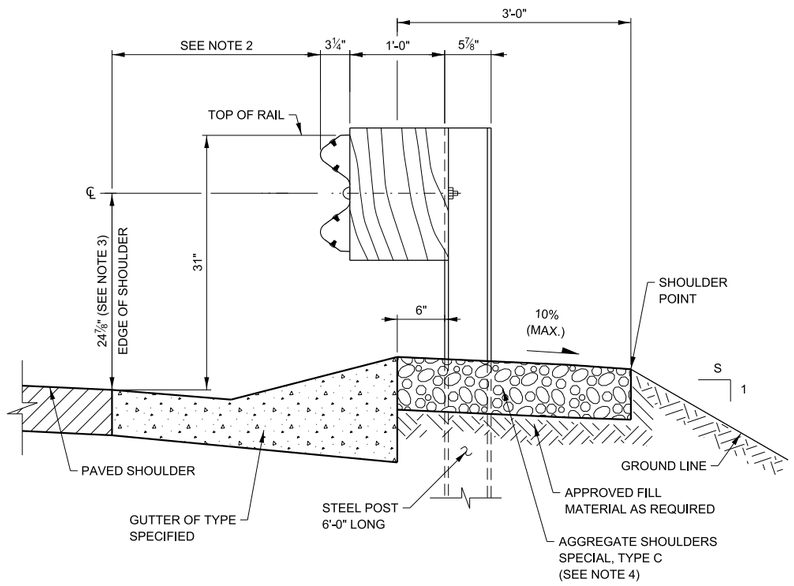
Illinois Tollway Standard Drawing Revisions

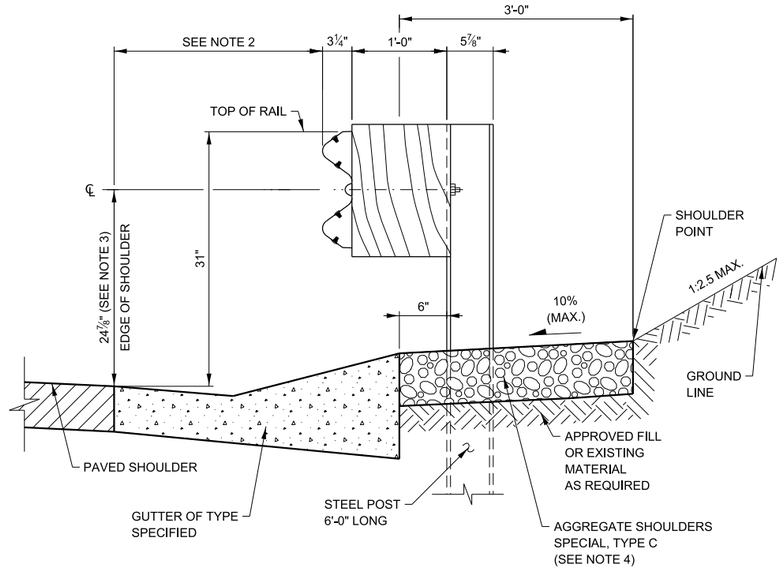
Section C	Guardrail and Concrete Barriers	
	Standard	**Modification Summary** **Effective: 03-01-2025**
		This set of standard drawings has been converted from v8i to OpenRoads.
		There are no other changes to this set of standards from the previous version.

New Sheet

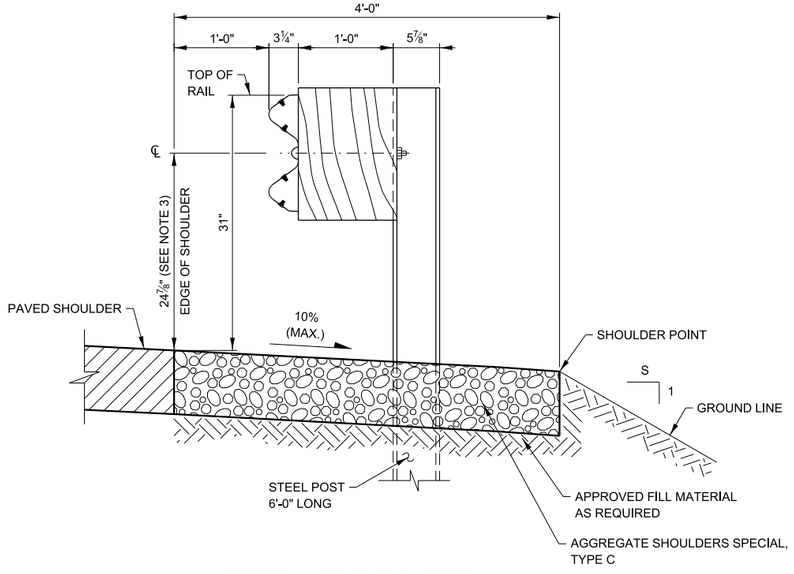
Retired Standard



FILL SECTION WITH GUTTER



CUT SECTION WITH GUTTER



SECTION WITHOUT GUTTER

GUARDRAIL INSTALLATION DETAILS

NOTES:

1. 1'-0" OFFSET FROM EDGE OF PAVED SHOULDER TO FACE OF RAIL IS TYPICAL FOR ALL INSTALLATIONS WITHOUT GUTTER 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 B28.
3. THE 24⅞" TYPICAL RAIL HEIGHT IS MEASURED FROM EXISTING SURFACE 1'-0" IN FRONT OF RAIL, OR FROM EDGE OF SHOULDER/EDGE OF GUTTER WHEN EDGE IS MORE THAN 1'-0" IN FRONT OF RAIL TO CENTER OF RAIL.
4. WHERE GUTTER IS PROPOSED WITH GUARDRAIL, A 6" MINIMUM THICKNESS OF AGGREGATE SHOULDERS SPECIAL, TYPE C SHALL BE PLACED BEHIND GUTTER. FOR GUARDRAIL WITHOUT GUTTER, AGGREGATE SHOULDER, TYPE C, OF THE SAME THICKNESS AS PAVED SHOULDER SHALL BE PLACED FROM THE EDGE OF PAVED SHOULDER SLOPING AWAY TO A 6" MIN. THICKNESS.
5. GUARDRAIL POSTS SHALL NOT BE ATTACHED TO ANY STRUCTURE.
6. PLASTIC BLOCK-OUTS SHALL NOT BE ALLOWED AS A SUBSTITUTE FOR WOOD BLOCK-OUTS ON NEW INSTALLATIONS.
7. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENTS (V:H).
8. UNDER NO CIRCUMSTANCES SHALL AN EXISTING GUARDRAIL, THAT WAS DESIGNED USING A PREVIOUS STANDARD, BE EXTENDED, 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 CONFORMS TO THE CURRENT STANDARD.
9. THE MGS GUARDRAIL SYSTEM WITH STANDARD POST SPACING HAS BEEN PERFORMANCE-TESTED FOR TL-3 CRASH WORTHINESS UNDER PROCEDURES DEFINED IN THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). OTHER VARIATIONS OF THE MGS GUARDRAIL SYSTEM HAVE BEEN PERFORMANCE-TESTED FOR TL-3 CRASH WORTHINESS UNDER PROCEDURES OUTLINED IN THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350. NO MODIFICATION TO THIS STANDARD DRAWING SHALL BE PERMITTED.
10. GUARDRAIL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR ASPHALT PAVEMENT. WHEN NECESSARY USE LEAVE-OUT DETAIL ON SHEET 3 OF 4 OF THIS SERIES.

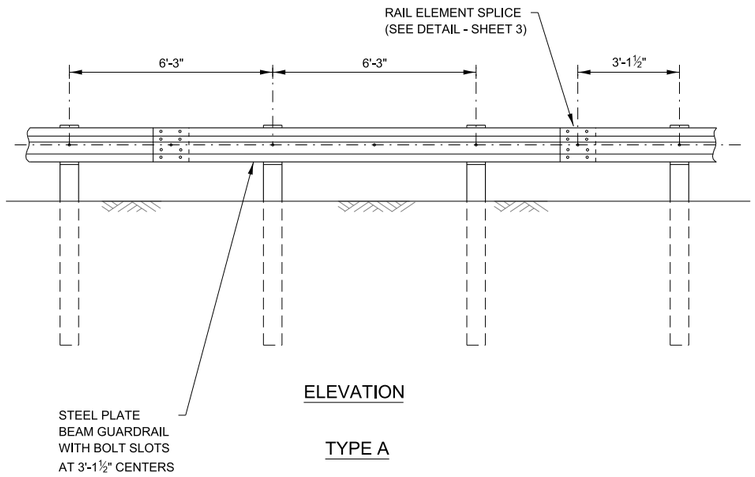
APPROVED BY: Marwan Nashif, CHIEF ENGINEERING OFFICER
DATE: 03/01/2024

REVISIONS	
DATE	DESCRIPTION
03-01-2024	REMOVE 9' POSTS AND REQUIRE FULL WIDTH AGGREGATE SHOULDER
03-01-2021	CHANGED DRAINAGE CONFLICTS TO OMITTED POST, SHEET 4
03-01-2020	MODIFIED NOTE 11 AND HEADING OF TABLE 2B

Illinois Tollway

GALVANIZED STEEL PLATE BEAM GUARDRAIL

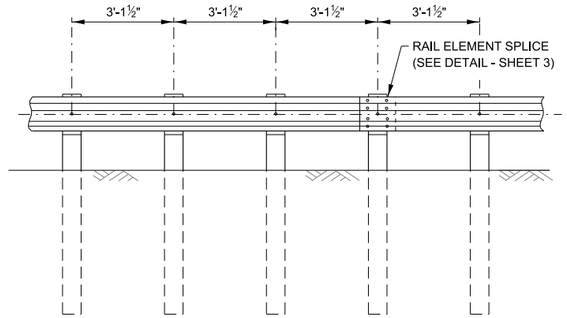
VERSION:	STANDARD:	SHEET:
2024-03	C1-13	1 OF 4



ELEVATION

TYPE A

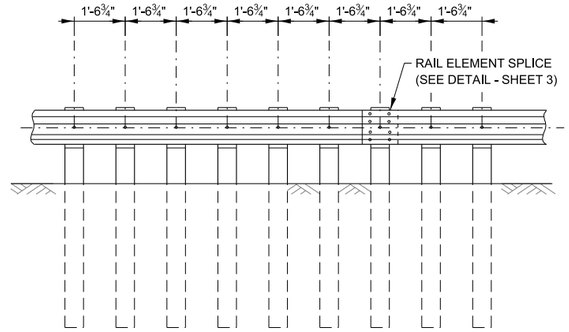
6'-3" TYPICAL POST SPACING



ELEVATION

TYPE B

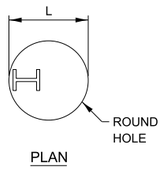
3'-1½" ½ POST SPACING



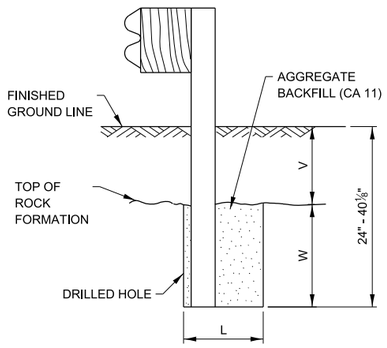
ELEVATION

TYPE C

1'-6¾" ¼ POST SPACING



PLAN

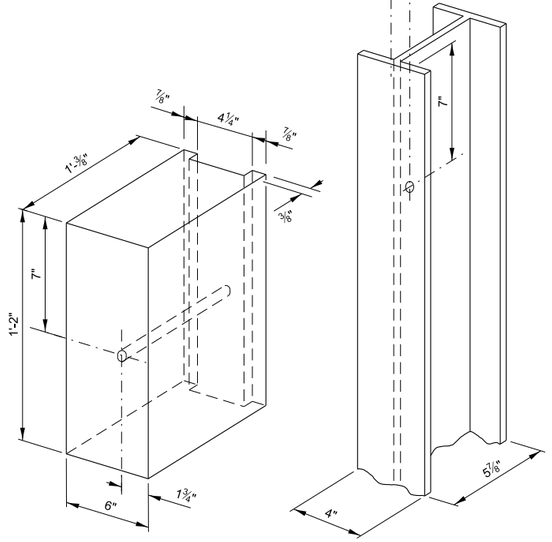


ELEVATION

FOOTING FOR POST WHEN ROCK FORMATION IS ENCOUNTERED

TABLE 1		
V	W	L
0 - 16⅛"	24"	21"
> 16⅛" - 28⅛"	12"	8"
> 28⅛" - 40⅛"	12" - 0 (*)	8"

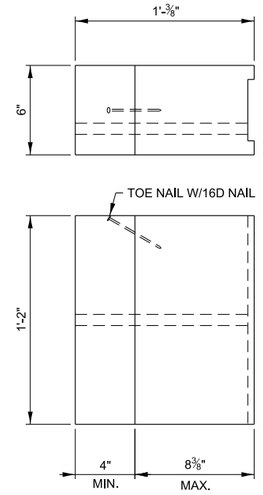
* V + W = 40⅛"



NOTES:

ALL HOLES 3/4" DIA.

WOOD BLOCK-OUT AND STEEL POST DETAILS



TWO-PIECE WOOD BLOCK-OUT OPTION

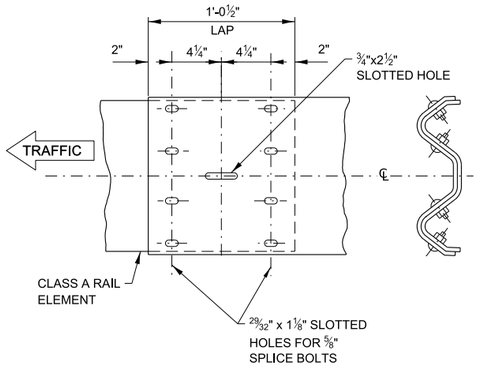
APPROVED BY:
Manar Nashif
CHIEF ENGINEERING OFFICER

DATE:
03/01/2024

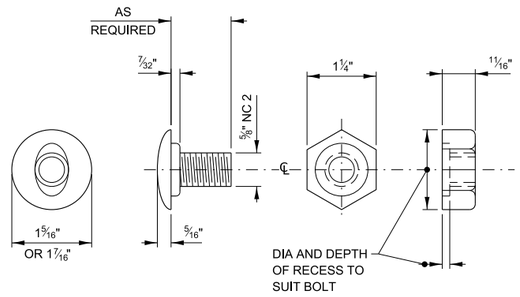
Illinois Tollway

GALVANIZED STEEL PLATE BEAM GUARDRAIL

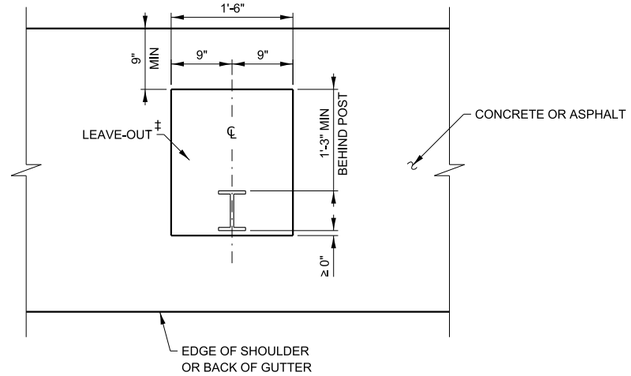
VERSION:	STANDARD:	SHEET:
2024-03	C1-13	2 OF 4



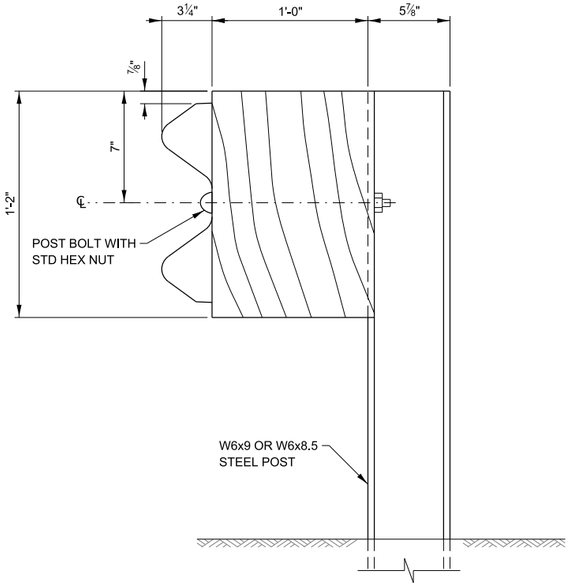
RAIL ELEMENT SPLICE



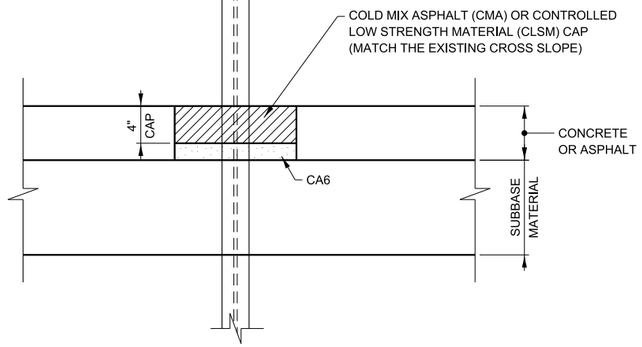
POST OR SPLICE BOLT & NUT



PLAN



STEEL POST CONSTRUCTION



ELEVATION

LEAVE-OUTS

‡ THE AREA AROUND THE POST THAT IS EITHER OMITTED FROM THE NEW CONSTRUCTION OR REMOVED FROM THE EXISTING CONCRETE OR ASPHALT.

APPROVED BY:
Marco Nashif
CHIEF ENGINEERING OFFICER

DATE:
03/01/2024

Illinois Tollway

GALVANIZED STEEL PLATE BEAM GUARDRAIL

VERSION:	STANDARD:	SHEET:
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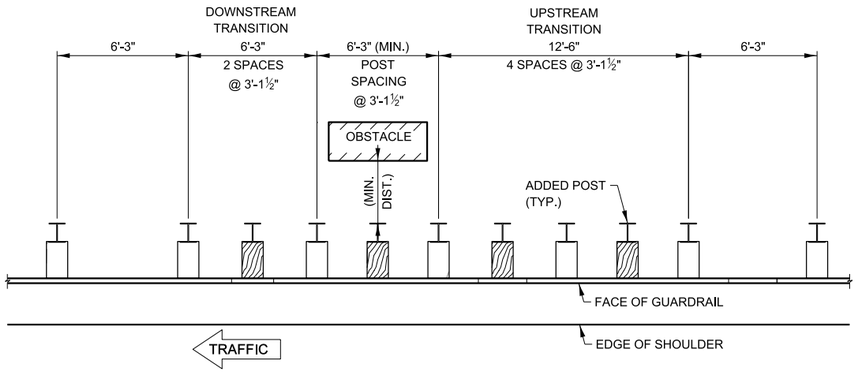
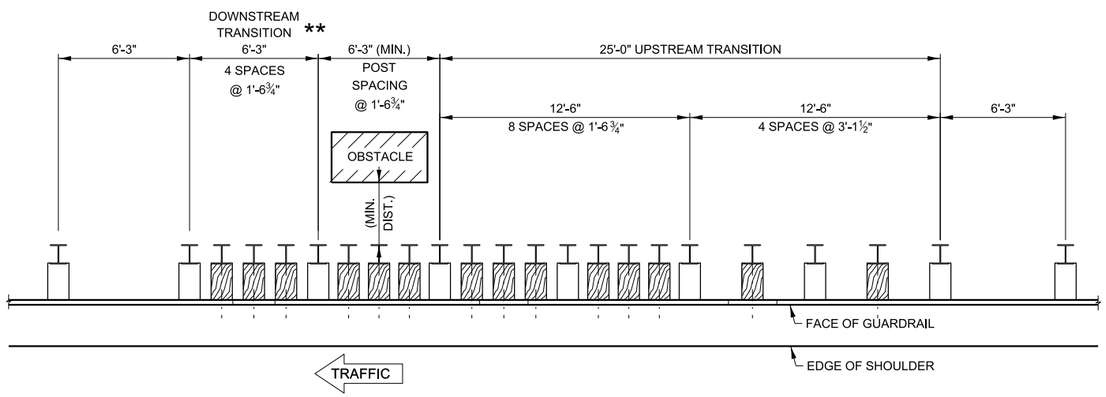
TABLE 2A BARRIER CLEARANCE DISTANCE (MGS) NEW CONSTRUCTION/RECONSTRUCTION		
GUARDRAIL SYSTEM	POST SPACING	MINIMUM DISTANCE
TYPE A	6'-3"	39"
TYPE B ½ POST SPACING	3'-1½"	34"
TYPE C ¼ POST SPACING	1'-6¾"	26"

TABLE 2B BARRIER CLEARANCE DISTANCE (MGS) REHABILITATION				
GUARDRAIL SYSTEM	POST SPACING	MINIMUM DISTANCE		
		EXISTING BREAKAWAY LIGHT POLES	ALL OTHER OBSTACLES	
			EXISTING GUARDRAIL	ALL NEW GUARDRAIL
TYPE A	6'-3"	20"	28"	39"
TYPE B ½ POST SPACING	3'-1½"	N/A	23"	34"
TYPE C ¼ POST SPACING	1'-6¾"	N/A	14"	26"



TRANSITION TO ½-POST SPACING



TRANSITION TO ¼-POST SPACING

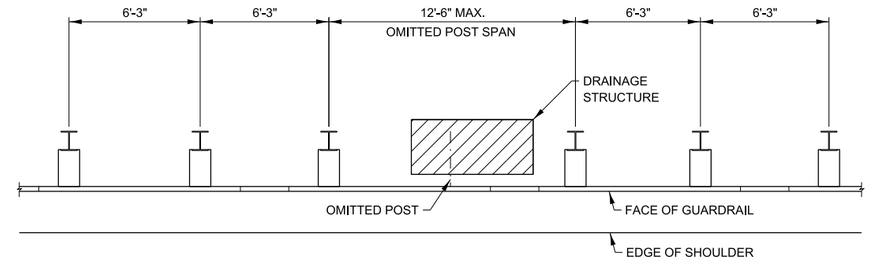
** WHEN LENGTH OF OBSTACLES IS 1'-3" OR LESS, THE DOWNSTREAM TRANSITION SHALL BE OMITTED.

POST SPACING TRANSITIONS

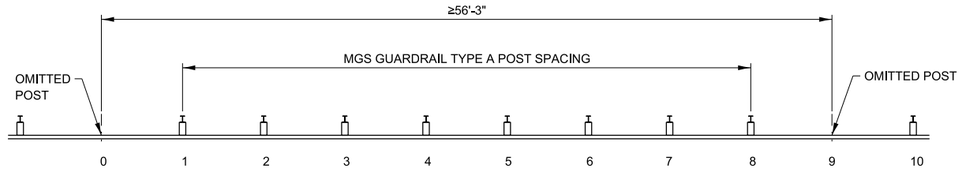
NOTE: NO MODIFICATIONS OF ANY KIND TO THE TRANSITION POST SPACING ARE ALLOWED.

APPROVED BY: Marwan Nashif, CHIEF ENGINEERING OFFICER

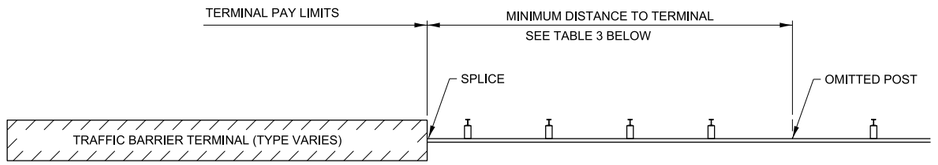
DATE: 03/01/2024



TYPE A GUARDRAIL-DRAINAGE STRUCTURE CONFLICT
ONE POST OMITTED



MINIMUM ALLOWED DISTANCE BETWEEN OMITTED POSTS



MINIMUM DISTANCE TO TERMINAL FROM OMITTED POST

NOTES:

A. THE OMISSION OF A SINGLE SUPPORT POST WITHIN THE GUARDRAIL SPAN IS PERMITTED WHEN A CONFLICT EXISTS. THE MINIMUM DISTANCE BETWEEN TWO OMITTED POSTS IS 56'-3".

