

Chapter 02 - Substructure

SECTION 07

**END POSTS
(SUB-EP)**

Chapter 02 - Substructure

Section 07 – End Posts

SUB-SECTION 01

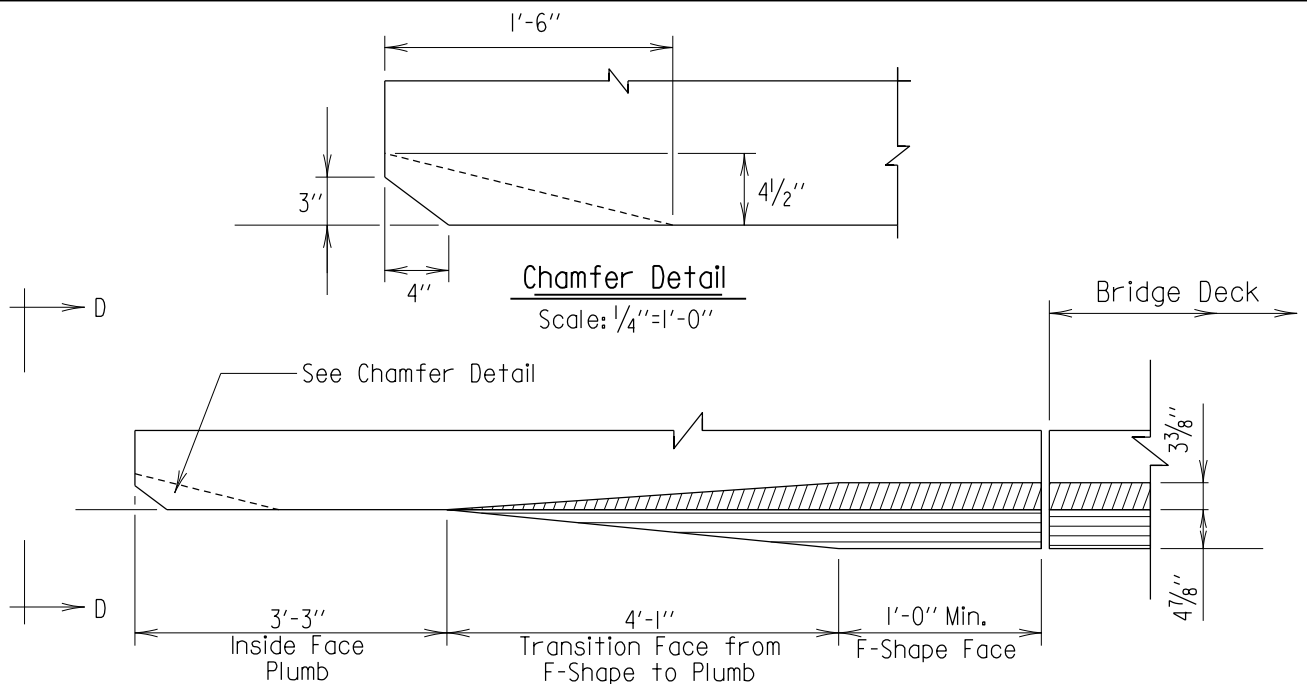
42" F-SHAPE

(SUB-EP(42F))

and

42" SINGLE SLOPE

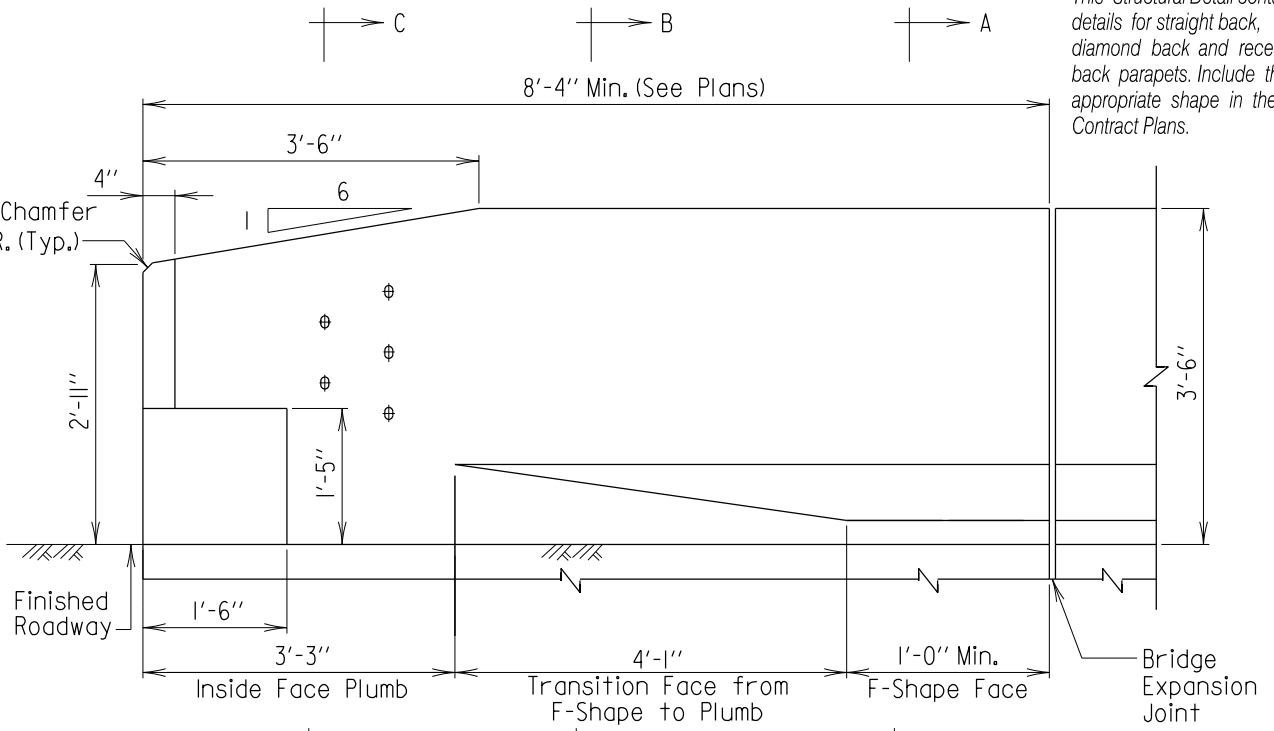
(SUB-EP(42SS))



Chamfer Detail
Scale: 1/4"=1'-0"

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

Note to Designer:
This Structural Detail contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.



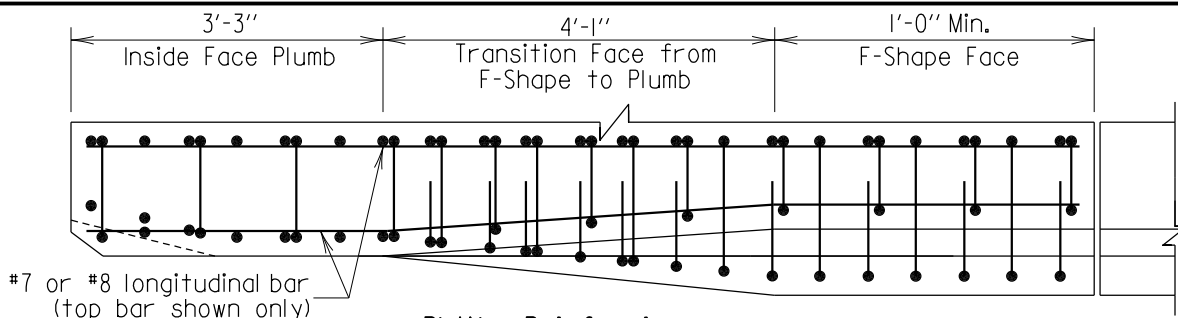
ELEVATION
Scale: 1/2"=1'-0"

- Notes:
1. Thrie Beam Traffic Barrier not shown.
 2. See Highway Standards for more information on Thrie Beam connection.
 3. Do not place any year built markings or junction boxes in the plumb face before the transition area.

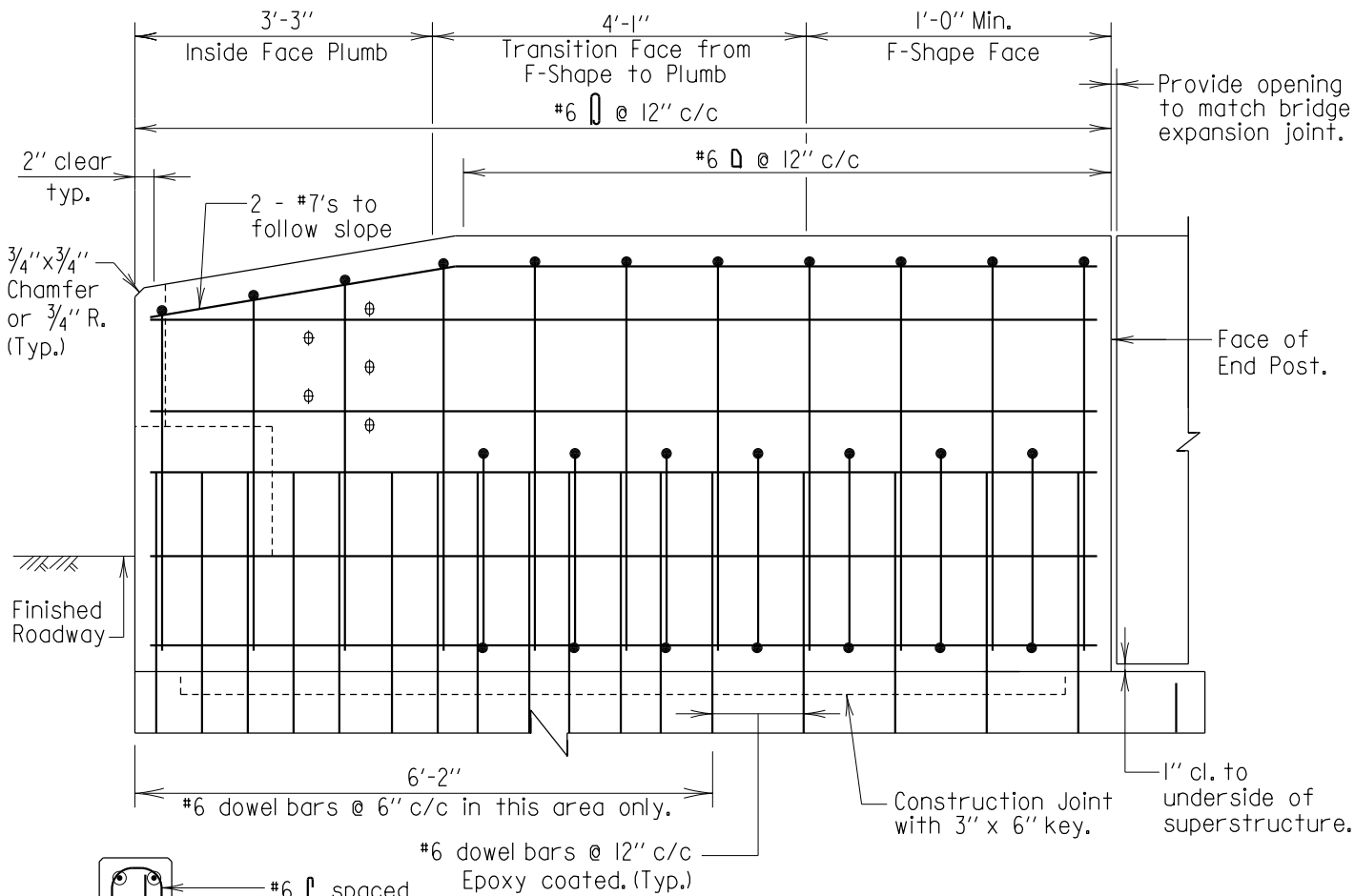
 DIRECTOR OFFICE OF STRUCTURES DATE: 12/16/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE PARAPET END POST THRIE BEAM APPROACH END	
DETAIL NO. SUB-EP(42F)-101	SHEET <u>1</u> OF <u>4</u>

