SUBJECT:   
Revisions to Traffic Control – Pavement Markings and Signing Standards  
TC-8600 and TC-8700 Series  
June 2013 Edition, Change No. 1  

INFORMATION AND SPECIAL INSTRUCTIONS:
Incorporate the attached revisions into the June 2013 Edition of Publication 111.

These revised Standard Drawings should be adopted on all new and existing designs as soon as possible without affecting any letting schedules and in conjunction with the current Publication 408 Specifications. Regardless, revised standards under this change must be used on all projects let after September 1, 2021.

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>SHEET</th>
<th>DESCRIPTION OF CHANGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-8604</td>
<td>General</td>
<td>Increased total number of sheets from 4 to 5.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Updated sheet number references for consistency with 5 total sheets.</td>
</tr>
<tr>
<td></td>
<td>Sheet 1</td>
<td>Revised Note 1 from &quot;USE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PUBLICATION 408&quot; to &quot;PROVIDE MATERIALS AND CONSTRUCT AS SPECIFIED IN PUBLICATION 408.&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Revised Note 2 from &quot;IN ACCORDANCE WITH&quot; to &quot;ACCORDING TO&quot;.</td>
</tr>
<tr>
<td></td>
<td>Sheet 2</td>
<td>Updated Guide-Rail Delineators Details as follows:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Added the callout &quot;SEE NOTE 9&quot; for Type D delineator.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Updated Delineator Placement Details as follows:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Added &quot;(SEE NOTE 8)&quot; below callout for &quot;TYPE CS OR CW DELINEATOR&quot;.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Added &quot;(SEE NOTE 9)&quot; below callout for &quot;TYPE D DELINEATOR&quot;.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Changed &quot;SEE NOTE 7&quot; to &quot;SEE NOTES 7 &amp; 10&quot; for delineator placement on a Terminal Section.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Updated Notes as follows:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Revised Note 1 from &quot;USE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PUBLICATION 408&quot; to &quot;PROVIDE MATERIALS AND CONSTRUCT AS SPECIFIED IN PUBLICATION 408.&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Moved Note 2's second sentence to new Note 10.</td>
</tr>
</tbody>
</table>
|          |       | -Revised Note 5, first sentence by inserting "AND EITHER TYPE R OR O
DELINEATORS ON THE SIDE" between "ON THE TOP" and "OF ALL TEMPORARY BARRIERS".

- Revised Note 5, second sentence by inserting "ANY BULLETIN 15 APPROVED" between "USE" and "ORANGE SHEETING".

- Revised Note 5, third sentence by changing "DELINEATOR" to "TYPE WZ DELINEATORS".

- Revised Note 6, first sentence by:
  - Inserting "PAINT" before "CONTINUOUS WHITE".
  - Deleting "MAY BE INSTALLED" between "PAVEMENT MARKINGS" and "AS SHOWN".

- Revised Note 6, second sentence by changing "MAY" to "SHALL".

- Revised Note 8 by:
  - Adding first two sentences.
  - Inserting text into third sentence.
  - Revising end of third sentence to say, "ACCORDING TO MANUFACTURER'S RECOMMENDATIONS" rather than "AS PER MANUFACTURER'S RECOMMENDATION".

- Added Note 9 for Type D Delineators.

- Added Note 10 by moving second sentence from Note 2; changed "TYPE III YELLOW REFLECTIVE SHEETING ON TERMINAL SECTION END TREATMENTS" to "BULLETIN 15 APPROVED YELLOW REFLECTIVE SHEETING ON TERMINAL SECTIONS".

Sheet 3
Inserted Sheet 3 with Delineation of Impact Attenuating Devices details. Details were moved from Standard Drawing RC-57M.

Revised nomenclature for clearance markers from warning signs ("W" Series) to Object Markers ("OM" Series).

Revised title of detail by adding "AND CRASH CUSHIONS" after "DELINEATION OF IMPACT ATTENUATING DEVICES".

Revised Gore Area detail by adding "OR CRASH CUSHION" after "IMPACT ATTENUATING DEVICE".

Added Notes 1, 2, 3, 4 and 5.

Sheet 5
Updated Note 1, Item F by inserting "END OF GUIDE RAIL," in first sentence between "INLET" and "ETC.".

Updated Note 4 (Lateral Placement) as follows:

- Changed Item D from "OBSTRUCTION MARKERS" and "OBSTRUCTION MARKER DELINEATORS" to "OBJECT MARKERS" for consistency with the terminology in Publication 46, Traffic Engineering Manual and FHWA's Manual on Uniform Traffic Control Devices.
-Revised Item E (Maintenance Markers) by inserting "END OF GUIDE RAIL,"

Updated Note 5 (Types of Delineator) as follows:

-Revised Item A (White Delineators) by inserting "WHITE POST WITH WHITE REFLECTIVE SHEETING" between "PLACE" and "ON RIGHT SIDE".

-Revised Item B (Yellow Delineators) by:
  - Inserting "YELLOW POST WITH YELLOW REFLECTIVE SHEETING" between "PLACE" and "ON LEFT SIDE".
  - Inserting "(E.G., FREEWAYS, EXPRESSWAYS, DIVIDED HIGHWAYS)" after "ON LEFT SIDE OF THROUGH ROADWAYS".
  - Deleting last sentence, "ALSO AT EDGE OF OBSTRUCTIONS ADJACENT TO THE ROADWAY AND AT POINT WHERE GUIDE RAIL BECOMES TANGENT TO THE ROADWAY."

-Revised Item C (Red Delineators) by inserting "RED POST WITH RED REFLECTIVE SHEETING" between "PLACE" and "ON RIGHT, LEFT, OR BOTH SIDES".

-Revised Item E (Maintenance Markers) by replacing, "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." with, "PLACE RED POST WITH REFLECTIVE SHEETING COLOR TO MATCH THE NEAREST PAVEMENT MARKING EDGE LINE COLOR."

Updated Notes, Note 1 (Maintenance Markers) by:

- Inserting "END OF GUIDE RAIL," in first sentence between "INLETS" and "ETC."

- Changing "A HAZARD" to "AN OBSTRUCTION" in second sentence.

- Adding third sentence, "INSTALL RED FLEXIBLE DELINEATOR POSTS A MINIMUM OF 3' AWAY FROM THE IMPACT ATTENUATOR."

Gender neutral language has been updated in all revised Standard Drawings, i.e., TC-8604.

Any comments or questions regarding the above revisions should be directed to the Traffic Engineering and Permits Section, Highway Safety and Traffic Operations Division, Bureau of Maintenance and Operations.
<table>
<thead>
<tr>
<th>CANCEL AND DESTROY THE FOLLOWING:</th>
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<tbody>
<tr>
<td>Index Sheet – Jun. 13, 2013</td>
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<td><em>Click on Forms, Publications &amp; Maps</em></td>
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<th>APPROVED FOR ISSUANCE BY:</th>
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<tbody>
<tr>
<td>T Jay Cunningham, P.E.</td>
</tr>
<tr>
<td>T Jay Cunningham, P.E., Acting Director</td>
</tr>
<tr>
<td>Bureau of Maintenance and Operations</td>
</tr>
</tbody>
</table>
TRANSMITTAL LETTER

PUBLICATION:
Publication 111

DATE:
6/17/2013

SUBJECT:
Publication 111 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 Signs and Pavement Markings. The previous edition of Publication 111M, issued May 2007, and any changes thereto shall be replaced by this edition.

The attached pages contain a summary of the major changes that have been incorporated into this edition.

CANCEL AND DESTROY THE FOLLOWING:

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<td>(717) 787-6746 phone</td>
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<tr>
<td>(717) 787-8779 fax</td>
</tr>
<tr>
<td><a href="mailto:ra-penndotsalesstore@pa.gov">ra-penndotsalesstore@pa.gov</a></td>
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<td>☑ PennDOT website - <a href="http://www.dot.state.pa.us">www.dot.state.pa.us</a></td>
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APPROVED FOR ISSUANCE BY:

Charles C. Goodhart, Director
Bureau of Maintenance and Operations
<table>
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<th>No.</th>
<th>Sheet #</th>
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<th>CHANGE</th>
</tr>
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<tbody>
<tr>
<td>General Change</td>
<td></td>
<td></td>
<td>Removed all reference to metric units</td>
</tr>
<tr>
<td>8700C</td>
<td>1 of 18</td>
<td>Spacing Charts Direct Applied Letters &amp; Numerals / General Information</td>
<td>Revised notes</td>
</tr>
<tr>
<td></td>
<td>18 of 18</td>
<td>Spacing Charts Direct Applied / Arrows</td>
<td>Revised Notes</td>
</tr>
<tr>
<td>8701A</td>
<td>2</td>
<td>Interchange Advance Signing General Notes</td>
<td>Changed sheet number (previously Sheet 1 of 7)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Advance Signing Diamond Interchange (One Exit)</td>
<td>Changed sheet number (previously Sheet 2 of 7)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Signing One-Lane Crossroad Approach</td>
<td>Changed title, sheet number, revised signing options (previously Sheet 3 of 7)</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Signing Diamond Interchange Multi-Lane Crossroad Approach</td>
<td>New Sheet</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Signing One-Lane Crossroad Approach With Nearby Intersecting Road</td>
<td>New Sheet</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Advance Signing Cloverleaf Interchange</td>
<td>Changed sheet number (previously Sheet 4 of 7)</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Signing Cloverleaf Interchange Multi-Lane Crossroad Approach</td>
<td>Changed Title, sheet number, revised signing options (previously Sheet 5 of 7)</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Signing Partial Cloverleaf Interchange Multi-Lane Crossroad Approach</td>
<td>New Sheet</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Signing Diagrammatic &amp; Lane Drop</td>
<td>Revised signing layout, notes added (previously Sheet 6 of 7)</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Typical Signing Closely Spaced Interchanges</td>
<td>Changed sheet number (previously Sheet 7 of 7)</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Signing Jughandles</td>
<td>New Sheet</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>Signing Traditional Jughandles</td>
<td>New Sheet</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Signing Intermediate &amp; Minor Interchange Multi-Lane Exits With An Option Lane</td>
<td>New Sheet</td>
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<tr>
<td>8701D</td>
<td>15</td>
<td>Sign Details Freeway, Expressway and Conventional Roads Guide Signs / Advance Guide Signs</td>
<td>Added 10.6/8 and 8/6 Destination sizing to all signs, revised notes, changed title and sheet number (previously Sheet 1 of 9)</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>Sign Details Freeway, Expressway and Conventional Roads Guide Signs / Overhead Lane Assignment Signs</td>
<td>Added 10.6/8 and 8/6 Destination sizing to all signs, revised sign layouts, revised notes, changed title and sheet number (previously Sheet 2 of 9)</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>Sign Details Freeway, Expressway and Conventional Roads Guide Signs / Exit Direction Signs</td>
<td>Added 10.6/8 and 8/6 Destination sizing to all signs, revised notes, changed title and sheet number (previously Sheet 3 of 9)</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Sign Details Freeway, Expressway and Conventional Roads Guide Signs / Exit Direction Signs With Advisory Speed Panel</td>
<td>New Sheet</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>Sign Details Freeway and Expressway Guide Signs / Diagrammatic Signs</td>
<td>Revised sign layout, revised notes and changed sheet number (previously Sheet 4 of 9)</td>
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<tr>
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<td>20</td>
<td>Sign Details Freeway and Expressway Guide Signs / Overhead Arrow-per-Lane Signs</td>
<td>New Sheet</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>Sign Details Freeway and Expressway Guide Signs / Exit Only &amp; Next Exit Panels</td>
<td>Added Next Exit Panel, revised notes, moved Exit Signs to sheet 8 of 13, change title and sheet number (previously Sheet 5 of 9)</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>Sign Details Freeway and Expressway Guide Signs / Gore Signs &amp; Exit Panels</td>
<td>New Sheet</td>
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<td></td>
<td>23</td>
<td>Sign Details Freeway and Expressway Guide Signs / Supplemental Guide Signs &amp; Miscellaneous Interchange Signs</td>
<td>Added Left Panel to &quot;Community Interchanges Identification Sign&quot;, revised notes, changed sheet number (previously Sheet 6 of 9)</td>
</tr>
<tr>
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<td>24</td>
<td>Sign Details Freeway and Expressway Guide Signs / General Motorist Service Signs</td>
<td>Changed sheet number (previously Sheet 7 of 9)</td>
</tr>
<tr>
<td>No.</td>
<td>Sheet #</td>
<td>Sheet Name</td>
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</tr>
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<tr>
<td>25</td>
<td>11 of 13</td>
<td>Sign Details Freeway and Expressway Guide Signs / Ramp destination and</td>
<td>Changed sheet number (previously Sheet 8 of 9)</td>
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<tr>
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<td></td>
<td>Boundary Signs</td>
<td></td>
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<tr>
<td>26</td>
<td>12 of 13</td>
<td>Sign Details Exit Destination Roundabout Guide Signs</td>
<td>New Sheet</td>
</tr>
<tr>
<td>27</td>
<td>13 of 13</td>
<td>Sign Details Freeway and Expressway Guide Sign / Cardinals and Shield</td>
<td>Added 24” and 30” to route number shields, added 24” to Penna. Turnpike</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shield, added size 10/8 and 8/8 sizes to &quot;Cardinal Details&quot;; changed</td>
<td>sheet number (previously Sheet 9 of 9)</td>
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<td></td>
<td>sheet number (previously Sheet 9 of 9)</td>
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<td>8702A</td>
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<tr>
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<td>2 of 8</td>
<td>Post Mounted Signs, Type A / Post Selection Table</td>
<td>Revised nctes</td>
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<td>1 of 9</td>
<td>Post Mounted Signs, Type B / Steel Square Post Erection Details</td>
<td>Revised Table for Dimension of Corner Bolts</td>
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<tr>
<td>30</td>
<td>3 of 9</td>
<td>Post Mounted Signs, Type B / Steel Square Post Erection Details</td>
<td>Revised Table for Dimension of Corner Bolts</td>
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<td>9 of 9</td>
<td>Post Mounted Signs, Type B / Sign Location/Installation Details</td>
<td>Revised nctes</td>
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<td>8702C</td>
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<td>32</td>
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<td>Post Mounted Signs, Type C / Erection Details</td>
<td>Revised nctes</td>
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<td>33</td>
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<td>Post Mounted Signs, Type D / Erection Details</td>
<td>Replaced Adhesive Anchor Detail with Mechanical Anchor Detail</td>
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<tr>
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<td>8702E</td>
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<tr>
<td>34</td>
<td>5 of 5</td>
<td>Post Mounted Signs , Type E / Wood Posts - Direct Burial Erection Details</td>
<td>Revised nctes</td>
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<td>Temporary Use Only</td>
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<td>General Change</td>
<td>Remove all references to metric units</td>
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<td>1</td>
<td>1 of 13</td>
<td>Pavement Markings - Expressway / Freeway</td>
<td>Added or 6' to Dotted Extension Line</td>
</tr>
<tr>
<td>2</td>
<td>1 of 13</td>
<td>Pavement Markings - Expressway / Freeway</td>
<td>Added 4&quot; Min / 6&quot; TYP. To Broken Lane Line and Broken Lane Line with Black Shadow Lines</td>
</tr>
<tr>
<td>3</td>
<td>1 of 13</td>
<td>Pavement Markings - Expressway / Freeway</td>
<td>Removed Gore Markings Symbol</td>
</tr>
<tr>
<td>4</td>
<td>3 of 13</td>
<td>Pavement Markings - Conventional</td>
<td>Added or 6' to Dotted Extension Line</td>
</tr>
<tr>
<td>5</td>
<td>3 of 13</td>
<td>Pavement Markings - Conventional</td>
<td>Stopped edge line from going through crosswalk on the Plan</td>
</tr>
<tr>
<td>6</td>
<td>3 of 13</td>
<td>Pavement Markings - Conventional</td>
<td>Added when additional lanes are added to what is otherwise a and all multi-lane highways to note 1</td>
</tr>
<tr>
<td>7</td>
<td>4 of 13</td>
<td>Pavement Markings - Conventional</td>
<td>Added ≤ 35 MPH to Transverse Median Marking, Chevron Gore Marking and One-way Barrier Gore Marking</td>
</tr>
<tr>
<td>8</td>
<td>5 of 13</td>
<td>Pavement Markings - Crosswalks</td>
<td>Added Details for Crosswalk Pavement Markings Only above Detail A, B &amp; C</td>
</tr>
<tr>
<td>9</td>
<td>5 of 13</td>
<td>Pavement Markings - Crosswalks</td>
<td>Removed Plan - Typical Crosswalk</td>
</tr>
<tr>
<td>10</td>
<td>5 of 13</td>
<td>Pavement Markings - Crosswalks</td>
<td>Changed sign nomenclature from W11-2 with or without W16-2 (__FT.) or W16-SP (AHEAD) to W11-2 with W16-103P (__FT. AHEAD) or W16-SP (AHEAD) in the Plan - Crosswalk with Advance Warning Pavement Markings</td>
</tr>
<tr>
<td>11</td>
<td>5 of 13</td>
<td>Pavement Markings - Crosswalks</td>
<td>Changed (OPTIONAL) R5-1L to R1-6L</td>
</tr>
<tr>
<td>12</td>
<td>5 of 13</td>
<td>Pavement Markings - Crosswalks</td>
<td>Removed the edge line from going through the crosswalk on the Plan</td>
</tr>
<tr>
<td>13</td>
<td>6 of 13</td>
<td>Pavement Markings - Crosswalks</td>
<td>Changed 24&quot; Max. to 60&quot; Max. on Type B &amp; C Crosswalk spacing</td>
</tr>
<tr>
<td>14</td>
<td>6 of 13</td>
<td>Pavement Markings - Crosswalks</td>
<td>Added Ten to Approved Non-reflective Colors</td>
</tr>
<tr>
<td>15</td>
<td>6 of 13</td>
<td>Pavement Markings - Crosswalks</td>
<td>Spelled Decorative correctly in Plan - Crosswalk with Decorative Pattern</td>
</tr>
<tr>
<td>16</td>
<td>6 of 13</td>
<td>Pavement Markings - Crosswalks</td>
<td>Changed number 6 to number 4 under the notes and on the Plan - Crosswalk with Decorative Pattern</td>
</tr>
<tr>
<td>17</td>
<td>6 of 13</td>
<td>Pavement Markings - Crosswalks</td>
<td>Changed Material width on Type C from 60&quot; Max. to 24&quot; Max.</td>
</tr>
<tr>
<td>18</td>
<td>6 of 13</td>
<td>Pavement Markings - Crosswalks</td>
<td>Changed Spacing on Type C from 24&quot; Max. to 60&quot; Max.</td>
</tr>
<tr>
<td>19</td>
<td>7 of 13</td>
<td>Pavement Markings - Railroad Crossing</td>
<td>Stopped Edge Lines from going through the tracks and kept back 4' from edge of the tracks</td>
</tr>
<tr>
<td>20</td>
<td>7 of 13</td>
<td>Pavement Markings - Railroad Crossing</td>
<td>Changed note 1 from controlled intersections to grade crossings.</td>
</tr>
<tr>
<td>21</td>
<td>8 of 13</td>
<td>Pavement Markings - Legends and Symbols</td>
<td>Changed title from Conventional, Speed Humps, Yield and Bicycle to Legends and Symbols</td>
</tr>
<tr>
<td>22</td>
<td>8 of 13</td>
<td>Pavement Markings - Legends and Symbols</td>
<td>Added Ped Symbol and Shared Lane Marking Symbol</td>
</tr>
<tr>
<td>23</td>
<td>9 of 13</td>
<td>Pavement Markings - Legends and Symbols</td>
<td>Added See page 3 of 11, note 14 for spacing between words above LEGENDS comment</td>
</tr>
<tr>
<td>24</td>
<td>10 of 13</td>
<td>Pavement Markings - Legends and Symbols</td>
<td>Added (OPTIONAL) to Lane Reduction Transition Arrow</td>
</tr>
<tr>
<td>25</td>
<td>10 of 13</td>
<td>Pavement Markings - Legends and Symbols</td>
<td>Changed Quantity for Pavement Marking Removal from e.g., 20'FT to 20'FT²</td>
</tr>
<tr>
<td>26</td>
<td>11 of 13</td>
<td>Pavement Markings - Legends and Symbols</td>
<td>Added sheet 11 - Slow Curve Arrows</td>
</tr>
<tr>
<td>27</td>
<td>12 of 13</td>
<td>Pavement Markings - Legends and Symbols</td>
<td>Added sheet 12 - Roundabout Arrows</td>
</tr>
<tr>
<td>28</td>
<td>13 of 13</td>
<td>Pavement Markings - Legends and Symbols</td>
<td>Changed from sheet 11 to sheet 13</td>
</tr>
<tr>
<td>29</td>
<td>13 of 13</td>
<td>Pavement Markings - Legends and Symbols</td>
<td>Removed () from title around Standard Alphabet &amp; Numerals</td>
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8602

