

Chapter 03 - Superstructure

SECTION 02

TRAFFIC BARRIERS (PARAPETS) (SUP-TB)

Chapter 03 - Superstructure

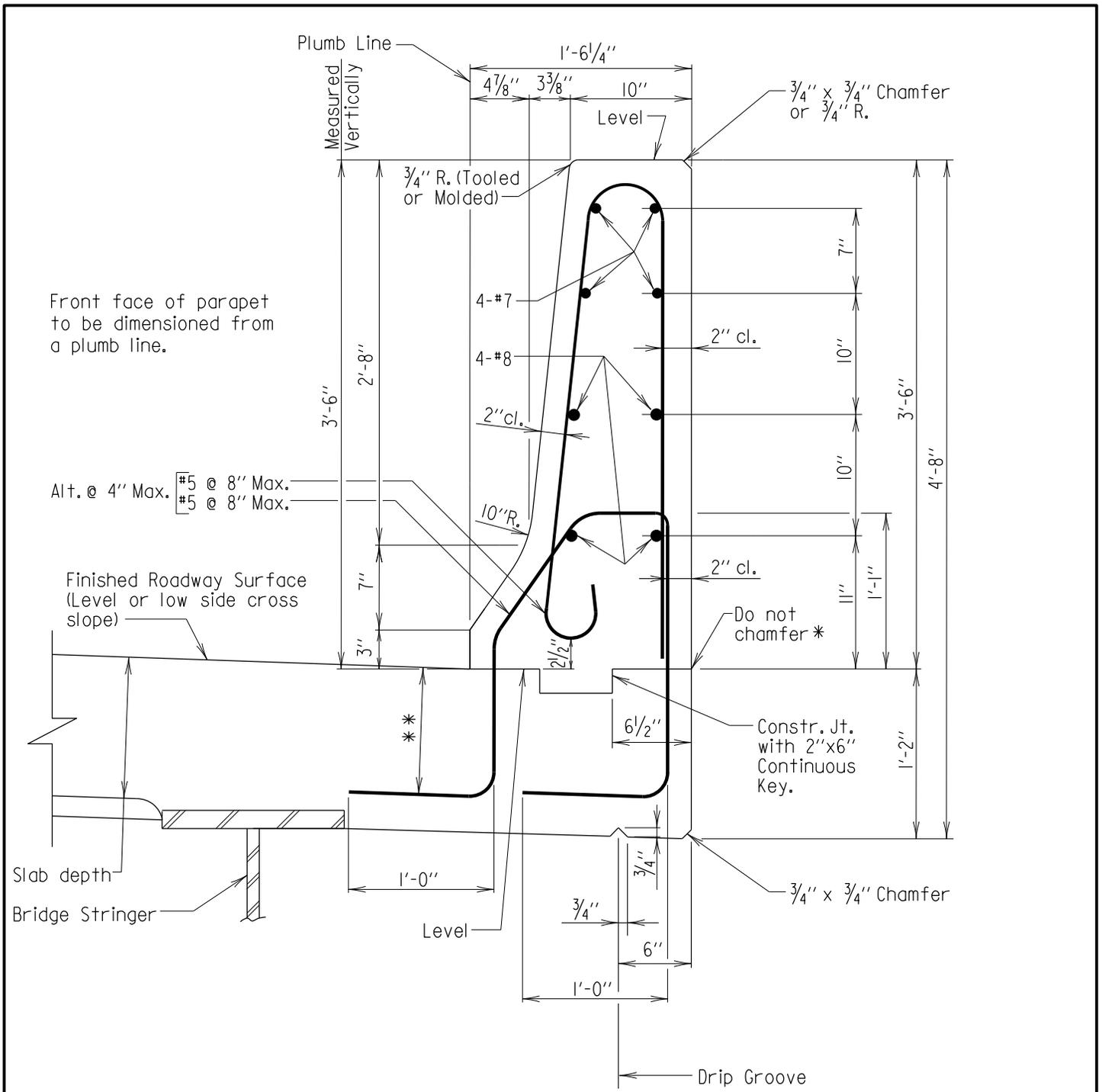
Section 02 – Traffic Barriers

SUB-SECTION 01

42" F-SHAPE PARAPET
(SUP-TB(42F))

and

42" SINGLE SLOPE
PARAPET
(SUP-TB(42SS))



SECTION

Scale: 1" = 1'-0"

* In order to ensure a smooth and acceptable surface, 420.03.11 (Construction joints) will be strictly adhered to.

** Slab depth minus 1".

Notes:

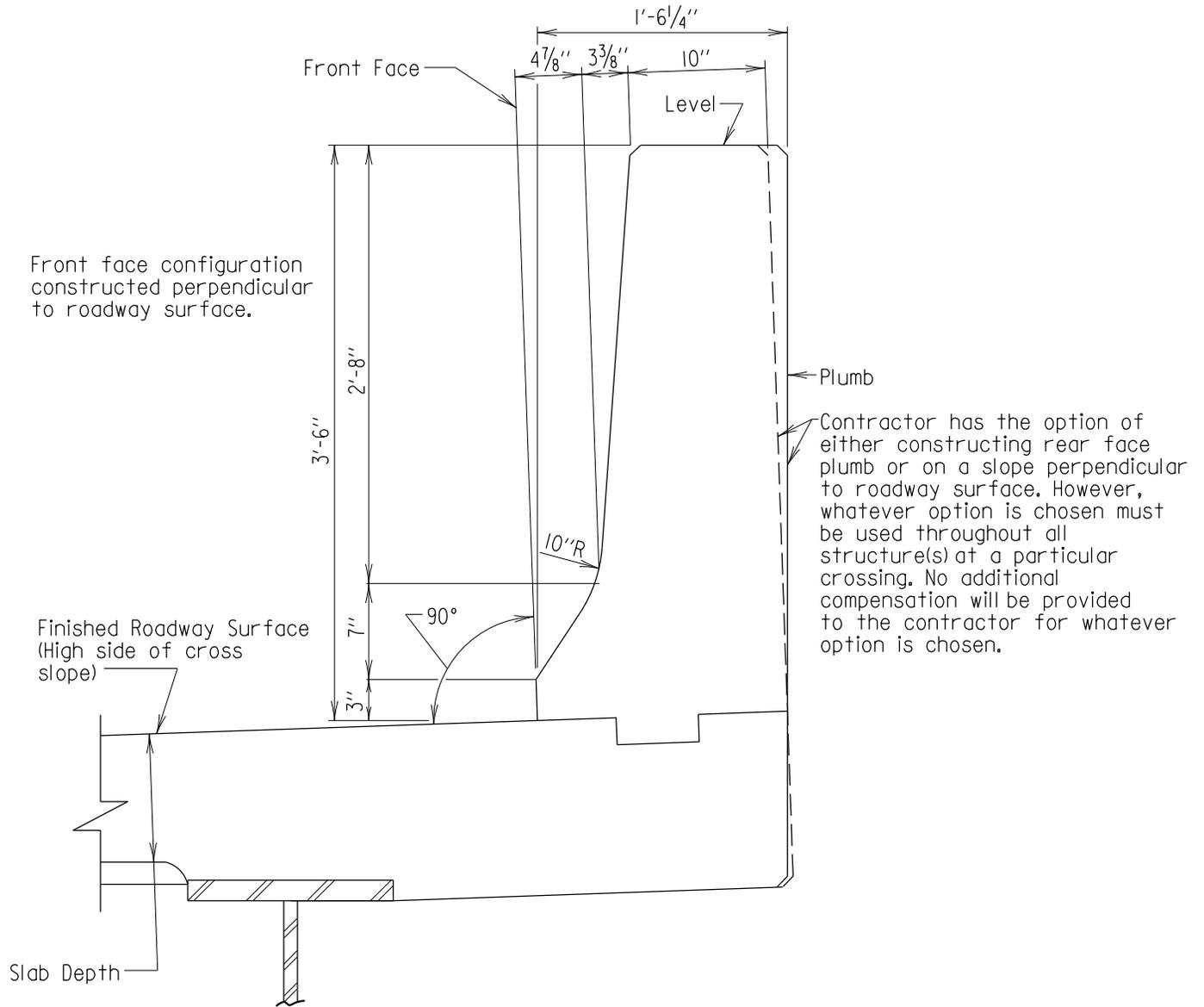
1. All #7 and #8 longitudinal bars shall be placed continuously in the parapet from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
2. Key is nominal size.
3. All reinforcing steel to be epoxy coated.
4. Concrete deck reinforcing steel not shown.

MASH COMPLIANT TL-5 BRIDGE RAILING

APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
LEVEL OR LOW SIDE OF CROSS SLOPE 42" F-SHAPE PARAPET WITH STRAIGHT BACK	
DETAIL NO. SUP-TB(42F)-101	SHEET 1 OF 2

SUPER - TRAFFIC BARRIERS



SECTION
Scale: 1" = 1'-0"

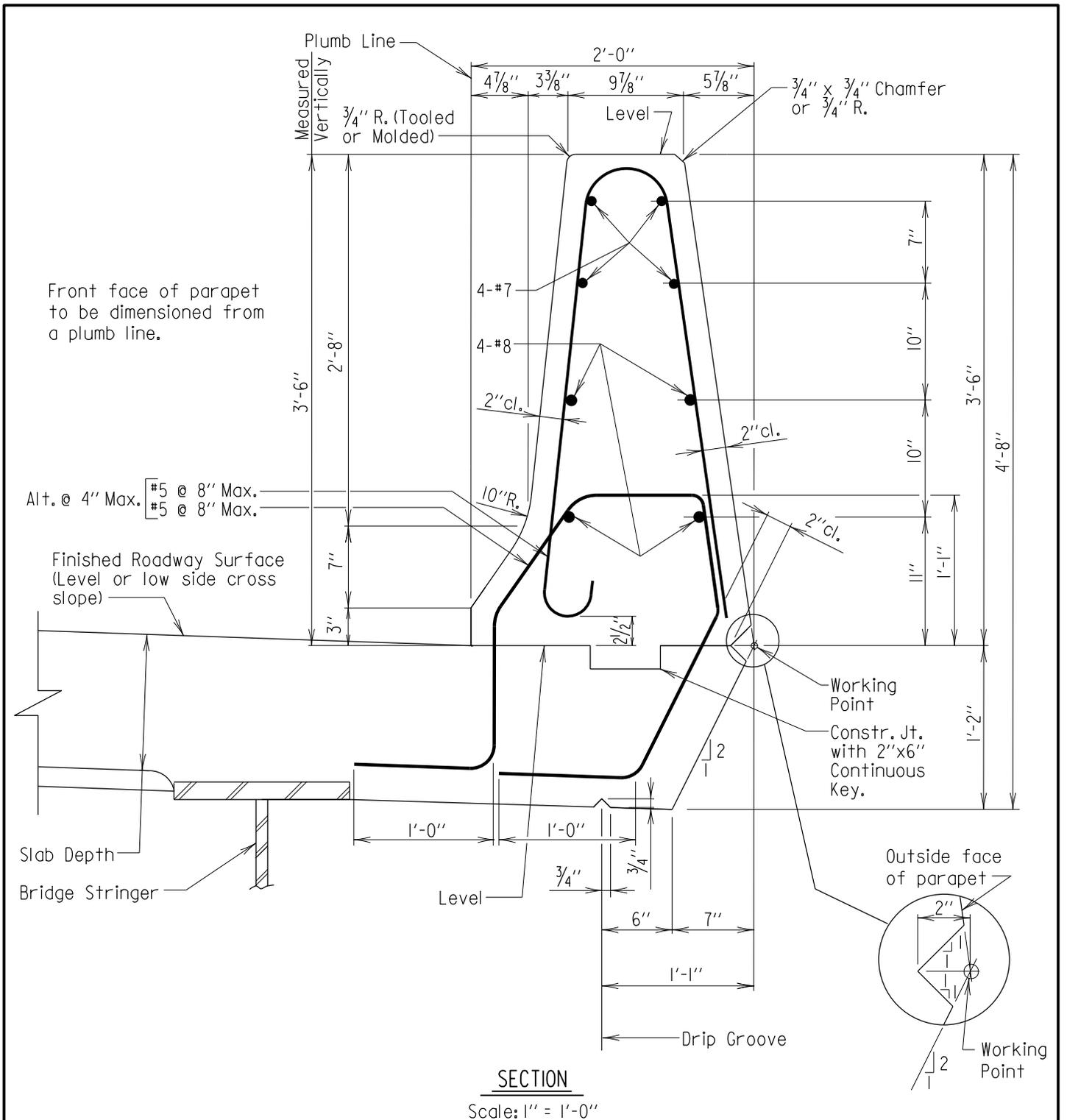
Note:
For all details not shown see sheet 1 of 2.

MASH COMPLIANT TL-5 BRIDGE RAILING

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
HIGH SIDE OF CROSS SLOPE 42" F-SHAPE PARAPET WITH STRAIGHT BACK
DETAIL NO. SUP-TB(42F)-101
SHEET 2 OF 2

SUPER - TRAFFIC BARRIER



- Notes:
- All #7 and #8 longitudinal bars shall be placed continuously in the parapet from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
 - Key is nominal size.
 - All reinforcing steel to be epoxy coated.
 - Concrete deck reinforcing steel not shown.

MASH COMPLIANT TL-5 BRIDGE RAILING

APPROVAL
<i>Ben C. ...</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
1.01

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

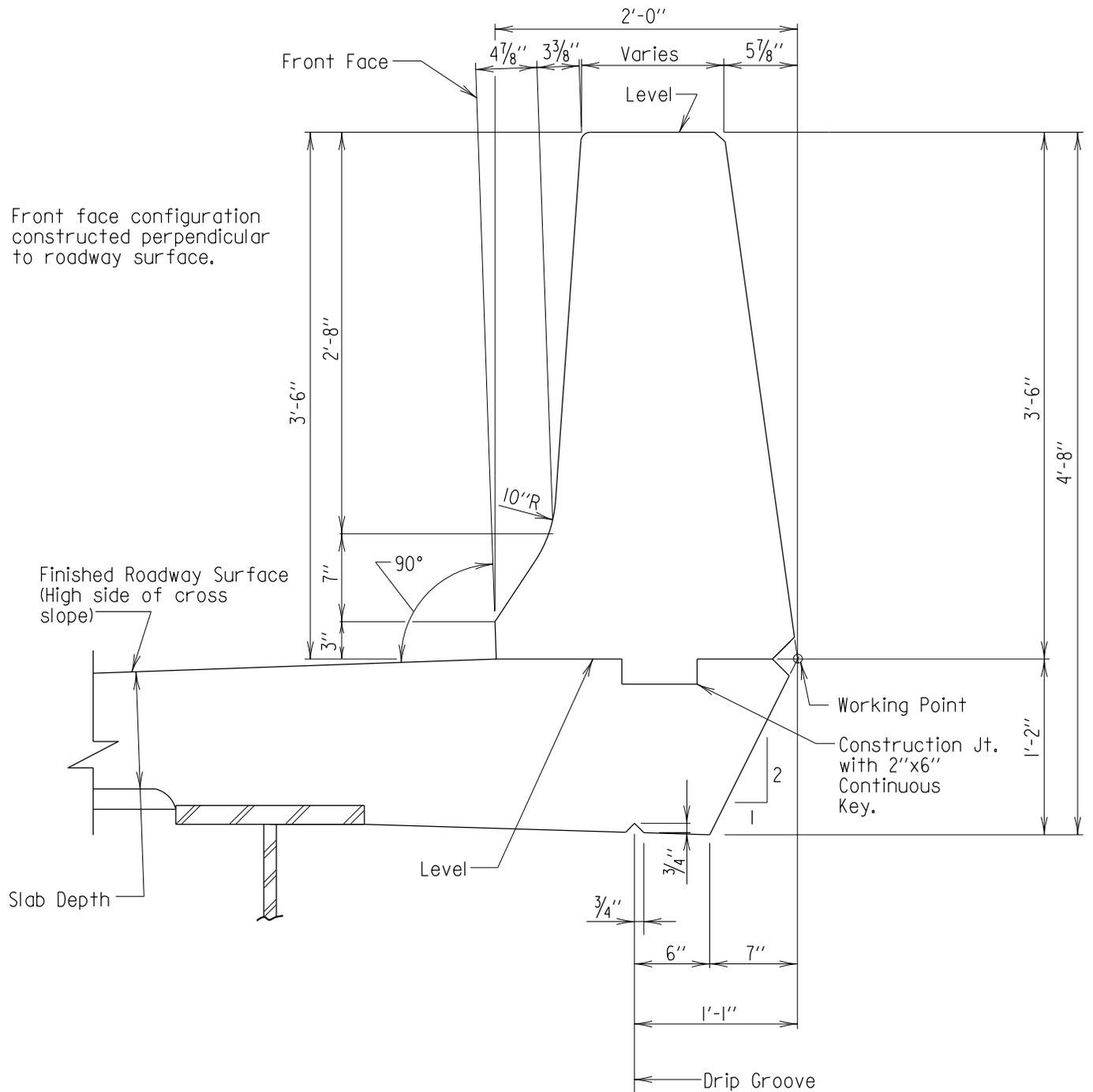
LEVEL OR LOW SIDE OF
CROSS SLOPE 42" F-SHAPE
PARAPET WITH DIAMOND BACK

DETAIL NO. SUP-TB(42F)-102

SHEET 1 OF 2

SUPER - TRAFFIC BARRIER

Front face configuration constructed perpendicular to roadway surface.



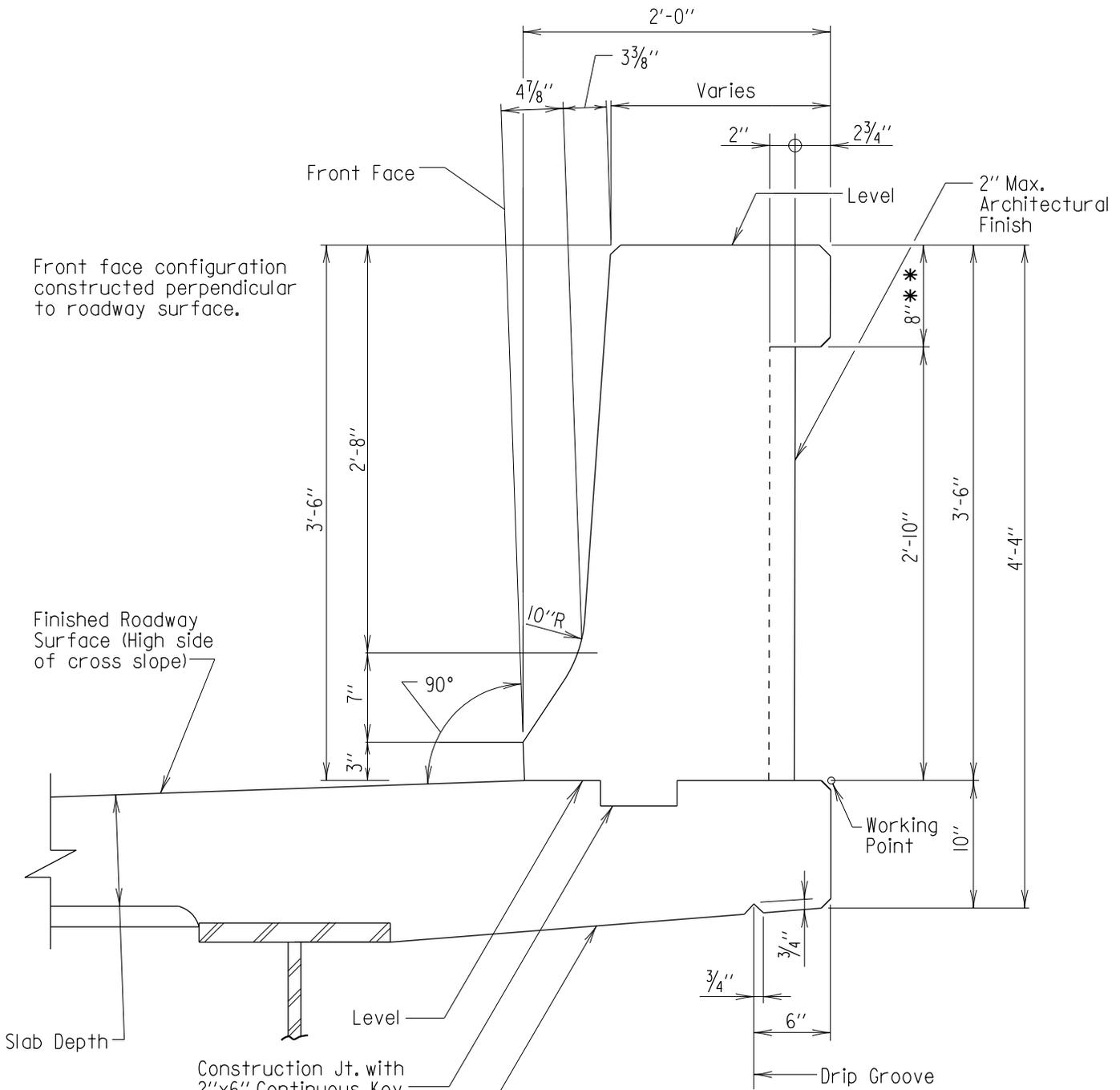
SECTION
Scale: 1" = 1'-0"

Note:
For all details not shown see sheet 1 of 2.

APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
HIGH SIDE OF CROSS SLOPE 42" F-SHAPED PARAPET WITH DIAMOND BACK	
DETAIL NO. SUP-TB(42F)-102	SHEET 2 OF 2

SUPER - TRAFFIC BARRIER



Front face configuration constructed perpendicular to roadway surface.

Finished Roadway Surface (High side of cross slope)

Slab Depth

Construction Jt. with 2"x6" Continuous Key

Slope to meet flange as shown.

SECTION
Scale: 1" = 1'-0"

* * This dimension can vary (1/2" + max.) according to the form liner chosen. The Contractor must contact SHA Project Engineer to verify form liner and this dimension.

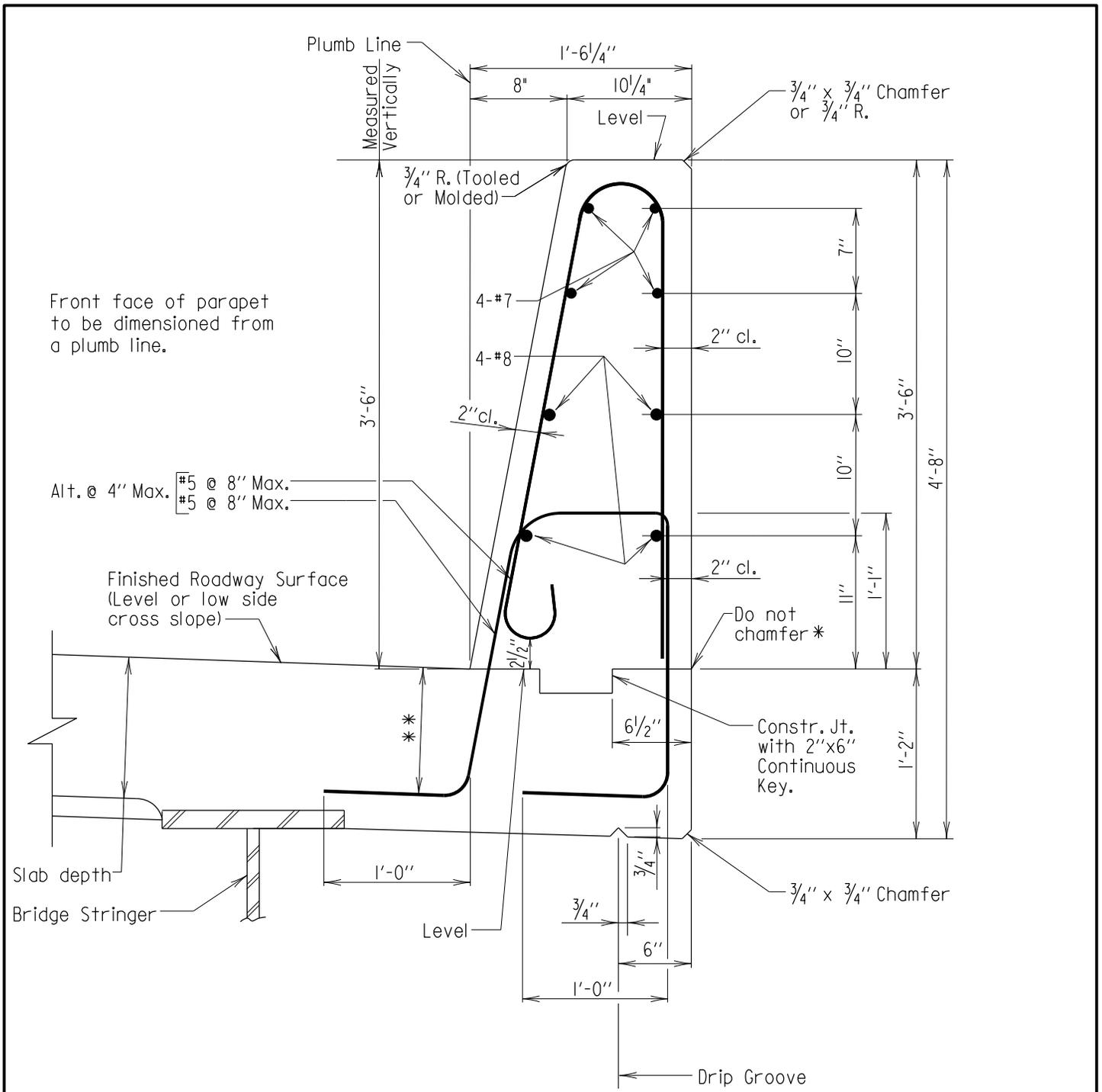
Note:
For all details not shown see sheet 1 of 2.

MASH COMPLIANT TL-5 BRIDGE RAILING

APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
HIGH SIDE OF CROSS SLOPE 42" F-SHAPE PARAPET WITH ARCHITECTURAL FINISH
DETAIL NO. SUP-TB(42F)-103
SHEET 2 OF 2

SUPER - TRAFFIC BARRIER



Front face of parapet to be dimensioned from a plumb line.

Alt. @ 4" Max. #5 @ 8" Max. #5 @ 8" Max.

Finished Roadway Surface (Level or low side cross slope)

Slab depth
Bridge Stringer

SECTION

Scale: 1" = 1'-0"

* In order to ensure a smooth and acceptable surface, 420.03.11 (Construction joints) will be strictly adhered to.

** Slab depth minus 1'.

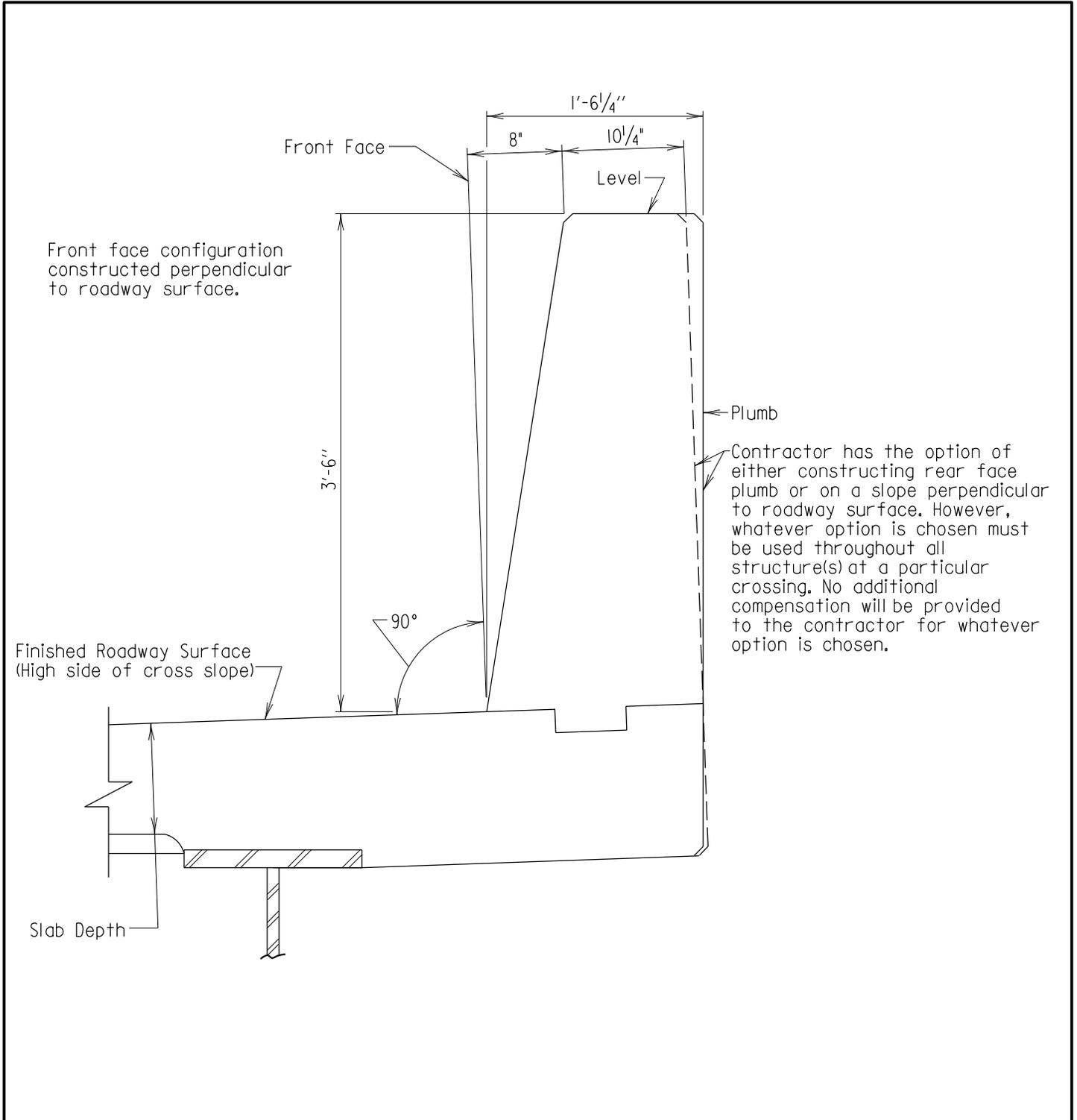
Notes:

1. All #7 and #8 longitudinal bars shall be placed continuously in the parapet from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
2. Key is nominal size.
3. All reinforcing steel to be epoxy coated.
4. Concrete deck reinforcing steel not shown.

MASH COMPLIANT TL-5 BRIDGE RAILING

<p>APPROVAL</p> <p><i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES</p> <p>DATE: 08/16/2019</p> <hr/> <p>VERSION</p> <p>1.01</p>	<p>STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES</p> <p>LEVEL OR LOW SIDE OF CROSS SLOPE 42" SINGLE SLOPE PARAPET WITH STRAIGHT BACK</p> <p>DETAIL NO. SUP-TB(42SS)-101</p>
<p>SHEET <u>1</u> OF <u>2</u></p>	

SUPER - TRAFFIC BARRIERS



Front face configuration constructed perpendicular to roadway surface.

Contractor has the option of either constructing rear face plumb or on a slope perpendicular to roadway surface. However, whatever option is chosen must be used throughout all structure(s) at a particular crossing. No additional compensation will be provided to the contractor for whatever option is chosen.

