYPICAL)

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DEPARTMENT OF TRANSPORTATION
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SIGN LIGHTING



- LEGEND**
- CONDUIT, TRENCH, CABLE
 - ▲ CABLE AND CONDUIT MARKER
 - JUNCTION BOX, TYPE INDICATED
 - ⊗ MAIN SERVICE
 - CONDUIT-JACKED, BORED OR AUGERED
 - GUIDE RAIL

METRIC UNITS

NOTE - BRIDGE MOUNTED SIGNS:

TRENCH FROM JUNCTION BOX DOWN EMBANKMENT TO PIER MOUNTED ENCLOSURE SEE SHEET 2 OF 5, TC-8715.

GENERAL NOTES:

1. QUANTITIES SHOWN ARE FOR ESTIMATING PURPOSE ONLY.
2. COMPLY WITH STANDARD SPECIFICATIONS PUBLICATION 408, SECTIONS 920 & 1102 APPLICABLE TO MATERIAL AND WORK ON THIS PROJECT, AND THE FOLLOWING STANDARD DRAWINGS:

RC-81M HIGHWAY LIGHTING-JUNCTION BOXES-LIGHT DUTY
 RC-82M HIGHWAY LIGHTING-JUNCTION BOXES-HEAVY DUTY
 RC-84M HIGHWAY LIGHTING-LIGHTING AND ELECTRIC DETAILS
 TC-8715 SIGN LIGHTING

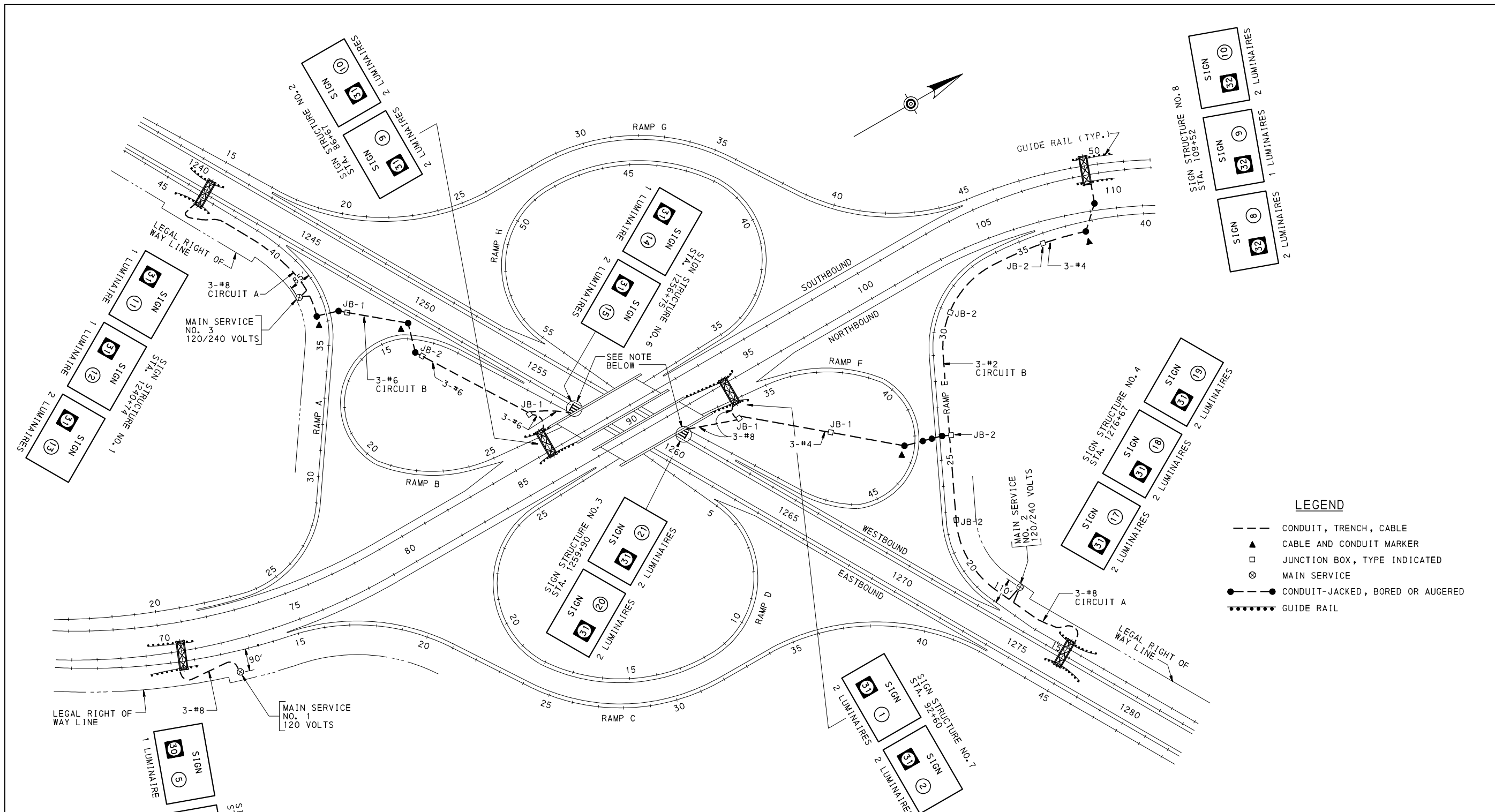
INFORMATION TO DESIGNER:

