## Tollway Standard Drawing Revisions

### Section C

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<td><strong>C4</strong> Concrete Shoulder Barrier Transition</td>
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<td><strong>C14</strong> Concrete Barrier Transition, Type V at Biridge Piers</td>
<td>New Sheet</td>
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</tbody>
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NOTES:
1. Offset from edge of paved shoulder to face of rail is typical for all installations except as otherwise detailed in the plan drawings.
2. Where gutters such as Type G-2, G-3 are required in front of the guardrail, the posts shall be located 6" behind the gutter, or as otherwise detailed in the plans. The offset from the edge of shoulder to the face of the guardrail shall be as shown on standard size.
3. The 2 1/4" typical rail height is measured from existing surface to top of rail, or from edge of shoulder to face of gutter when edge of shoulder is more than 6" in front of rail to center of rail.
4. Aggregate shoulders special type C shall comply with the requirements of the Standard. The edge of aggregate shall be placed 6" behind rail. For guardrails without curb or gutter, aggregate shoulder shall be placed from the edge of paved shoulder sloping away to a 3" nominal thickness.
5. Aggregate shoulders special type C shall extend a minimum of 1' behind post of guardrail wherever it is practical, except as detailed elsewhere in the plans.
6. Plastic block-outs shall not be allowed as a substitute for wood block-outs on new installations.
7. Where S-G and 3'-0" min. aggregate shoulder cannot be met, the post length shall be 9'-0" and the min. aggregate shoulder shall be 1'-0" measured distance behind post to the shoulder point.
8. All slopes are expressed as units of vertical displacement to units of horizontal displacements.
9. Unless no circumstances shall an existing guardrail, that was designed using the previous standards, be extended, attached to or modified in any way that reduces the original design. If any modification or repair is required and a proper barrier warning system has been completed, the entire barrier installation shall be completely removed and replaced with a new system that conforms to the current standard.
10. When S-G, the post length shall be 9'-0" and 4' aggregate shoulder width maintained.
11. The guardrail system has been performance-tested for crashworthiness under procedures defined in the National Cooperative Highway Research Program (NCHRP) Report 350. No modification to this standard drawing shall be permitted.
12. Guardrail posts shall not be installed in concrete or asphalt pavement, when necessary the rail guardrail shall be extended on sheet 3 of this series.
13. Guardrail posts shall not be attached to any structure.
1. CAP SHALL BE INSTALLED TO MATCH THE EXISTING CROSS SLOPE.

2. THE LEAVE-OUT SHALL BE DEFINED AS THE AREA AROUND THE POST THAT IS EITHER Cut/FROM THE NEW CONSTRUCTION OR REMOVED FROM THE EXISTING CONCRETE OR ASPHALT.
### TABLE 2

<table>
<thead>
<tr>
<th>GUARDRAIL SYSTEM</th>
<th>POST SPACING</th>
<th>MINIMUM BARRIER CLEARANCE DISTANCE</th>
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<tbody>
<tr>
<td>TYPE A</td>
<td>6'-3&quot;</td>
<td>28''</td>
</tr>
<tr>
<td>TYPE B 1/2 POST SPACING</td>
<td>3'-1 1/2&quot;</td>
<td>23''</td>
</tr>
<tr>
<td>TYPE C 1/2 POST SPACING</td>
<td>1'-6 1/2&quot;</td>
<td>14''</td>
</tr>
</tbody>
</table>

**NOTE:**

When length of obstacle is 1'-3" or less, the downstream transition shall be omitted.

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**TYPE A GUARDRAIL - DRAINAGE STRUCTURE CONFLICT**

**ONE POST**

- Reposition post as required
- Width of guardrail as required
- Width of drainage structure as required

**TWO POSTS**

- Reposition post as required
- Width of guardrail as required
- Width of drainage structure as required

**NOTES:**

1. Guardrail posts shall not be eliminated: all posts must be used.
2. Guardrail posts shall not be set back to avoid conflicts with a drainage structure.
3. No modifications of any kind to the transition post spacing are allowed.