B. GUARDRAIL POSTS SHALL NOT BE SET BACK TO AVOID CONFLICTS WITH A DRAINAGE SUBSURFACE UTILITY.

C. THIS DETAIL ALSO APPLIES TO OTHER UNDERGROUND CONFLICTS.

D. THE OMISSION OF A SUPPORT POST IS NOT PERMITTED WITHIN A GUARDRAIL INSTALLATION WITH GUTTER.

TABLE 3 MINIMUM DISTANCE FROM OMITTED POST TO TERMINAL LIMIT	
TRAFFIC BARRIER TERMINAL	MIN. DISTANCE
TBT TYPE T1 (SP) OR TBT TYPE T1-A (SP)	15'-7½"
TBT TYPE T6 OR TBT TYPE T6B	28'-1½"
TBT TYPE T2	53'-1½"

Illinois Tollway

GALVANIZED STEEL PLATE BEAM GUARDRAIL

VERSION:	STANDARD:	SHEET:
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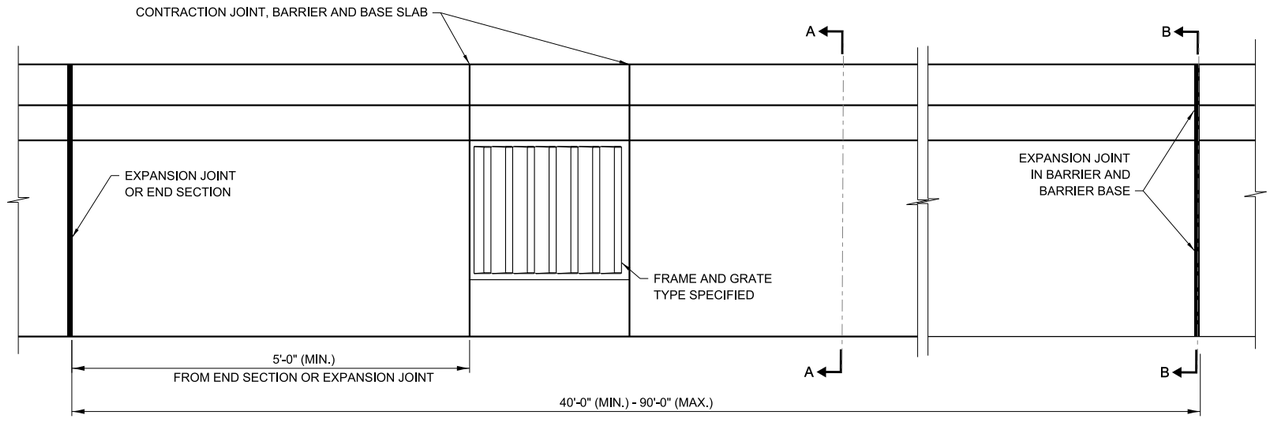
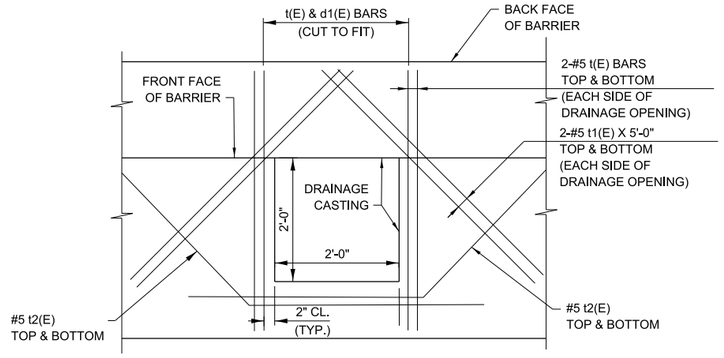
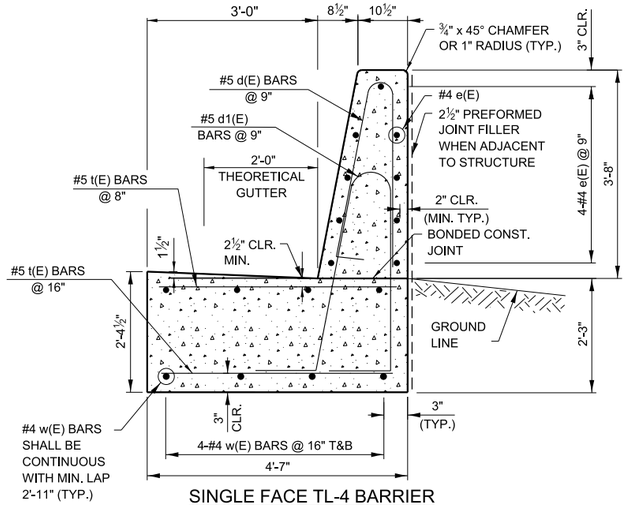


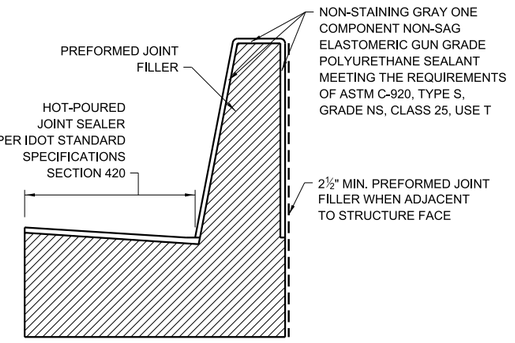
PLAN



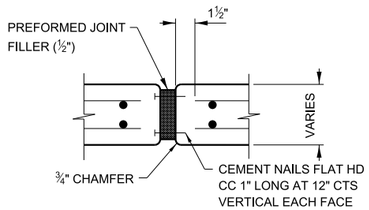
PLAN
REINFORCEMENT AROUND DRAINAGE STRUCTURE



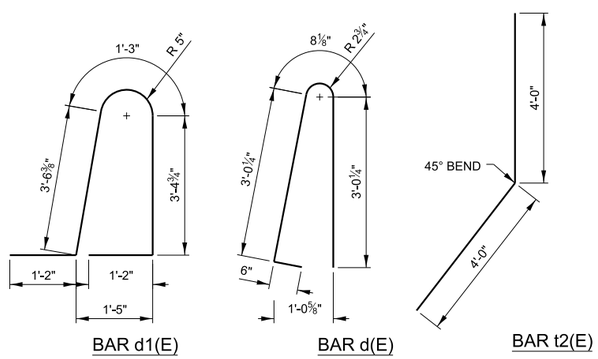
SINGLE FACE TL-4 BARRIER
SECTION A-A



SINGLE FACE TL-4 BARRIER
EXPANSION JOINT
SECTION B-B



EXPANSION JOINT



BAR d1(E) BAR d(E) BAR t2(E)

BENDING DIAGRAMS

NOTES:

1. THIS REINFORCED CONCRETE TL-4 ROADSIDE BARRIER IS USED TO SHIELD NON-CRASHWORTHY SOIL-BACKED WALLS AND OTHER ROADWAY APPURTENANCES WHEN SPACE BEHIND DOES NOT ALLOW THE FOOTING EXTENSION OF THE T-SHAPED BARRIER (STD C3). THE MINIMUM LENGTH OF INSTALLATION SHALL BE 40'-0". BASIS OF DESIGN: IL TOLLWAY STRUCTURE DESIGN MANUAL.
2. TOP SHOULDER EDGE OF BARRIER BASE SHALL MATCH THE TOP OF SHOULDER ELEVATION. BACKSIDE OF BARRIER SHALL BE FILLED TO THE TOP OF THE BASE.
3. WHEN USED ADJACENT TO A STRUCTURE, A 2 1/2" PREFORMED JOINT FILLER SHALL BE INSTALLED BETWEEN THE BARRIER AND THE STRUCTURE FACE.
4. 1" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN BOTH THE REINFORCED CONCRETE BARRIER WALL AND BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM CONTRACTION JOINT SPACING SHALL BE 30'-0".
5. CONTRACTION JOINTS SHALL BE FORMED BY A ⅛" WIDE, GROOVE EITHER FORMED IN THE PLASTIC CONCRETE OR SAWED AFTER THE CONCRETE HAS SET.
6. REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.
7. REINFORCEMENT BARS BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315, LATEST EDITION. REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT.
8. AT DRAINAGE STRUCTURES, CUT FOOTING BARS TO FIT. ADD ADDITIONAL t, t1, AND t2 BARS ON EACH SIDE OF THE DRAINAGE STRUCTURE. A 1" PJF SHALL BE PLACED BELOW THE BARRIER BASE WHEN IT SITS UPON A FLAT SLAB DRAINAGE STRUCTURE.
9. EXPANSION JOINTS SHALL BE CONSTRUCTED IN BARRIER AND BASE AT A MAXIMUM JOINT SPACING OF 90'-0" AND A MINIMUM JOINT SPACING OF 40'-0". SEE SECTION B-B FOR DETAILS.

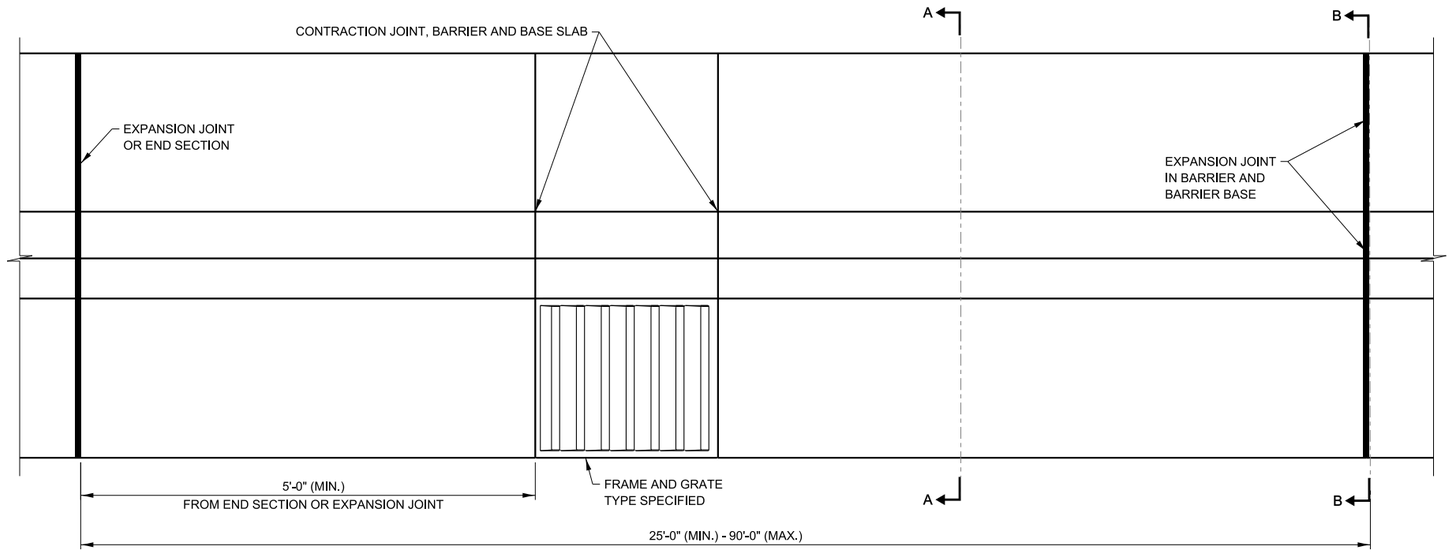
APPROVED BY:
Manar Nashif
CHIEF ENGINEERING OFFICER
DATE: 03/01/2024

Illinois Tollway

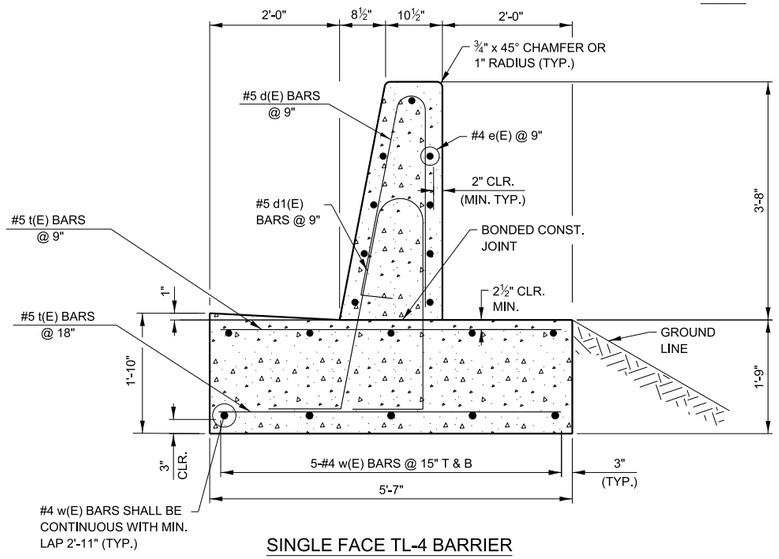
REVISIONS	
DATE	DESCRIPTION
03-01-2024	ADDED PJF BETWEEN BASE AND
	DRAINAGE STRUCTURE

CONCRETE BARRIER SINGLE FACE, REINFORCED TL-4, L-SHAPE 44 INCH

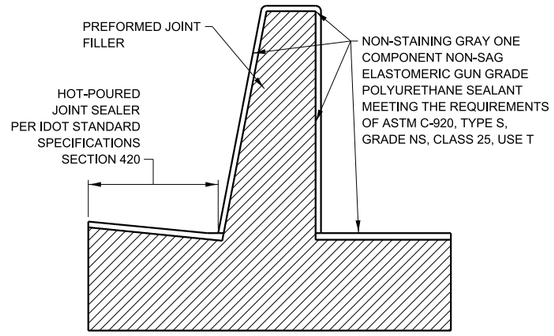
VERSION: 2024-03 | STANDARD: C2-01 | SHEET: 1 OF 1



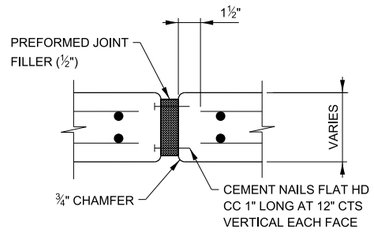
PLAN



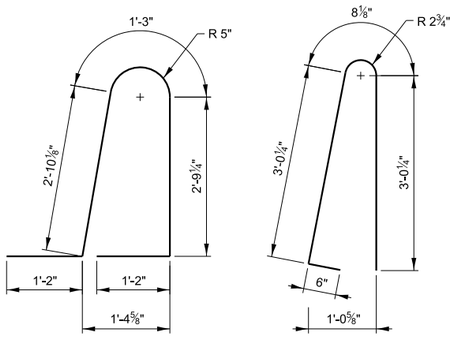
SINGLE FACE TL-4 BARRIER
SECTION A-A



SINGLE FACE TL-4 BARRIER
EXPANSION JOINT
SECTION B-B

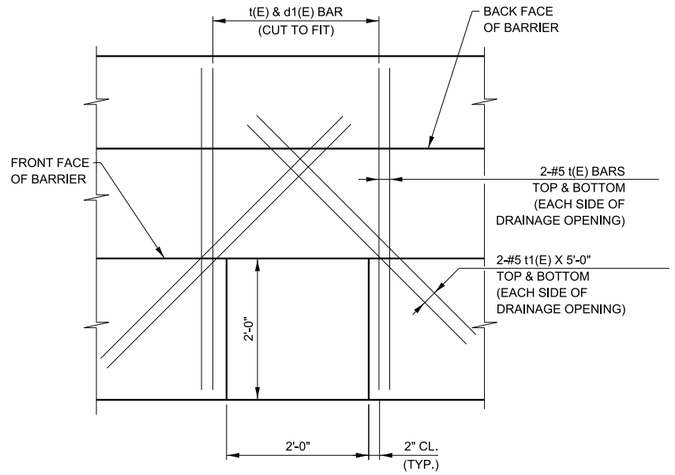


EXPANSION JOINT



BAR d1(E) BAR d(E)

BENDING DIAGRAMS



PLAN
REINFORCEMENT AROUND DRAINAGE STRUCTURE

NOTES:

1. THIS IS A REINFORCED CONCRETE TL-4 ROADSIDE BARRIER USED TO SHIELD ROADWAY APPURTENANCES. THE MINIMUM LENGTH OF INSTALLATION SHALL BE 25'-0". BASIS OF DESIGN: IL TOLLWAY STRUCTURE DESIGN MANUAL.
2. TOP SHOULDER EDGE OF BARRIER BASE GUTTER SHALL MATCH THE TOP OF SHOULDER ELEVATION.
3. 1" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN BOTH THE REINFORCED CONCRETE BARRIER WALL AND BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM CONTRACTION JOINT SPACING SHALL BE 30'-0".
4. CONTRACTION JOINTS SHALL BE FORMED BY A GROOVE ⅛", EITHER FORMED IN THE PLASTIC CONCRETE OR SAWED AFTER THE CONCRETE HAS SET.
5. REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.
6. REINFORCEMENT BARS BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315, LATEST EDITION. REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT.
7. AT DRAINAGE STRUCTURES, CUT FOOTING BARS TO FIT. ADD ADDITIONAL t AND t1 BARS ON EACH SIDE OF THE DRAINAGE STRUCTURE. A 1" PJF SHALL BE PLACED BELOW THE BARRIER BASE WHEN IT SITS UPON A FLAT SLAB DRAINAGE STRUCTURE.
8. EXPANSION JOINTS SHALL BE CONSTRUCTED IN BARRIER WALL AT A MAXIMUM JOINT SPACING OF 90'-0" AND A MINIMUM JOINT SPACING OF 25'-0". SEE SECTION B-B FOR DETAILS.
9. WHEN SPECIFIED IN THE PLANS, THE BACKSIDE OF THE BARRIER BASE MAY BE LEFT EXPOSED A MAXIMUM OF 1', MEASURED FROM THE TOP OF THE BARRIER BASE.

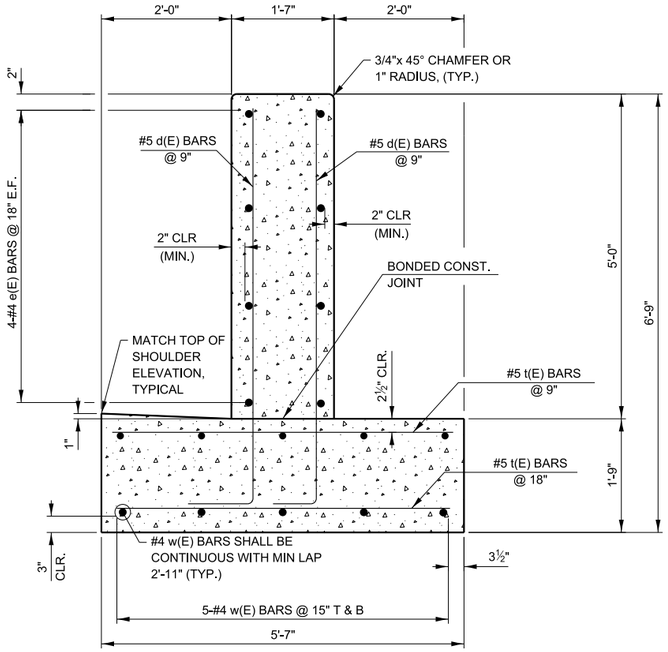
APPROVED BY: Manar Nashif, CHIEF ENGINEERING OFFICER
DATE: 03/01/2024

REVISIONS	
DATE	DESCRIPTION
03-01-2024	ADDED PJF BETWEEN BASE AND DRAINAGE STRUCTURE
03-01-2023	REVISED REINF. AT DRAINAGE STR.
03-01-2022	REVISED CALLOUTS AND NOTES
03-01-2020	REVISED TO 44" HEIGHT & RENAMED
03-01-2019	REVISED TO CONSTANT SLOPE

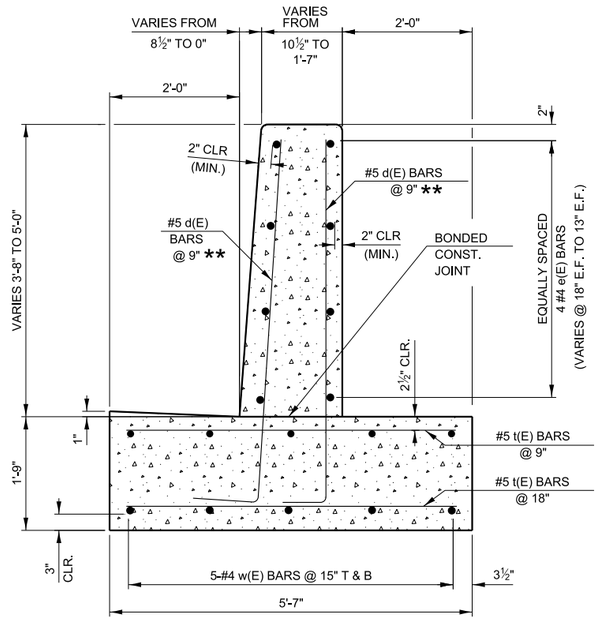
Illinois Tollway

CONCRETE BARRIER SINGLE FACE, REINFORCED TL-4, 44 INCH

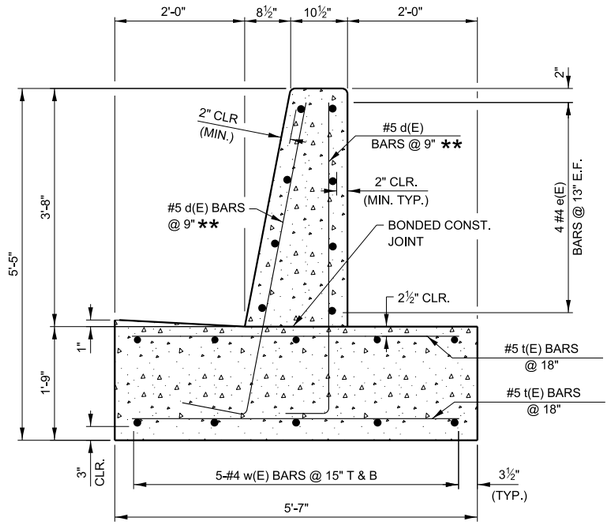
VERSION:	STANDARD:	SHEET:
2024-03	C3-11	1 OF 1



SECTION C-C

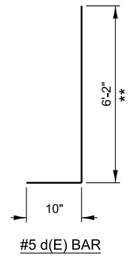


SECTION B-B



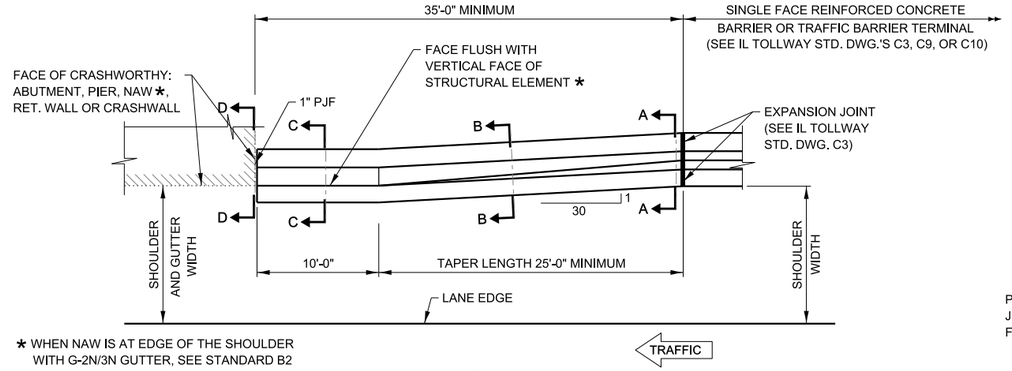
SECTION A-A

** CUT TO FIT IN FIELD
2" MIN. VERTICAL CLR.



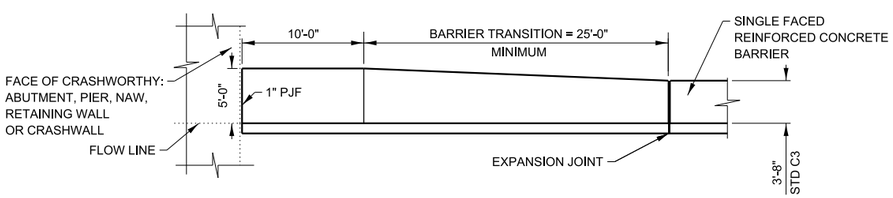
#5 d(E) BAR

BENDING DIAGRAM



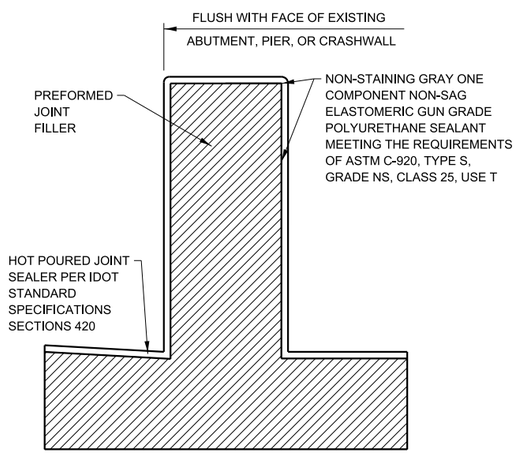
* WHEN NAW IS AT EDGE OF THE SHOULDER
WITH G-2N/3N GUTTER, SEE STANDARD B2
FOR PREFERRED LAYOUT.

PLAN



ELEVATION

CONCRETE SHOULDER BARRIER TRANSITION, V-SF



SECTION D-D

NOTES:

1. TAPER LENGTH REQUIRED FOR THE SHOULDER WIDTH TRANSITION SHALL BE 25'-0" MINIMUM. INCREASE TAPER RATE AS REQUIRED TO OBTAIN THE LENGTH 0F 25'-0".
2. TOP SHOULDER EDGE OF BARRIER BASE GUTTER SHALL MATCH THE TOP OF SHOULDER ELEVATION.
3. 1" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN BOTH THE REINFORCED CONCRETE BARRIER WALL AND BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM CONTRACTION JOINT SPACING SHALL BE 30'-0".
4. CONTRACTION JOINTS SHALL BE FORMED BY A GROOVE ⅛", EITHER IN THE PLASTIC CONCRETE OR SAWED AFTER THE CONCRETE HAS SET.
5. REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.
6. REINFORCEMENT BARS BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315, LATEST EDITION.
7. REINFORCEMENT BARS BENDING DIMENSIONS ARE OUT TO OUT.
8. CONSTANT-SLOPE BARRIER SHALL BE USED WITH ALL NEW CONSTRUCTION, OR RECONSTRUCTION OF EXISTING BARRIERS.
9. E.F. DENOTES EACH FACE
10. MINIMUM EXPANSION JOINT SPACING SHALL BE 25'-0".

