1. Unless otherwise specified, channelizing devices shall be spaced as shown on Standard Drawing E-801-TCDV-12.

2. All channelizing devices shall meet NCHRP 350 or MASH crash evaluation criteria.

3. It is not necessary to delineate a drop-off of 3 in. or less adjacent to active travel lanes. Where channelizing devices are used to delineate drop-offs of 3 in. or less adjacent to active travel lanes, at least 33 in. of the device shall be above the adjoining pavement surface. Where channelizing devices are used to delineate a drop-off greater than 3 in. adjacent to active travel lanes, at least 27 in. of the device shall be above the adjoining pavement surface and a Type C warning light shall be attached to the top of the device (on the pavement side). In no case shall more than 9 in. of the device be below the adjoining pavement surface.

4. The proper orientation in respect to approaching vehicular traffic shall be maintained on channelizing devices. Drums are the preferred channelizing device in a tight radius curve and at intersections.

### INDEX

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>SUBJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Index</td>
</tr>
<tr>
<td>2</td>
<td>Channelizing Devices</td>
</tr>
<tr>
<td>3</td>
<td>Merging or Shifting Taper</td>
</tr>
<tr>
<td>4</td>
<td>Type III Barricade</td>
</tr>
<tr>
<td>5</td>
<td>Typical Construction Sign Mounting</td>
</tr>
<tr>
<td>6</td>
<td>Type III Barricade Application for Road Closure for Thru Traffic</td>
</tr>
<tr>
<td>7</td>
<td>Type III Barricade Application for Road Closure to All Traffic</td>
</tr>
<tr>
<td>8</td>
<td>U Channel Steel Post Splice Detail</td>
</tr>
<tr>
<td>9</td>
<td>Temporary Buzz Strips</td>
</tr>
<tr>
<td>10</td>
<td>Worksite Speed Limit Sign Assembly for Intermittent Use</td>
</tr>
<tr>
<td>11</td>
<td>Worksite Speed Limit Sign Assembly for Continuous Use</td>
</tr>
<tr>
<td>12</td>
<td>Worksite Speed Limit Sign Assembly Longitudinal Placement</td>
</tr>
</tbody>
</table>

### LEGEND

- O  - Device may be used in tangent set-ups.
- X  - Device may be used in tangent set-ups.
- XX - Devices may be used in two-way traffic set-ups to divide opposing lanes of traffic.
- ○  - Device may be used to divide two or more lanes of traffic in the same direction.
- ●  - Device may be used to replace barricades and drums where space is limited.
- Δ  - Device may be used to delineate edge of pavement drop-off where space is limited.
<table>
<thead>
<tr>
<th>W</th>
<th>MPH</th>
<th>L - Taper Section</th>
<th>Tangent Section</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>L 1</td>
<td>L 2</td>
</tr>
<tr>
<td>20</td>
<td>30</td>
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<td>55</td>
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<td></td>
</tr>
<tr>
<td>70</td>
<td>85</td>
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</table>

**NOTE:**
1. The taper lengths used may be either of the values provided in the table, or the value calculated from the equation.

**LEGEND**
- **L** - Minimum length of taper in feet.
- **S** - Posted speed limit prior to the construction zone in mph.
- **W** - Width of lane or shift in feet.

**INDIANA DEPARTMENT OF TRANSPORTATION**

**MERGING OR SHIFTING TAPER**

**SEPTEMBER 2016**

**STANDARD DRAWING NO. E 801-TCDV-03**

**E 801-TCDV-03**

**STATE OF INDIANA**

**DESIGN STANDARDS ENGINEER**

**Date**

**CHIEF ENGINEER**

**Date**

---

**MERGING TAPER**

<table>
<thead>
<tr>
<th>S</th>
<th>Min. Taper Length L/1</th>
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</thead>
<tbody>
<tr>
<td>MPH</td>
<td>W = 9</td>
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<td>95</td>
</tr>
<tr>
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<td>585</td>
</tr>
<tr>
<td>70</td>
<td>630</td>
</tr>
</tbody>
</table>

For W not shown in the table, L = W x S for a speed of 45 mph or greater. L = W x S/60 for a speed of 40 mph or lower.