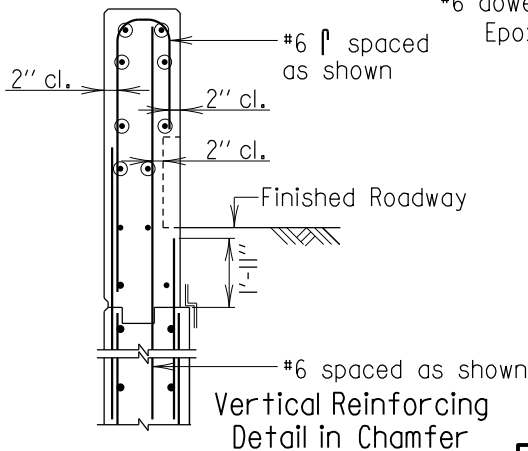
SUBSTRUCTURE - END POST



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



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



Vertical Reinforcing
Detail in Chamfer
Scale: 1/3"=1'-0"

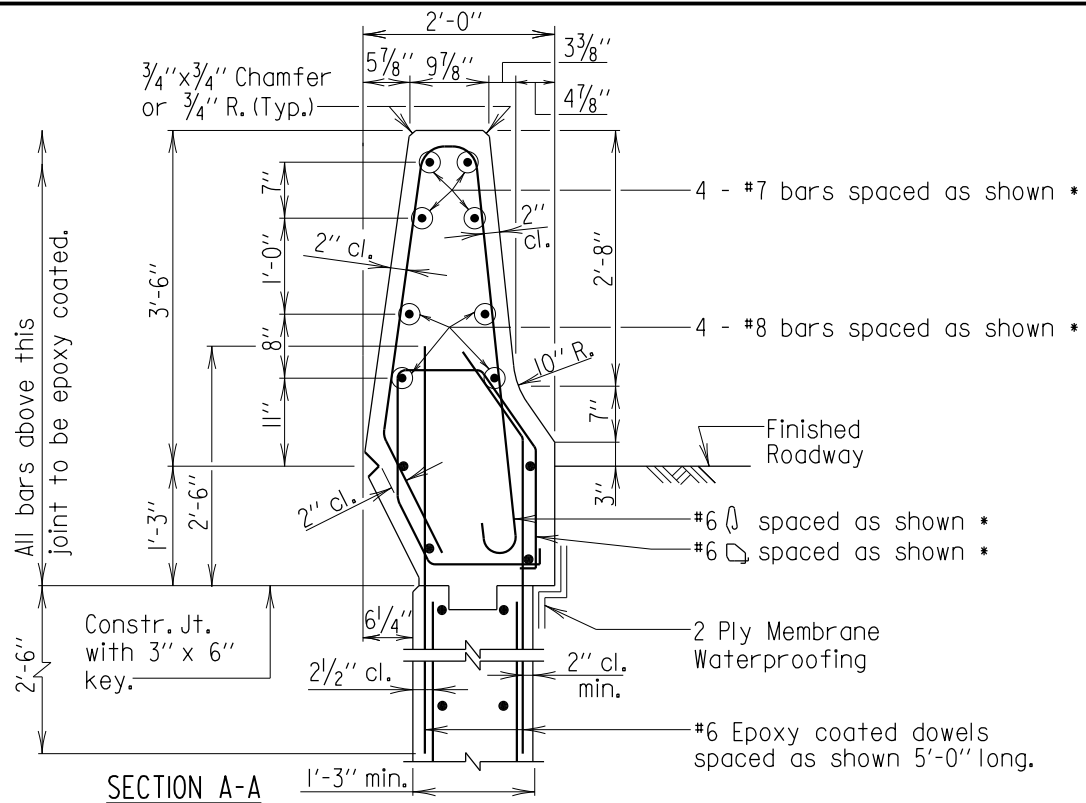
Note to Designer:
This Structural Detail contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

- Notes for Chamfer Detail:
1. All dimensions and spacing not shown shall match sheet 4 of 4.
 2. Field bend longitudinal reinforcing around end chamfers.
 3. Reinforcing shown for straight back parapet. Recessed back and diamond back are similar.

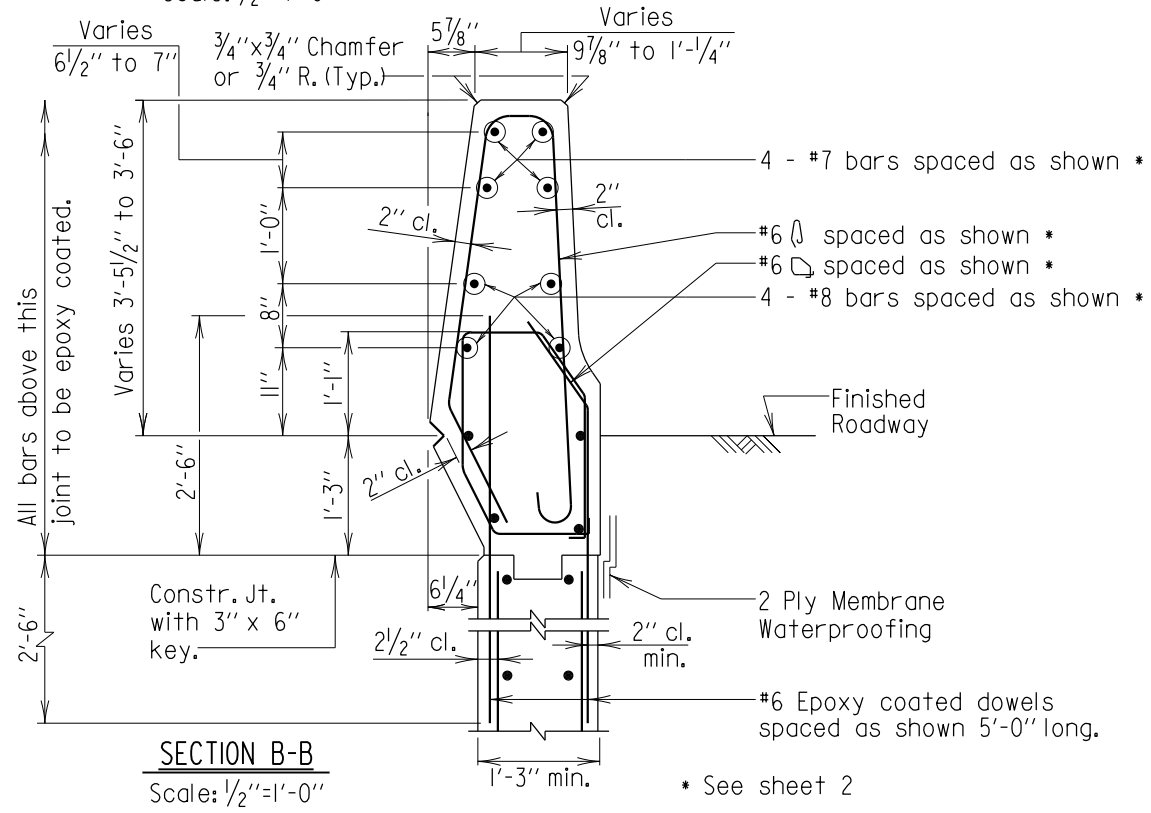
APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE PARAPET END POST THREE BEAM APPROACH END
DETAIL NO. SUB-EP(42F)-101
SHEET 2 OF 4