1. SHOW AS INFORMATION ONLY THE CONDUIT CROSSINGS ON THE ROADWAY PLANS.
2. MAIN SERVICE LOCATIONS MUST HAVE CONFIRMATION FROM LOCAL ELECTRIC UTILITY.
3. SUBMIT CONDUCTOR SIZE CALCULATIONS WITH PLANS FOR APPROVAL.
4. LOCATE MAIN SERVICE OUTSIDE CLEAR ZONE AS FAR FROM ROADWAY AS PRACTICAL.
5. SIGN LIGHTING MAY NOT BE REQUIRED ON ALL OVERHEAD SIGNS. SEE STANDARD DRAWING TC-8701A FOR EXCEPTIONS.
6. WHEN NOT INCLUDED IN OTHER CONTRACTS, PROVIDE FOR SEEDING AND MULCHING OF BACKFILLED TRENCH AND OTHER DISTURBED AREAS.

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

SIGN LIGHTING PLAN
 (SAMPLE DRAWING)

RECOMMENDED MAY 25, 2007 <i>Alan C. Rowe</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED MAY 25, 2007 <i>M. Latel</i> CHIEF HIGHWAY ENGINEER	SHT. 3 OF 5 TC-8715
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LEGEND

- CONDUIT, TRENCH, CABLE
- ▲ CABLE AND CONDUIT MARKER
- JUNCTION BOX, TYPE INDICATED
- ⊗ MAIN SERVICE
- CONDUIT-JACKED, BORED OR AUGERED
- GUIDE RAIL

NOTE - BRIDGE MOUNTED SIGNS:

TRENCH FROM JUNCTION BOX DOWN EMBANKMENT TO PIER MOUNTED ENCLOSURE SEE SHEET 2 OF 5, TC-8715.

GENERAL NOTES:

1. QUANTITIES SHOWN ARE FOR ESTIMATING PURPOSE ONLY.
2. COMPLY WITH STANDARD SPECIFICATIONS PUBLICATION 408, SECTIONS 920 & 1102 APPLICABLE TO MATERIAL AND WORK ON THIS PROJECT, AND THE FOLLOWING STANDARD DRAWINGS:

RC-81M HIGHWAY LIGHTING-JUNCTION BOXES-LIGHT DUTY
 RC-82M HIGHWAY LIGHTING-JUNCTION BOXES-HEAVY DUTY
 RC-84M HIGHWAY LIGHTING-LIGHTING AND ELECTRIC DETAILS
 TC-8715 SIGN LIGHTING

INFORMATION TO DESIGNER:

1. SHOW AS INFORMATION ONLY THE CONDUIT CROSSINGS ON THE ROADWAY PLANS.
2. MAIN SERVICE LOCATIONS MUST HAVE CONFIRMATION FROM LOCAL ELECTRIC UTILITY.
3. SUBMIT CONDUCTOR SIZE CALCULATIONS WITH PLANS FOR APPROVAL.
4. LOCATE MAIN SERVICE OUTSIDE CLEAR ZONE AS FAR FROM ROADWAY AS PRACTICAL.
5. SIGN LIGHTING MAY NOT BE REQUIRED ON ALL OVERHEAD SIGNS. SEE STANDARD DRAWING TC-8701A FOR EXCEPTIONS.
6. WHEN NOT INCLUDED IN OTHER CONTRACTS, PROVIDE FOR SEEDING AND MULCHING OF BACKFILLED TRENCH AND OTHER DISTURBED AREAS.

