<table>
<thead>
<tr>
<th>Standard</th>
<th>Modification Summary</th>
<th>Effective 03/01/2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Sheets</td>
<td>Illinois Tollway Standard Logo Inserted In Title Block.</td>
<td></td>
</tr>
<tr>
<td>C6</td>
<td>Traffic Barrier Terminal Type T1 (Special)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Terminal drawing change to all steel post system.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revised terminal pay limits.</td>
<td></td>
</tr>
<tr>
<td>C12</td>
<td>Traffic Barrier Terminal Type T1-A (Special)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Terminal drawing change to all steel post system.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revised terminal pay limits.</td>
<td></td>
</tr>
</tbody>
</table>
NOTES:
1. OFFSET FROM EDGE OF PAVED SHOULDER TO FACE OF RAIL IS TYPICAL FOR ALL INSTALLATIONS EXCEPT AS OTHERWISE DETAILLED IN THE PLAN DRAWINGS.

2. GUTTERS SUCH AS TYPE G-2, G-3 ARE REQUIRED IN FRONT OF THE GUARDRAIL. THE POSTS SHALL BE LOCATED 10' BEHIND THE GUTTER, OR AS OTHERWISE DETAILLED IN THE PLANS. THE OFFSET FROM THE EDGE OF SHOULDER TO FACE OF GUARDRAIL SHALL BE AS SHOWN ON STANDARD SIZE.

3. THE 24½'- TYPICAL RAIL HEIGHT IS MEASURED FROM EXISTING SURFACE TO TOP OF RAIL. ON EDGE OF SHOULDER, FACE OF GUARDRAIL MOUNTED RIDGE IS MORE THAN 10' IN FRONT OF RAIL TO CENTER OF RAIL.

4. AGGREGATE SHOULDER SPECIAL TYPE C SHALL COMPLY WITH THE REQUIREMENTS OF THE YIELDING REQUIRED SPECIAL PROVISION, WHERE GUARDRAIL IS PROPOSED WITH GUARDRAIL, A 6'-MINIMUM THICKNESS OF AGGREGATE SHOULDER SPECIAL TYPE C SHALL BE PLACED BEHIND CURB. FOR GUARDRAILS WITHOUT CURB & GUTTER, AGGREGATE SHOULDERS OR同等 TANGENT THICKNESS SHALL BE PLACED FROM THE EDGE OF PAVED SHOULDER SLOPING AWAY TO A 6'-MIN. THICKNESS.

5. AGGREGATE SHOULDER SPECIAL TYPE C SHALL EXTEND A MINIMUM OF 10' BEHIND POST OR GUARDRAIL, WHEREVER IT IS TYPICAL, EXCEPT AS DETAILLED ELSEWHERE IN THE PLANS.

6. PLASTIC BLOCK-OFFS SHALL NOT BE ALLOWED AS A SUBSTITUTE FOR WOOD BLOCK-OFFS OR GLASS SMOOTH-OUTS ON NEW INSTALLATIONS.

7. WHEN 5'-MIN. AND 3'-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 GUARDRAIL POINT.

8. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT FROM 100.

9. UNLESS NO CIRCUMSTANCES ARE EXISTING GUARDRAIL, THAT WAS DESIGNED USING A PREVIOUS STANDARDS, BE EXTENDED, ATTACHED TO OR MODIFIED IN ANY APPROPRIATE FROM ITS ORIGINAL DESIGN. ANY MODIFICATION IS REQUIRED AND A PROPER GUARDRAIL IS REQUIRED TO COMPLETE. THE ENTIRE GUARDRAIL INSTALLATION SHALL BE COMPLETED AND INSTALLED WITH A NEW SYSTEM THAT CONFORMS TO THE CURRENT STANDARD.

10. WHEN 5'-MIN. THE POST LENGTH SHALL BE 9'-0" AND 4'-MIN. AGGREGATE SHOULDER WIDTH MAINTAINED.

11. THE GUARDRAIL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR CHASSIS CONTACTS UNDER PROCEDURES DEFINED IN THE NATIONAL COOPERATIVE HIGHWAY RESERCH PROGRAM (NCHRP) REPORT 350, NO MODIFICATION TO TWO STANDARD DRAWINGS SHALL BE REQUIRED.