APPROVED BY:
Marwan Nashif
CHIEF ENGINEERING OFFICER

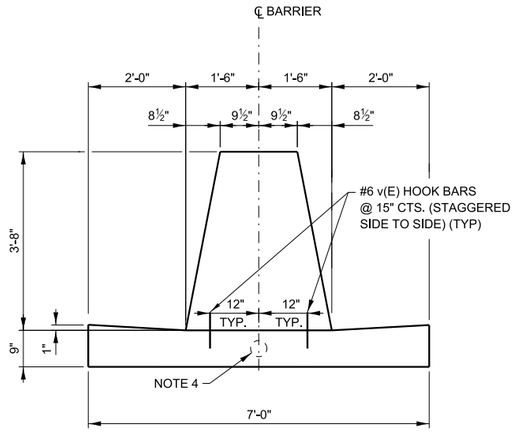
DATE:
03/01/2024

REVISIONS	
DATE	DESCRIPTION
03-01-2024	ADDED NOTE, NAW WITH G-2N/3N SEE
	STD B2,ADDED HOT POUR AT SECT D-D
03-01-2022	REVISED NOTE 4
03-01-2021	CLARIFIED SHLD. WIDTH AND
	REVISED NOTES IN PLAN VIEW

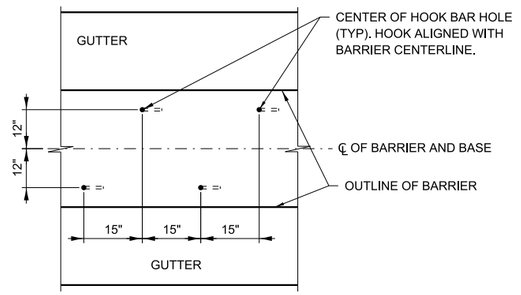
Illinois Tollway

CONCRETE SHOULDER BARRIER TRANSITION TYPE V-SF

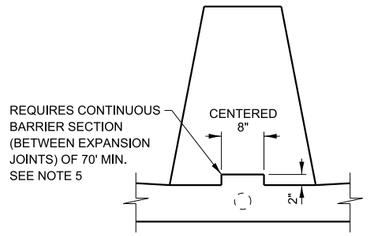
VERSION:	STANDARD:	SHEET:
2024-03	C4-12	1 OF 1



CONCRETE BARRIER, DOUBLE FACE, 44"
CONCRETE BARRIER BASE, 7'-0"



HOOK BAR PLACEMENT
(Plan View)



CONCRETE BARRIER BASE
WITH KEYWAY OPTION

NOTES:

1. 2" DEEP CONTRACTION JOINTS SHALL BE DONE BY SAWING AND SHALL BE CONSTRUCTED IN THE CONCRETE BARRIER WALL, CONCRETE BARRIER BASE, AND CONCRETE GUTTER (SPECIAL). CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM CONTRACTION JOINT SPACING SHALL BE 30'-0". THE MINIMUM DISTANCE BETWEEN CONTRACTION JOINTS IN THE MEDIAN BARRIER WALL SHALL BE 2'-0". WHEN A DRAINAGE STRUCTURE FALLS WITHIN 2'-0" FROM AN EXPANSION JOINT (OR) CONTRACTION JOINT, THE NEAREST CONTRACTION JOINT SHALL BE OMITTED.

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

3. IN AREAS OF RELATIVELY FLAT LONGITUDINAL PROFILE GRADES, THE VERTICAL DIMENSION TO THE TOP OF THE BARRIER CAN VARY (BY VARYING THE GUTTER SLOPE) FROM 43" TO 44.5" TO CREATE AN ACCEPTABLE LONGITUDINAL GRADE IN THE GUTTER.

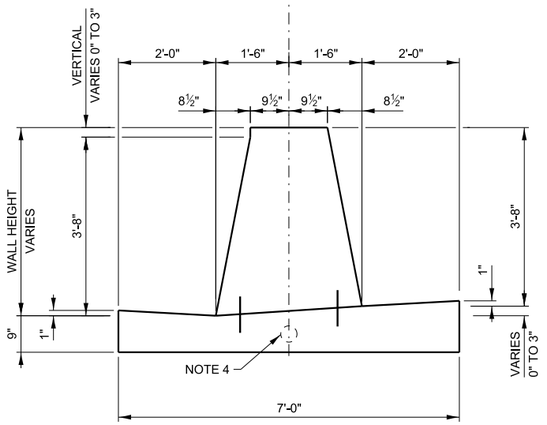
4. REFERENCE PLAN SHEET FOR TYPE, SIZE AND NUMBER OF CONDUITS. PROVIDE 1½" (MIN.) CLEARANCE TO THE TOP OF CONDUIT AND 2" (MIN.) CLEARANCE TO THE BOTTOM OF THE CONDUIT.

5. THE CONTRACTOR HAS THE OPTION OF USING EITHER THE KEYWAY OR THE #6 HOOK BAR v(E) BETWEEN THE BARRIER AND THE BASE. WHEN THE KEYWAY IS USED, THE RAISED KEYWAY SHALL BE POURED MONOLITHIC WITH THE BARRIER BASE AND THE BARRIER SHALL HAVE A MINIMUM UNINTERRUPTED SECTION LENGTH OF 70'. IF THE KEYWAY OR ITS EDGES BECOME DAMAGED, THEN HOOK BARS SHALL BE INSTALLED WITHIN THE DAMAGED SECTION.

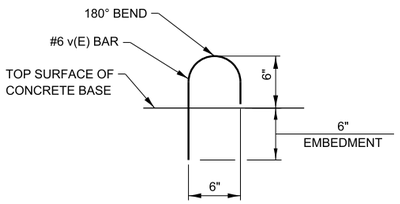
6. ALL BARS SHALL BE INCLUDED IN THE COST OF THE VARIOUS BARRIER AND GUTTER ITEMS. REINFORCEMENT BARS DESIGNATED '(E)' SHALL BE EPOXY COATED. TIE BARS BETWEEN THE BARRIER AND BASE SHALL BE v(E) HOOK BARS ON 15" CENTERS AND ALTERNATE LEFT AND RIGHT OF THE BARRIER CENTERLINE. TIE BARS BETWEEN EITHER THE VARIABLE HEIGHT BARRIER OR THE BASE AND THE GUTTER (SPECIAL) SHALL BE h(E) STRAIGHT BAR PAIRS ON 30" CENTERS.

7. WHEN VARIABLE HEIGHT VERTICAL DIFFERENTIAL EXCEEDS 12" SEE STRUCTURAL PLANS FOR DETAILS.

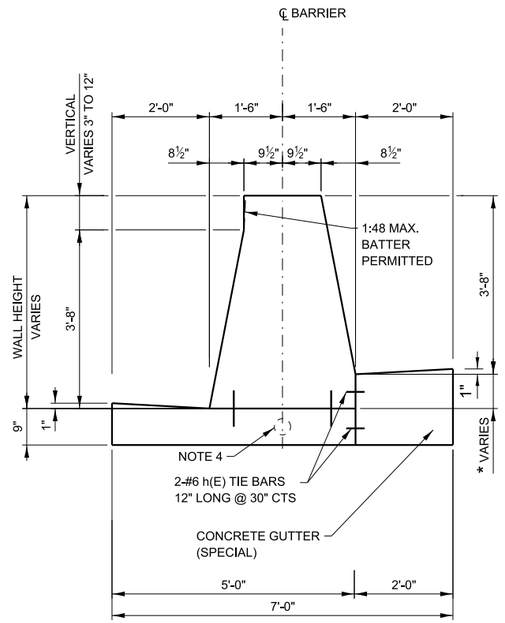
8. GUTTER SLOPE SHALL BE 4.17% SLOPED TOWARD THE MEDIAN UNLESS OTHERWISE NOTED. GUTTER SLOPE IS REVERSE PITCHED WHEN THE SHOULDER/FLEX LANE DRAINS AWAY FROM THE GUTTER. TRANSITION GUTTER SLOPE OVER 30'-0". GUTTER SLOPE TRANSITIONS ARE INCLUDED IN THE COST OF CONCRETE BASE AND/OR CONCRETE GUTTER (SPECIAL). SEE ROADWAY PLANS FOR LIMITS OF REVERSE PITCHED GUTTER AND TRANSITIONS.



CONCRETE BARRIER, DOUBLE FACE, VARIABLE HEIGHT
CONCRETE BARRIER BASE, VARIABLE HEIGHT, 7'-0"
(BARRIER HEIGHT VERTICAL DIFFERENTIAL VARIES 0" TO 3")



HOOK BAR
(Side View)



CONCRETE BARRIER, DOUBLE FACE, VARIABLE HEIGHT
CONCRETE BARRIER BASE, 5'-0"

(BARRIER HEIGHT VERTICAL DIFFERENTIAL VARIES 3" TO 12")
* WHEN 6" OR GREATER ADD TOP TIE BAR.

APPROVED BY:
Paul Kovacs
CHIEF ENGINEERING OFFICER
DATE: 03/01/2020

REVISIONS	
DATE	DESCRIPTION
08-28-2020	CHANGED TIE BAR DETAILS
03-01-2020	CHANGED MAX. VERTICAL DIFFERENTIAL TO 12"
03-01-2019	REVISED TO CONSTANT SLOPE ADDED
	TIE BARS
03-31-2016	REVISED NOTES

Illinois Tollway

CONCRETE BARRIER BASE, AND CONCRETE BARRIER, DOUBLE FACE, 44 INCH AND VARIABLE HEIGHT

VERSION:	STANDARD:	SHEET:
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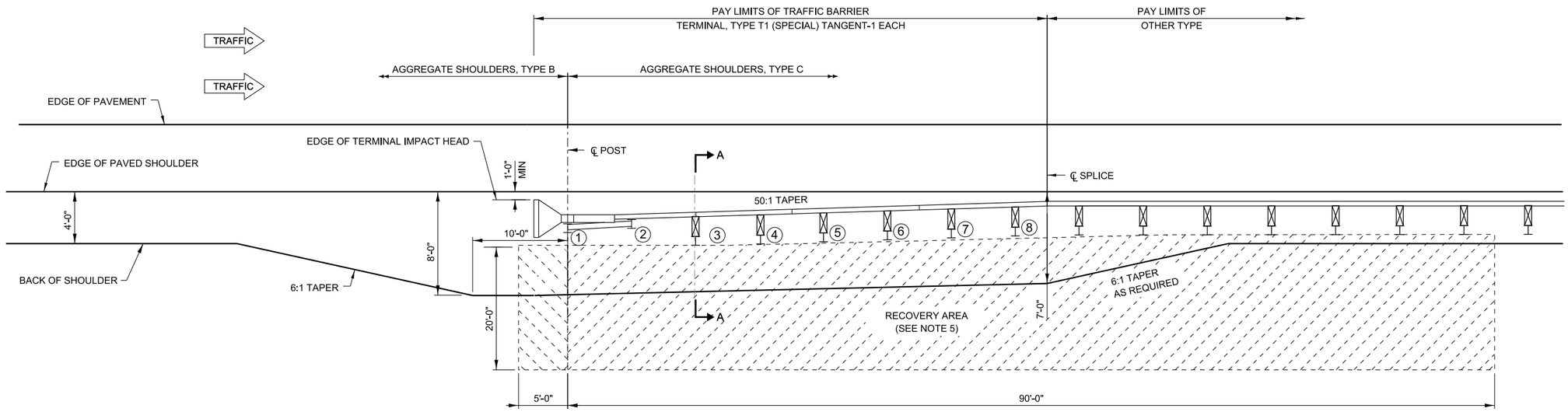
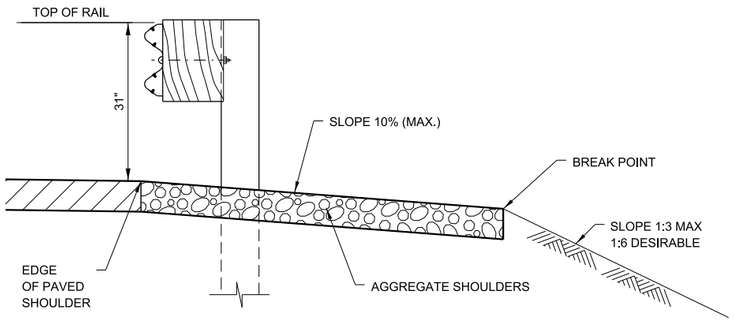


SHOULDER WIDENING TRANSITION - WITHOUT GUTTER FOR
TRAFFIC BARRIER TERMINAL, TYPE T1 (SPECIAL) TANGENT



SECTION A-A

GENERAL NOTES:

1. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

2. REFERENCE ILLINOIS TOLLWAY STANDARD DRAWING B28 FOR GUTTER TRANSITION, AND MINIMUM DISTANCE FROM EDGE OF PAVED SHOULDER TO FACE OF RAIL.

3. 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 CONFORMS TO THE CURRENT STANDARD.

4. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S DETAILS AND SPECIFICATIONS.

5. NO ABOVE-GROUND ROADSIDE OBSTACLE OF ANY TYPE-FIXED OR BREAKAWAY, EITHER TEMPORARY OR PERMANENT SHALL BE ALLOWED WITHIN THIS RECOVERY AREA.

6. ON TANGENT ROADWAY: TRAFFIC BARRIER TERMINAL SHALL BE INSTALLED AT A 50:1 TAPER MEASURED FROM EDGE OF TRAVELED WAY.
ON CURVED ROADWAY: THE EDGE OF THE TERMINAL IMPACT HEAD SHALL BE OFFSET A DISTANCE FROM A POINT ON THE BACK OF THE CURVED EDGE OF PAVED SHOULDER AS SHOWN IN TABLE 1. NO CURVED W-BEAM SECTIONS ARE PERMITTED WITHIN THE TERMINAL PAY LIMITS. THE TERMINAL SHALL BE LAID OUT IN A STRAIGHT LINE.

7. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR ASPHALT. WHEN NECESSARY USE LEAVE-OUT DETAIL SHOWN ON ILLINOIS TOLLWAY STANDARD DRAWING C1.

8. THE TERMINAL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR CRASHWORTHINESS UNDER PROCEDURES DEFINED IN AASHTO MASH. NO MODIFICATION TO THIS STANDARD DRAWING SHALL BE PERMITTED.

9. WHEN GUTTER IS PRESENT, DRAINAGE STRUCTURES SHALL NOT BE INSTALLED WITHIN THE TERMINAL LIMITS, BUT SHALL BE INSTALLED UPSTREAM AND DOWNSTREAM OF THE TERMINAL AS REQUIRED.

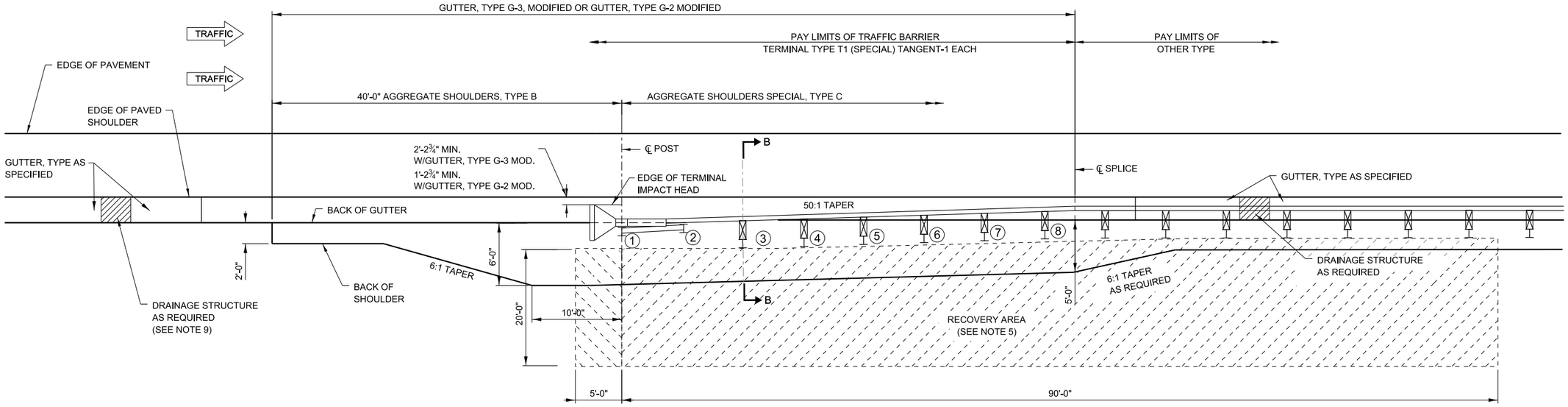
APPROVED BY: Paul Kovacs
CHIEF ENGINEERING OFFICER
DATE: 03/01/2020

Illinois Tollway

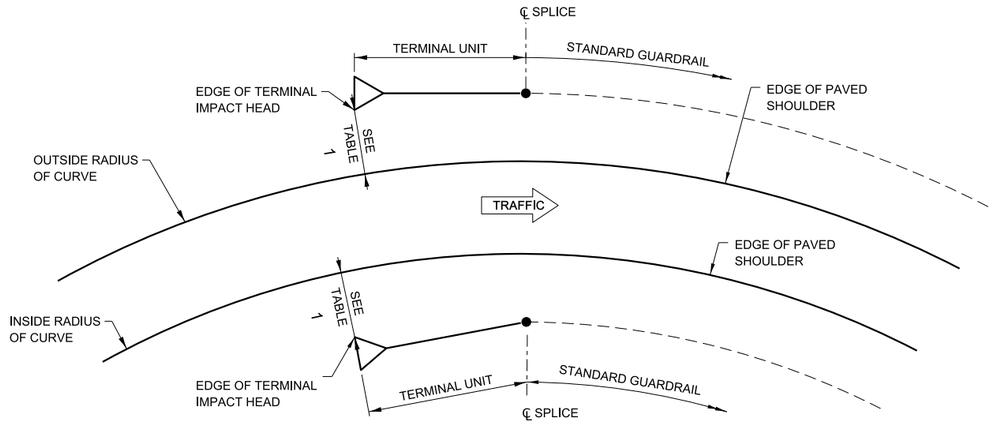
REVISIONS	
DATE	DESCRIPTION
03-01-2020	ADDED MOD. TO TABLE 1
	& PLAN NOTE
03-01-2019	REVISED NOTES FOR MASH
03-31-2017	REVISED NOTES
03-31-2016	COMBINED G-3 & G-2
03-11-2015	REVISED NOTES

SHOULDER WIDENING FOR TRAFFIC BARRIER TERMINAL, TYPE T1 (SPECIAL) TANGENT

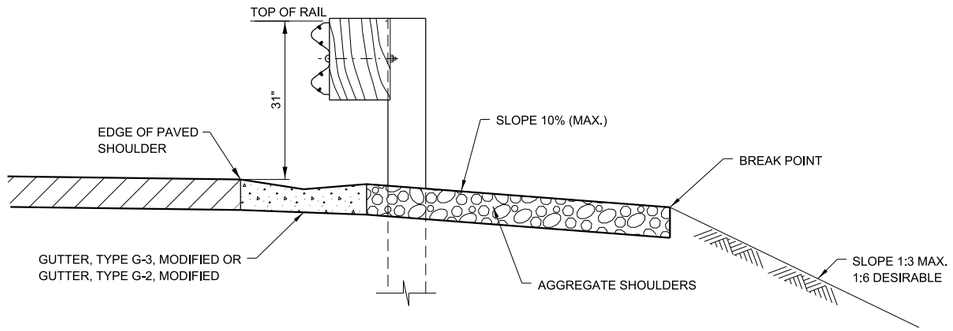
VERSION:	STANDARD:	SHEET:
2020-03	C6-11	1 OF 2



SHOULDER WIDENING TRANSITION - WITH GUTTER, TYPE G-3 OR TYPE G-2 FOR
TRAFFIC BARRIER TERMINAL, TYPE T1 (SPECIAL) TANGENT



CURVED ROADWAY
TRAFFIC BARRIER TERMINAL PLACEMENT



SECTION B-B

TABLE 1		
LATERAL OFFSET DIMENSION TO EDGE OF TERMINAL IMPACT HEAD		
	INSIDE RADIUS OF CURVE	OUTSIDE RADIUS OF CURVE
NO GUTTER	1'-0"	1'-0" *
GUTTER, TYPE G-2, MOD.	1'-2¾"	1'-2¾" MIN. *
GUTTER, TYPE G-3, MOD.	2'-2¾"	2'-2¾" MIN. *

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

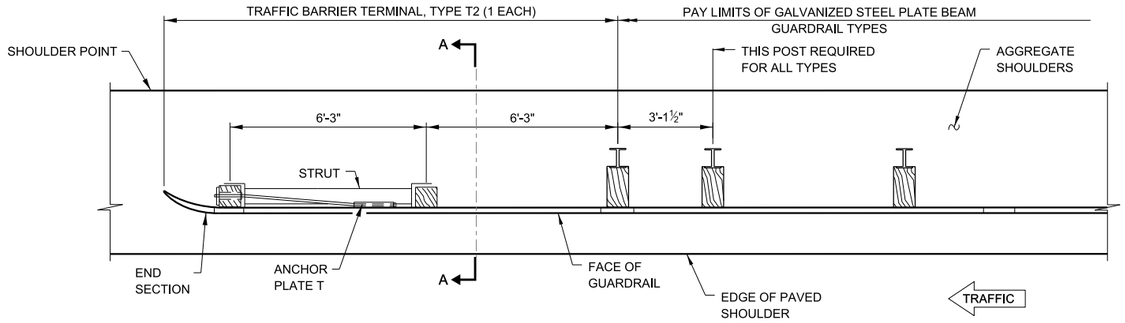
NOTES:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

APPROVED BY: Paul Kovacs
CHIEF ENGINEERING OFFICER
DATE: 03/01/2020

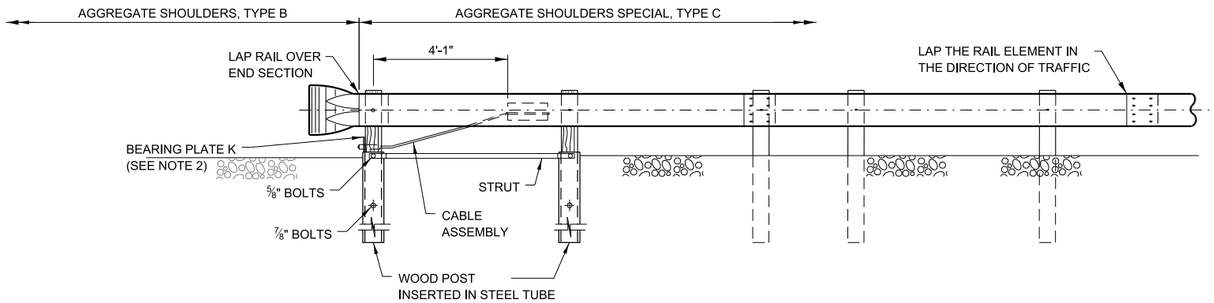
Illinois Tollway

SHOULDER WIDENING FOR TRAFFIC BARRIER TERMINAL, TYPE T1 (SPECIAL) TANGENT

VERSION:	STANDARD:	SHEET:
2020-03	C6-11	2 OF 2

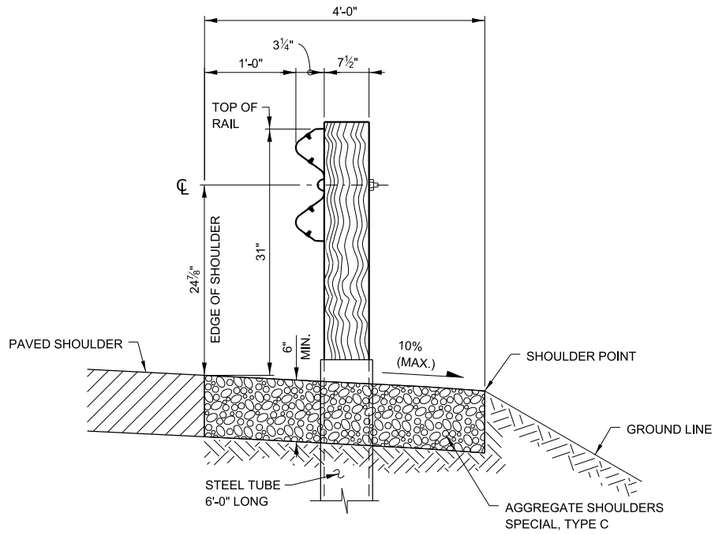


PLAN



ELEVATION

TRAFFIC BARRIER TERMINAL, TYPE T2-WITHOUT GUTTER



SECTION A-A

NOTES:

1. SEE ILLINOIS TOLLWAY STANDARD DRAWING C1 FOR DETAILS OF GUARDRAIL NOT SHOWN.
2. THE BEARING PLATE K SHALL BE HELD IN POSITION BY TWO 8D NAILS DRIVEN INTO THE POST AND BENT OVER THE TOP OF THE PLATE.
3. THE TRAFFIC BARRIER TERMINAL, TYPE T2 IS TYPICALLY UTILIZED FOR THE DEPARTING END SECTION OF A GALVANIZED STEEL PLATE BEAM GUARDRAIL BARRIER SYSTEM.
4. UNDER NO CIRCUMSTANCES SHALL AN EXISTING TERMINAL, THAT WAS 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.
5. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE ILLINOIS TOLLWAY'S DETAILS AND SPECIFICATIONS. NO MODIFICATIONS SHALL BE PERMITTED.
6. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR ASPHALT PAVEMENT. WHEN NECESSARY USE LEAVE-OUT DETAIL PER ILLINOIS TOLLWAY STANDARD DRAWING C1.
7. WHERE GUTTER, TYPE G-2 OR GUTTER, TYPE 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 ILLINOIS TOLLWAY STANDARD DRAWING B28.