---

**SHIFTING TAPER**

<table>
<thead>
<tr>
<th>S</th>
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</thead>
<tbody>
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<td>65</td>
<td>295</td>
</tr>
<tr>
<td>70</td>
<td>315</td>
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</tbody>
</table>

For W not shown in the table, L is one half that required for a merging taper.

A shifting taper preceded by lane closure taper shall be separated by a tangent section equal to or greater than the length of the shifting taper.
THRU TRAFFIC THRU TRAFFIC TO ROAD CLOSED DETOUR

THRU TRAFFIC THRU TRAFFIC TO ROAD CLOSED DETOUR

THRU TRAFFIC THRU TRAFFIC TO ROAD CLOSED DETOUR

THRU TRAFFIC THRU TRAFFIC TO ROAD CLOSED DETOUR

THRU TRAFFIC THRU TRAFFIC TO ROAD CLOSED DETOUR

NOTES:

1. Barricade lights, signs, and supports shall meet NCHRP 350 or MASH crash evaluation criteria.

2. The Detour Arrow sign shall be used only when a detour route has been signed.

3. The sign assembly must be above the Type III barricade.

INFORMATION:

60900348

INDIANA DEPARTMENT OF TRANSPORTATION

SEPTEMBER 2016

STANDARD DRAWING NO. E 801-TCDV-04

/s/ David H. Boruff 06/25/15
DESIGN STANDARDS ENGINEER DATE

/s/ Mark A. Miller 07/02/15
CHIEF ENGINEER DATE
NOTES:


2. Signs, lights, and supports shall satisfy NCHRP 350 or MASH crash evaluation criteria.

3. An advisory speed plaque, required to be placed with another construction sign, may be mounted on the post closest to the roadway at a height not less than 4 ft above the edge of pavement adjacent to the sign. The bottom of the construction warning sign shall not be lower than the top of the advisory speed plaque.

4. Type A warning light required on all construction signs.

5. In urban area or on Interstate route, mounting height shall not be less than 7 ft.

6. When signs are placed on sidewalk, a 4 ft usable width must be maintained. No part of the sign or support that is less than 7 ft in height may protrude more than 4 in. into the 4 ft usable sidewalk width.

7. Temporary mounted construction sign for nighttime work or for operations which affect traffic lanes shall be mounting height of 5 ft above the traveled way. On roadways where on-street parking is allowed, temporary mounted construction signs shall have a minimum sign mounting height of 7 ft above the traveled way.

INDIANA DEPARTMENT OF TRANSPORTATION
TYPICAL CONSTRUCTION
SIGN MOUNTING
SEPTEMBER 2016
STANDARD DRAWING NO. E 801-TCDV-05

/s/ David H. Boruff 06/25/15
DESIGN STANDARDS ENGINEER DATE
/s/ Mark A. Miller 07/02/15
CHIEF ENGINEER DATE
NOTES:

1. The Detour Arrow sign shall be used only when a detour route has been signed.


3. Barricades and supports shall meet NCHRP 350 or MASH crash evaluation criteria.

4. The R11-3a ("ROAD CLOSED/LOCAL TRAFFIC ONLY") or R11-3b ("BRIDGE CLOSED/LOCAL TRAFFIC ONLY") sign may be substituted for the R11-4 signs as directed on the plans or by the engineer.
NOTES:

1. The Detour Arrow sign shall be used only when a detour route has been signed.

2. Barricades shall be supported on driven posts in areas outside of the pavement or sidewalk, where side slopes are 3 to 1 or flatter.


4. Barricades and supports shall meet NCHRP 350 or MASH crash evaluation criteria.

5. See Note 5 on Standard Drawing 801-TCSN-07 for post depth.

6. The Legend of the R11-2 may be modified to "BRIDGE CLOSED" as indicated on the plans or directed by the engineer.


NOTES:

1. The spacer thickness shall be 1/16 in. less than the gap between the posts when positioned in the unbolted configuration.