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</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>1 of 4</td>
<td>Snowplowable Raised Pavement Markers</td>
<td>Turned Two-way Marker with Yellow/Red Reflector 45° Left for the Exit Gore Area</td>
</tr>
<tr>
<td>31</td>
<td>1 of 4</td>
<td>Snowplowable Raised Pavement Markers</td>
<td>Turned Two-way Marker with White/Red Reflector 45° Left for the Exit Gore Area</td>
</tr>
<tr>
<td>32</td>
<td>1 of 4</td>
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<td>Changed bottom two arrows to go to the left on Multi-lane Split</td>
</tr>
<tr>
<td>33</td>
<td>1 of 4</td>
<td>Snowplowable Raised Pavement Markers</td>
<td>Changed Symbol to match the Two-way Marker with Yellow/Blank Reflector on the Multi-Lane Split, 60° Physical Gore Area</td>
</tr>
<tr>
<td>Page</td>
<td>1 of 4</td>
<td>Snowplowable Raised Pavement Markers</td>
<td>Changed Variable at 20' Distance on Multi-Lane Split</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>-------------------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>35</td>
<td>2 of 4</td>
<td>Delineation - Guide Rail and Barrier Details</td>
<td>Changed note 7 to say Use any Bulletin 15 approved sheeting.</td>
</tr>
<tr>
<td>36</td>
<td>2 of 4</td>
<td>Delineation - Guide Rail and Barrier Details</td>
<td>Added See Note 7 to Terminal Section Detail and Type WZ Top-Mount Barrier Delineator</td>
</tr>
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<td>37</td>
<td>3 of 4</td>
<td>Delineation - Location Details Interchange Areas</td>
<td>Changed D50-4 to D10 Series on the Median Crossover</td>
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<tr>
<td>38</td>
<td>3 of 4</td>
<td>Delineation - Location Details Interchange Areas</td>
<td>Changed R5-3-6 to R5-101 on the Median Crossover</td>
</tr>
<tr>
<td>39</td>
<td>3 of 4</td>
<td>Delineation - Location Details Interchange Areas</td>
<td>Changed w16-1 to OM1-3 under Legend</td>
</tr>
<tr>
<td>40</td>
<td>4 of 4</td>
<td>Delineation and Markers - Location/Placement Notes</td>
<td>Changed W16 to OM under Location: E</td>
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<tr>
<td>41</td>
<td>4 of 4</td>
<td>Delineation and Markers - Location/Placement Notes</td>
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</tbody>
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# INDEX OF TRAFFIC CONTROL - PAVEMENT MARKINGS AND SIGNING STANDARDS

<table>
<thead>
<tr>
<th>STANDARD DRAWING NO.</th>
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<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>TC-8600</td>
<td>JUN.13, 2013</td>
<td>PAVEMENT MARKINGS (EXPRESSWAY / FREEWAY, CONVENTIONAL, LEGENDS &amp; SYMBOLS)</td>
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<td>TC-8602</td>
<td>JUN.13, 2013</td>
<td>SNOWPLOWABLE RAISED PAVEMENT MARKERS</td>
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<tr>
<td>TC-8604</td>
<td>AUG.17, 2021</td>
<td>DELINEATION</td>
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<tr>
<td>TC-8700C</td>
<td>JUN.13, 2013</td>
<td>SPACING CHARTS / DIRECT APPLIED LETTERS, NUMERALS &amp; ARROWS</td>
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<td>TC-8701A</td>
<td>JUN.13, 2013</td>
<td>ADVANCE SIGNING FOR INTERCHANGES</td>
</tr>
<tr>
<td>TC-8701D</td>
<td>JUN.13, 2013</td>
<td>SIGN DETAILS / FREEWAY &amp; EXPRESSWAY GUIDE SIGNS</td>
</tr>
<tr>
<td>TC-8701E</td>
<td>JUN.13, 2013</td>
<td>EXTRUDED ALUMINUM CHANNEL SIGNS</td>
</tr>
<tr>
<td>TC-8701P</td>
<td>JUN.13, 2013</td>
<td>FREEWAY &amp; EXPRESSWAY ADVANCE SIGNING FOR PARKING AREAS</td>
</tr>
<tr>
<td>TC-8701R</td>
<td>JUN.13, 2013</td>
<td>FREEWAY &amp; EXPRESSWAY ADVANCE SIGNING FOR REST AREAS</td>
</tr>
<tr>
<td>TC-8701S</td>
<td>JUN.13, 2013</td>
<td>FLAT SHEET ALUMINUM SIGNS WITH EXTRUDED ALUMINUM STIFFENERS</td>
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<tr>
<td>TC-8701W</td>
<td>JUN.13, 2013</td>
<td>FREEWAY &amp; EXPRESSWAY ADVANCE SIGNING FOR WELCOME CENTERS</td>
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<tr>
<td>TC-8702A</td>
<td>JUN.13, 2013</td>
<td>POST-MOUNTED SIGNS, TYPE A</td>
</tr>
<tr>
<td>TC-8702B</td>
<td>JUN.13, 2013</td>
<td>POST-MOUNTED SIGNS, TYPE B</td>
</tr>
<tr>
<td>TC-8702C</td>
<td>JUN.13, 2013</td>
<td>POST-MOUNTED SIGNS, TYPE C</td>
</tr>
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<td>TC-8702D</td>
<td>JUN.13, 2013</td>
<td>POST-MOUNTED SIGNS, TYPE D</td>
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<tr>
<td>TC-8702E</td>
<td>JUN.13, 2013</td>
<td>POST-MOUNTED SIGNS, TYPE E</td>
</tr>
<tr>
<td>TC-8710</td>
<td>JUN.13, 2013</td>
<td>DISTANCE MARKERS</td>
</tr>
<tr>
<td>TC-8715</td>
<td>JUN.13, 2013</td>
<td>SIGN LIGHTING</td>
</tr>
<tr>
<td>TC-8716</td>
<td>JUN.13, 2013</td>
<td>TYPE III BARRICADE</td>
</tr>
<tr>
<td>TC-8717</td>
<td>JUN.13, 2013</td>
<td>TEMPORARY PORTABLE SIGN POST, &quot;H&quot; BASE AND &quot;X&quot; BASE</td>
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</tbody>
</table>

**PUB. 111 JUNE 2013 EDITION**

*SEE CHANGE #1 FOR AUGUST 17, 2021 STANDARD REVISION*
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

RECOMMENDED

PAVEMENT MARKINGS
EXPRESSWAY / FREEWAY

1. REMOVE ALL NON-BLACK PAINTED CENTER LINES, COMPLETE CENTER LINES IN BLACK SHADOW LINES REQUIRED FOR CONCRETE ROADWAY SURFACES, APPLY PAINTED CENTER LINES, LANE LINES AND LEGENDS AT 12 MILS MINIMUM WET THICKNESS.
2. APPLY PAINTED CENTER LINES, LANE LINES AND LEGENDS AT 15 MILS MINIMUM WET THICKNESS.
3. APPLY PAINTED CENTER LINES, COMPLETE CENTER LINES IN BLACK SHADOW LINES REQUIRED FOR CONCRETE ROADWAY SURFACES, APPLY PAINTED CENTER LINES, LANE LINES AND LEGENDS AT 12 MILS MINIMUM WET THICKNESS.
4. FOR ADDITIONAL DETAILS REFER TO MARKINGS, CHAPTER 3, MUTCD.
5. FOR LOCATION AND INSTALLATION OF NON-PAVEMENT SURFACE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION'S PUBLICATION 408, UNLESS NOTED OTHERWISE.
6. FOR LOCATION AND INSTALLATION OF SNOWPLOWABLE RAISED PAVEMENT MARKERS, SEE TC-8602.
7. USE CROSSHATCHING AT EXIT GORE AREAS WHEN VISIBILITY OR SIGHT DISTANCE OF THE GORE IS RESTRICTED.
8. HEADER FROM STOP BAR OR PAVEMENT EDGE AND ACROSS FROM 12' TO 6'.
9. RAMP, 5' FROM STOP BAR OR PAVEMENT EDGE AND ACROSS FROM 12'.
10. TYPICAL S.P.A.R.E. ZONE LENGTH IS 0.9 MILES, MINIMUM IS 0.6 MILES.
11. FOR ADDITIONAL DETAILS REFER TO MARKINGS, CHAPTER 3, MUTCD.
12. FOR CONVENTIONAL HIGHWAY PAVEMENT MARKINGS, SEE SHEETS 3 AND 4.
13. FOR LEGENDS & SYMBOLS PAVEMENT MARKINGS, SEE SHEETS 6, 7 AND 8.
14. FOR LOCATION AND INSTALLATION OF SNOWPLOWABLE RAISED PAVEMENT MARKERS, SEE TC-8602.
15. BLACK SHADOW LINES REQUIRED FOR CONCRETE ROADWAY SURFACES.

NOTE:

1. MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION'S PUBLICATION 408, UNLESS NOTED OTHERWISE.
2. REFLECTIVE ALL NON-BLACK PAINTED CENTER LINES, COMPLETE CENTER LINES IN BLACK SHADOW LINES REQUIRED FOR CONCRETE ROADWAY SURFACES, APPLY PAINTED CENTER LINES, LANE LINES AND LEGENDS AT 12 MILS MINIMUM WET THICKNESS.
3. EDGE LINES SHOULD BE 4" MINIMUM WIDE SOLID LINE OF THE COLOR INDICATED AND PLACED 4" INSIDE THE EDGE OF THE PAVEMENT.
4. ON EXPRESSWAYS/FREEWAYS, USE BROKEN LANE LINES 6" WIDE AND LOCATE 4" TO THE RIGHT OF THE PAVEMENT EDGE AND JUMP OR SEAM.
5. APPLY ALL PAINTED CENTER LINES, LANE LINES AND LEGENDS AT 15 MILS MINIMUM WET THICKNESS.
6. APPLY PAINTED CENTER LINES AT 12 MILS MINIMUM WET THICKNESS.
7. USE CROSSHATCHING AT EXIT GORE AREAS WHEN VISIBILITY OR SIGHT DISTANCE OF THE GORE IS RESTRICTED.
8. HEADER FROM STOP BAR OR PAVEMENT EDGE AND ACROSS FROM 12'.
9. BROKEN LANE LINES WITH BLACK SHADOW LINES (SEE NOTE 5).
10. TYPICAL S.P.A.R.E. ZONE LENGTH IS 0.9 MILES, MINIMUM IS 0.6 MILES.

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10. TYPICAL S.P.A.R.E. ZONE LENGTH IS 0.9 MILES, MINIMUM IS 0.6 MILES.
THEORETICAL GORE

PARALLEL LANE

ACCELERATION LANE

TAPERED LANE

DECELERATION LANE

CLOVERLEAF INTERCHANGE

MULTIPLE EXIT LANES

EXIT ONLY LANE DROP

LEGEND

WHITE

YELLOW

DIRECTION OF TRAVEL

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS
EXPRESSWAY / FREEWAY
NOTES:

1. MAKE ALL LANE LINES, EXCEPT CENTER LINES, 4" MINIMUM WIDTH.

2. CONTINUE EDGES AT INTERSECTIONS, BUS LANE STRIPES, ACCESS POINTS AND OTHER MODIFICATIONS.

3. ADJUST ALL TURN LANE LINES TO TERMINATE AT THE CURB OR EDGE OF THE TURN LANE. 

4. MAKE LINES 24" OR BROKEN WHITE LINES 24" WIDE, EXCEPT USE SOLID YELLOW LINES 24" WHEN ADJACENT TO A MEDIAN WHICH SEPARATES OPPOSING DIRECTIONS OF TRAFFIC.

6. LANE LINES THAT DELINEATE THE EDGE OF A TURNING LANE ARE TO BE SOLID WHITE LINES 4" WIDE, NOT LESS THAN 3' TO THE LEFT OF THE TURN LANE, TERMINATED FROM THE STOP BAR.

7. MAKE CENTER LINES 4" WIDE, EXCEPT USE SOLID YELLOW LINES 4" WHEN ADJACENT TO A MEDIAN WHICH SEPARATES OPPOSING DIRECTIONS OF TRAFFIC.

8. DOTTED EXTENSION LINES ARE TO BE 3' MINIMUM LENGTH. THEY SHOULD TERMINATE AT THE CURB OR EDGE OF THE ROADWAY. 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 ONCOMING TRAFFIC.

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 NEAR THE STOP BAR TO PROVIDE A MINIMUM DISTANCE TO TRAVEL IN THE STOP BAR MANDATORY TURN LANE.

10. LOCATE STOP LINES AT A MINIMUM OF 4' IN ADVANCE OF AND PARALLEL TO THE STOP BAR. ONE-WAY BARRIER LINES SHOWN AT THE POINT OF THE LANE LINES INSIDE THE SOLID YELLOW LINES.

11. YIELD LINES ARE TO CONSIST OF A ROW OF SOLID WHITE ISOSCELES TRIANGLES POINTING TOWARD THE APPROACHING VEHICLE. EACH TRIANGLE SHOULD BE 12" WIDE EXTENDING A DISTANCE OF 6' IN A LINE PARALLEL TO THE STOP LINE. YIELD LINES ARE TO BE LOCATED AT A DISTANCE OF 150' FROM THE STOP BAR ON MINOR APPROACHES, WHERE CONDITIONS REQUIRE IT.

12. TRANSVERSE MEDIAN MARKINGS ARE 24" WIDE YELLOW LINES SPACED AS INDICATED. WHEN USED ON MULTI-LANE APPROACH TO A SIGNALIZED INTERSECTION, THE STOP LINES MAY BE STAGGERED TO ASSIST TURNING VEHICLES AND TO IMPROVE SIGHT DISTANCE FOR ONCOMING TRAFFIC.

13. LOCATION OF LINES SHOWN TRANSVERSE TO THE ROADWAY, EDGE AND CENTERLINES.

14. MAKE THE LOCATION OF LINES SHOWN TRANSVERSE TO THE ROADWAY, EDGE AND CENTERLINES SHOWN TRANSVERSE TO THE ROADWAY, EDGE AND CENTERLINES.

15. ALONG THE EDGES OF THE ROADWAY, EDGE AND CENTERLINES SHOWN TRANSVERSE TO THE ROADWAY, EDGE AND CENTERLINES.


17. ALONG THE HEAD OF THE ROADWAY, EDGE AND CENTERLINES SHOWN TRANSVERSE TO THE ROADWAY, EDGE AND CENTERLINES.

18. DOTTED EXTENSION LINES MAY BE USED TO DELINEATE TRAVEL LANE REDUCTION ARROWS. LANE REDUCTION ARROWS SHOULD BE LOCATED ON THE MEDIAN OF THE ROADWAY, EDGE AND CENTERLINES.

19. DOTTED EXTENSION LINES MAY BE USED TO DELINEATE TRAVEL LANE REDUCTION ARROWS. LANE REDUCTION ARROWS SHOULD BE LOCATED ON THE MEDIAN OF THE ROADWAY, EDGE AND CENTERLINES.
**NOTES:**

1. Offset pavement marking lines, as determined by the Engineer. Offset lines on two-lane, two-way roadways (except passing lane) in both directions, can be offset 15’ or more as determined by the Engineer.

2. No passing zones shall be determined by the Engineer.

3. Edge lines are not required along curb and gutter locations.

4. Do not continue edge lines through intersections, and do not break edge lines at driveways.

5. Plate edge lines at raised island locations, outlining the shape of the raised island.

6. Edge lines are not required along curb and gutter locations.

7. 1320’ typical distance between center lane - left turn lane.

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5. Plate edge lines at raised island locations, outlining the shape of the raised island.

6. Edge lines are not required along curb and gutter locations.

7. 1320’ typical distance between center lane - left turn lane.
1. The minimum width of crosswalks shall be 6' and make the crosswalk lines solid white not less than 6" wide, the lines forming a 20 ft. to 50 ft. permit section.