SUBSTRUCTURE - END POST



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



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

* See sheet 2

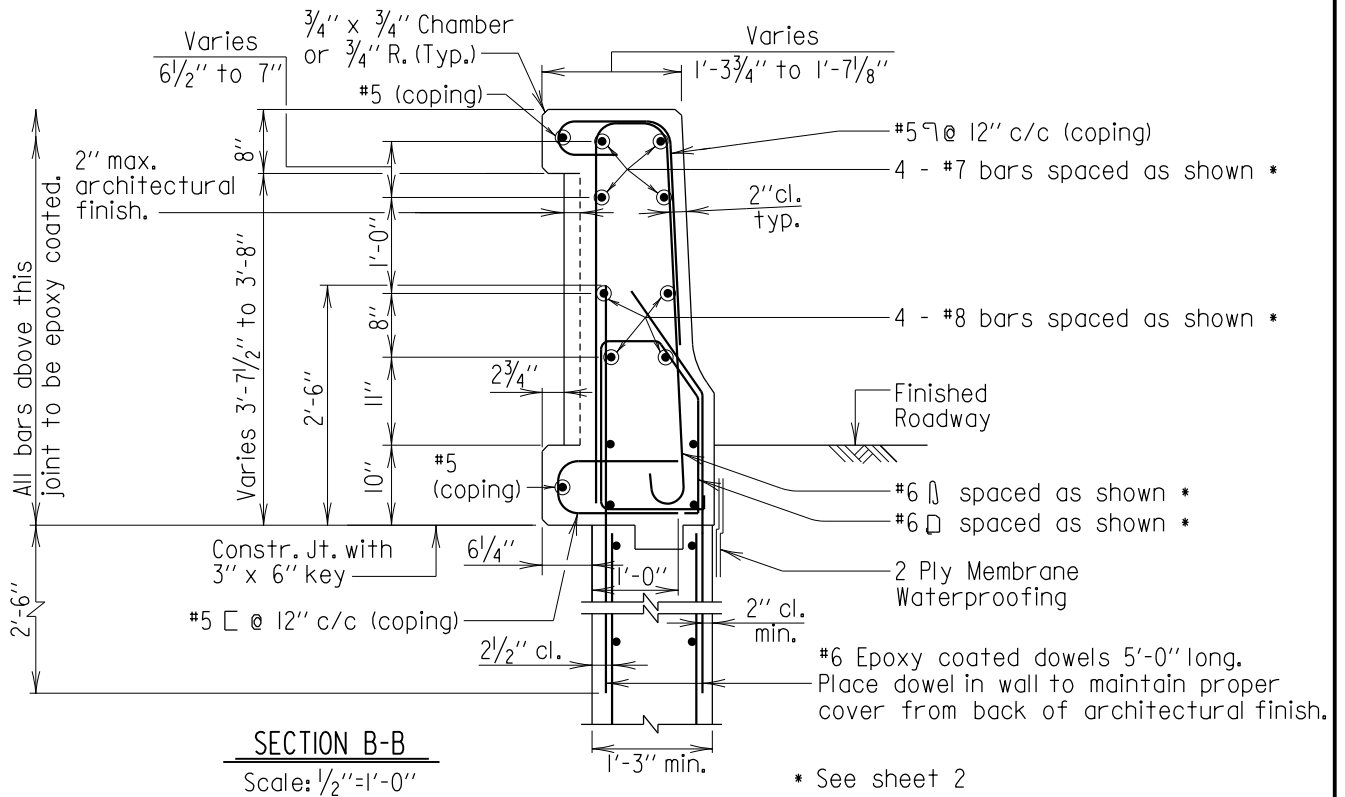
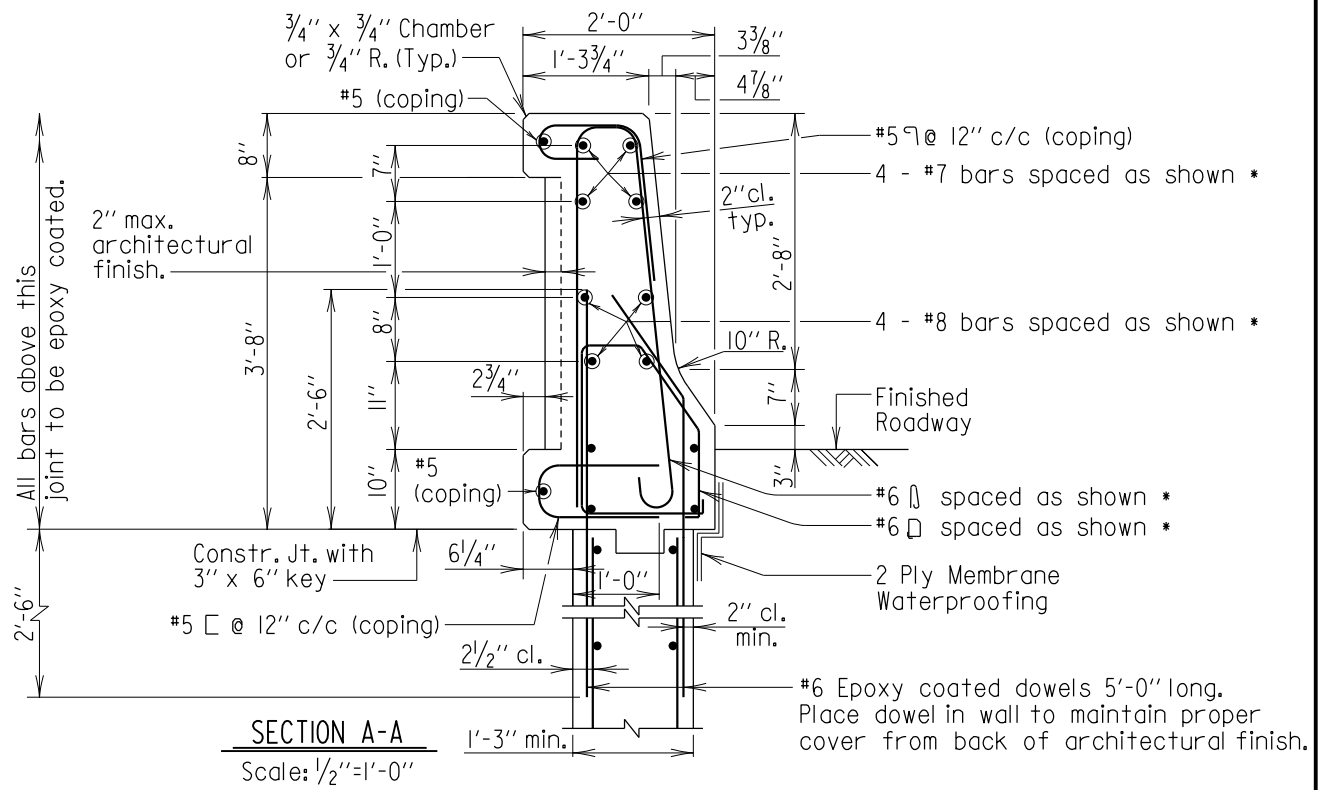
Notes:
1. All longitudinal bars are #5 spaced as shown, unless noted otherwise.

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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE PARAPET END POST THRIE BEAM APPROACH END
DETAIL NO. SUB-EP(42F)-101
SHEET <u>3A</u> OF <u>4</u>

SUBSTRUCTURE - END POST

DIAMOND BACK



* See sheet 2

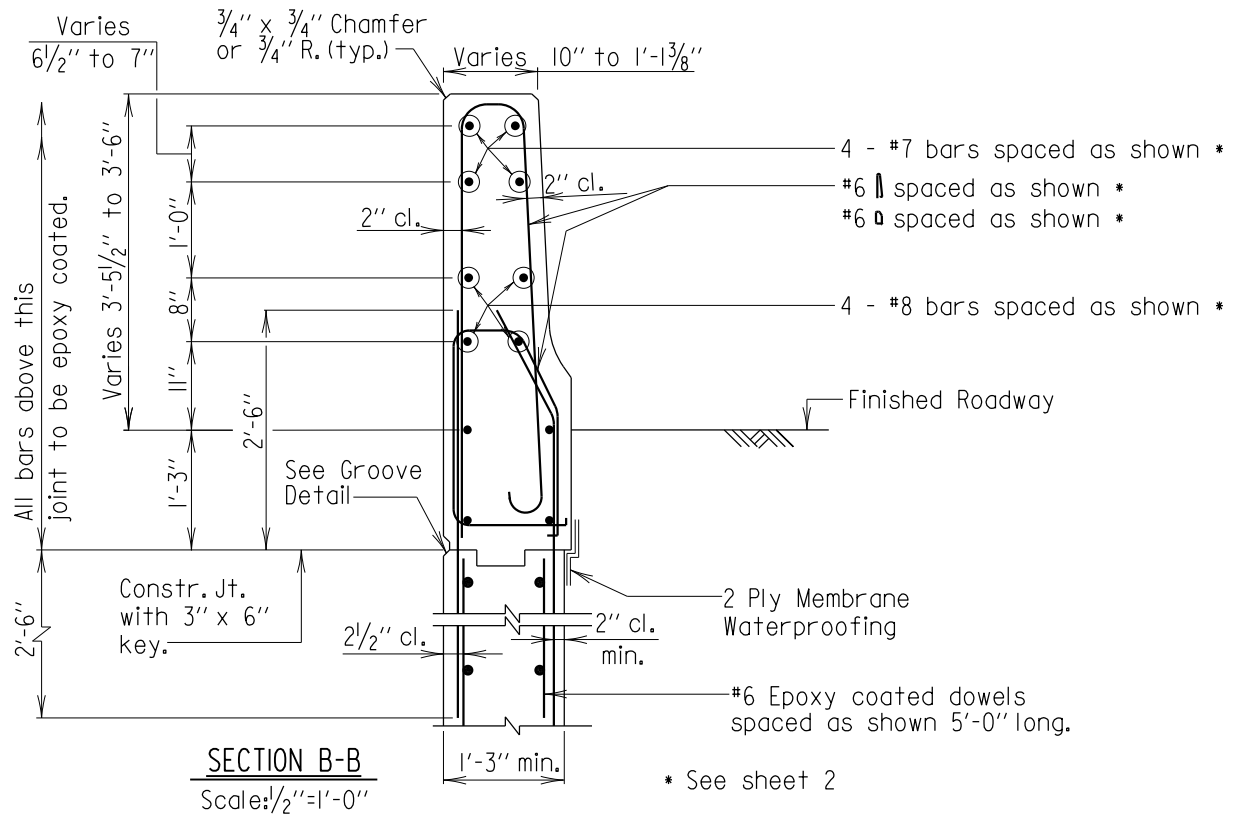
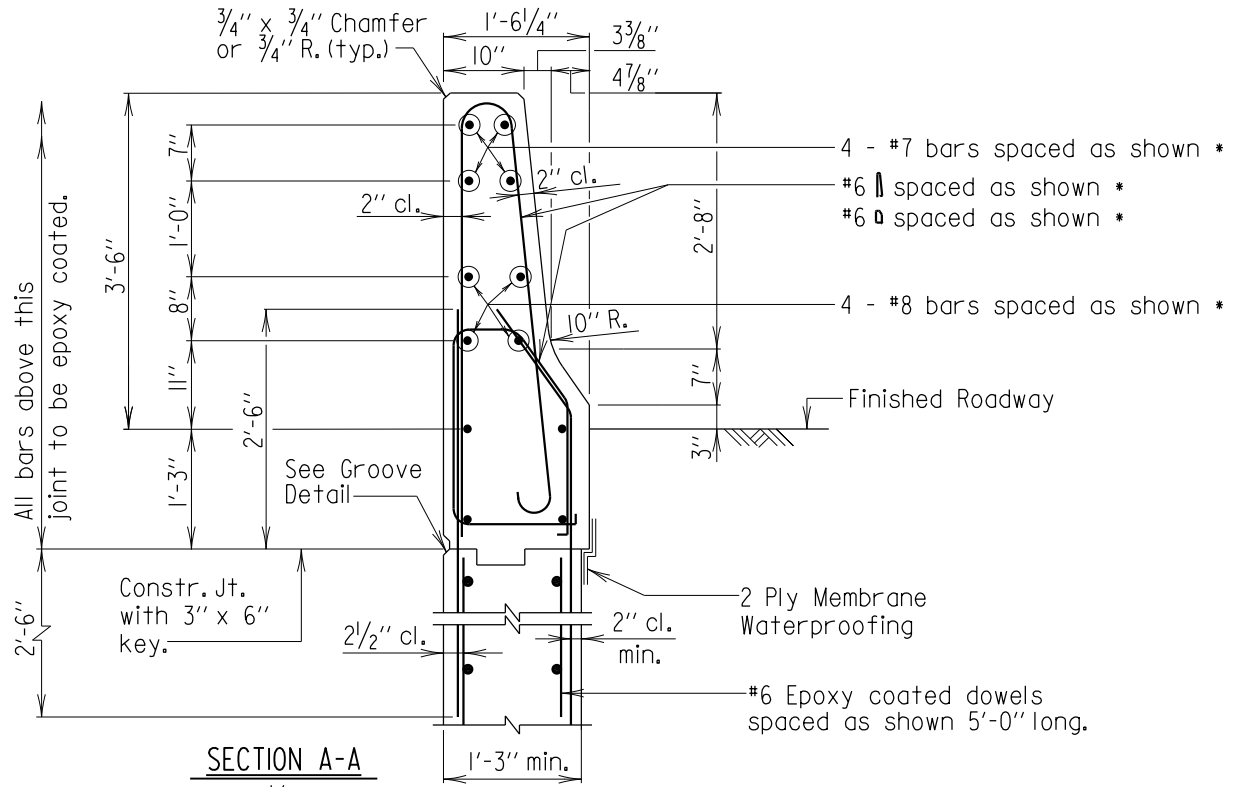
RECESSED BACK

Notes:
1. All longitudinal bars are #5 spaced as shown, unless noted otherwise.

