

STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	NO.
VA.			

Notes:

Plan dimensions shown are measured in the respective horizontal and vertical planes.

The Contractor shall determine all dimensions and details necessary for installation.

All concrete shall be Low Shrinkage Class A4 Modified.

All levels for concrete shall be 3/4".

All reinforcing steel shall be Corrosion Resistant Reinforcing Steel, Class ...

For details and reinforcing steel schedule of terminal wall, see sheet ....

Posts and rail members, including pipe sleeves, shall be ASTM A500 Grade B steel. Plates shall be ASTM A36 steel. Charpy V-notch testing is not required for HSS members.

Bolts for attaching rails to post are 3/4" diameter round head (with slot in head), ASTM A449.

For bolts attaching rails to posts, bolt extensions beyond nut shall be limited to the smaller of one and a half finishing turns or 1/4". If the extension is longer, excess shall be cut off and the edges of the bolt end ground so that no sharp edges remain. Cold galvanizing shall be applied to damaged galvanized areas.

All bolts shall be snug tightened.

All steel, including hardware, shall be hot dip galvanized.

Posts shall be equally spaced within a span. Maximum spacing is 6'-8".

Posts shall be seated on neoprene pads 1/8" minimum thickness, having a nominal durometer hardness of 60. Pads shall conform to post base dimensions.

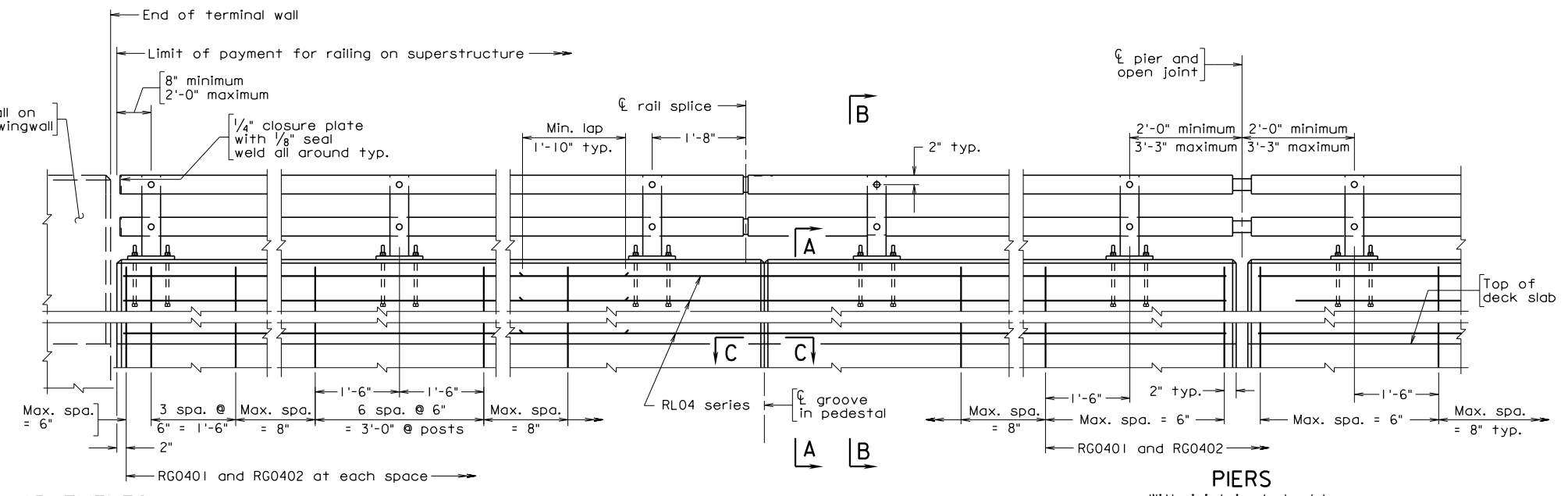
Posts shall be vertical in transverse direction and normal to longitudinal profile grade. Cut bottom of posts to meet these configurations.

Rails to be continuous over a minimum of 3 posts before splicing.

For additional notes, see sheet for the CPSR-3.

After galvanizing, all exposed surfaces, including all hardware (except hardware attaching the post base plates), shall be powder coated in accordance with the Special Provision for Powder Coated Galvanized Material. Finished color shall be brown, Federal Standard Color No. 595-20059.