2. For standard crosswalk markings and approved decorative crosswalk pattern configuration and colors, see Sheet 6.

**NOTES:**

**DETAIL A**

- **PLAN**
  - Pedestrian Crosswalk Line
  - Outside Pedestrian Crosswalk Line
  - Inside Pedestrian Crosswalk Line
  - Depressed Curb
  - Stop Line

**DETAIL B**

- **PLAN**
  - Pedestrian Crosswalk Line
  - Outside Pedestrian Crosswalk Line
  - Inside Pedestrian Crosswalk Line
  - Depressed Curb
  - Stop Line

**DETAIL C**

- **PLAN**
  - Pedestrian Crosswalk Line
  - Outside Pedestrian Crosswalk Line
  - Inside Pedestrian Crosswalk Line
  - Depressed Curb

**MID-BLOCK CROSSWALK DETAIL**

Refer to Publication 46, Chapter 11.9 and Note 2.17 for more details.

**LEGEND**

- **WHITE**
- **YELLOW**

**DIRECTION OF TRAVEL**
NOTES:

1. MAKE THE CROSSWALK LINES SOLID WHITE, NOT LESS THAN 6" WIDE.
2. EXTEND THE CROSSWALK ACROSS THE ROADWAY FROM FACE OF CURB TO FACE OF CURB OR SHOULDER.
3. THE MINIMUM WIDTH OF CROSSWALKS SHALL BE 6'.
4. A WHITE BORDER, 6" WIDE, IS REQUIRED ALONG EACH SIDE OF THE DECORATIVE CROSSWALK. THE BORDERS ARE TO BE PARALLEL USING A TYPE OF REFLECTIVE MATERIAL AND EXTEND FROM FACE OF CURB TO FACE OF CURB OR SHOULDER.

LEGEND

- WHITE
- NOTE REFERENCE NUMBER
- PEDESTRIAN FLOW
RAILROAD CROSSING MARKINGS

SEE DETAIL H, NOTES 1-5 FOR MORE DETAILS

NOTE REFERENCE NUMBER 3

TABLE A

LOCATION OF RAILROAD CROSSING SIGN

SEE NOTE 1

NOTES

1. ON TWO-LANE, TWO-WAY HIGHWAYS, THE CENTER LINES ARE YELLOW, 6"-WIDE ETCHED SOLID, CENTERED ON A CONSTRUCTION THROUGH, AND CENTER IS 5'-10" FROM THE EDGE OF THE ROAD. GRADE CROSSINGS BY THE MINIMUM DISTANCE NOTED IN TABLE A


3. ON MULTI-LANE ROADS EXTEND THE TRANSVERSE LINES ACROSS ALL TRAFFIC LANES, AND USE INDIVIDUAL SYMBOLS IN EACH APPROACH LANE.


5. LOCATE STOP LINES 8' FROM THE GATE (IF PRESENT), BUT NO CLOSER THAN 10' FROM THE NEAREST RAIL.

6. CENTER THE RAILROAD SYMBOLS WITHIN EACH LANE ON ALL TRAFFIC LANES, AND USE INDIVIDUAL SYMBOLS IN EACH APPROACH LANE.


8. LOCATE STOP LINES 8' FROM THE GATE (IF PRESENT), BUT NO CLOSER THAN 10' FROM THE NEAREST RAIL.
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, PED SYMBOL, AND BICYCLE RIDER SYMBOL MAY BE USE OF MUTCD TABLE 9C-4, CONDITION "B" FOR ADVANCE WARNING MARKING FOR SPEED HUMPS OR OTHER ENGINEERED VERTICAL ROADWAY DEFLECTIONS.

3. USE MUTCD CHAPTER C-2, TABLE C-4, CONDITION "B" FOR ADVANCE WARNING MARKING FOR SPEED HUMPS OR OTHER ENGINEERED VERTICAL ROADWAY DEFLECTIONS.

4. USE MUTCD CHAPTER C-1.
NOTE:
1. HANDICAPPED SYMBOL SHALL BE WHITE. IT MAY BE INSTALLED ALONGSIDE OTHER STANDARD SYMBOLS WHICH EXTENDS A MINIMUM OF 20 MILS THE BLUE BACKGROUND MUST BE USED. ANY REDUCTION IN DIMENSIONS MUST BE APPROVED BY THE DEPARTMENT.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

PAVEMENT MARKINGS
LEGENDS AND SYMBOLS

TC-8600
### Left Lane (Move Left)

**Lane Reduction Arrow Placement**

1. Locate lane reduction arrow in center of lane.
2. Place lane reduction arrows in groups of three when.
3. Follow MUTCD - Table 2C-4 (Condition A) for placement if lane reduction arrow in advance of taper.
4. Place additional lane reduction arrows at 300' intervals.
5. Place additional lane reduction arrows at 600' intervals.

### Right Lane (Move Right)

**Lane Reduction Arrow Placement**

- Place lane reduction arrows in groups of three when.
- Follow MUTCD - Table 2C-4 (Condition A) for placement if lane reduction arrow in advance of taper.
- Place additional lane reduction arrows at 300' intervals.
- Place additional lane reduction arrows at 600' intervals.

### Table 2C-4

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<td>15 ft²</td>
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<tr>
<td>⊙</td>
<td>32 ft²</td>
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### Legends and Symbols

- **W4-2R**: Arrow
- **W9-2L**: Arrow
- **W9-1R**: Arrow

---

**Commonwealth of Pennsylvania**

**Department of Transportation**

**Recommended**: TC-8600

**PAVEMENT MARKINGS**

**LEGENDS AND SYMBOLS**

**JUN. 2013**

**SHEET 10 OF 13**
SLOW CURVE ARROW
LOW-SPEED STANDARD MARKING
(PRESED SPEED LIMIT 35 MPH OR LESS)

SLOW CURVE ARROW
HIGH-SPEED STANDARD MARKING
(PRESED SPEED LIMIT 40 MPH OR GREATER)

SLOW

HIGH-SPEED STANDARD MARKING
(PRESED SPEED LIMIT 40 MPH OR GREATER)

LEGENDS AND SYMBOLS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS

SLOW CURVE ARROW
HIGH-SPEED STANDARD MARKING
(PRESED SPEED LIMIT 40 MPH OR GREATER)

NOTE: ON ROADWAYS WITH A POSTED SPEED LIMIT OF 35 MPH OR LESS, USE THE SLOW CURVE ARROW, HIGH-SPEED STANDARD MARKING, AS SHOWN ON THIS SHEET. ON ALL OTHER ROADWAYS, USE THE CURVE ARROW, LOW-SPEED STANDARD MARKING, AS SHOWN ON THE SLOW CURVE ARROW, HIGH-SPEED STANDARD MARKING, OTHER SHEETS.
ROUNDABOUT LEFT-RIGHT-Straight
Combination Arrow
(Optional)
NOTES:
1. STANDARD CHARACTERS ARE 24 GRID UNITS HIGH AND 4 UNITS WIDE (EXCEPT LETTER “R” AND THE NUMBER “1” WHICH ARE 1 UNIT WIDE).
2. VERTICAL STROKES ARE 1 UNIT WIDE, HORIZONTAL STROKES ARE 4 UNITS HIGH.
3. SPACING 1 UNIT BETWEEN CHARACTERS OR AS OTHERWISE SHOWN (OPTICAL SPACING MAY BE USED).
4. STANDARD CHARACTER HEIGHTS ARE 8”, EXCEPT FOR THE 6” RAILROAD “R” SYMBOL.
5. FOR 6” CHARACTERS, THE WIDTH IS 16” (USE 4” FOR EACH GRID SQUARE).
6. FOR 10” CHARACTERS, THE WIDTH IS 20” (USE 5” FOR EACH GRID SQUARE).
7. FOR 8” CHARACTERS, THE WIDTH IS 12” (USE 3” FOR EACH GRID SQUARE).

STANDARD ALPHABET

STANDARD NUMERALS
INSTALLATION PATTERNS - FREEWAYS & EXPRESSWAYS

NOTES:
1. MATERIAL AND WORKMANSHIP IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, OR AS ENRIGATED ELSEWHERE.
2. PLACE MARKERS ALONG A LINE (BROKEN LINE) MIDWAY BETWEEN THE PAINTED PORTIONS.
3. PLACE MARKERS ALONG A LANE (BROKEN LINE) MIDWAY BETWEEN THE LANE LINES.
4. INSTALL MARKERS 4" MIN. FROM ANY PAVEMENT SEAM, JOINT OR EDGE.
5. SEE SHEET 4 FOR MARKER DETAILS.
6. FOR MARKER SPACING ON CURVES SEE SHEET 3.

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
- YELLOW/BLANK

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

SNOWPLOWABLE RAISED PAVEMENT MARKERS

TC-8602
TWO LANES TO ONE LANE

FOUR LANES TO TWO LANES

INTERSECTION APPROACH

LEGEND

TWO-WAY MARKER WITH WHITE/BLANK REFLECTOR
TWO-WAY MARKER WITH YELLOW/BLANK REFLECTOR
TWO-WAY MARKER WITH YELLOW/YELLOW REFLECTOR

NOTES:

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

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

SNOWPLOWABLE RAISED
PAVEMENT MARKERS
TWO-LANE ROADWAY

CURVES

CENTER LANE LEFT-TURN ONLY

UNDIVIDED FOUR LANES

NARROW BRIDGE

ACROSS STRUCTURE USE BARRIER-MOUNT DELINEATORS

NOTES:

LEGEND

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

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

SNOWPLOWABLE RAISED PAVEMENT MARKERS

JUN.13, 2013

TC-8602
1. Saw cut to dimensions recommended by manufacturer.
2. Inspect saw cut for proper fit of the marker.
3. Saw cut areas to be dry and free of material that adversely affects the adhesive bond.
4. Install the markers with two-component epoxy adhesive that meets AASHTO Standard M237 and classified as Type IV. This adhesive shall have at least 0.125" clearance (side-to-side movement) for the casting when installed into the cut.
NOTES:

1. PROVIDE MATERIALS AND CONSTRUCT AS SPECIFIED IN PUBICATION 408.

2. GALVANIZED METAL, GIRD, AND/or AFTER FABRICATION, ACCORDING TO AWWA A 102.

3. FOR GUIDE RAIL AND BARREL DECKYTOPS, SEE SHEET 2.

4. FOR INTERCHANGE AREAS LOCATION DETAILS, SEE SHEET 6.

5. FOR LOCATION/PLACEMENT NOTES, SEE SHEET 3.

6. FOR DETECTOR SPACING ON CURVES, SEE SHEET 4.

7. USE TYPE SM-1 AND GM-2 POSTS IN AREAS WHERE TRAFFIC MOTION DEPENDS ON DIRECTIONAL INFORMATION, SUCH AS KERNS, HIGH AT INTERSECTIONS AND THE ENDS OF CLARIONS.

8. USE ANY BULLETIN AS APPROVED SHEETING.
DELINEATION OF IMPACT ATTENUATING DEVICES
AND CRASH CUSHIONS

NOTE:
1. PROVIDE MATERIALS AND CONSTRUCT AS SPECIFIED IN PUBLICATION 466.
2. C由于 PERMANENT IMPACT ATTENUATING DEVICES OR CRASH CUSHIONS, WHERE A TYPE 3 OBJECT MARKER IS TO BE APPLIED TO THE APPROACH END OF AN IMPACT ATTENUATING DEVICE OR CRASH CUSHION, APPLY SHEETING WITHOUT A SUBSTRATE DIRECTLY TO THE APPROACH END MARKER. APPLY SHEETING TO THE APPROACH END MARKER IN LAYERS OF BLACK AND YELLOW STRIPES, SLOPING DOWNWARD AT AN ANGLE OF 45° TOWARD THE SIDE OF THE OBSTRUCTION ON WHICH IT IS TO PASS.
3. C由于 WORK ZONES WITH TEMPORARY IMPACT ATTENUATING DEVICES OR CRASH CUSHIONS, PROVIDE A LAYER OF CASTING, STANDARD ALUMINUM REFLECTIVE SECURITY CLEARANCE MARKER BARS, AND OR VISUAL ATTACH MARKERS DIRECTLY TO THE LEADING END OF TEMPORARY IMPACT ATTENUATING DEVICES OR CRASH CUSHIONS, ON MATERIAL, BARriers OR BARRiER RAILS OR RAILING. PROVIDE SHEETING ON THE TOP AND BOTTOM OF THE C由于 MARKER. A LAYER OF BLACK AND YELLOW STRIPES, SLOPING DOWNWARD AT AN ANGLE OF 45° TOWARD THE SIDE OF THE OBSTRUCTION ON WHICH IT IS TO PASS.
4. FOR ADDITIONAL DELEATION, A GROUND-MOUNTED FEET OR SUBGROUND MOUNTED POST USE SHEETING AS A LAYER OF 3" IN ADVANCE OF AN IMPACT ATTENUATING DEVICE.
5. USE ANY BULLETIN 15 APPROVED SHEETING.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS
DELINEATION

DELINEATION OF IMPACT ATTENUATING
DEVICE DETAILS

RECOMMENDED AUG 11, 2021
RECOMMENDED AUG 11, 2021
SHT 3 OF 5

TC-8604
HOW TO USE THE SPACING CHARTS ON THE FOLLOWING SHEETS:

a. Select the proper chart from sheets 2 through 17. Large letters and numerals sizes where a spacing chart has not been provided, use the nearest chart above for spacing considerations. For other lettering sizes, use 1.5 times the values shown for (e) series & numerals.

b. In the left-hand vertical column, locate the first letter of the word being spaced.

c. Locate the next letter of the word being spaced in the top horizontal column.

d. The figure at the intersection of the two columns is the total width of the first letter plus the space to the left of the next letter.

e. 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.

f. The minimum spacing between words in the same line should be the height of the upper case letter used in that line.

SIZE AND SPACING OF DASHES

The dash is to be centered optically.

NOTE:

- The solidus (slanted line or forward slash) is intended to be used for fractions only.

SIZE AND SPACING OF FRACTIONS

(except see sheet 6 of 12 of TC-8700C for fractions on lines with upper/lower case legend)

SIZE AND SPACING OF DASHES

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS
SPACING CHARTS
DIRECT APPLIED LETTERS & NUMERALS

GENERAL INFORMATION
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**NOTE:**

All dimensions are in inches.
### DIRECT APPLIED LETTERS & NUMERALS

| Font Size | 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" lower case to 15" lower case |
| 12" lower case to 12" lower case |
| 10" lower case to 10" lower case |
| 8" lower case to 8" lower case |
| 6" lower case to 6" lower case |

### COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS
SPACING CHARTS
DIRECT APPLIED LETTERS & NUMERALS

**LOWER CASE**
CLEARVIEW HIGHWAY 5WR

**NOTE:**
ALL DIMENSIONS ARE IN INCHES.
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**NOTE:**
All dimensions are in inches.
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**NOTE:**

All dimensions are in inches.
SIGNING PLANS

1. The signing plans shall be drawn to a scale of 1:1000 (1" = 100').

2. A plan view of the signing and support systems shall be depicted at the approximate locations and shall pictorially depict the position and support systems. A number shall be assigned to each sign not included in the drawing. All signs shall be located in the area of the main roadway and the ramp at all exits. Signs shall be located to avoid the open area of the exit and to avoid the ramp at all exits. The number of signs and letters shall also be included.

3. The number of signs shall be determined in accordance with the layout details. All signs shall be located in the area of the main roadway.

4. The number of signs shall be included for all overhead signs except signs on tangent roadways where motorists have a clear view of the sign for a minimum of 1 mile and maintain a clear view of the sign.

DESCRIPTION OF SIGNS

1. Major guide signs provide motorists advance information on the pattern of destinations served by the interchange. Three major guide signs shall be used, with typical placement being 2.2 to 12 miles. The lower guide sign shall be 8 km (5 miles) in advance of the exit. The following information shall be displayed on the major guide signs, beginning from the top of the sign:

   a. Exit panel when the exit is numbered, the panel shall 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 on which is very close to the interchange. A diagonal sign should be associated with each traffic route, which can be not in one direction, and the word "EXIT" should be used above the shield of routes which are either to the interchange.

   c. The name of the two nearest communities as identified in the official transportation map, one to the left and one to the right, unless alternate destinations are approved in accordance with Department policy. At all exits, directories to the community name to the left should be above the name to the right, at double exits, and any exit should be marked by the community name. In urban areas, the street name should be labeled in lieu of community name.

   d. The distance to the exit in miles and/or fractions of miles shall be given below the community name or the street name. Fractions shall typically be shown to the nearest 1/8 mile, although the fractions 1/4, 1/8, and 1/16 are acceptable. The word "EXIT" or "EXITS" shall be used in the definition of the exit.

   e. A supplemental guide sign may include one or two destinations. Alternate destinations not identified in the major guide signs on any other traffic direction guide shall be shown in the same manner as illustrated in the major guide signs on other traffic direction guide in accordance with Department policy.

   f. Signs used to identify gas, food, lodging, camping, tourist information, hospital, diesel, and state police, with the exception of state police and general motorists service signs installed on the lane, shall be the same size and type as illustrated in traffic standard TC-657.

   g. At an alternative to general motorists service signs, the sign shall be placed under the major guide signs on the lane, and the direction signs of the state police and the general motorists service signs shall be clearly shown in the same manner as illustrated in traffic standard TC-657.

   h. The word "EXIT" or "EXITS" shall be used in the definition of the exit.

   i. Exit direction signs shall include the same traffic routes and destinations as illustrated on the major guide signs, as appropriate, plus an arrow. The alignment of the arrow shall approximate the angle related to the sharpness of the turn.

   j. Exit direction signs shall be located in the area between the main roadway and the ramp at all exits. The sign shall have the word "EXIT" and an arrow. If the exit is numbered, the name of number and letter shall also be included.

   k. The name of the city or community to which the traffic route is carried on the mainline. Exit only panels shall be used on all major guide, exit direction, lane assignment, and diagnostic signs designated as "EXIT ONLY".

   l. Exit only panels shall be used on all major guide, exit direction, lane assignment, and diagnostic signs designated as "EXIT ONLY".

   m. Exit only panels shall be used on all major guide, exit direction, lane assignment, and diagnostic signs designated as "EXIT ONLY".

   n. Exit only panels shall be used on all major guide, exit direction, lane assignment, and diagnostic signs designated as "EXIT ONLY".
NOTES:

* IF NEEDED

** A SIGN THAT IS MOUNTED BACK-TO-BACK WITH A
SIGN THAT IS MOUNTED BACK-TO-BACK WITHIN THE
EDGE OF THE "STOP" OR "YIELD" SIGN.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

SIGNING
DIAMOND INTERCHANGE
ONE-LANE CROSSROAD APPROACH

JUN. 13, 2013
JUN. 13, 2013
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

SIGNING
ONE-LANE CROSSROAD APPROACH WITH NEARBY INTERSECTING ROAD

JUN. 13, 2013
JUN. 13, 2013
TO BE FIELD LOCATED.

ALL MAJOR SIGNS AND SIGN STRUCTURES ARE DISTANCE FROM GORE.