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DATE: 12/16/2019
VERSION
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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE PARAPET END POST THREE BEAM APPROACH END	
DETAIL NO. SUB-EP(42F)-101	SHEET 3B OF 4

SUBSTRUCTURE - END POST



* See sheet 2

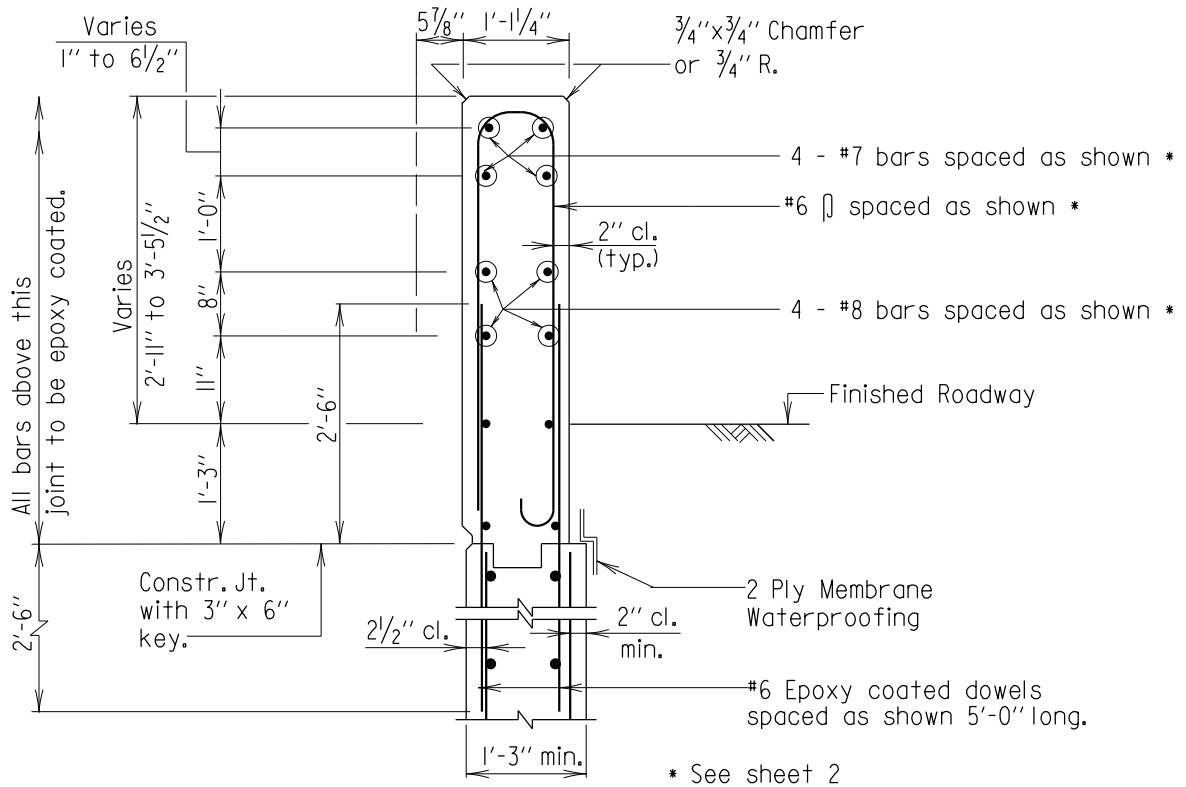
STRAIGHT BACK

Notes:
1. All longitudinal bars are #5 spaced as shown, unless noted otherwise.

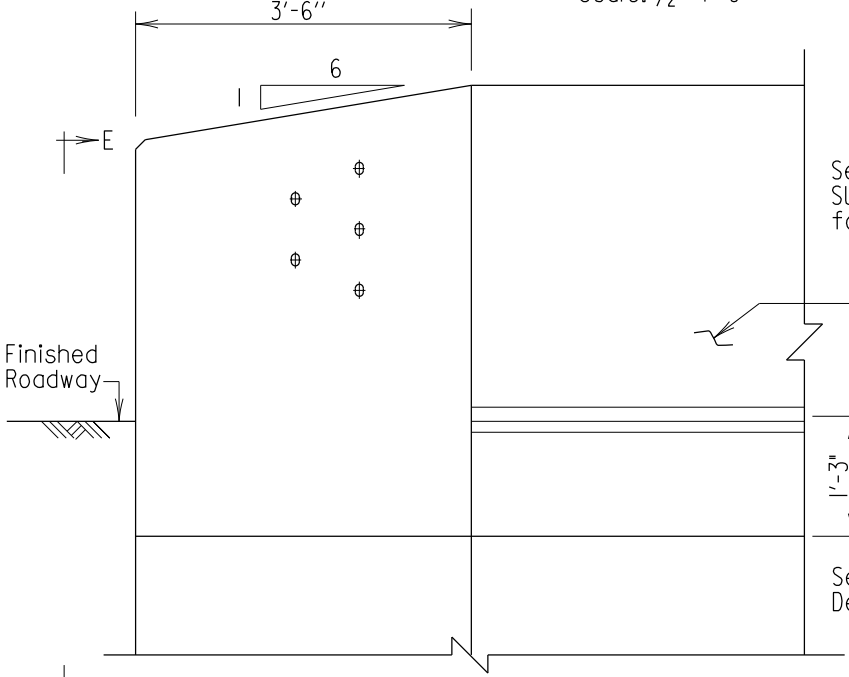
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<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE PARAPET END POST THREE BEAM APPROACH END	
DETAIL NO. SUB-EP(42F)-101	SHEET 3C OF 4

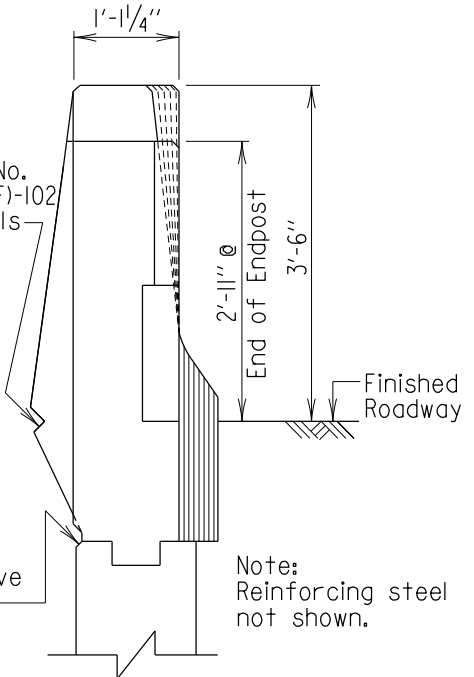
SUBSTRUCTURE - END POST



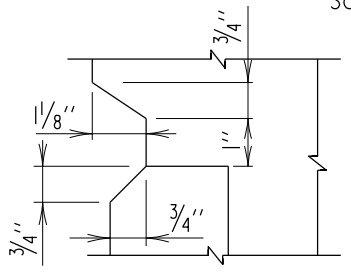
SECTION C-C
Scale: 1/2" = 1'-0"



PARTIAL REAR ELEVATION
Scale: 1/2" = 1'-0"



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



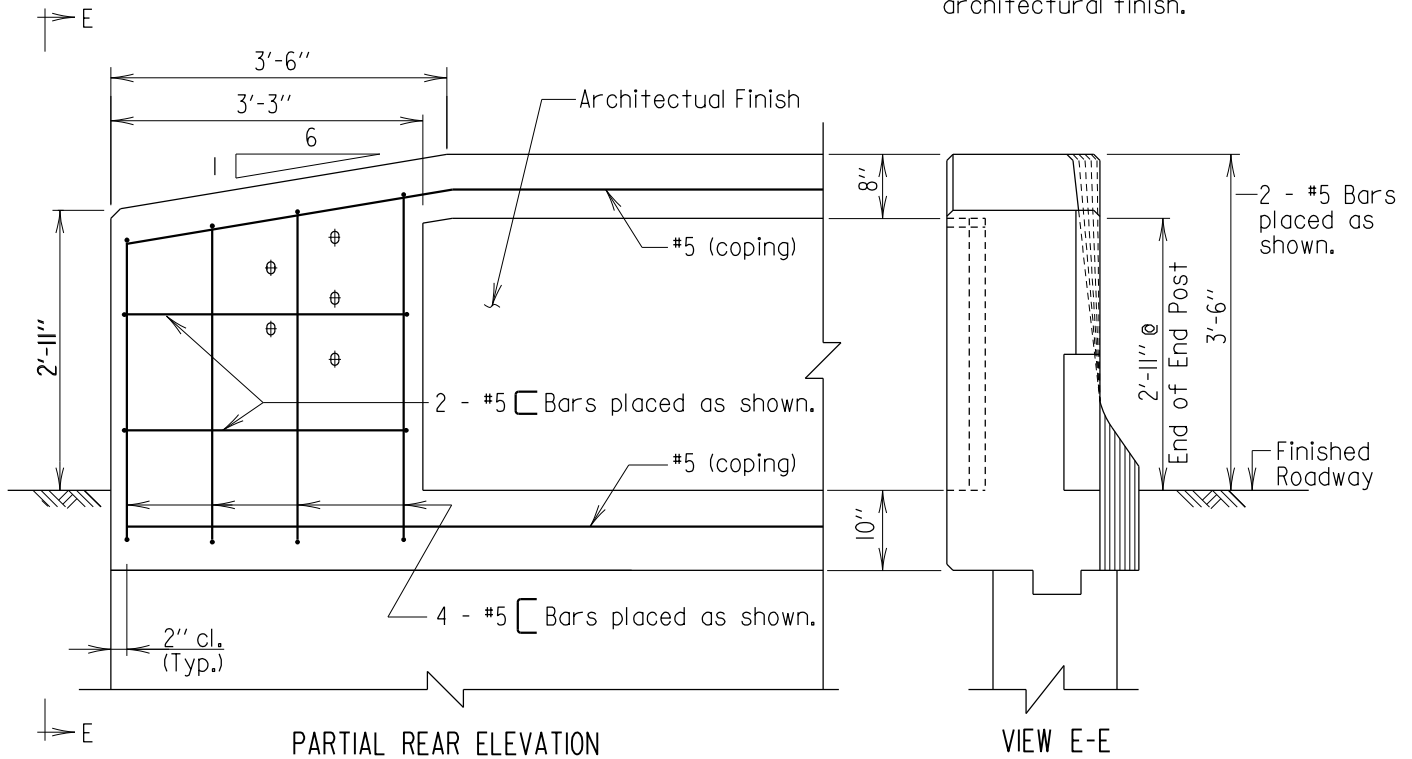
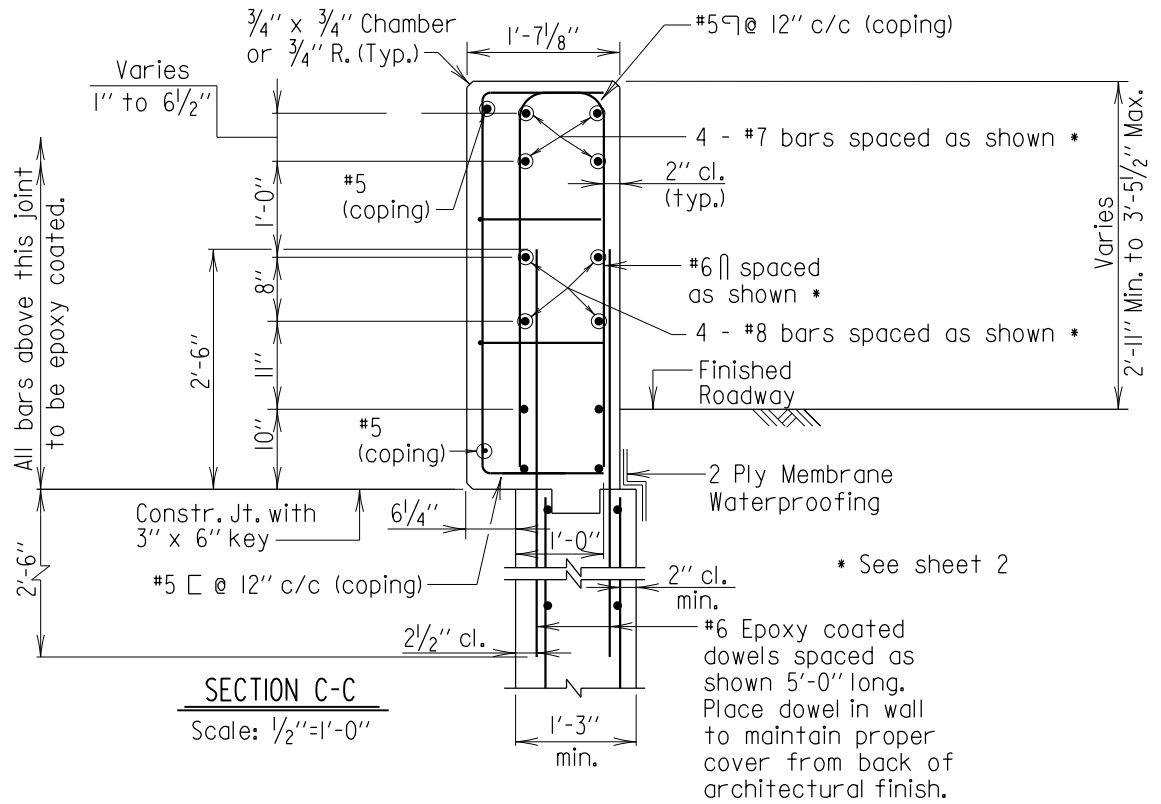
GROOVE DETAIL
Scale: 3" = 1'-0"