ENGLISH UNITS

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION
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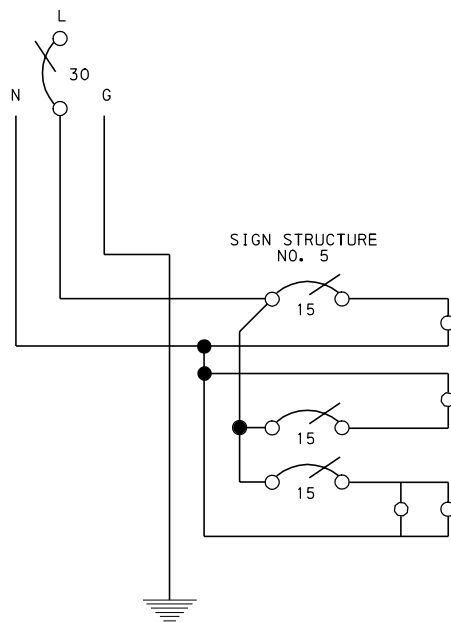
SIGN LIGHTING PLAN
 (SAMPLE DRAWING)

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

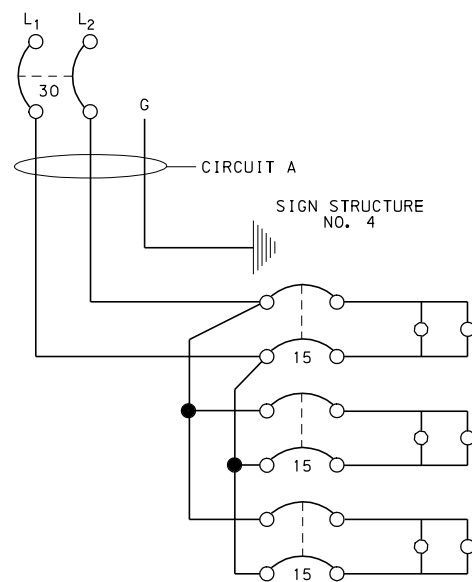
RECOMMENDED MAY 25, 2007
m. G. Patel
 CHIEF HIGHWAY ENGINEER

SHT. 4 OF 5
 TC-8715

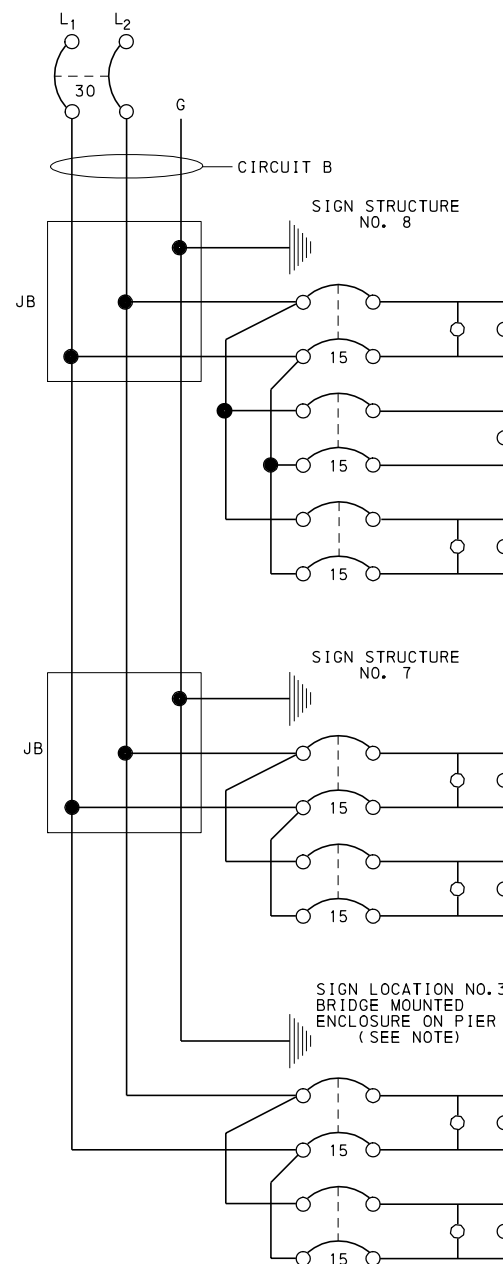
MAIN SERVICE NO. 1
120 V - 2 WIRE SUPPLY