SECTION

Scale: 1" = 1'-0"

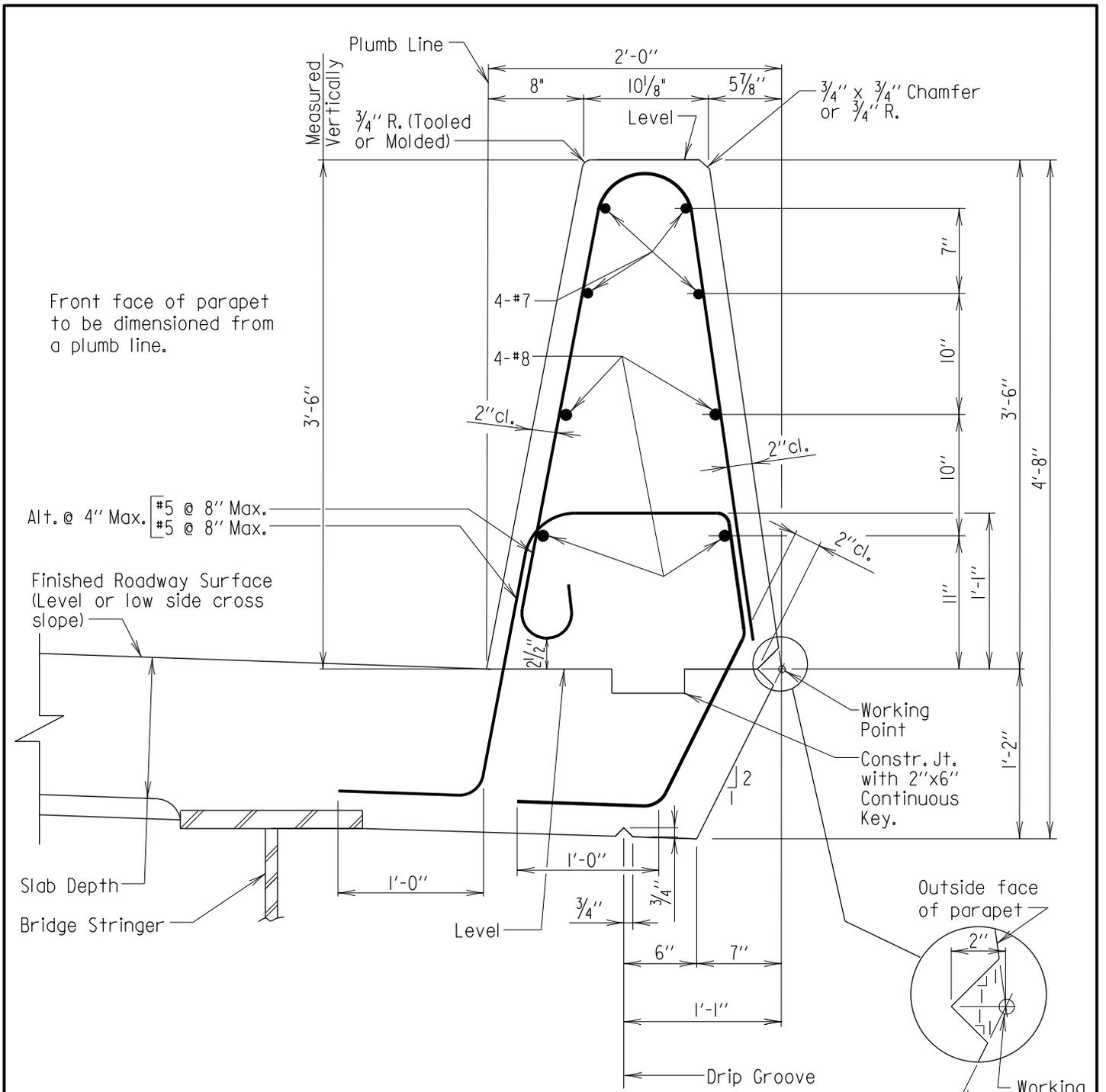
MASH COMPLIANT TL-5 BRIDGE RAILING

Note:
For all details not shown see sheet 1 of 2.

APPROVAL
<i>Ben C. Dwyer</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
HIGH SIDE OF CROSS SLOPE 42" SINGLE SLOPE PARAPET WITH STRAIGHT BACK	
DETAIL NO. SUP-TB(42SS)-101	SHEET 2 OF 2

SUPER - TRAFFIC BARRIER



SECTION

Scale: 1" = 1'-0"

Notes:

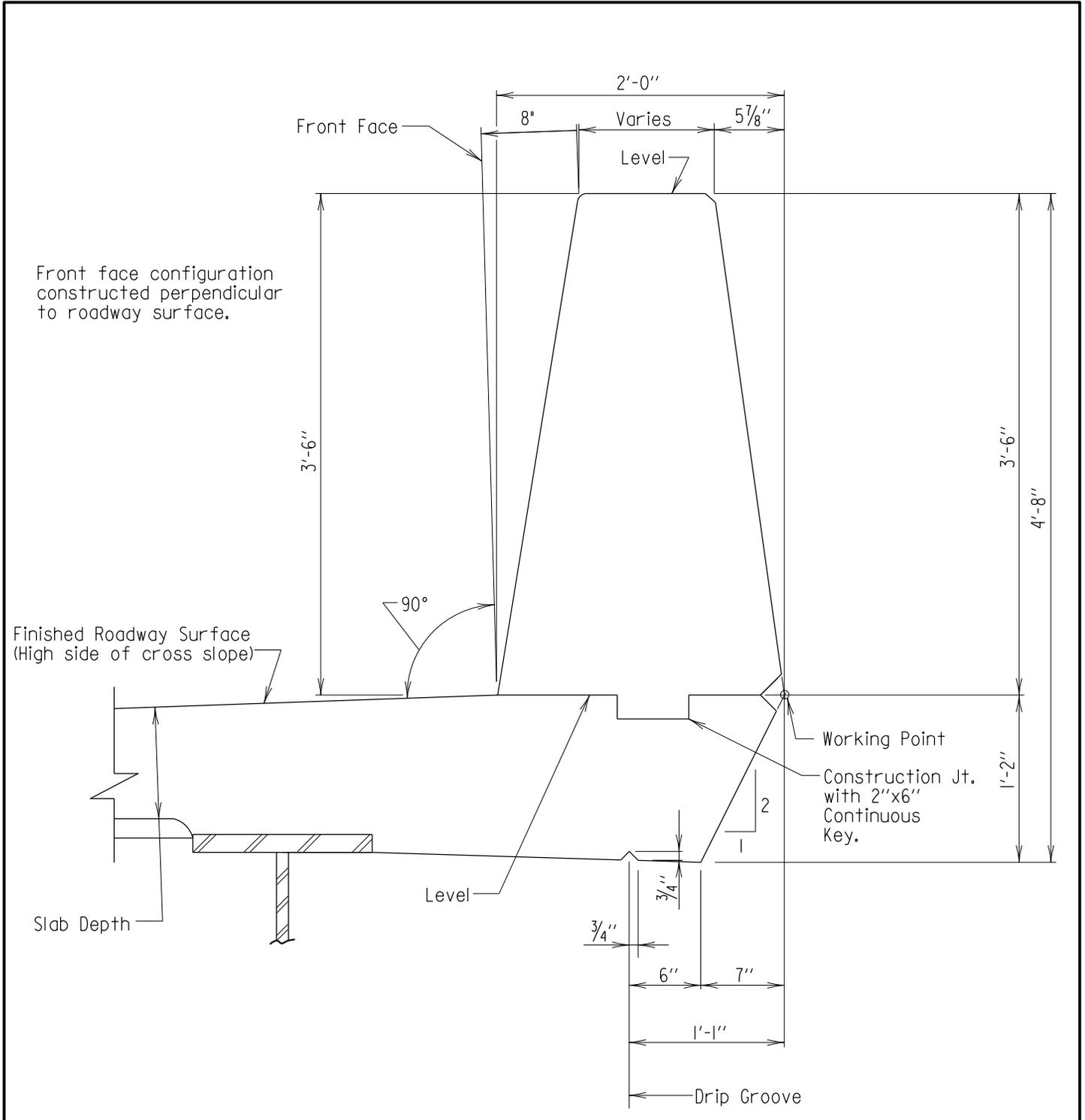
1. All #7 and #8 longitudinal bars shall be placed continuously in the parapet from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
2. Key is nominal size.
3. All reinforcing steel to be epoxy coated.
4. Concrete deck reinforcing steel not shown.

MASH COMPLIANT TL-5 BRIDGE RAILING

APPROVAL
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DATE: 08/16/2019
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1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
LEVEL OR LOW SIDE OF CROSS SLOPE 42" SINGLE SLOPE PARAPET WITH DIAMOND BACK	
DETAIL NO. SUP-TB(42SS)-102	SHEET 1 OF 2

SUPER - TRAFFIC BARRIER



Front face configuration constructed perpendicular to roadway surface.

SECTION

Scale: 1" = 1'-0"

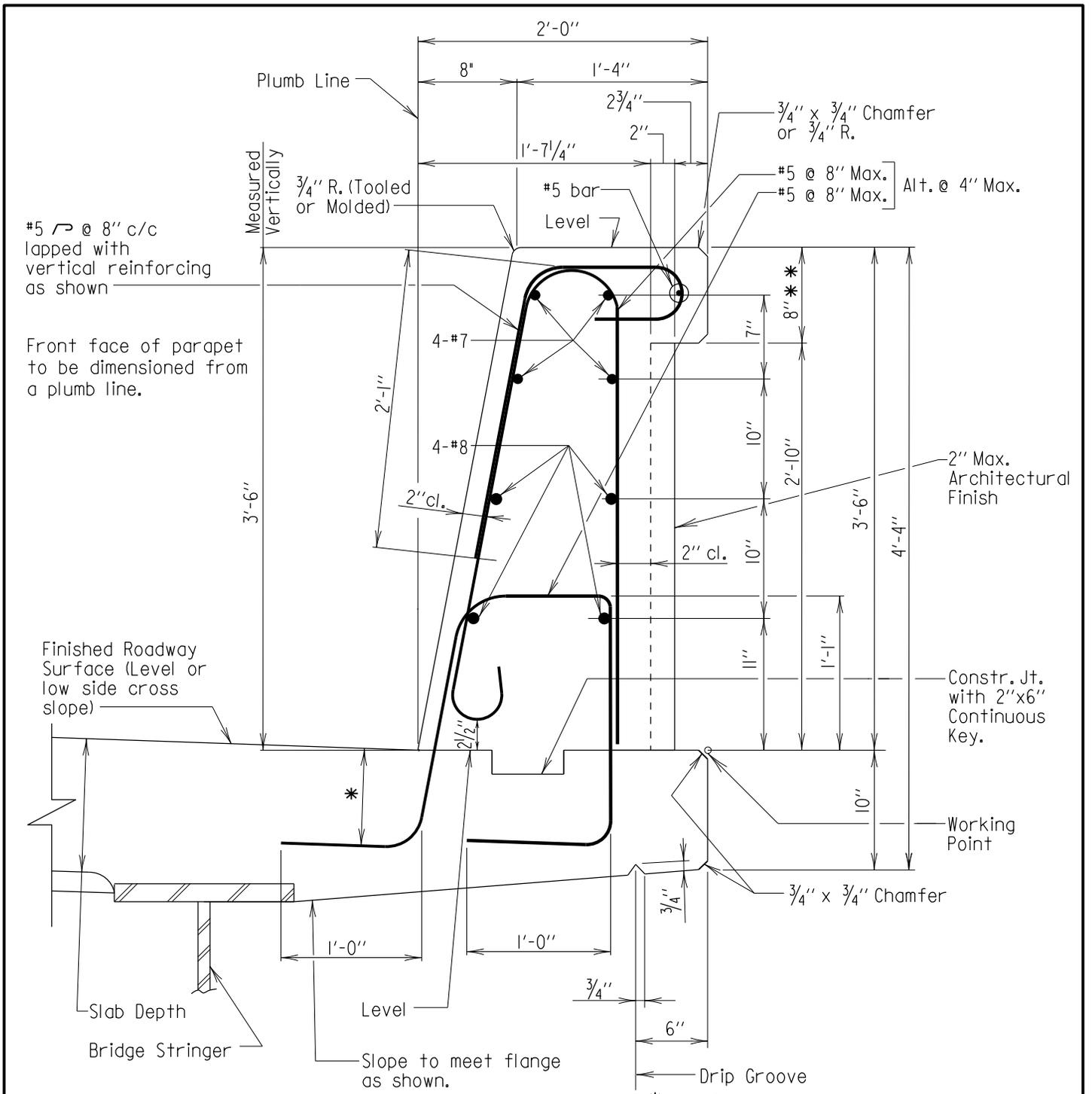
MASH COMPLIANT TL-5 BRIDGE RAILING

Note:
For all details not shown see sheet 1 of 2.

APPROVAL
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DATE: 08/16/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
HIGH SIDE OF CROSS SLOPE 42" SINGLE SLOPE PARAPET WITH DIAMOND BACK	
DETAIL NO. SUP-TB(42SS)-102	SHEET 2 OF 2

SUPER - TRAFFIC BARRIER



SECTION
Scale: 1" = 1'-0"

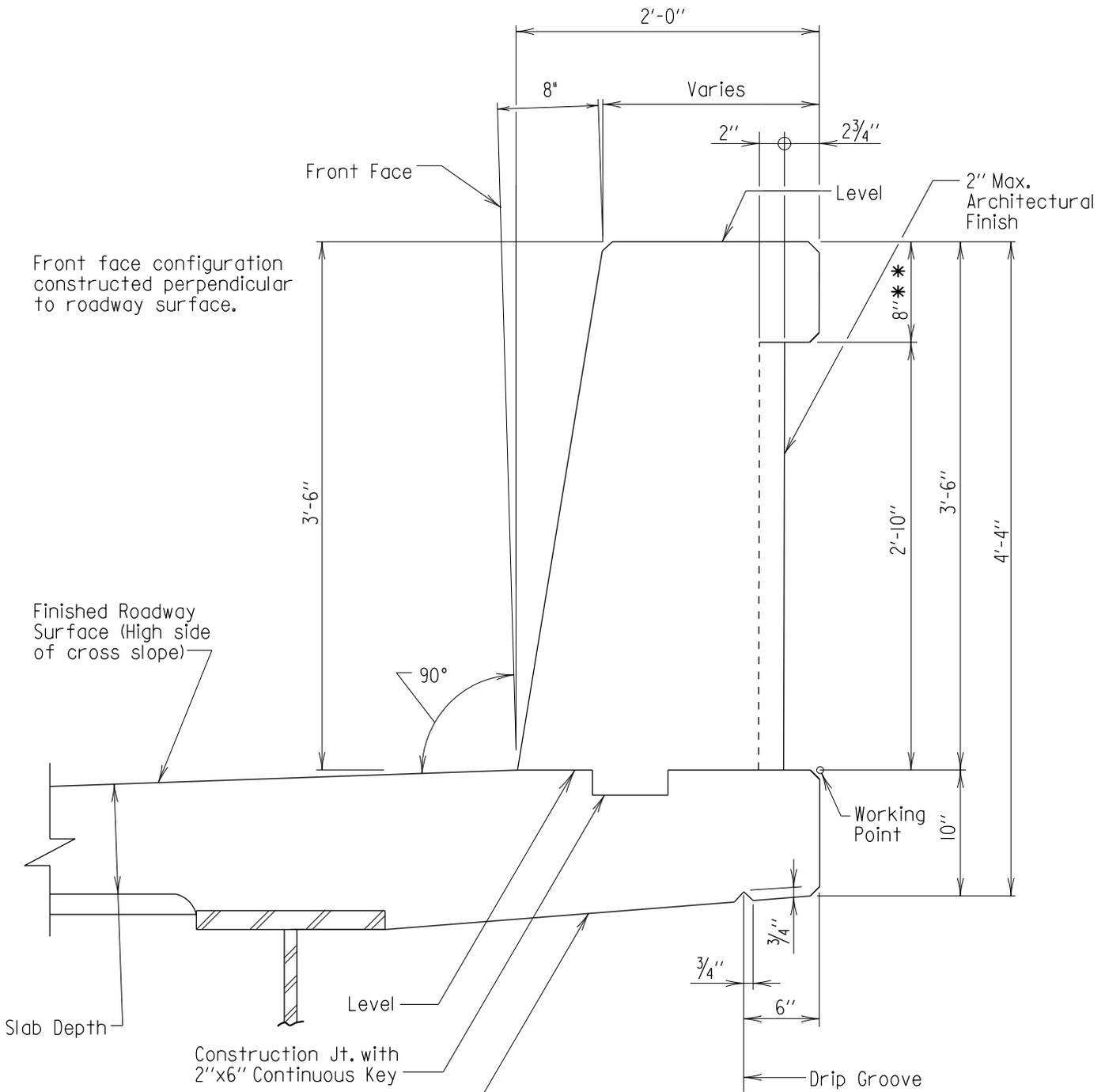
* Slab Depth - 1"
 ** This dimension can vary (1/2" ± max.) according to the form liner chosen. The Contractor must contact SHA Project Engineer to verify form liner and this dimension.

- Notes:
1. All #5, #7 and #8 longitudinal bars shall be placed continuously in the parapet from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
 2. Key is nominal size.
 3. All reinforcing steel to be epoxy coated.
 4. Concrete deck reinforcing steel not shown.

MASH COMPLIANT TL-5 BRIDGE RAILING

APPROVAL DIRECTOR OFFICE OF STRUCTURES DATE: 08/16/2019	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
VERSION 1.01	LEVEL OR LOW SIDE OF CROSS SLOPE 42" SINGLE SLOPE PARAPET WITH ARCHITECTURAL FINISH
DETAIL NO. SUP-TB(42SS)-103	
SHEET <u>1</u> OF <u>2</u>	

SUPER - TRAFFIC BARRIER



Front face configuration constructed perpendicular to roadway surface.

Finished Roadway Surface (High side of cross slope)

Slab Depth

Construction Jt. with 2''x6'' Continuous Key

Slope to meet flange as shown.

SECTION
Scale: 1" = 1'-0"

** This dimension can vary (1/2" ± max.) according to the form liner chosen. The Contractor must contact SHA Project Engineer to verify form liner and this dimension.

MASH COMPLIANT TL-5 BRIDGE RAILING

Note:
For all details not shown see sheet 1 of 2.

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DATE: 08/16/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
HIGH SIDE OF CROSS SLOPE 42" SINGLE SLOPE PARAPET WITH ARCHITECTURAL FINISH	
DETAIL NO. SUP-TB(42SS)-103	SHEET 2 OF 2

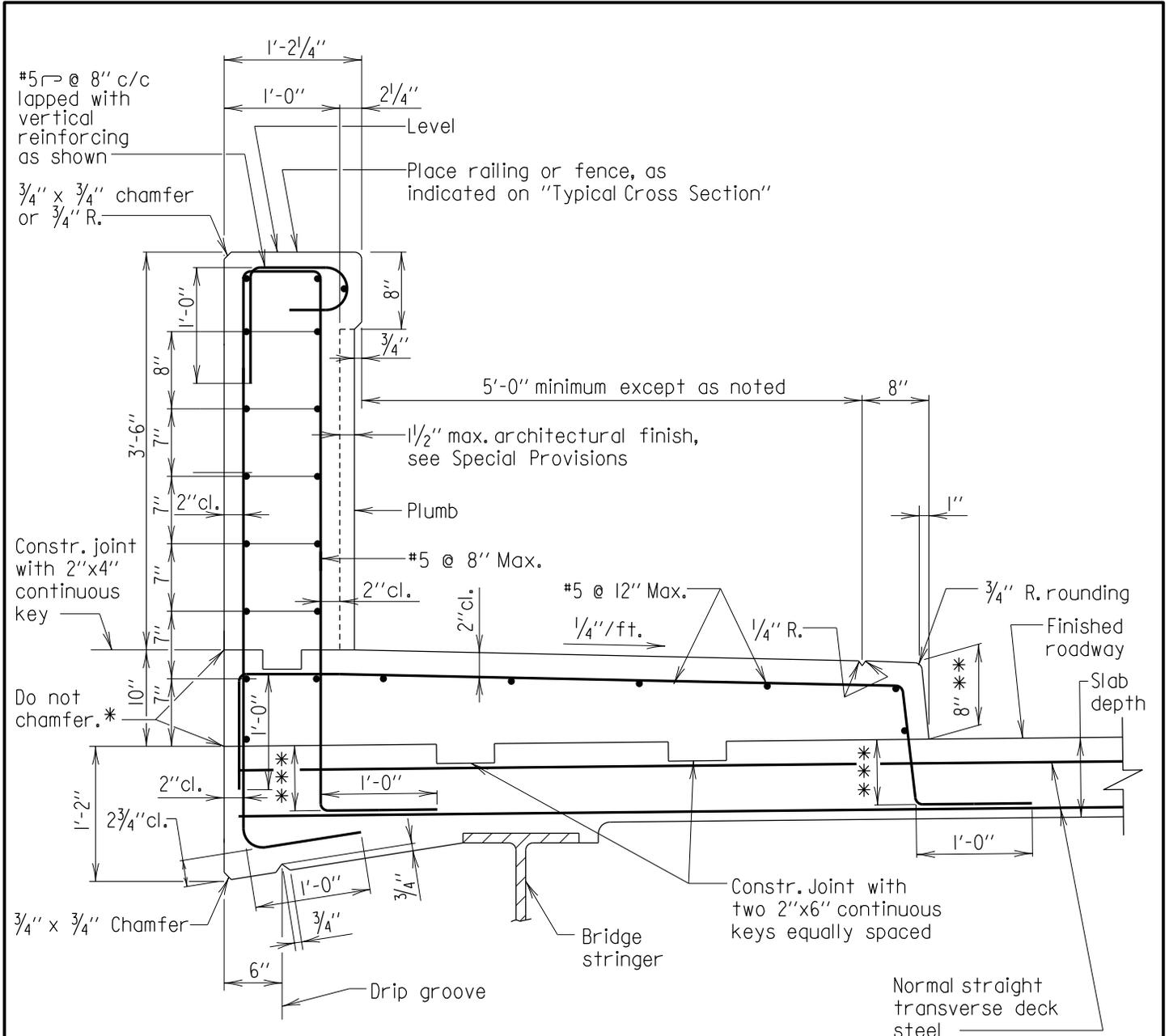
SUPER - TRAFFIC BARRIER

Chapter 03 - Superstructure

Section 02 – Traffic Barriers

SUB-SECTION 02

**PARAPET WITH
SIDEWALK
(SUP-TB(SW))**



SECTION
Scale: 3/4"=1'-0"

- * In order to ensure a smooth and acceptable surface, 420.03.11 (Constr. joints) shall be strictly adhered to.
- ** Unless otherwise indicated on "Typical Cross Section".
- *** Slab Depth - 1"

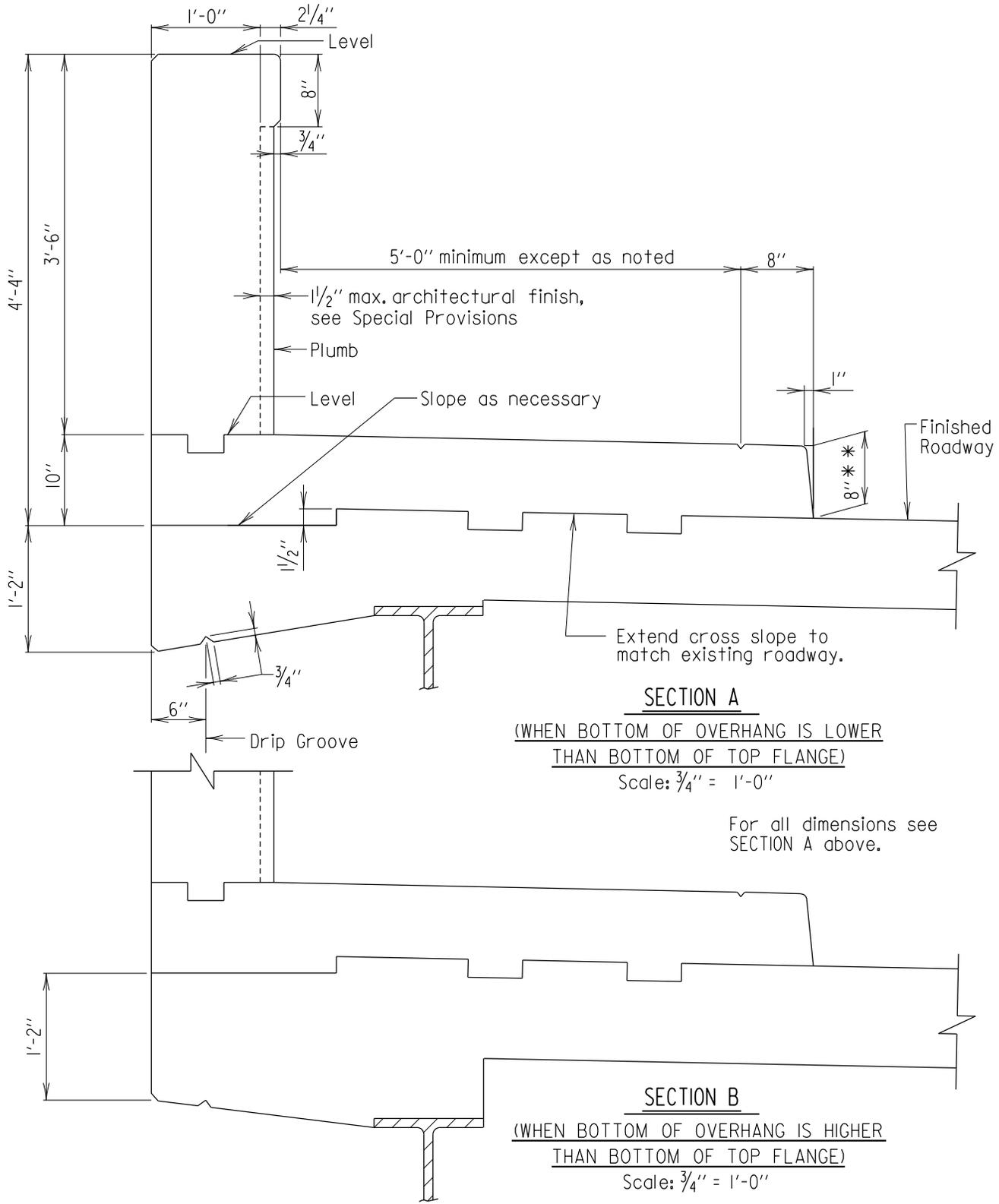
Notes:

1. All longitudinal bars are #5 spaced as shown and shall be placed continuously in the parapet from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
2. All keys are nominal size.
3. Portions of normal longitudinal deck steel and truss bars are not shown.
4. All reinforcing steel to be epoxy coated.
5. This barrier is to be used only for posted speeds of 45 mph or less.

MASH COMPLIANT TL-2 COMBINATION RAILING

APPROVAL DIRECTOR OFFICE OF STRUCTURES DATE: 08/16/2019	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
VERSION 2.00	LEVEL OR LOW SIDE OF CROSS SLOPE SIDEWALK AND PARAPET WITH STRAIGHT BACK
DETAIL NO. SUP-TB(SW)-101 SHEET <u>1</u> OF <u>2</u>	

SUPER - TRAFFIC BARRIER



SECTION A
 (WHEN BOTTOM OF OVERHANG IS LOWER
 THAN BOTTOM OF TOP FLANGE)
 Scale: 3/4" = 1'-0"

For all dimensions see SECTION A above.

SECTION B
 (WHEN BOTTOM OF OVERHANG IS HIGHER
 THAN BOTTOM OF TOP FLANGE)
 Scale: 3/4" = 1'-0"

** Unless otherwise indicated on "Typical Cross Section".

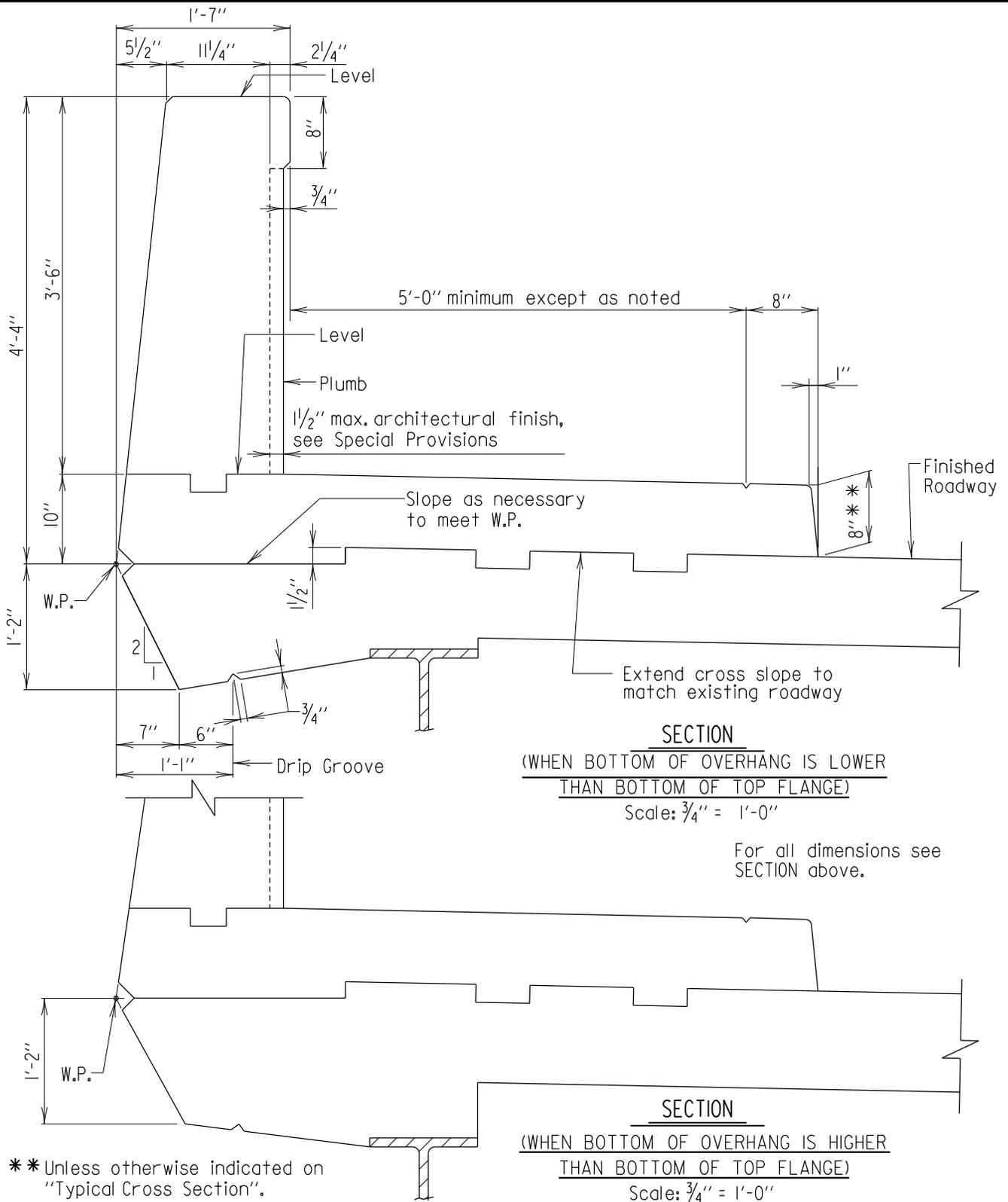
- Note:
1. For all details not shown see sheet 1 of 2.
 2. This barrier is to be used only for posted speeds of 45 mph or less.