DIAMOND BACK

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
<i>Ben C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES DATE: 12/16/2019	
VERSION	42" F-SHAPE PARAPET END POST THRIE BEAM APPROACH END
3.0	

DETAIL NO. SUB-EP(42F)-101	SHEET 4A OF 4
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SUBSTRUCTURE - END POST



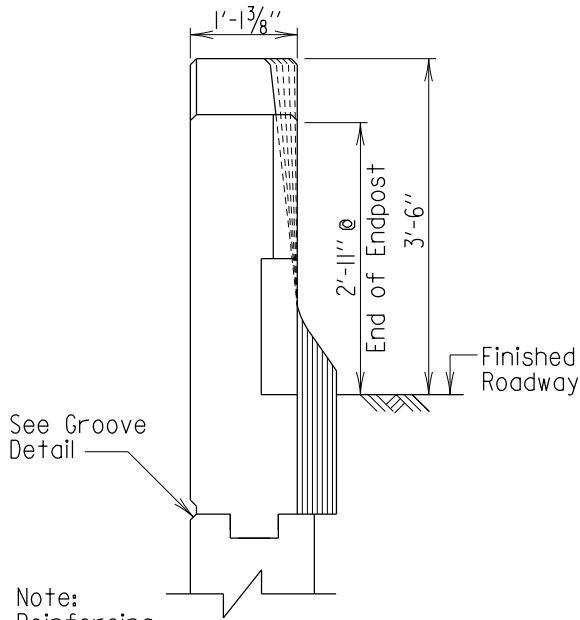
RECESSED BACK

Notes:

1. All longitudinal bars are #5 spaced as shown, unless noted otherwise.
2. There is no view D-D for the 42" Recessed End Post.
3. Reinforcing steel not shown.

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DATE: 12/16/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE PARAPET END POST THREE BEAM APPROACH END	
DETAIL NO. SUB-EP(42F)-101	SHEET 4B OF 4

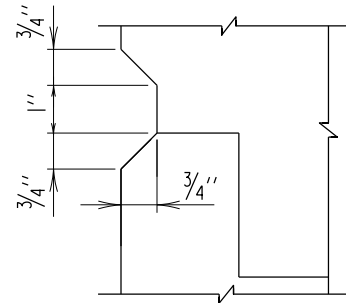


See Groove Detail

Note:
Reinforcing steel not shown.

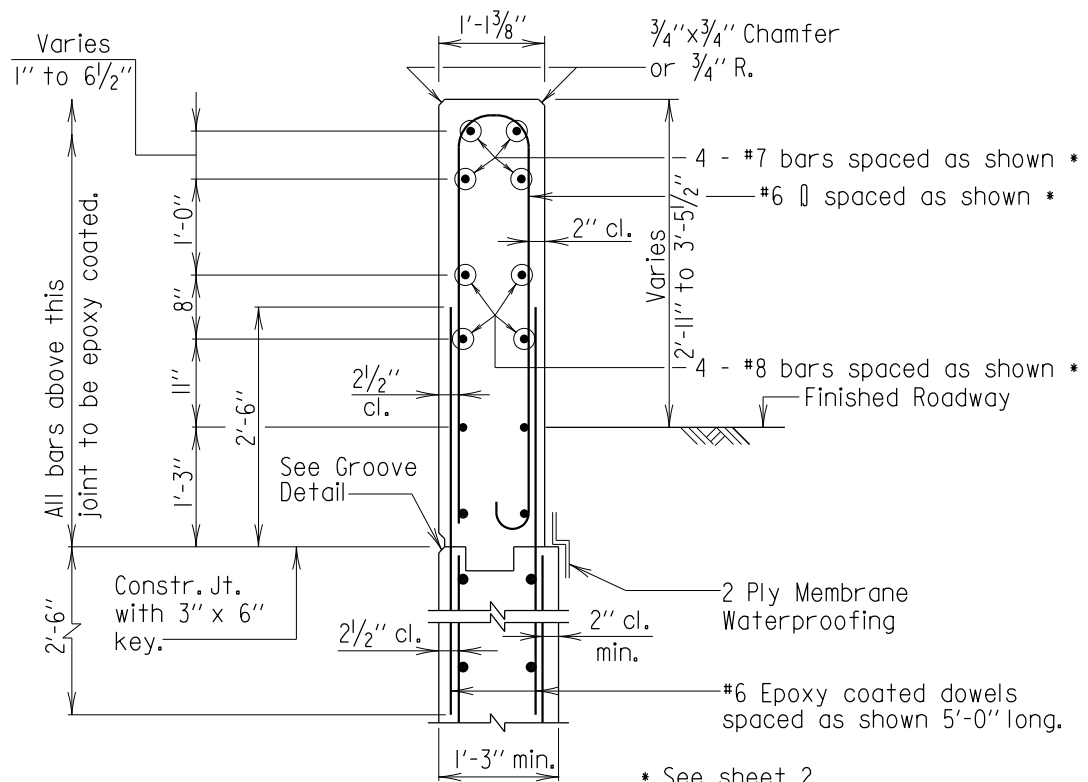
VIEW D-D

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



GROOVE DETAIL

Scale: 3"=1'-0"



SECTION C-C

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

* See sheet 2

Notes:
1. All longitudinal bars are #5 spaced as shown, unless noted otherwise.

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DATE: 12/16/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE PARAPET END POST THREE BEAM APPROACH END	
DETAIL NO. SUB-EP(42F)-101	SHEET <u>4C</u> OF <u>4</u>

SUBSTRUCTURE - END POST

STRAIGHT BACK



Bridge Deck

Bridge Expansion Joint

4 7/8"

3 3/8"

1'-0" Min. F-Shape Face

Concrete End Post L > 11'-2" (See Plans)

7'-6"

Inside Face Transitions from F-Shape to Plumb

2'-8"

Inside Face Plumb

4 7/8"

* For overall Parapet dimensions, see sheets 3 and 4 of 4.

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

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

Do not place any year built markings or junction boxes in this area.

Note to Designer:
This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

- Notes:
1. Use on the approach end of bridge when end post length is greater than 11'-2".
 2. Thrive Beam Traffic Barrier not shown.
 3. Taper barrier height to 2'-10" when Thrive Beam is required. Continue at 3'-6" and eliminate transition of F-Shape when adjacent to concrete F-Shape barrier.

DETAIL NO. SUB-EP(42F)-102 IS RESCINDED
APPROACH END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL	
<i>E.S. Fisher</i>	DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005	
VERSION	
1.0	

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

**42" F-SHAPE PARAPET END POST WITHOUT
FENCING OR RAILING
APPROACH END, END POST LENGTH > 11'-2"**

DETAIL NO. SUB-EP(42F)-102

SHEET 1 OF 4

Provide opening to match bridge expansion joint.

Concrete End Post 11'-2" Min. (See Plans)

1'-0" Min.
F-Shape Face

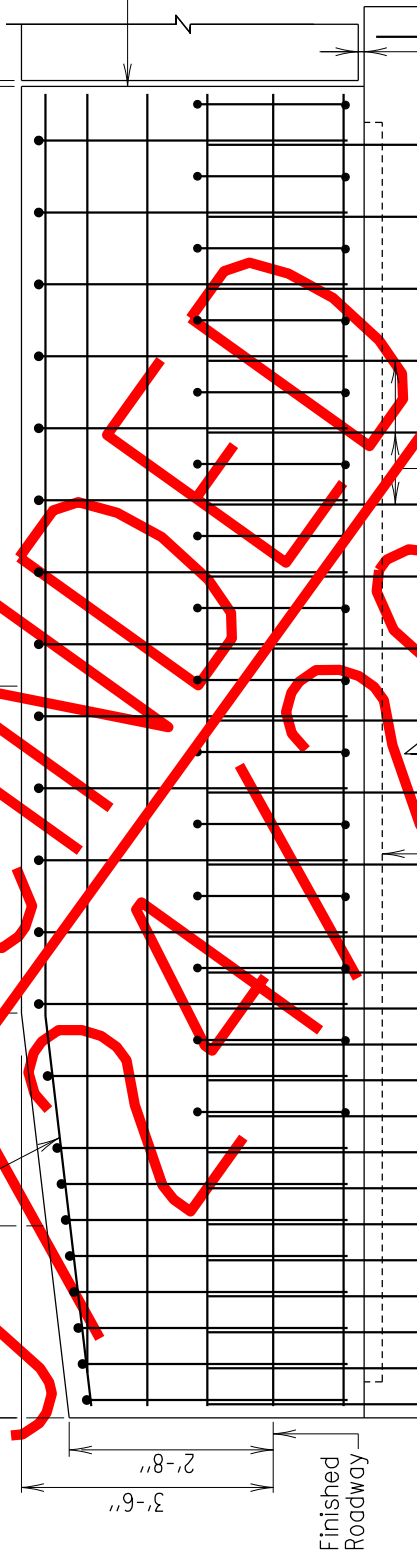
7'-6"
Inside Face transitions from F-Shape to Plumb

2'-8"
Inside Face Plumb

5'-0"
(see note 3 on sheet 1)

2 #7's to follow slope

Face of End Post.