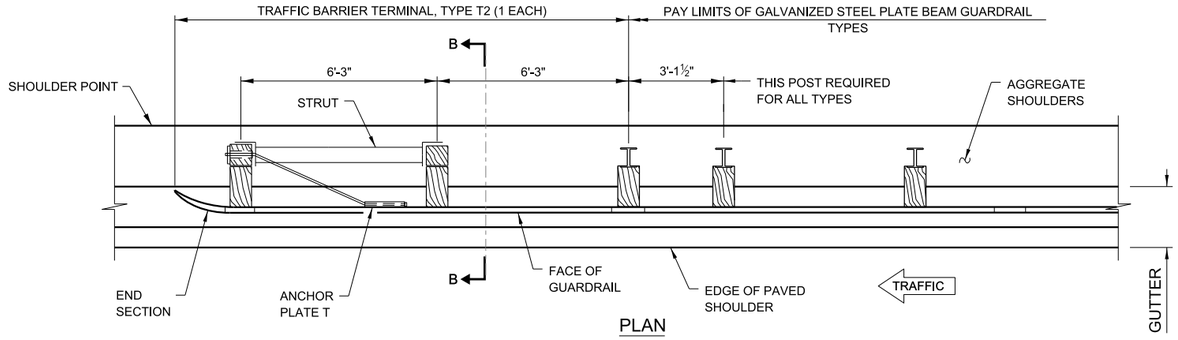
APPROVED BY:
CHIEF ENGINEERING OFFICER
DATE: 03/31/2017

REVISIONS	
DATE	DESCRIPTION
03-31-2017	REVISED SECT A-A SHOULDER SLOPE TO %
03-31-2016	REVISED SECTION A-A SHOULDER
03-11-2015	REVISED NOTES
03-31-2014	REVISED NOTES

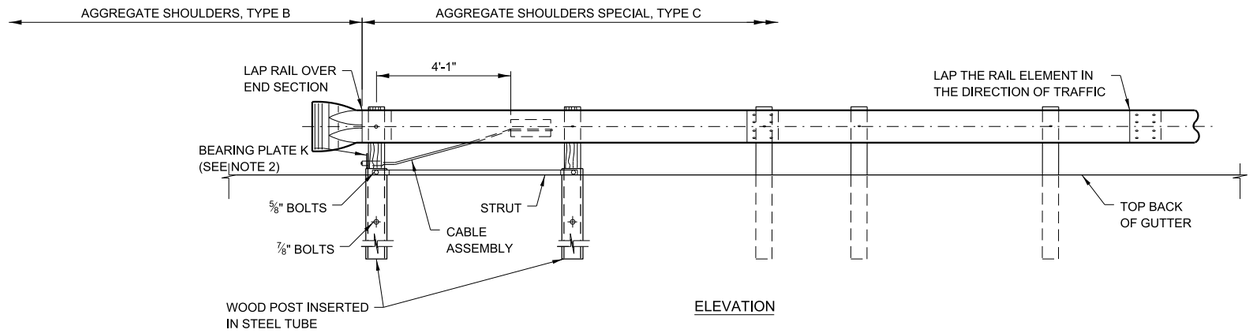
Illinois Tollway

TRAFFIC BARRIER TERMINAL, TYPE T2

VERSION:	STANDARD:	SHEET:
2017-03	C7-08	1 OF 3

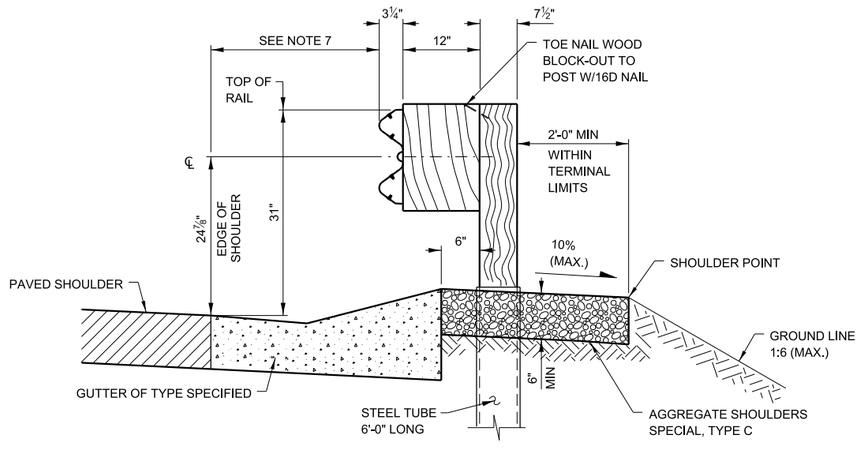


PLAN



ELEVATION

TRAFFIC BARRIER TERMINAL, TYPE T2-WITH GUTTER



SECTION B-B

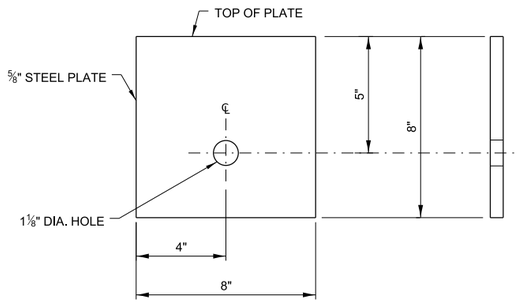
NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

APPROVED BY:
Paul Kovacs
CHIEF ENGINEERING OFFICER
DATE: 03/31/2017

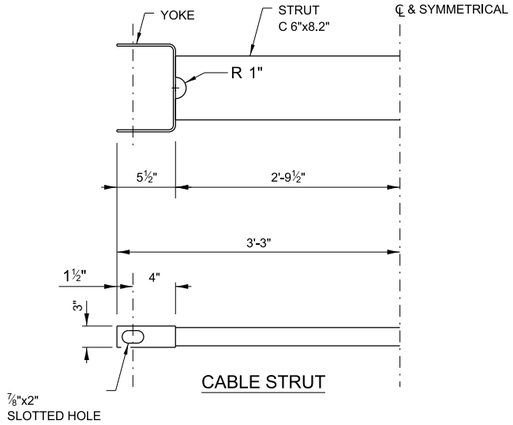
Illinois Tollway

TRAFFIC BARRIER TERMINAL, TYPE T2

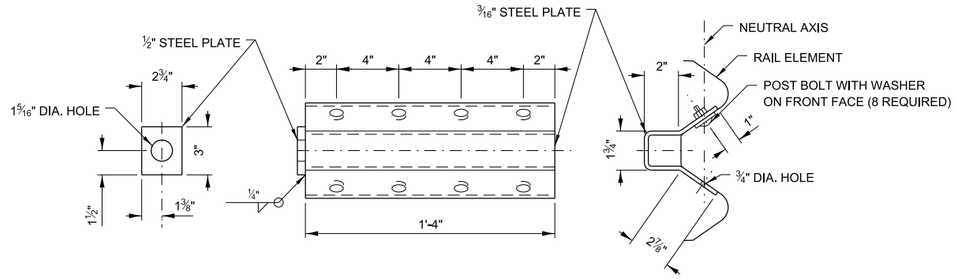
VERSION:	STANDARD:	SHEET:
2017-03	C7-08	2 OF 3



BEARING PLATE K

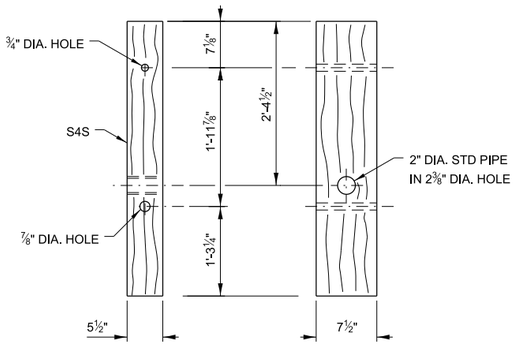


CABLE STRUT

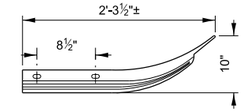


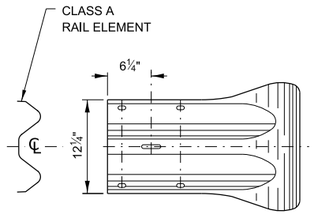
NOTE:
ANCHOR PLATE T SHALL BE USED TO ATTACH CABLE ASSEMBLY TO GUARDRAIL WHEN REQUIRED ON TRAFFIC BARRIER TERMINALS.

ANCHOR PLATE T DETAILS



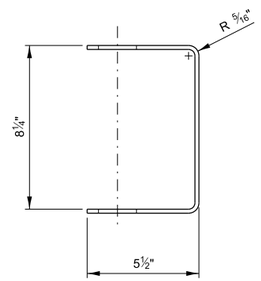
WOOD POST



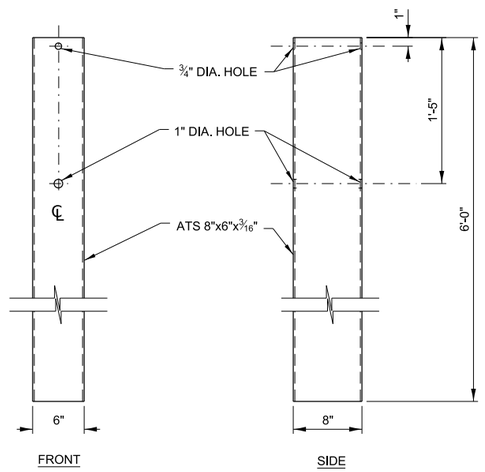


END SECTION

CABLE ASSEMBLY
(40,000 LBS.) MIN. BREAKING STRENGTH)
TIGHTEN TO TAUT TENSION



YOKE
3/16" THICK STEEL



STEEL TUBE

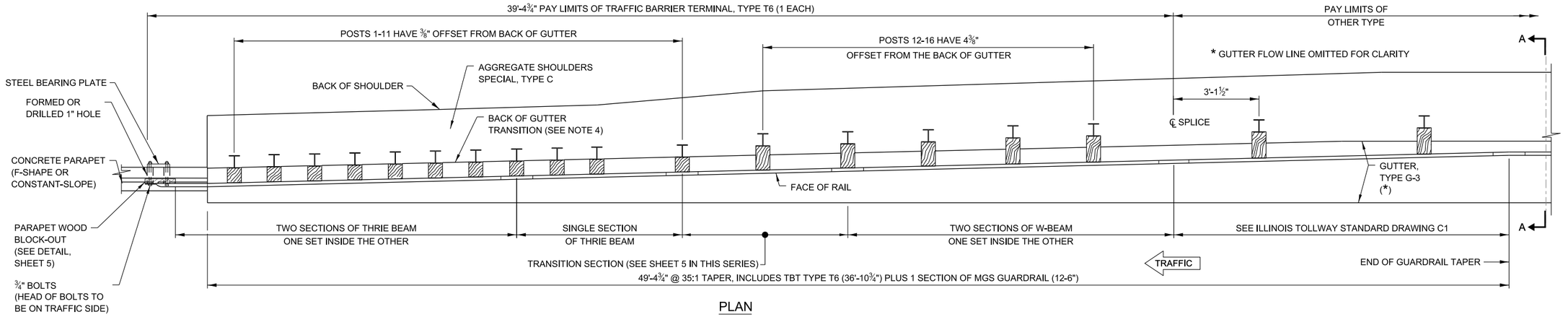
NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

APPROVED BY:
CHIEF ENGINEERING OFFICER
DATE: 03/31/2017

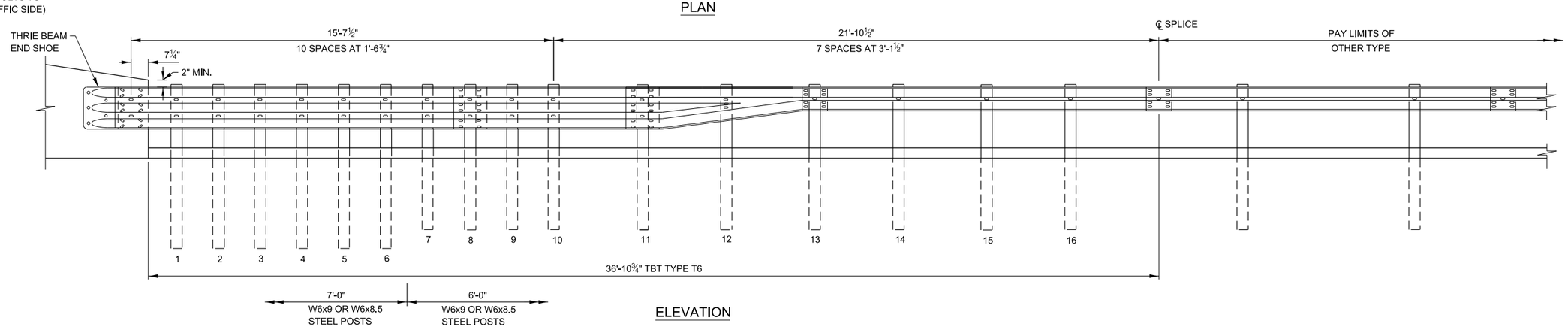
Illinois Tollway

TRAFFIC BARRIER TERMINAL, TYPE T2

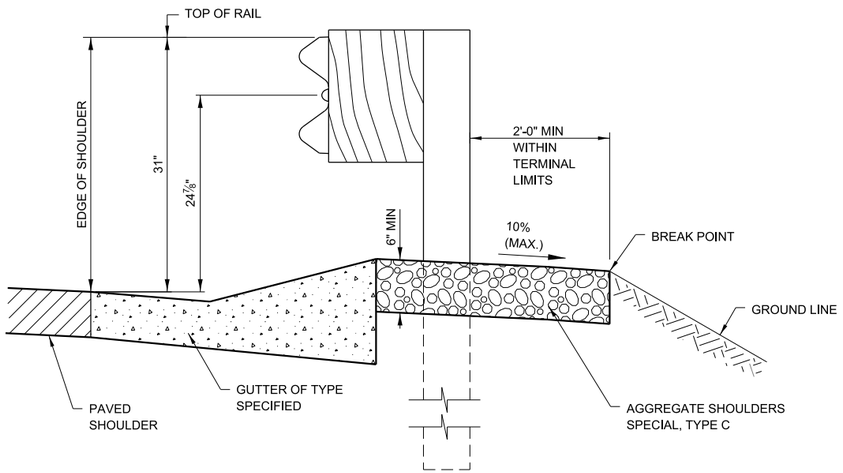
VERSION:	STANDARD:	SHEET:
2017-03	C7-08	3 OF 3



PLAN



ELEVATION



WITH GUTTER,TYPE G-3

SECTION A-A

NOTES:

1. SEE ILLINOIS TOLLWAY STANDARD DRAWING C1 FOR DETAILS OF GUARDRAIL NOT SHOWN.
2. THRIE BEAM RAIL SHALL BE BOLTED TO BLOCK-OUT AT ALL POSTS.
3. THE TRAFFIC BARRIER TERMINAL, TYPE T6 IS TYPICALLY UTILIZED TO ATTACH GALVANIZED STEEL PLATE BEAM GUARDRAIL AT THE UPSTREAM END OF THE BRIDGES CONCRETE PARAPET, WHERE A ROADSIDE GUTTER IS TO BE INSTALLED.
4. SEE ILLINOIS TOLLWAY STANDARD DRAWING B3 FOR GUTTER TRANSITION AT TRAFFIC BARRIER TERMINAL, TYPE T6.
5. UNDER NO CIRCUMSTANCES SHALL AN EXISTING TERMINAL, THAT WAS DESIGNED USING A PREVIOUS STANDARD, BE ATTACHED TO OR MODIFIED IN ANYWAY FROM ITS ORIGINAL DESIGN. IF ANY MODIFICATION IS REQUIRED AND A PROPER 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. TRAFFIC BARRIER TERMINAL, TYPE T6 SHALL BE IN ACCORDANCE WITH THE ILLINOIS TOLLWAY'S DETAILS AND SPECIFICATIONS. NO MODIFICATIONS SHALL BE PERMITTED.
7. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR ASPHALT PAVEMENTS. WHEN NECESSARY USE LEAVE-OUT DETAIL PER ILLINOIS TOLLWAY STANDARD DRAWING C1.
8. TERMINAL POSTS TO BE INSTALLED PERPENDICULAR TO BACK OF GUTTER.
9. THE TERMINAL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR CRASHWORTHINESS UNDER PROCEDURES DEFINED IN AASHTO MASH. NO MODIFICATION TO THIS STANDARD DRAWING SHALL BE PERMITTED.
10. TERMINAL BARRIER CLEARANCE DISTANCE SHALL CONFORM WITH TABLE 2 ON ILLINOIS TOLLWAY STANDARD DRAWING C1.
11. LEAVE-OUT DIMENSION BEHIND POSTS 1-6, SHALL BE A MINIMUM OF 4".
12. WHEN GUTTER IS PRESENT, DRAINAGE STRUCTURES SHALL NOT BE INSTALLED WITHIN THE TERMINAL LIMITS, BUT SHALL BE INSTALLED UPSTREAM AND DOWNSTREAM OF THE TERMINAL AS REQUIRED.

FOR PARAPET (SAFETY SHAPE)
WITH GUTTER, TYPE G-3

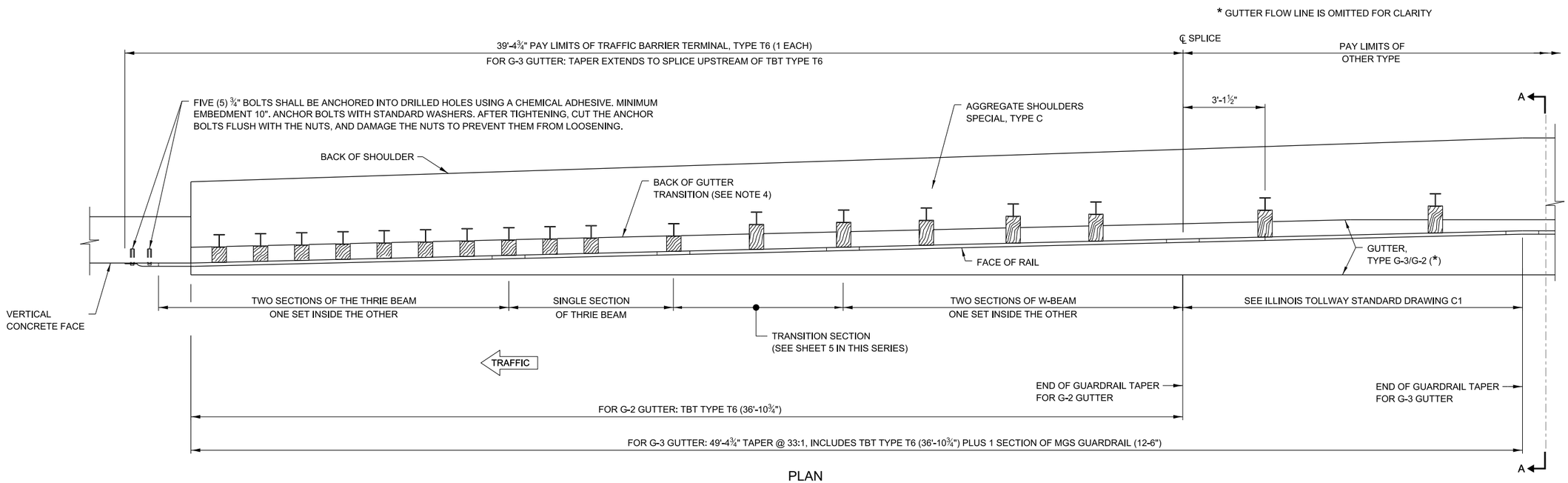
APPROVED BY: Paul Kovacs
CHIEF ENGINEERING OFFICER
DATE: 03/01/2020

REVISIONS	
DATE	DESCRIPTION
03-21-2020	REVISED LENGTH OF THRIE BEAM
	REVISED LENGTH OF POSTS
03-01-2019	UPDATED NOTES FOR
	CONSTANT-SLOPE CONCRETE BARRIER
03-31-2017	ADDED DRAINAGE STRUCTURE NOTE
03-31-2016	REVISED SHOULDER SECTION

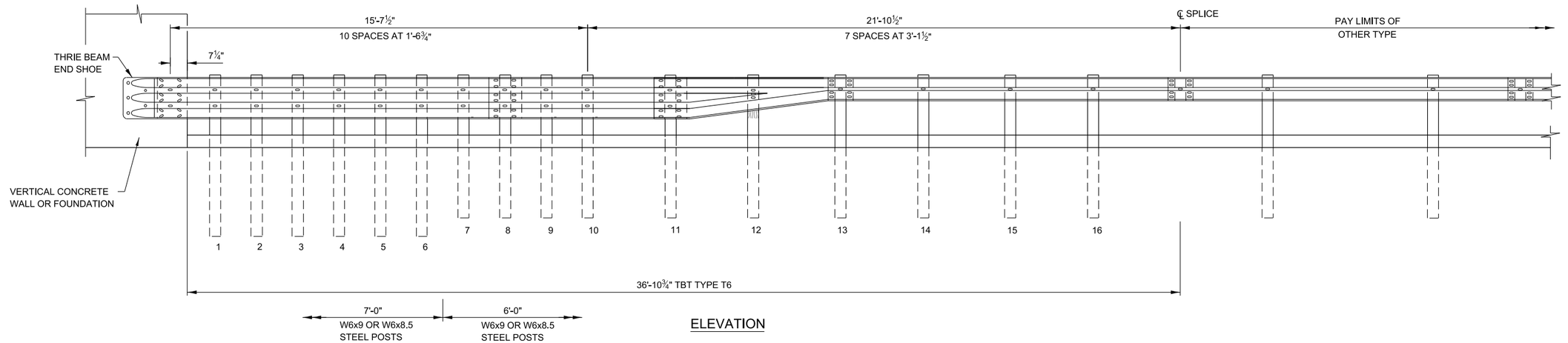
Illinois Tollway

TRAFFIC BARRIER TERMINAL, TYPE T6

VERSION:	STANDARD:	SHEET:
2020-03	C9-10	1 OF 5



PLAN



ELEVATION

FOR OTHER VERTICAL CONCRETE WALL/FOUNDATION WITH GUTTER

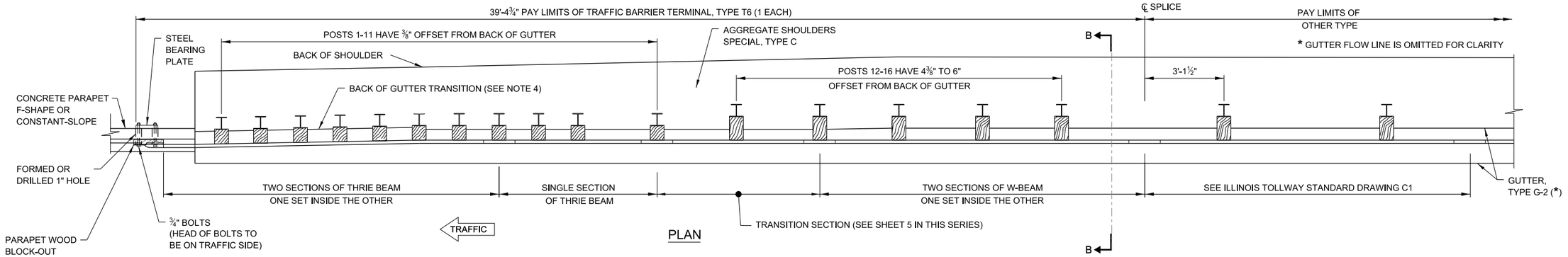
NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES AND SECTION A-A.