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**ILLINOIS DOTWAY**

**STANDARD CI-07**

**GALVANIZED STEEL PLATE BEAM GUARDRAIL**

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NOTES

1. The shoulder edge of barrier base gutter shall match the top of sidewalk elevation.

2. These construction joints shall be constructed in accordance with the requirements of the Project Specifications. All bars shall be embedded at least 2 inches above the top of the concrete structure.

3. The finished length of construction joints shall be equal to the thread length of the expansion joint to the nearest inch.

4. Expansion joints shall be made of flexible joints to the nearest inch.

5. Expansion joints shall be placed at a distance of 30 feet on each side of the structure.

6. Expansion joints shall be placed at horizontal joints of 30 feet. See Section 26 for details.

7. Anchor bolts shall be placed at the elevation shown on the plans and shall be installed at the top of the concrete structure. See details.

8. Minimum length of installation shall be 30 feet.
SHOULDER WIDENING TRANSITION WITHOUT GUTTER
FOR TRAFFIC BARRIER TERMINAL TYPE TI (SPECIAL)

GENERAL NOTES:
1. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V/H).
2. THE TYPE TI (SPECIAL) TERMINAL IS THE UPSTREAM END SECTION OF A GALVANIZED STEEL PLATE BEAM GUARDRAIL BARRIER SYSTEM.
3. REFERENCE STANDARD B28 FOR GUTTER TRANSITION AT TRAFFIC BARRIER TERMINAL TYPE TI (SPECIAL).
4. UNDER NO CIRCUMSTANCES SHALL AN EXISTING TERMINAL THAT WAS DESIGNED USING A PREVIOUS STANDARD BE ATTACHED TO OR MODIFIED IN ANY WAY FROM ITS ORIGINAL DESIGN. IF ANY MODIFICATION IS REQUIRED AND A PROPER BARRIER WARRANT HAS BEEN COMPLETED, THE ENTIRE BARRIER INSTALLATION SHALL BE COMPLETELY REMOVED AND REPLACED WITH A NEW SYSTEM THAT CONFORM TO THE CURRENT STANDARD.
5. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURER’S DETAILS AND SPECIFICATIONS.
6. NO ROADSIDE OBSTRUCTION OF ANY TYPE-FIXED OR BREAKAWAY, EITHER TEMPORARY OR PERMANENT SHALL BE ALLOWED WITHIN THIS RECOVERY AREA.
7. NO CURVED A BEAM SECTIONS ARE PERMITTED WITHIN THE TERMINAL PAY LIMITS, THE TRAFFIC BARRIER TERMINAL TI (SPECIAL) SHALL BE LAID OUT IN A STRAIGHT LINE.
8. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR HMA. WHEN NECESSARY USE LEAVE-OUT DETAIL SHOWN ON STANDARD CS.
9. THE TERMINAL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR CRASHWORTHINESS UNDER PROCEDURES DEFINED IN THE NATIONAL COOPERATIVE HIGHWAY RESEARCH REPORT (NCHRP) REPORT 350. NO MODIFICATION TO THIS STANDARD DRAWING SHALL BE PERMITTED.