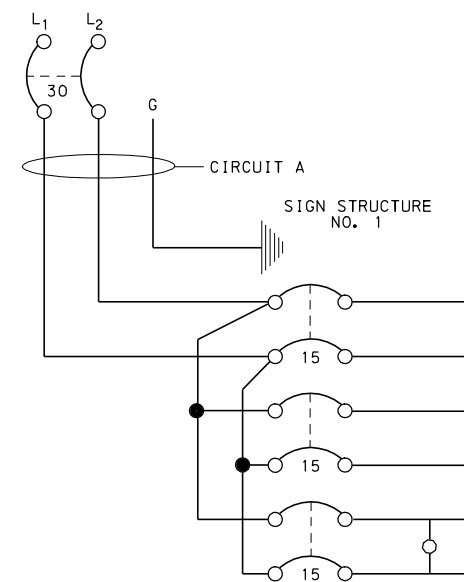
MAIN SERVICE NO. 2
120/240 V - 3 WIRE SUPPLY



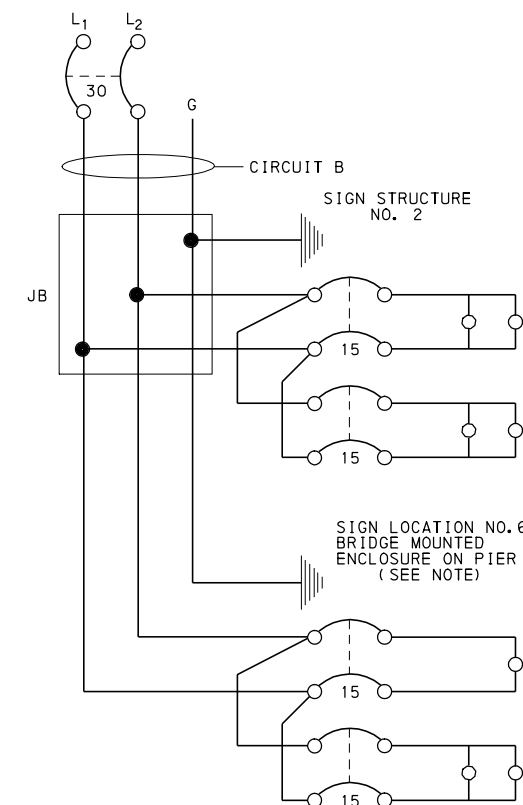
MAIN SERVICE NO. 2
120/240 V - 3 WIRE SUPPLY



MAIN SERVICE NO. 3
120/240 V - 3 WIRE SUPPLY



MAIN SERVICE NO. 3
120/240 V - 3 WIRE SUPPLY



ESTIMATE OF REQUIRED QUANTITIES

MAIN SERVICE REQUIRED QUANTITIES	M. S. M. S. M. S.			TOTAL
	#1	#2	#3	
SERVICE POLE	1	1	1	3
METER BASE (IF REQUIRED)	1	1	1	3
SERVICE DISCONNECT	1	1	1	3
ENCLOSURE	1	1	1	3
WEATHERHEAD & SERVICE CLOSURE	1	1	1	3
LIGHTNING ARRESTER	1	1	1	3
PHOTOELECTRIC CELL	1	1	1	3
GROUND ROD	1	1	1	3
SELECTOR SWITCH	1	1	1	3
LIGHTING CONTACTOR, 2 POLES, 60 A	1	1	1	3
CIRCUIT BREAKER, 1 POLE, 60 A	1			1
CIRCUIT BREAKER, 2 POLES, 60 A		1	1	2
CIRCUIT BREAKER, 1 POLE, 15 A	1	1	1	3
CIRCUIT BREAKER, 1 POLE, 30 A	1			1
CIRCUIT BREAKER, 2 POLES, 30 A		2	2	4
CONDUIT, FITTINGS, MISC. HARDWARE	1	1	1	3

SIGN STRUCTURE REQUIRED QUANTITIES					
SIGN STRUCTURE	ENCLOSURE	GROUND ROD	15 A 1P, C.B.	15 A 2P, C.B.	175 W LUM.
1	1	1			3
2	1	1			2
3	1*	1			2
4	1	1			3
5	1	1	3		4
6	1*	1			2
7	1	1			2
8	1	1			3
TOTAL	8	8	3	17	34

* BRIDGE MOUNTED SIGNS - ENCLOSURE MOUNTED ON BRIDGE MOUNTED ENCLOSURE ON PIER (SEE SHEET 1 OF 5, TC-8715.)