MASH COMPLIANT TL-2 COMBINATION RAILING

APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
2.00

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
HIGH SIDE OF CROSS SLOPE SIDEWALK AND PARAPET WITH STRAIGHT BACK	
DETAIL NO. SUP-TB(SW)-101	SHEET 2 OF 2

SUPER - TRAFFIC BARRIER



** Unless otherwise indicated on "Typical Cross Section".

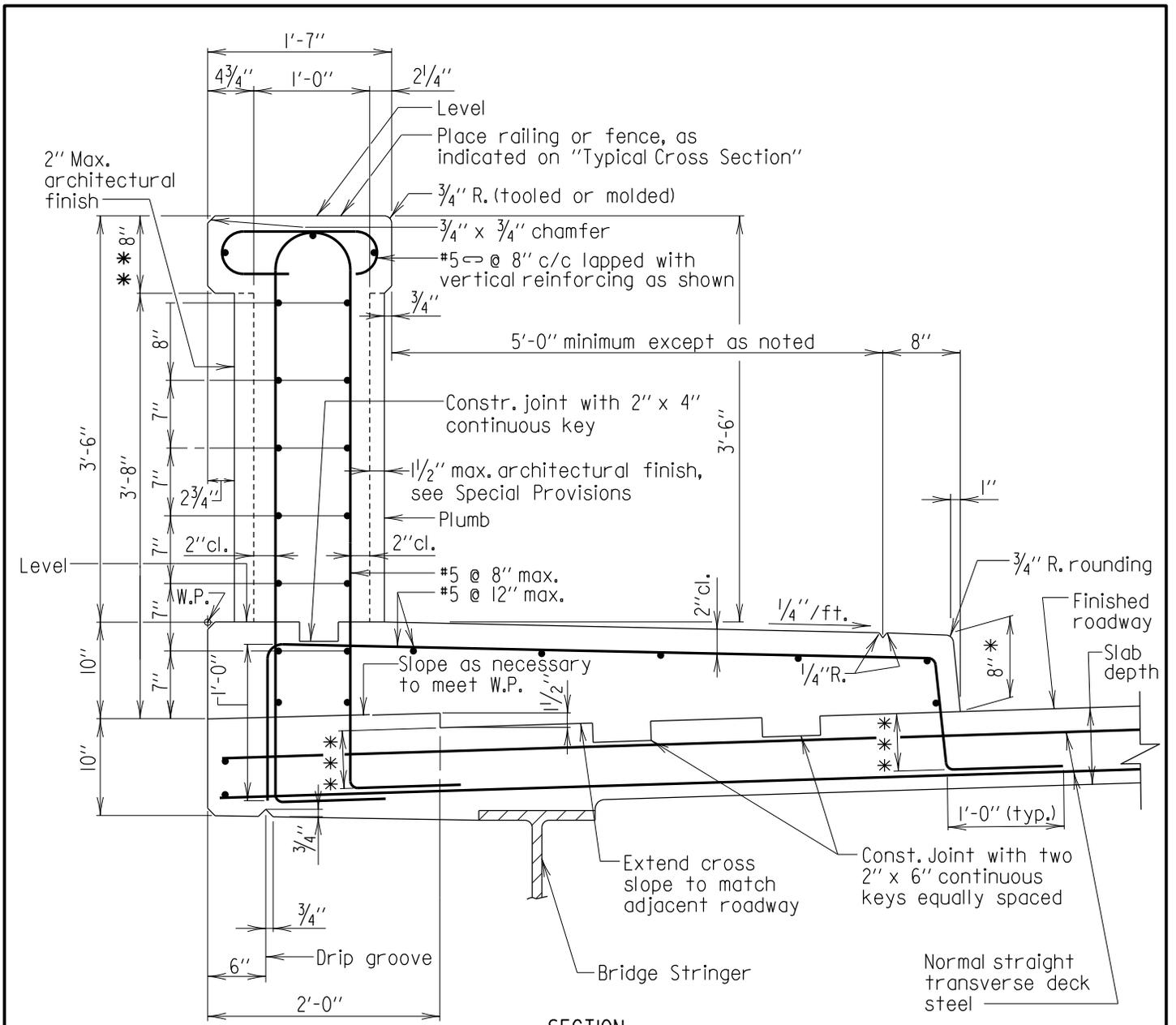
- Note:
1. For all details not shown see sheet 1 of 2.
 2. This barrier is to be used only for posted speeds of 45 mph or less.

MASH COMPLIANT TL-2 COMBINATION RAILING

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
2.00

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
HIGH SIDE OF CROSS SLOPE SIDEWALK AND PARAPET WITH DIAMOND BACK
DETAIL NO. SUP-TB(SW)-102
SHEET 2 OF 2

SUPER - TRAFFIC BARRIER



SECTION

Scale: 3/4" = 1'-0"

- * Unless otherwise indicated on "Typical Cross Section".
- ** This dimension can vary (1/2" + max.) according to the form liner chosen. The Contractor must contact SHA Project Engineer to verify form liner and this dimension.
- *** Slab Depth - 1"

Notes:

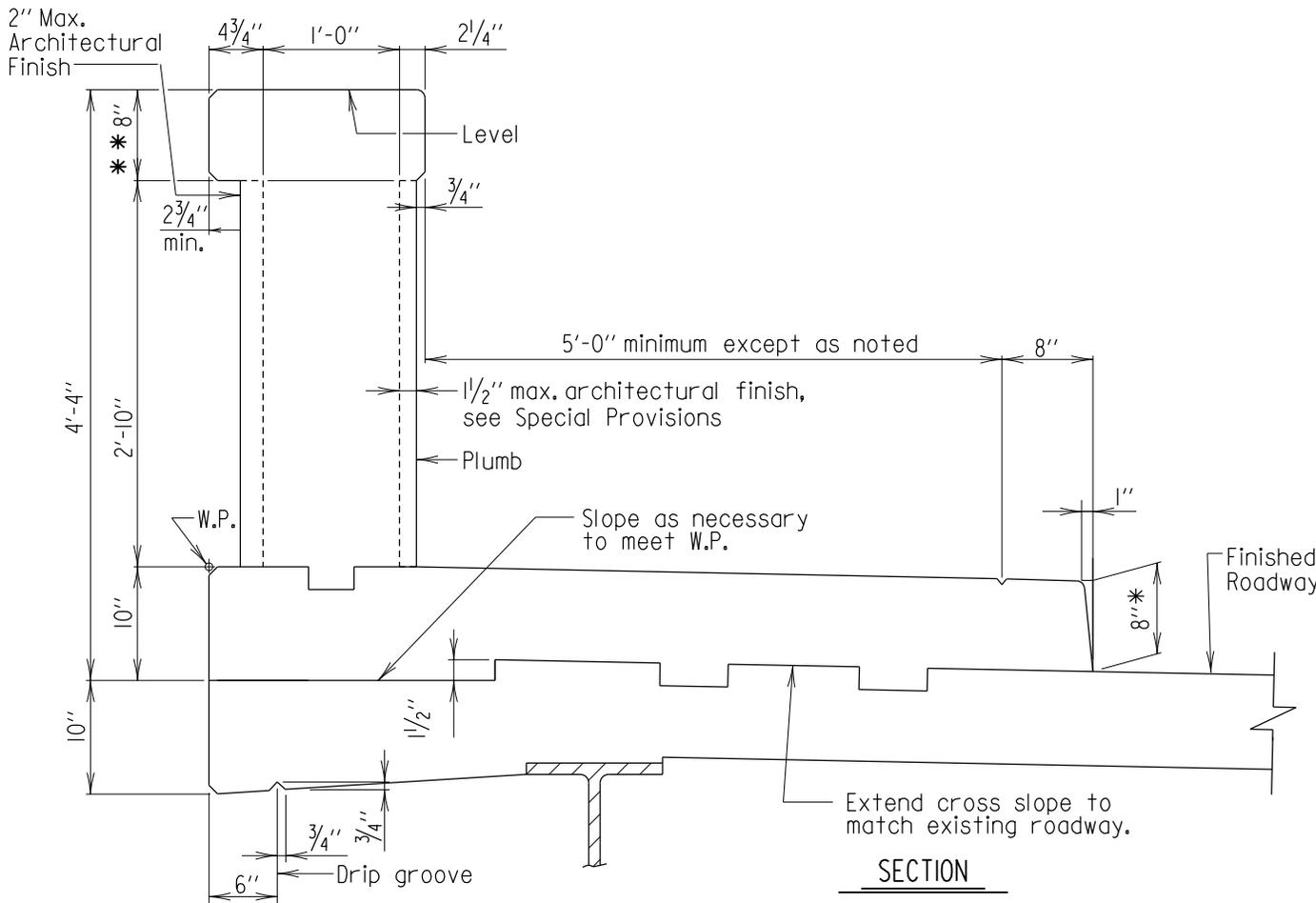
1. All longitudinal bars are #5 spaced as shown and shall be placed continuously in the parapet from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
2. All keys are nominal size.
3. Portions of normal longitudinal deck steel and truss bars are not shown.
4. W.P. = Working Point.
5. All reinforcing steel to be epoxy coated.
6. This barrier is to be used only for posted speeds of 45 mph or less.

**MASH COMPLIANT TL-2
COMBINATION RAILING**

APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
2.00

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
LEVEL OR LOW SIDE OF CROSS SLOPE SIDEWALK AND PARAPET WITH ARCHITECTURAL FINISH	
DETAIL NO. SUP-TB(SW)-103	SHEET 1 OF 2

SUPER - TRAFFIC BARRIER

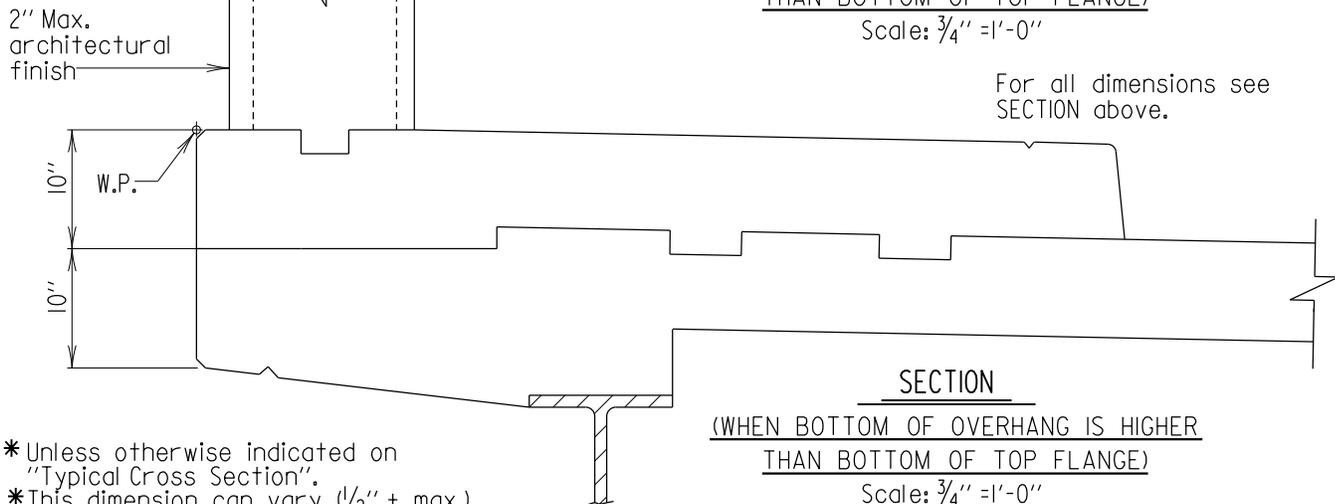


SECTION

(WHEN BOTTOM OF OVERHANG IS LOWER THAN BOTTOM OF TOP FLANGE)

Scale: 3/4" = 1'-0"

For all dimensions see SECTION above.



- * Unless otherwise indicated on "Typical Cross Section".
- * This dimension can vary (1/2" ± max.) according to the form liner chosen. The Contractor must contact SHA Project Engineer to verify form liner and this dimension.

Note:

1. For all details not shown see sheet 1 of 2.
2. This barrier is to be used only for posted speeds of 45 mph or less.

MASH COMPLIANT TL-2 COMBINATION RAILING

APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
2.00

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
HIGH SIDE OF CROSS SLOPE SIDEWALK AND PARAPET WITH ARCHITECTURAL FINISH
DETAIL NO. SUP-TB(SW)-103
SHEET 2 OF 2

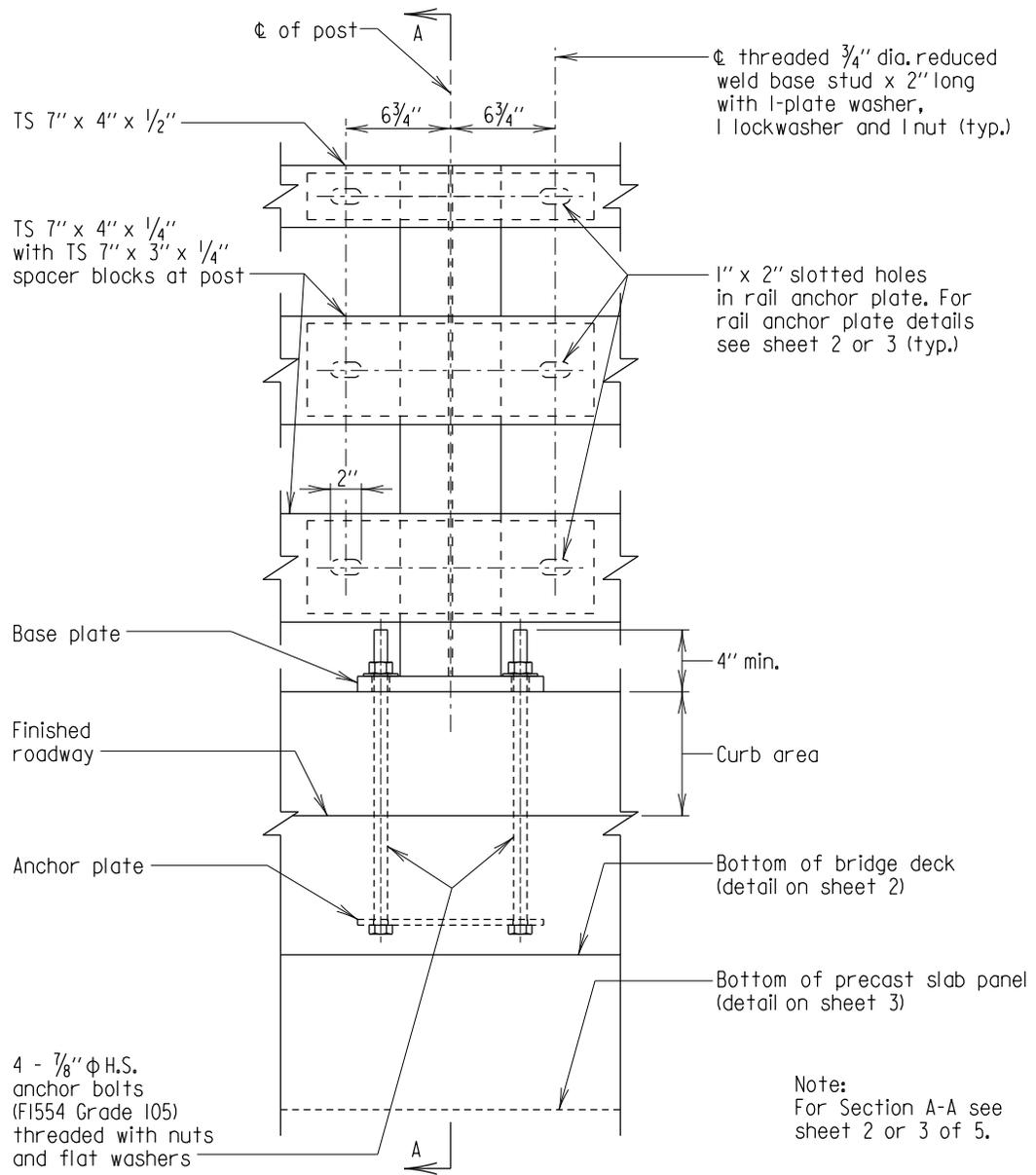
SUPER - TRAFFIC BARRIER

Chapter 03 - Superstructure

Section 02 – Traffic Barriers

SUB-SECTION 03

TUBE RAIL PARAPET (SUP-TB(TR))



ELEVATION

Scale: 1" = 1'-0"

GENERAL NOTES:

1. All railings shall be fabricated and erected as indicated on the Plans.
2. Rails shall be parallel to the grade of the roadway. Rail sections shall be attached to as many posts as possible, but not less than two.
3. The center line of any splice and/or expansion joint shall be located at least 2'-0" away from center line of a post except where indicated otherwise on Plans. Expansion and/or splice joints for each strand of three strand railing shall be placed in the same location and in the same panel.
4. Rail elements shall be structural tubing in accordance with ASTM A500 Grade B, A618 or A501.
5. Steel posts and plates shall conform to ASTM A36 unless otherwise noted.
6. Posts shall be set perpendicular to top of curb. For post spacing see Plans (Maximum 10'-0" Spacing).
7. All structural steel including fasteners shall be hot-dip galvanized as per ASTM A-123 after fabrication, except as noted. All anchor plates shall be attached before galvanizing.
8. In setting anchor bolts be sure enough threads are exposed so that nuts can be completely attached (4" min.).

Note:
For Section A-A see
sheet 2 or 3 of 5.

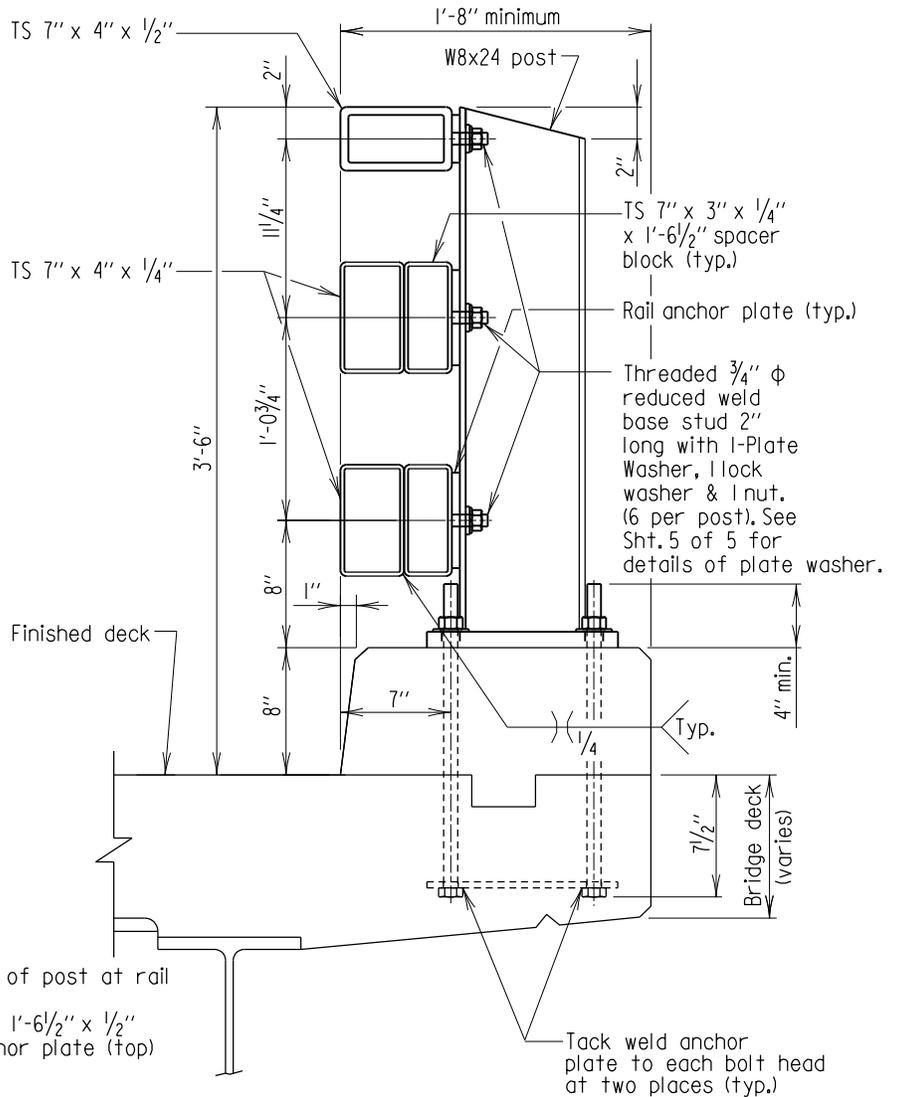
Note:
For anchor bolt length and curb reinforcing
details see Detail No. SUP-TB(TR)-201
for bridge decks or SUP-TB(TR)-301 for
precast slab panels.

MASH COMPLIANT TL-4 BRIDGE RAILING

APPROVAL
<i>Ben C. ...</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/11/2019
VERSION
1.02

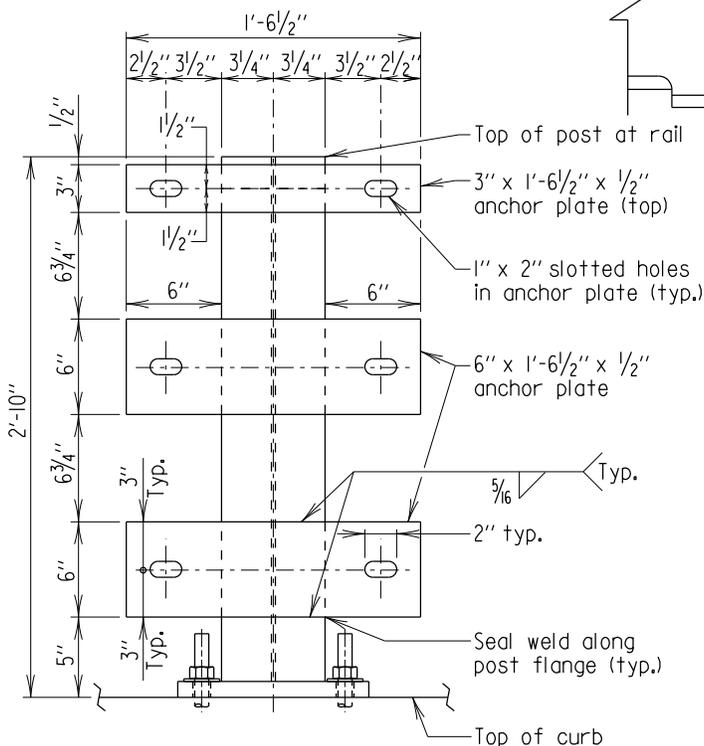
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
THREE STRAND STRUCTURAL TUBE RAIL CURB MOUNTED - ELEVATION
DETAIL NO. SUP-TB(TR)-101
SHEET <u>1</u> OF <u>5</u>

SUPER - TRAFFIC BARRIER



SECTION A-A (BRIDGE DECK)

Scale: 1" = 1'-0"



ELEVATION - RAIL ANCHOR PLATE DETAIL

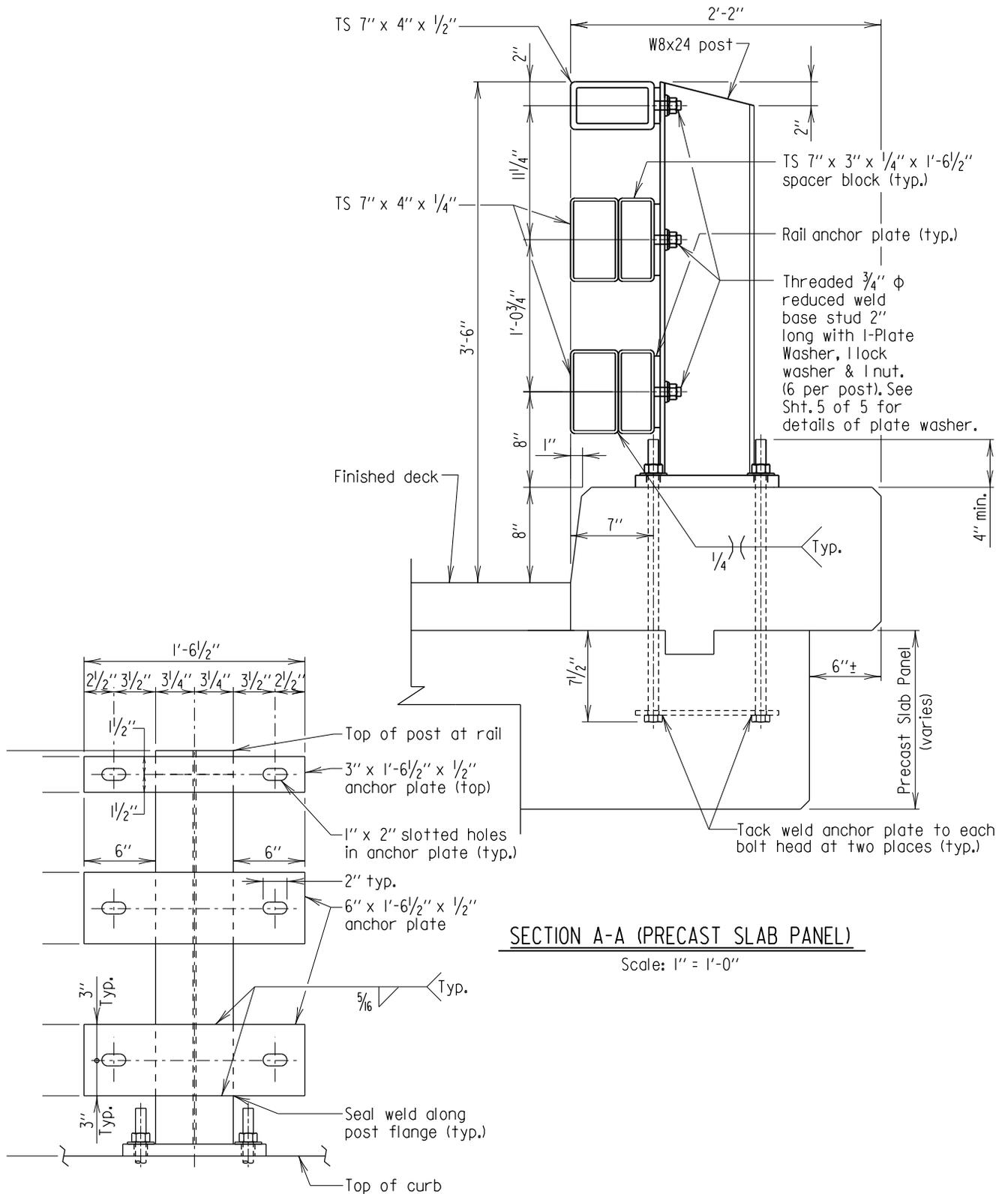
Scale: 1" = 1'-0"

MASH COMPLIANT TL-4 BRIDGE RAILING

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/11/2019
VERSION
1.02

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
THREE STRAND STRUCTURAL TUBE RAIL CURB MOUNTED - DETAILS CONCRETE BRIDGE DECK MOUNTED
DETAIL NO. SUP-TB(TR)-101
SHEET 2 OF 5

SUPER - TRAFFIC BARRIER



SECTION A-A (PRECAST SLAB PANEL)

Scale: 1" = 1'-0"

ELEVATION - RAIL ANCHOR PLATE DETAIL

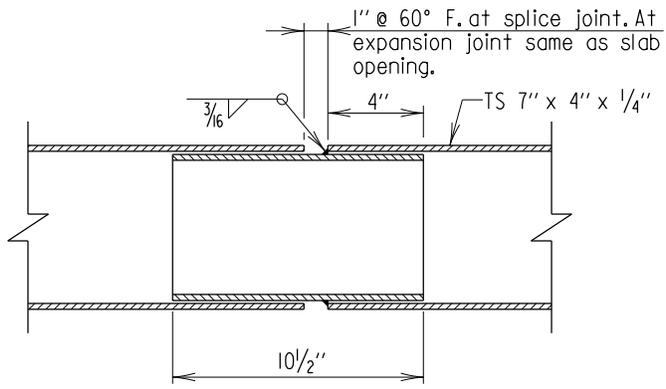
Scale: 1" = 1'-0"

MASH COMPLIANT TL-4 BRIDGE RAILING

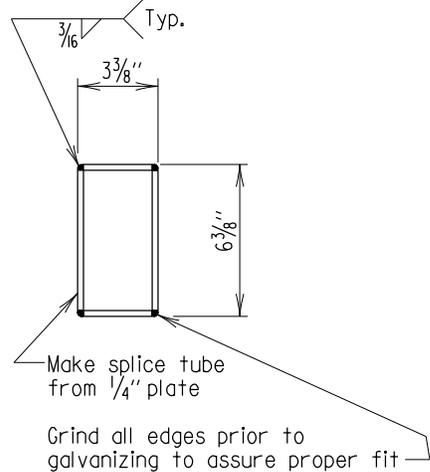
APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/11/2019
VERSION
1.02

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
THREE STRAND STRUCTURAL TUBE RAIL CURB MOUNTED - DETAILS PRECAST SLAB PANEL MOUNTED
DETAIL NO. SUP-TB(TR)-101
SHEET 3 OF 5

SUPER - TRAFFIC BARRIER



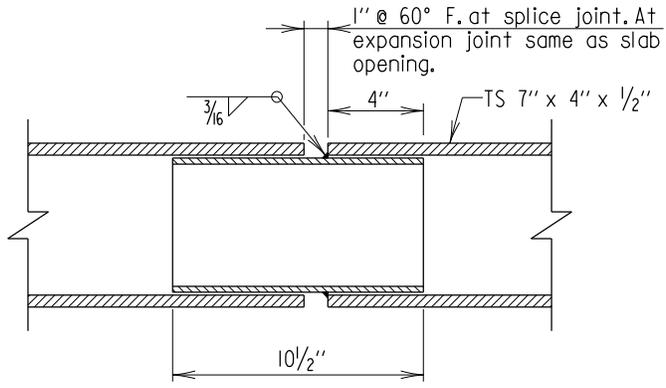
PLAN



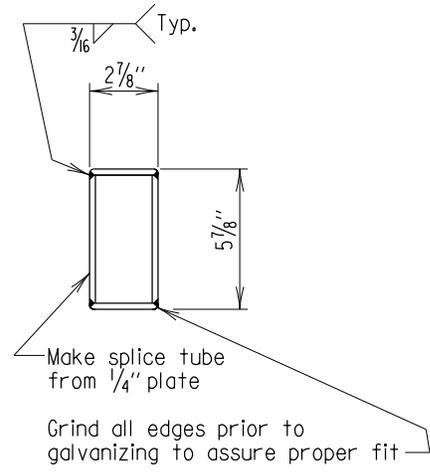
SECTION - SPLICE TUBE

RAIL SPLICE DETAILS (TS 7'' x 4'' x 1/4'')

Scale: 1/2'' = 1'-0''



PLAN



SECTION - SPLICE TUBE

RAIL SPLICE DETAILS (TS 7'' x 4'' x 1/2'')

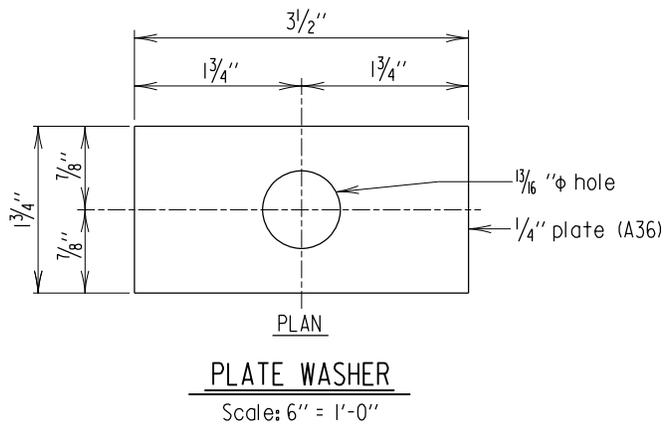
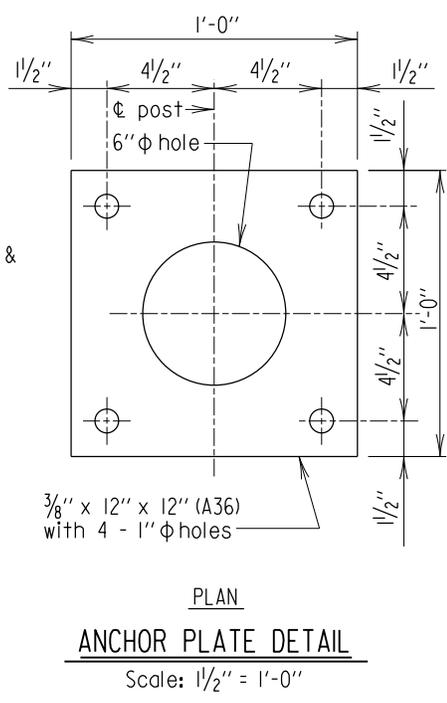
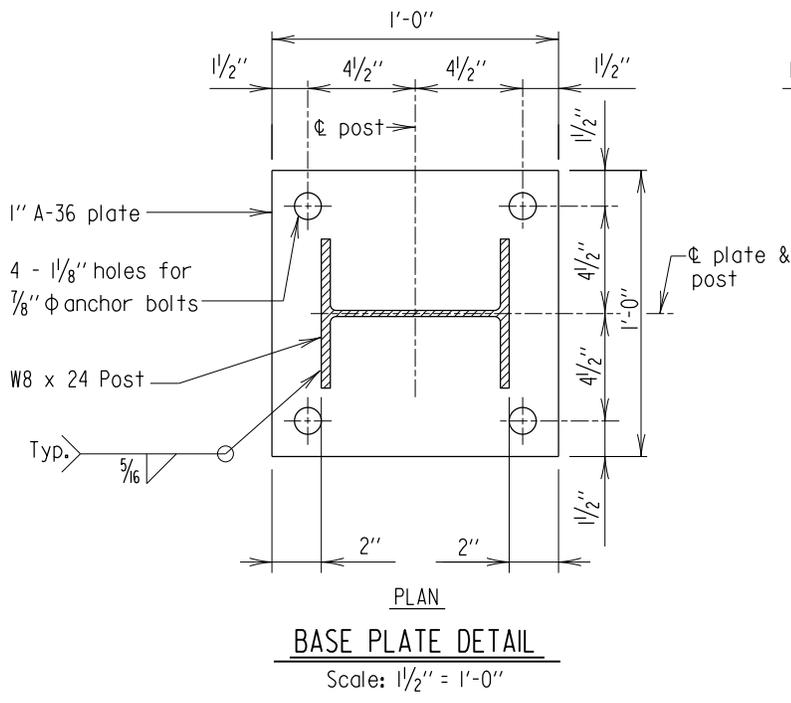
Scale: 1/2'' = 1'-0''

MASH COMPLIANT TL-4 BRIDGE RAILING

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/11/2019
VERSION
1.02

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
THREE STRAND STRUCTURAL TUBE RAIL CURB MOUNTED - DETAILS	
DETAIL NO. SUP-TB(TR)-101	SHEET <u>4</u> OF <u>5</u>

SUPER - TRAFFIC BARRIER



Note:
 Position washers to completely cover slotted hole.