#6 dowel bars @ 12" c/c
Epoxy coated. (Typ.)

1" dia. to underside of superstructure.

Construction Joint with 3" x 6" key.

6'-2"
#6 dowel bars @ 6" c/c in this area only.

SECTION A-A

Scale: 3/8" = 1'-0"

Note to Designer:

This standard contains details for straight back diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

Notes:

1. For Parapet Reinforcing Details, see sheets 3 and 4.
2. If applicable, reinforcing for coping not shown.

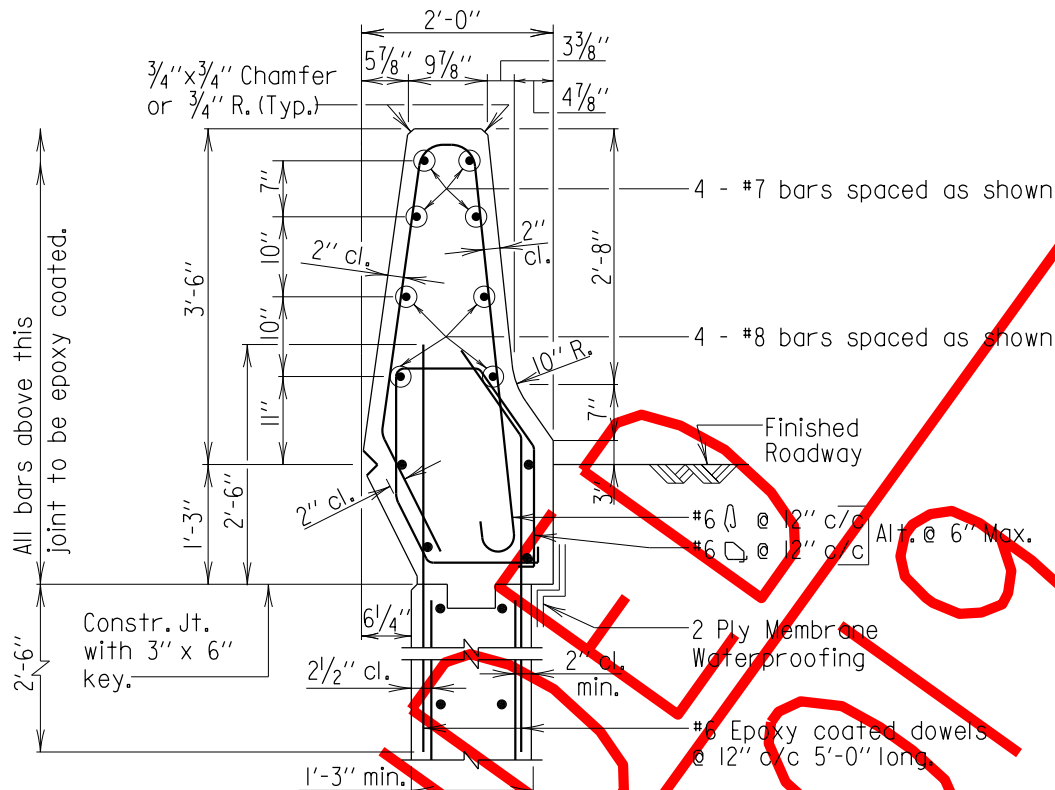
DETAIL NO. SUB-EP(42F)-102 IS RESCINDED. APPROACH END F-SHAPE END POSTS ARE FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES DATE: 06/01/2005	
VERSION	42" F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING APPROACH END, END POST LENGTH > 11'-2"
1.0	

DETAIL NO. SUB-EP(42F)-102

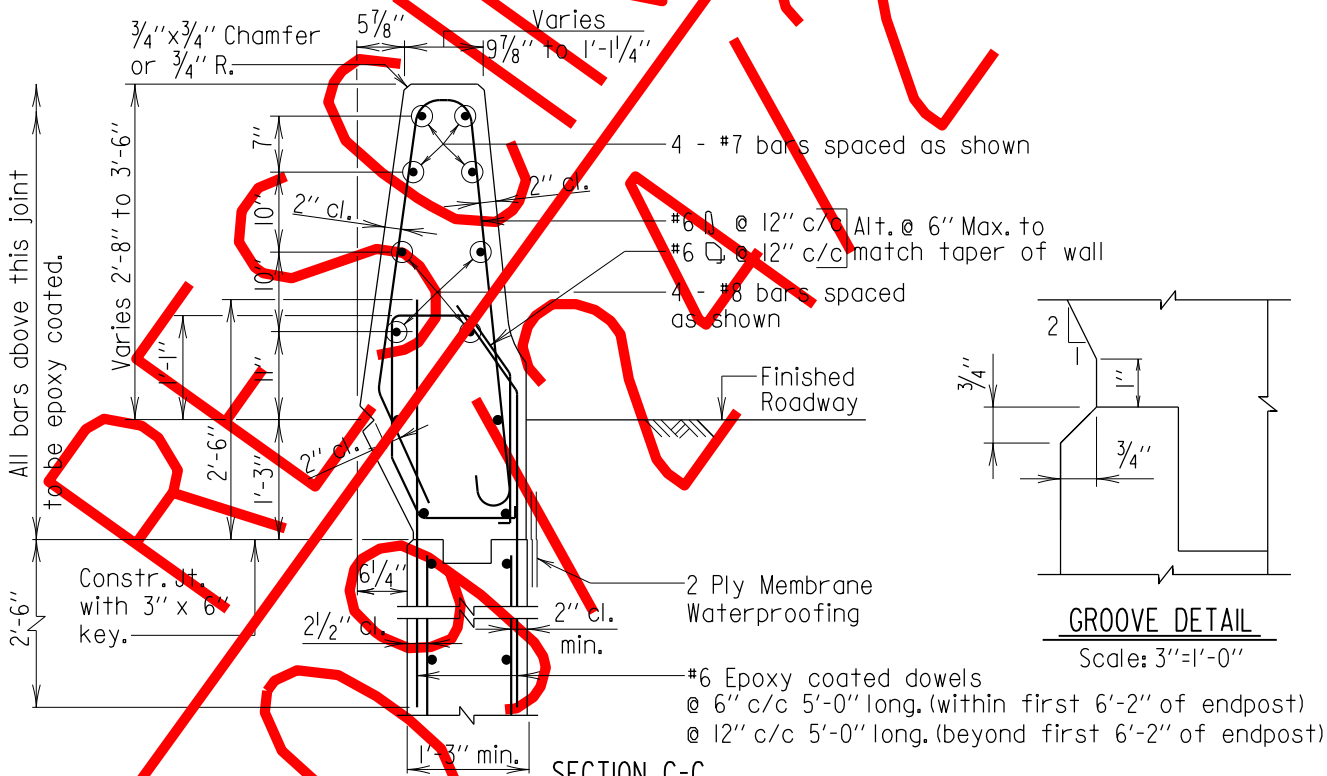
SHEET 2 OF 4

SUBSTRUCTURE - END POST



SECTION B-B

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



SECTION C-C

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

42" DIAMOND BACK

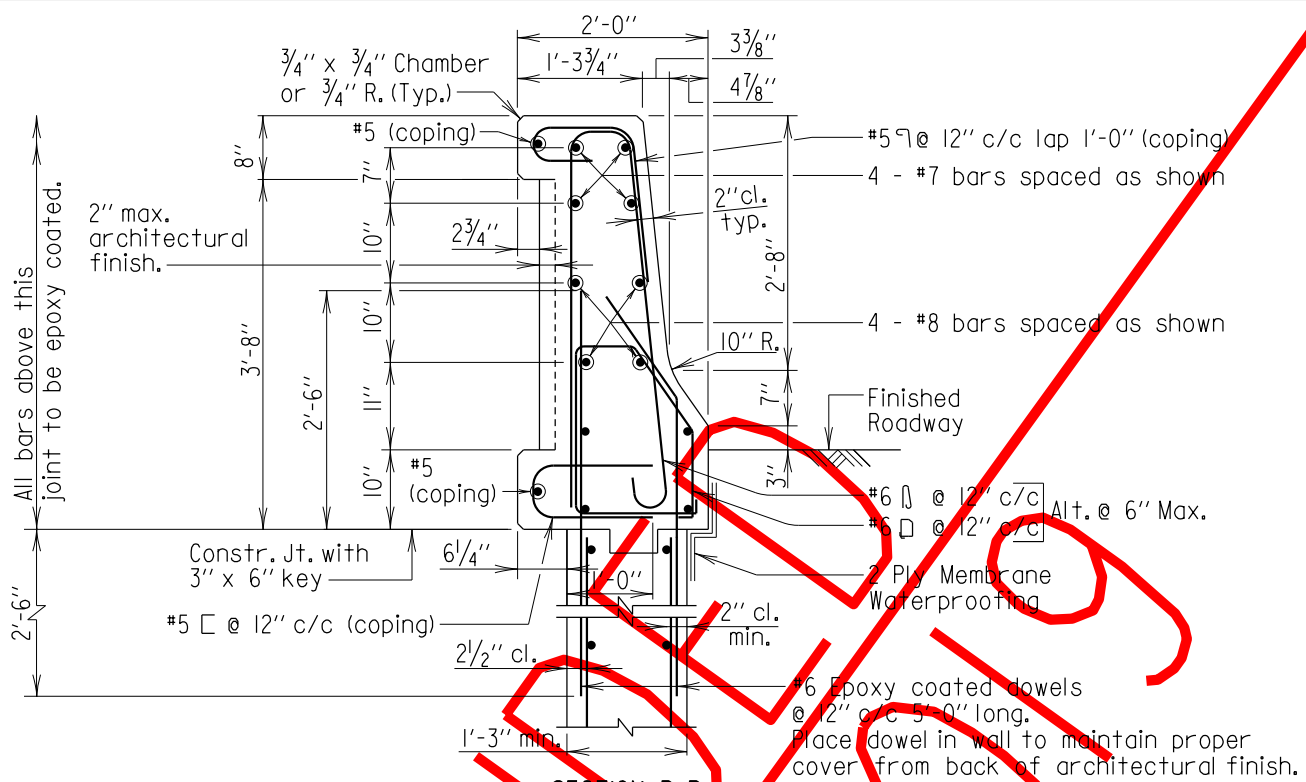
Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