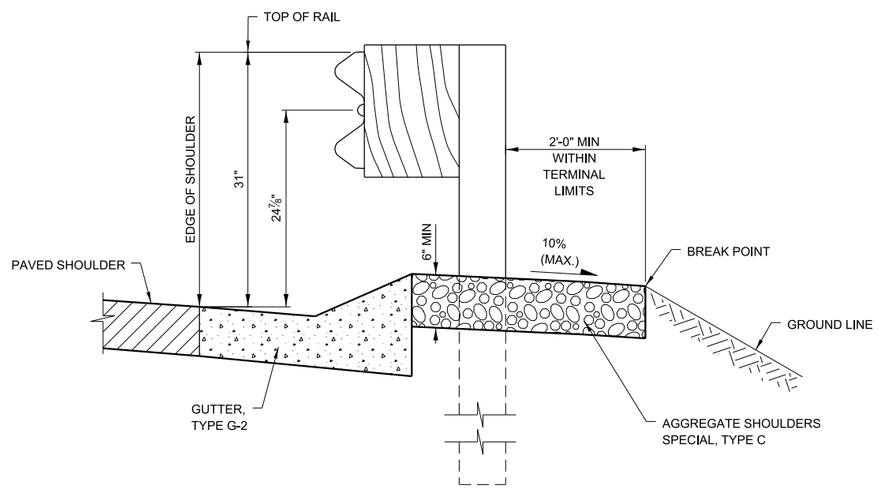
APPROVED BY: Paul Kovacs
CHIEF ENGINEERING OFFICER
DATE: 03/01/2020

Illinois Tollway

TRAFFIC BARRIER TERMINAL, TYPE T6

VERSION:	STANDARD:	SHEET:
2020-03	C9-10	2 OF 5





SECTION B-B
WITH GUTTER, TYPE G-2

FOR PARAPET (SAFETY SHAPE)
WITH GUTTER, TYPE G-2

NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

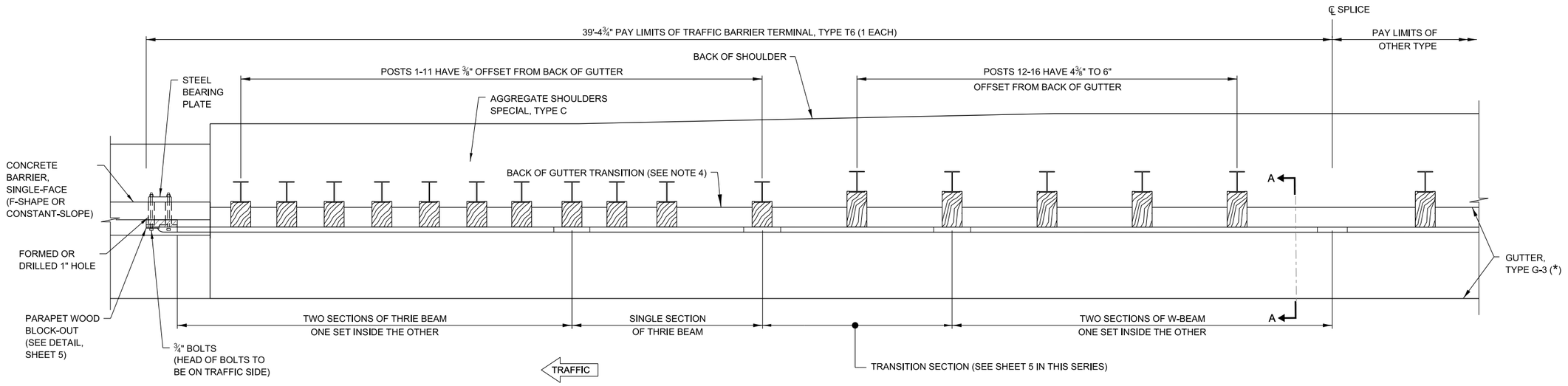
APPROVED BY:
Paul Kovacs
CHIEF ENGINEERING OFFICER
DATE: 03/01/2020

Illinois Tollway

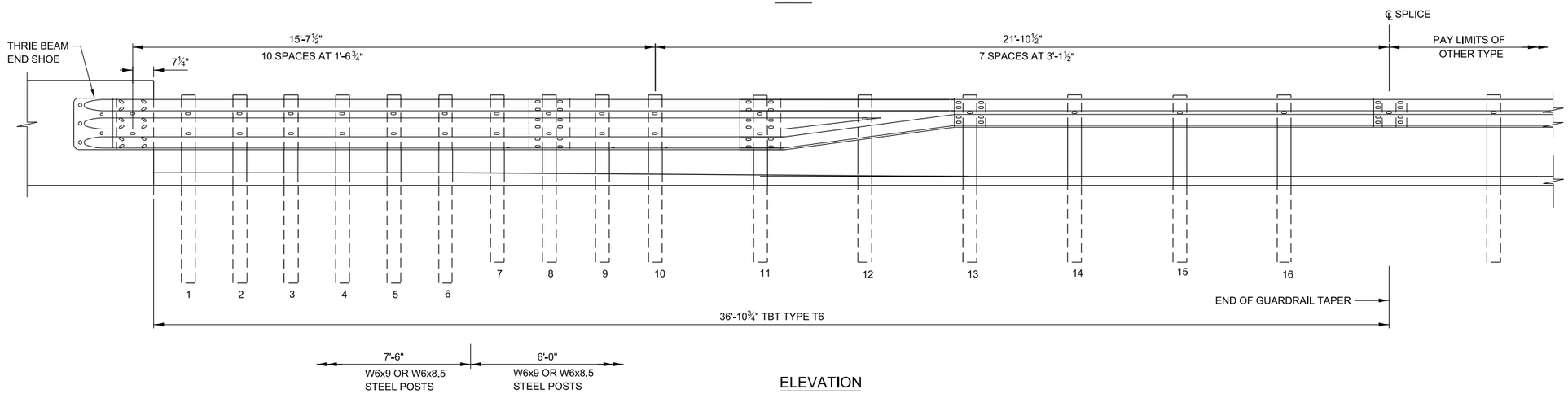
TRAFFIC BARRIER TERMINAL, TYPE T6

VERSION:	STANDARD:	SHEET:
2020-03	C9-10	3 OF 5

* GUTTER FLOW LINE IS OMITTED FOR CLARITY



PLAN



ELEVATION

FOR CONCRETE BARRIER, SINGLE-FACE W/ GUTTER, TYPE G-3

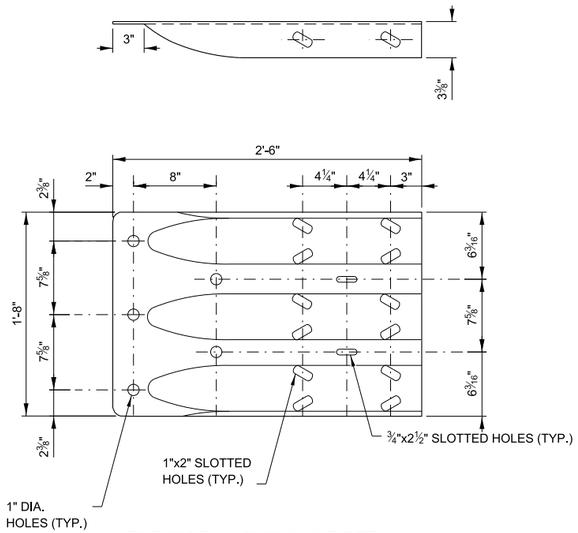
NOTE:
SEE SHEET 1 OF THIS SERIES FOR GUTTER TRANSITION NOTES AND SECTION A-A.

APPROVED BY: Paul Kovacs
CHIEF ENGINEERING OFFICER
DATE: 03/01/2020

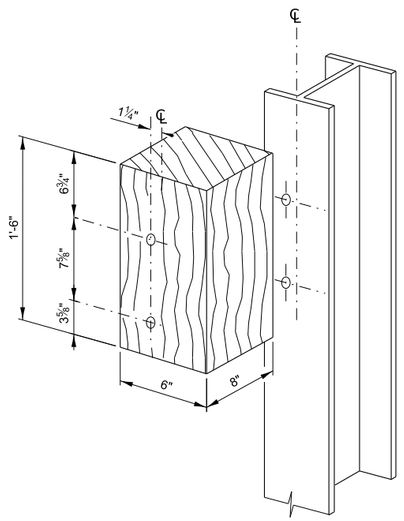
Illinois Tollway

TRAFFIC BARRIER TERMINAL, TYPE T6

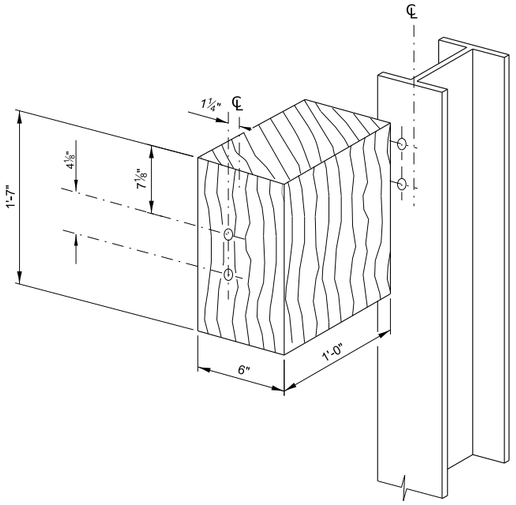
VERSION:	STANDARD:	SHEET:
2020-03	C9-10	4 OF 5



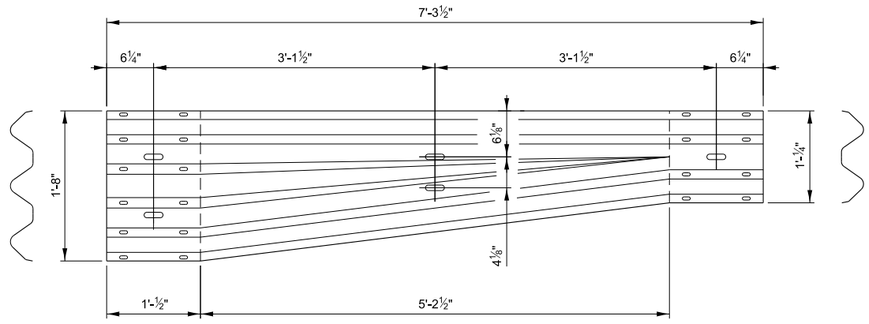
THRIE BEAM END SHOE DETAIL



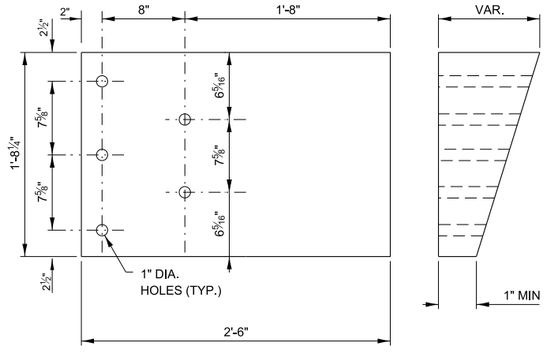
POSTS 1-11 WOOD BLOCK-OUT DETAIL



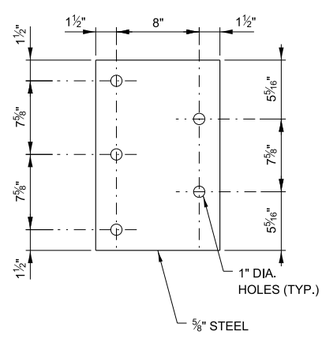
POST 12 WOOD BLOCK-OUT DETAIL
(SEE ILLINOIS TOLLWAY STANDARD DRAWING C1 FOR POST 13-16 BLOCKOUTS)



TRANSITION SECTION
(10 GAUGE RAIL ELEMENT)



PARAPET WOOD BLOCK-OUT DETAIL



PARAPET STEEL BEARING PLATE DETAIL
(5 EACH INDIVIDUAL 5"x5"x⅝" STEEL PLATES WITH CENTERED 1" HOLES MAY BE SUBSTITUTED FOR THE PLATE SHOWN.)

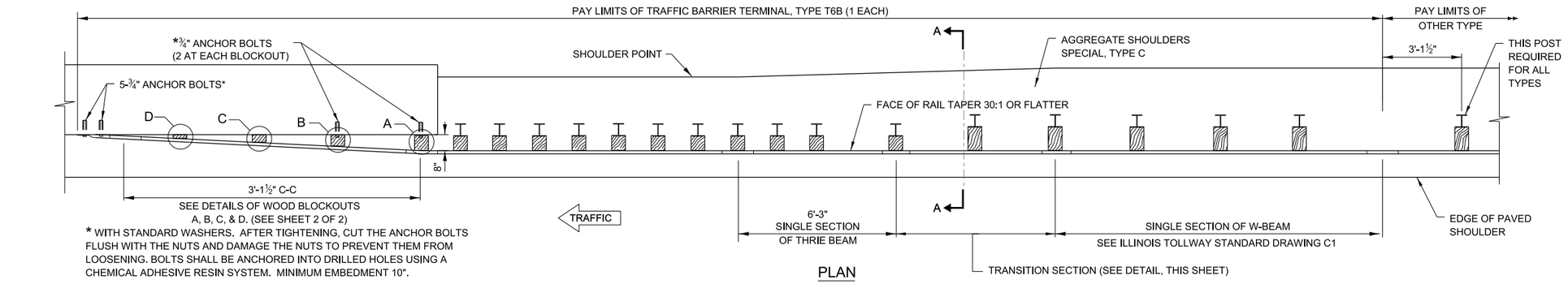
NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

APPROVED BY: Paul Kovacs
CHIEF ENGINEERING OFFICER
DATE: 03/01/2020

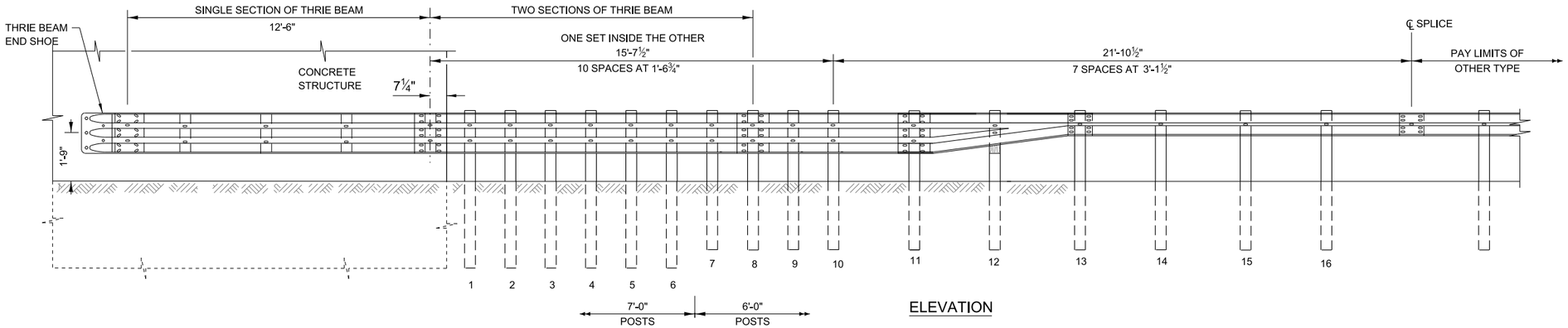
Illinois Tollway

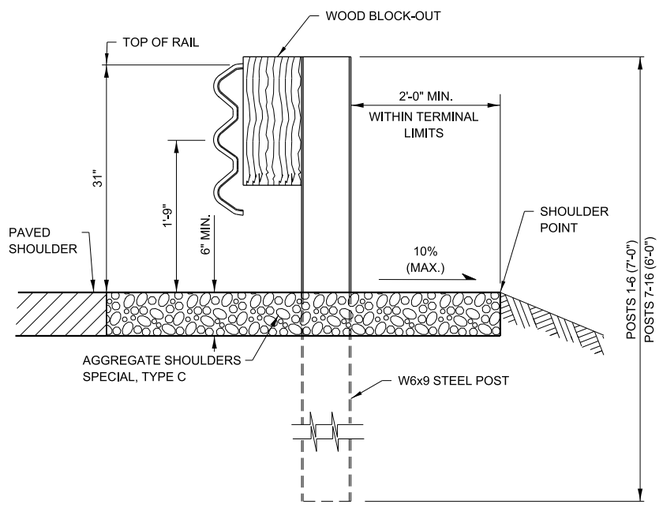
TRAFFIC BARRIER TERMINAL, TYPE T6

VERSION:	STANDARD:	SHEET:
2020-03	C9-10	5 OF 5



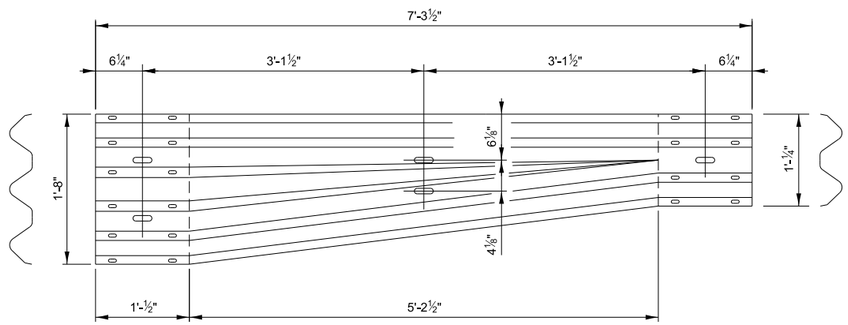
* WITH STANDARD WASHERS. AFTER TIGHTENING, CUT THE ANCHOR BOLTS FLUSH WITH THE NUTS AND DAMAGE THE NUTS TO PREVENT THEM FROM LOOSENING. BOLTS SHALL BE ANCHORED INTO DRILLED HOLES USING A CHEMICAL ADHESIVE RESIN SYSTEM. MINIMUM EMBEDMENT 10".





NOTES:

1. SEE ILLINOIS TOLLWAY STANDARD DRAWING C1 FOR DETAILS OF GUARDRAIL NOT SHOWN.
2. THRIE BEAM RAIL SHALL BE BOLTED TO BLOCK-OUT AT ALL POSTS.
3. THE TRAFFIC BARRIER TERMINAL, TYPE T6B IS TYPICALLY UTILIZED TO ATTACH GALVANIZED STEEL PLATE BEAM GUARDRAIL AT THE UPSTREAM END OF THE BRIDGE CONCRETE PARAPET, WHERE A ROADSIDE GUTTER IS NOT TO BE INSTALLED.
4. UNDER NO CIRCUMSTANCES SHALL EXISTING TERMINAL, THAT WAS 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.
5. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE ILLINOIS TOLLWAY'S DETAILS AND SPECIFICATIONS. NO MODIFICATIONS SHALL BE PERMITTED.
6. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR ASPHALT PAVEMENTS. WHEN NECESSARY USE LEAVE-OUT DETAIL PER ILLINOIS TOLLWAY STANDARD DRAWING C1, SHEET 3 OF 4.
7. TERMINAL BARRIER CLEARANCE DISTANCE SHALL CONFORM WITH TABLE 2 ON ILLINOIS TOLLWAY STANDARD DRAWING C1.
8. LEAVE-OUT DIMENSION BEHIND POSTS 1-6, SHALL BE A MINIMUM OF 4".



TRANSITION SECTION
(10 GAUGE RAIL ELEMENT)

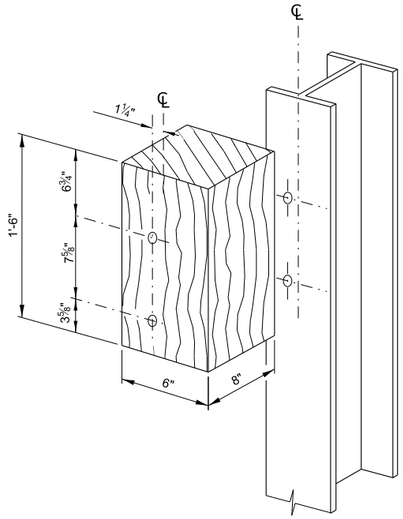
APPROVED BY: Paul Kovacs, CHIEF ENGINEERING OFFICER — DATE: 03/01/2020

REVISIONS	
DATE	DESCRIPTION
03-01-2020	REVISED LENGTH OF THRIE BEAM
	REVISED LENGTH OF POSTS
03-31-2017	REVISED SHOULDER SLOPE LABEL
03-31-2016	REVISED SECTION A-A SHOULDER
03-11-2015	REVISED NOTES
03-31-2014	REVISED WOOD BLOCKS AND NOTES

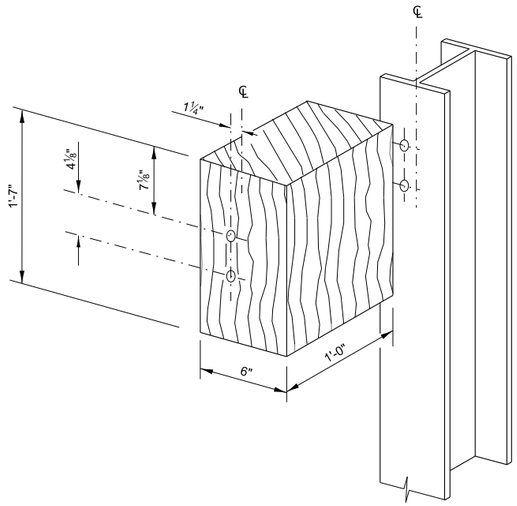
Illinois Tollway

TRAFFIC BARRIER TERMINAL, TYPE T6B

VERSION:	STANDARD:	SHEET:
2020-03	C10-09	1 OF 2

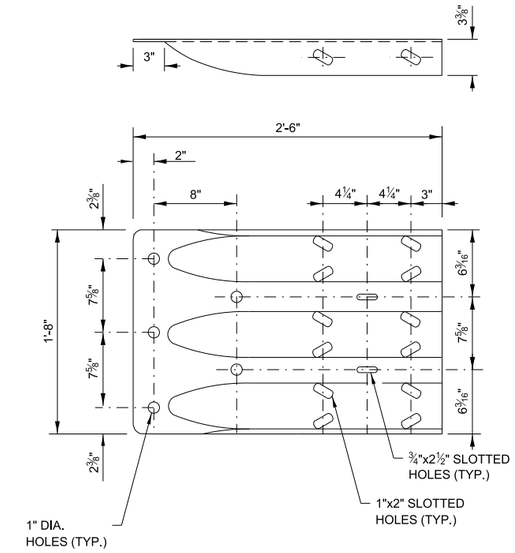


POSTS 1-11 WOOD BLOCK-OUT DETAIL

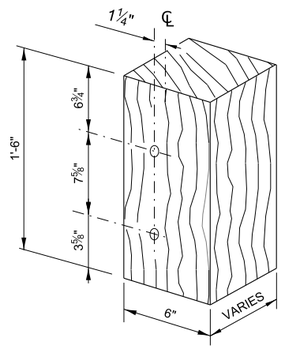


POST 12 WOOD BLOCK-OUT DETAIL

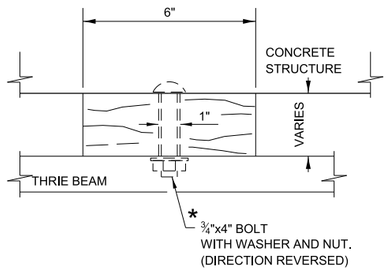
(SEE ILLINOIS TOLLWAY STANDARD DRAWING C1
FOR POST 13-16 BLOCKOUTS)



THRIE BEAM END SHOE DETAIL

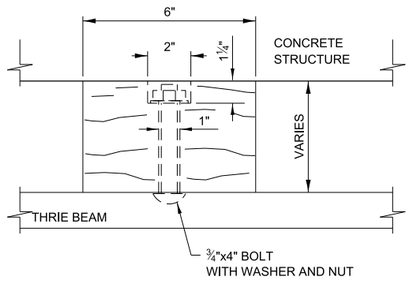


MODIFIED THICKNESS DETAIL
WOOD BLOCK-OUTS A, B, C, & D

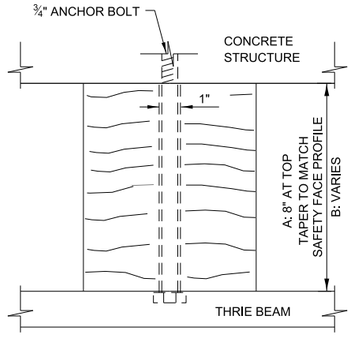


WOOD BLOCK-OUT D

* AFTER TIGHTENING, CUT THE BOLTS FLUSH WITH THE NUTS AND DAMAGE THE NUTS TO PREVENT THEM FROM LOOSENING.