12. GUARDRAIL POSTS SHALL NOT BE INSTALLED IN CONCRETE ON ASPHALT PAVEMENTS. WHEN NECESSARY USE LEAVE-OUT DETAIL ON SHEET 4 OF 4 OF THIS SERIES.

13. GUARDRAIL POSTS SHALL NOT BE ATTACHED TO ANY STRUCTURE.
TABLE 1

<table>
<thead>
<tr>
<th>V</th>
<th>L</th>
<th>WOOD POST</th>
<th>STEEL POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>16.0”</td>
<td>24”</td>
<td>21”</td>
</tr>
<tr>
<td>&gt; 16”</td>
<td>20.0”</td>
<td>12”</td>
<td>8”</td>
</tr>
<tr>
<td>&gt; 20”</td>
<td>24.0”</td>
<td>17”</td>
<td>0”</td>
</tr>
</tbody>
</table>

* V = V - 0.5”

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**NOTES:**

1. CAP SHALL BE INSTALLED TO MATCH THE EXISTING CROSS SLOPE.
2. THE LEAVE-OUTS SHALL BE DEFINED AS THE AREAS AROUND THE POST THAT IS EITHER SHUTTLED FROM THE NEW CONSTRUCTION OR REMOVED FROM THE EXISTING CONCRETE OR ASPHALT.
## TABLE 2
### BARRIER CLEARANCE DISTANCE

<table>
<thead>
<tr>
<th>GUARDRAIL SYSTEM</th>
<th>POST SPACING</th>
<th>DESIRABLE BARRIER CLEARANCE DISTANCE</th>
<th>MINIMUM BARRIER CLEARANCE DISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE A</td>
<td>6’-3”</td>
<td>42”</td>
<td>28”</td>
</tr>
<tr>
<td>TYPE B 1/2 POST SPACING</td>
<td>3’-4 3/4”</td>
<td>30”</td>
<td>20”</td>
</tr>
<tr>
<td>TYPE C 1/2 POST SPACING</td>
<td>3’-8 3/4”</td>
<td>24”</td>
<td>14”</td>
</tr>
</tbody>
</table>

### Notes:
1. Desirable barrier clearance distances shall be used for all new installations.
2. Minimum barrier clearance distances are only to be used for existing obstacles.
3. When length of obstacles is 1’-3” or less, the downstream transition shall be omitted.

### Diagram:
- **Type A Guardrail - Drainage Structure Conflict**
  - One Post
  - Transition to 1/2-post spacing
  - Transition to 1/4-post spacing

- **Type A Guardrail - Drainage Structure Conflict**
  - Two Posts
  - 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.
ELEVATION

MEDIAN PIER PROTECTION-TERMINAL SECTION

NOTES:

1. ALL ELEMENTS, HOLES, NUTS, AND WASHERS SHALL BE Made OF GALVANIZED STEEL IN ACCORDANCE WITH THE STANDARDS SPECIFIED AND AS SHOWN ON SHEET 2-02.


3. POSTS, PLATES, AND MOUNTING ACCESSORIES SHALL CONFORM TO THE REQUIREMENTS OF ASME B365, GRADE 50, AND SHALL BE CALIBRATED IN ACCORDANCE WITH THE ASME SPECIFICATIONS.

4. THE MEDIAN MOUNTING POSTS SHALL BE TREATED AND CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

5. MOUNTING STRUCTURAL TUBING SHALL CONFORM TO ASTM A-500, GRADE B, OR EQUIVALENT.

MEDIAN PIER PROTECTION-TERMINAL SECTION

1. All holes in posts and flanges shall be treated and sealed.

2. In the event of an obstruction preventing post installation, up to 30 degrees off center posts may be installed. Two adjacent posts are used in this situation.

3. All elements shall be furnished in standard lengths of 5'0". An alternate 3'0" standard length may be furnished at the option of the Contractor.

4. All rail elements and accessories shall conform to standard specifications unless otherwise noted.

5. The contractor shall confirm the accuracy of all specifications. A copy of this document shall be installed in the structure. The item shown is not a substitute for the original materials. Each item shall be marked with the maker's name, model number, and any other information required by the specification.