MASH COMPLIANT TL-4 BRIDGE RAILING

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/11/2019
VERSION
1.02

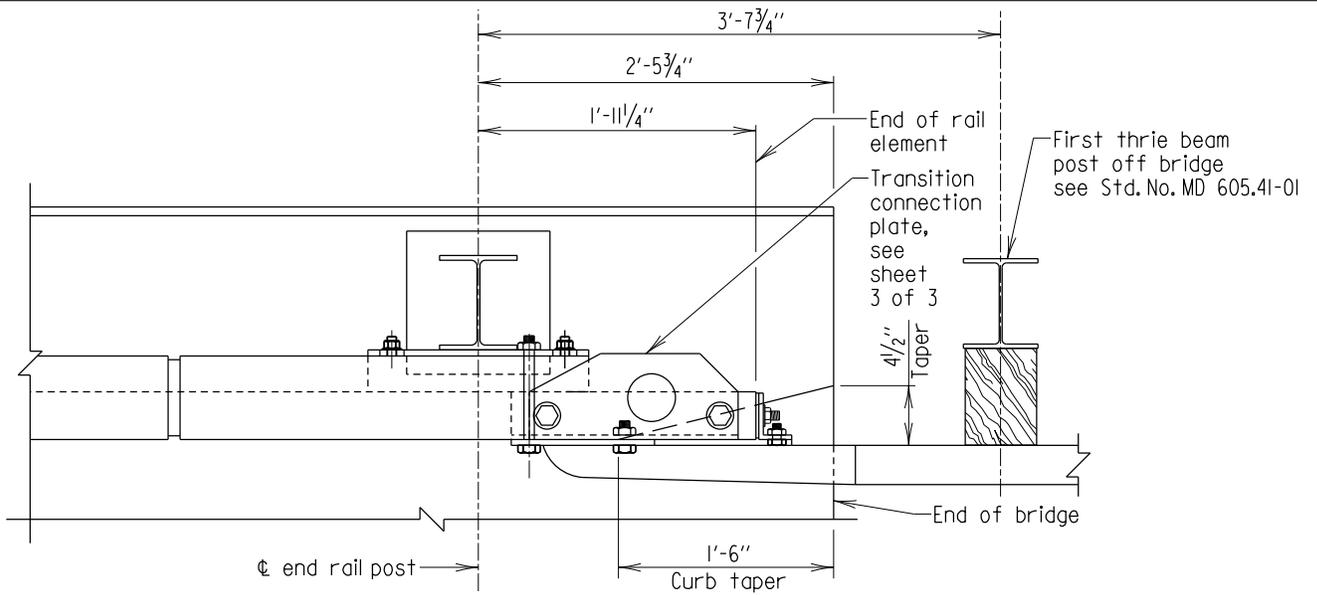
STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF STRUCTURES

THREE STRAND STRUCTURAL TUBE RAIL
 CURB MOUNTED - DETAILS

DETAIL NO. SUP-TB(TR)-101

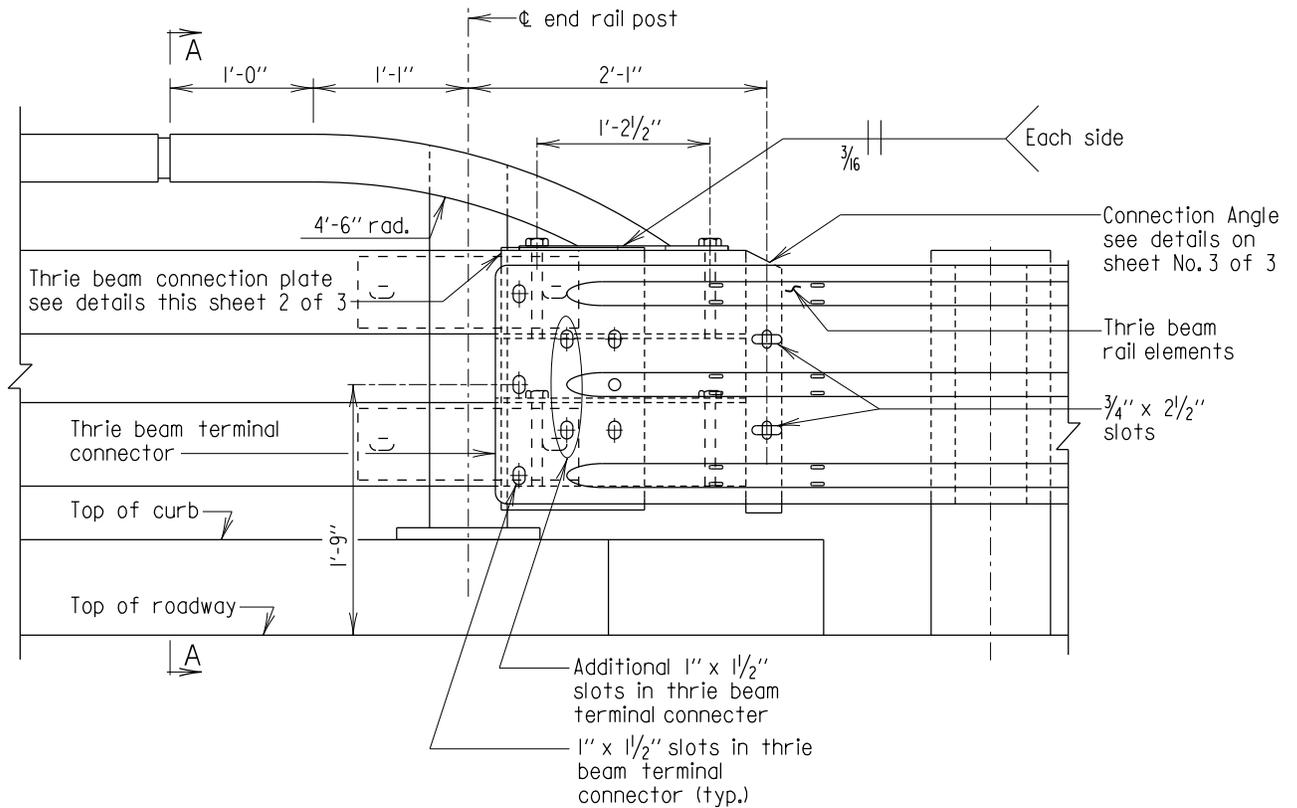
SHEET 5 OF 5

SUPER - TRAFFIC BARRIER



PLAN

Scale: $\frac{3}{4}$ " = 1'-0"



TRANSITION CONNECTION ELEVATION

Scale: $\frac{3}{4}$ " = 1'-0"

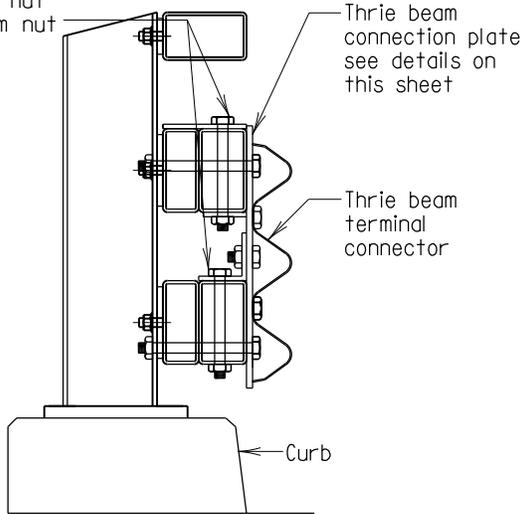
Note:
See Std. No. MD 605.41-01 for additional details on Thrie Beam Anchorage Post Spacing.

APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 02/13/2017
VERSION
1.0

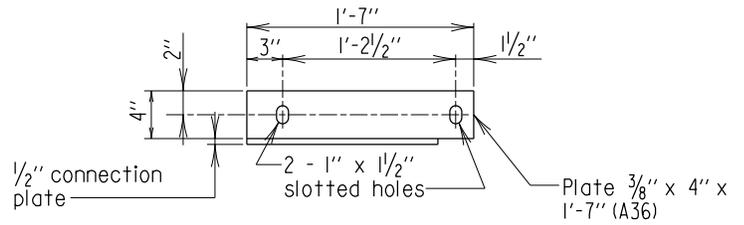
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
THREE STRAND STRUCTURAL TUBE RAIL THRIE BEAM CONNECTION PLATE
DETAIL NO. SUP-TB(TR)-102
SHEET <u>1</u> OF <u>3</u>

SUPER TRAFFIC BARRIER

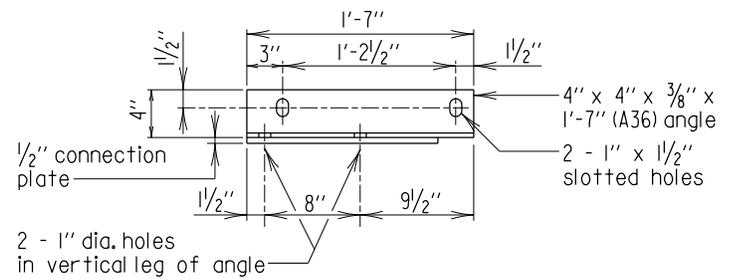
7/8" dia. bolts (A307) with washers and self locking nut or nut and jam nut



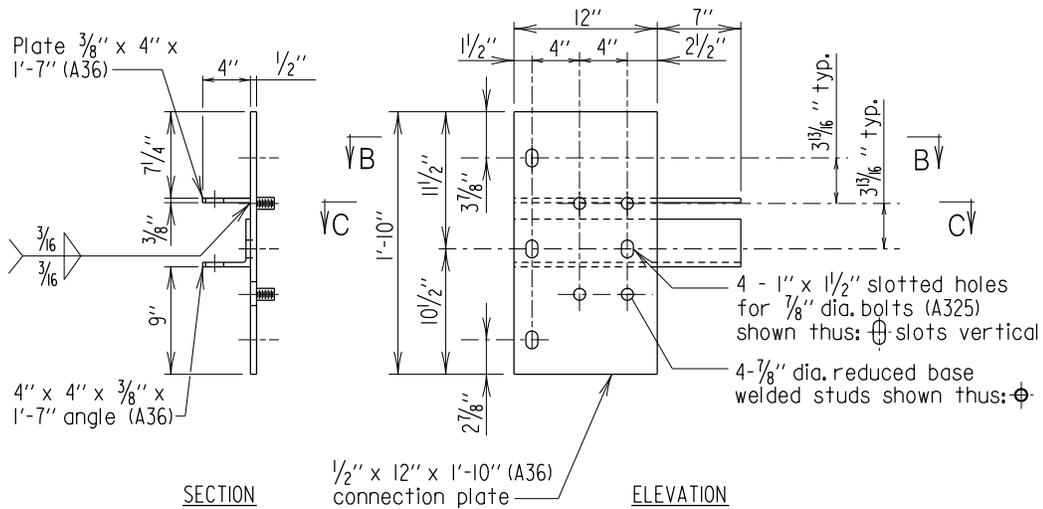
SECTION A-A
Scale: 3/4" = 1'-0"



SECTION B-B



SECTION C-C

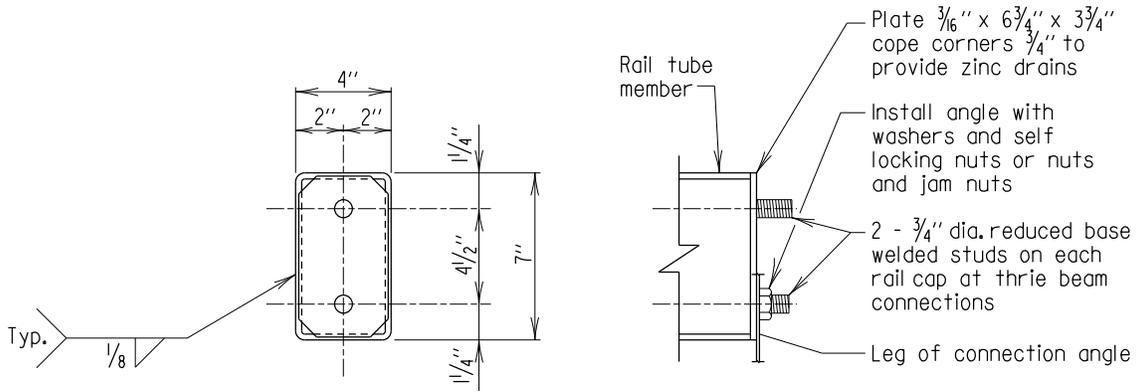


CONNECTION PLATE DETAILS
Scale: 3/4" = 1'-0"

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 02/10/2017
VERSION
1.0

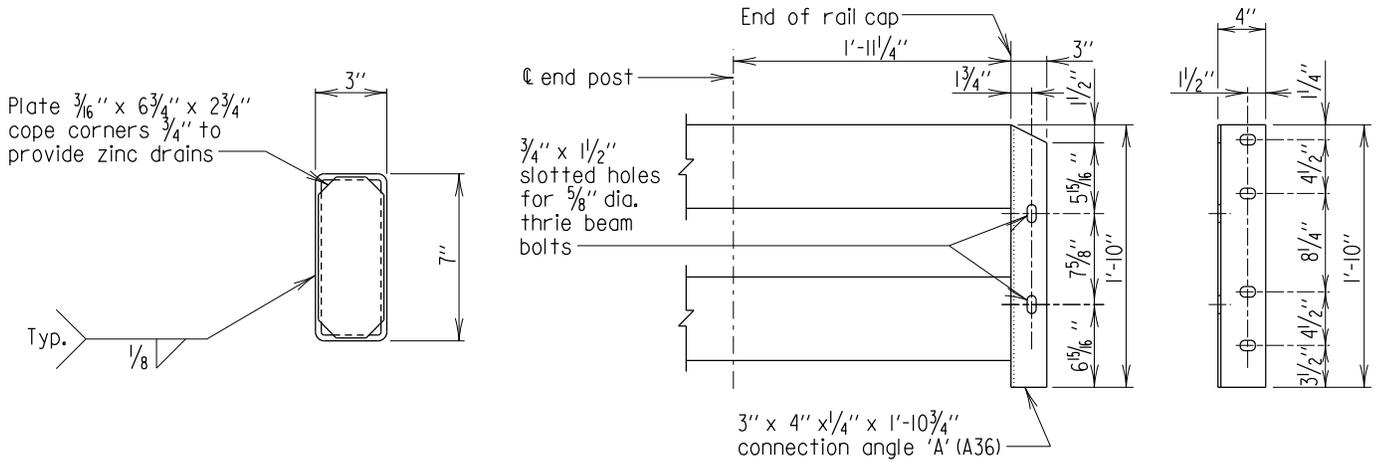
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
THREE STRAND STRUCTURAL TUBE RAIL THRIE BEAM CONNECTION PLATE	
DETAIL NO. SUP-TB(TR)-102	SHEET <u>2</u> OF <u>3</u>

SUPER TRAFFIC BARRIER



RAIL CAP DETAIL

Scale: 1/2" = 1'-0"

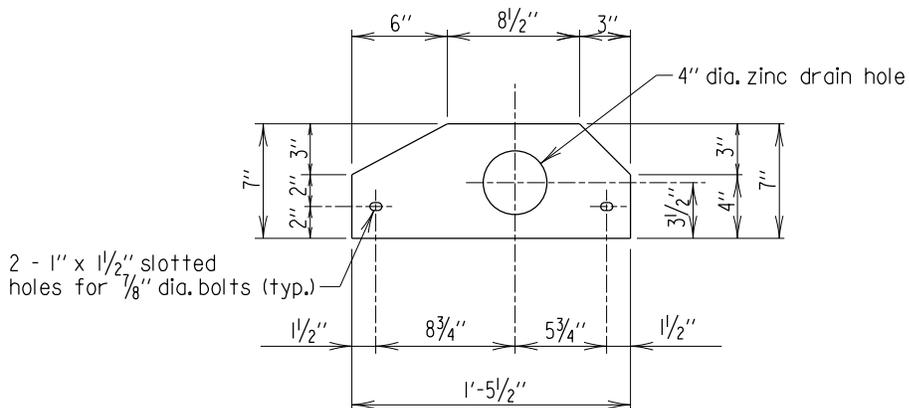


RAIL CAP FOR SPACER BLOCK

Scale: 1/2" = 1'-0"

CONNECTION ANGLE

Scale: 3/4" = 1'-0"



TOP RAIL TRANSITION CONNECTION PLATE

Scale: 1/2" = 1'-0"

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 02/10/2017
VERSION
1.0

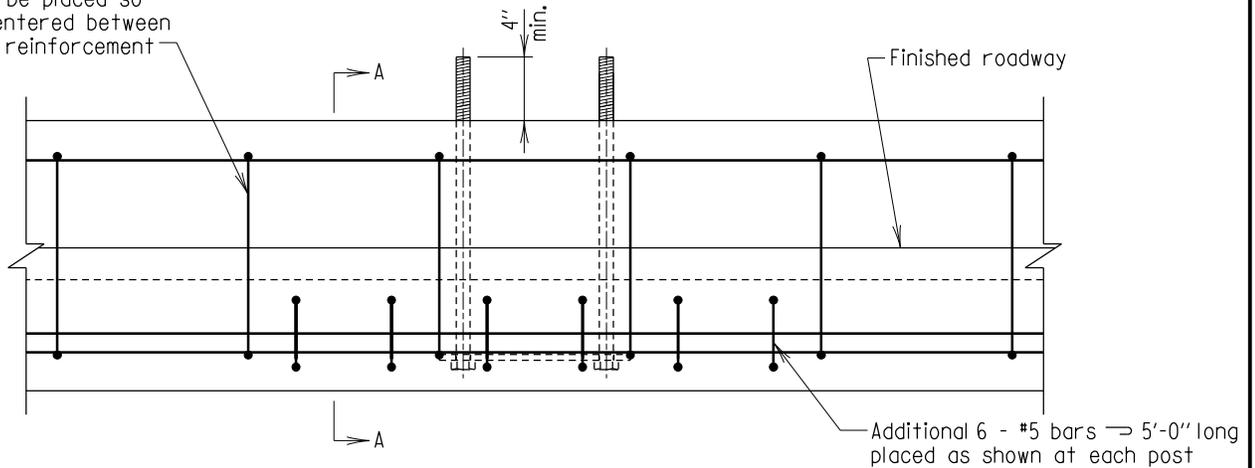
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

**THREE STRAND STRUCTURAL TUBE RAIL
THRIE BEAM CONNECTION PLATE**

DETAIL NO. SUP-TB(TR)-102

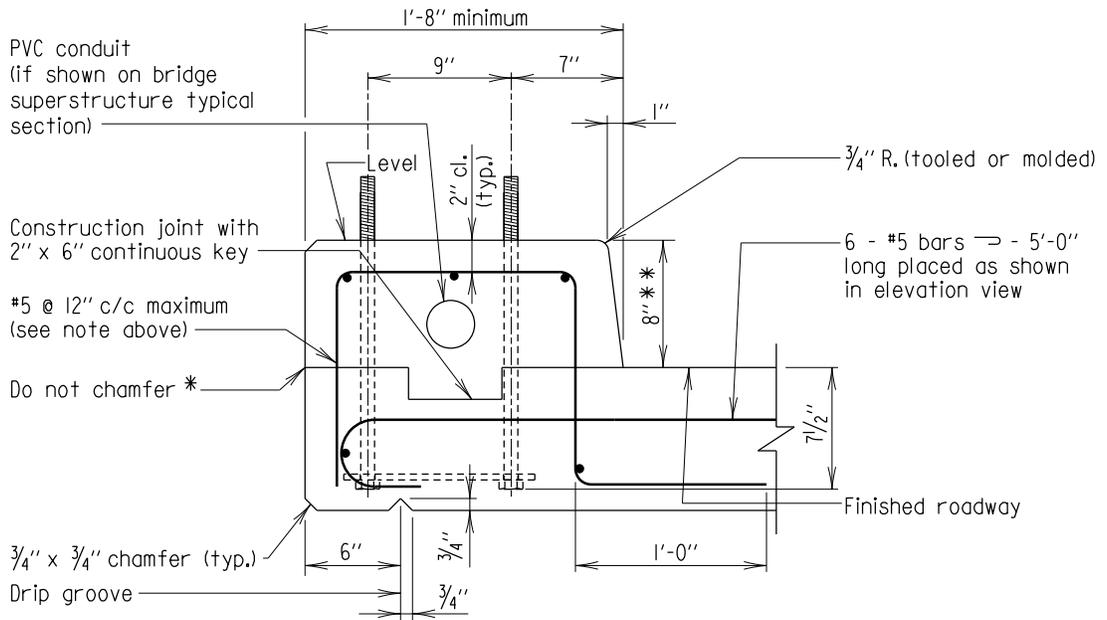
SHEET 3 OF 3

#5 @ 12" c/c maximum
(normal curb reinforcing).
Bars should be placed so
they are centered between
normal deck reinforcement



ELEVATION

Scale: 1" = 1'-0"



SECTION A-A

Scale: 1" = 1'-0"

* In order to insure a smooth and acceptable surface, Section 420.03.11 (Construction joints) will be strictly adhered to.

** May vary with application.

(USE WITH DETAIL NO. SUP-TB(TR)-101)

Notes:

1. All longitudinal bars are #5 spaced as shown.
2. Normal concrete deck reinforcing not shown.
3. All reinforcing steel shall be epoxy coated.

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DATE: 02/10/2017
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
BRIDGE DECK CURB DETAIL FOR THREE STRAND STRUCTURAL TUBE RAIL
DETAIL NO. SUP-TB(TR)-201
SHEET <u> 1 </u> OF <u> 1 </u>

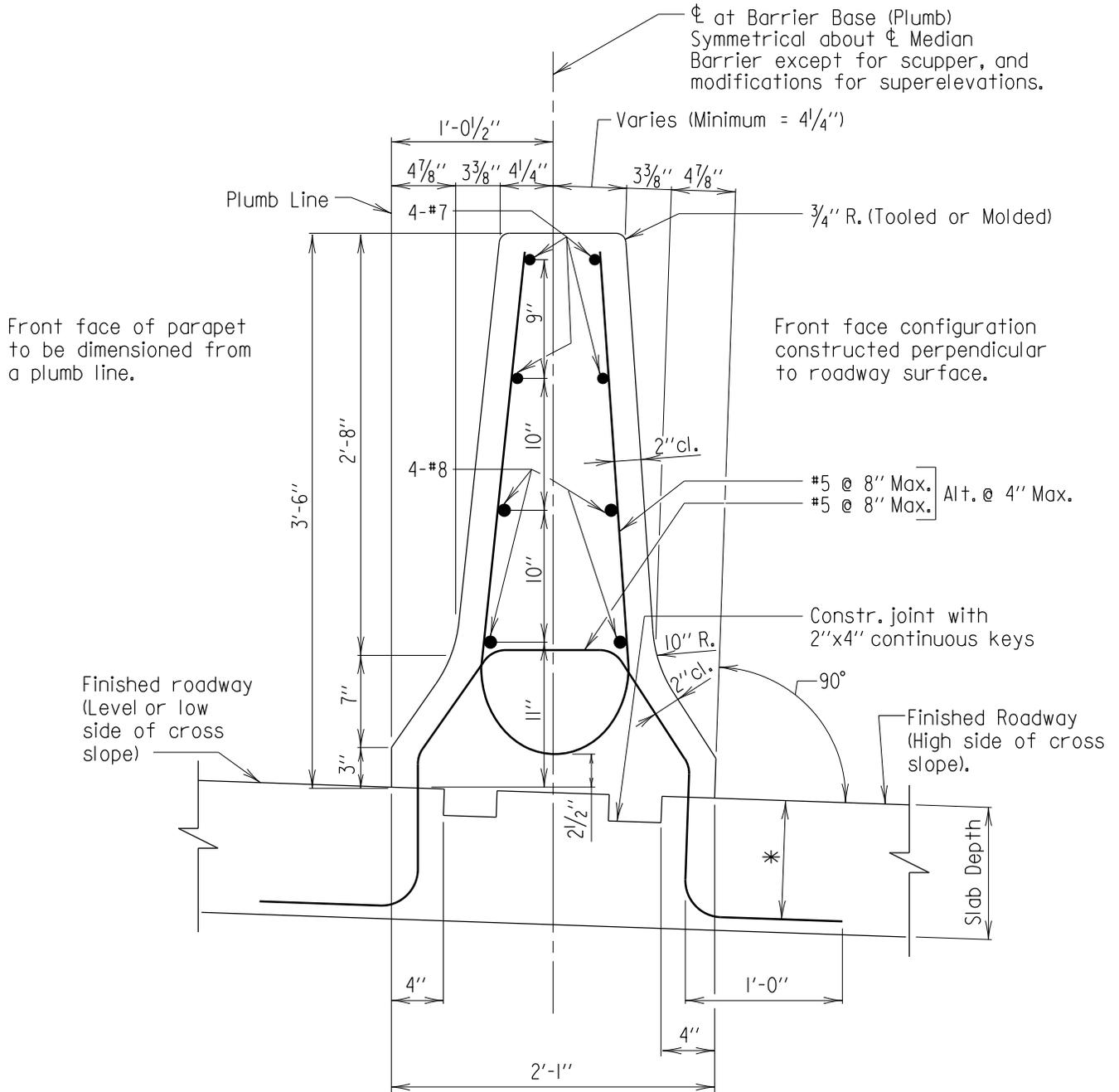
SUPER TRAFFIC BARRIER

Chapter 03 - Superstructure

Section 02 – Traffic Barriers

SUB-SECTION 04

**MEDIAN BARRIER
(SUP-TB(MB))**



SECTION

Scale: 1" = 1'-0"

* Slab depth minus 1".

Notes:

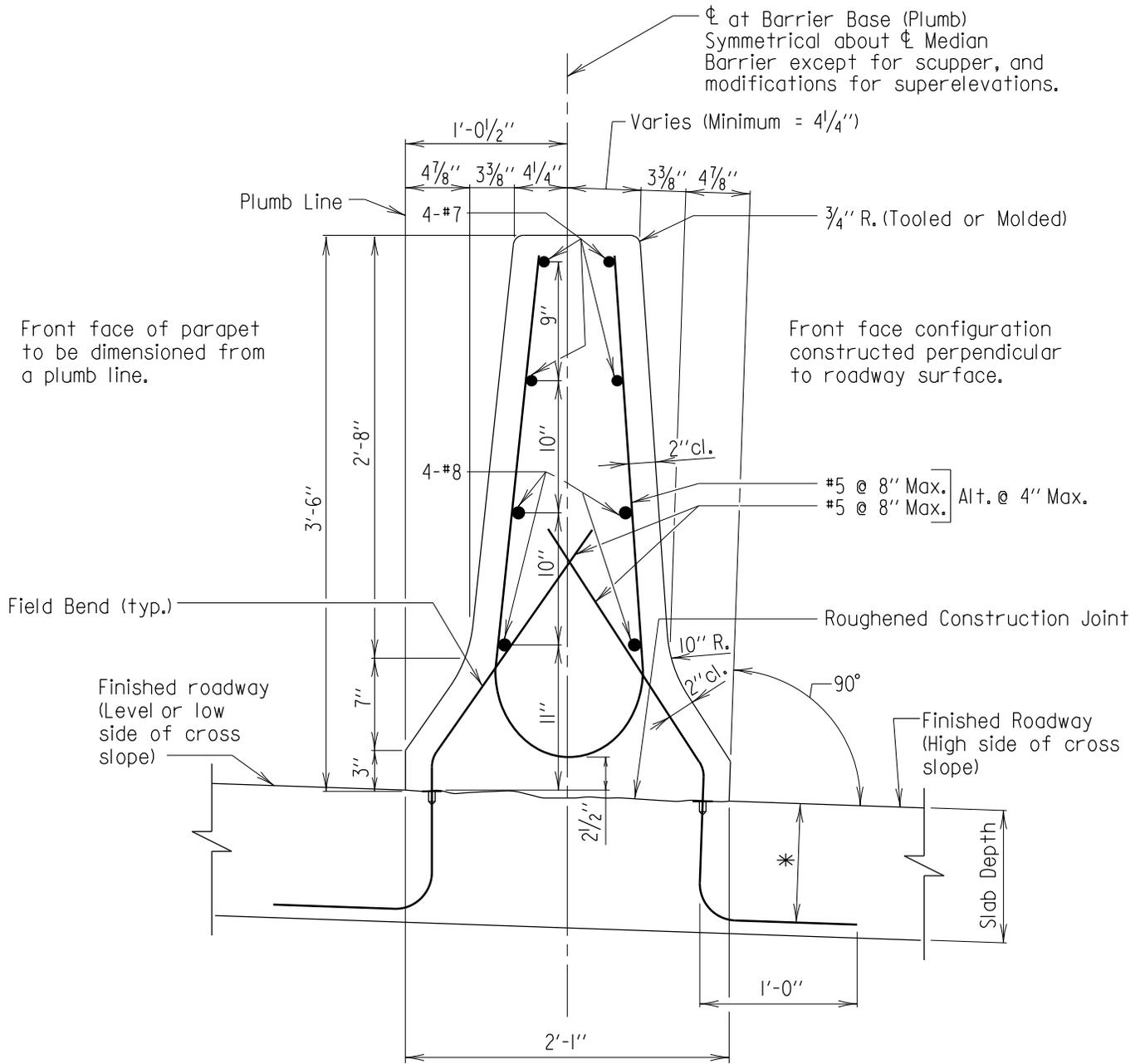
1. Place 1/2" saw cut joints to match joint spacing of outside parapet.
2. Concrete deck reinforcing steel not shown.
3. All #7 and #8 longitudinal bars shall be placed continuously in the barrier from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
4. All keys are nominal size.
5. No increase in any prices bid will be allowed for barrier modifications due to roadway slope.