WOOD BLOCK-OUT C



WOOD BLOCK-OUT A & B

NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

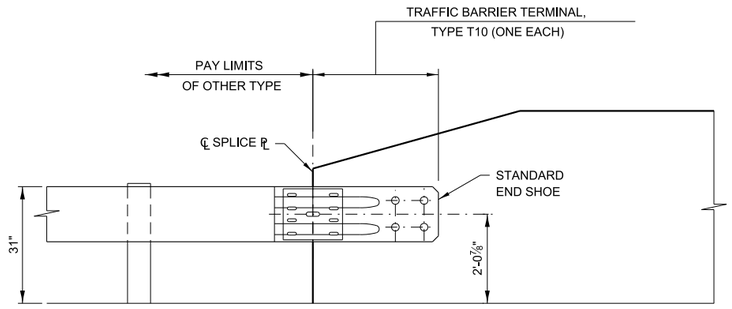
APPROVED BY:
CHIEF ENGINEERING OFFICER

DATE:
03/01/2020

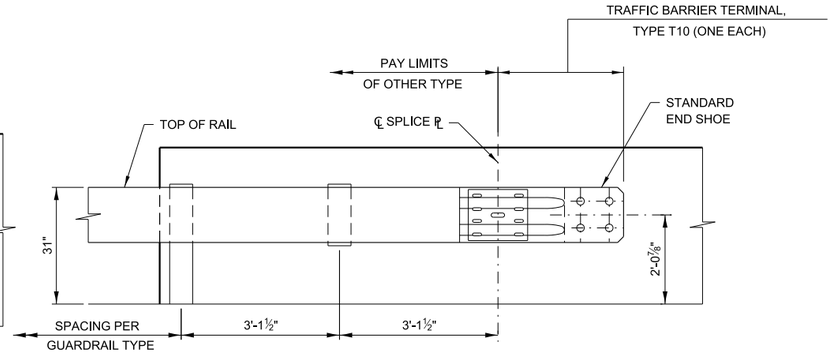
Illinois Tollway

TRAFFIC BARRIER TERMINAL, TYPE T6B

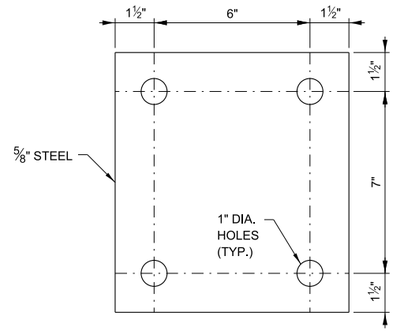
VERSION:	STANDARD:	SHEET:
2020-03	C10-09	2 OF 2



ELEVATION

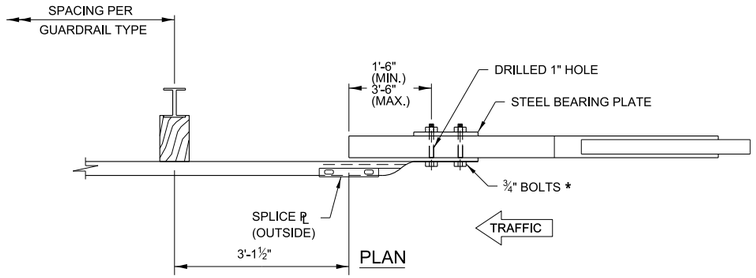


ELEVATION

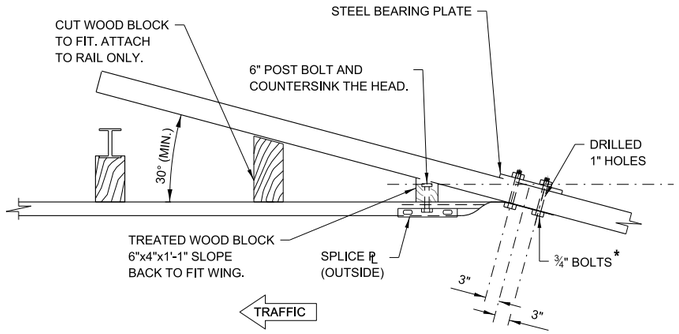


PARAPET STEEL BEARING
PLATE DETAIL

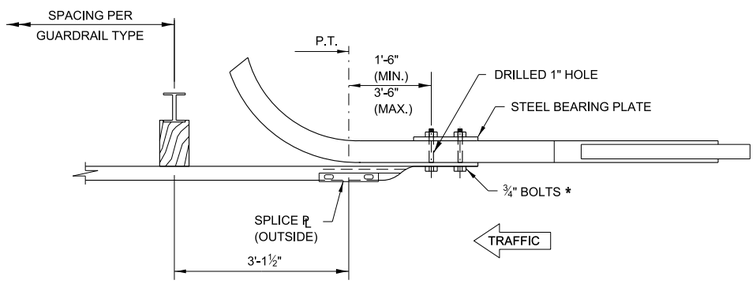
(4 EACH INDIVIDUAL 5"x5"x⅝" STEEL PLATES WITH CENTERED HOLES MAY BE SUBSTITUTED FOR THE PLATE SHOWN)



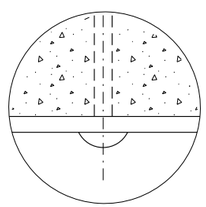
TANGENT WING



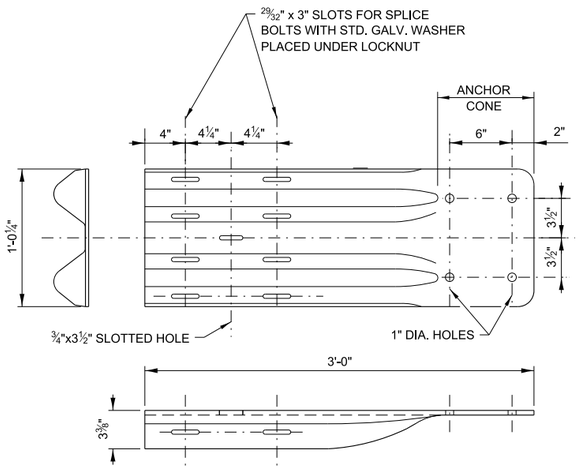
PLAN
FLARED WING



PLAN
CURVED WING



DETAIL "A"



END SHOE

GENERAL NOTE:

* HEAD OF BOLT TO BE ON TRAFFIC SIDE. SEE DETAIL "A"

NOTES:

1. SEE ILLINOIS TOLLWAY STANDARD DRAWING C1 FOR DETAILS OF GUARDRAIL NOT SHOWN.
2. THE 24⅞" TYPICAL RAIL HEIGHT IS MEASURED FROM EXISTING SURFACE 1'-0" IN FRONT OF RAIL, OR FROM EDGE OF SHOULDER/EDGE OF GUTTER WHEN EDGE IS MORE THAN 1'-0" IN FRONT OF RAIL TO CENTER OF RAIL.
3. THE TRAFFIC BARRIER TERMINAL, TYPE T10 IS TYPICALLY UTILIZED TO CONNECT GALVANIZED STEEL PLATE BEAM GUARDRAIL TO THE DEPARTING END OF AN EXISTING BRIDGE CONCRETE WING WALL OR PARAPET.
4. UNDER NO CIRCUMSTANCES SHALL AN EXISTING TERMINAL, THAT WAS 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.
5. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE ILLINOIS TOLLWAY'S DETAILS AND SPECIFICATIONS. NO MODIFICATIONS SHALL BE PERMITTED.
6. WHEN END SHOE IS ATTACHED TO A BRIDGE PARAPET WHICH HAS AN EXPANSION JOINT, THE BOLTS SHALL BE PROVIDED WITH A LOCKNUT OR DOUBLE NUT AND SHALL BE TIGHTENED ONLY TO A POINT THAT WILL ALLOW GUARDRAIL MOVEMENT.
7. THE ANCHOR CONE SHALL BE SET FLUSH WITH THE SURFACE OF THE CONCRETE.
8. EXTERNALLY THREADED STUDS PROTRUDING FROM THE SURFACE OF THE CONCRETE SHALL NOT BE PERMITTED.
9. WHEN WING WALL THICKNESS IS GREATER THAN 18" OR NOT ACCESSIBLE TO THE BACK SIDE, 4-¾" BOLTS SHALL BE ANCHORED INTO DRILLED HOLES, USING A CHEMICAL ADHESIVE. MINIMUM EMBEDMENT SHALL BE 10". ANCHOR BOLTS WITH STANDARD WASHER SHALL BE USED. AFTER TIGHTENING, CUT THE ANCHOR BOLTS FLUSH WITH THE NUTS, AND DAMAGE THE NUTS TO PREVENT THEM FROM LOOSENING.

APPROVED BY: Paul Kovacs
CHIEF ENGINEERING OFFICER

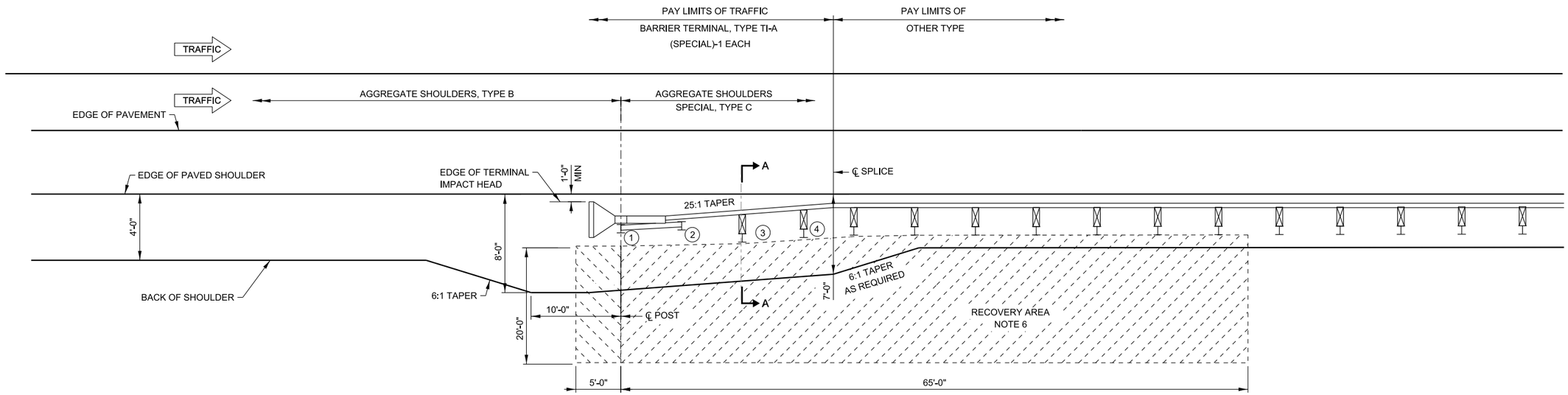
DATE: 03/31/2017

Illinois Tollway

REVISIONS	
DATE	DESCRIPTION
03-31-2017	REV'D EL PARAPET & FL WING ANGLE
03-31-2016	REVISED FLARED WING ANGLE
03-11-2015	REVISED NOTES
03-31-2014	REVISED NOTES
02-07-2012	REVISED BOLT NOTE, ADDED DETAIL "A" AND REVISED NOTES

TERMINAL BARRIER TERMINAL, TYPE T10

VERSION:	STANDARD:	SHEET:
2017-03	C11-07	1 OF 1



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 TRAFFIC BARRIER TERMINAL, TYPE T1-A (SPECIAL) IS THE UPSTREAM END SECTION OF A GALVANIZED STEEL PLATE BEAM GUARDRAIL BARRIER SYSTEM, FOR RAMP INSTALLATION WITH DESIGN SPEED LIMIT OF 40 MPH OR LESS, AASHTO MASH, TEST LEVEL (TL-2).

3. REFERENCE ILLINOIS TOLLWAY STANDARD DRAWING B29 FOR GUTTER TRANSITION AT TRAFFIC BARRIER TERMINAL, TYPE T1-A (SPECIAL), AND MINIMUM DISTANCE FROM EDGE OF PAVED SHOULDER TO FACE OF RAIL.

4. UNDER NO CIRCUMSTANCES SHALL AN EXISTING TERMINAL, THAT WAS 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.

5. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S DETAILS AND SPECIFICATIONS.

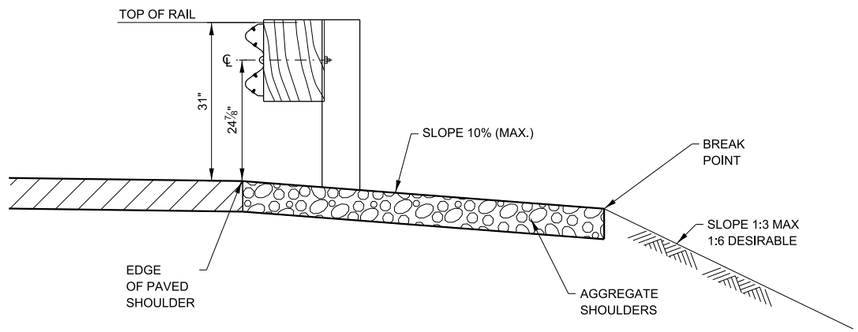
6. NO ABOVE-GROUND ROADSIDE OBSTACLE OF ANY TYPE-FIXED OR BREAKAWAY, EITHER TEMPORARY OR PERMANENT SHALL BE ALLOWED WITHIN THIS RECOVERY AREA.

7. ON TANGENT ROADWAY: TRAFFIC BARRIER TERMINAL SHALL BE INSTALLED AT A 25:1 TAPER MEASURED FROM EDGE OF TRAVELED WAY.
   ON CURVED ROADWAY: THE EDGE OF THE TERMINAL IMPACT HEAD SHALL BE OFFSET A DISTANCE FROM A POINT ON THE BACK OF THE CURVED EDGE OF PAVED SHOULDER AS SHOWN IN TABLE 1. 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 ASPHALT. WHEN NECESSARY USE LEAVE-OUT DETAIL SHOWN ON ILLINOIS TOLLWAY STANDARD DRAWING C1.

9. THE TERMINAL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR CRASHWORTHINESS UNDER PROCEDURCES DEFINED IN AASHTO MASH. NO MODIFICATION TO THIS STANDARD DRAWING SHALL BE PERMITTED.

10. WHEN GUTTER IS PRESENT, DRAINAGE STRUCTURES SHALL NOT BE INSTALLED WITHIN THE TERMINAL LIMITS, BUT SHALL BE INSTALLED UPSTREAM AND DOWNSTREAM OF THE TERMINAL AS REQUIRED.



SECTION A-A

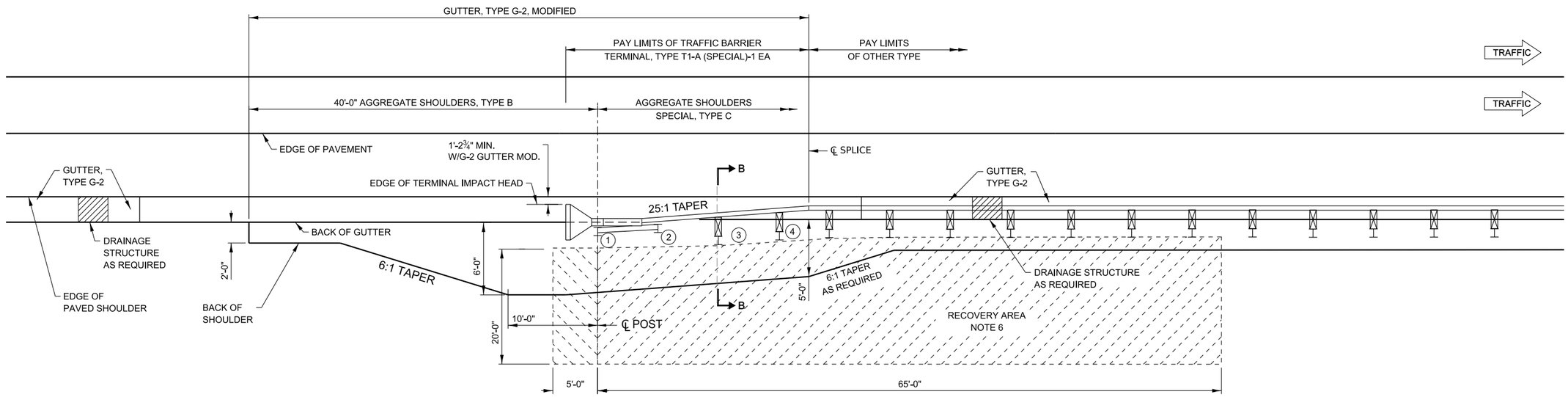
APPROVED BY: Paul Kovacs
CHIEF ENGINEERING OFFICER
DATE: 03/01/2020

REVISIONS	
DATE	DESCRIPTION
03-01-2020	ADD MOD. TO TABLE 1 & PLAN NOTE
03-01-2019	ADDED MOD. TO TABLE 1 & PL
03-01-2018	CORRECTED G-2 GUTTER REFERENCE
03-01-2017	REV SHOULDER WIDTH AT TERMINAL
03-01-2016	ADD INSTALL NOTES IN NOTE 7
	AND REVISED SECTION A-A SHLDR

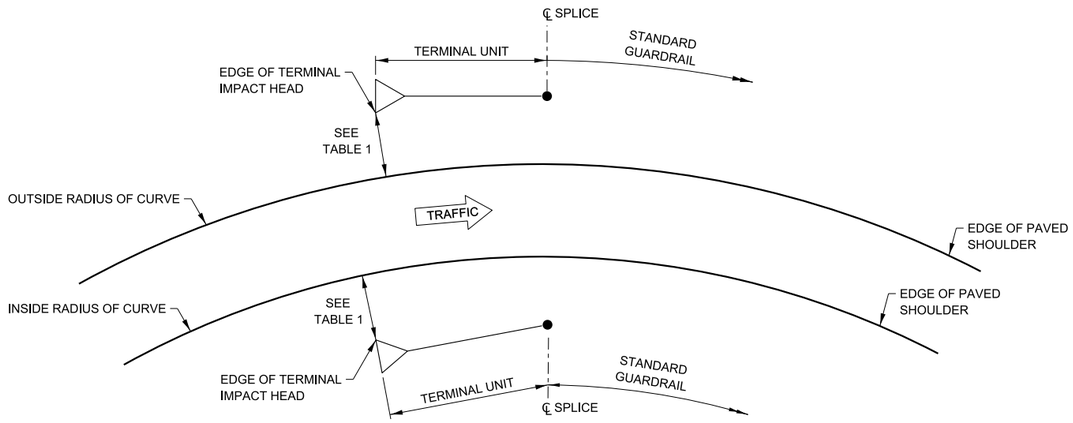
Illinois Tollway

SHOULDER WIDENING FOR TRAFFIC BARRIER TERMINAL, TYPE T1-A (SPECIAL)

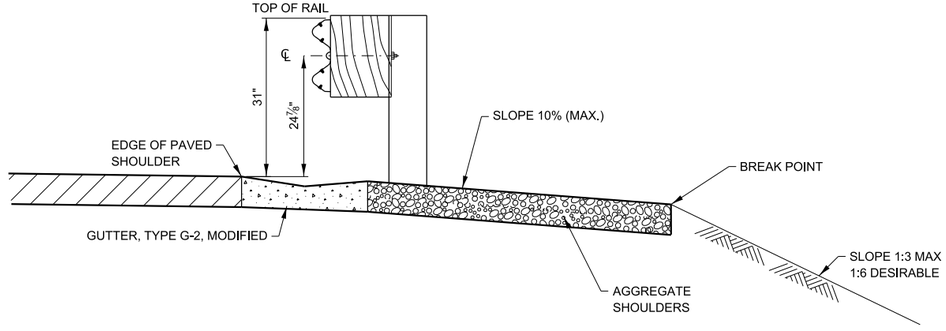
VERSION:	STANDARD:	SHEET:
2020-03	C12-10	1 OF 2



SHOULDER WIDENING TRANSITION - WITH GUTTER, TYPE G-2
FOR TRAFFIC BARRIER TERMINAL, TYPE T1-A (SPECIAL)



CURVED ROADWAY
TRAFFIC BARRIER TERMINAL PLACEMENT
(SEE NOTE 7)



SECTION B-B

TABLE 1		
LATERAL OFFSET DIMENSION TO EDGE OF TERMINAL IMPACT HEAD		
	INSIDE RADIUS OF CURVE	OUTSIDE RADIUS OF CURVE
NO GUTTER	1'-0"	1'-0" *
GUTTER, TYPE G-2, MOD.	1'-2¾"	1'-2¾" MIN.*

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

NOTES:

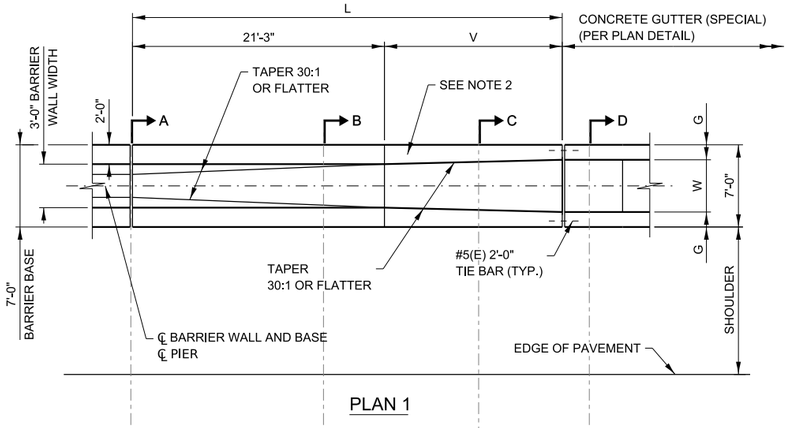
SEE SHEET 1 OF THIS SERIES FOR NOTES.

APPROVED BY: Paul Kovacs, CHIEF ENGINEERING OFFICER
DATE: 03/01/2020

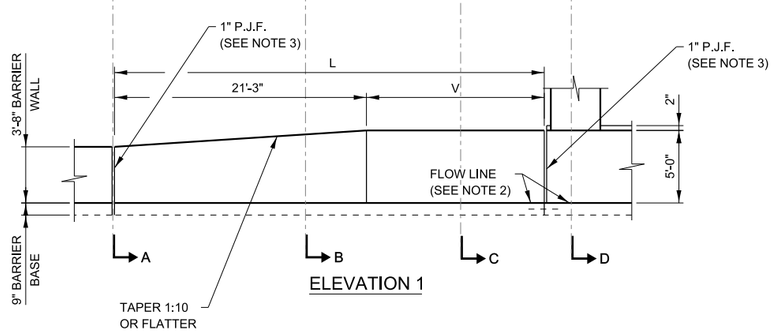
Illinois Tollway

SHOULDER WIDENING FOR TRAFFIC BARRIER TERMINAL, TYPE T1-A (SPECIAL)

VERSION:	STANDARD:	SHEET:
2020-03	C12-10	2 OF 2

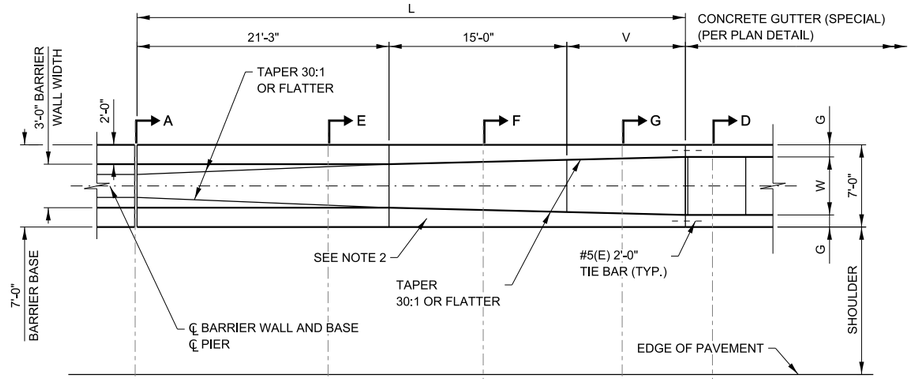


PLAN 1

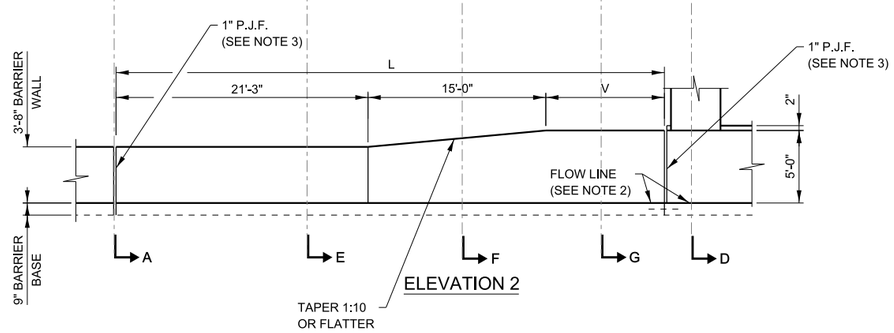


ELEVATION 1

CONCRETE MEDIAN BARRIER TRANSITION, TYPE V-DF
AT BRIDGE PIERS (FOR W ≤4'-0")



PLAN 2



ELEVATION 2

CONCRETE MEDIAN BARRIER TRANSITION, TYPE V-DF
AT BRIDGE PIERS (FOR W >4'-0")

	TABLE OF VARIABLES			
	W	L	V	G
PLAN 1	3'-0"	31'-3"	10'-0"	2'-0"
	3'-6"	31'-3"	10'-0"	1'-9"
	4'-0"	36'-3"	15'-0"	1'-6"
PLAN 2	4'-6"	46'-3"	10'-0"	1'-3"
	5'-0"	51'-3"	15'-0"	1'-0"
	5'-6"	58'-9"	22'-6"	9"
	6'-0"	66'-3"	30'-0"	6"

NOTES:

1. 2" DEEP CONTRACTION JOINTS SHALL BE DONE BY SAWING AND SHALL BE CONSTRUCTED IN THE CONCRETE BARRIER WALL, CONCRETE BARRIER BASE, AND CONCRETE GUTTER (SPECIAL). CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM CONTRACTION JOINT SPACING SHALL BE 30'-0". THE MINIMUM DISTANCE BETWEEN CONTRACTION JOINTS IN THE MEDIAN BARRIER WALL SHALL BE 2'-0". WHEN A DRAINAGE STRUCTURE FALLS WITHIN 2'-0" FROM AN EXPANSION JOINT (OR) CONTRACTION JOINT, THE NEAREST CONTRACTION JOINT SHALL BE OMITTED.

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

3. NON-STAINING GRAY ONE COMPONENT NON-SAG ELASTOMERIC GUN GRADE POLYURETHANE SEALANT MEETING THE REQUIREMENTS OF ASTM C-920, TYPE S, GRADE NS, CLASS 25, USE T.

4. HOOK BARS SHALL BE INCLUDED IN THE COST OF THE VARIOUS BARRIER AND GUTTER ITEMS AND SHALL BE EPOXY COATED. HOOK BARS BETWEEN THE BARRIER AND BASE SHALL BE ON 15" CENTERS AND ALTERNATE LEFT AND RIGHT OF THE BARRIER CENTERLINE. SEE STANDARD C5 FOR "HOOK BAR" DETAIL.