** DISTANCE INDICATED ON SIGN SHALL AGREE WITH SECOND ADVANCE GUIDE SIGNS.

SUPPLEMENTAL SIGN MIDWAY BETWEEN FIRST AND SERVICE SIGN IS NOT USED, LOCATE DESIRABLE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

RECOMMENDED TC-8701A

CLOVERLEAF INTERCHANGE

ADVANCE SIGNING NOTES:

1. USE NEXT EXIT 2 MILES 5250 ONLY WHEN DISTANCES ARE 2 MILES OR MORE APART.

2. WHEN INSUFFICIENT SPACE EXISTS FOR ALL INTERCHANGE SIGNS, THE DISTANCE SIGN SHALL BE DESIGNATED FIRST.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

ADVANCE SIGNING CLOVERLEAF INTERCHANGE

NOTES:

1. USE NEXT EXIT 2 MILES 5250 ONLY WHEN DISTANCES ARE 2 MILES OR MORE APART.

2. WHEN INSUFFICIENT SPACE EXISTS FOR ALL INTERCHANGE SIGNS, THE DISTANCE SIGN SHALL BE DESIGNATED FIRST.
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
MULTI-LANE CROSSROAD APPROACH
CLOVERLEAF INTERCHANGE
SIGNING

# COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

SIGNING
CLOVERLEAF INTERCHANGE
MULTI-LANE CROSSROAD APPROACH

* SHOUL OF BE USED IF INADEQUATE ACCELERATION LANE EXISTS.

** LOCATE ON OR IN FRONT OF BRIDGE IF FREEWAY SHOUL OF BE USED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

SIGNING
CLOVERLEAF INTERCHANGE
MULTI-LANE CROSSROAD APPROACH

* SHOUL OF BE USED IF INADEQUATE ACCELERATION LANE EXISTS.

** LOCATE ON OR IN FRONT OF BRIDGE IF FREEWAY SHOUL OF BE USED.
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

SIGNED
PARTIAL CLOVERLEAF INTERCHANGE
MULTI-LANE CROSSROAD APPROACH

* LANE EXISTS. SHOULD BE USED IF INADEQUATE ACCELERATION

JUN. 13, 2013

JUN. 13, 2013
NOTE:

1. DIAGRAMMATIC GUIDE SIGNS USED WHERE AN OPTION LANE IS PRESENT ON A FREEWAY OR EXPRESSWAY EXIT OF A MULTI-LANE EXIT LANE.

2. DIAGRAMMATIC GUIDE SIGNS SHALL NOT BE USED AT COLONIAL INTERCHANGES WHERE THE COLLECTOR-DISTRIBUTOR ROADWAY IS A MULTI-LANE EXIT LANE.

- AT COLONIAL INTERCHANGES WHERE THE COLLECTOR-DISTRIBUTOR ROADWAY IS A MULTI-LANE EXIT LANE.

- WHERE THE OUTER (NON-LOOP) EXIT RAMP OF THE CLOVERLEAF IS A MULTI-LANE EXIT HAVING AN OPTIONAL EXIT LANE THAT ALSO ACCESS THE THROUGH ROUTE.

- WHERE THE THROUGH ROUTE IS A FREEWAY OR EXPRESSWAY EXIT HAVING AN OPTIONAL EXIT LANE THAT ALSO ACCESS THE THROUGH ROUTE.

- WHERE THE THROUGH ROUTE IS A COLLECTOR-DISTRIBUTOR ROADWAY THAT ARE NOT THE ENTIRE INTERCHANGE CONFIGURATION.

- WHERE THE THROUGH ROUTE IS A COLLECTOR-DISTRIBUTOR ROADWAY THAT ARE NOT THE ENTIRE INTERCHANGE CONFIGURATION.

1. DIAGRAMMATIC GUIDE SIGNS USED WHERE AN OPTION LANE IS PRESENT ON A FREEWAY OR EXPRESSWAY EXIT OF A MULTI-LANE EXIT LANE.

- WHERE THE OUTER (NON-LOOP) EXIT RAMP OF THE CLOVERLEAF IS A COLLECTOR-DISTRIBUTOR ROADWAY.

- WHERE THE THROUGH ROUTE IS A FREEWAY OR EXPRESSWAY EXIT HAVING AN OPTIONAL EXIT LANE THAT ALSO ACCESS THE THROUGH ROUTE.

- WHERE THE THROUGH ROUTE IS A FREEWAY OR EXPRESSWAY EXIT HAVING AN OPTIONAL EXIT LANE THAT ALSO ACCESS THE THROUGH ROUTE.

- WHERE THE THROUGH ROUTE IS A COLLECTOR-DISTRIBUTOR ROADWAY THAT ARE NOT THE ENTIRE INTERCHANGE CONFIGURATION.

- WHERE THE THROUGH ROUTE IS A COLLECTOR-DISTRIBUTOR ROADWAY THAT ARE NOT THE ENTIRE INTERCHANGE CONFIGURATION.
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

TYPICAL SIGNING
CLOSETLY SPACED
INTERCHANGES

SHT. 10 OF 13
JUN. 13, 2013

RECOMMENDED JULY 13, 2013
RECOMMENDED JULY 13, 2013
DATE: 10 OF 13

TC-8701A
TRADITIONAL T-INTERSECTION JUGHANDLE

TRADITIONAL U TURN JUGHANDLE
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

INTERMEDIATE & MINOR INTERCHANGE MULTI-LANE EXITS WITH AN OPTION LANE

INTERMEDIATE & MINOR INTERCHANGE MULTI-LANE EXITS WITH AN OPTION AND AUXILIARY LANE

TC-8701A
INDICATES MEDIUM SPACING.
NOTES:

1. MAJOR GUIDE SIGNS FOR ALL LANE CHANGES AT INTERSECTIONS SHALL BE MOUNTED OVERTHE LANE TO WHICH THE THROUGH TRAFFIC IS EN远离 THE MEDIAN.

2. REFER TO T-STOP FOR ARROW DETAILS. TYPE F AND TYPE I ARROWS ARE SHOWN FOR ILLUSTRATIVE PURPOSES. MINIMUM SPACING AND SHIELD DIMENSIONS MAY ALSO BE USED FOR THE SIGNS SHOWN ON THIS SHEET.

* INDICATES MINIMUM SPACING.
NOTE:
1. The Graphic Legend shall be of a plan view showing a simplified
   diagrammatic arrangement.
2. No other symbols or route shields shall be used as a substitute
   for arrowheads.
3. Only one destination may be shown for each arrowhead, with a
   maximum of two destinations per sign.
4. The arrowhead for the diverging movement should be positioned
   lower on the sign than the arrowhead for the movement that
   continues straight ahead, independent of which movement carries
   the lower sign.
5. The arrowhead for the diverging movement should be positioned
   lower than the arrowhead for the movement that continues straight
   ahead, independent of which movement carries the lower sign.
6. Arrowheads should contain large lines where appropriate and
   route shields shall not be used as a substitute for arrowheads.
7. Route shields, cardinal directions, and destinations should be
   clearly related to the arrowheads, and the arrowhead shields
   point toward the route shields for the correct movement.
8. The cardinal direction should generally be placed adjacent to
   the route shields and the destination should be placed below
   and justified with the route shields.
9. 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.
10. For numbered exits, the exit panel or left exit panel
    shall be used at the top left edge of the sign.
11. For exit signs leading to a single direction, the cardinal
    direction shall be placed adjacent to the route shield, and the
    arrowhead should be placed below the route shield and cardinal
    direction.
12. The exit only sign panels shall be used on the exit
    direction sign at the theoretical gore, except at outlets of two
    overlapping routes where neither of the routes is designated as an
    exit.
13. Specific design standards for graphic components and other
    recommended features are shown in this standard.
14. See Sheet 12 of this standard for shield and cardinal details.
15. See TC-8701A sheet 6 for advance placement of sign.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
GUIDE SIGNS
FREEWAY AND EXPRESSWAY
SIGN DETAILS

PERMITS SECTION
CHIEF, TRAFFIC ENGINEERING AND
TRAFFIC OPERATIONS DIVISION

JUN. 13, 2013
1. OVERHEAD ARROW-PER-LANE SIGNS SHOULD BE USED ON PREMITS AND EXPRESSIONS SMALL ENOUGH TO USE EACH LANE AND SHOULD BE DESIGNED IN ACCORDANCE WITH THE FOLLOWING CRITERIA.

2. THE SIGN SHALL INCLUDE AN UPWARD-POINTING ARROW FOR EACH LANE OF THE APPROACH TO THE SPLIT AT EXIT, AND THE ARROW OF EACH ARROW SHALL BE LOCATED NEAR THE CENTER OF THE LANE WHERE IT APPLIES.

3. ARROWS FOR CONTINUING THROUGH LANES SHALL BE VERTICALLY UPWARD-POINTING UNLESS THE LANE IS ON A 30° UPWARD-POINTING CURVING ARROW DETAILING THE THEORETICAL CURVE, IN WHICH CASE THE ARROWS FOR THE CONTINUING THROUGH LANES SHALL INDICATE THE APPROPRIATE DEGREES OF CURVATURE.


5. THE ARROW FOR AN OPTIONAL EXIT LANE THAT ALSO CARRIES THE THROUGH ROUTE SHALL HAVE A SINGLE SHAFT THAT TERMINATES INTO A VERTICALLY UPWARD-POINTING ARROW SHAPED ARROW AND A CURVING ARROW CORRESPONDING TO THE CONFIGURATION OF THE THROUGH AND EXIT LANE.


7. A VERTICAL WHITE LINE SHALL BE USED TO SEPARATE THE ROUTE SHIELDS AND DESTINATIONS FOR THE TWO OVERLAPPING MOVEMENTS FROM EACH OTHER.

8. THE DISTANCE TO THE EXIT OR SPLIT SHALL BE DISPLAYED BELOW THE IMPLEMENTED DESTINATION ON THE ADVANCE SIGN AT THE SPLIT AND EXIT LOCATION.

9. THE NUMBERS OF LANES DISPLAYED ON A SIGN SHALL CORRESPOND TO THE NUMBER OF LANES AT THE EXIT OR SPLIT ON THAT SIGN. AN ADVANCE SIGN SHALL NOT DEPICT LANES THAT ARE AXIONS DISCONTINUED OF THE SIGN.


11. NO MORE THAN ONE DESTINATION SHOULD BE DISPLAYED FOR EACH MOVEMENT, AND NO MORE THAN TWO DESTINATIONS SHOULD BE DISPLAYED FOR SIGN.

12. THE ARROWHEAD(S) FOR THE DIVERGING MOVEMENT SHOULD BE POSITIONED LOWER ON THE SIGN THAN THE ARROWHEAD(S) FOR MOVEMENT THAT CONTINUE STRAIGHT AHEAD, INDEPENDENT OF WHICH MOVEMENT TOOL THE OPTIONED ROUTE. WHEN THE MOVEMENT TO CONTINUE STRAIGHT AHEAD IS DECIDED, THE ARROWHEAD(S) SHOULD BE POSITIONED AT THE TOP OF THE SAME HEIGHT ON THE SIGN.

13. THE CARDINAL DIRECTION SHOULD BE PLACED BRAND TO THE ROUTE SHIELD FOR EXITS OF SPLITS LENDING IN A SINGLE CARDINAL DIRECTION.

14. THE CARDINAL DIRECTION SHOULD BE PLACED ADJACENT TO THE ROUTE SHIELD FOR EXITS OR SPLITS LENDING IN SEVERAL CARDINAL DIRECTION.

15. THE VERTICAL WHITE LINE THAT IS USED TO SEPARATE THE ROUTE SHIELDS AND DESTINATIONS FOR THE TWO SPLIT MOVEMENTS FROM EACH OTHER SHALL NOT DEPICTED BELOW THE TOP OF THE ARROWS FOR THE THROUGH LANES, AND SHOULD BE POSITIONED APPROPRIATELY WALKWAY BETWEEN THE OCTAVE ARROW FOR THE OPTIMAL MOVEMENT.

16. OTHERS FEATURES OF THE SPECIFICALLY LOW ADVISORY RAMP SPEED IS NEEDED, AN EXIT ADVISORY SIGN MAY NOT BE PLACE THE APPLICABLE DESTINATION LOCATION TO SUPPLEMENT, BUT NOT TO REPLACE THE EXIT OF RAMP ADVISORY SPEED MAPPING SIGN.

17. SPECIFIC DESIGN STANDARDS FOR GRAPHIC COMPONENTS AND OTHER RECOMMENDED FEATURES ARE SHOWN IN THIS STANDARD.

18. SEE SHEET 12 OF THIS STANDARD FOR SHIELDS AND CARDINAL DETAILS.

19. THE "EXIT" AND "ONLY" PANELS SHALL HAVE A YELLOW REFLECTORIZED BACKGROUND WITH BLACK NONREFLECTORIZED LEGEND.

NOTES:

1. OVERHEAD ARROW-PER-LANE SIGNS SHOULD BE USED ON PREMITS AND EXPRESSIONS SMALL ENOUGH TO USE EACH LANE AND SHOULD BE DESIGNED IN ACCORDANCE WITH THE FOLLOWING CRITERIA.

2. THE SIGN SHALL INCLUDE AN UPWARD-POINTING ARROW FOR EACH LANE OF THE APPROACH TO THE SPLIT AT EXIT, AND THE ARROW OF EACH ARROW SHALL BE LOCATED NEAR THE CENTER OF THE LANE WHERE IT APPLIES.

3. ARROWS FOR CONTINUING THROUGH LANES SHALL BE VERTICALLY UPWARD-POINTING UNLESS THE LANE IS ON A 30° UPWARD-POINTING CURVING ARROW DETAILING THE THEORETICAL CURVE, IN WHICH CASE THE ARROWS FOR THE CONTINUING THROUGH LANES SHALL INDICATE THE APPROPRIATE DEGREES OF CURVATURE.


5. THE ARROW FOR AN OPTIONAL EXIT LANE THAT ALSO CARRIES THE THROUGH ROUTE SHALL HAVE A SINGLE SHAFT THAT TERMINATES INTO A VERTICALLY UPWARD-POINTING ARROW SHAPED ARROW AND A CURVING ARROW CORRESPONDING TO THE CONFIGURATION OF THE THROUGH AND EXIT LANE.


7. A VERTICAL WHITE LINE SHALL BE USED TO SEPARATE THE ROUTE SHIELDS AND DESTINATIONS FOR THE TWO OVERLAPPING MOVEMENTS FROM EACH OTHER.

8. THE DISTANCE TO THE EXIT OR SPLIT SHALL BE DISPLAYED BELOW THE IMPLEMENTED DESTINATION ON THE ADVANCE SIGN AT THE SPLIT AND EXIT LOCATION.

9. THE NUMBERS OF LANES DISPLAYED ON A SIGN SHALL CORRESPOND TO THE NUMBER OF LANES AT THE EXIT OR SPLIT ON THAT SIGN. AN ADVANCE SIGN SHALL NOT DEPICT LANES THAT ARE AXIONS DISCONTINUED OF THE SIGN.


11. NO MORE THAN ONE DESTINATION SHOULD BE DISPLAYED FOR EACH MOVEMENT, AND NO MORE THAN TWO DESTINATIONS SHOULD BE DISPLAYED FOR SIGN.

12. THE ARROWHEAD(S) FOR THE DIVERGING MOVEMENT SHOULD BE POSITIONED LOWER ON THE SIGN THAN THE ARROWHEAD(S) FOR MOVEMENT THAT CONTINUE STRAIGHT AHEAD, INDEPENDENT OF WHICH MOVEMENT TOOL THE OPTIONED ROUTE. WHEN THE MOVEMENT TO CONTINUE STRAIGHT AHEAD IS DECIDED, THE ARROWHEAD(S) SHOULD BE POSITIONED AT THE TOP OF THE SAME HEIGHT ON THE SIGN.

13. THE CARDINAL DIRECTION SHOULD BE PLACED BRAND TO THE ROUTE SHIELD FOR EXITS OR SPLITS LENDING IN A SINGLE CARDINAL DIRECTION.

14. THE CARDINAL DIRECTION SHOULD BE PLACED ADJACENT TO THE ROUTE SHIELD FOR EXITS OR SPLITS LENDING IN SEVERAL CARDINAL DIRECTION.

15. THE VERTICAL WHITE LINE THAT IS USED TO SEPARATE THE ROUTE SHIELDS AND DESTINATIONS FOR THE TWO SPLIT MOVEMENTS FROM EACH OTHER SHALL NOT DEPICTED BELOW THE TOP OF THE ARROWS FOR THE THROUGH LANES, AND SHOULD BE POSITIONED APPROPRIATELY WALKWAY BETWEEN THE OCTAVE ARROW FOR THE OPTIMAL MOVEMENT.

16. OTHERS FEATURES OF THE SPECIFICALLY LOW ADVISORY RAMP SPEED IS NEEDED, AN EXIT ADVISORY SIGN MAY NOT BE PLACE THE APPLICABLE DESTINATION LOCATION TO SUPPLEMENT, BUT NOT TO REPLACE THE EXIT OF RAMP ADVISORY SPEED MAPPING SIGN.

17. SPECIFIC DESIGN STANDARDS FOR GRAPHIC COMPONENTS AND OTHER RECOMMENDED FEATURES ARE SHOWN IN THIS STANDARD.

18. SEE SHEET 12 OF THIS STANDARD FOR SHIELDS AND CARDINAL DETAILS.

19. THE "EXIT" AND "ONLY" PANELS SHALL HAVE A YELLOW REFLECTORIZED BACKGROUND WITH BLACK NONREFLECTORIZED LEGEND.

NOTES:
**NOTES:**

1. *EXIT ONLY AND THIS LANE PANELS SHALL HAVE A VARIOUS LEGEND WITH A 0.5" MARGIN AND 1.5" BLACK BORDER.*

2. REFER TO TC-8701C FOR ARROW DETAILS. **TYPE C ARROW LEGEND WITH A 0.5" MARGIN AND 1.5" BLACK BORDER.**

3. REFLECTORIZED BACKGROUND AND BLACK NONREFLECTORIZED EXIT ONLY AND THIS LANE PANELS SHALL HAVE A YELLOW VARIABLE (174" MIN.)