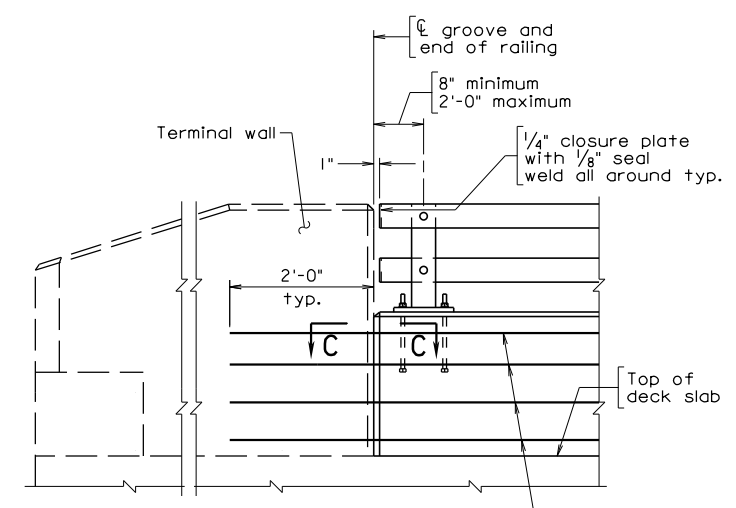
After railing installations are completed, galvanized hardware used in the attachment of post base plates shall be field coated using System F. 6" coating shall match the specified railing color.



**ABUTMENTS**  
Terminal Wall on Wingwall

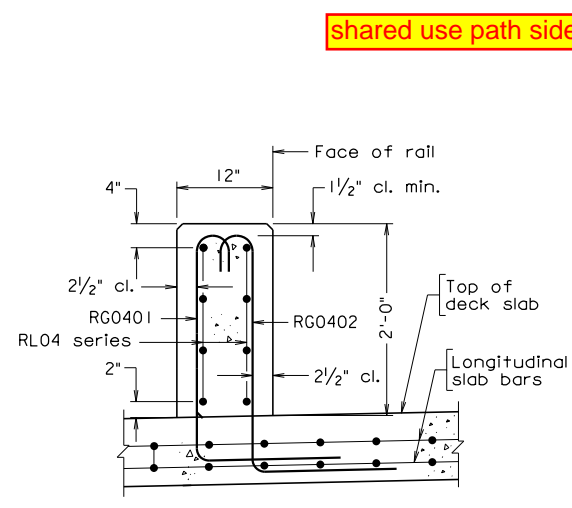
**ELEVATION**

**PIERS**  
With joint in deck slab



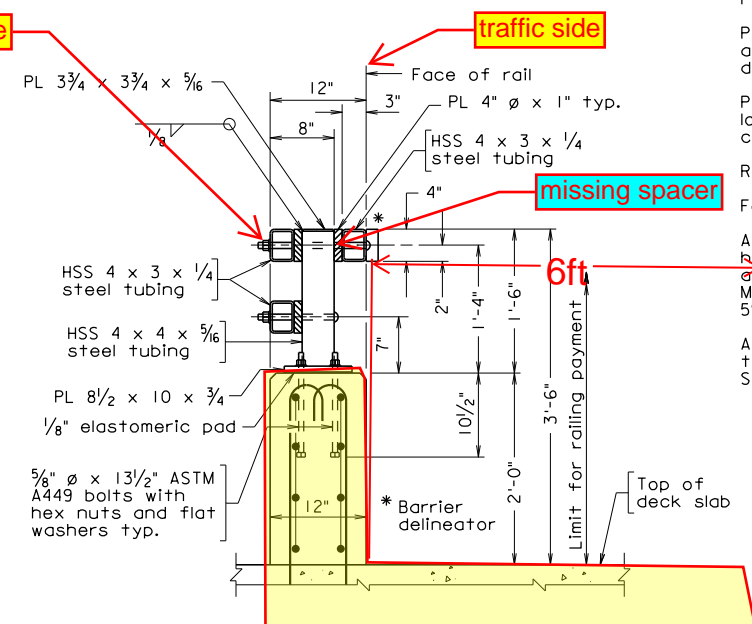
**ABUTMENT**

**PART ELEVATION**  
Terminal Wall on Superstructure



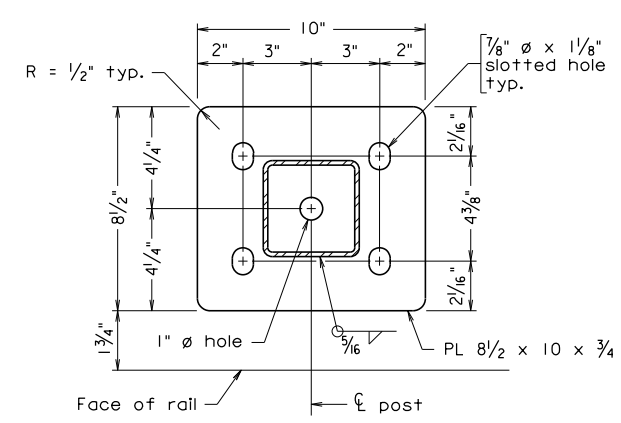
**SECTION A-A**  
Scale: 1" = 1'-0"

Transverse rebar in deck slab not shown for clarity

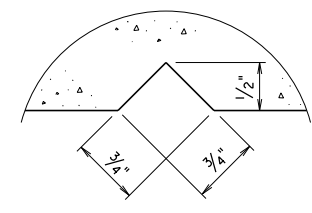


**SECTION B-B**  
Scale: 1" = 1'-0"

Bolts through base plate shall be contained inside rebar cage



**BASE PLATE DETAIL**  
Not to scale



**SECTION C-C**  
Full scale

Groove detail for both sides of rail

REINFORCING STEEL SCHEDULE					
Mark	Size	No.	Length	Pin $\phi$	Location
RG0401	#4			3"	Parapet
RG0402	#4			3"	Parapet
RL04	#4				Parapet

Dimensions in bending diagram are out-to-out of bars.

cpsr2.dgn

10-31-2023

CPSR-2

Sealed and Signed by:  
Junyi Meng  
Lic. No. 033572  
On the date of  
October 31, 2023

A copy of the original sealed and signed standard drawing is on file in the Central Office.