METRIC UNITS *

CIRCUIT REQUIRED QUANTITIES - ENTIRE		
ITEM	QUANTITY	REMARKS
33.6 mm ² , UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	510 m	
21.1 mm ² , UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	1320 m	
13.3 mm ² , UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	900 m	
8.38 mm ² , UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	905 m	
5.26 mm ² , TYPE TC CABLE, COPPER, 2 CONDUCTOR	460 m	FROM S.S. ENCLOSURE TO LUMINAIRE
CABLE & CONDUIT MARKER	4 EACH	
53 mm Ø DIRECT BURIAL CONDUIT	1150 m	
TRENCH	1150 m	
JUNCTION BOX JB-1	3 EACH	
JUNCTION BOX JB-12	6 EACH	

ENGLISH UNITS *

CIRCUIT REQUIRED QUANTITIES - ENTIRE		
ITEM	QUANTITY	REMARKS
AWG 2, UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	2190 FT.	
AWG 4, UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	6588 FT.	
AWG 6, UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	4350 FT.	
AWG 8, UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	5090 FT.	
AWG 10, TYPE TC CABLE, COPPER, 2 CONDUCTOR	1500 FT.	FROM S.S. ENCLOSURE TO LUMINAIRE
CABLE & CONDUIT MARKER	4 EACH	
2" Ø DIRECT BURIAL CONDUIT	5730 FT.	
TRENCH	5730 FT.	
JUNCTION BOX JB-1	3 EACH	
JUNCTION BOX JB-12	6 EACH	

* EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.

NOTE:

IT MAY BE MORE DESIRABLE TO USE ONE COMMON ENCLOSURE ON NEARBY SIGN STRUCTURE COLUMN FOR BOTH THE STRUCTURE SIGN AND THE BRIDGE-MOUNTED SIGN IN LIEU OF A SEPARATE ENCLOSURE MOUNTED ON THE BRIDGE PIER AS SHOWN ON SHEET 1 OF 5, TC-8715. IF THIS OPTION IS DESIRED, IT MUST BE CLEARLY SPECIFIED ON THIS SHEET. IN THE SAMPLE, ENCLOSURES FOR SIGN LOCATIONS 3 AND 6 WOULD NOT BE SPECIFIED AND A NOTE EXPLAINING THE OMISSION WOULD BE NECESSARY.