4. SHALL BE USED ON THE GORE SIGNS, AND TYPE C ARROW REFER TO TC-8700C FOR ARROW DETAILS. **TYPE N ARROW LEGEND WITH A 0.5" MARGIN AND 1.5" BLACK BORDER.**

5. *INCREASE SPACING BETWEEN LETTERS BY 40%*

**COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF TRANSPORTATION**

**BUREAU OF MAINTENANCE AND OPERATIONS**

**PERMITS SECTION**

**CHIEF, TRAFFIC ENGINEERING AND**

**TRAFFIC OPERATIONS DIVISION**

**JUN. 13, 2013**
GORE SIGNS & EXIT PANELS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

SIGN DETAILS
FREEWAY AND EXPRESSWAY
GUIDE SIGNS

NOTES:
1. THE LEFT PLAQUE AND LEFT PANEL SHALL HAVE A YELLOW REFLECTORIZED BACKGROUND AND BLACK NONREFLECTORIZED LETTERS.
2. REFER TO TC-8700C FOR ARROW DETAILS. TYPE N ARROW SHALL BE USED ON THE GORE SIGNS, AND TYPE A ARROW SHALL BE USED IN THE EXIT ONLY AND THIS LEFT PANEL.
3. LEFT PLACARD SHALL BE USED ABOVE THE TOP LEFT EDGE OF NON-NUMBERED GUIDE SIGNS AND EXIT SIGN. THE LEFT PANEL SHALL BE ADDED TO EXIT PANELS.

GUIDE SIGNS

FREEWAY AND EXPRESSWAY SIGN DETAILS

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>NUMBER</th>
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</tr>
</thead>
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<td>60</td>
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LEFT PLAQUE

LEFT PANEL

LEFT EXIT PANEL

EXIT PANEL

BORDER: 1.3"  MARGIN: 0.8"  *
INCREASE SPACING BY 25%
<table>
<thead>
<tr>
<th>Type</th>
<th>Facility</th>
<th>Destination Lines</th>
<th>Dimensions (Inches)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Interchange Distance Sign</td>
<td>Freeway</td>
<td>Destination</td>
<td>10.8 / 15</td>
<td>Immediate to the right of the interchange name.</td>
</tr>
<tr>
<td>Interchange Sequence Sign</td>
<td>Freeway</td>
<td></td>
<td>10.9 / 12</td>
<td>Left panel shall be displayed in the same line.</td>
</tr>
<tr>
<td>Next (Number) Exits Area Sign</td>
<td>Freeway</td>
<td></td>
<td>11.3 / 8</td>
<td>* Indicates minimum spacing.</td>
</tr>
<tr>
<td>Community Interchanges Identification Sign</td>
<td>Freeway</td>
<td>Destination</td>
<td>10.4 / 12</td>
<td>Metropolis Exits.</td>
</tr>
<tr>
<td>Community Interchanges Identification Sign</td>
<td>Expressway</td>
<td>Destination</td>
<td>10.4 / 12</td>
<td>Hillcrest St (LEFT) 1/2</td>
</tr>
<tr>
<td>Community Interchanges Identification Sign</td>
<td>Expressway</td>
<td>Destination</td>
<td>10.4 / 12</td>
<td>College Ave (LEFT) 1/4</td>
</tr>
<tr>
<td>Community Interchanges Identification Sign</td>
<td>Expressway</td>
<td>Destination</td>
<td>10.4 / 12</td>
<td>Hanover Ave (LEFT) 2 3/4</td>
</tr>
<tr>
<td>Community Interchanges Identification Sign</td>
<td>Expressway</td>
<td>Destination</td>
<td>10.4 / 12</td>
<td>Miller St (LEFT) 1/2</td>
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<tr>
<td>Community Interchanges Identification Sign</td>
<td>Expressway</td>
<td>Destination</td>
<td>10.4 / 12</td>
<td>College Ave (LEFT) 1/4</td>
</tr>
</tbody>
</table>

**Notes:**
1. Under the exit direction is to the left, a left turn will be required at the point of the interchange sign.
2. See TC-8700C, Sheet 1 for layout of fractions.
1. All service signs shall have a blue reflectorized background and white reflectorized symbols, legends, and numbers. Unless otherwise noted, the type of reflective sheeting shall comply with Department Publication 408.

2. The blaze height of the service sign shall be 120”.

3. The blaze shall be 60” wide and shall be the width of the service sign. If more than four symbols are required, a 120” x 60” 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 [24” x 24”], see separate in Department Publication 236.

6. Normal symbols should be gas (diesel), food, lodging, and other service.
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
RECOMMENDED
TC-8701D

SIGN DETAILS
FREEWAY AND EXPRESSWAY
GUIDE SIGNS
RAMP DESTINATION
AND BOUNDARY SIGNS

NOTES:
1. ALL SIGNS ON THIS SHEET SHALL HAVE A 1.25" BORDER
   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. COUNTY BOUNDARY SIGNS AND WATERWAY SIGNS SHALL HAVE WHITE REFLECTORIZED
   BACKGROUND AND BLUE REFLECTORIZED
   LEGEND AND BORDER.
4. UNLESS NOTED OTHERWISE, THE
   TYPE OF REFLECTIVE SHEETING
   SHALL COMPLY WITH
   INDICATES MINIMUM SPACING

* indicates minimum spacing
**Roundabout Guide Signs**

**Exit Destination**

**Sign Details**

**Roundabout Type A**

**Roundabout Type B**

*Indicates minimum spacing.*
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

EXTRUDED ALUMINUM CHANNEL SIGN

1. IF A 4" SECTION IS REQUIRED, IT SHOULD BE PLACED AT THE TOP AND OR THE BOTTOM OF THE SIGN.
2. STITCH BOLTS TO BE USED AT 12" CENTERS THROUGHOUT THE SIGN PANEL.
3. A DOUBLE POST CLIP PATTERN IS REQUIRED FOR ALL OVERHEAD SIGNS.
4. A LOCK WASHER AND STANDARD NUT FOR POST CLIPS.
5. SEE TC-8702E FOR INSTALLATION ON WOOD POSTS.

SECTION A-A

NOTES:

1. IF A 4" SECTION IS REQUIRED, IT SHOULD BE PLACED AT THE TOP AND OR THE BOTTOM OF THE SIGN.
2. STITCH BOLTS TO BE USED AT 12" CENTERS THROUGHOUT THE SIGN PANEL.
3. A DOUBLE POST CLIP PATTERN IS REQUIRED FOR ALL OVERHEAD SIGNS.
4. A LOCK WASHER AND STANDARD NUT FOR POST CLIPS.
5. SEE TC-8702E FOR INSTALLATION ON WOOD POSTS.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

EXTRUDED ALUMINUM CHANNEL SIGN

1. IF A 6" SECTION IS REQUIRED, IT SHOULD BE Placed AT THE TOP AND OR THE BOTTOM OF THE SIGN.
2. STITCH BOLTS TO BE USED AT 12" CENTERS THROUGHOUT THE SIGN PANEL.
3. A DOUBLE POST CLIP PATTERN IS REQUIRED FOR ALL OVERHEAD SIGNS.
4. A LOCK WASHER AND STANDARD NUT FOR POST CLIPS.
5. SEE TC-8702E FOR INSTALLATION ON WOOD POSTS.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

EXTRUDED ALUMINUM CHANNEL SIGN

1. IF A 6" SECTION IS REQUIRED, IT SHOULD BE PLACED AT THE TOP AND OR THE BOTTOM OF THE SIGN.
2. STITCH BOLTS TO BE USED AT 12" CENTERS THROUGHOUT THE SIGN PANEL.
3. A DOUBLE POST CLIP PATTERN IS REQUIRED FOR ALL OVERHEAD SIGNS.
4. A LOCK WASHER AND STANDARD NUT FOR POST CLIPS.
5. SEE TC-8702E FOR INSTALLATION ON WOOD POSTS.

SECTION A-A

NOTES:

1. IF A 4" SECTION IS REQUIRED, IT SHOULD BE PLACED AT THE TOP AND OR THE BOTTOM OF THE SIGN.
2. STITCH BOLTS TO BE USED AT 12" CENTERS THROUGHOUT THE SIGN PANEL.
3. A DOUBLE POST CLIP PATTERN IS REQUIRED FOR ALL OVERHEAD SIGNS.
4. A LOCK WASHER AND STANDARD NUT FOR POST CLIPS.
5. SEE TC-8702E FOR INSTALLATION ON WOOD POSTS.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

EXTRUDED ALUMINUM CHANNEL SIGN
NOTES:
1. DEFINITION: PARKING AREAS DO NOT HAVE PERMANENT RESTROOM FACILITIES.
2. DISTANCE: USE DISTANCE FROM THEORETICAL GORE FOR POINTS INDICATED ON SIGNS.
3. COLOR: USE BLUE REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED DIRECT APPLIED LEGEND AND BORDER, UNLESS OTHERWISE NOTED.
4. MATERIAL: USE 2" WIDE BORDER WITH 12" CORNER RADIUS, REFLECTORIZED DIRECT APPLIED.
5. LEGENDS AND SIGN BACKGROUNDS: REFLECTORIZED DIRECT APPLIED LEGENDS, USE 15" SERIES D UPPER CASE FOR LEGEND, AND 12" SERIES D LOWER CASE FOR DISTANCE INDICATED ON SIGNS.
6. DISTANCE: USE DISTANCE FROM THEORETICAL GORE FOR POINTS INDICATED ON SIGNS.
7. MATERIAL: USE ONLY WHEN SEPARATE PARKING AREAS ARE PRESENT.
8. REFLECTIVE BORDERS: MAINTAIN 10" MINIMUM SPACING BETWEEN SIGNS TO DECELERATION LANE.
9. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS
FREeway AND EXPRESSWAY
ADVANCE SIGNING
PARKING AREAS

RECOMMENDED: JUN. 13, 2013
RECOMMENDED: JUN. 13, 2013
SHEET 1 OF 1
TC-8701P
1. This standard applies to large reflectorized signs manufactured from flat sheet aluminum, braced with extruded aluminum stiffeners and connected to specified type of post via vertical supports of a structure. In the event of single and double post, the stainless steel post clips, when used, must be designed for both post mounted and overhead sign applications.

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 installations where the spacing between the posts is three times the sign overhang. The maximum stiffener spacing is indicated horizontally to the right of the sign width. However, the spacing in the chart is for the sign system shown, and the spacing in the chart should be increased for signs of other systems.

4. When signs are to be installed and the spacing of the posts is other than those indicated in note no. 1, the fabricator should consult the District Traffic Engineer for the proper spacing of the stiffeners. However, the spacing for the stiffeners for the sign system shown shall not be less than the spacing indicated in the chart.

5. To use the stiffener spacing chart, start with the sign width and go vertically upward until intersecting the curved line indicating the proper spacing for the same width of sign. The maximum stiffener spacing is indicated horizontally to the right of the sign width.

6. The maximum stiffener spacing is normally 29", however, for signs over 12' in width, a continuous sheet of stiffeners shall be installed throughout the height of the sign. Vertical supports shall be installed at a distance of not less than 3' from the top and bottom of the sign. In the case of signs over 12' in width, a continuous sheet of stiffeners shall be installed throughout the height of the sign. Vertical supports shall be installed at a distance of not less than 3' from the top and bottom of the sign.

7. Panels may be spliced using any of the three arrangements shown on sheet 2 of these standards.

8. See TC-8701E for installation on wood posts.

NOTES:

- THIS STANDARD APPLIES TO LARGE REFLECTORIZED SIGNS MANUFACTURED FROM FLAT SHEET ALUMINUM, BRACED WITH EXTRUDED ALUMINUM STIFFENERS, AND CONNECTED TO A SPECIFIED TYPE OF POST VIA VERTICAL SUPPORTS OF A STRUCTURE. IN THE EVENT OF SINGLE AND DOUBLE POST, THE STAINLESS STEEL POST CLIPS, WHEN USED, MUST BE DESIGNED FOR BOTH POST MOUNTED AND OVERHEAD SIGN APPLICATIONS.

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THIS STANDARD AND PUB. 408.


- TO USE THE STIFFENER SPACING CHART, START WITH THE SIGN WIDTH AND GO VERTICALLY UPWARD UNTIL INTERSECTING THE CURVED LINE INDICATING THE PROPER SPACING FOR THE SAME WIDTH OF SIGN. THE MAXIMUM STIFFENER SPACING IS INDICATED HORIZONTALLY TO THE RIGHT OF THE SIGN WIDTH.


- PANELS MAY BE SPLICED USING ANY OF THE THREE ARRANGEMENTS SHOWN ON SHEET 2 OF THESE STANDARDS.

- SEE TC-8701E FOR INSTALLATION ON WOOD POSTS.
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

ALUMINUM EXTRUSION SIGN BRACE

SECTION A-A

BUTTING PLATE

SECTION B-B

SECTION C-C

GENERAL INFORMATION

WITH EXTRUDED ALUMINUM STIFFENERS

PERMITS SECTION

CHIEF, TRAFFIC ENGINEERING AND
TRAFFIC OPERATIONS DIVISION

CHIEF, HIGHWAY SAFETY AND
BUREAU OF MAINTENANCE AND OPERATIONS

FLAT SHEET ALUMINUM SIGNS

JUN. 13, 2013

JUN. 13, 2013
SPLICE AND CONNECTION DETAILS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

FLAT SHEET ALUMINUM SIGNS
WITH EXTRUDED ALUMINUM STIFFENERS

LARGE SECTION SPLICE
MEDIUM SECTION SPLICE
SINGLE LARGE SECTION PANEL SPLICE
DOUBLE LARGE SECTION PANEL SPLICE
BUTTING PLATE
POST CLIP SF-VHB
PLASTIC INSERT
SPLICE BAR

L. 1.00" x 0.075" x 2.28"
L. 0.75" x 1.00" x 3"
L. 0.375" x 0.75" x 0.75"
0.375"
0.75"
3"

0.05" x (0.075" x 0.75"

FOR 3/8" BOLTS 3/8" HOLES

PERMITS SECTION CHIEF, TRAFFIC ENGINEERING AND
TRAFFIC OPERATIONS DIVISION
CHIEF, HIGHWAY SAFETY AND
BUREAU OF MAINTENANCE AND OPERATIONS

1.00" 2.28" 0.39" 0.49" 0.99" 0.41"

L 1.00" x 0.075" x 2.28"
STIFFENER
EXIT PANEL BRACE
TOGGLE AND BUCKLE STRAP
BUTTING PLATE
TWO-STRAP CONNECTIONS
STAGGER BUCKLES ON
DETAIL 2
DETAIL 4
DETAIL 5
DETAIL 6
SHT. 4 OF 4
JUN. 13, 2013
JUN. 13, 2013
L3" x 3" x 0.19"
ALUMINUM
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS
PERMITS SECTION
CHIEF, TRAFFIC ENGINEERING AND
TRAFFIC OPERATIONS DIVISION
CHIEF, HIGHWAY SAFETY AND
BUREAU OF MAINTENANCE AND OPERATIONS
FLAT SHEET ALUMINUM SIGNS
WITH EXTRUDED ALUMINUM STIFFENERS
POST & STIFFENER CONNECTIONS
RECOMMENDED 1/15/2015
RECOMMENDED 1/15/2015
SHT. 4 OF 4
TC-8701S
1. Design based on 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS including 2001 interim specifications with the following design criteria:
   - Basic wind speed V = 45 mph (0.71 gale)
   - King importance factor K = 0.5 (3 year design life)
   - Wind importance factor B = 0.7
   - Fatigue is not considered for roadside signs.
   - Bending coefficient (C) = 1.30
   - Wind importance factor (I) = 0.71 (10 year design life)

2. Erection of posts is based on Bruno's method outlined in the AASHTO specifications. See Sheet 6 for soil properties.

3. Minimum post height between ground level and bottom of sign will be 7' MIN. (SEE GENERAL NOTE 3) when the sign is located in the clear zone as defined in Publication 13M.

4. Minimum post height between ground level and bottom of sign will be 7' MIN. (SEE SHEET 8) when the sign face will be obscured by vegetation and where the sign is protected by guardrail or barrier. At locations where it is very unlikely to be hit by an errant vehicle, e.g., on a very steep bank.

5. MOUNT ALL SIGN PANELS ABOVE POST HINGES.

6. FOR SELECTION OF FOOTINGS, REFER TO FOOTING SELECTION TABLE ON SHEET 8.

7. FOR SELECTION OF SIGNS, LUMINAIRES AND TRAFFIC SIGNALS including 2001 interim specifications with the following design criteria, see Sheet 6 for soil properties.

8. FOR SELECTION OF POSTS, REFER TO POST SELECTION TABLES ON SHEETS 2 THROUGH 4.

9. FOR SELECTION OF POSTING AND REINFORCEMENT, REFER TO POST SELECTION TABLE ON SHEET 6.

10. FOR DETAIL OF SIGN PANELS AND ATTACHMENT HARDWARE, SEE TRAFFIC STANDARD TC-8701E OR TC-8701S.

GENERAL NOTES:

1. MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, UNLESS NOTED OTHERWISE.

2. POST #1 Always adjacent to roadway, whether sign is located on left or right.

3. At locations with unmountable curb, guide rail, or barrier, place the right edge of the sign at least 5 ft. behind the curb. At all other locations, place the sign panel on the side facing the approach. For post mounted signs, place the sign panel on the side facing the approach. The sign panel on the side facing the approach shall be located at least 2 ft. behind the curb.

4. LOCATE SIGNS TO AVOID PLACING SUPPORTS IN DRAINAGE DITCHES.

5. MOUNT ALL SIGN PANELS ABOVE POST HINGES.

6. REFER TO SHEET 5 FOR DETAIL OF SIGN PANELS AND ATTACHMENT HARDWARE, SEE TRAFFIC STANDARD TC-8701E OR TC-8701S.

7. FOR POST BASE AND HINGE DETAILS, REFER TO SHEET 5.

8. REFER TO POST SELECTION TABLE ON SHEET 6.

9. REFER TO POST SELECTION TABLE ON SHEET 6.

10. REFER TO FOOTING SELECTION TABLE ON SHEET 8.
### POST SELECTION TABLE - TWO POSTS

<table>
<thead>
<tr>
<th>W FT</th>
<th>L FT</th>
<th>6'</th>
<th>7'</th>
<th>8'</th>
<th>9'</th>
<th>10'</th>
<th>11'</th>
<th>12'</th>
<th>13'</th>
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<th>16'</th>
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</tbody>
</table>

#### LEGEND
- P1 = H x 9
- P2 = W x 12
- P3 = B x 16
- P4 = W x 21
- P5 = B x 27
- P6 = W x 53
- P7 = B x 40

#### SIGN ON TWO POSTS

<table>
<thead>
<tr>
<th>SHEET A</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1 = W x 6</td>
</tr>
<tr>
<td>P2 = H x 11</td>
</tr>
</tbody>
</table>

Two P2 = W x 12 steel posts are required.