MASH COMPLIANT TL-5 BRIDGE RAILING

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/20/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE MEDIAN BARRIER FOR BRIDGE WITHOUT LOGITUDINAL JOINT
DETAIL NO. SUP-TB(MB)-101
SHEET <u> 1 </u> OF <u> 1 </u>

SUPER TRAFFIC BARRIER



SECTION
Scale: 1" = 1'-0"

Notes:

1. All #7 and #8 longitudinal bars shall be placed continuously in the barrier from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
2. All reinforcement bars shall be epoxy coated.
3. The Contractor has the option of substituting cast-in-place epoxy coated open coil inserts with threaded holes for the bars shown. The inserts in the back face of the parapet shall have a minimum working load tension strength of 6000 lb. and a minimum length of 4 1/2". The inserts in the front face shall have a minimum working load tension strength of 8000 lb. and a minimum length of 5 1/2". The cost of epoxy coated inserts shall be included in the pertinent Superstructure Concrete item.
4. Concrete deck reinforcing steel not shown.
5. Place 1/2" saw cut joints to match joint spacing of outside parapet.
6. No increase in any prices bid will be allowed for barrier modifications due to roadway slope or maintenance of traffic.

* Slab depth minus 1".

MASH COMPLIANT
TL-5 BRIDGE RAILING

APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/20/2019
VERSION
1.01

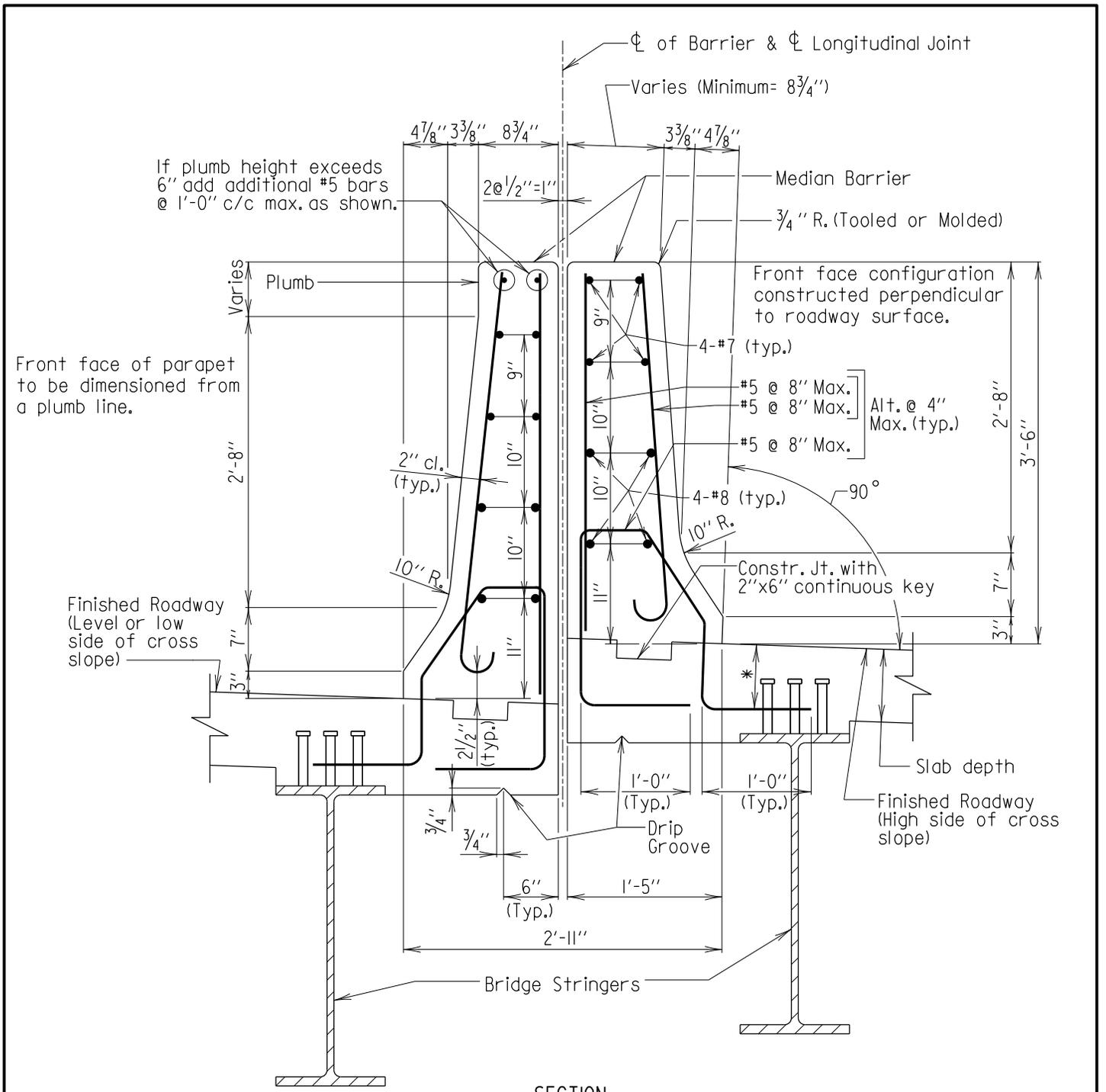
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

42" F-SHAPE MEDIAN BARRIER FOR BRIDGE
WITHOUT LONGITUDINAL JOINT WHERE TRAFFIC WILL
USE AREA PRIOR TO PLACING BARRIER

DETAIL NO. SUP-TB(MB)-102

SHEET 1 OF 1

SUPER TRAFFIC BARRIER



SECTION
Scale : $\frac{3}{4}'' = 1'-0''$

* Slab depth minus 1".

Notes:

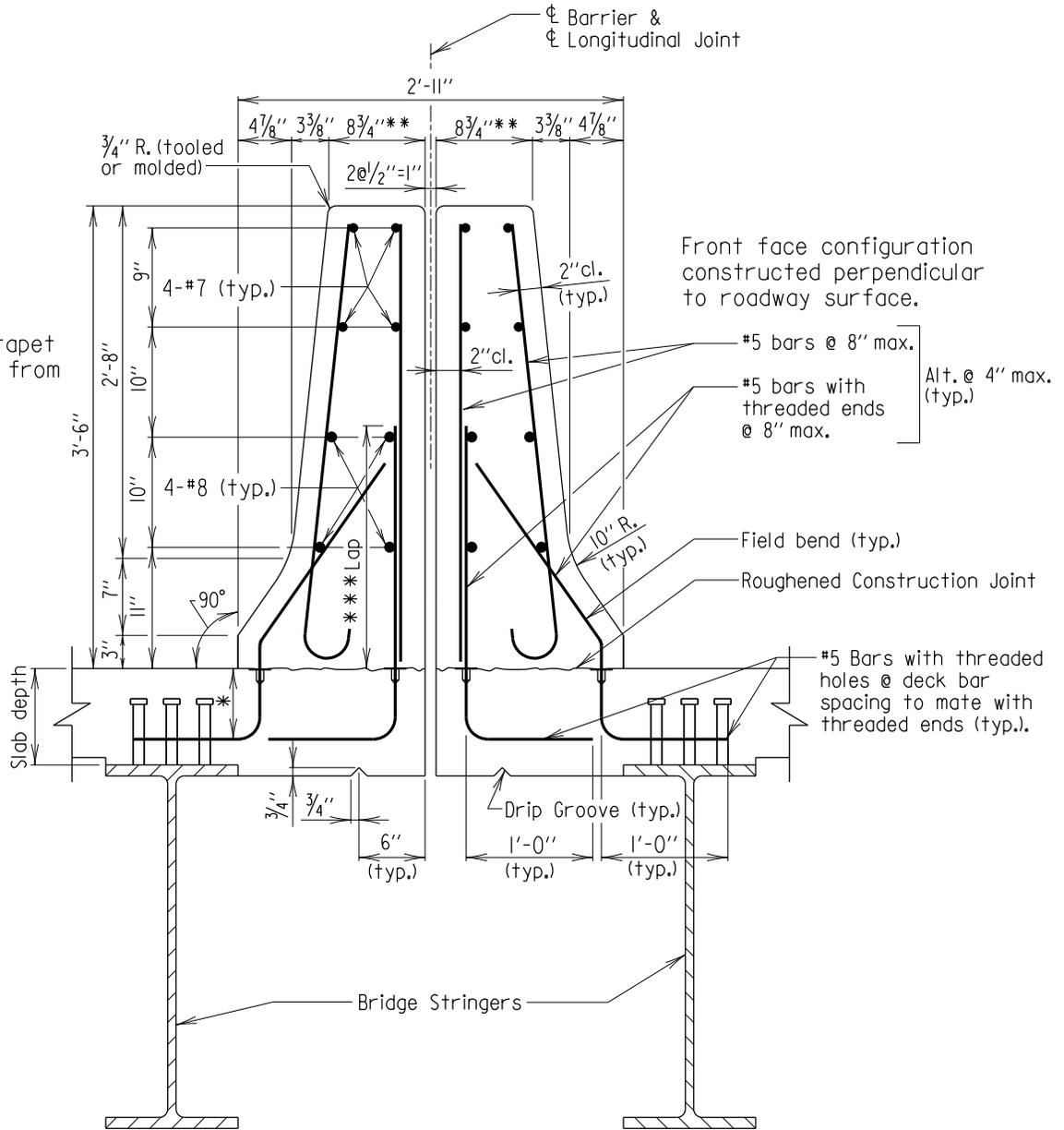
1. All #7 and #8 longitudinal bars shall be placed continuously in the barrier from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
2. All reinforcing steel epoxy coated.
3. Concrete deck reinforcing steel not shown.
4. Place $\frac{1}{2}''$ saw cut joints to match joint spacing of outside parapet.
5. All keys are nominal size.
6. No increase in any prices bid will be allowed for barrier modifications due to roadway slope.

MASH COMPLIANT TL-5 BRIDGE RAILING

APPROVAL
<i>Ben C. ...</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/20/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE MEDIAN BARRIER FOR BRIDGE WITH OPEN LOGITUDINAL JOINT
DETAIL NO. SUP-TB(MB)-201
SHEET <u>1</u> OF <u>1</u>

SUPER TRAFFIC BARRIER



Front face of parapet to be dimensioned from a plumb line.

Front face configuration constructed perpendicular to roadway surface.

Alt. @ 4" max. (typ.)

SECTION

Scale: 3/4" : 1'-0"

Notes:

1. All #7 and #8 longitudinal bars shall be placed continuously in the barrier from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
2. All reinforcement bars shall be epoxy coated.
3. The Contractor has the option of substituting cast-in-place epoxy coated open coil inserts with threaded holes for the bars shown. The inserts in the back face of the parapet shall have a minimum working load tension strength of 6000 lb. and a minimum length of 4 1/2". The inserts in the front face shall have a minimum working load tension strength of 8000 lb. and a minimum length of 5 1/2". The cost of epoxy coated inserts shall be included in the pertinent Superstructure Concrete item.
4. Concrete deck reinforcing steel not shown.
5. Place 1/2" saw cut joints to match joint spacing of outside parapet.
6. No increase in any prices bid will be allowed for barrier modifications due to roadway slope or maintenance of traffic.

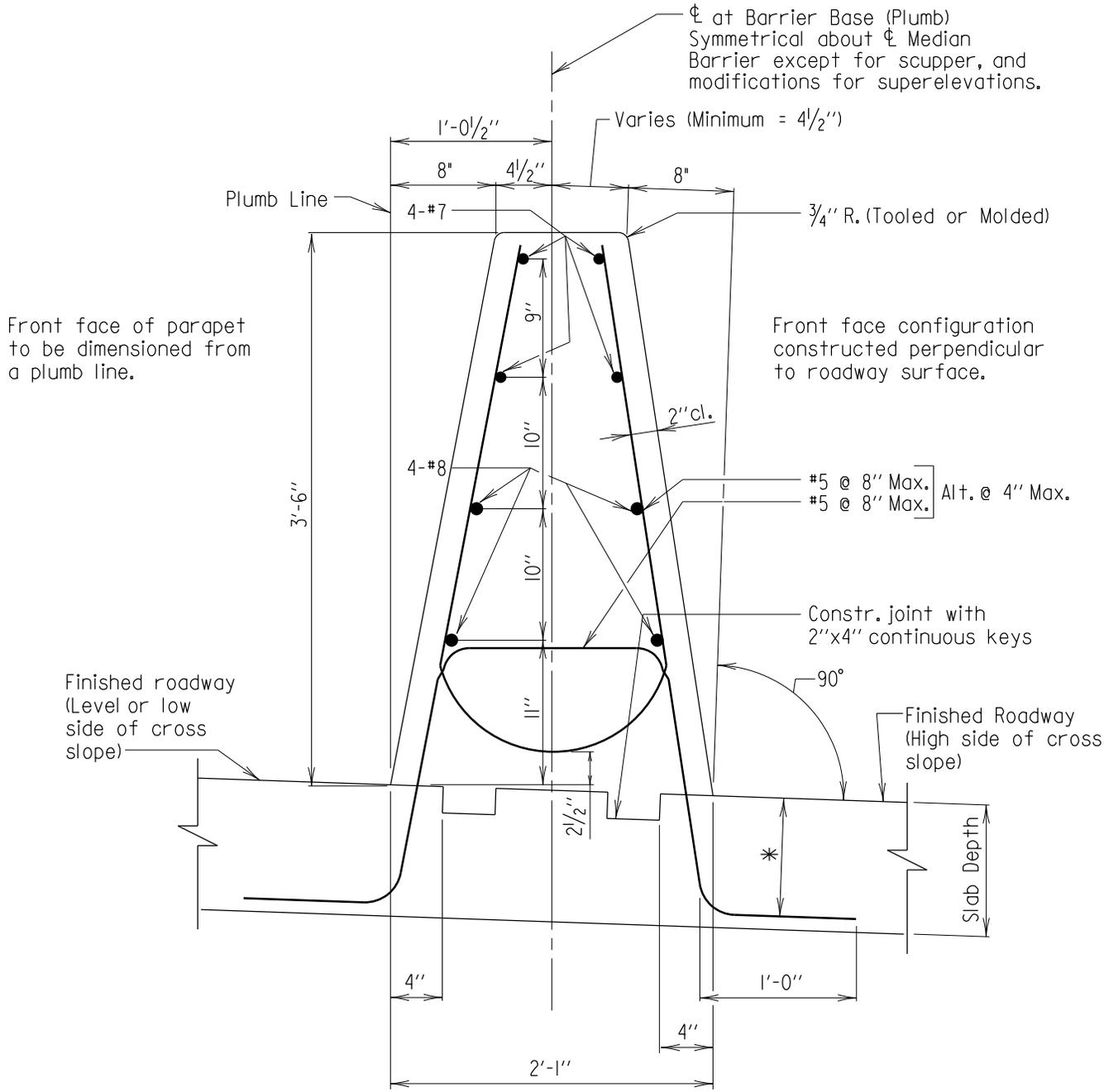
- * Slab depth minus 1".
- ** These dimensions can change if superelevation affects barrier face alignment.
- *** Dowel may replace vertical by being extended full height.

**MASH COMPLIANT
TL-5 BRIDGE RAILING**

APPROVAL
<i>Ben C. ...</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/20/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE MEDIAN BARRIER FOR BRIDGE WITH LONGITUDINAL JOINT WHERE TRAFFIC WILL USE AREA PRIOR TO PLACING BARRIER
DETAIL NO. SUP-TB(MB)-202
SHEET <u>1</u> OF <u>1</u>

SUPER TRAFFIC BARRIER



SECTION

Scale: 1" = 1'-0"

* Slab depth minus 1".

Notes:

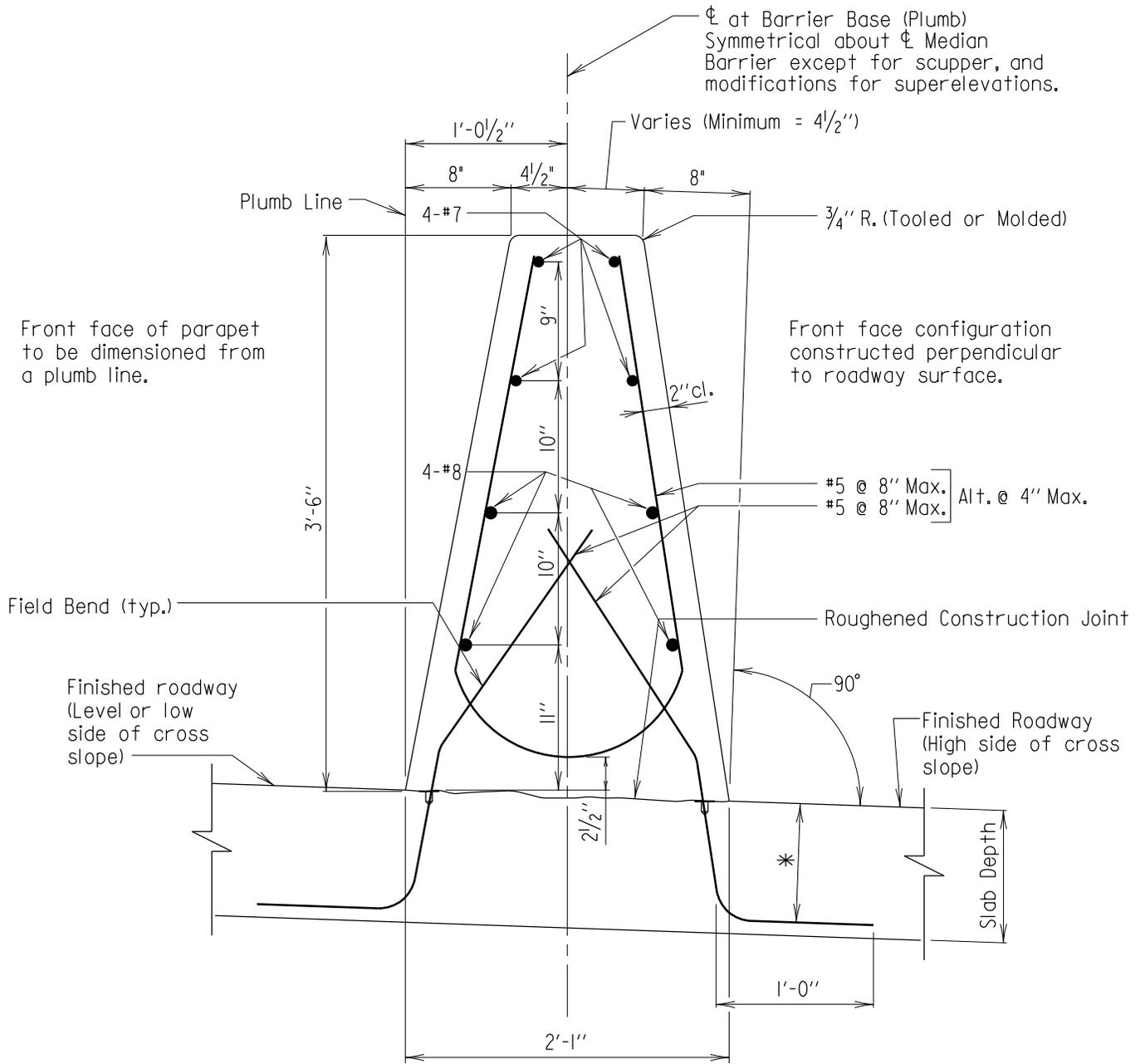
1. Place 1/2" saw cut joints to match joint spacing of outside parapet.
2. Concrete deck reinforcing steel not shown.
3. All #7 and #8 longitudinal bars shall be placed continuously in the barrier from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi-span bridge.
4. All keys are nominal size.
5. No increase in any prices bid will be allowed for barrier modifications due to roadway slope.

MASH COMPLIANT TL-5 BRIDGE RAILING

APPROVAL
<i>Ben C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" SINGLE SLOPE MEDIAN BARRIER FOR BRIDGE WITHOUT LOGITUDINAL JOINT
DETAIL NO. SUP-TB(MB)-301
SHEET <u> 1 </u> OF <u> 1 </u>

SUPER TRAFFIC BARRIER



SECTION

Scale: 1" = 1'-0"

Notes:

1. All #7 and #8 longitudinal bars shall be placed continuously in the barrier from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
2. All reinforcement bars shall be epoxy coated.
3. The Contractor has the option of substituting cast-in-place epoxy coated open coil inserts with threaded holes for the bars shown. The inserts in the back face of the parapet shall have a minimum working load tension strength of 6000 lb. and a minimum length of 4 1/2". The inserts in the front face shall have a minimum working load tension strength of 8000 lb. and a minimum length of 5 1/2". The cost of epoxy coated inserts shall be included in the pertinent Superstructure Concrete item.
4. Concrete deck reinforcing steel not shown.
5. Place 1/2" saw cut joints to match joint spacing of outside parapet.
6. No increase in any prices bid will be allowed for barrier modifications due to roadway slope or maintenance of traffic.

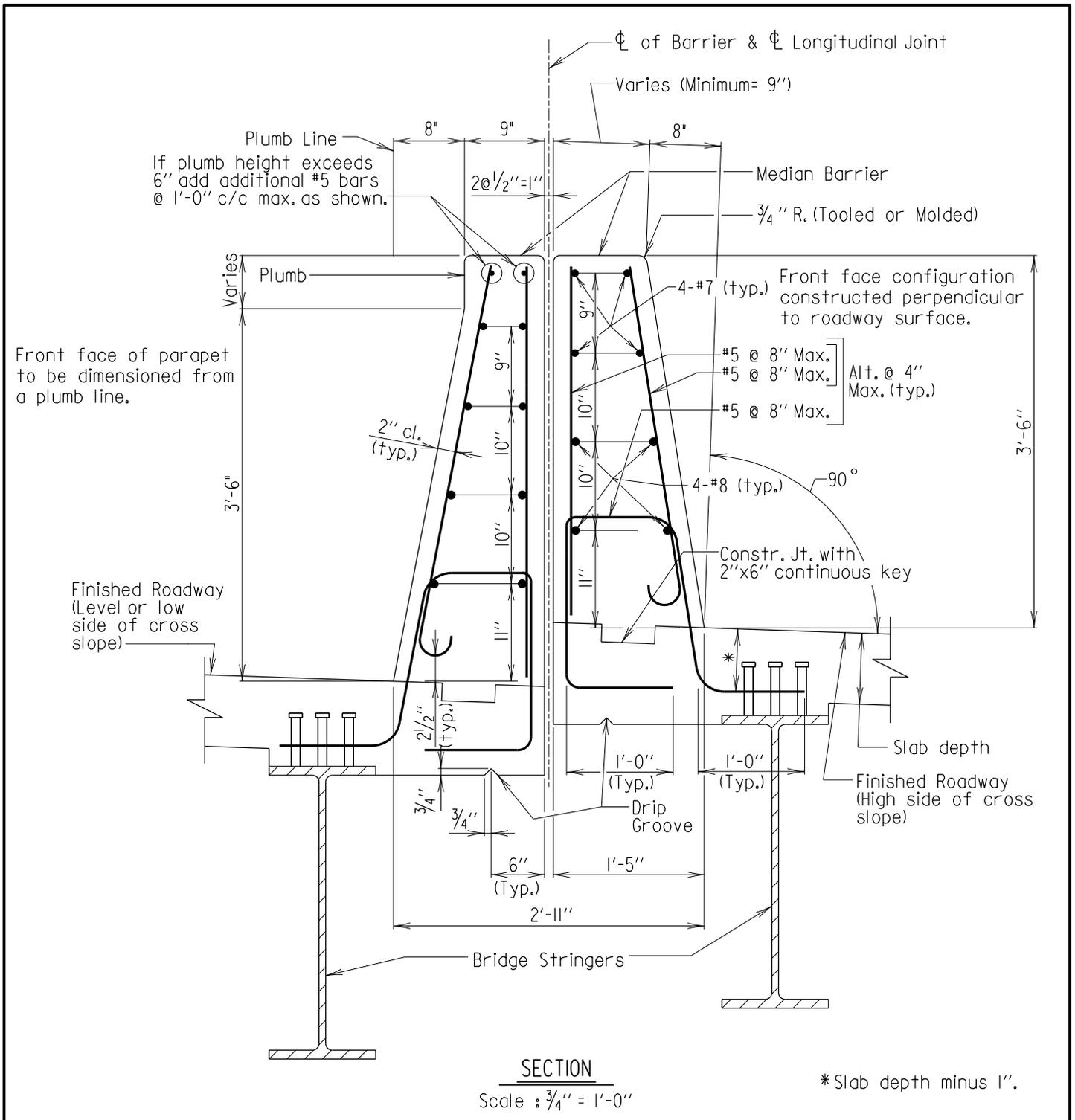
* Slab depth minus 1".

**MASH COMPLIANT
TL-5 BRIDGE RAILING**

APPROVAL
<i>Ben C. ...</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" SINGLE SLOPE MEDIAN BARRIER FOR BRIDGE WITHOUT LONGITUDINAL JOINT WHERE TRAFFIC WILL USE AREA PRIOR TO PLACING BARRIER
DETAIL NO. SUP-TB(MB)-302
SHEET <u>1</u> OF <u>1</u>

SUPER TRAFFIC BARRIER



Front face of parapet to be dimensioned from a plumb line.

Plumb Line
If plumb height exceeds 6" add additional #5 bars @ 1'-0" c/c max. as shown.

Finished Roadway (Level or low side of cross slope)

Front face configuration constructed perpendicular to roadway surface.

Alt. @ 4" Max. (typ.)

90°

Constr. Jt. with 2"x6" continuous key

Slab depth

Finished Roadway (High side of cross slope)

SECTION

Scale : 3/4" = 1'-0"

* Slab depth minus 1".

Notes:

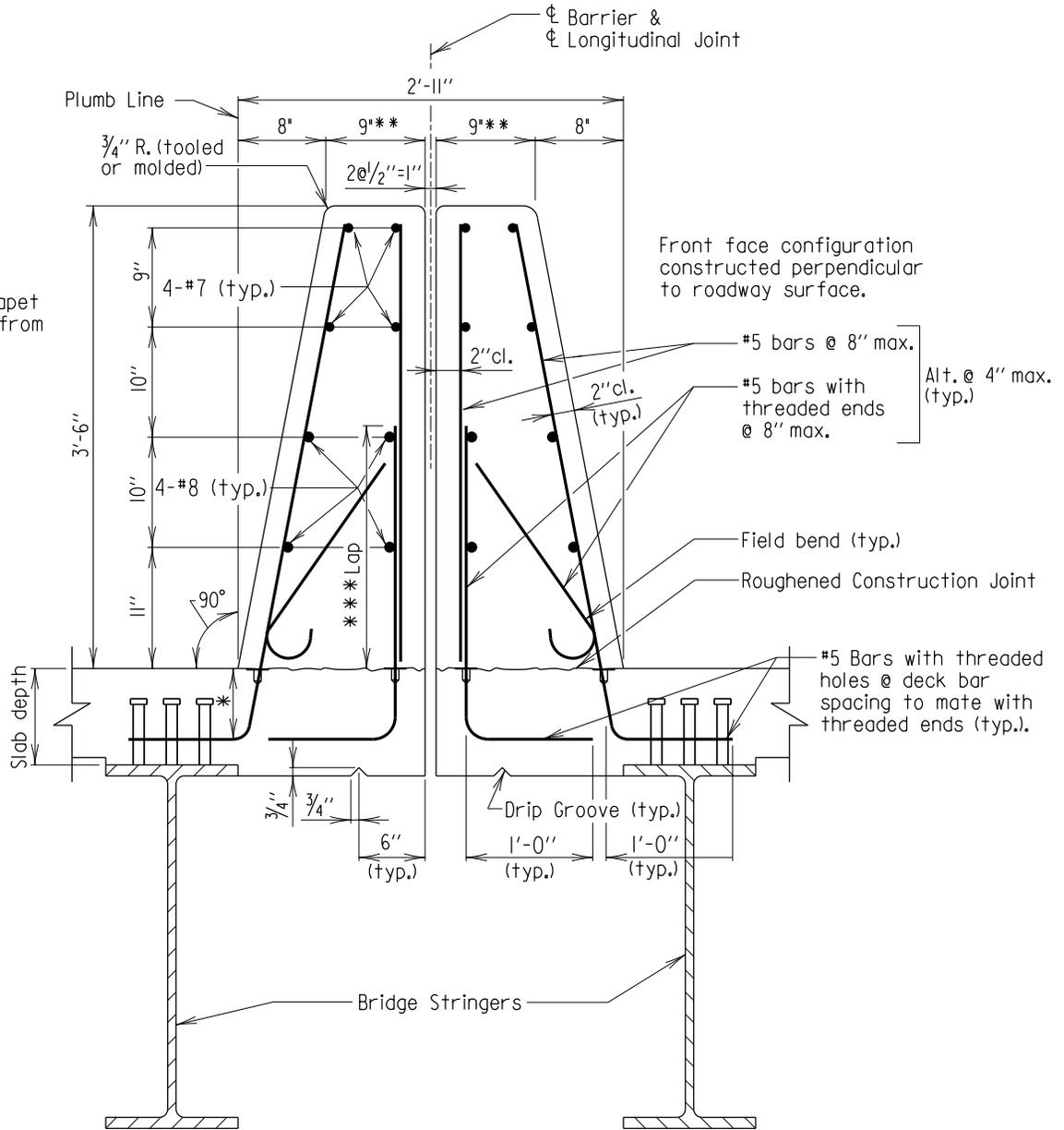
1. All #7 and #8 longitudinal bars shall be placed continuously in the barrier from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
2. All reinforcing steel epoxy coated.
3. Concrete deck reinforcing steel not shown.
4. Place 1/2" saw cut joints to match joint spacing of outside parapet.
5. All keys are nominal size.
6. No increase in any prices bid will be allowed for barrier modifications due to roadway slope.

MASH COMPLIANT TL-5 BRIDGE RAILING

APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/16/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" SINGLE SLOPE MEDIAN BARRIER FOR BRIDGE WITH OPEN LOGITUDINAL JOINT
DETAIL NO. SUP-TB(MB)-401
SHEET <u>1</u> OF <u>1</u>

SUPER TRAFFIC BARRIER



Front face of parapet to be dimensioned from a plumb line.