6. The maximum post spacing shall be 6'0".
SHOULDER WIDENING TRANSITION-WITHOUT GUTTER FOR TRAFFIC BARRIER TERMINAL TYPE T1 (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 (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 T1 (SPECIAL).
4. UNDER NO CIRCUMSTANCES SHALL AN EXISTING TERMINAL THAT WAS DESIGNED USING A PREVIOUS STANDARD BE ATTACHED TO OR MODIFIED IN ANY WAY OTHER THAN 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 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 A BEAM SECTIONS ARE PERMITTED WITHIN THE TERMINAL PAY LIMITS. THE TRAFFIC BARRIER TERMINAL TYPE T1 (SPECIAL) SHALL BE Laid IN A STRAIGHT LINE.
8. TERMINAL POSTS SHALL NOT BE INSTALLED ON CONCRETE OR PCC. WHEN NECESSARY USE LEAVE-OUT DETAIL SHOWN ON STANDARD.
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.
SHOULDER WIDENING TRANSITION WITH GUTTER, TYPE G-2
FOR TRAFFIC BARRIER TERMINAL TYPE T1 (SPECIAL)

SECTION A-A
IMPACT HEAD OMITTED FOR CLARITY

NOTE
SEE SHEET 1 OF THIS SERIES FOR NOTES.
CABLE ASSEMBLY
190,000 LBS. VERTICAL BREAKING STRENGTH
TIGHTEN TO TIGHT TENSION.

NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.
TYPE T5 - CONCRETE BRIDGE PARAPET

SECTION WITH GUTTER

SECTION WITHOUT GUTTER

SECTION A-A
NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

SHEET 2 OF 2
ILLINOIS TOLLWAY
TRAFFIC BARRIER TERMINAL, TYPE TS
STANDARD CB-04
NOTES:
1. SEE STANDARD C1 FOR DETAILS OF GUARDER, NOT SHOWN.
2. PACK BEAM SHALL BE BOLTED TO DROP-OUT AT ALL POSTS.
3. ALL SCREW GUARDERS ARE EXTRACTED AS UNITS OF VERTICAL DEFORMATION TO UNITS OF HORIZONTAL DEFORMATION HAN.
4. THE TYPE T5 TERMINAL IS TYPICALLY UTILIZED TO ATTACH GALVANIZED STEEL PLATE-BEAM GUARDER AT THE UPSIDE END OF THE HINGED CONCRETE PARAPET, WHERE A HANDGUARDER IS TO BE INSTALLED.
5. SEE STANDARD B3 FOR GUARD TRANSITION AT TRAFFIC BARRIER TERMINAL TYPE T6.
6. UNDER No CIRCUMSTANCES SHALL AN EXISTING TERMINAL BE USED USING A PREVIOUS STANDARD, OR ATTACHED TO ANY HINGED RAIL IN ANYWAY FROM ITS ORIGINAL DESIGN. IF ANY MODIFICATIONS ARE REQUIRED AND A PROPER WARRANT HAS BEEN COMPLETED, THE ENTIRE INSTALLATION SHALL BE COMPLETELY REMOVED AND REPLACED WITH A NEW SYSTEM THAT COMPLIES TO THE CURRENT STANDARD.
7. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S DETAILS AND SPECIFICATIONS.
8. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR MIXED PAYMENTS, WHEN NEEDED USE LEAVE-OUT DETAIL PER STANDARD C1.
9. TERMINAL POSTS SHALL BE INSTALLED PERPENDICULAR TO BACK OF GUARDER.
10. THE TERMINAL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR STRENGTH AND WITHDRAWAL LEAKAGE. PROCEDURES DESCRIBED IN THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 502 ON NO MODIFICATION TO THIS STANDARD DRAWING SHALL BE PERMITTED.
11. TERMINAL BARRIER CLEARANCE DISTANCE SHALL CONFORM TO TABLE 2 ON STANDARD C1.
12. LEAVE-OUT DIMENSIONS BEHIND POSTS 1-5 SHALL BE A MINIMUM OF 40.