#### SIGN POST SELECTION NOTES:
1. Determine values of W, H, and LFT as indicated in Sketch A.
2. For selection of posts, enter tables with values of W, H, and LFT.
3. For a sign size between these values of W, H, and LFT, use next nearest P1 value.
4. All posts are ASTM A 572 Gr 50 steel.
5. Use the longest post to select all post sizes.
6. Posts in the selection table with all "**" must have a maximum clear separation of 14' from the other post. The minimum separating distance is equal to the sign height.
7. There is no need to check the column height criteria for posts other than this set of two posts. Each post should have a clear separation of 14' from any other post. Small signs may be set closer than 14' but not less than 7'. Each post shall have a mass less than 17'.

#### NOTES:
1. The posting height can be adjusted when support is located above the top of the sign, and the sign is located to allow the curve to enter the sign the separation at the top is closer to the rod.

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**COMMONWEALTH OF PENNSYLVANIA**
**DEPARTMENT OF TRANSPORTATION**
**BUREAU OF MAINTENANCE AND OPERATIONS**

**POST-MOUNTED SIGNS, TYPE A**

**POST SELECTION TABLE**

[Sheet 3]
| Post Height (Ft) | 4' 5' 6' 7' 8' 9' 10' 11' 12' 13' 14' 15' 16' 17' 18' |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                  |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| POST SELECTION   |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |

**NOTES:**
1. See Sheet 2 for sign post selection notes and Sheet 3 for signs on three posts.

**COMMONWEALTH OF PENNSYLVANIA**
**DEPARTMENT OF TRANSPORTATION**
**BUREAU OF MAINTENANCE AND OPERATIONS**

**POST-MOUNTED SIGNS, TYPE A**

**POST SELECTION TABLE**

**TABLE CONTINUED FROM SHEET 2**
### POST SELECTION TABLE - THREE POSTS

<table>
<thead>
<tr>
<th>B (Feet)</th>
<th>L (Feet)</th>
<th>4'</th>
<th>5'</th>
<th>6'</th>
<th>7'</th>
<th>8'</th>
<th>9'</th>
<th>10'</th>
<th>11'</th>
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<tr>
<td>16'</td>
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</tbody>
</table>

### LEGEND

- P1 = W6 x 9
- P2 = W6 x 12
- P3 = W6 x 15
- P4 = W6 x 22
- P5 = W6 x 30
- P6 = W6 x 40

### SKETCH B

**NOTE:**
1. See sheets 2 and 3 for sign post selection notes and signs on the posts.

---

**COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF TRANSPORTATION**

**BUREAU OF MAINTENANCE AND OPERATION**

**POST-MOUNTED SIGNS, TYPE A**

**POST SELECTION TABLE**

[Revised: Jan 16, 2013] [Drawing: 1 of 8]
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 8.
5. ALL BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. FASTENERS, INCLUDING SPECIAL BOLT AND COUPLING, ARE INSTALLED EXCEPT FOR SPECIAL BOLT AND COUPLING, ARE INSTALLED WITH CONVENTIONAL WRENCHES. DO NOT USE A PIPE WRENCH.
6. SHIMS BETWEEN THE COUPLINGS AND ANCHORS SHOULD BE SECURED AS TIGHT AS POSSIBLE AND SHIMS TO BE ADDED SHOULD BE SECURED AS TIGHT AS POSSIBLE WITH LOCK WASHERS.

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 8.
5. ALL BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. FASTENERS, INCLUDING SPECIAL BOLT AND COUPLING, ARE INSTALLED EXCEPT FOR SPECIAL BOLT AND COUPLING, ARE INSTALLED WITH CONVENTIONAL WRENCHES. DO NOT USE A PIPE WRENCH.
6. SHIMS BETWEEN THE COUPLINGS AND ANCHORS SHOULD BE SECURED AS TIGHT AS POSSIBLE AND SHIMS TO BE ADDED SHOULD BE SECURED AS TIGHT AS POSSIBLE WITH LOCK WASHERS.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

POST-MOUNTED SIGNS,
TYPE A

POST BASE AND HINGE DETAILS
**BREAKAWAY COUPLING DETAIL**

Note: Do not place torque across neck portion of coupling.

**COUPLING BOLT DETAIL**

**SHIM DETAIL**

**BRACKET DETAIL**

---

**BREAKAWAY COUPLING AND BRACKET DETAILS**

**TABLE A**

<table>
<thead>
<tr>
<th>Bracket No.</th>
<th>D (INCHES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.100&quot;</td>
</tr>
<tr>
<td>2</td>
<td>0.150&quot;</td>
</tr>
<tr>
<td>3</td>
<td>0.200&quot;</td>
</tr>
</tbody>
</table>

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**BUREAU OF MAINTENANCE AND OPERATIONS**

**PERMITS SECTION**

**CHIEF, TRAFFIC ENGINEERING AND TRAFFIC OPERATIONS DIVISION**

**CHIEF, HIGHWAY SAFETY AND**

**JUN. 13, 2013**

**COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF TRANSPORTATION**

**BUREAU OF MAINTENANCE AND OPERATIONS**

**POST-MOUNTED SIGNS, TYPE A**

**BREAKAWAY COUPLING AND BRACKET DETAILS**
**NOTES FOR SELECTION OF BRACKET NUMBER**

1. FOR EACH POST, DETERMINE VALUES OF "H" AND "L" AS INDICATED IN SKETCH.

   - H = MAXIMUM HEIGHT OF SIGN (FEET).
   - L = DISTANCE BETWEEN THE TOP OF FOOTING AND THE TOP OF SIGN (FEET) FOR EACH POST.

2. ENTER TABLE WITH "H" AND "L" TO SELECT THE REQUIRED BRACKET NUMBER.

   - USE THE NEXT HIGHER VALUE.

3. FOR SIZES OF "H" AND "L" BETWEEN THOSE VALUES ON THE TABLE, USE THE NEXT HIGHER VALUE.

### TYPE A

#### POST-MOUNTED SIGNS

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<tbody>
<tr>
<td>B-525 Bracket Tables</td>
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<td>B-650 Bracket Tables</td>
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</tbody>
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**Commonwealth of Pennsylvania**

**Department of Transportation**

**Bureau of Maintenance and Operations**

**Permits Section**

**Chief, Traffic Engineering and Traffic Operations Division**

JUN.13, 2013

---

**Post-Mounted Signs, Type A**

**Bracket Selection Tables**

|---------|----------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
TOP OF FOOTING PROJECTIONS ABOVE GROUND LINE SHALL BE MINIMIZED. THE MAXIMUM PERMISSIBLE FOOTING PROJECTION SHALL BE 4" ON THE LOWER SLOPE AND 3" ON THE OTHER SIDE OF THE SUPPORT.

1. ENTER FOOTING SELECTION TABLE WITH REQUIRED POST SIZE AND FIND CORRESPONDING FOOTING DETAILS.
2. THE ANCHOR SHALL BE 304 STAINLESS STEEL WITH 1045 STEEL ROD AND 1008 COIL.
3. THREAD DEPTH = 1.125" MIN.
4. STAINLESS STEEL WASHER 2.5" O.D., 1.0625" I.D., 0.125" THICK
5. STEEL WIRE 2.1875" LONG AND 1.4375" O.D., CLOSED WIRE COIL (4 PER ANCHOR)
6. TO AVOID UNDERCARRIAGE SNAGGING ON CONVEX GROUND PROFILES, THE TOP OF THE FOOTING SHALL NOT PROJECT MORE THAN 4 INCHES ABOVE ANY 5 FT. CHORD BETWEEN A POINT ON THE GROUND SURFACE ON ONE SIDE AND A POINT ON THE GROUND SURFACE ON THE OTHER SIDE OF THE SUPPORT.

FOOTING SELECTION TABLE

<table>
<thead>
<tr>
<th>POST SIZE (ft)</th>
<th>DEPTH (ft)</th>
<th>REINF. STEEL</th>
<th>REINF. STEEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>W6</td>
<td>2.5</td>
<td>6-#4</td>
<td></td>
</tr>
<tr>
<td>W8</td>
<td>2.5</td>
<td>7-#4</td>
<td></td>
</tr>
<tr>
<td>W10</td>
<td>3.0</td>
<td>9-#4</td>
<td>2-1/2#7</td>
</tr>
<tr>
<td>W14</td>
<td>3.0</td>
<td>10-#4</td>
<td>2-1/2#7</td>
</tr>
<tr>
<td>W18</td>
<td>3.5</td>
<td>12-#7</td>
<td>2-1/2#7</td>
</tr>
</tbody>
</table>

SOIL PROPERTIES:
FOUNDATION DESIGN IS BASED ON BROOK'S METHOD USING THE FOLLOWING SOIL PROPERTIES:
- TYPE OF SOIL = LOOSE-MEDIUM SAND
- UNIT WEIGHT OF SOIL (γ) = 120 PCF
- ANGLE OF INTERNAL FRICTION (ϕ) = 25°.

NOTES:
1. ENTER FOOTING SELECTION TABLE WITH REQUIRED POST SIZE AND FIND REQUIRED FOOTING VALUES AS SHOWN IN DETAILS.
2. THE ANCHOR SHALL BE 304 STAINLESS STEEL WITH 1045 STEEL ROD AND 1008 COIL.
3. FORM THE TOP 1 FT. OF THE FOOTING.
4. THE ANCHOR SHALL BE 304 STAINLESS STEEL WITH 1045 STEEL ROD AND 1008 COIL.
5. THREAD DEPTH = 1.125" MIN.
6. STAINLESS STEEL WASHER 2.5" O.D., 1.0625" I.D., 0.125" THICK
7. STEEL WIRE 2.1875" LONG AND 1.4375" O.D., CLOSED WIRE COIL (4 PER ANCHOR)
8. (LONGITUDINAL SPACING OF ANCHOR)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS
POST-MOUNTED SIGNS, TYPE A
1. Determine the proper size and number of sign posts from the appropriate graph on Sheet A.

2. Punch out appropriate knockouts and attach the sign.

3. Install the proper size anchor post from the square steel posts table on this sheet.

4. Drive the anchor post into the ground, using the splice sleeve. (Note: The anchor post is made of another elevation on the concrete.

5. Punch out the sixth knockout from the bottom of the sign post.

6. Drive a minimum of 6" of the sign post into the anchor post.

7. Attach the sign post to the anchor post with one ½" corner bolt and nut (or alternatively one 3/8" bolt and nut through the top of the anchor post, then tighten by using the turn-of-nut method. Using this method to ensure that all parts are brought together into full contact with each other, then tighten to an additional 2/3 turn.

**INSTALLATION IN CONCRETE**

Install as noted above, but place a 18" long anchor sleeve over the sign post. Select the proper size anchor sleeve from the square steel posts table on this sheet.

**NOTES:**

1. Materials and workmanship shall be in accordance with Pub. CRB. 

2. Sign posts and splice sleeves shall have ½" diameter holes or die-cut knockouts on 1" centers on all four sides. Anchor posts and anchor sleeves shall have ½" diameter holes on 1" centers on all four sides.

3. Bolts and nuts shall be ASTM A307, grade B.

4. Drive sheet may be used to fasten sign blanks to the sign post.

**COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF TRANSPORTATION**

**BUREAU OF MAINTENANCE AND OPERATIONS**

**POST-MOUNTED SIGNS, TYPE B**

**STEEL SQUARE POSTS (SYSTEM A)**

**ERECTION DETAILS**

**RECOMMENDED JAN. 13, 2013**

**PERMITS SECTION CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION CHIEF, HIGHWAY SAFETY AND SECURITY DIVISION BUREAU OF MAINTENANCE AND OPERATIONS**

**JUN. 13, 2013**
1. The signs that are pre-punched, this distance is the distance between the horizontal holes.

**SEE NOTE 2** FOR SIGN LOCATION/INSTALLATION DETAILS.

\[ A = \text{SIGN AREA (IN. x IN.)} \]

\[ H = \text{HEIGHT OF SIGN} \]

\[ W = \text{WIDTH OF SIGN} \]

\[ A = W \times H \text{ FOR SQUARE OR RECTANGULAR SIGNS}, \]

\[ A = \text{SIGN AREA (SEE TABLE)}. \]

**NOTES:**

1. To determine the post size, enter the graph with the values of A and B and choose the appropriate post size.

2. 1.5" posts shall have 3 ft. clearance between each other when used in one-post installations. 2.25" posts shall have 5 ft. clearance between each other when used in two-post installations.

**COMMONWEALTH OF PENNSYLVANIA**

DEPARTMENT OF TRANSPORTATION

BUREAU OF MAINTENANCE AND OPERATIONS

POST-MOUNTED SIGNS, TYPE B

STEEL SQUARE POSTS (SYSTEM A) SELECTION TABLES

<table>
<thead>
<tr>
<th>SQUARE OR RECTANGULAR SIGNS</th>
<th>IRREGULAR SHAPED SIGNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A IN. x IN.</td>
<td>A IN. x IN.</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>8&quot; x 12&quot;</td>
<td>2.7</td>
</tr>
<tr>
<td>10&quot; x 16&quot;</td>
<td>3.1</td>
</tr>
<tr>
<td>12&quot; x 20&quot;</td>
<td>3.5</td>
</tr>
<tr>
<td>14&quot; x 24&quot;</td>
<td>3.9</td>
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<tr>
<td>16&quot; x 30&quot;</td>
<td>4.3</td>
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<tr>
<td>18&quot; x 36&quot;</td>
<td>4.7</td>
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<tr>
<td>20&quot; x 40&quot;</td>
<td>5.1</td>
</tr>
<tr>
<td>22&quot; x 48&quot;</td>
<td>5.4</td>
</tr>
<tr>
<td>24&quot; x 54&quot;</td>
<td>5.7</td>
</tr>
</tbody>
</table>

**SEE SHEET 9 FOR SIGN LOCATION/INSTALLATION DETAILS.**
1. To extend the height of a sign post, a maximum of one splice may be made.

2. Sign post spllices must be a minimum of 6 ft. above ground.

3. Select the proper size splice sleeve from the square steel posts table on this sheet.

4. Slide a minimum of 6" of the sign post into the anchor post.

5. Attach the sign post to the anchor post and sleeve with the top corner bolt and nut on the top hole of the anchor post and sleeve.

6. Tighten the bolt and nut with the turn-of-nut method. Slides and bolts are to be tightened alternately, then tighten an additional ½ turn each other, then tighten an additional further.

**INSTALLATION IN CONCRETE:**
Install as noted above.

**NOTES:**
1. Materials and workmanship shall be in accordance with Pub. 408.
2. Bolt and nut shall be ASTM A 307, Grade B.
3. Bolts and nuts shall be in accordance with Pub. 408.
4. Drive rivets may be used to fasten sign blanks to the sign post.

**INSTALLATION DETAIL**

1. Determine the proper size and number of sign posts from the appropriate graph on Sheet 4.

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 elevation of the concrete.

4. Slide a minimum of 6" of the sign post into the anchor post.

5. Attach the sign post to the anchor post and sleeve with the corner bolt and nut (or alternatively one bolt and nut) through the top hole of the anchor post and sleeve.

6. Tighten the bolt and nut with the turn-of-nut method. Slides and bolts are to be tightened alternately, then tighten an additional ½ turn each other, then tighten an additional further.

**COMMONWEALTH OF PENNSYLVANIA**
**DEPARTMENT OF TRANSPORTATION**
**BUREAU OF MAINTENANCE AND OPERATIONS**

**SQUARE STEEL POSTS (SYSTEM C)**

<table>
<thead>
<tr>
<th>SIZE (INCHES)</th>
<th>SIGN POST</th>
<th>ANCHOR POST</th>
<th>ANCHOR SLEEVE</th>
<th>SPLICE SLEEVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.75</td>
<td>0.0747</td>
<td>0.1046</td>
<td>0.1046</td>
<td></td>
</tr>
<tr>
<td>2.00</td>
<td>0.0747</td>
<td>0.1046</td>
<td>0.1046</td>
<td></td>
</tr>
<tr>
<td>3.00</td>
<td>0.0747</td>
<td>0.1046</td>
<td>0.1046</td>
<td></td>
</tr>
</tbody>
</table>

* Required for all post installations.

**INSTALLATION INSTRUCTIONS:**
1. Determine the proper size and number of sign posts from the appropriate graph on sheet 4.

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 elevation of the concrete.

4. Slide a minimum of 6" of the sign post into the anchor post.

5. Attach the sign post to the anchor post and sleeve with the corner bolt and nut (or alternatively one bolt and nut) through the top hole of the anchor post and sleeve.

6. Tighten the bolt and nut with the turn-of-nut method. Slides and bolts are to be tightened alternately, then tighten an additional ½ turn each other, then tighten an additional further.

**NOTES:**
1. Materials and workmanship shall be in accordance with Pub. 408.
2. Bolt and nut shall be ASTM A 307, Grade B.
3. Bolts and nuts shall be in accordance with Pub. 408.
4. Drive rivets may be used to fasten sign blanks to the sign post.

**COMMONWEALTH OF PENNSYLVANIA**
**DEPARTMENT OF TRANSPORTATION**
**BUREAU OF MAINTENANCE AND OPERATIONS**

**POST-MOUNTED SIGNS, TYPE B**

**STEEL SQUARE POSTS (SYSTEM C)**

**ERECTION DETAILS**

**INSTALLATION DETAIL**

**NOTES:**
1. Materials and workmanship shall be in accordance with Pub. 408.
2. Sign post and splice sleeves shall have ¾" diameter holes. BOLTS AND NUTS SHALL BE ASTM A 307, GRADE B.
3. Anchor posts and anchor sleeves shall have ¾" diameter holes on 1" centers on all four sides.

**COMMONWEALTH OF PENNSYLVANIA**
**DEPARTMENT OF TRANSPORTATION**
**BUREAU OF MAINTENANCE AND OPERATIONS**

**POST-MOUNTED SIGNS, TYPE B**

**STEEL SQUARE POSTS (SYSTEM C)**

**ERECTION DETAILS**

**INSTALLATION DETAIL**

**NOTES:**
1. Materials and workmanship shall be in accordance with Pub. 408.
2. Bolt and nut shall be ASTM A 307, Grade B.
3. Bolts and nuts shall be in accordance with Pub. 408.
4. Drive rivets may be used to fasten sign blanks to the sign post.