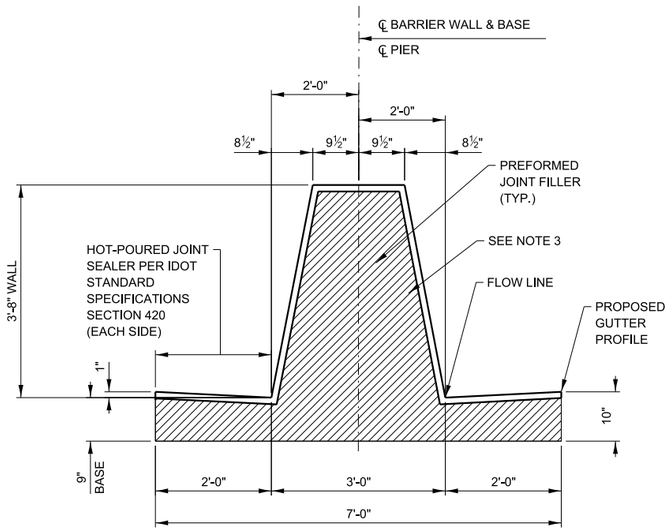
APPROVED BY:
CHIEF ENGINEERING OFFICER
DATE: 03/01/2022

REVISIONS	
DATE	DESCRIPTION
03-01-2022	REVISED SECTION A-A DIMENSIONS
03-01-2021	REVISED TO HOOK BARS
03-01-2019	REVISED TO CONSTANT SLOPE AT 44"
03-31-2016	MODIFIED NOTES
03-11-2015	MODIFIED MEDIAN BARRIER TRANSITION
03-31-2014	MODIFIED BARRIER BASE

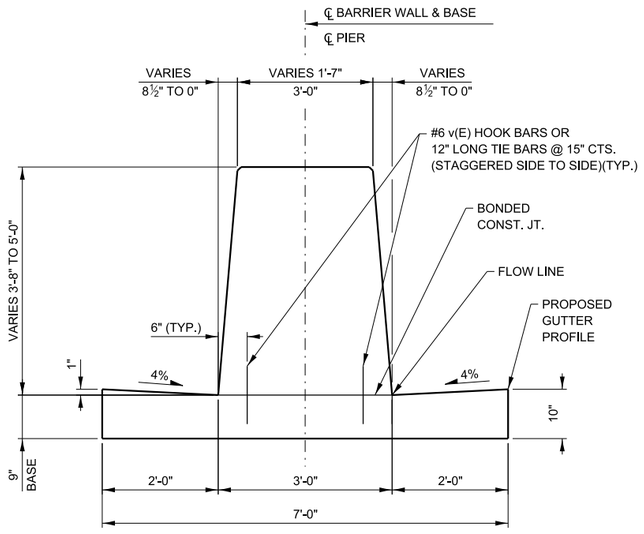
Illinois Tollway

CONCRETE MEDIAN BARRIER TRANSITION, TYPE V-DF AT BRIDGE PIERS

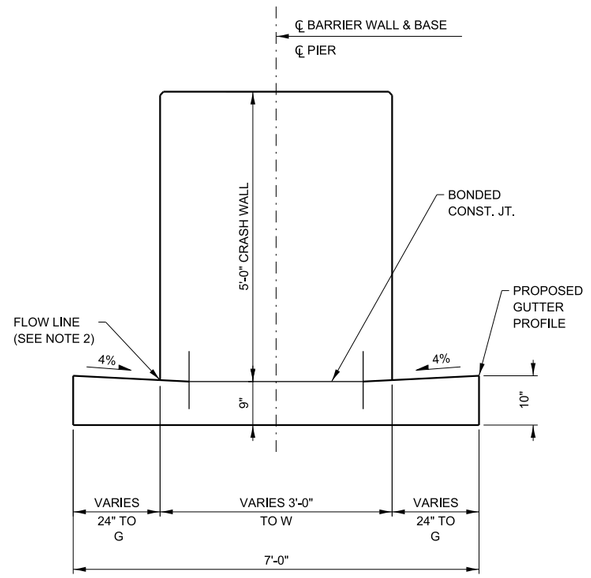
VERSION:	STANDARD:	SHEET:
2022-03	C13-07	1 OF 2



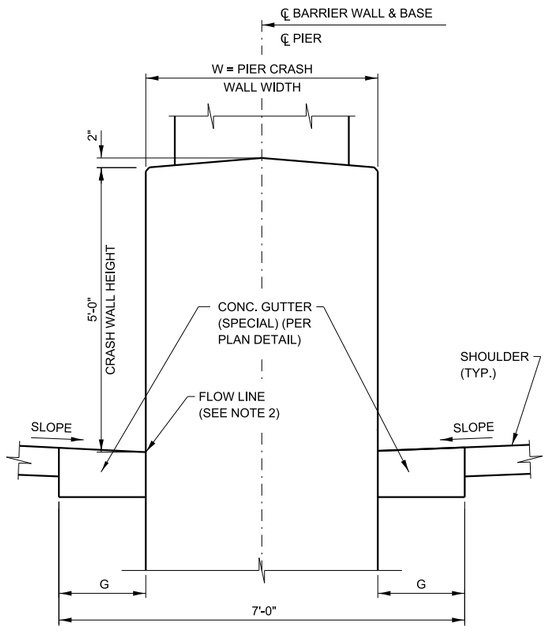
SECTION A-A



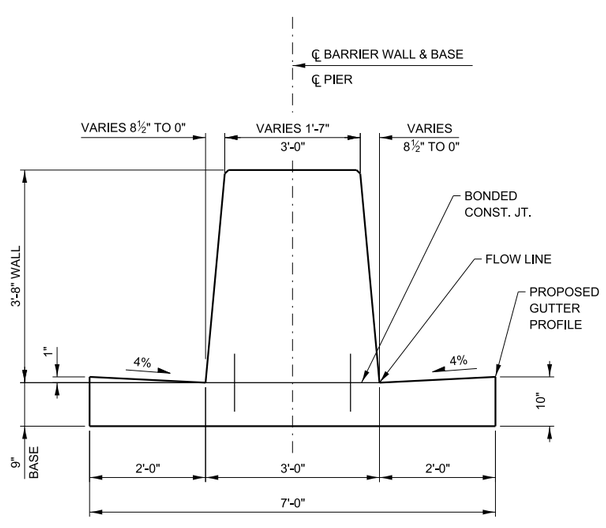
SECTION B-B



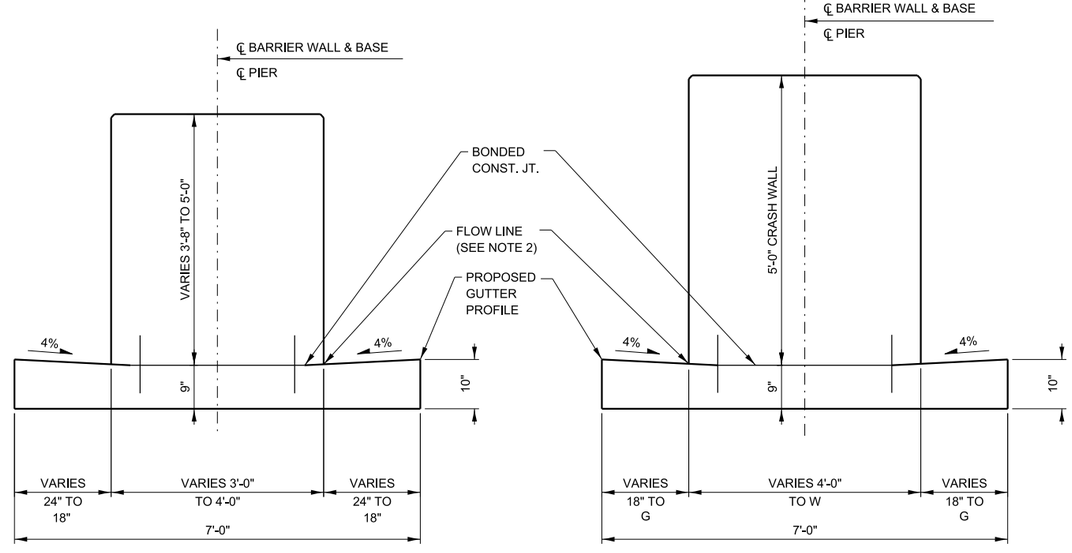
SECTION C-C



SECTION D-D



SECTION E-E



SECTION F-F

SECTION G-G

APPROVED BY:

CHIEF ENGINEERING OFFICER

DATE: 03/01/2022

NOTES:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

Illinois Tollway

CONCRETE MEDIAN BARRIER TRANSITION, TYPE V-DF AT BRIDGE PIERS

VERSION:	STANDARD:	SHEET:
2022-03	C13-07	2 OF 2

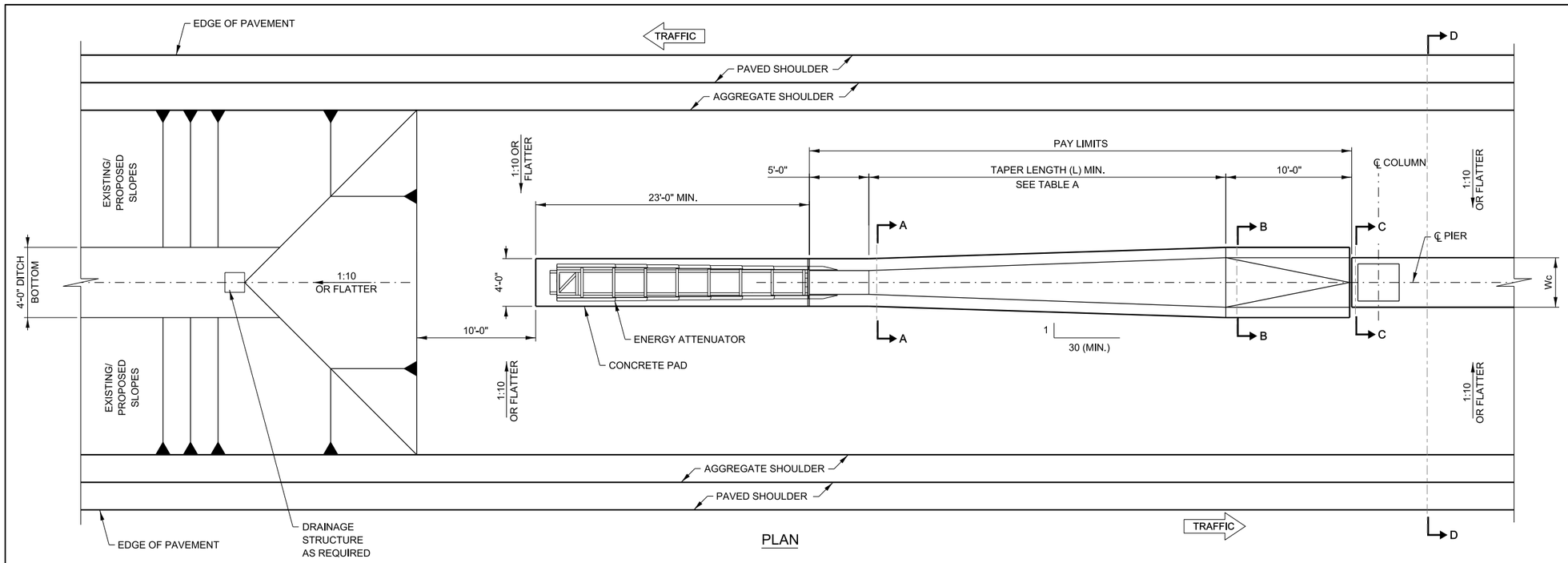
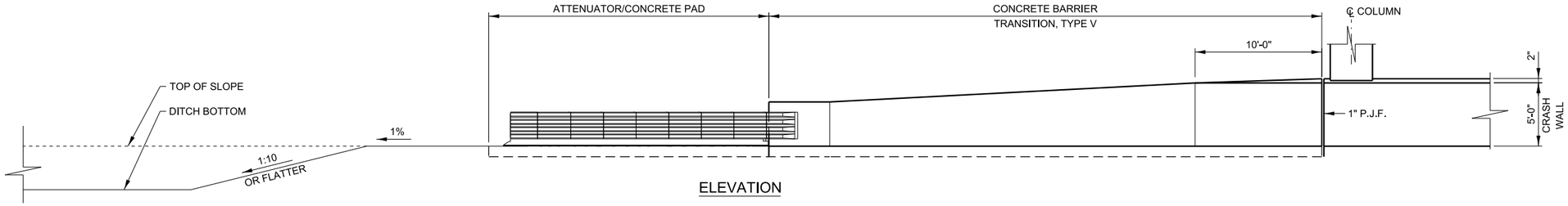
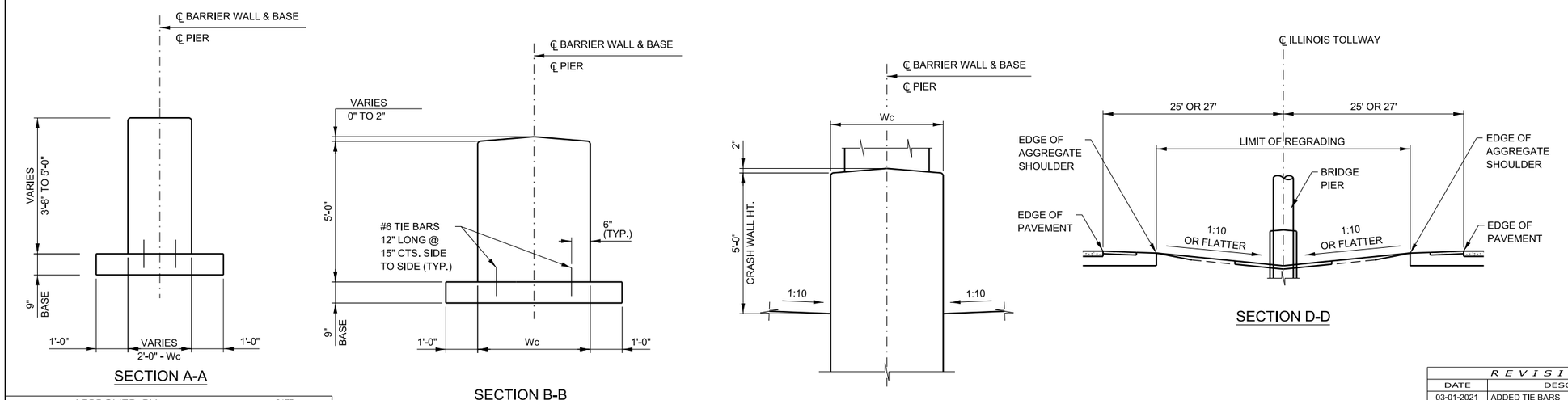


TABLE A	
Wc	L (MIN.)
24"	20'-0"
24"<Wc<35"	25'-0"
35"<Wc<43"	35'-0"
43"<Wc<51"	45'-0"
51"<Wc<59"	55'-0"
59"<Wc<67"	65'-0"
67"<Wc<72"	75'-0"

Wc=PIER CRASH WALL WIDTH



ELEVATION



NOTES:

1. SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
2. ENERGY ATTENUATOR AND PAD SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S DETAILS AND SPECIFICATIONS.
3. 2" DEEP CONTRACTION JOINTS SHALL BE DONE BY SAWING AND SHALL BE CONSTRUCTED IN THE CONCRETE BARRIER WALL, AND CONCRETE BARRIER BASE. MAXIMUM CONTRACTION JOINT SPACING SHALL BE 30'-0". THE MINIMUM DISTANCE BETWEEN CONTRACTION JOINTS IN THE MEDIAN BARRIER WALL SHALL BE 2'-0".

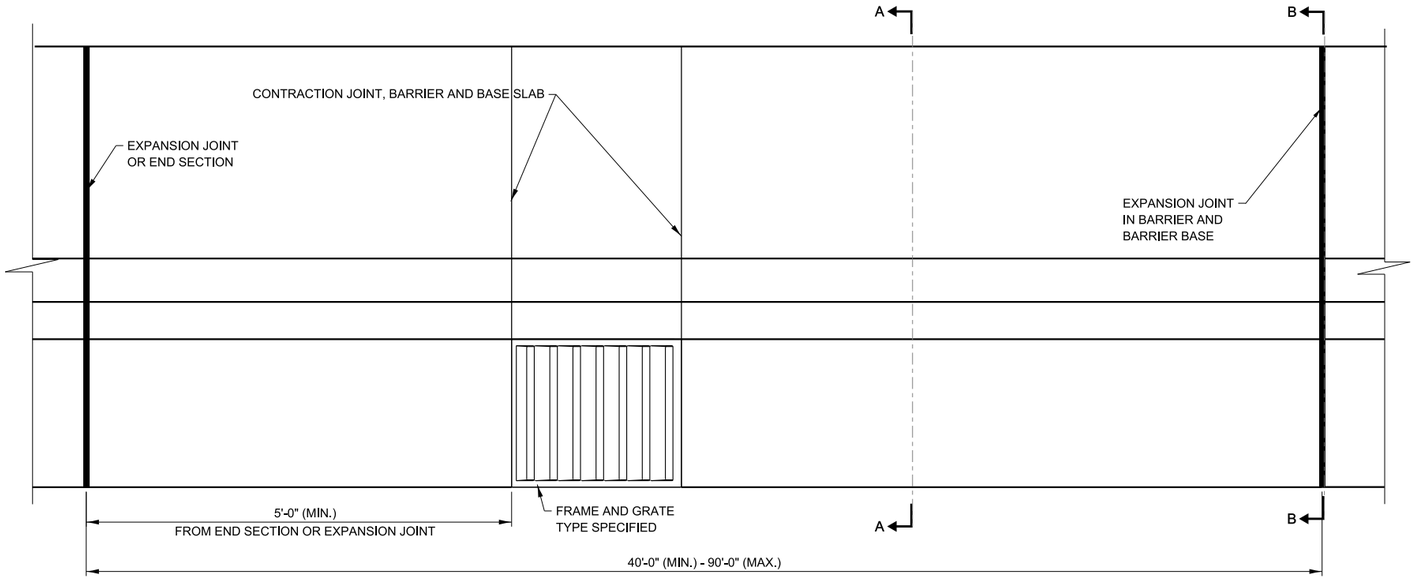
APPROVED BY: Paul Kovacs CHIEF ENGINEERING OFFICER
DATE: 03/01/2021

REVISIONS	
DATE	DESCRIPTION
03-01-2021	ADDED TIE BARS
03-01-2020	CORRECTED HEIGHT IN SECTION A-A
03-01-2019	REVISED ATTENUATOR
03-31-2016	ADDED SEC. B-B TOP. DITCH ELEV.
	VIEW AND REVISED NOTE 3
03-11-2015	REVISED NOTES

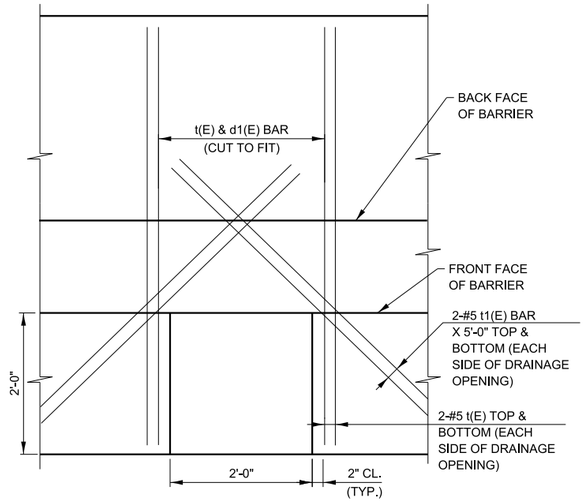
Illinois Tollway

CONCRETE MEDIAN BARRIER TRANSITION, TYPE V AT BRIDGE PIERS

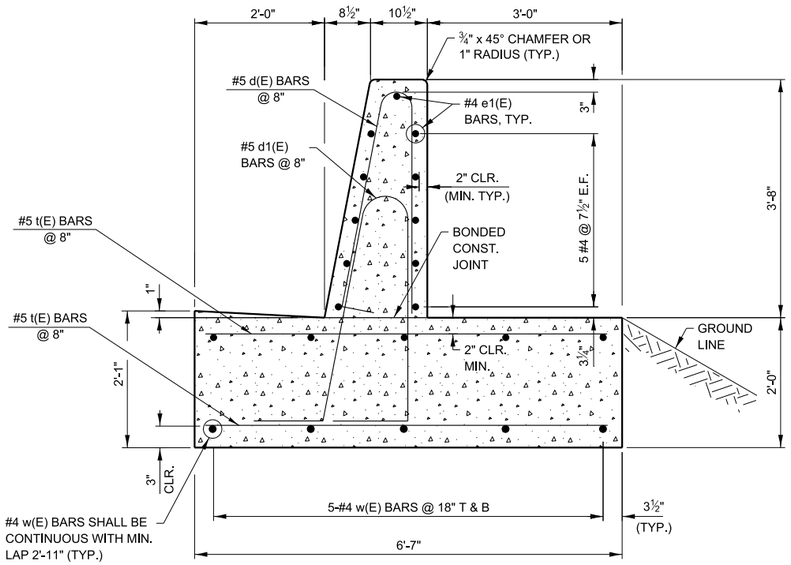
VERSION:	STANDARD:	SHEET:
2021-03	C14-05	1 OF 1



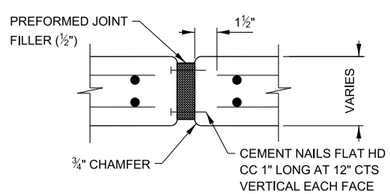
PLAN



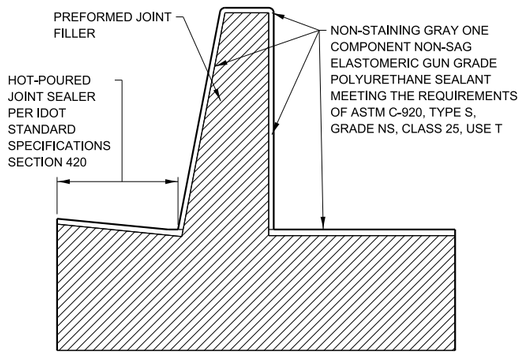
PLAN
REINFORCEMENT AROUND
DRAINAGE STRUCTURE



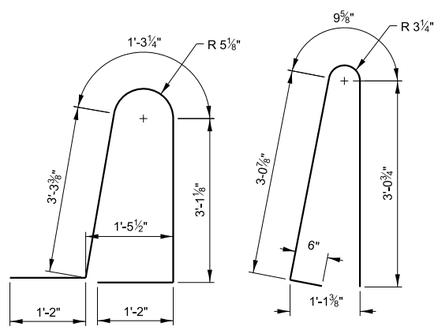
SINGLE FACE TL-5 BARRIER
SECTION A-A



EXPANSION JOINT



SINGLE FACE 44" BARRIER
EXPANSION JOINT
SECTION B-B



BAR d1(E) BAR d(E)

BENDING DIAGRAMS

NOTES:

1. THIS IS A REINFORCED CONCRETE TL-5 ROADSIDE BARRIER USED TO SHIELD DROP-OFFS AND FOR PROTECTION OF STRUCTURES WHEN THE BARRIER IS AWAY FROM THE FACE OF THE STRUCTURE. THE MINIMUM LENGTH OF INSTALLATION SHALL BE 40'-0". BASIS OF DESIGN: IL TOLLWAY STRUCTURE DESIGN MANUAL.
2. TOP SHOULDER EDGE OF BARRIER BASE GUTTER SHALL MATCH THE TOP OF SHOULDER ELEVATION.
3. 1" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN BOTH THE REINFORCED CONCRETE BARRIER WALL AND BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM CONTRACTION JOINT SPACING SHALL BE 30'-0".
4. CONTRACTION JOINTS SHALL BE FORMED BY A GROOVE ⅛", EITHER IN THE PLASTIC CONCRETE OR SAWED AFTER THE CONCRETE HAS SET.
5. REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.
6. REINFORCEMENT BARS BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICES" FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315, LATEST EDITION. REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT. E.F. DENOTES EACH FACE.
7. AT DRAINAGE STRUCTURES, CUT FOOTING BARS TO FIT. ADD ADDITIONAL t AND t1 BARS ON EACH SIDE OF THE DRAINAGE STRUCTURE. A 1" PJF SHALL BE PLACED BELOW THE BARRIER BASE WHEN IT SITS UPON A FLAT SLAB DRAINAGE STRUCTURE.
8. EXPANSION JOINTS SHALL BE CONSTRUCTED IN BARRIER WALL AT A MAXIMUM JOINT SPACING OF 90'-0" AND A MINIMUM JOINT SPACING OF 40'-0". SEE SECTION B-B FOR DETAILS.
9. WHEN SPECIFIED IN THE PLANS, THE BACKSIDE OF THE BARRIER BASE MAY BE LEFT EXPOSED A MAXIMUM OF 1', MEASURED FROM THE TOP OF THE BARRIER BASE.