VDOT S&B DIVISION  
RICHMOND, VA  
STRUCTURAL ENGINEER

Scale: 3/4" = 1'-0" unless otherwise noted

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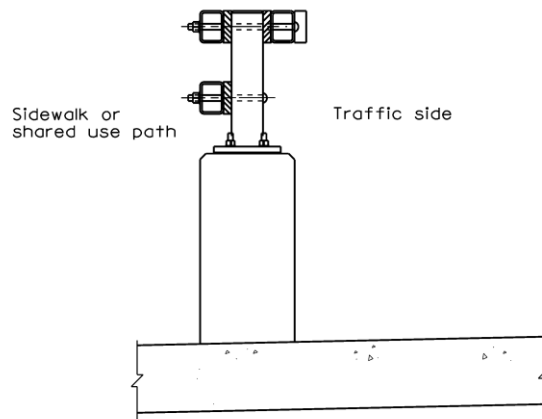
COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
42"-CPSR RAILING (CPSR-2)					
No.	Description	Date	Designed: S&B...DIV	Date	Plan No.
			Drawn: ...S&B...DIV		CPSR-2
			Checked: S&B...DIV		
Revisions					

## 42" CPSR RAILING

### CPSR-2

#### NOTES TO DESIGNER:

This railing as detailed is for use as a traffic barrier to separate a pedestrian or bicycle facility from traffic. The railing has a height of 3'-6" and is used for Adjusted Test Level TL-4 for MASH criteria. The standard may be used when an open railing is required. If architectural treatment is required, use standard CPSR-2-AT.



### CPSR-2

The rail connections and notes (Standard CPSR-3) and the appropriate terminal wall standard from CPSRT-1 thru CPSRT-4 are to be included in the plans when using this standard.

If an initial bituminous overlay is used on the bridge at the time of construction, vertical dimensions and dimensions for reinforcing steel need to be adjusted. The dimensions shown are established from the top of roadway surface. Therefore, for example if a 1" overlay at the roadway surface is set, the 2'-0" dimension and overall 3'-6" height of the rail would need to be adjusted to 2'-1" and 3'-7" respectively (Section B-B) and the 2'-0" dimension in Section A-A would have to be adjusted to 2'-1".

It is the Contractor's responsibility to determine the number of reinforcing bars required as well as any details or dimensions. Therefore, these items are to be left blank in the Reinforcing Steel Schedule except as instructed under Reinforcing Steel Schedule on next sheet.

## 42" CPSR RAILING

### CPSR-2

#### ADD THE FOLLOWING NOTES, DIMENSIONS, DETAILS, ETC. TO STANDARD:

##### SECTION A-A:

Modify vertical dimension (2'-0") as noted above if an initial overlay is used on bridge.

##### SECTION B-B:

Modify vertical dimensions (2'-0" and 3'-6" railing height) as noted above if an initial overlay is used on bridge.

##### NOTES:

Complete corrosion resistant reinforcing steel note by adding Class I or III. For additional information on corrosion resistant reinforcing steel (CRR), see Structure and Bridge Division Instructional and Informational Memorandum (current IIM-S&B-81).

Complete sheet no. for terminal wall.

The District Bridge Engineer decides if the metal surfaces are to be only galvanized, or galvanized and then coated.

- If galvanized only, delete the last 2 notes, which are:

After galvanizing, all exposed surfaces, including all hardware (except hardware attaching the post base plates), shall be powder coated in accordance with the Special Provision for Powder Coated Galvanized Material. Finished color shall be brown, Federal Standard Color No. 595-20059.

After railing installations are completed, galvanized hardware used in the attachment of post base plates shall be field coated using System F. The coating shall match the specified railing color.

- If coated:

- Keep the coating notes (the last 2 notes) on the standard. The finished color is not to be changed unless approved by the DBE.
- Contact Engineering Services to obtain the Special Provision for Powder Coated Galvanized Material to be included in the contract.

##### REINFORCING STEEL SCHEDULE:

Add dimensions and length for rebar RG0401 and RG0402.

##### TITLE BLOCK:

Replace standard designation with plan number.

## STANDARD CPSR-2: NOTES TO DESIGNER

PART 3  
DATE: 31Oct2022  
SHEET 3 of 3  
FILE NO. CPSR-2-3