**COMMONWEALTH OF PENNSYLVANIA**
**DEPARTMENT OF TRANSPORTATION**
**BUREAU OF MAINTENANCE AND OPERATIONS**

**POST-MOUNTED SIGNS, TYPE B**

**STEEL SQUARE POSTS (SYSTEM C)**

**ERECTION DETAILS**

**INSTALLATION DETAIL**

**NOTES:**
1. Materials and workmanship shall be in accordance with Pub. 408.
2. Bolt and nut shall be ASTM A 307, Grade B.
3. Bolts and nuts shall be in accordance with Pub. 408.
4. Drive rivets may be used to fasten sign blanks to the sign post.
**Commonwealth of Pennsylvania**

**Department of Transportation**

**Bureau of Maintenance and Operations**

**Post-Mounted Signs, Type B**

**Steel Square Posts (System C) Selection Tables**

1. To determine the post size, enter the graph with the values of A and B. The shaded area indicates the appropriate post size to determine the post size, enter the graph with the values of A and B. The shaded area indicates the appropriate post size.

2. 2" and 1.75" posts may have less than 7 ft. clearance between each other when used in two-post installations.

### Sign Area Table

<table>
<thead>
<tr>
<th>Square or Rectangular Signs</th>
<th>Irregular Shaped Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S</strong></td>
<td><strong>A</strong></td>
</tr>
<tr>
<td>4.0</td>
<td>2.0</td>
</tr>
<tr>
<td>8.0</td>
<td>4.0</td>
</tr>
<tr>
<td>12.0</td>
<td>6.0</td>
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<tr>
<td>16.0</td>
<td>8.0</td>
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<tr>
<td>20.0</td>
<td>10.0</td>
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<tr>
<td>24.0</td>
<td>12.0</td>
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<td>32.0</td>
<td>16.0</td>
</tr>
<tr>
<td>36.0</td>
<td>18.0</td>
</tr>
</tbody>
</table>

**Notes:**

1. To determine the post size, enter the graph with the values of A and B. The shaded area indicates the appropriate post size.

2. 2" and 1.75" posts may have less than 7 ft. clearance between each other when used in two-post installations.
1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PUB.408.

2. FORMED-CHANNEL SIGN MOUNTS SHALL BE MILD STEEL.

3. HOLE SIZE SHALL BE 3/8" - 18 UNC x 1.5" FULL THREADED.
   USE 1/4" - 20 UNC FLANGED ANCHOR BOLT FOR THE STANDARD FLANGED ANCHOR BOLT AND FLAT WASHER.

4. BOLTS SHALL BE 1/4" GRADE 9 PLATED.
   USE 1/4" GRADE 9 HEX HEAD WASHER AND HEX NUT.

5. LOCKNUTS SHALL BE 1/4" - 20 UNC THREADS, HEX NUTED.

6. ANY OTHER DEPARTMENT APPROVED BREAKAWAY CONNECTION APPROVED FOR THE KIND OF POST MAY BE SUBSTITUTED FOR THE UNIVERSAL SPACER.

7. SEE SHEET 6 FOR SPACER AND ANCHOR BOLT DETAILS.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS
POST-MOUNTED SIGNS,
TYPE B
CHANNEL BAR POSTS
(ROLLED STEEL RAILS)
MATERIAL DETAILS

SIGN POST
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 SIG MOUNTING LOCATION ON THE PLANTED RAIL.
INSTALLATION DETAIL

SECTION A-A
SECTION B-B
SECTION C-C

ANCHOR SPLICE INSTALLATION INSTRUCTIONS:
1. ATTACH THE POST TO SIGN POST AND ANCHOR POST.
   FROM THE APPROPRIATE HOLES ON SHEET 3.
   USE 2.5 LB/FT.
   ANCHOR POSTS WITH 4.0 LB/FT. SIGN POSTS.
   FROM THE END OF THE ANCHOR POST.
   SECURELY TIGHTEN SPACER ONTO BOLT. (BOLTS 4" APART).
   3. DRIVE ANCHOR POST WITH A DRIVE CAP TO WITHIN APPROXIMATELY 2.5 LB/FT.
   4" ABOVE GROUND LEVEL. PLACE REMAINING BOLTS AND WASHERS IN FIRST HOLES
   FROM THE END OF THE EXPOSED ANCHOR POST. SECURELY TIGHTEN SPACER ONTO BOLT.
   4. 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
   USE THE ANCHOR PLATE IN AREAS WITH SOFT SOIL. BOLT THE TOP ANCHOR
   POST AND SIGN POST OVERLAP WITH ANCHOR BOLTS TO BE 4" APART; A 5" TO 6"
   AVERAGE HEIGHT OF 9 FT., MEASURED TO THE BOTTOM OF THE SPLICE.
   WHEN DETAIL A IS USED, 2.5 LB/FT. POST EXTENSION SPLICES MAY BE NESTED ON THE
   TOP SIGN POST SPLICE EXTENSIONS. WHEN DETAIL B IS USED, 2.5 LB/FT. POST EXTENSION SPLICES
   SHALL BE MOUNTED ON THE BACK (NON-IMPACT) SIDE OF THE SIGN POST.
   WHEN DETAIL A 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 6.25 FT., MEASURED
   FROM THE APPROPRIATE HOLES ON SHEET 3.
   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, LOCKNUTS AND NUTS ARE REQUIRED.
   LOCKNUTS MAY BE USED IN LIEU OF STANDARD LOCKNUTS AND NUTS.
   SEE THIS SHEET FOR ANCHOR BOLT SYSTEM.
3. POST EXTENSION SPLICE DETAIL A IS PRESCRIBED FOR POST EXTENSION SPLICE DETAIL B.
   WHEN DETAIL A IS USED, POST EXTENSION SPLICES MAY BE NESTED ON THE TOP SIGN POST.
   SPLICE EXTENSIONS.
4. POST EXTENSION SPLICE DETAIL B IS PRESCRIBED FOR USE TO PROVIDE A FLUSH SIGN MOUNT SURFACE
   FOR 4.0 LB/FT. POSTS. WHEN DETAIL B IS USED, POST EXTENSION SPLICE DETAIL B IS PERMITTED FOR USE
   TO PROVIDE A FLUSH SIGN MOUNT SURFACE FOR 4.0 LB/FT. POSTS. WHEN DETAIL B IS
   USED, POST EXTENSION SPLICE DETAIL B IS PERMITTED FOR USE TO PROVIDE A
   FLUSH SIGN MOUNT SURFACE FOR 4.0 LB/FT. POSTS. WHEN DETAIL B IS
   USED, POST EXTENSION SPLICE DETAIL B IS PERMITTED FOR USE TO PROVIDE A
   FLUSH SIGN MOUNT SURFACE FOR 4.0 LB/FT. POSTS.
### SIGN AREA TABLE

<table>
<thead>
<tr>
<th>SQUARE OR RECTANGULAR SIGNS</th>
<th>IRREGULAR SHAPED SIGNS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SIGN AREA IN FT</strong></td>
<td><strong>SIGN AREA IN FT</strong></td>
</tr>
<tr>
<td><strong>SIZE (IN. X IN.)</strong></td>
<td><strong>SIGNS AREA (FT</strong>²)</td>
</tr>
<tr>
<td><strong>AREA (FT</strong>²)</td>
<td><strong>A (SIGN AREA IN FT</strong>²)</td>
</tr>
</tbody>
</table>

#### ONE-POST INSTALLATION

- A = SIGN AREA
- **A = H x W** FOR SQUARE OR RECTANGULAR SIGNS
- **A = H x W** FOR IRREGULAR SHAPED SIGNS

#### TWO-POST INSTALLATION

- **A = H x W** FOR SQUARE OR RECTANGULAR SIGNS
- **A = H x W** FOR IRREGULAR SHAPED SIGNS

#### THREE-POST INSTALLATION

- **A = H x W** FOR SQUARE OR RECTANGULAR SIGNS
- **A = H x W** FOR IRREGULAR SHAPED SIGNS

#### NOTES

1. **TO DETERMINE THE POST SIZE, ENTER THE SIGN WITH THE VALUES **
2. **2.5 LB/FT. AND 4.0 LB/FT. POSTS MAY HAVE LESS THAN 1 FT.**
NOTES:
1. SOCKET SHALL CONSIST OF A BENT PLATE ATTACHED TO A LEG ANGLE.
2. SOCKET IS TO BE COATED WITH A RUST INHIBITING PRIMER MEETING
   FED. SPEC. TTP636.
3. SOCKET TO BE DIP-COATED WITH A RUST INHIBITING PRIMER MEETING
   FED. SPEC. TTP636.
4. LEG ANGLE SHALL BE ASTM A36/A36M.
5. BENT PLATE SHALL BE STEEL, COMMERICAL QUALITY, ASTM A569/A569M.
6. CHANNEL-ADAPTOR SHALL BE GALVANIZED STEEL MADE FROM
   1.9" OD TUBE WITH 0.1196" WALL THICKNESS, ASTM A500, GRADE B.
1. SOCKET SHALL BE 0.1046" HOT ROLLED CARBON SHEET
   STEEL, COMMERCIAL QUALITY, ASTM A569/A569M.
2. SOCKET TO BE DIP-COATED WITH A RUST INHIBITING PRIMER MEETING
   FED. SPEC. TTP636.
3. CHANNEL-ADAPTOR SHALL BE GALVANIZED STEEL MADE FROM
   1.9" OD TUBE WITH 0.1196" WALL THICKNESS, ASTM A500, GRADE B.
4. CHANNEL-ADAPTOR SHALL BE GALVANIZED STEEL MADE FROM
   1.9" OD TUBE WITH 0.1196" WALL THICKNESS, ASTM A500, GRADE B.
5. SOCKET SHALL CONSIST OF A BENT PLATE ATTACHED TO A LEG ANGLE
   AND DRIVE THE WEDGE INTO THE SOCKET UNITL THE TOP
   OF THE SOCKET IS FLUSH WITH THE TOP OF THE BENT PLATE.
6. SOCKET SHALL CONSIST OF A BENT PLATE ATTACHED TO A LEG ANGLE.
7. BOLTS TO BE Š" - 18 UNC THREADS, NYLON INSERT LOCK NUTS.
8. NUTS SHALL BE Š" - 18 UNC THREADS, NYLON INSERT LOCK NUTS.

INSTALLATION INSTRUCTIONS:
1. SOCKET SYSTEMS ARE APPROVED FOR CONCRETE INSTALLATIONS.
2. SOCKET SYSTEMS ARE APPROVED FOR USE WITH 2.5 LPFT. CHANNEL BAR
   POST AND 2.00" AND 2.25" STEEL SQUARE POSTS.
3. SOCKET TO BE 0.1046" HOT ROLLED CARBON SHEET
   STEEL, COMMERCIAL QUALITY, ASTM A569/A569M.
4. SOCKET TO BE DIP-COATED WITH A RUST INHIBITING PRIMER MEETING
   FED. SPEC. TTP636.
5. SOCKET SYSTEMS ARE APPROVED FOR USE WITH 2.5 LPFT. CHANNEL BAR
   POST AND 2.00" AND 2.25" STEEL SQUARE POSTS.
6. SOCKET SYSTEMS ARE APPROVED FOR USE WITH 2.5 LPFT. CHANNEL BAR
   POST AND 2.00" AND 2.25" STEEL SQUARE POSTS.
7. SOCKET SYSTEMS ARE APPROVED FOR USE WITH 2.5 LPFT. CHANNEL BAR
   POST AND 2.00" AND 2.25" STEEL SQUARE POSTS.
8. SOCKET SYSTEMS ARE APPROVED FOR USE WITH 2.5 LPFT. CHANNEL BAR
   POST AND 2.00" AND 2.25" STEEL SQUARE POSTS.

A. ATTACH THE CHANNEL BAR POST TO THE CHANNEL-ADAPTOR.
B. INSERT THE LOWER PORTION OF THE CHANNEL-ADAPTOR INTO
   THE SOCKET WITH THE FOH HOLES IN THE SOCKET AT THE
   SAME HEIGHT AS THE TOP OF THE SOCKET.
C. INSERT THE TWO UPPER HOLES IN THE SOCKET-ADAPTOR OR POST ARE TO
   BE PLACED.

FOR CHANNEL BAR 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 DRPE THE WEDGE INTO THE SOCKET UNITL THE TOP
   OF THE WEDGE IS FLUSH WITH THE TOP OF THE SOCKET.

FOR 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 DRPE THE WEDGE INTO THE SOCKET UNITL THE TOP
   OF THE WEDGE IS FLUSH WITH THE TOP OF THE SOCKET.
SHOULDER EDGE OF PAVEMENT EDGE OF LINE GROUND

RECOMMENDED PAVEMENT EDGE OF LINE GROUND

FOR ALL SIGNS PAVEMENT/CURB EDGE OF SIDEWALK GROUND LINE/(MIN.)

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

NOTE:

**SIGN CLEARANCE HEIGHT**

1. Clearance height shall be measured from the bottom of the sign to a level line projected from the near side of the roadway. The height may be reduced in a specially designed sign bracket when it is necessary to reduce the possibility of pedestrians colliding with the sign.

**LATERAL SIGN CLEARANCE**

2. Signs should be placed as far as practical from the edge of the roadway to reduce the possibility of vehicles hitting the sign. When guide rail is present, signs will be placed behind the guide rail.

3. Route marker signs with auxiliary signs (north, south, etc.) shall be considered a single sign assembly. The clearance height to any Supplemental sign to a level line projected from the near side of the roadway.

4. Business of urban areas:

   A. In business, commercial, or residential districts, where parking and pedestrian hazards are likely, signs may block traffic lights or a line of all signs leading left, stop signs, or other hazards.

   B. Lateral clearance recommended is 2' at curbs. In business districts, existing utility poles in close proximity to the curb, the clearance is considered impractical. Signs supports should not protrude into adjacent areas.

5. Rural Areas:

   A. Conventional highways. Although 7' minimum sign height clearance is recommended, in rural conditions, where conditions listed in 4 are not present and signs are considered a single sign assembly, the clearance height of the Supplemental sign may be 5'.

   B. Freeway and expressways. Directional signs shall be 3' on a level line projected from the near edge of roadway. When guide rail is present, signs will be placed behind the guide rail.

**COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BUREAU OF MAINTENANCE AND OPERATIONS**

**POST-MOUNTED SIGNS, TYPE B**

**SIGN LOCATION/INSTALLATION DETAILS**

**NOTE**

- Clearance height shall be measured from the bottom of the sign to a level line projected from the near side of the roadway. The height may be reduced in a specially designed sign bracket when it is necessary to reduce the possibility of pedestrians colliding with the sign.

- Signs should be placed as far as practical from the edge of the roadway to reduce the possibility of vehicles hitting the sign. When guide rail is present, signs will be placed behind the guide rail.

- Route marker signs with auxiliary signs (north, south, etc.) shall be considered a single sign assembly. The clearance height to any Supplemental sign to a level line projected from the near side of the roadway.

- Business of urban areas:

  - In business, commercial, or residential districts, where parking and pedestrian hazards are likely, signs may block traffic lights or a line of all signs leading left, stop signs, or other hazards.

  - Lateral clearance recommended is 2' at curbs. In business districts, existing utility poles in close proximity to the curb, the clearance is considered impractical. Signs supports should not protrude into adjacent areas.

- Rural Areas:

  - Conventional highways. Although 7' minimum sign height clearance is recommended, in rural conditions, where conditions listed in 4 are not present and signs are considered a single sign assembly, the clearance height of the Supplemental sign may be 5'.

  - Freeway and expressways. Directional signs shall be 3' on a level line projected from the near edge of roadway. When guide rail is present, signs will be placed behind the guide rail.

- Common heights of concrete barriers are present a 2' lateral clearance is recommended. When barriers are not present it is recommended that signs be placed 3' from the edge of the roadway. Baffles are not acceptable when signs are located at the edge of a roadway.

- Freeway and expressways, directional signs shall be 3' on a level line projected from the near edge of roadway.

- All route markers, regulatory, and warning signs assembled shall have a minimum clearance height of 7'. If a Supplemental sign is installed below the main sign, the clearance height of the Supplemental sign shall also be considered in the clearance height.

- Minimum lateral clearance is measured from the face of the curb to the near edge of roadway. Minimum lateral clearance is measured from the edge of the nearest travel lane to which it is attached.

- On conventional roads, 2' plus lateral offset is recommended where it is impractical to locate the sign with the prescribed offset.

- Lateral offset of 1' from the face of the curb may be used in business, commercial, or residential areas, where conditions listed in 4 are not present or where existing poles are close to the curb.

- Conventional sign supports and post-mounted sign and guide markers supports should not extend into the usable width of a sidewalk or other pedestrian facility.
**TYPICAL YIELD SIGN ASSEMBLY**

1. **ROUTE MARKER BRACKET ASSEMBLY - TYPE I**
   - Description:
     - Post Size
     - Surface Area
     - Maximum Sign

2. **ROUTE MARKER BRACKET ASSEMBLY - TYPE II**
   - Description:
     - Post Size
     - Surface Area
     - Maximum Sign

3. **BOLT TABLE**
   - Length
   - Description
   - Notes:
     - All materials and workmanship shall be in accordance with PennDOT specifications. Unless otherwise noted, bolts are stainless steel or aluminum. Use a flat aluminum or nylon washer on the face of all signs.
     - Drill breakaway holes in posts and bent as shown on Sheet 1 of 2.
     - Stamp bracket/bar number in 0.375" high letters and numbers in positions as shown.

4. **COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BUREAU OF MAINTENANCE AND OPERATIONS POST-MOUNTED SIGNS, TYPE C ERECTION DETAILS**

**PERMITS SECTION CHIEF, TRAFFIC ENGINEERING AND TRAFFIC OPERATIONS DIVISION JUN. 13, 2013**

**JUN. 13, 2013**
1. **Design Based On:***
   - AASHTO standards for structural support for roadway signs, luminaires and traffic signals including footings specified in the following design criteria:
     - Long wind speed 150.- 200- mph (3-second gusts)
     - Post height based on design life
     - Fatigue is not considered for signs.

2. **Post Height:**
   - Footing height is based on Figures 6-3 and 6-4 as outlined in the AASHTO specifications.