Front face configuration constructed perpendicular to roadway surface.

SECTION

Scale: 3/4" : 1'-0"

Notes:

1. All #7 and #8 longitudinal bars shall be placed continuously in the barrier from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi span bridge.
2. All reinforcement bars shall be epoxy coated.
3. The Contractor has the option of substituting cast-in-place epoxy coated open coil inserts with threaded holes for the bars shown. The inserts in the back face of the parapet shall have a minimum working load tension strength of 6000 lb. and a minimum length of 4 1/2". The inserts in the front face shall have a minimum working load tension strength of 8000 lb. and a minimum length of 5 1/2". The cost of epoxy coated inserts shall be included in the pertinent Superstructure Concrete item.
4. Concrete deck reinforcing steel not shown.
5. Place 1/2" saw cut joints to match joint spacing of outside parapet.
6. No increase in any prices bid will be allowed for barrier modifications due to roadway slope or maintenance of traffic.

- * Slab depth minus 1".
- ** These dimensions can change if superelevation affects barrier face alignment.
- *** Dowel may replace vertical by being extended full height.

**MASH COMPLIANT
TL-5 BRIDGE RAILING**

APPROVAL
<i>Ben C. Duda</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/20/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" SINGLE SLOPE MEDIAN BARRIER FOR BRIDGE WITH LONGITUNDINAL JOINT WHERE TRAFFIC WILL USE AREA PRIOR TO PLACING BARRIER
DETAIL NO. SUP-TB(MB)-402
SHEET <u>1</u> OF <u>1</u>

SUPER TRAFFIC BARRIER

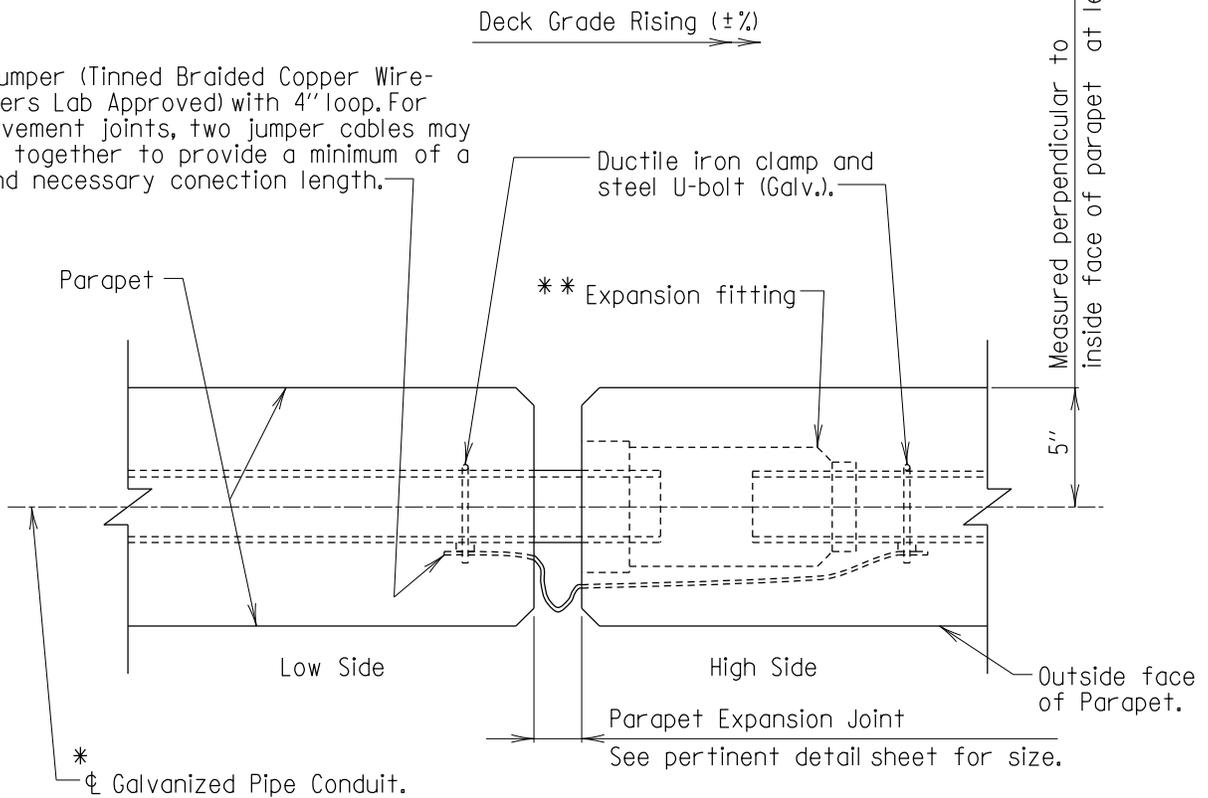
Chapter 03 - Superstructure

Section 02 – Traffic Barriers

SUB-SECTION 05

CONDUIT PLACEMENT (SUP-TB(CP))

Bonding Jumper (Tinned Braided Copper Wire-Underwriters Lab Approved) with 4" loop. For larger movement joints, two jumper cables may be bolted together to provide a minimum of a 6" loop and necessary connection length.



SECTION

Scale: 1/2" = 1'-0"

* For conduit size see Superstructure "Typical Section" sheet. Vertical location of ϕ of this conduit shall be at least 4" below bottom of railing or fencing anchorage systems.

** Expansion fittings for use with rigid galvanized steel conduit shall consist of a malleable iron head and steel sleeve which shall be hot-dipped galvanized and assembled with a watertight packing gland, an insulated bushing, pressure ring and gasket and a tinned-copper bond to assure continuity of ground. The fitting shall provide, unless otherwise noted on the plans: 4" of movement for all compression seal roadway joints and 8" of movement for all other roadway joints, such as steel finger joints.

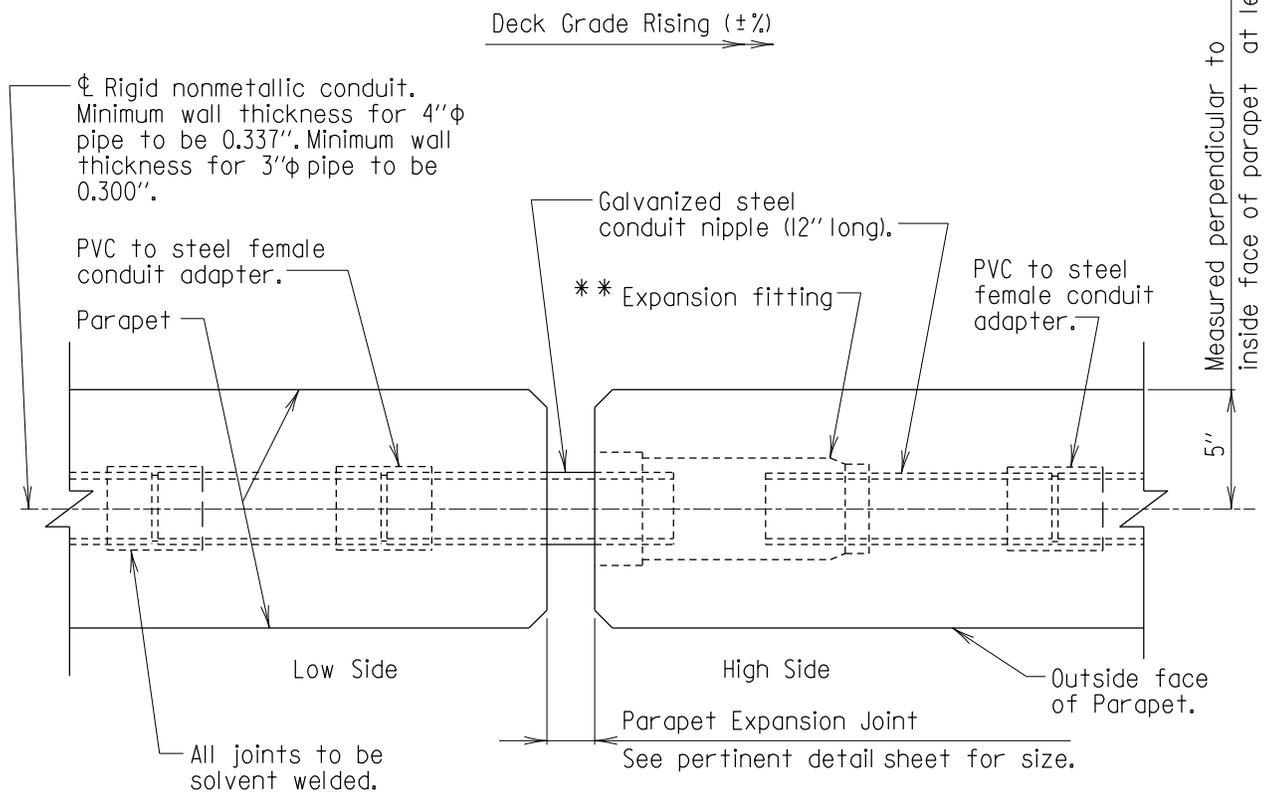
Notes:

1. Place expansion joint in pipe conduit and parapet at every expansion joint at supports in bridge deck.
2. #10 galvanized pull wire to be provided for full length of conduit and left in place.
3. Contractor may furnish either PVC conduit as shown on sheet 2 of 2 or material shown on this detail. However only one type can be used throughout a structure.

APPROVAL
<i>L.S. Fisher</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 01/22/2001
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
EXPANSION JOINT FOR CONDUIT IN PARAPET
DETAIL NO. SUP-TB(CP)-101
SHEET <u>1</u> OF <u>2</u>

SUPER TRAFFIC BARRIER



SECTION

Scale: 1/2" = 1'-0"

Note: No bonding jumper cable is required.

* For conduit size see Superstructure "Typical Section" sheet. Vertical location of ϕ of this conduit shall be at least 4" below bottom of railing or fencing anchorage systems.

** Expansion fittings for use with rigid galvanized steel conduit shall consist of a malleable iron head and steel sleeve which shall be hot-dipped galvanized and assembled with a watertight packing gland, an insulated bushing, pressure ring and gasket and a tinned-copper bond to assure continuity of ground. The fitting shall provide, unless otherwise noted on the plans: 4" of movement for all compression seal roadway joints and 8" of movement for all other roadway joints, such as steel finger joints.

Notes:

1. Place expansion joint in pipe conduit and parapet at every expansion joint at supports in bridge deck.
2. #10 galvanized pull wire to be provided for full length of conduit and left in place.
3. All pipe and expansion joint must be U.L. approved for encasement in concrete.
4. Fittings to be PVC, except for expansion joint.
5. Nonmetallic conduit shall conform to 92I.07.02.

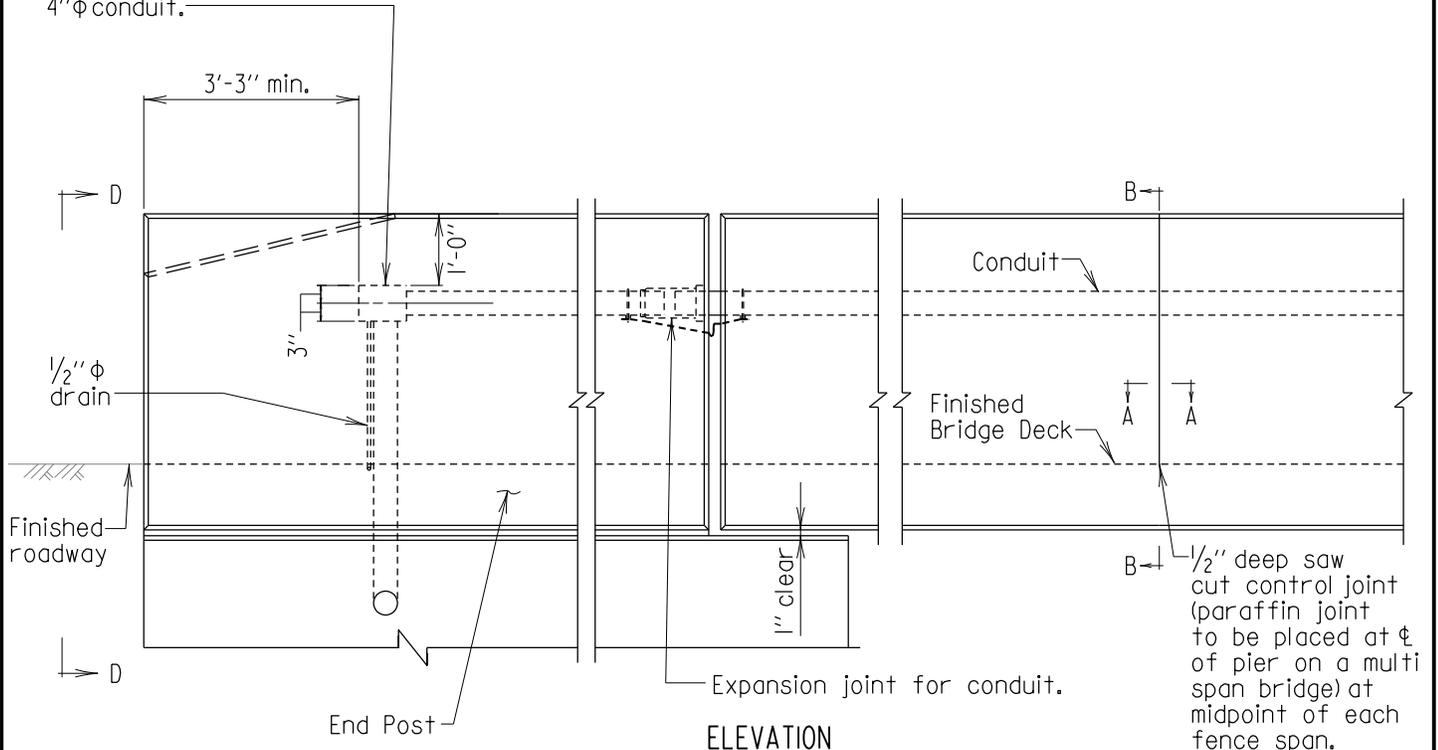
APPROVAL
<i>E. S. Fisher</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 01/22/2001
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
EXPANSION JOINT FOR CONDUIT IN PARAPET
DETAIL NO. SUP-TB(CP)-101
SHEET <u>2</u> OF <u>2</u>

SUPER TRAFFIC BARRIER

8"H x 6"W x 8" galvanized cast iron, galvanized steel or fiberglass U.L. listed junction box with cover. Provide holes in box for 4" ϕ conduit.

Note: Detail shown is for parapet without fencing. Fencing details are similar. On bridges with no fencing, see Plans for parapet control joint spacing.



ELEVATION

Scale: $\frac{3}{8}'' = 1'-0''$

Note: For Section A-A and B-B see sheets 2 & 3 of 3. For View D-D see sheet 2 of 3.

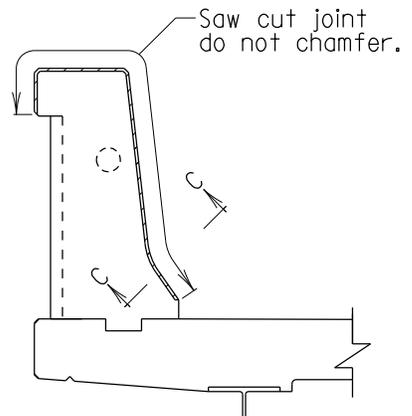
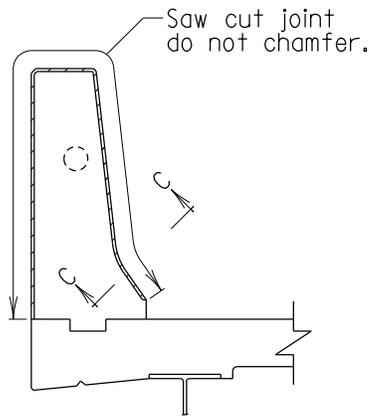
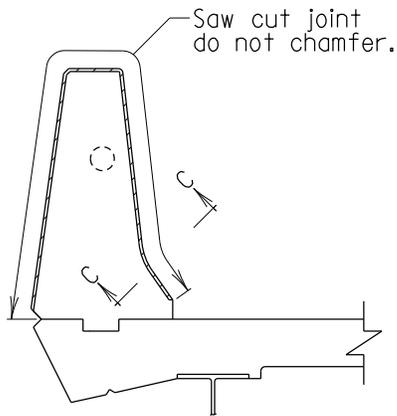
Notes:

1. The conduit and junction box are to be placed only when indicated in the Superstructure "Typical Section." If ϕ to ϕ of end junction boxes exceed 200', then additional junction boxes shall be placed in parapet, between control joints, so that the maximum distance between boxes is 200'. Junction boxes for light standards, may be utilized. All junction boxes to have $\frac{1}{2}''\phi$ drain at low point of box.
2. Conduit may be either PVC or galvanized pipe.

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/17/2019
VERSION
3.0

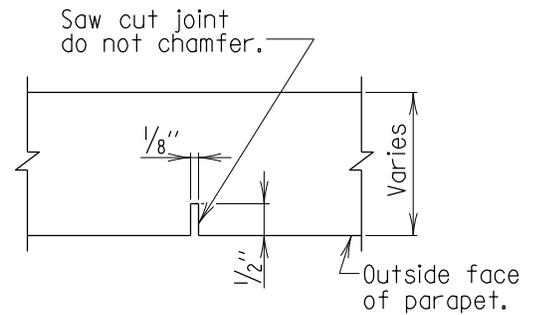
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
PARAPET CONTROL JOINT AND SINGLE CONDUIT PLACEMENT WITH 42" F-SHAPE AND SINGLE SLOPE PARAPET	
DETAIL NO. SUP-TB(CP)-201	SHEET <u>1</u> OF <u>3</u>

SUPER TRAFFIC BARRIER



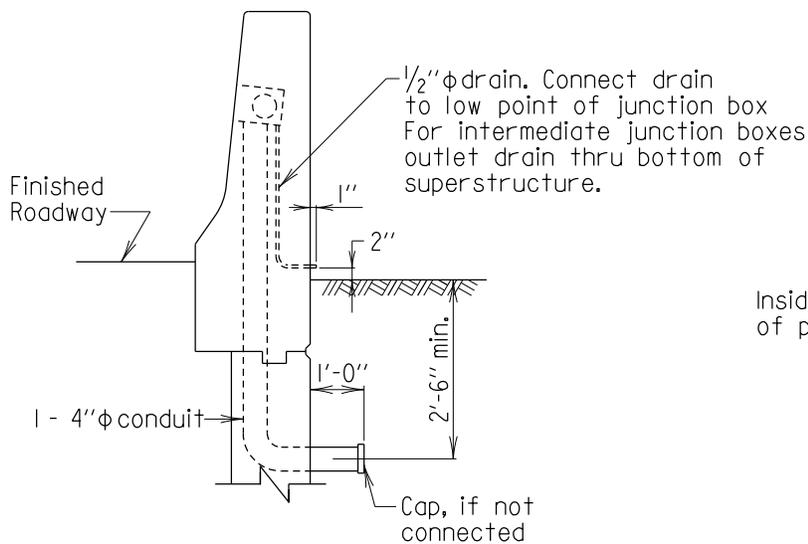
SECTION B-B

Scale: $\frac{3}{8}'' = 1'-0''$



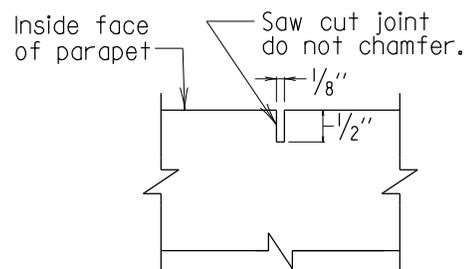
SECTION A-A

Scale: None



VIEW D-D

Scale: $\frac{3}{8}'' = 1'-0''$



SECTION C-C

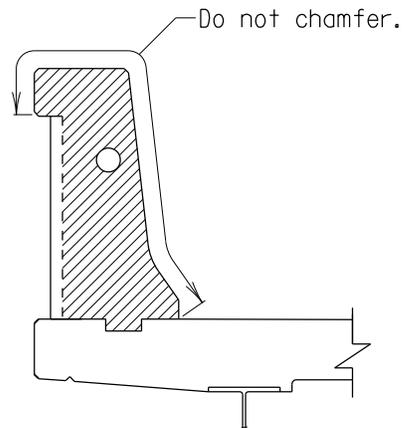
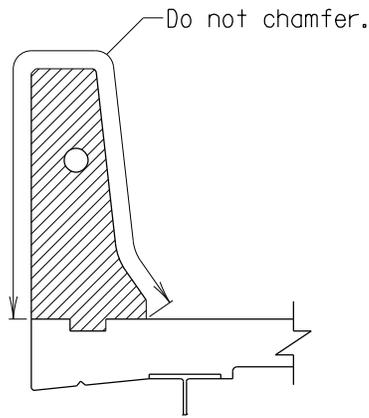
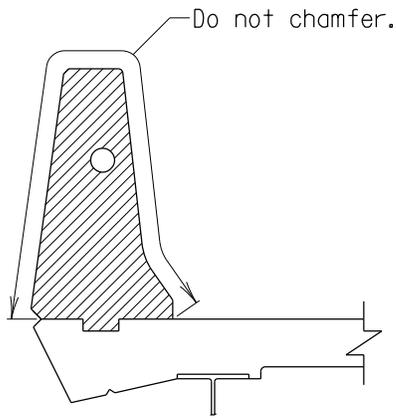
Scale: None

- Notes:
1. Parapet is placed continuously.
 2. Saw cut control joint to be sawed same day as concrete is poured.
 3. Fencing not shown.
 4. F-Shape barrier is shown for illustrative purposes only. See plans for barrier type.

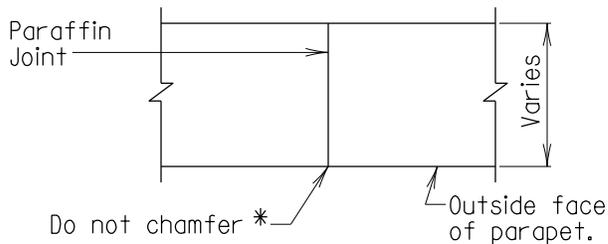
APPROVAL
<i>Ben C. Dwyer</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/17/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
PARAPET CONTROL JOINT AND SINGLE CONDUIT PLACEMENT WITH 42" F-SHAPE AND SINGLE SLOPE PARAPET
DETAIL NO. SUP-TB(CP)-201
SHEET 2 OF 3

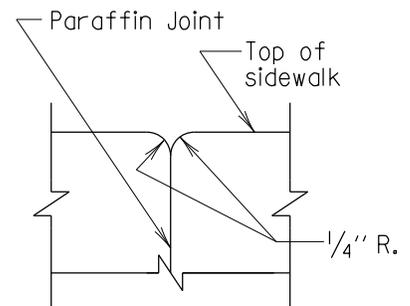
SUPER TRAFFIC BARRIER



SECTION B-B
Scale: $\frac{3}{8}'' = 1'-0''$



SECTION A-A
Scale: None



SECTION C-C
Scale: Full

- Notes:
1. Place vertical paraffin joint, shown hatched, at centerline of pier on multi span bridges.
 2. Joints shall be formed by placing alternate sections.
 3. The placement of adjacent sections shall have a 40 hour delay between placements.
 4. Fencing not shown.
 5. F-Shape barrier is shown for illustrative purposes only. See plans for barrier type.

*In order to ensure a smooth and acceptable surface, 420.03.11 (Construction Joints) will be strictly adhered to.

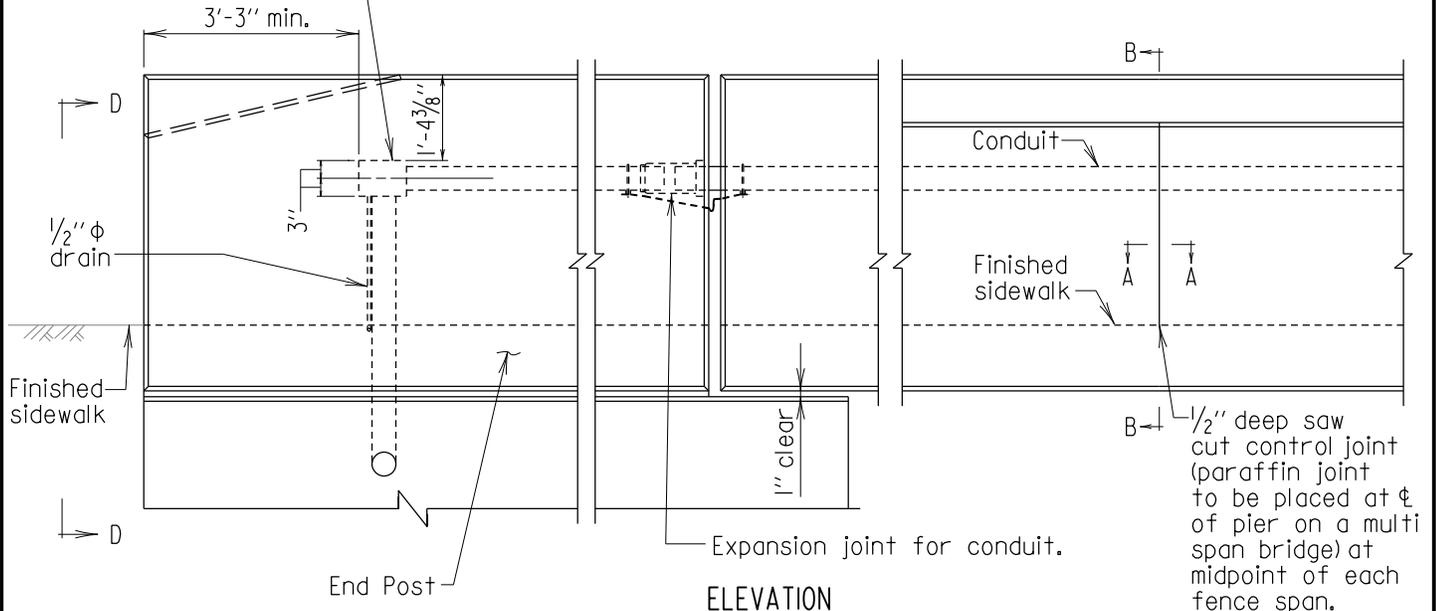
APPROVAL
<i>Ben C. Duda</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/17/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
PARAPET CONTROL JOINT AND SINGLE CONDUIT PLACEMENT WITH 42" F-SHAPE AND SINGLE SLOPE PARAPET
DETAIL NO. SUP-TB(CP)-201
SHEET <u>3</u> OF <u>3</u>

SUPER TRAFFIC BARRIER

Note: Detail shown is for parapet without fencing. Fencing details are similar. On bridges with no fencing, see Plans for parapet control joint spacing.

8"H x 6"V x 8" galvanized cast iron, galvanized steel or fiberglass U.L. listed junction box with cover. Provide holes in box for 4"φ conduit.



ELEVATION

Scale: $\frac{3}{8}'' = 1'-0''$

Note: For Section A-A & B-B see sheets 2 & 3 of 3. For View D-D see sheets 2 of 3.

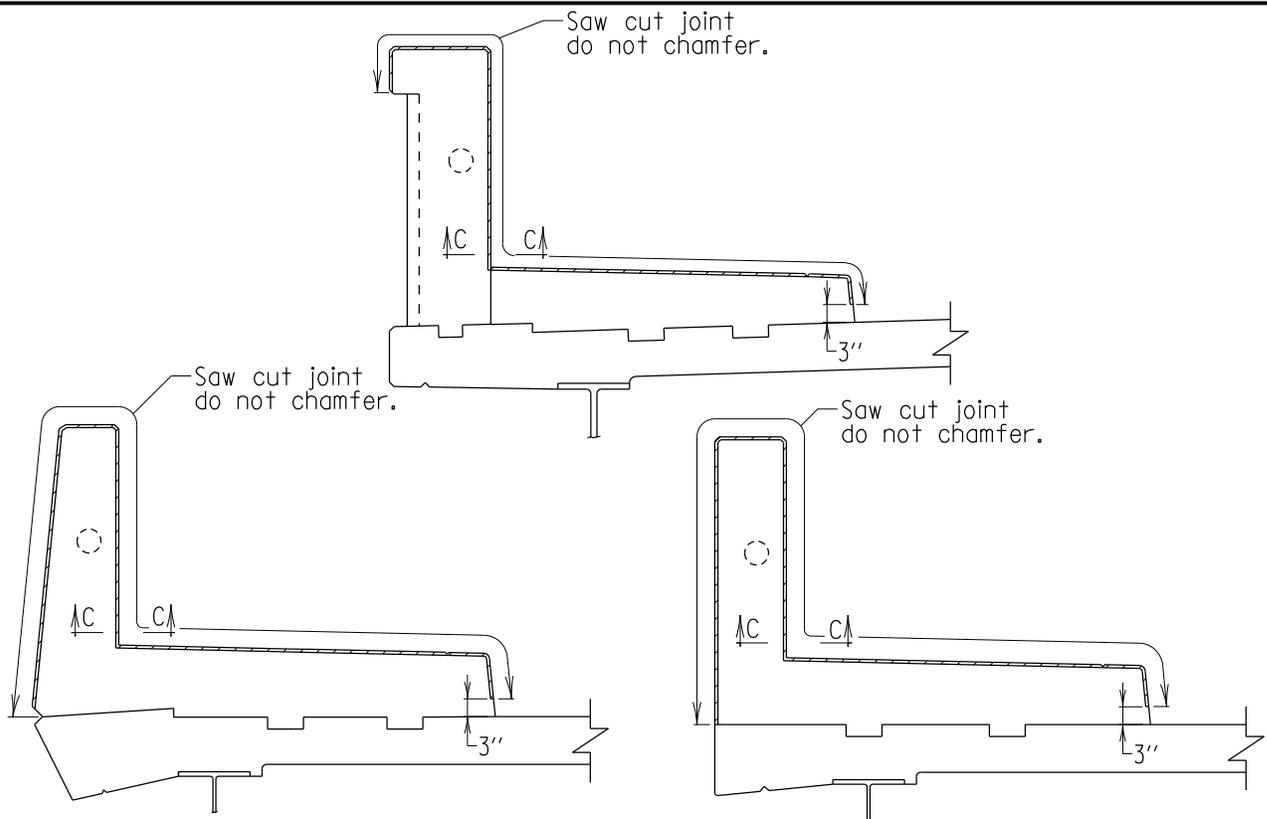
Notes:

1. The conduit and junction box are to be placed only when indicated in the Superstructure "Typical Section." If ϕ to ϕ of end junction boxes exceed 200', then additional junction boxes shall be placed in parapet, between control joints, so that the maximum distance between boxes is 200'. Junction boxes for light standards, may be utilized. All junction boxes to have $\frac{1}{2}''\phi$ drain at low point of box.
2. Conduit may be either PVC or galvanized pipe.