WITH TYPE C-3 GUTTER

SECTION A-A

FOR PARAPET (SAFETY FACE)
WITH TYPE C-3 GUTTER

Illinois Tollway

C9-04.dgn 2/14/2013 10:39:25 AM
FOR OTHER CONCRETE STRUCTURE (VERTICAL FACE) WITH TYPE G-3/G-2 GUTTER

NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.
NOTES:
1. See Standard C1 for details of guardrail not shown.
2. Three beam rail shall be bolted to block-out at all posts.
3. All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V/H).
4. The "Type T68 Terminal" is typically utilized to attach galvanized steel flare beam guardrail at the upstream end of the bridge concrete parapet, where a roadside gutter is not to be installed.
5. Under no circumstances shall existing terminal, that has been designed using a previous standard, be attached to or modified in anyway 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 conforms to the current standard.
6. Trafiic barrier terminal shall be in accordance with the manufacturer's details and specifications.
7. Terminal posts shall not be installed in concrete or HMA pavements, when necessary use leave-out detail per standard C1, sheet 4 of 4.
8. Terminal barrier clearance distance shall conform with Table 2 on standard C1.
9. Leave-out dimension behind posts 1-6, shall be a minimum of 4'.

TRANSITION SECTION
(6 gauge rail element)
C11-03.dgn 2/14/2013 11:02:13 AM
SHOULDER WIDENING TRANSITION-WITHOUT GUTTER
FOR TRAFFIC BARRIER TERMINAL TYPE TI-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 TI-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 I (L. 25).
3. REFERENCE STANDARD 829 FOR GUTTER TRANSITION AT TRAFFIC BARRIER TERMINAL TYPE TI-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 REQUIRED AND
   A PROPER BARRIERT WARRANT HAS BEEN COMPLETED, THE ENTIRE BARRIERT 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 B-BEAM SECTIONS ARE PERMITTED WITHIN THE TERMINAL PAY LIMITS. THE TRAFFIC BARRIER
   TERMINAL TYPE TI-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 CI.
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 TRAVELED WAY.

NOTES FOR INSTALLATION ON CURVED ROADWAY
SHOULDER WIDENING TRANSITION WITH GUTTER, TYPE C-2
FOR TRAFFIC BARRIER TERMINAL TYPE TI-A (SPECIAL)

TABLE 1

<table>
<thead>
<tr>
<th>GUTTER</th>
<th>INSIDE RADIUS OF CURVE</th>
<th>OUTSIDE RADIUS OF CURVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO GUTTER</td>
<td>1'-0&quot;</td>
<td>1'-0&quot; MNL. *</td>
</tr>
<tr>
<td>TYPE C-2 GUTTER</td>
<td>1'-2&quot;-1/2&quot;</td>
<td>2'-3&quot;-1/2&quot; MNL. *</td>
</tr>
<tr>
<td>TYPE C-3 GUTTER</td>
<td>2'-2&quot;-1/2&quot;</td>
<td>2'-2&quot;-1/2&quot; MNL. *</td>
</tr>
</tbody>
</table>

(1) OFFSET DISTANCE WILL VARY BASED ON RADIUS OF CURVE AND THE TERMINAL BEING INSTALLED IN A STRAIGHT LINE.
NOTES:
1. 1" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN THE CONCRETE BARRIER WALL AND IN THE CONCRETE BARRIER BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM JOINT SPACING SHALL BE 30'.

2. THE FORMING OF CONTRACTION JOINTS SHALL BE DONE WITH AN APPROVED FINISHING TOOL AT THE DISCRETION OF THE ENGINEER SUBJECT TO THE SATISFACTORY CONTROL OF CRACKING. THE SAWING OF CONTRACTION 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 CURB SLAB SHALL MATCH THE TOP OF SHOULDER ELEVATION.

5. CURB PROFILE IN THE VICINITY OF SAG VERTICAL CURVES, ALONG FLAT GRADES AND AT THE MELTING OF PROPOSED AND EXISTING CURB, SHALL BE CAREFULLY CONTROLLED AND FIELD ADJUSTED IF NECESSARY TO ENSURE POSITIVE DRAINAGE AND AVOID PONDING.