DETAIL NO. SUB-EP(42F)-102 IS RESCINDED. APPROACH END F-SHAPE END POSTS ARE FOUND IN DETAIL NO. SUB-EP(42F)-101

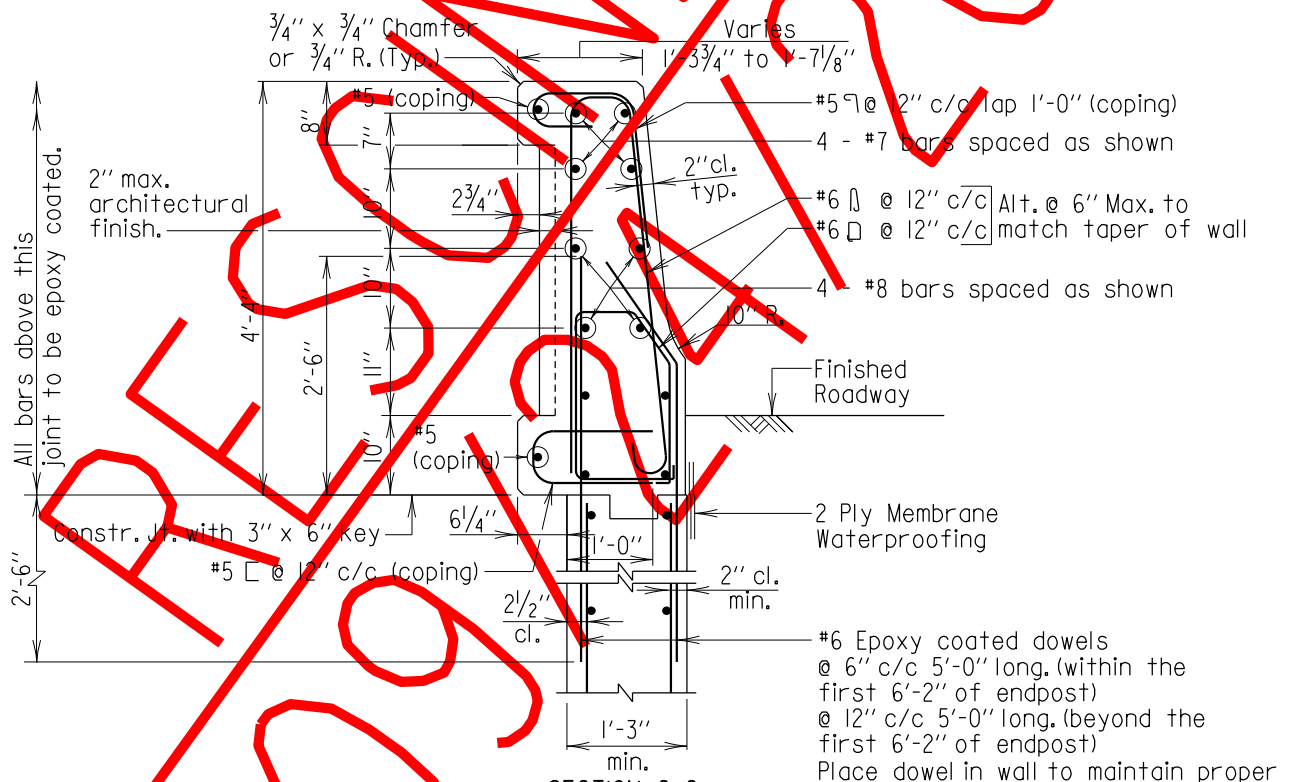
APPROVAL
<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING APPROACH END, END POST LENGTH > 11'-2"
DETAIL NO. SUB-EP(42F)-102
SHEET 3 OF 4

SUBSTRUCTURE - END POST



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



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

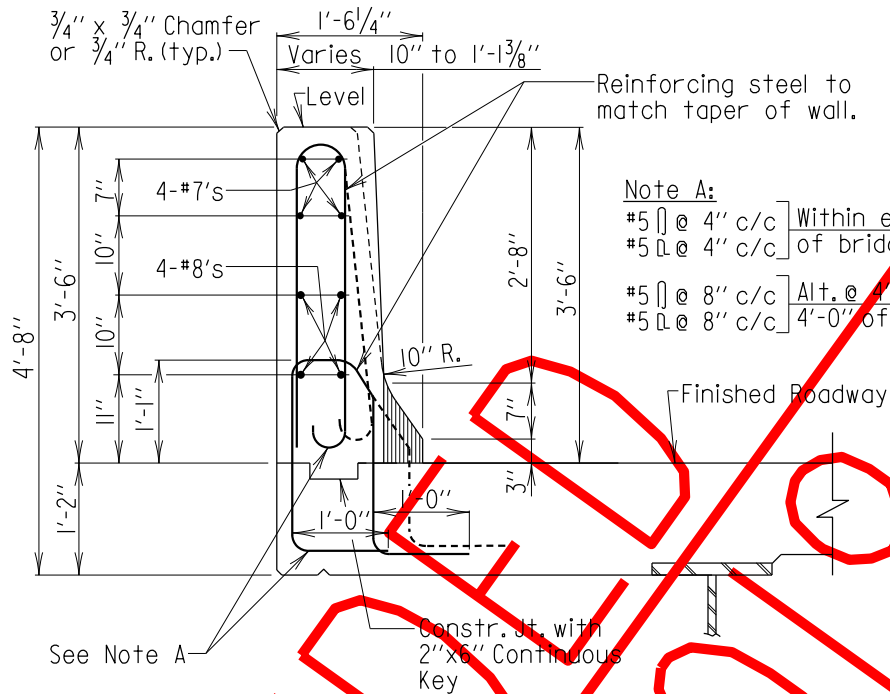
Note:
All longitudinal bars are #5's placed as shown, unless noted otherwise.

DETAIL NO. SUB-EP(42F)-102 IS RESCINDED
APPROACH END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL
<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING APPROACH END, END POST LENGTH > 11'-2"
DETAIL NO. SUB-EP(42F)-102
SHEET 3 OF 4

SUBSTRUCTURE - END POST



Note A:
 #5 @ 4" c/c Within end 4'-0"
 #5 @ 4" c/c of bridge deck
 #5 @ 8" c/c Alt. @ 4" max. beyond end
 #5 @ 8" c/c 4'-0" of bridge deck

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



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

42" STRAIGHT BACK

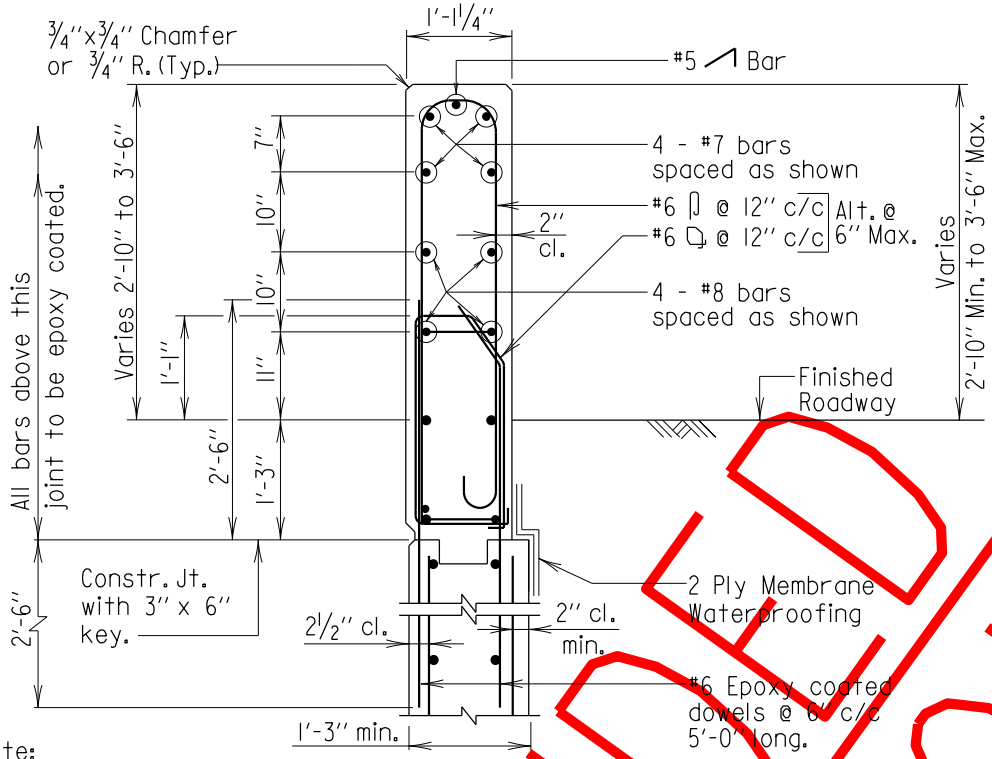
Note:
 Normal deck reinforcing not shown.

DETAIL NO. SUB-EP(42F)-102 IS RESCINDED
 APPROACH END F-SHAPE END POSTS ARE
 FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

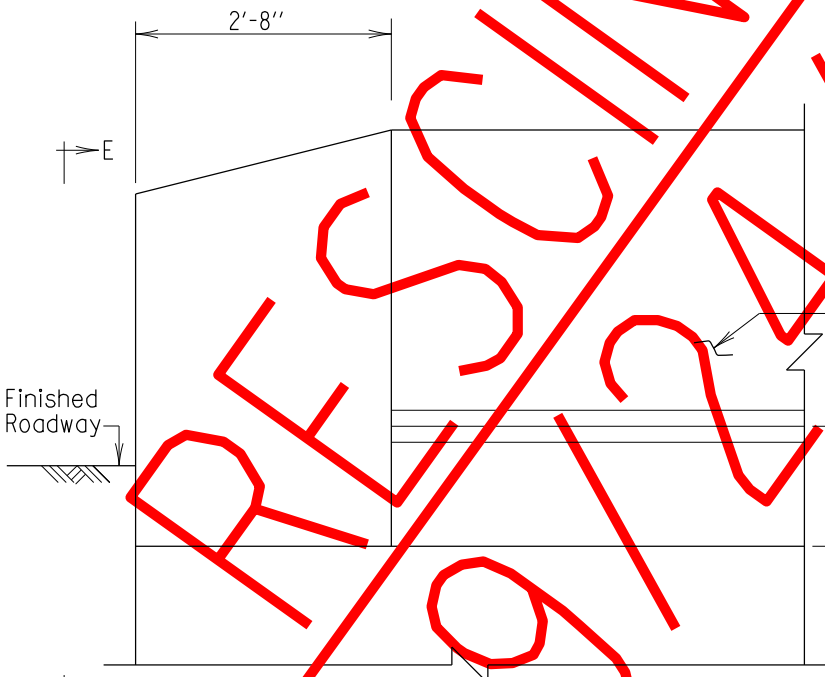
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE END POST WITHOUT FENCING OR RAILING (APPROACH END, END POST LENGTH < = 11'-2")
DETAIL NO. SUB-EP(42F)-102
SHEET 3 OF 4

SUBSTRUCTURE - END POST

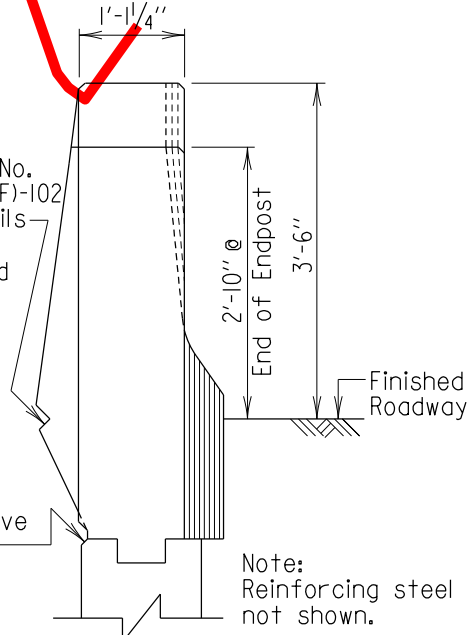


Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

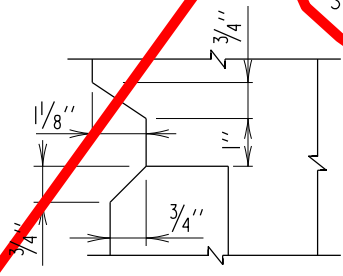
SECTION D-D
Scale: 1/2"=1'-0"