NOTE FOR INSTALLATION ON CURVED ROADWAY:
THE EDGE OF THE TERMINAL EXTRUDER HEAD SHALL BE OFFSET A DISTANCE FROM A POINT ON THE RACK OF THE CURVED EDGE OF PAVED SHOULDER AS SHOWN IN TABLE I.
NOTES:
1. SEE STANDARD C1 FOR DETAILS OF GUARDRAIL NOT SHOWN.
2. THE GUARDPLATE X1 SHALL BE HELD IN POSITION BY TWO 80 HAMMERS DRIVEN INTO THE POST AND RIBBED OVER THE TOP OF THE PLATE.
3. THE TYPE T2 TERMINAL IS TYPICALLY UTILIZED FOR THE DEPARTING END SECTION OF A GALVANIZED STEEL PLATE BEAM GUARDRAIL SYSTEM.
4. UNDER NO CIRCUMSTANCES SHALL AN EXISTING TERMINAL, THAT HAS BEEN DESIGNED USING A PREVIOUS STANDARD, BE CHANGED TO OR MODIFIED IN ANYWAY FROM ITS ORIGINAL DESIGN. IF ANY MODIFICATION IS REQUIRED AND A PROPER GUARDRAIL ASSEMBLY HAS BEEN COMPLETED, THE ENTIRE GUARDRAIL INSTALLATION SHALL BE COMPLETELY REMOVED AND REPLACED WITH A NEW SYSTEM THAT CONFORMS TO THE CURRENT STANDARD.
5. GUARDRAIL TERMINAL SHALL BE IN ACCORDANCE WITH THE VILLAGE'S DETAILS AND SPECIFICATIONS. NO MODIFICATIONS SHALL BE PERMITTED.
6. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR ASPHALT PAVEMENT, WHEN NECESSARY THE USE LEAVE-OUT DETAIL PER STANDARD C1.
RESERVED
FOR OTHER CONCRETE STRUCTURE (VERTICAL FACE) WITH TYPE 6-3/6-2 GUTTER

NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

SHEET 2 OF 4

TRAFFIC BARRIER TERMINAL, TYPE TG
STANDARD C9-05
**PLAN**

Two sections of three beam

One set inside the other

Direction of traffic

Transition section See Sheet 1 of this series for notes.

**ELEVATION**

Note: See sheet 1 of this series for notes.

**SECTION A-A**

For parapet (safety face) with type G-2 gutter

**NOTE:**

See Sheet 1 of this series for notes.

**ILLINOIS HIGHWAY**

Traffic Barrier Terminal, Type TG

Standard C9-05

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SHOULDER WIDENING TRANSITION-WITHOUT GUTTER
FOR TRAFFIC BARRIER TERMINAL TYPE T1-A (SPECIAL)

GENERAL NOTES:
1. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL
   DISPLACEMENT (V/H).
2. THE TYPE T1-A (SPECIAL) IS THE UPSTREAM END SECTION OF A GALVANIZED STEEL PLATE BEAM GUARDRAIL
   BARRIER SYSTEM, FOR RAMP INSTALLATION WITH POSTED SPEED LIMIT OF 40 MPH OR LESS, NCHRP 350, TEST
   LEVEL TL-2.
3. REFERENCE STANDARD 229 FOR GUTTER TRANSITION AT TRAFFIC BARRIER TERMINAL TYPE T1-A (SPECIAL).
4. UNDER NO CIRCUMSTANCES SHALL AN EXISTING TERMINAL, THAT WAS DESIGNED USING A PREVIOUS STANDARD,
   BE ATTACHED TO OR MODIFIED IN ANY WAY FROM ITS ORIGINAL DESIGN. IF ANY MODIFICATION IS REQUISITED AND
   A PROPER BARRIER WARRANT HAS BEEN COMPLETED, THE ENTIRE BARRIER INSTALLATION SHALL BE
   COMPLETELY REMOVED AND REPLACED WITH A NEW SYSTEM THAT CONFORMS TO THE CURRENT STANDARD.
5. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S DETAILS AND SPECIFICATIONS.
6. NO ROADSIDE OBSTRUCTION OF ANY TYPE FIXED OR BREAKAWAY, EITHER TEMPORARY OR PERMANENT SHALL BE
   ALLOWED WITHIN THIS RECOVERY AREA.
7. NO CURVED W-BEAM SECTIONS ARE PERMITTED WITHIN THE TERMINAL PAY LIMITS. THE TRAFFIC BARRIER
   TERMINAL TYPE T1-A (SPECIAL) SHALL BE LAID OUT IN A STRAIGHT LINE.
8. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR HMA. WHEN NECESSARY USE LEAVE-OUT DETAIL
   SHOWN ON STANDARD Cl.
9. THE TERMINAL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR CRASHWORTHINESS UNDER PROCEDURES
   DEFINED IN THE NATIONAL COOPERATIVE HIGHWAY RESEARCH REPORT (NCHRP) REPORT 350. NO
   MODIFICATION TO THIS STANDARD DRAWING SHALL BE PERMITTED.