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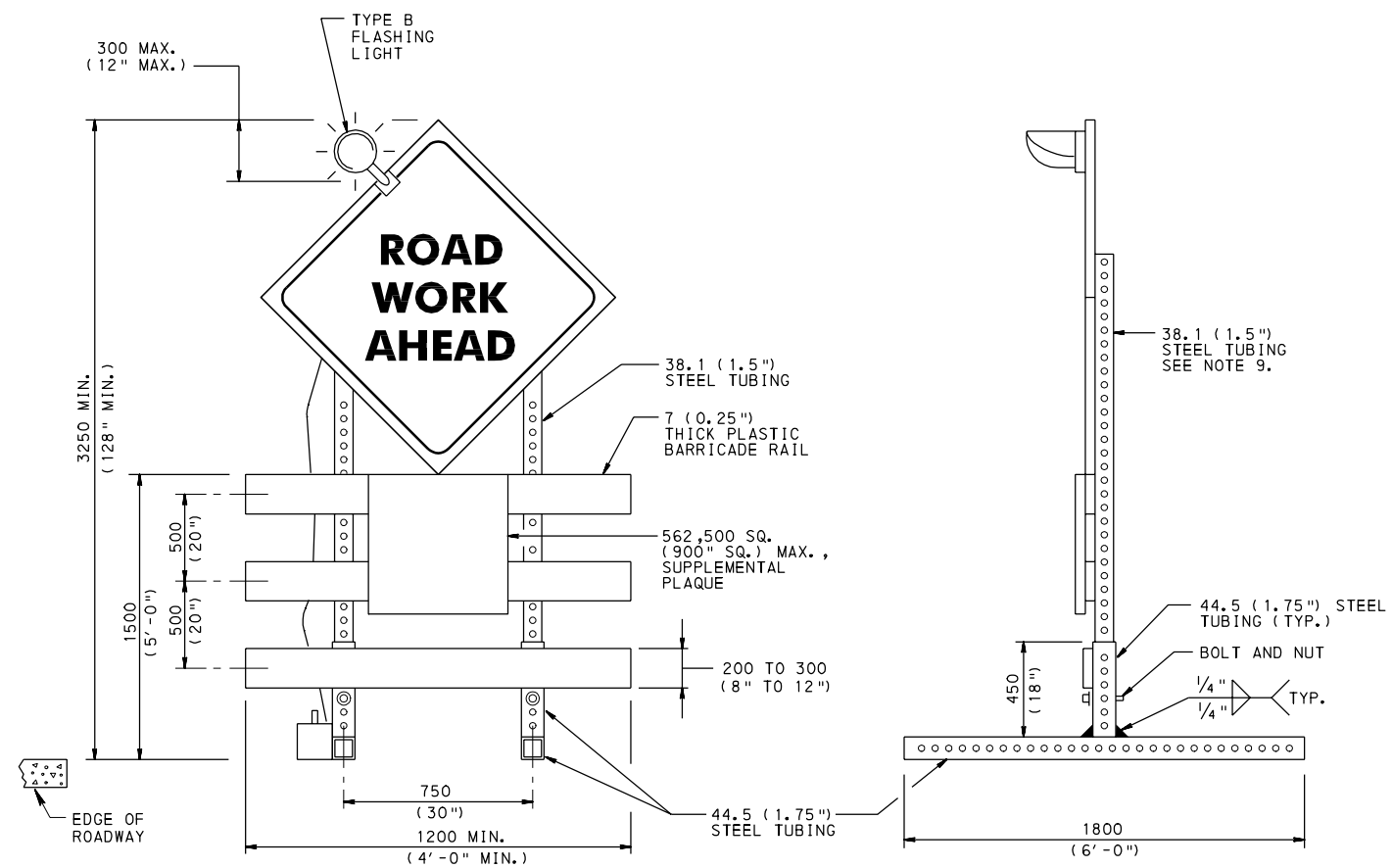
SIGN LIGHTING
(SAMPLE DRAWING)

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

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

SHT. 5 OF 5

TC-8715



SKID-MOUNTED METAL SIGN SUPPORT

NOTES:

1. PROVIDE SIGN MATERIALS MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 1103.4.
2. DIAMOND, RECTANGULAR, OCTAGONAL AND TRIANGULAR SIGNS ARE PERMITTED. WHILE HAVING NO MAXIMUM AREA, THE MAXIMUM WEIGHT OF THE SIGN MAY NOT EXCEED 11.3 kg (25 lb).
3. MINIMUM MOUNTING HEIGHT TO TOP OF ALL SIGNS IS 3250 mm (128").
4. SUPPLEMENTAL PLAQUE IS TO BE MOUNTED AS SHOWN.
5. BATTERY CASE MUST BE PLACED EITHER ON THE GROUND OR ATTACHED 500 (20") MAXIMUM ABOVE THE GROUND TO THE POST OR BASE LEG.
6. SIGN SUBSTRATE MAY BE PLYWOOD, ALUMINUM, FLEXIBLE (ROLL-UP) ABS, ALUMINUM / PLASTIC LAMINATE, CORRUGATED POLYPROPYLENE OR POLYETHYLENE.
7. PLACE SANDBAG BALLAST OR EQUAL ON BASE AS INDICATED OR DIRECTED.
8. SIGNS AND RAILS ARE TO BE ATTACHED WITH BOLTS AND NUTS.
9. IF TURNED 90°, RETROREFLECTIVE SHEETING MUST BE PLACED ON THE SIDES SO THAT THE BARRICADE IS CLEARLY VISIBLY TO APPROACHING DRIVERS.
10. MAXIMUM OF TWO TYPE B WARNING LIGHTS ON ALL SIGNS ARE ALLOWED WITH 600 (24") SEPARATING LIGHTS ON ROAD CLOSED SIGNS.
11. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS SHOWN IN PARENTHESIS ().
12. 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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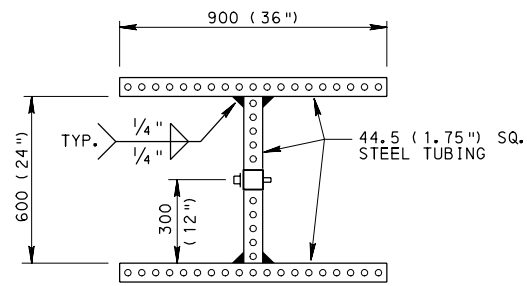
TRAFFIC CONTROL SIGNING
TYPE III BARRICADE