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3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
PARAPET CONTROL JOINT AND SINGLE CONDUIT PLACEMENT ON PARAPET WITH SIDEWALK	
DETAIL NO. SUP-TB(CP)-202	SHEET <u>1</u> OF <u>3</u>

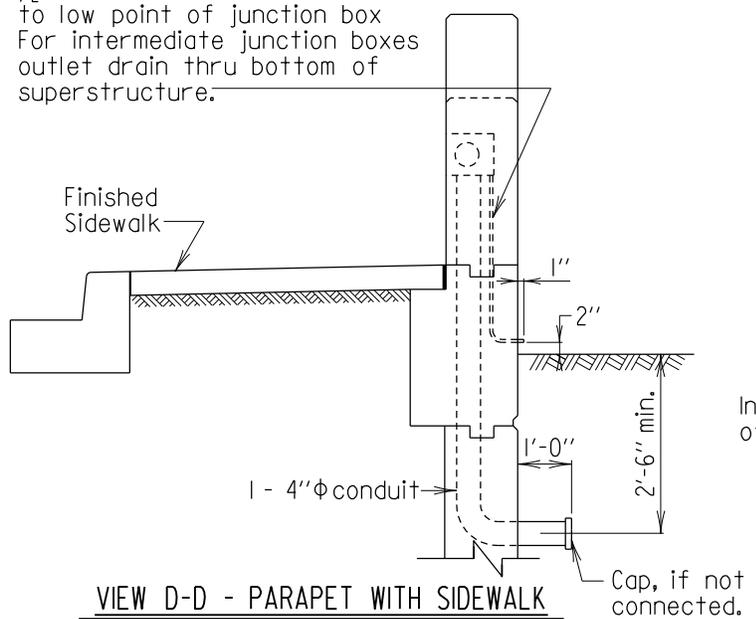
SUPER-TRAFFIC BARRIER



SECTION B-B

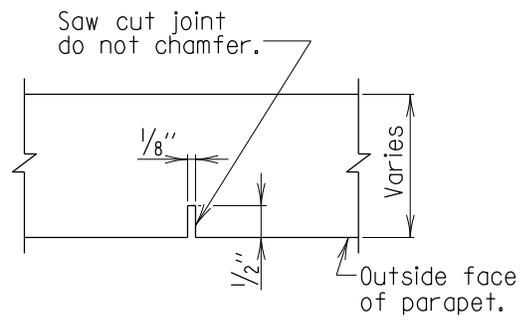
Scale: $\frac{3}{8}'' = 1'-0''$

$\frac{1}{2}''\phi$ drain. Connect drain to low point of junction box. For intermediate junction boxes outlet drain thru bottom of superstructure.



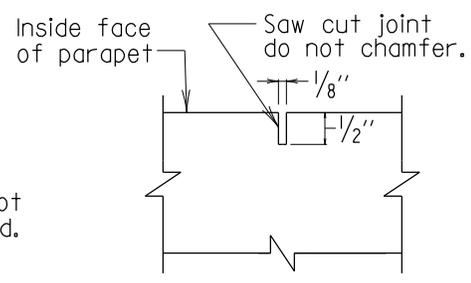
VIEW D-D - PARAPET WITH SIDEWALK

Scale: $\frac{3}{8}'' = 1'-0''$



SECTION A-A

Scale: None



SECTION C-C

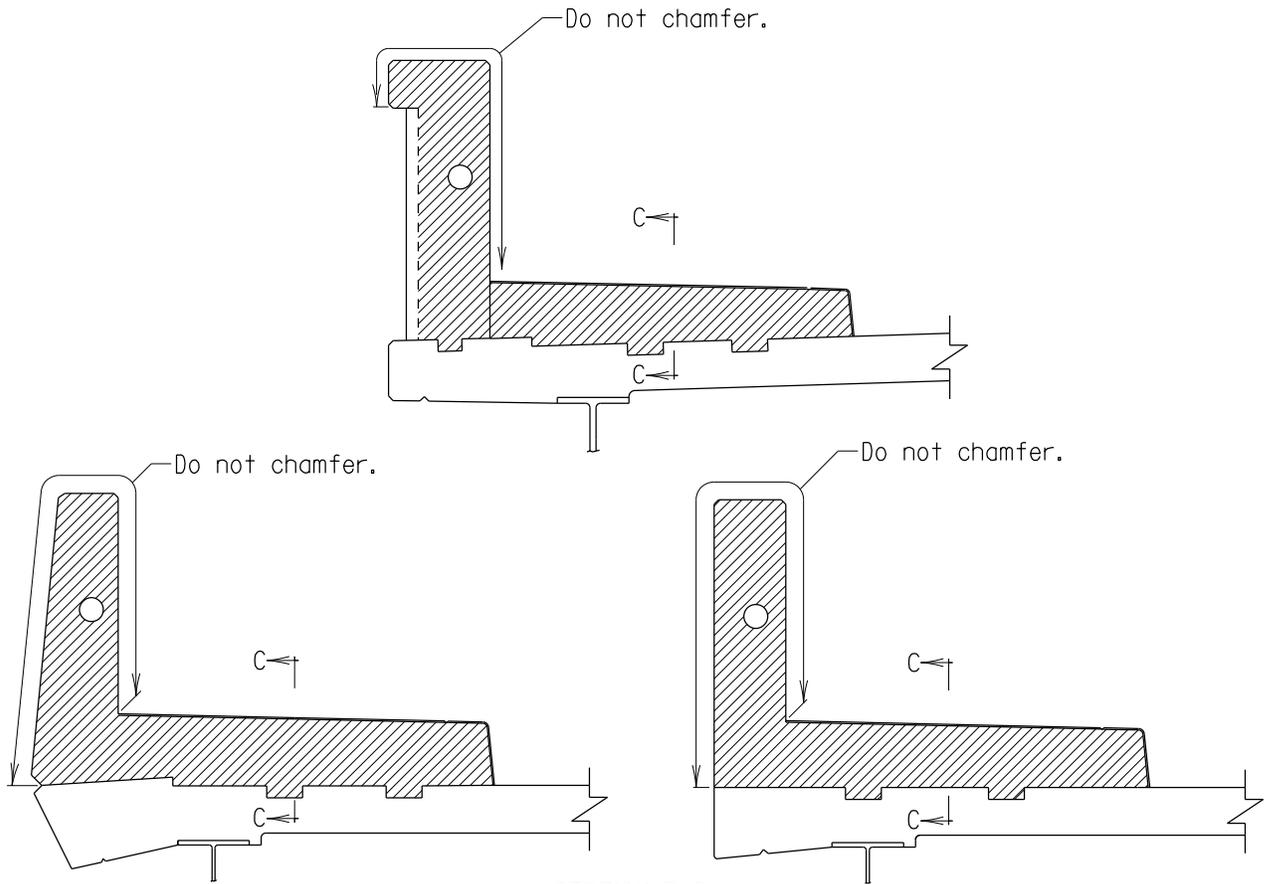
Scale: None

- Notes:
1. Parapet is placed continuously.
 2. Saw cut control joint to be sawed same day as concrete is poured.
 3. Fencing not shown.

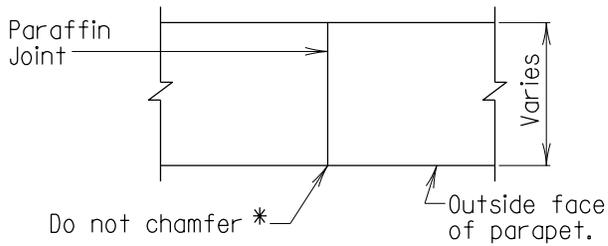
APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/17/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
PARAPET CONTROL JOINT AND SINGLE CONDUIT PLACEMENT ON PARAPET WITH SIDEWALK	
DETAIL NO. SUP-TB(CP)-202	SHEET <u>2</u> OF <u>3</u>

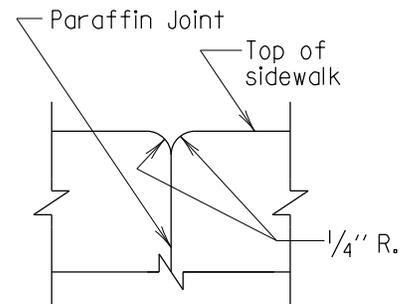
SUPER-TRAFFIC BARRIER



SECTION B-B
Scale: $\frac{3}{8}'' = 1-0''$



SECTION A-A
Scale: None



SECTION C-C
Scale: Full

*In order to ensure a smooth and acceptable surface, 420.03.11 (Construction Joints) will be strictly adhered to.

Notes:

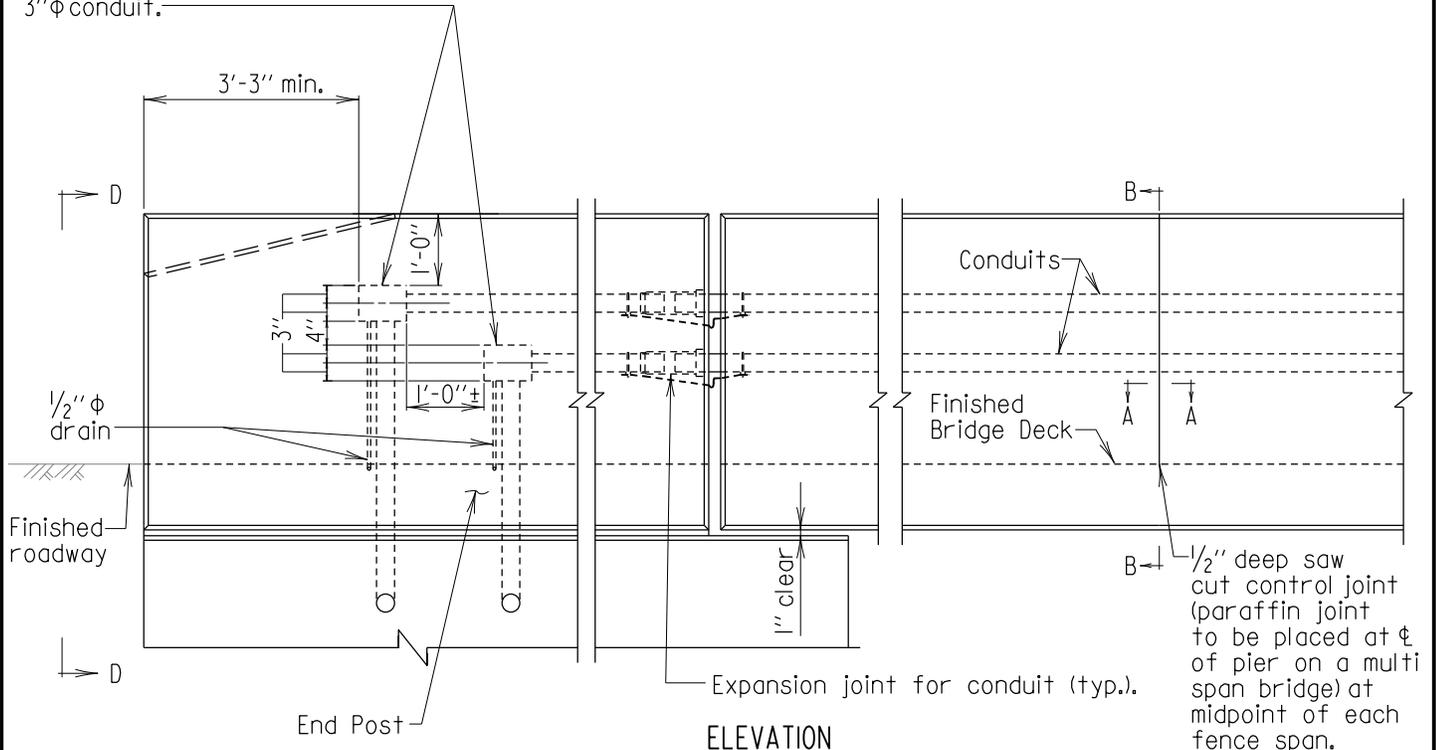
1. Place vertical paraffin joint, shown hatched, at centerline of pier on multi span bridges.
2. Joints shall be formed by placing alternate sections.
3. The placement of adjacent sections shall have a 40 hour delay between placements.
4. Fencing not shown.

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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
PARAPET CONTROL JOINT AND SINGLE CONDUIT PLACEMENT ON PARAPET WITH SIDEWALK
DETAIL NO. SUP-TB(CP)-202
SHEET <u>3</u> OF <u>3</u>

Note: Detail shown is for parapet without fencing. Fencing details are similar. On bridges with no fencing, see Plans for parapet control joint spacing.

8"H x 6"V x 8" galvanized cast iron, galvanized steel or fiberglass U.L. listed junction boxes with covers. Provide holes in box for 3"φ conduit.



ELEVATION

Scale: $\frac{3}{8}'' = 1'-0''$

Note: For Section A-A & B-B see sheet 2 of 3.
 For View D-D see sheet 2 of 3.
 For Sections A-A and B-B at centerline of pier on multi-span continuous bridges, see sheet 3 of 3.

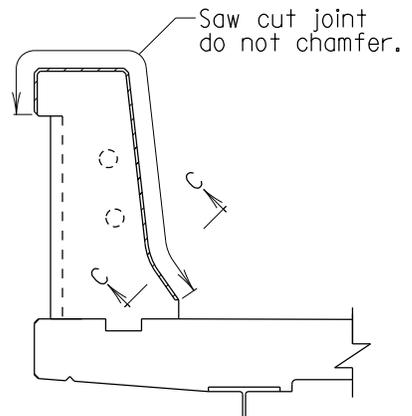
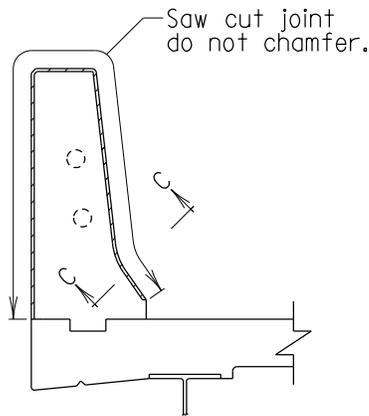
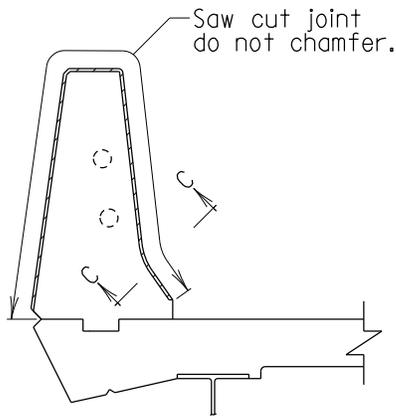
Notes:

1. The conduits and junction boxes are to be placed only when indicated in the Superstructure "Typical Section." If ϕ to ϕ of end junction boxes exceed 200', then additional junction boxes shall be placed in parapet, between control joints, so that the maximum distance between boxes is 200'. Junction boxes for light standards, may be utilized. All junction boxes to have $\frac{1}{2}''\phi$ drain at low point of box.
2. Conduit may be either PVC or galvanized pipe.

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DATE: 12/17/2019
VERSION
3.0

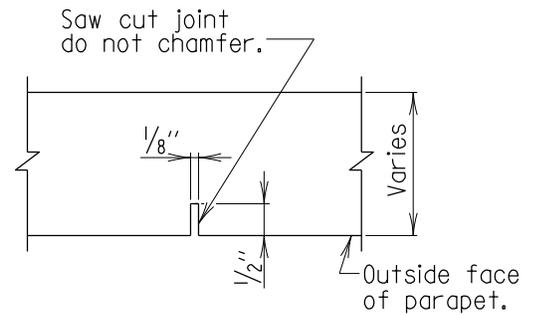
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
PARAPET CONTROL JOINT AND DUAL CONDUIT PLACEMENT WITH 42" F-SHAPE AND SINGLE SLOPE PARAPET
DETAIL NO. SUP-TB(CP)-30I
SHEET <u>1</u> OF <u>3</u>

SUPER TRAFFIC BARRIER



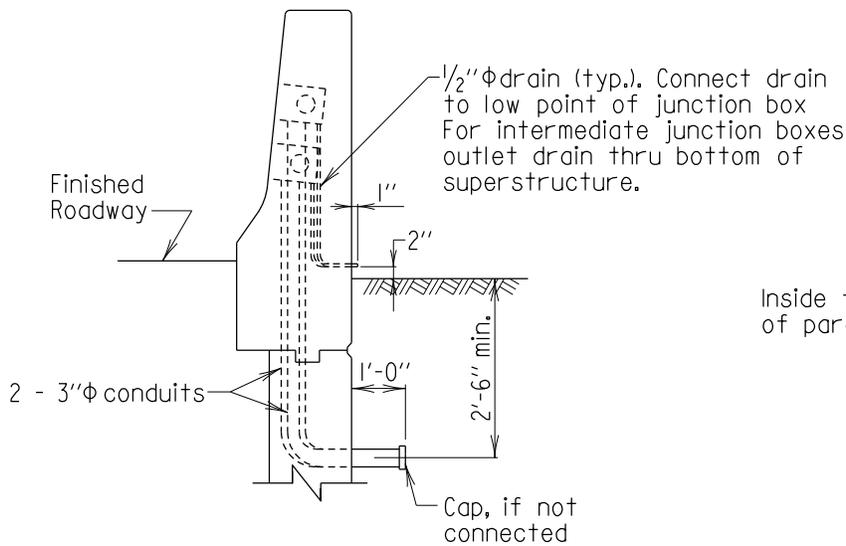
SECTION B-B

Scale: $\frac{3}{8}'' = 1'-0''$



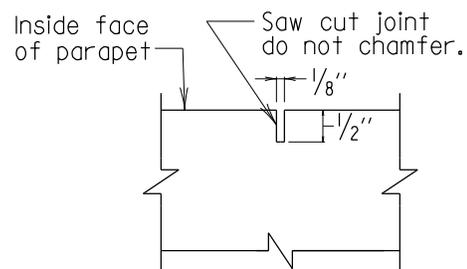
SECTION A-A

Scale: None



VIEW D-D

Scale: $\frac{3}{8}'' = 1'-0''$



SECTION C-C

Scale: None

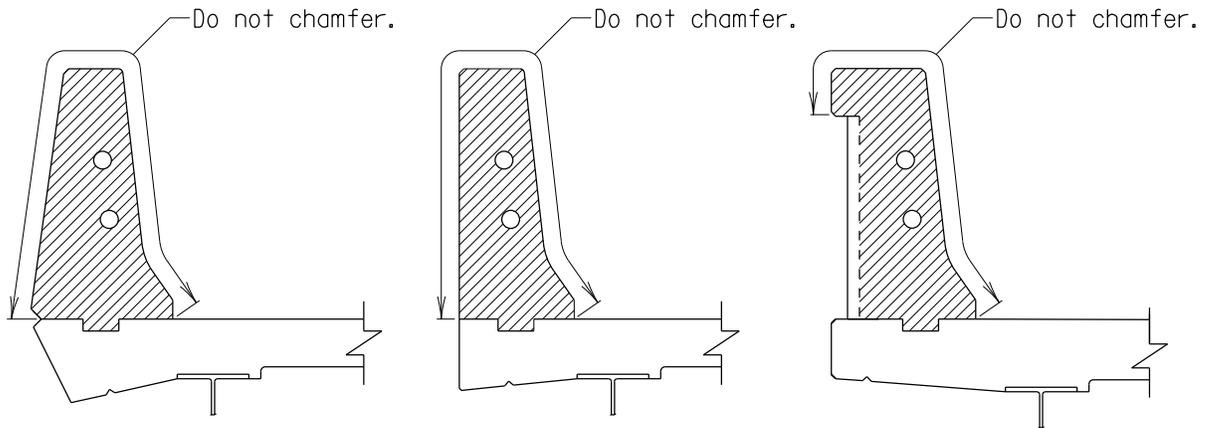
Notes:

1. Parapet is placed continuously.
2. Saw cut control joint to be sawed same day as concrete is poured.
3. Fencing not shown.
4. F-Shape barrier is shown for illustrative purposes only. See plans for barrier type.

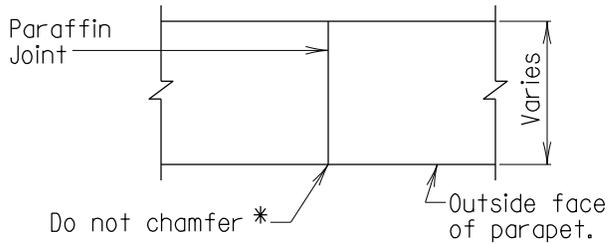
APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/17/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
PARAPET CONTROL JOINT AND DUAL CONDUIT PLACEMENT WITH 42" F-SHAPE AND SINGLE SLOPE PARAPET	
DETAIL NO. SUP-TB(CP)-301	SHEET <u>2</u> OF <u>3</u>

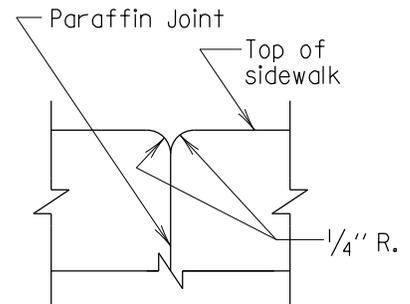
SUPER TRAFFIC BARRIER



SECTION B-B
Scale: $\frac{3}{8}'' = 1-0''$



SECTION A-A
Scale: None



SECTION C-C
Scale: Full

*In order to ensure a smooth and acceptable surface, 420.03.11 (Construction Joints) will be strictly adhered to.

Notes:

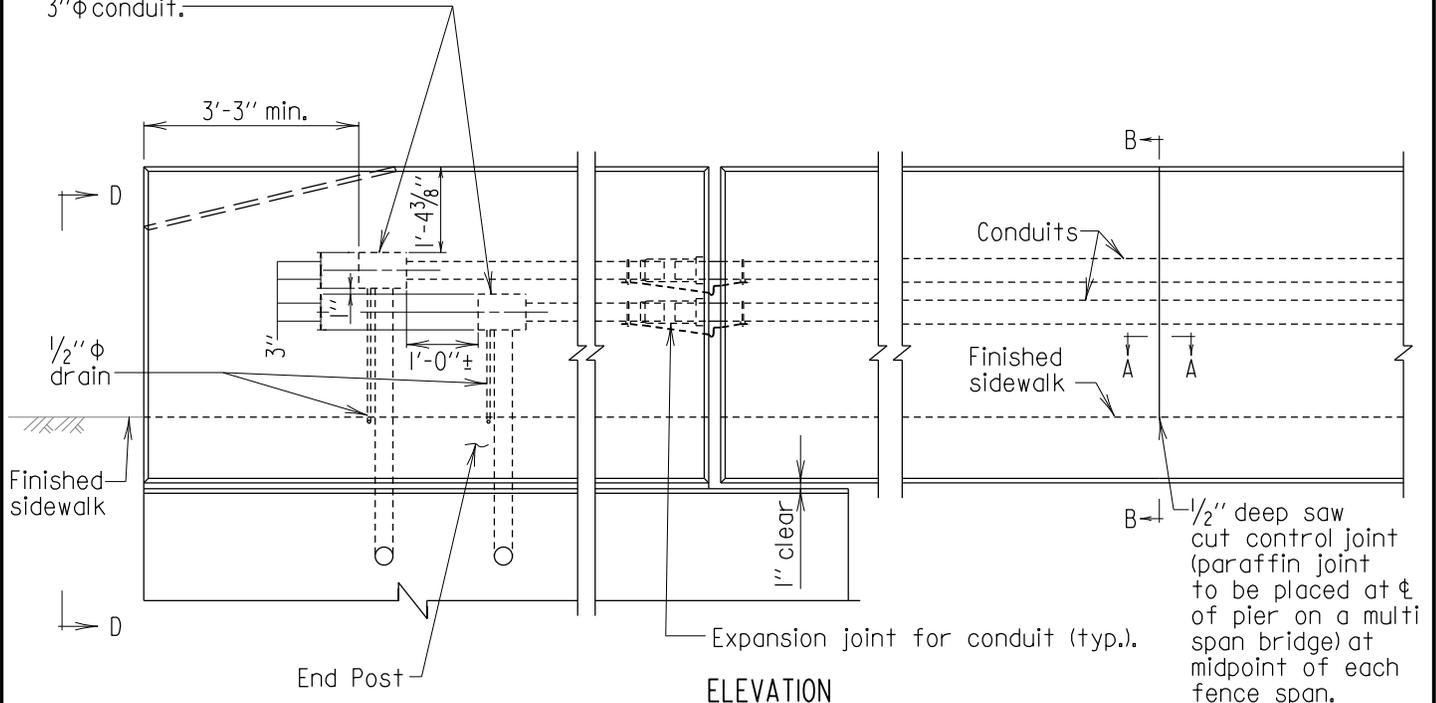
1. Place vertical paraffin joint, shown hatched, at centerline of pier on multi-span continuous bridges.
2. The placement of adjacent sections shall have a 40 hour delay between placements.
3. Fencing not shown.
4. F-Shape barrier is shown for illustrative purposes only. See plans for barrier type.

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<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/17/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
PARAPET CONTROL JOINT AND DUAL CONDUIT PLACEMENT WITH 42" F-SHAPE AND SINGLE SLOPE PARAPET	
DETAIL NO. SUP-TB(CP)-301	SHEET <u>3</u> OF <u>3</u>

Note: Detail shown is for parapet without fencing. Fencing details are similar. On bridges with no fencing, see Plans for parapet control joint spacing.

8"H x 6"W x 8" galvanized cast iron, galvanized steel or fiberglass U.L. listed junction boxes with covers. Provide holes in box for 3" ϕ conduit.



ELEVATION

Scale: $\frac{3}{8}'' = 1'-0''$

Note: For Section A-A and B-B see sheets 2 & 3 of 3. For View D-D see sheet 2 of 4. For Sections A-A and B-B at centerline of pier on multi-span continuous bridges, see sheet 3 of 3.

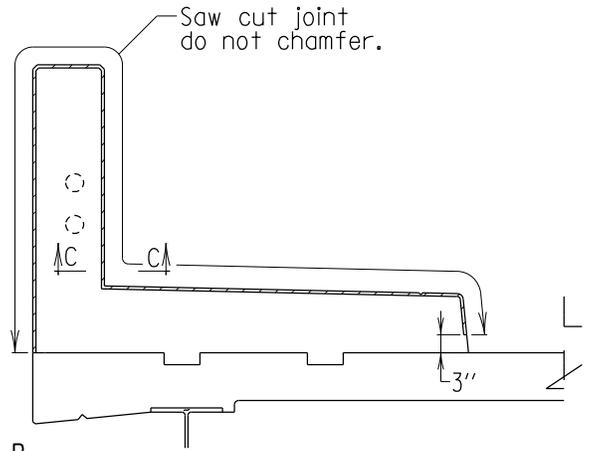
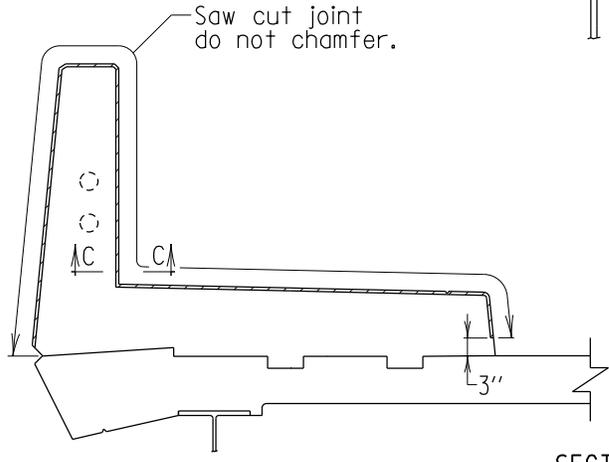
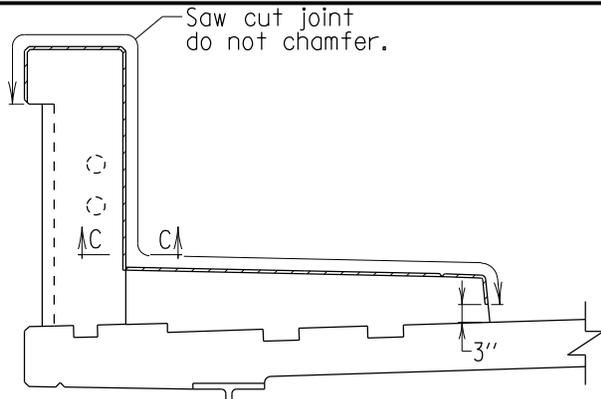
Notes:

1. The conduits and junction boxes are to be placed only when indicated in the Superstructure "Typical Section." If ϕ to ϕ of end junction boxes exceed 200', then additional junction boxes shall be placed in parapet, between control joints, so that the maximum distance between boxes is 200'. Junction boxes for light standards, may be utilized. All junction boxes to have $\frac{1}{2}'' \phi$ drain at low point of box.
2. Conduit may be either PVC or galvanized pipe.

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<i>Ben C. Dwyer</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/17/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
PARAPET CONTROL JOINT AND DUAL CONDUIT PLACEMENT ON PARAPET WITH SIDEWALK
DETAIL NO. SUP-TB(CP)-302
SHEET <u>1</u> OF <u>3</u>

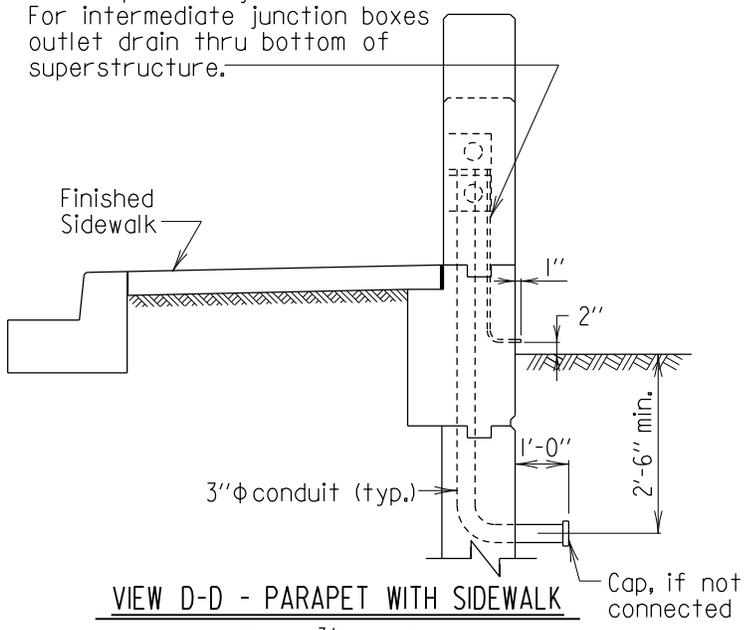
SUPER-TRAFFIC BARRIER



SECTION B-B

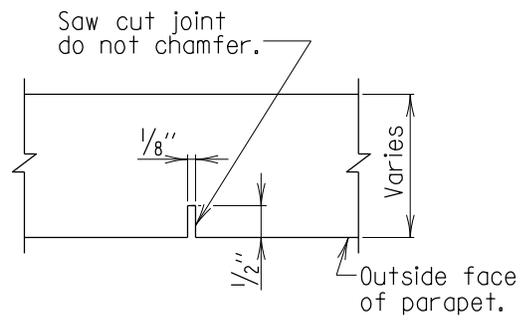
Scale: $\frac{3}{8}'' = 1'-0''$

$\frac{1}{2}''\phi$ drain (typ.). Connect drain to low point of junction box. For intermediate junction boxes outlet drain thru bottom of superstructure.



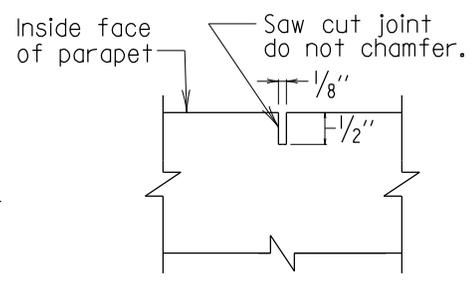
VIEW D-D - PARAPET WITH SIDEWALK

Scale: $\frac{3}{8}'' = 1'-0''$



SECTION A-A

Scale: None



SECTION C-C

Scale: None

- Notes:
1. Parapet is placed continuously.
 2. Saw cut control joint to be sawed same day as concrete is poured.
 3. Fencing not shown.