NOTES FOR INSTALLATION ON TANGENT ROADWAY
TRAFFIC BARRIER TERMINAL SHALL BE INSTALLED AT A 2%-TAPER MEASURED FROM
EDGE OF TRAVELLED WAY.

NOTES FOR INSTALLATION ON CURVED ROADWAY
THE EDGE OF THE TERMINAL EXTENDER HEAD SHALL BE OFFSET A DISTANCE FROM A POINT
ON THE BACK OF THE CURVED EDGE OF PAVED SHOULDER AS SHOWN IN TABLE 1.

SECTION A-A
(IMPACT HEAD OMITTED FOR CLARITY)
SHOULDER WIDENING TRANSITION-WITH GUTTER, TYPE C-2
FOR TRAFFIC BARRIER TERMINAL TYPE T1-A (SPECIAL)

SECTION A-A
IMPACT HEAD OMITTED FOR CLARITY.

CURVED ROADWAY
TRAFFIC BARRIER TERMINAL PLACEMENT

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>LATERAL OFFSET DIMENSION TO EDGE OF TERMINAL EXTENDER HEAD</th>
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<tbody>
<tr>
<td></td>
<td>INSIDE RADIUS OF CURVE</td>
</tr>
<tr>
<td>NO GUTTER</td>
<td>1'-0&quot;</td>
</tr>
<tr>
<td>TYPE C-2 GUTTER</td>
<td>1'-2½&quot;</td>
</tr>
<tr>
<td>TYPE C-3 GUTTER</td>
<td>2'-2½&quot;</td>
</tr>
</tbody>
</table>

*(#) OFFSET DISTANCE WILL VARY BASED ON RADIUS OF HORIZONTAL CURVE AND THE TERMINAL BEING INSTALLED IN A STRAIGHT LINE.

SEE SHEET 1 OF THIS SERIES FOR NOTES.
ELEVATION
CONCRETE MEDIAN BARRIER TRANSITION, TYPE V-F
AT BRIDGE PIERS

NOTES:
1. 10' DEEP CONSTRUCTION JOINTS SHALL BE CONSTRUCTED IN THE CONCRETE BARRIER WALL AND IN THE CONCRETE BARRIER BASE. CONSTRUCTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM JOINT SPACING SHALL NOT BE 10'.
2. THE FLOWING OF CONSTRUCTION JOINTS SHALL BE DONE IN AN APPROVED FLOWING MOLD AT THE DIRECTION OF THE ENGINEER SUBJECT TO THE SATISFACTION CONTROL OF BARRIERS. THE FLOWING OF CONSTRUCTION JOINTS IN THE BARRIER WALL SHALL NOT BE PERMITTED.
3. TAPER LENGTH REQUIRED FOR THE WIDTH TRANSITION WILL BE 20'-0" MINIMUM.
4. TOP SHOULDER EDGE OF GUTTER SLOP SHALL MATCH THE TOP OF SHOULDER ELEVATION.
5. GUTTER PROFILE IN THE SLOPES OF 5% VERTICAL CURVES, ALONG FLAT SPACES AND AT THE WINGING OF PROPOSED AND EXISTING GUTTER SHALL BE SIMILARLY CONTROLLED AND FINISHED, ADJUSTED IF NECESSARY TO ENSURE PROPER DRAINAGE AND AVOID PONDING.