RECOMMENDED JUN. 23, 2009
John P. Tompkins
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

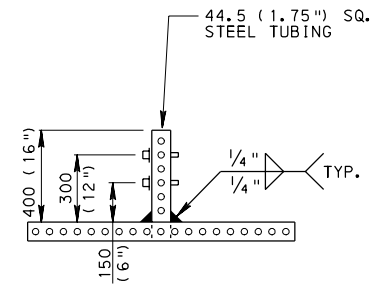
RECOMMENDED JUN. 23, 2009
Debra C. Rome
ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SHT. 1 OF 1

TC-8716

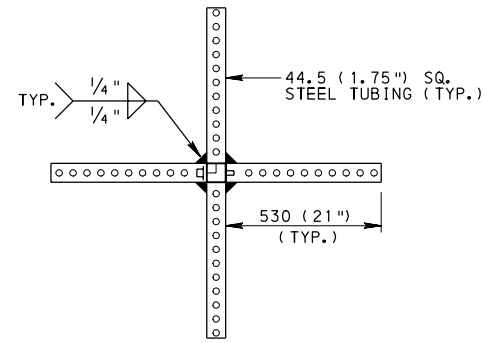


PLAN

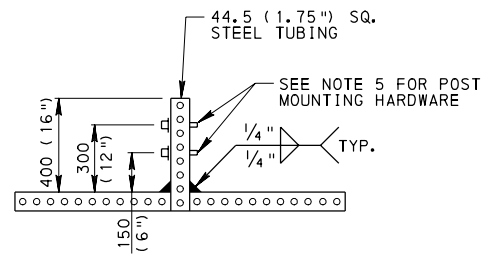


ELEVATION

"H" BASE DETAIL



PLAN

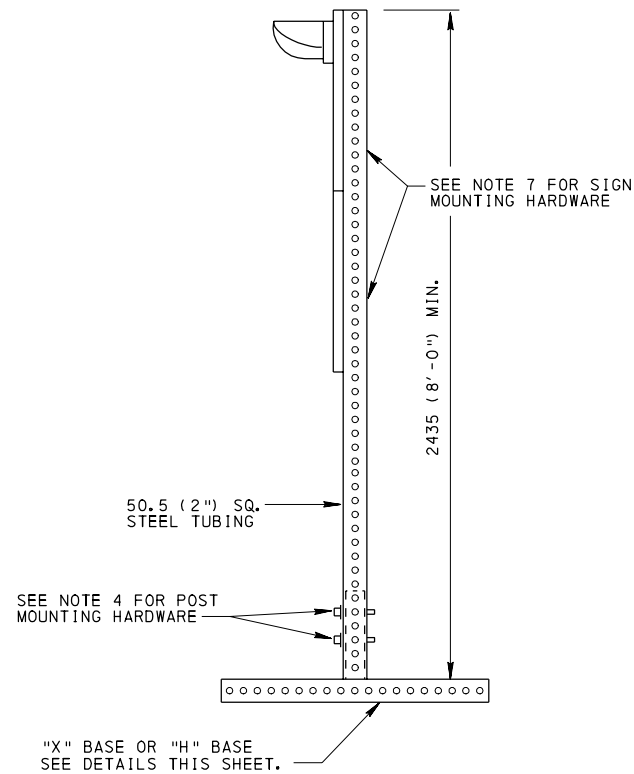
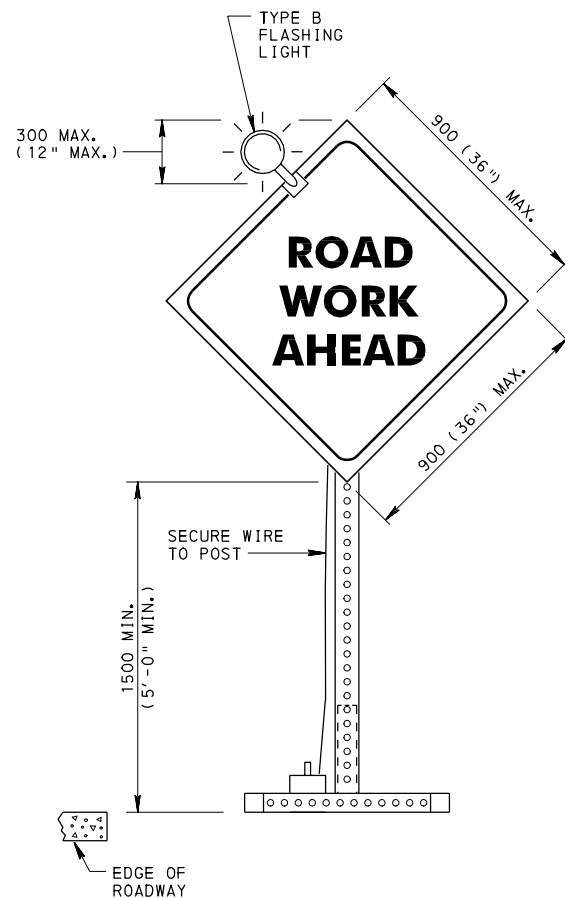