APPROVED BY:
Marwan Nashif
CHIEF ENGINEERING OFFICER

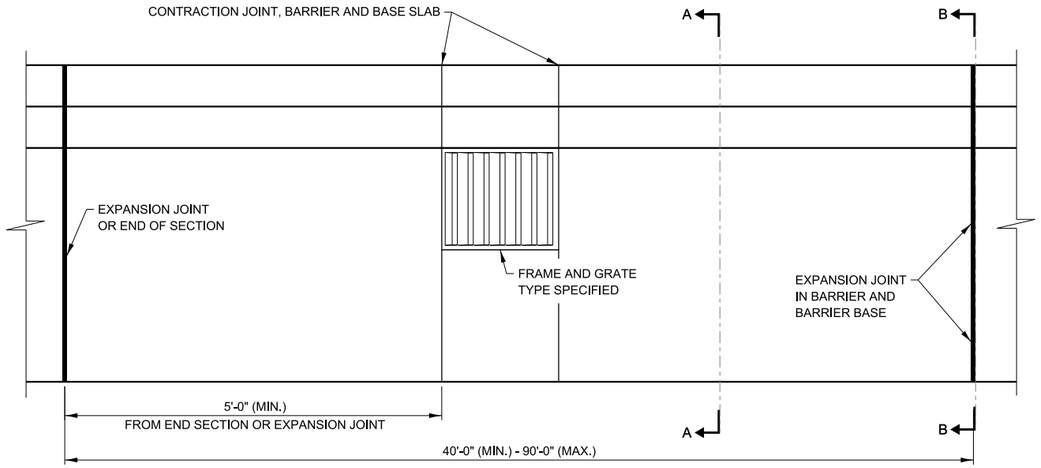
DATE:
03/01/2024

Illinois Tollway

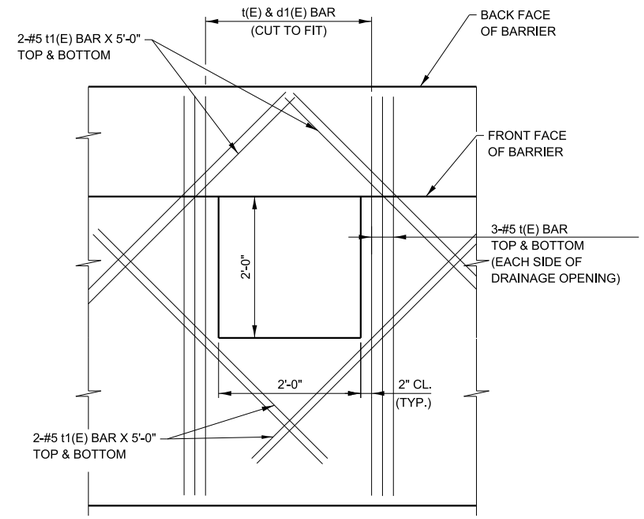
REVISIONS	
DATE	DESCRIPTION
03-01-2024	ADDED PJF BETWEEN BASE AND
	DRAINAGE STRUCTURES
03-01-2023	REVISED NOTE #1 AND REINF. DETAIL
	AT DRAINAGE STRUCTURES
03-01-2022	REVISED NOTES & CALLOUTS
03-01-2020	REVISED NAME & REINFORCING

CONCRETE BARRIER SINGLE FACE, REINFORCED TL-5, T-SHAPE 44 INCH

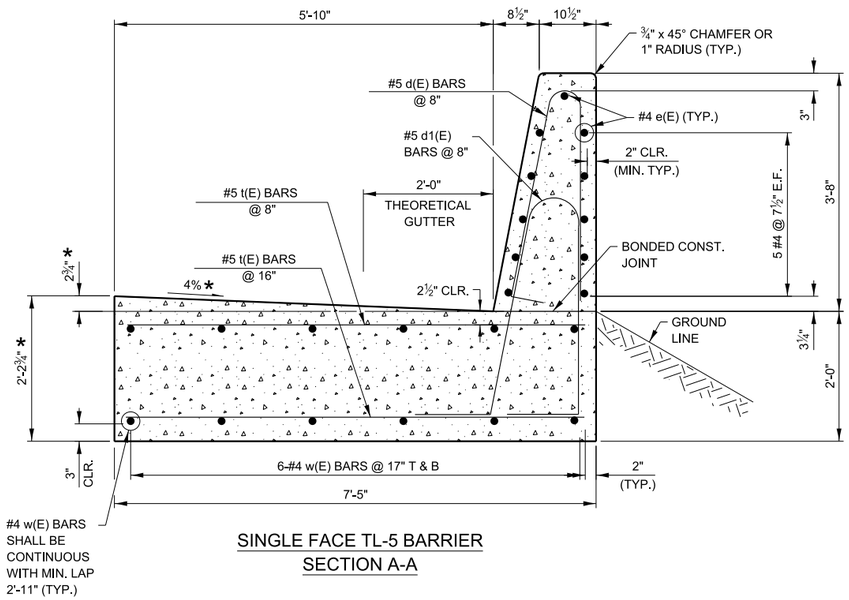
VERSION:	STANDARD:	SHEET:
2024-03	C15-04	1 OF 1



PLAN

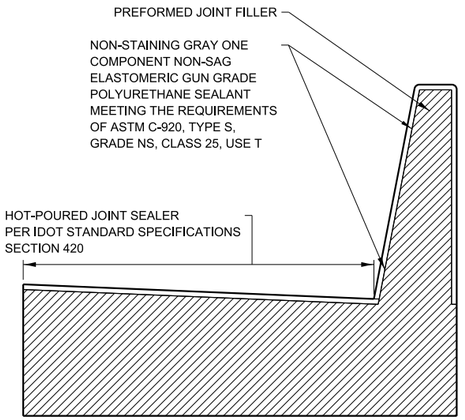


PLAN
REINFORCEMENT AROUND
DRAINAGE STRUCTURE



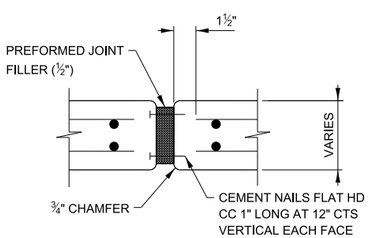
SINGLE FACE TL-5 BARRIER
SECTION A-A

* OR AS REQUIRED TO MATCH
SHOULDER CROSS SLOPE

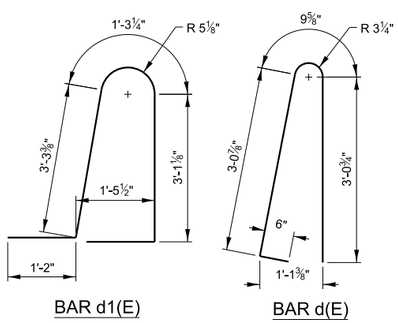


SINGLE FACE 44" BARRIER
EXPANSION JOINT

SECTION B-B



EXPANSION JOINT



BENDING DIAGRAMS

NOTES:

1. THIS IS A REINFORCED CONCRETE TL-5 ROADSIDE BARRIER USED TO SHIELD DROP-OFFS AND FOR PROTECTION OF STRUCTURES WHEN THE BARRIER IS AWAY FROM THE FACE OF THE STRUCTURE. THE MINIMUM LENGTH OF INSTALLATION SHALL BE 40'-0". BASIS OF DESIGN: IL TOLLWAY STRUCTURE DESIGN MANUAL.
2. TOP SHOULDER EDGE OF BARRIER BASE GUTTER SHALL MATCH THE TOP OF SHOULDER ELEVATION.
3. 1" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN BOTH THE REINFORCED CONCRETE BARRIER WALL AND BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM CONTRACTION JOINT SPACING SHALL BE 30'-0".
4. CONTRACTION JOINTS SHALL BE FORMED BY A GROOVE ⅛", EITHER IN THE PLASTIC CONCRETE OR SAWED AFTER THE CONCRETE HAS SET.
5. REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.
6. REINFORCEMENT BARS BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315, LATEST EDITION. REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT. E. F. DENOTES EACH FACE.
7. AT DRAINAGE STRUCTURES, CUT FOOTING BARS TO FIT. ADD ADDITIONAL t AND t1 BARS ON EACH SIDE OF THE DRAINAGE STRUCTURE. A 1" PJF SHALL BE PLACED BELOW THE BARRIER BASE WHEN IT SITS UPON A FLAT SLAB DRAINAGE STRUCTURE.
8. EXPANSION JOINTS SHALL BE CONSTRUCTED IN BARRIER WALL AT A MAXIMUM JOINT SPACING OF 90'-0" AND A MINIMUM JOINT SPACING OF 40'-0". SEE SECTION B-B FOR DETAILS.
9. WHEN SPECIFIED IN THE PLANS, THE BACKSIDE OF THE BARRIER BASE MAY BE LEFT EXPOSED A MAXIMUM OF 1', MEASURED FROM THE TOP OF THE BARRIER BASE.

APPROVED BY:
Marco Nastif
CHIEF ENGINEERING OFFICER

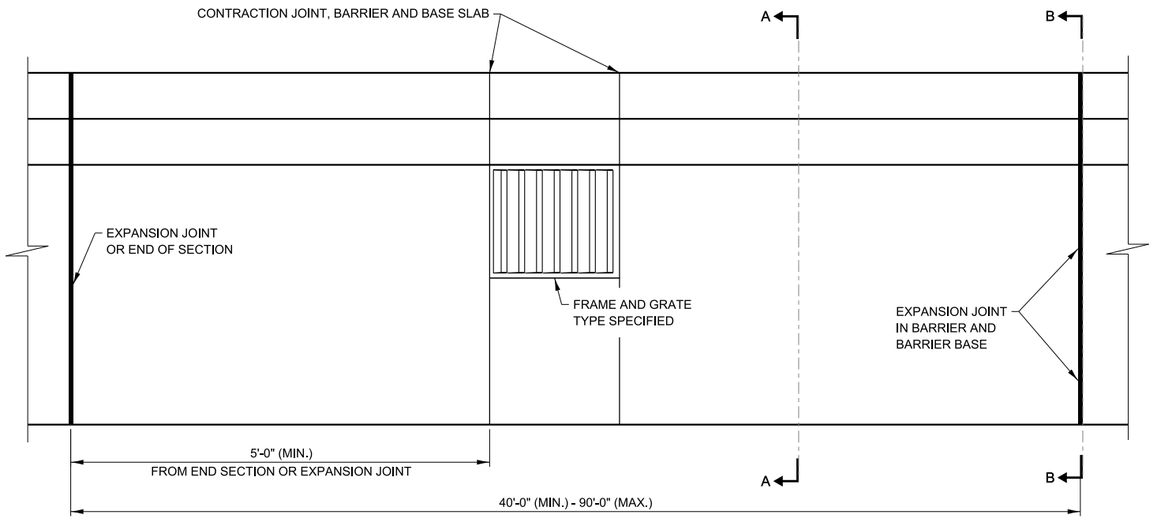
DATE:
03/01/2024

Illinois Tollway

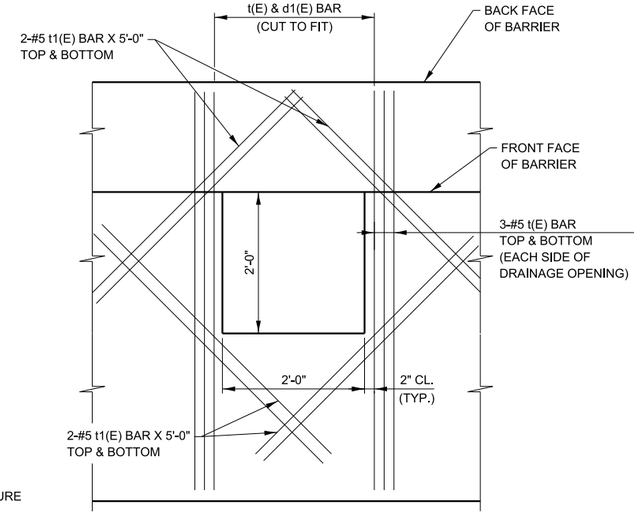
REVISIONS	
DATE	DESCRIPTION
03-01-2024	ADDED PJF BETWEEN BASE AND
	DRAINAGE STRUCTURES
03-01-2023	REVISED NOTE #1 AND REINF.
	DETAIL AT DRAINAGE STRUCTURES
03-01-2022	REVISED NOTES & CALLOUTS

CONCRETE BARRIER SINGLE FACE, REINFORCED TL-5, L-SHAPE 44 INCH

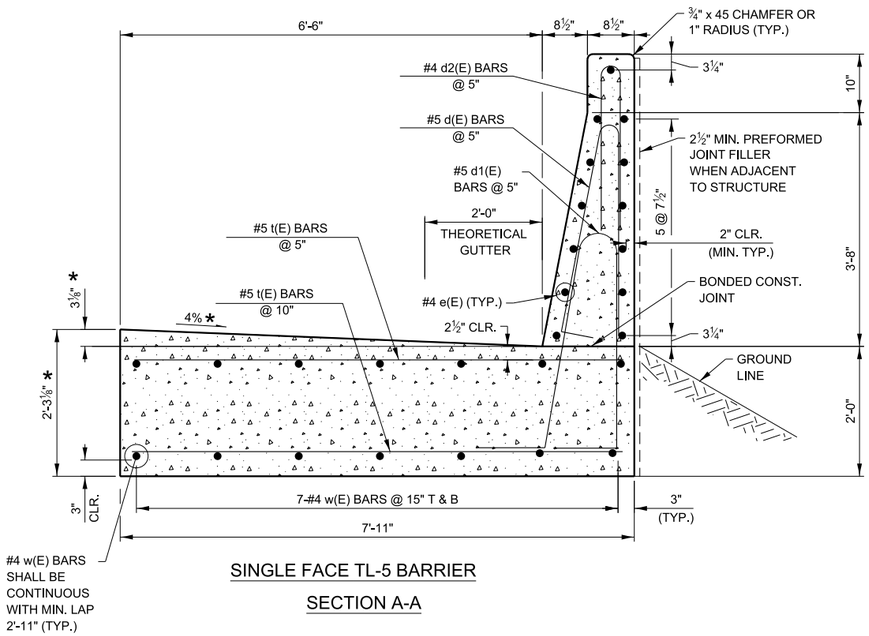
VERSION:	STANDARD:	SHEET:
2024-03	C16-04	1 OF 1



PLAN



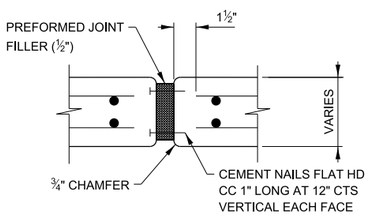
PLAN
REINFORCEMENT AROUND
DRAINAGE STRUCTURE



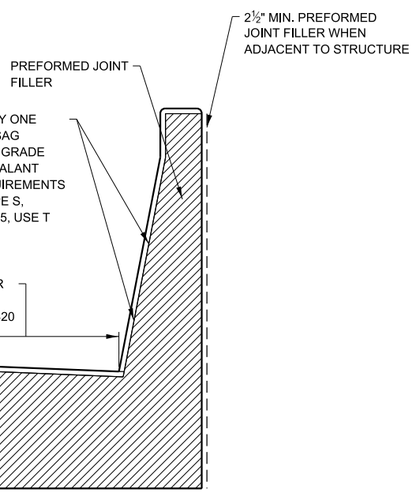
SINGLE FACE TL-5 BARRIER

SECTION A-A

* OR AS REQUIRED TO MATCH
SHOULDER CROSS SLOPE

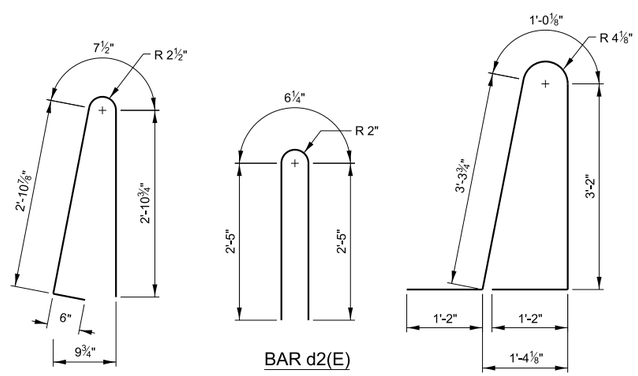


EXPANSION JOINT



SINGLE FACE 54" BARRIER
EXPANSION JOINT

SECTION B-B



BAR d(E)

BAR d2(E)

BAR d1(E)

BENDING DIAGRAMS

NOTES:

1. THIS IS A REINFORCED CONCRETE TL-5 ROADSIDE BARRIER USED TO SHIELD BRIDGE PIERS AND ABUTMENTS WHEN THE BARRIER IS ADJACENT TO THE FACE OF THE STRUCTURE. THE MINIMUM LENGTH OF INSTALLATION SHALL BE 40'-0". BASIS OF DESIGN: IL TOLLWAY STRUCTURE DESIGN MANUAL.
2. TOP SHOULDER EDGE OF BARRIER BASE GUTTER SHALL MATCH THE TOP OF SHOULDER ELEVATION.
3. 1" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN BOTH THE REINFORCED CONCRETE BARRIER WALL AND BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM CONTRACTION JOINT SPACING SHALL BE 30'-0".
4. CONTRACTION JOINTS SHALL BE FORMED BY A GROOVE ⅛", EITHER IN THE PLASTIC CONCRETE OR SAWED AFTER THE CONCRETE HAS SET.
5. REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.
6. REINFORCEMENT BARS BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315, LATEST EDITION. REINFORCEMENT BAR BENDING DIMENSIONS ARE SHOWN OUT TO OUT.
7. AT DRAINAGE STRUCTURES, CUT FOOTING BARS TO FIT. ADD ADDITIONAL t, AND t1 BARS ON EACH SIDE OF THE DRAINAGE STRUCTURE. A 1" PJF SHALL BE PLACED BELOW THE BARRIER BASE WHEN IT SITS UPON A FLAT SLAB DRAINAGE STRUCTURE.
8. EXPANSION JOINTS SHALL BE CONSTRUCTED IN BARRIER WALL AT A MAXIMUM JOINT SPACING OF 90'-0" AND A MINIMUM JOINT SPACING OF 40'-0". SEE SECTION B-B FOR DETAILS.

APPROVED BY:
Marco Nashif
CHIEF ENGINEERING OFFICER

DATE:
03/01/2024

Illinois Tollway

REVISIONS	
DATE	DESCRIPTION
03-01-2024	ADDED PJF BETWEEN BASE AND DRAINAGE STRUCTURE
03-01-2023	REVISED REINF. DETAIL AT DRN. STRUCTURE. REMOVED NOTE 9
03-01-2022	REVISED NOTE 4.
03-01-2021	REVISED REBAR LENGTH, ADDED NOTE

CONCRETE BARRIER SINGLE FACE, REINFORCED TL-5, 54 INCH

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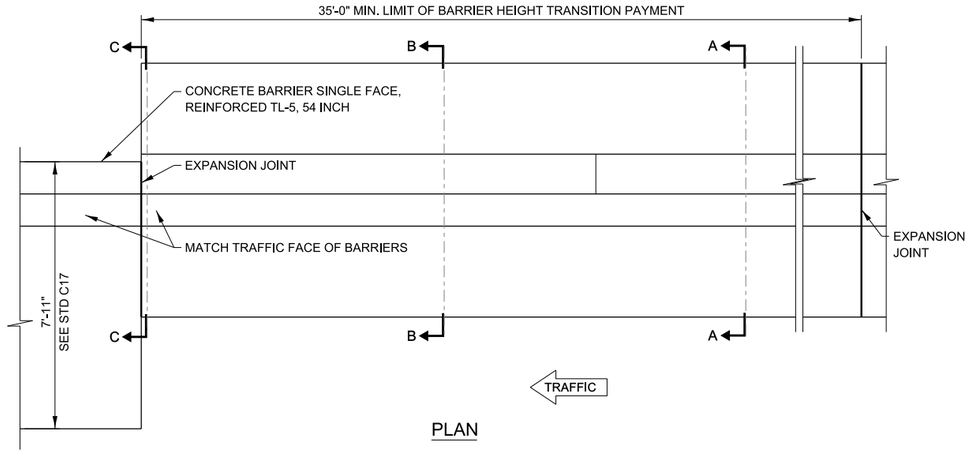
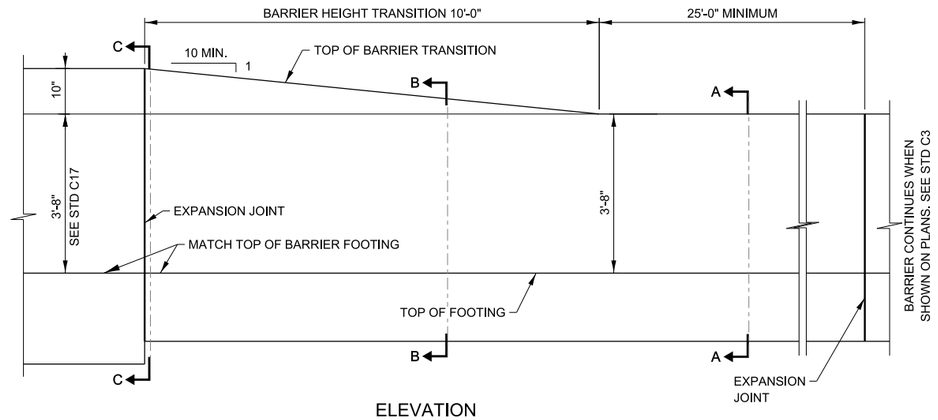
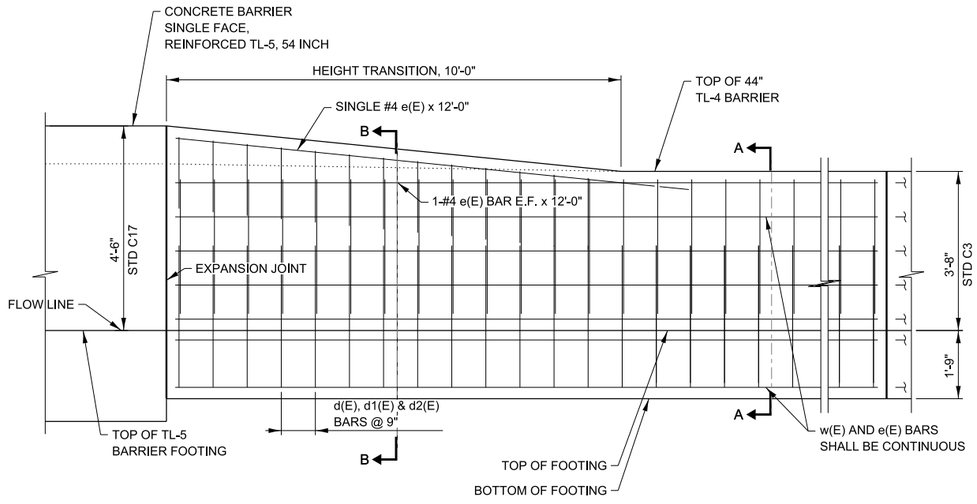


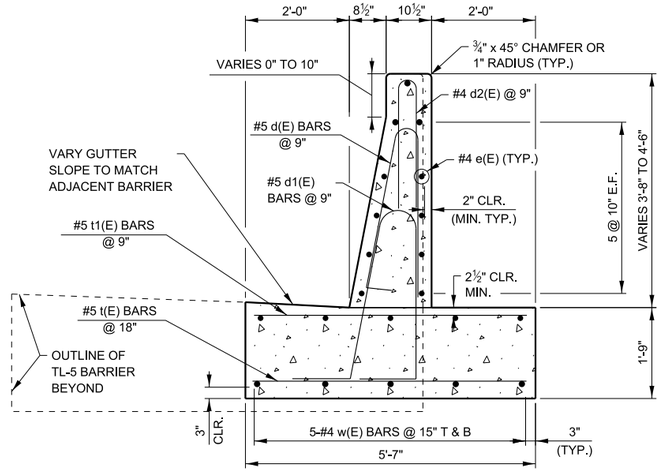
PLAN



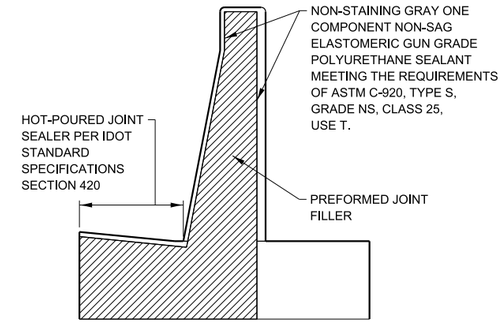
ELEVATION



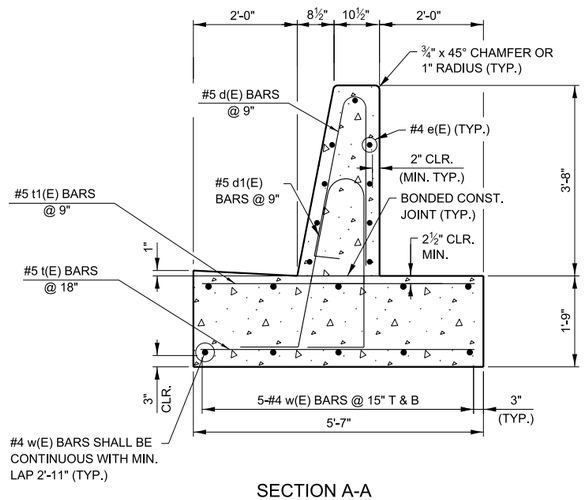
REINFORCEMENT ELEVATION



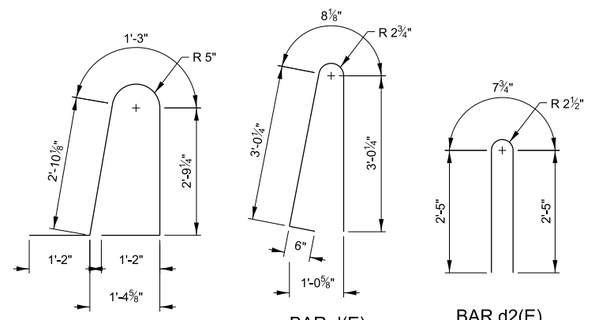
SECTION B-B



EXPANSION JOINT
SECTION C-C



SECTION A-A



BAR d1(E) BAR d(E) BAR d2(E)

BENDING DIAGRAMS

NOTES:

1. THIS REINFORCED CONCRETE TL-4 BARRIER HEIGHT TRANSITION IS USED TO VARY THE BARRIER HEIGHT FROM 44" TO 54". THE MINIMUM LENGTH OF INSTALLATION BETWEEN EXPANSION JOINTS SHALL BE 35'-0". BASIS OF DESIGN: IL TOLLWAY STRUCTURE DESIGN MANUAL.
2. TOP SHOULDER EDGE OF BARRIER BASE GUTTER SHALL MATCH THE TOP OF SHOULDER ELEVATION.
3. 1" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN BOTH THE REINFORCED CONCRETE BARRIER WALL AND BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. SEE STANDARD C3 FOR REINFORCEMENT AROUND DRAINAGE STRUCTURES. MAXIMUM CONTRACTION JOINT SPACING SHALL BE 30'-0".
4. CONTRACTION JOINTS SHALL BE FORMED BY A GROOVE ⅛", EITHER IN THE PLASTIC CONCRETE OR SAWED AFTER THE CONCRETE HAS SET.
5. REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED. ALL w(E) AND e(E) BARS SHALL BE CONTINUOS WITH 2'-11" LAPS MIN. "E.F." DENOTES EACH FACE.
6. REINFORCEMENT BARS BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315, LATEST EDITION. REINFORCEMENT BARS BENDING DIMENSIONS ARE OUT TO OUT.

APPROVED BY: Paul Kovacs
CHIEF ENGINEERING OFFICER
DATE: 03/01/2022

REVISIONS	
DATE	DESCRIPTION
03-01-2022	REVISED NOTES
03-01-2021	REVISED REBAR LENGTH

Illinois Tollway

CONCRETE SHOULDER BARRIER HEIGHT TRANSITION, SINGLE FACE, TYPE SF-54

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