**Post Selection Table - One Post**

<table>
<thead>
<tr>
<th>W (FT)</th>
<th>L (FT)</th>
<th>Post Type</th>
<th>Max H (FT)</th>
<th>Max L (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>P1</td>
<td>4 6 x 6</td>
<td>11'-0&quot;</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>P1</td>
<td>4 6 x 6</td>
<td>11'-0&quot;</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>P1</td>
<td>4 6 x 6</td>
<td>11'-0&quot;</td>
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<td>6</td>
<td>1</td>
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<td>P1</td>
<td>4 6 x 6</td>
<td>11'-0&quot;</td>
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<tr>
<td>8</td>
<td>1</td>
<td>P1</td>
<td>4 6 x 6</td>
<td>11'-0&quot;</td>
</tr>
</tbody>
</table>

**Post Selection Example:**
- For a sign height: 4 6 x 6 post
- For a sign height: 7'-0" post
- Use two posts (see page 2)

**Table for Hole Spacing**

<table>
<thead>
<tr>
<th>Holes</th>
<th>Hole Spacing</th>
<th>Post Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>6&quot;</td>
<td>P1</td>
</tr>
<tr>
<td>3</td>
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<tr>
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<td>P1</td>
</tr>
<tr>
<td>7</td>
<td>6&quot;</td>
<td>P1</td>
</tr>
<tr>
<td>8</td>
<td>6&quot;</td>
<td>P1</td>
</tr>
</tbody>
</table>

**Notes:**
1. **Materials and dimensions are in accordance with Pennsylvania Department of Transportation recommendations.**
2. **Post hole depth is at roadway shoulder, whether sign is located on left or right.**
3. **At locations with unmovable curb, guide rail or barrier, place the top of the sign at least 3'-6" behind the curb.**
4. **For selection of signs, enter tables with values of W, H and L in the table.**
5. **For a sign height, refer to values of W, H and L in the table.**
6. **Use the longest post to select all post sizes.**

**Sign Post Selection Notes:**
1. **Define values of W, H, and L** as indicated in the sign elevation.
   - W = maximum width of sign.
   - H = maximum height of sign.
   - L = maximum distance between top of a footing and bottom of sign.
2. **For selection of posts, enter tables with values of W, H and L.**
3. **For a sign where values of W, H and L" in the table, one may specify the value.**
4. **Use the longest post to select all post sizes.**

**Legend:**
- **P1:** 6 x 6 x 6 post
- **P2:** 6 x 6 x 6 post
- **P3:** 6 x 6 x 6 post
- **P4:** 6 x 6 x 6 post

**Commonwealth of Pennsylvania Department of Transportation Bureau of Maintenance and Operations**

**Post-Mounted Signs, Type E**

**Wood Posts Selection Tables Erection Details**

**Recommended:**
- JUN. 13, 2013
- SHEET 1 of 5

**Canonicity:**
- TC-8702E
**POST SELECTION TABLE - TWO POSTS**

<table>
<thead>
<tr>
<th>POST SELECTION EXAMPLE</th>
<th>POST SELECTION TABLE - TWO POSTS</th>
<th>POST SELECTION TABLE - TWO POSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>W</strong> (in)</td>
<td><strong>L</strong> (in)</td>
<td><strong>H</strong> (ft.)</td>
</tr>
<tr>
<td>6</td>
<td>P1</td>
<td>P1</td>
</tr>
<tr>
<td>7</td>
<td>P1</td>
<td>P1</td>
</tr>
<tr>
<td>8</td>
<td>P1</td>
<td>P1</td>
</tr>
<tr>
<td>9</td>
<td>P1</td>
<td>P1</td>
</tr>
<tr>
<td>10</td>
<td>P1</td>
<td>P1</td>
</tr>
</tbody>
</table>

**NOTES:**
1. Posts in the selection table with an "*" must have a minimum of 8 ft. of embedment. Posts with a "*" should be equally spaced to the nearest available hole spacing.
2. See Sheet 1 for additional notes.
3. See Sheet 4 for sections and erection details.

**LEGEND:**
- P1 = 4" x 4" post
- P2 = 4" x 6" post
- P3 = 6" x 8" post

**TABLE FOR HOLE SPACING**

**COMMONWEALTH OF PENNSYLVANIA**
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

**POST-MOUNTED SIGNS, TYPE E**

**WOOD POSTS**

**SELECTION TABLES**

**ERCTION DETAILS**

**TC-8702E**
**Commonwealth of Pennsylvania**

**Department of Transportation**

**Bureau of Maintenance and Operations**

**Post-Mounted Signs, Type E**

**Wood Posts Selection Tables**

**Erection Details**

---

**NOTES:**

1. POSTS IN THE SELECTION TABLE WITH AN "*" MUST HAVE A MINIMUM OF 6' IN LENGTH.
2. USE 12 GA. GALV. BOLTS.
3. SEE SHEET 7 FOR ADDITIONAL NOTES.

---

**Legend:**

- P1: 4" x 4" Post
- P2: 4" x 6" Post
- P3: 6" x 4" Post

**Post Selection Example**

For a sign width of 20', the following post selections are recommended:

- P1: 4" x 4" Post
- P2: 4" x 6" Post
- P3: 6" x 4" Post

Three P3: 6" x 4" wood posts are required.

---

**Post Selection Table - Three Posts**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>22</td>
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<td>22</td>
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</tr>
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<td>23</td>
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<td>26</td>
<td>6</td>
<td>22</td>
<td>23</td>
<td>25</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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**Plan View**

**Table for Hole Spacing**

Elev. 1

---

**End View**

---

**Legend:**

- 2" Sub Grade Depth
- 3" - 4" for 1/2" Diameter Holes
- See Sheet 1 for Additional Notes
WOOD POST
SIGN FACE
& BOLT
POST CLIP
BAR D
SHIM BAR C
SHIM BAR D
POST IS BEING PLACED.
HOLD BARS IN PLACE WHILE NAIL SHIM BARS TO POST TO
NOTE:
PLATE
SHIM PLATE A
SHIM PLATE B

SECTION A-A

SECTION B-B

SECTION E-E

NOTES:
1. STEEL SLEEVES AND SHIMS SHALL HAVE A MINIMUM YIELD STRENGTH OF 36 KSI.
2. STAINLESS STEEL BOLT, LOCKWASHER AND NUT SHALL BE AISI TYPE 304 STRENGTH OF 36 KSI.

STEEL SLEEVE
12 GA. GALV.

STEEL AND MEET ASTM A320.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS
POST-MOUNTED SIGNS,
TYPE E

WOOD POSTS
ERECTION DETAILS

RECOMMENDED JUN. 13, 2013
JUN. 13, 2013
**PERMITS SECTION**

**TRAFFIC OPERATIONS DIVISION**

---

**Post Selection Table - Two Posts**

<table>
<thead>
<tr>
<th>Height (H) in FT</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<tr>
<td>6</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Post Selection Table - Two Posts**

<table>
<thead>
<tr>
<th>Height (H) in FT</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
<td>2</td>
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<td></td>
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<tr>
<td>3</td>
<td></td>
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<tr>
<td>4</td>
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<tr>
<td>6</td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

---

**Notes:**

1. Posts in the selection tables with an * denote wood posts. When selecting posts, make sure width *H* should be equally distributed to the overhangs.

2. Sides of each are a width of sustained periods and depth to place the post of choice, set the post and secure to the ground line using acceptable embankment material. Typically, it should be placed in the lateral offset.

3. For post-mounted signs, the minimum lateral offset should be 6" or more, but must be at least 12" for Welded Steel Girders, but not less than 9" from the edge of the traveled way.

4. Lateral offset may not exceed 12" in either direction. If desired, see note 2.

5. Drilled or excavated a hole of suitable dimensions and depth equal to the overhangs.

6. A lateral offset of 1 foot from the face of the curb may be used to place the post at grade. Set the post and backfill to the ground line using acceptable embankment material.

7. When it is impractical to locate the sign with the prescribed offset, see sheet 4 for additional notes.

---

**Commonwealth of Pennsylvania**

**Department of Transportation**

**Bureau of Maintenance and Operations**

**Post-Mounted Signs, Type E**

**Wood Posts - Direct Burial**

**Erection Details**

**Temporary Use Only**

---

**Table for Hole Spacing**

<table>
<thead>
<tr>
<th>Angle Connection</th>
<th>1/2&quot; Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3&quot;</td>
</tr>
<tr>
<td>5</td>
<td>5&quot;</td>
</tr>
</tbody>
</table>

---

**Plan View**

**Sign Elevation**

**End View**

---

**Legend:**

For a sign where

- N = *H* *W*
- M = *H* *L*
- L = *H* *B*

Two 3" x 4" steel posts are required.
DISTANCE MARKER SIGN

ALUMINUM BRACKET

CLAMP

STAINLESS STEEL

RAILING TUBE

ALUMINUM BAR

ALL NUTS USED UNDER WASHER TO BE SPRING LOCK

NORTHBOUND OR EASTBOUND

SOUTHBOUND OR WESTBOUND

DISTANCE MARKERS

DETAILS FOR TOP RAIL

DETAILS FOR BOTTOM RAIL

BUTTON HEAD BOLT FOR CONNECTING SIGN TO ANGLE

ATTACHMENT OF DISTANCE MARKER ASSEMBLY TO DOUBLE TUBE RAILING

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

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 1 MILE WILL BE TAKEN ALONG THE OUTSIDE EDGE OF THE PAVEMENT ON NORTHBOUND OR EASTBOUND ROADWAYS. DISTANCE MARKERS ON SOUTHBOUND OR WESTBOUND ROADWAYS SHALL BE INSTALLED ALONG THE OUTSIDE EDGE OF THE PAVEMENT OR CURB.

3. ALL STAINLESS STEEL STRAPS AND CLAMPS SHALL CONFORM TO ASTM A167.

4. DISTANCE MARKERS WHICH ARE NOT ON BRIDGES SHALL BE INSTALLED ON TYPE B SIGN POSTS AT 4'-0" HEIGHT.

TYPICAL LOCATION OF DISTANCE MARKERS

SIGN SUPPORT

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

DISTANCE MARKERS

SHT. 1 OF 1

JUN.13, 2013
120 V - 2 WIRE SUPPLY
120 V LUMINAIRE

120/240 V - 3 WIRE SUPPLY
240 V LUMINAIRE

240/480 V - 4 WIRE SUPPLY
240 V LUMINAIRE

SIMILAR TO B. NOT MORE THAN 8 LUMINAIRES ON TO SIGN STRUCTURE DISCONNECT SIMILAR TO C. NOT MORE THAN 17 LUMINAIRES ON EACH LEG ON EACH 30 A CIRCUIT.

NOTE:
1. PROVIDE A CIRCUIT BREAKER FOR THE MAIN DISCONNECT UNLESS THE POWER COMPANY REQUIRES FUSES.
2. PROVIDE A MAIN DISCONNECT IN A SEPARATE NEMA 3R OR 4 ENCLOSURE ONLY AS REQUIRED TO PROVIDE A CONNECTION FOR THE SERVICE EQUIPMENT. THE CABINET IS DEAD FRONT AND LABELED AS "SUITABLE FOR USE AS SERVICE EQUIPMENT".

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

SIGN LIGHTING
PERMITS SECTION

CHIEF, HIGHWAY SAFETY AND

SHT. 3 OF 4

TC-8715  SIGN LIGHTING

RECOMMENDED

JUN. 13, 2013

WHEN NOT INCLUDED IN OTHER CONTRACTS, PROVIDE FOR

RC-81M  HIGHWAY LIGHTING-JUNCTION BOXES-LIGHT DUTY

ON THIS PROJECT, AND THE FOLLOWING STANDARD DRAWINGS:

5.

2.

COMPLY WITH STANDARD SPECIFICATIONS PUBLICATION 408,

(SAMPLE DRAWING)

4.

LOCATE MAIN SERVICE OUTSIDE CLEAR ZONE AS FAR FROM

QUANTITIES SHOWN ARE FOR ESTIMATING PURPOSE ONLY.

SUBMIT CONDUCTOR SIZE CALCULATIONS WITH PLANS

FROM LOCAL ELECTRIC UTILITY.

THE ROADWAY PLANS.

FOR APPROVAL.

THE STANDARD DRAWING TC-8715 FOR EXC.

INFORMATION TO DESIGNER:

1. DRAW AS INFORMATION ONLY THE CONDUIT CROSSINGS ON

THE ROADWAY PLANS.

2. MAIN SERVICE LOCATIONS NEED HAVE COMPARISON

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 IN ALL LOCATIONS.

6. WHEN NOT INCLUDED IN OTHER CONTRACTS, PROVIDE FOR

INSTALLATION AND MOUNTING OF BACKED-IN MOUNTED SIGN AND OTHER

DISTURBED AREAS.

NOTE – BRIDGE MOUNTED SIGNS:

TRENCH FROM JUNCTION BOX DOWN

EXTENT TO FIRE HOSE.

INDEMNITY, SEE SHEET 7.

GENERAL NOTES:

1. QUANTITIES SHOWN ARE FOR ESTIMATING PURPOSE ONLY.

2. COMPLY WITH STANDARD SPECIFICATIONS PUBLICATION 408,

(SAMPLE DRAWING)

3-#12 SIGN LIGHTING AND ELECTRICAL DETAILS

IN-8775 SIGN LIGHTING

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

SIGN LIGHTING PLAN
SAMPLE DRAWING

RECOMMENDED: JUL. 13, 2013
RECOMMENDED: JUL. 13, 2013
SAT. 5 OF 4
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 25 lb.

3. IF TURNED 90°, RETROREFLECTIVE SHEETING MUST BE PLACED ON THE SIDE OF THE SIGN WHICH IS NEAREST TO TRAFFIC.

4. SUPPLEMENTAL PLAQUE IS TO BE MOUNTED AS SHOWN.

5. BATTERY CASE MUST BE PLACED EITHER ON THE GROUND OR ATTACHED 20" MAXIMUM ABOVE THE GROUND TO THE POST OR BASELEG.

6. SIGN SUBSTRATE MAY BE PLYWOOD, ALUMINUM, FLEXIBLE ROLL-UP, METAL, ALUMINUM / PLASTIC LAMINATE, CORRUGATED POLYPROPYLENE OR POLYETHYLENE.

7. SANDBAG BALLAST SHALL BE PLACED ON THE END OF EACH LEG TO PROVIDE STABILITY.

8. SIGNS AND RAILS ARE TO BE ATTACHED WITH BOLTS AND NUTS.

9. IF TURNED 90°, RETROREFLECTIVE SHEETING MUST BE PLACED ON THE SIDE OF THE SIGN WHICH IS CLEARLY VISIBLE TO APPROACHING DRIVERS. SHOWN AND LOCATED ON THE SIDE OF THE SIGN WHICH IS HARDEST TO TRAFFIC.

10. MAXIMUM OF TWO TYPE B WARNING LIGHTS ON ALL SIGNS ARE ALLOWED WITH 24" SEPARATING LIGHTS ON ROAD CLOSED SIGNS.

11. FLASHING LIGHTS ARE OPTIONAL. WHEN USED, LIGHTS SHALL BE ATTACHED AS SHOWN AND LOCATED ON THE SIDE OF THE SIGN WHICH IS HARDEST TO TRAFFIC.

12. SIGNS SHALL REMAIN IN THE VERTICAL POSITION WHEN LOCATED WITHIN THE HIGHWAY RIGHT-OF-WAY.

NOTES:

13. SIGNS SHALL REMAIN IN THE VERTICAL POSITION WHEN LOCATED WITHIN THE HIGHWAY RIGHT-OF-WAY.

14. PROVIDE SIGN MATERIALS MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 1103.4.


16. IF TURNED 90°, RETROREFLECTIVE SHEETING MUST BE PLACED ON THE SIDE OF THE SIGN WHICH IS NEAREST TO TRAFFIC.

17. SUPPLEMENTAL PLAQUE IS TO BE MOUNTED AS SHOWN.

18. BATTERY CASE MUST BE PLACED EITHER ON THE GROUND OR ATTACHED 20" MAXIMUM ABOVE THE GROUND TO THE POST OR BASELEG.

19. SIGN SUBSTRATE MAY BE PLYWOOD, ALUMINUM, FLEXIBLE ROLL-UP, METAL, ALUMINUM / PLASTIC LAMINATE, CORRUGATED POLYPROPYLENE OR POLYETHYLENE.

20. SANDBAG BALLAST SHALL BE PLACED ON THE END OF EACH LEG TO PROVIDE STABILITY.

21. SIGNS AND RAILS ARE TO BE ATTACHED WITH BOLTS AND NUTS.

22. IF TURNED 90°, RETROREFLECTIVE SHEETING MUST BE PLACED ON THE SIDE OF THE SIGN WHICH IS CLEARLY VISIBLE TO APPROACHING DRIVERS. SHOWN AND LOCATED ON THE SIDE OF THE SIGN WHICH IS HARDEST TO TRAFFIC.

23. MAXIMUM OF TWO TYPE B WARNING LIGHTS ON ALL SIGNS ARE ALLOWED WITH 24" SEPARATING LIGHTS ON ROAD CLOSED SIGNS.

24. FLASHING LIGHTS ARE OPTIONAL. WHEN USED, LIGHTS SHALL BE ATTACHED AS SHOWN AND LOCATED ON THE SIDE OF THE SIGN WHICH IS HARDEST TO TRAFFIC.


NOTES:
1. PROVIDE SIGN MATERIALS MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 1103.4.
2. DIAMOND, RECTANGULAR, OCTAGONAL AND TRIANGULAR SIGNS ARE RECOMMENDED.
3. BATTERY CASE MUST BE PLACED EITHER ON THE GROUND OR POSTED OUT MAXIMUM ABOVE THE GROUND AT THE POST OF BASE LEG.
4. SIGN SUBSTRATE MAY BE PLYWOOD, ALUMINUM, ALUMINUM / PLASTIC LAMINATE, CORRUGATED POLYPROPYLENE OR POLYETHYLENE.
5. MAX. WEIGHT 15lbs.
6. PERMITTED. THE MAXIMUM SIGN AREA SHALL NOT EXCEED 9 sq. ft.
7. SIGN PANEL IS PLACED ON THE VERTICAL SIGN POST WITH TOP EDGE ALIGNED WITH POST TOP END AND FASTENED WITH 5/16" DIAMETER 2" LONG NYLON 6/6 FULLY THREADED HEX HEAD BOLTS AND NYLON INSERT LOCK NUTS. USE 5/16 STEEL AND NYLON WASHERS UNDER BOTH THE BOLT AND NUT.
8. MAXIMUM OF TWO TYPE B WARNING LIGHTS ON ALL SIGNS ARE ALLOWED.
9. NCHRP 350 TEST LEVEL 3 CRASH TESTED AND APPROVED.
10. FLASHING LIGHTS ARE OPTIONAL. WHEN USED, LIGHTS SHALL BE ATTACHED AS ShOWN AND LOCATED ON THE SIDE OF THE SIGN WHICH IS NEAREST TO TRAFFIC.
11. SIGNS SHALL REMAIN IN THE VERTICAL POSITION WHEN LOCATED WITHIN THE ROADWAY RIGHT-OF-WAY.

ROADWORK AHEAD

"H" BASE DETAIL

"X" BASE DETAIL

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS
TEMPORARY PORTABLE SIGN POST
"H" BASE AND "X" BASE

TC-8717