2. The exterior bolt, spacer, washer, and nut shall be installed in a prepunched hole within the first 2 in. of the end of the lapped post section.

3. The interior bolt, spacer, washer, and nut shall be installed in a prepunched hole within the first 2 in. of the exterior bolts. The maximum spacing between the interior bolts shall be 1'-6". If the length of the post lap is increased such that this 1'-6" maximum is exceeded, then additional interior bolts shall be installed such that the maximum space between adjacent interior bolts does not exceed the 1'-6" limit.

4. The driven post shall be mounted in front of the upper post with respect to adjacent oncoming traffic, regardless of the direction the sign is facing.

SECTION "A-A"

The bolts shown shall be 5/16" Ø x 2".

The spacer thickness shall be 1/16 in. less than the gap between the posts when positioned in the unbolted configuration.

The exterior bolt, spacer, washer, and nut shall be installed in a prepunched hole within the first 2 in. of the end of the lapped post section.

The interior bolt, spacer, washer, and nut shall be installed in a prepunched hole within the first 2 in. of the exterior bolts. The maximum spacing between the interior bolts shall be 1'-6". If the length of the post lap is increased such that this 1'-6" maximum is exceeded, then additional interior bolts shall be installed such that the maximum space between adjacent interior bolts does not exceed the 1'-6" limit.

The driven post shall be mounted in front of the upper post with respect to adjacent oncoming traffic, regardless of the direction the sign is facing.
SECTION F-F

8'-0" (Typ.)

8'-0" (Typ.)

1/4"

Allowable Buzz Strip Material

Edge of Pavement

Flashing Arrow Sign

Pavement Width

Direction of Traffic

Taper

Flashing Arrow Sign

Pavement Width

SECTION F-F

8'-0"

8'-0" (Typ.)

1/4"

Allowable Buzz Strip Material

Edge of Pavement
NOTES:
1. If not trailer mounted, signs and supports shall satisfy NCHRP 350 or MASH crash evaluation criteria.
3. Advance warning signs speed limit shall match that on worksite speed limit sign.
4. The worksite speed limit shall be at least 10 mph below the posted speed limit for the roadway under construction.
5. Sign series shown is for freeway or expressway application.

REDUCED SPEED ADVANCE WARNING SIGN ASSEMBLY

WORKSITE SPEED LIMIT SIGN ASSEMBLY

[Diagram of signs showing Amber Strobe Light and Speed Limit]

INDIANA DEPARTMENT OF TRANSPORTATION
WORKSITE SPEED LIMIT SIGN ASSEMBLY
FOR INTERMITTENT USE
(WORKERS PRESENT)
SEPTEMBER 2016

STANDARD DRAWING NO. E 801-TCDV-10

/s/ David H. Boruff 06/25/15
Design Standards Engineer Date

/s/ Mark A. Miller 07/02/15
Chief Engineer Date
1. If not trailer mounted, signs and supports shall satisfy NCHRP 350 or MASH crash evaluation criteria.


3. Advance warning signs speed limit shall match that on worksite speed limit sign.

4. The worksite speed limit shall be at least 10 mph below the posted speed limit for the roadway under construction.

5. Sign series shown is for freeway or expressway application.
NOTES:

1. Worksite speed limit sign assemblies shall be placed on both sides of the directional lanes when multiple lanes travelling in the same direction are open to traffic. For undivided roadways, or on roadways where a single lane is open in one direction, assemblies are required on only one side of the roadway.

2. Assembly spacing may be reduced using Distance B from Table 6C-1 of the MUTCD for Urban and Rural Roadways.

3. Worksite speed limit sign assemblies shall be placed 500 ft beyond each crossroad or the last entrance ramp for each interchange, at 2-mile intervals throughout the worksite, or adjacent to the existing normal speed limit signs.

4. For a rural Interstate route application, a truck speed limit sign shall be used and placed immediately to the right of the normal speed limit sign.