ELEVATION

"X" BASE DETAIL

NOTES:

1. PROVIDE SIGN MATERIALS MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 1103.4.
2. DIAMOND, RECTANGULAR, OCTAGONAL AND TRIANGULAR SIGNS ARE PERMITTED. THE MAXIMUM SIGN AREA SHALL NOT EXCEED 0.81sq. m (9 sq. ft.)
3. BATTERY CASE MUST BE PLACED EITHER ON THE GROUND OR ATTACHED 500 (20") MAXIMUM ABOVE THE GROUND TO THE POST OR BASE LEG.
4. SIGN SUBSTRATE MAY BE PLYWOOD, ALUMINUM, ALUMINUM / PLASTIC LAMINATE, CORRUGATED POLYPROPYLENE OR POLYETHYLENE, MAX. WEIGHT 6.8 kgs (15 lbs).
5. POST, 50.5 (2") STEEL TUBING SLIDES OVER BASE STUB, 44.5 (1.75") STEEL TUBING FASTENED WITH 8 (5/16") DIAMETER 57 (2 1/4") LONG STAINLESS STEEL OR GRADE 5 ZINC PLATED BOLTS AND NYLON INSERT LOCK NUTS. USE 9.5 (3/8") STEEL AND NYLON WASHERS UNDER BOTH THE BOLT AND NUT.
6. PLACE SANDBAG BALLAST OR EQUAL ON BASE AS INDICATED OR DIRECTED.
7. SIGN PANEL IS PLACED ON THE VERTICAL SIGN POST WITH TOP EDGE ALIGNED WITH POST TOP END AND FASTENED WITH 8 (5/16") DIAMETER 57 (2 1/4") LONG NYLON 6/6 FULLY THREADED HEX HEADED BOLTS AND NYLON INSERT LOCK NUTS. USE 9.5 (3/8") STEEL AND NYLON WASHERS UNDER BOTH THE BOLT AND NUT.
8. MAXIMUM OF TWO TYPE B WARNING LIGHTS ON ALL SIGNS ARE ALLOWED WITH 600 (24") SEPARATING LIGHTS ON ROAD CLOSED SIGNS.
9. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ENGLISH UNITS SHOWN IN PARENTHESIS ().
10. NCHRP 350 TEST LEVEL 3 CRASH TESTED AND APPROVED.
11. EITHER ALL METRIC OR ALL ENGLISH UNITS MUST BE USED ON PLANS. METRIC AND ENGLISH UNITS SHOWN MAY NOT BE MIXED.



COMMONWEALTH OF PENNSYLVANIA
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BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

TEMPORARY PORTABLE
SIGN POST

"H" BASE AND "X" BASE

RECOMMENDED JUN. 23, 2009
John P. Tompkins
CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION

RECOMMENDED JUN. 23, 2009
Don C. Rowe
ACTING DIR. BUR. OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING

SHT. 1 OF 1

TC-8717