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<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/17/2019
VERSION
3.0

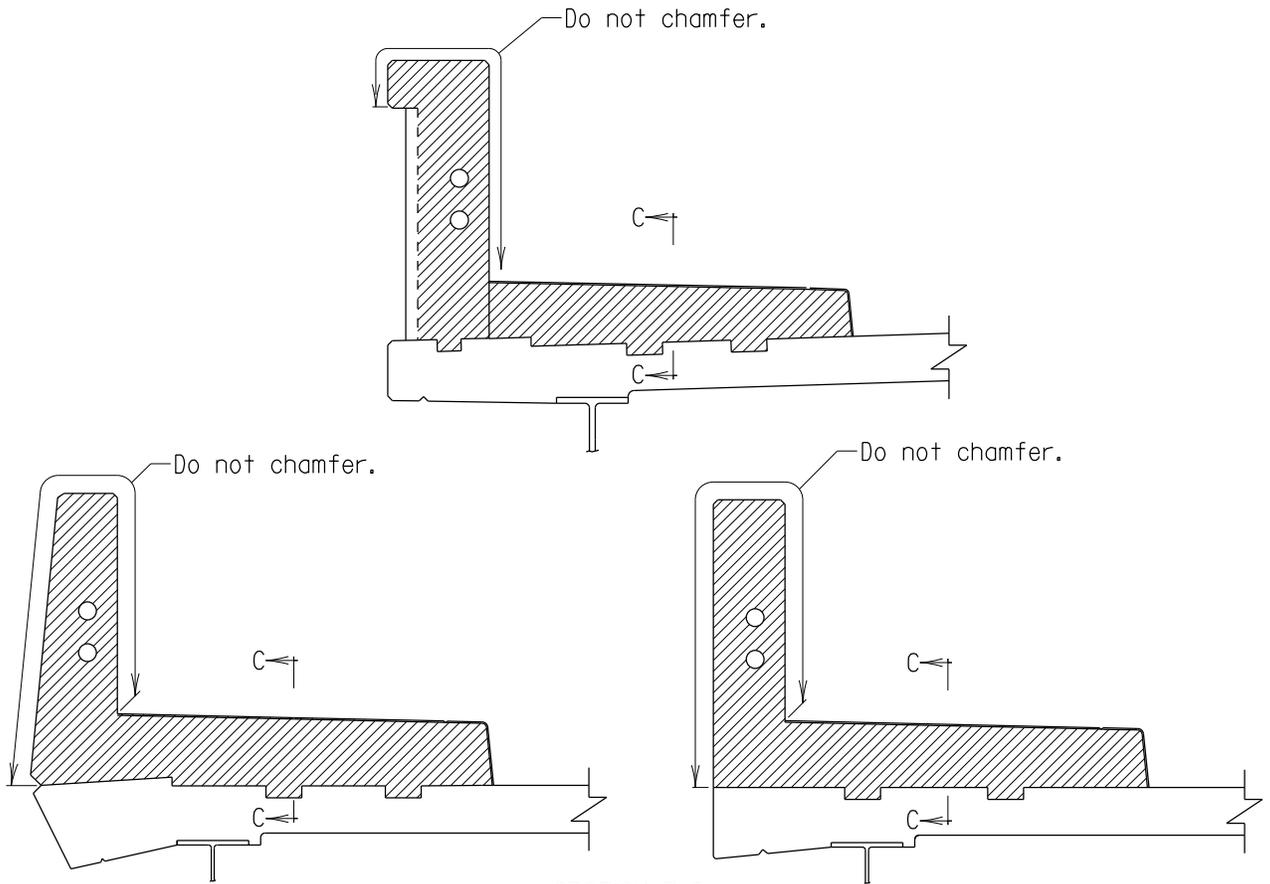
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

**PARAPET CONTROL JOINT AND DUAL CONDUIT
PLACEMENT ON
PARAPET WITH SIDEWALK**

DETAIL NO. SUP-TB(CP)-302

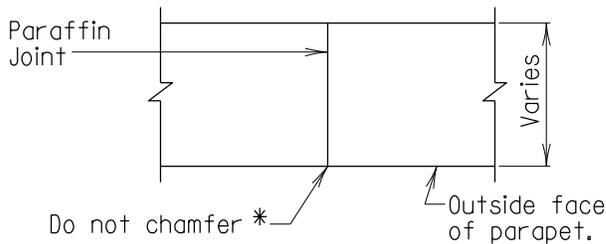
SHEET 2 OF 3

SUPER-TRAFFIC BARRIER



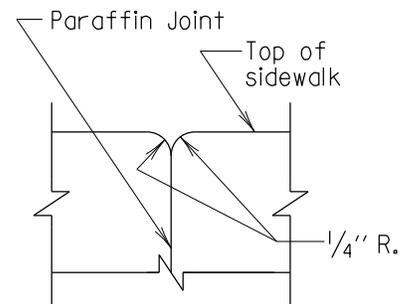
SECTION B-B

Scale: $\frac{3}{8}'' = 1-0''$



SECTION A-A

Scale: None



SECTION C-C

Scale: Full

*In order to ensure a smooth and acceptable surface, 420.03.11 (Construction Joints) will be strictly adhered to.

Notes:

1. Place vertical paraffin joint, shown hatched, at centerline of pier on multi-span continuous bridges.
2. The placement of adjacent sections shall have a 40 hour delay between placements.
3. Fencing not shown.

APPROVAL
<i>Ben C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/17/2019
VERSION
3.0

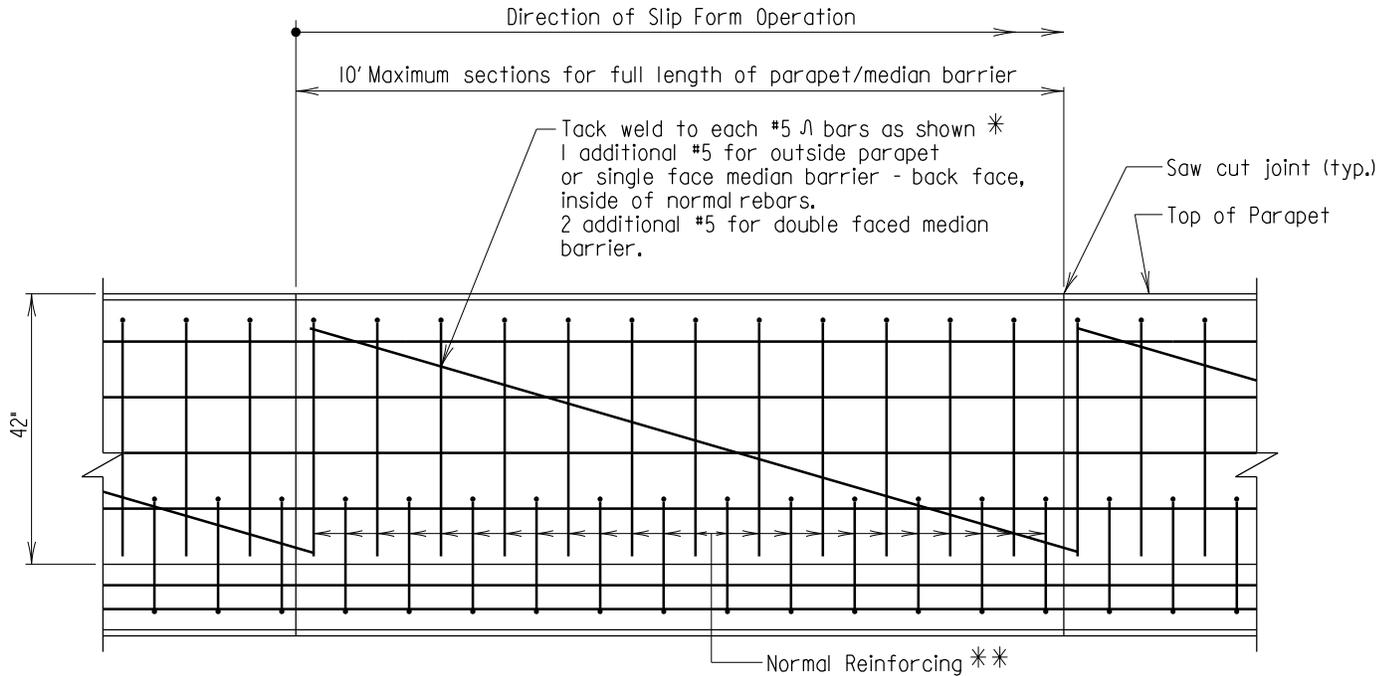
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
PARAPET CONTROL JOINT AND DUAL CONDUIT PLACEMENT ON PARAPET WITH SIDEWALK
DETAIL NO. SUP-TB(CP)-302
SHEET <u>3</u> OF <u>3</u>

Chapter 03 - Superstructure

Section 02 – Traffic Barriers

SUB-SECTION 06

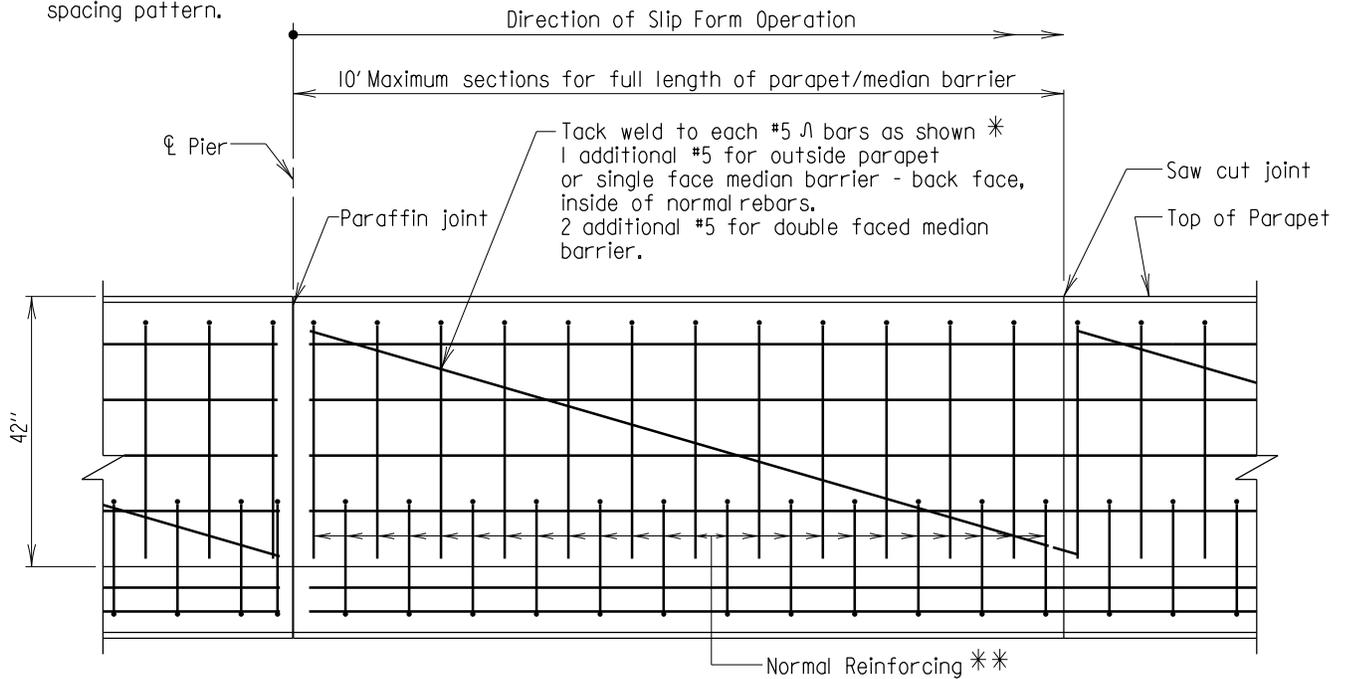
**MISCELLANEOUS
DETAILS
(SUP-TB(MISC))**



ELEVATION

Scale: 1/2" = 1'-0"

- * Coat weld with epoxy touch up.
- ** See appropriate detail for rebar types and spacing pattern.



ELEVATION-MULTISPAN AT PIER

Scale: 1/2" = 1'-0"

Note:

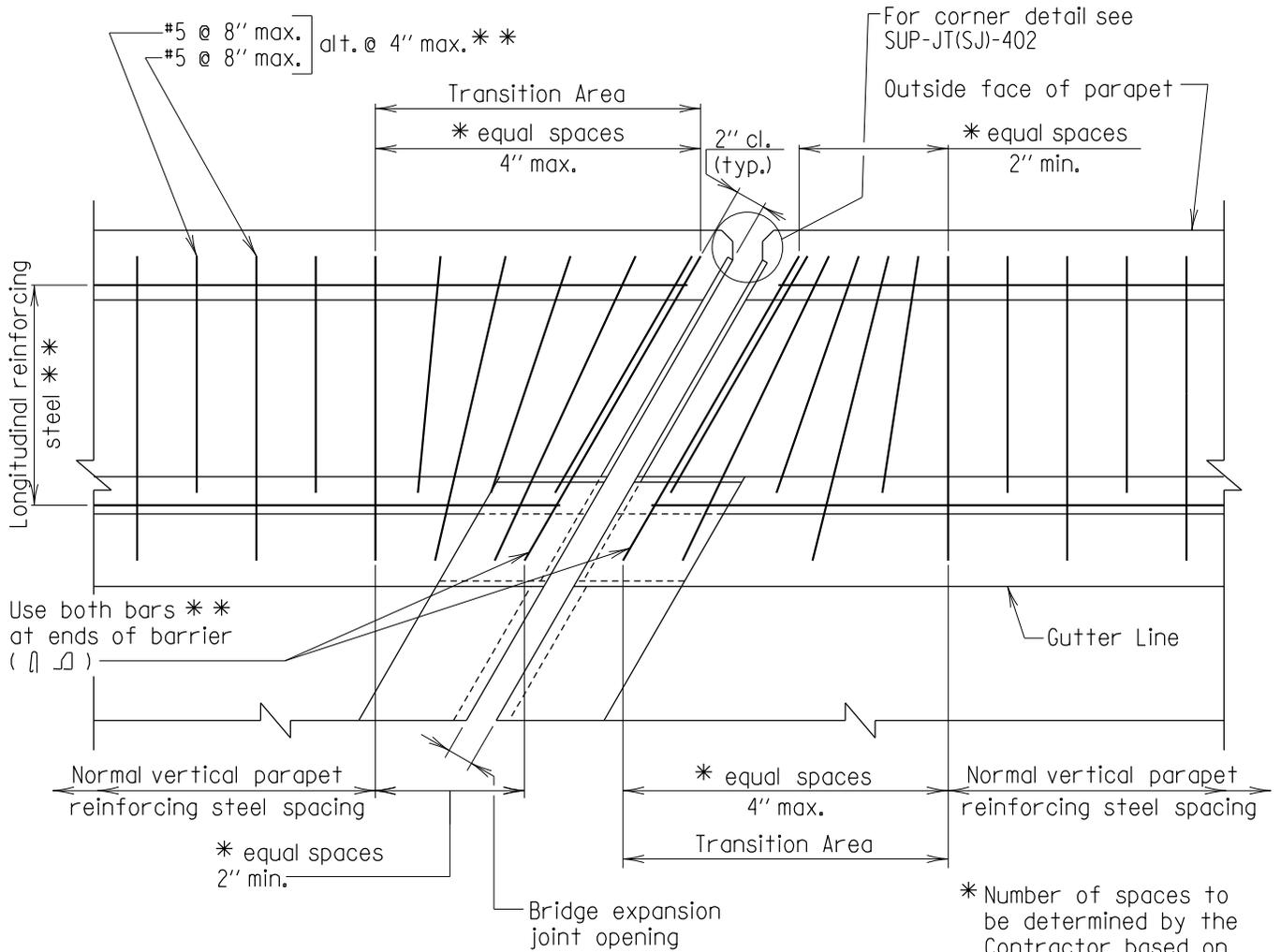
1. All longitudinal bars shall be placed continuously in the parapet/median barrier from expansion opening to expansion opening in a simple span bridge and expansion opening to centerline of pier in a multi-span bridge.

42' PARAPET OR MEDIAN

APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/20/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
ADDITIONAL REINFORCING FOR SLIP FORMING PARAPETS AND MEDIAN BARRIERS	
DETAIL NO. SUP-TB(MISC)-101	SHEET <u>1</u> OF <u>1</u>

SUPER TRAFFIC BARRIER

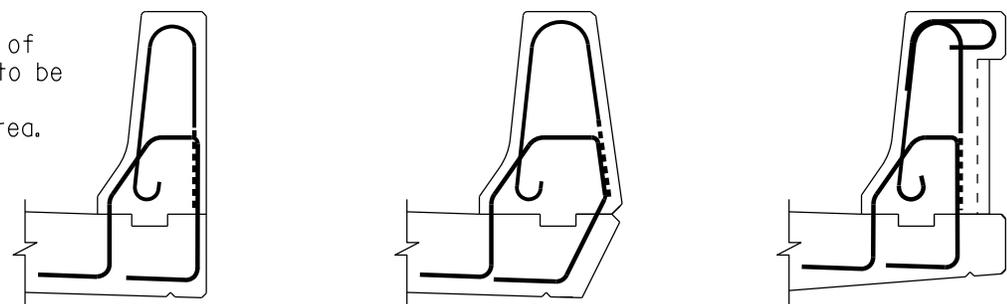


** Number, shape and size of bars is contingent upon the height and style of parapet that is chosen. See Typical Section for details.

* Number of spaces to be determined by the Contractor based on the skew angle as part of the Shop Drawing Process.

PLAN
Scale: 1" = 1'-0"

Note:
Dashed area of reinforcing to be eliminated in transition area.



REINFORCING PATTERN FOR TRANSITION AREA ONLY

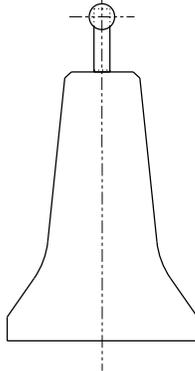
- Notes:
1. All reinforcing steel to be epoxy coated.
 2. Compression seal not shown.
 3. F-Shape barrier is for illustrative purposes only. See plans for barrier type.

APPROVAL
<i>Ben C. ...</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/16/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
PARAPET REINFORCING STEEL PLACEMENT AT EXPANSION JOINT	
DETAIL NO. SUP-TB(MISC)-201	SHEET <u>1</u> OF <u>1</u>

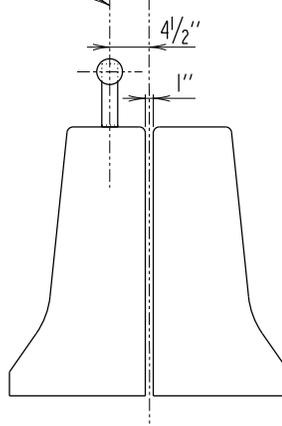
SUPER TRAFFIC BARRIER

ϕ Yellow Delineator and
ϕ Barrier



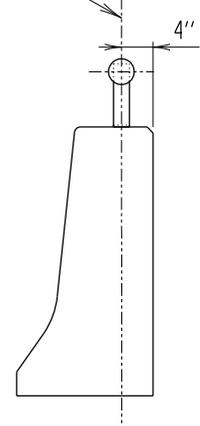
SOLID MEDIAN BARRIER

ϕ Yellow Delineator



SPLIT MEDIAN BARRIER

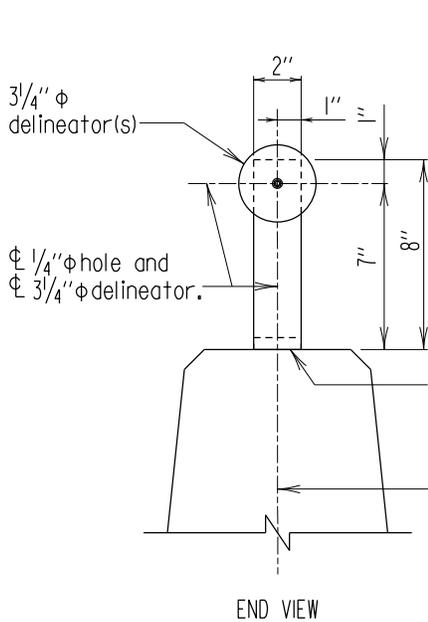
ϕ White Delineator



SINGLE FACE BARRIER

TRANSVERSE LOCATION OF DELINEATORS

Scale: 1/2" = 1'-0"



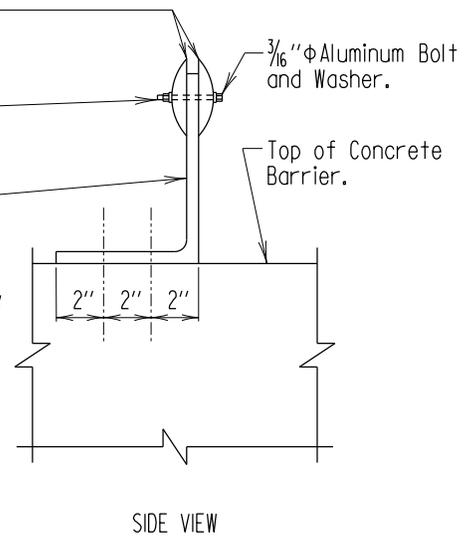
2 - 3/4" Single delineators
(Median Barrier Only).
3/4" Single delineators
(All other Barriers).

Aluminum Nut and Washer
(Burr threads after tightening).

Delineator support to be
8" x 6" x 1/4" L or bent
plate (Aluminum).

Bottom of 6" leg of angle to be thoroughly
coated with an approved caulking compound
or an approved zinc chromate paint.

ϕ 2 - 1/4" Galvanized Bolts in Bulldog
Gold Digger Flush Drill Anchors (or
Approved Equal). As alternate, the
Contractor may cast 2 - 1/4" x 4" long
galvanized bolts in the concrete. Use
galvanized nuts and washers to fasten
support to barrier.



CONCRETE BARRIER DELINEATOR

Scale: 1/2" = 1'-0"

* SPACING OF DELINEATORS	
Radius of Horizontal Curve	C/C Distance Between Delineators
Less than 2000'	115'
2000' to 3000'	130'
3000' to 5000'	160'
Over 5000'	200'
Tangent Area	200'

* Place one delineator at each end of each wall, even if wall is shorter than lengths indicated below.

Note:
F-Shape barrier is for
illustrative purposes only.
See plans for barrier type.

APPROVAL
<i>Gene Clough</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/16/2019
VERSION
1.01

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
CONCRETE BARRIER DELINEATOR
DETAIL NO. SUP-TB(MISC)-301
SHEET 1 OF 1

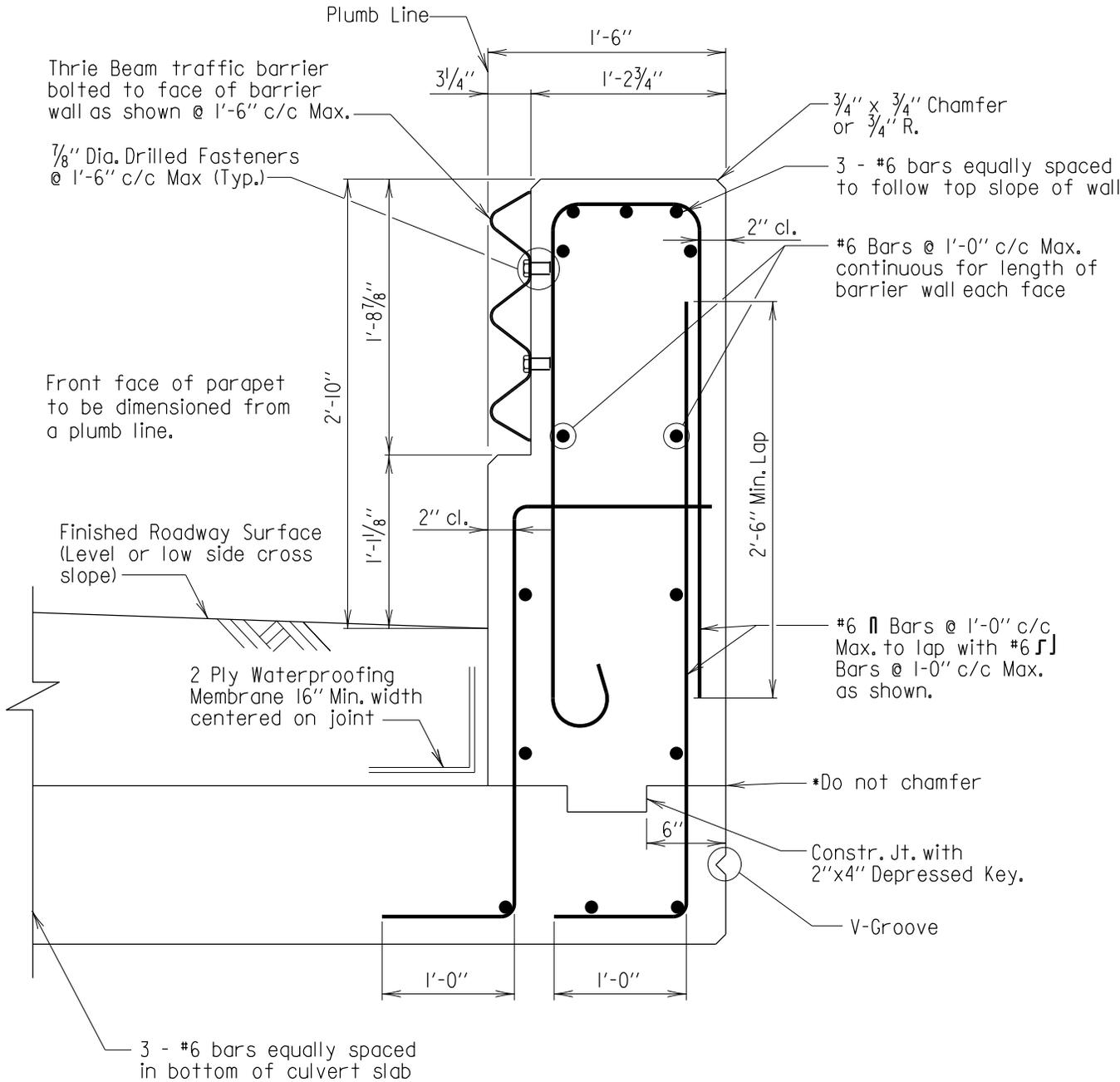
SUPER TRAFFIC BARRIER

Chapter 03 - Superstructure

Section 02 – Traffic Barriers

SUB-SECTION 07

**34 " VERTICAL
PARAPET
WITH THRIE
BEAM
(SUP-TB(34T))**



* In order to ensure a smooth and acceptable surface, 420.03.11 (Construction joints) will be strictly adhered to.

SECTION
Scale: 1" = 1'-0"

- Notes:
1. All #6 longitudinal bars shall be placed continuously in the parapet from expansion opening to expansion opening in a simple span bridge.
 2. Key is nominal size.
 3. All reinforcing steel to be epoxy coated.
 4. Concrete deck reinforcing steel not shown.
 5. 7/8" Dia drilled fasteners to be stainless steel or galvanized. Zinc coated fasteners will not be permitted.

MASH COMPLAINT TL-3 BRIDGE RAILING

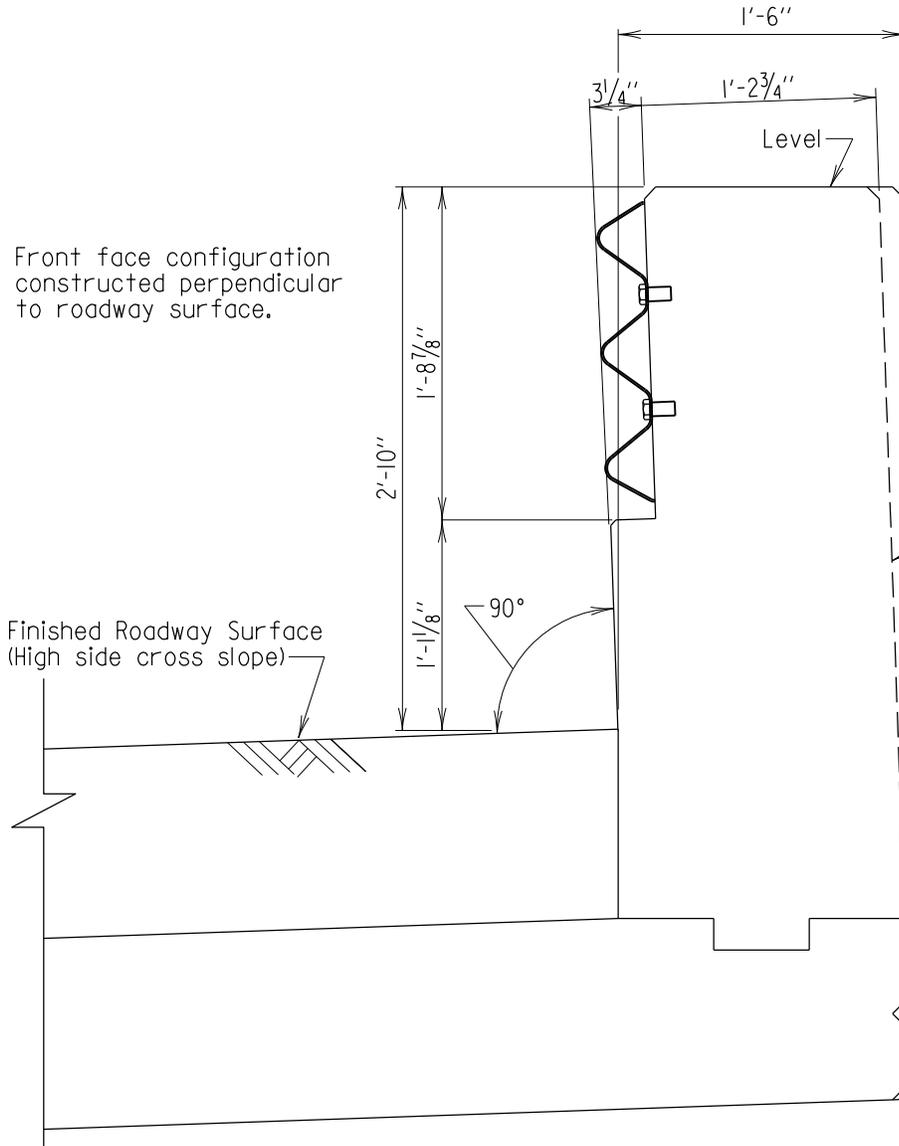
APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/27/2019
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
LEVEL OR LOW SIDE OF CROSS SLOPE 34" THRIE BEAM ATTACHED TO VERTICAL WALL PARAPET	
DETAIL NO. SUP-TB(34T)-101	SHEET <u>1</u> OF <u>2</u>

SUPER - TRAFFIC BARRIERS

Front face configuration constructed perpendicular to roadway surface.

Finished Roadway Surface (High side cross slope)



Contractor has the option of either constructing rear face plumb or on a slope perpendicular to roadway surface. Whatever option is chosen must be used throughout all structure(s) at a particular crossing. No additional compensation will be provided to the contractor for whatever option is chosen.

SECTION

Scale: 1" = 1'-0"

Note:
For all details not shown see sheet 1 of 2.

MASH COMPLAINT TL-3 BRIDGE RAILING

APPROVAL
<i>Ben C. Dwyer</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 08/27/2019
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
HIGH SIDE OF CROSS SLOPE 34" THRIE BEAM ATTACHED TO VERTICAL WALL PARAPET
DETAIL NO. SUP-TB(34T)-101
SHEET 2 OF 2

SUPER - TRAFFIC BARRIERS