PARTIAL REAR ELEVATION
Scale: 1/2"=1'-0"



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



GROOVE DETAIL
Scale: 3"=1'-0"

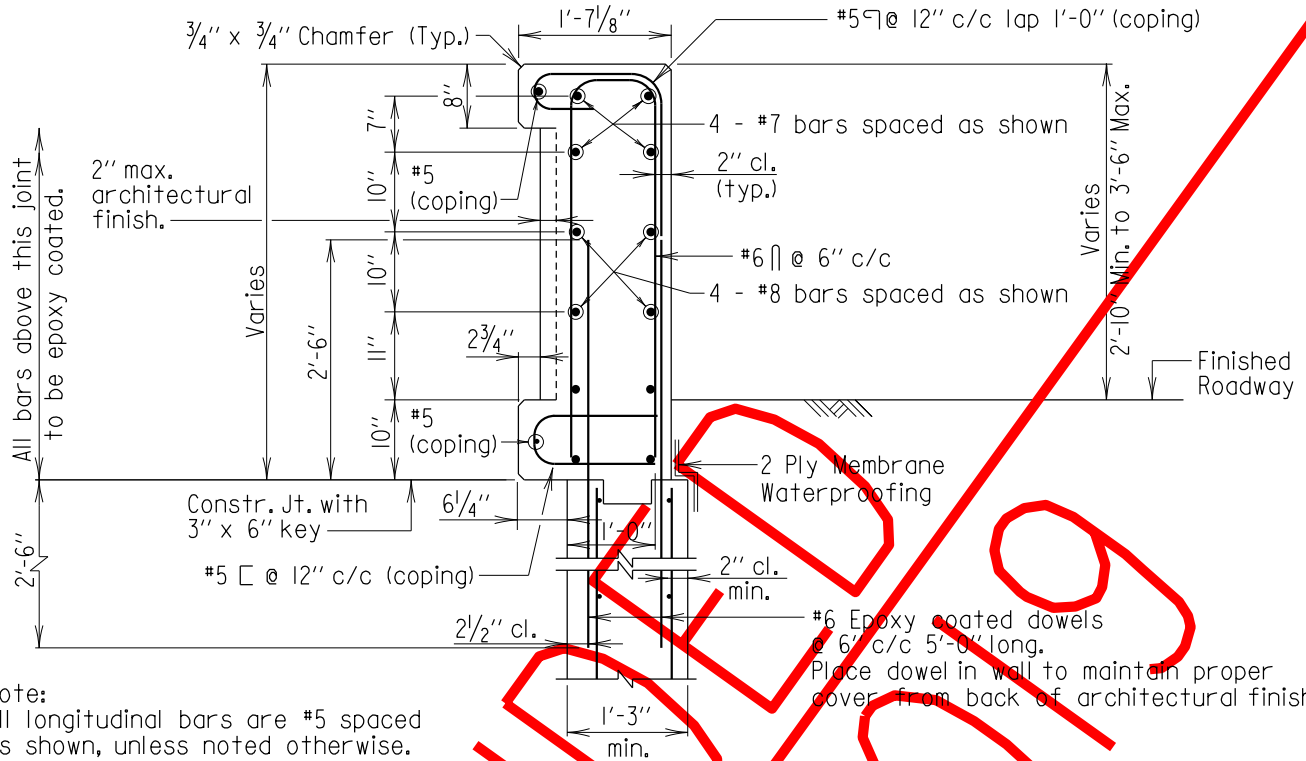
DETAIL NO. SUB-EP(42F)-102 IS RESCINDED
APPROACH END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-101

42" DIAMOND BACK

APPROVAL
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DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING APPROACH END, END POST LENGTH > 11'-2"
DETAIL NO. SUB-EP(42F)-102
SHEET 4 OF 4

SUBSTRUCTURE - END POST



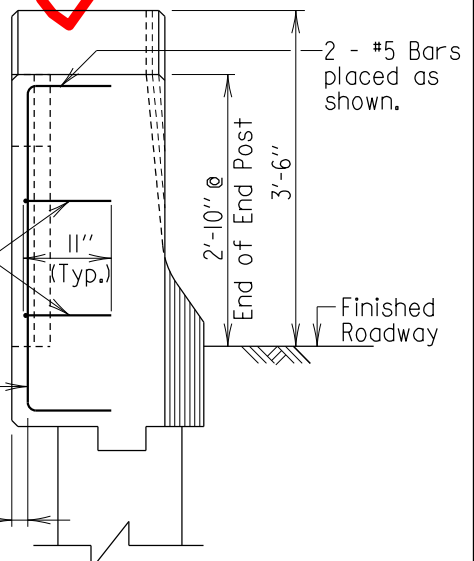
Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

#6 Epoxy coated dowels @ 6" c/c 5'-0" long.
Place dowel in wall to maintain proper cover from back of architectural finish.

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



PARTIAL REAR ELEVATION
Scale: 1/2" = 1'-0"



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

42" RECESSED BACK

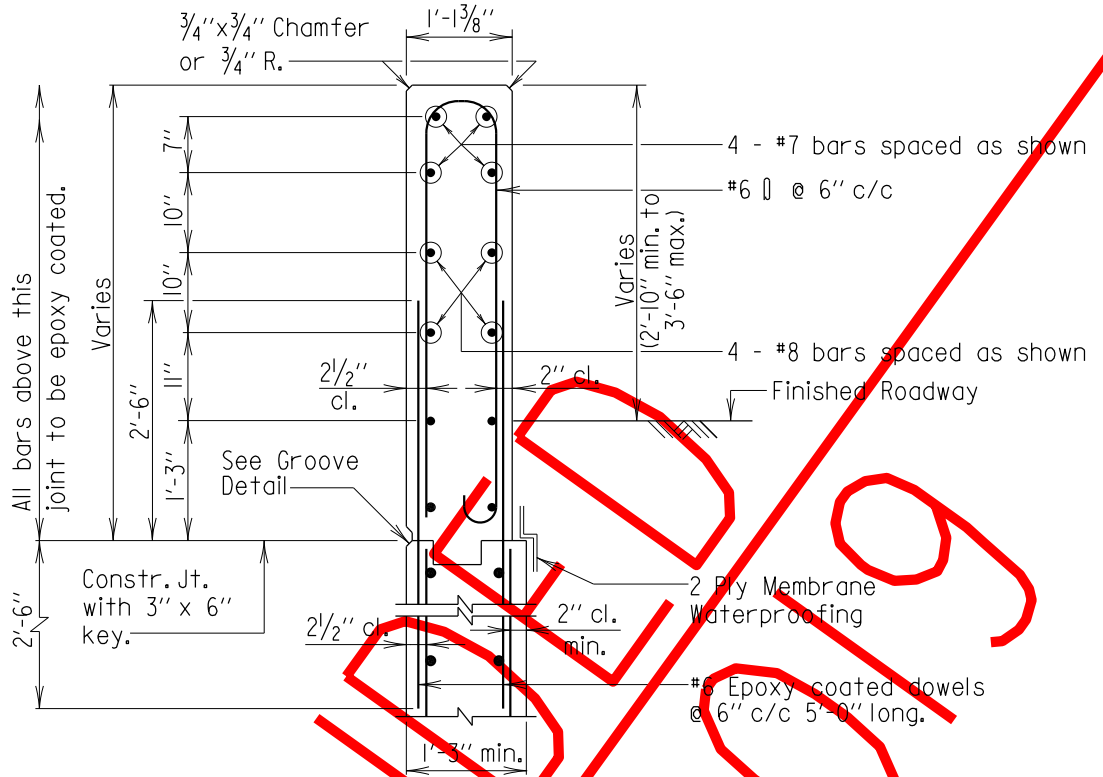
Notes:
1. Reinforcing steel not shown.
2. There is no View E-E for the 42" Recessed Back End Post.

DETAIL NO. SUB-EP(42F)-102 IS RESCINDED.
APPROACH END F-SHAPE END POSTS ARE FOUND IN DETAIL NO. SUB-EP(42F)-101

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<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING APPROACH END, END POST LENGTH > 11'-2"
DETAIL NO. SUB-EP(42F)-102
SHEET 4 OF 4

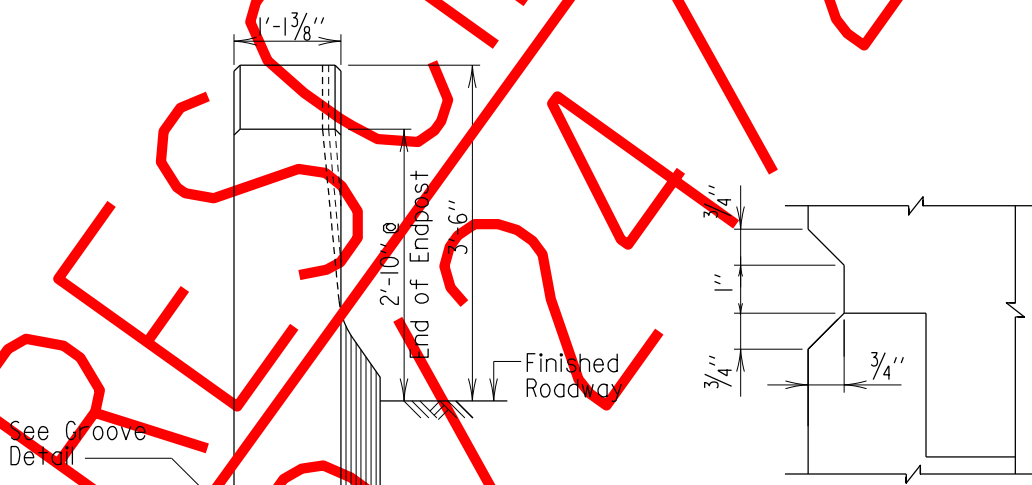
SUBSTRUCTURE - END POST



Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

SECTION D-D

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



Note:
Reinforcing steel not shown.

VIEW E-E

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

GROOVE DETAIL

Scale: 3"=1'-0"

42" STRAIGHT BACK

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING APPROACH END, END POST LENGTH > 11'-2"
DETAIL NO. SUB-EP(42F)-102
SHEET 4 OF 4

DETAIL NO. SUB-EP(42F)-102 IS RESCINDED
APPROACH END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-101

SUBSTRUCTURE - END POST



* For overall parapet dimension see sheets 3 and 4.

PLAN

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

Do not place any year built markings or junction boxes in this area.

Concrete end post $5'-6'' \leq L \leq 11'-2''$, See Plans

See Plans and Note 4

2'-8"

See chart 2 on Sheet 2

3'-6"

2'-10"

8"

Top of Roadway

ELEVATION

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

Top of Deck

Note to Designer:
This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

- Notes:
1. Use on the approach end of bridge when end post length is less than 11'-2".
 2. Thrie Beam Traffic Barrier not shown.
 3. Type II fence shown, see Plans for fence or railing layout and details.
 4. Taper barrier height to 2'-8" when Thrie Beam is required. Taper barrier height to 2'-10" and eliminate F-Shape transition when adjacent to concrete F-Shape barrier.

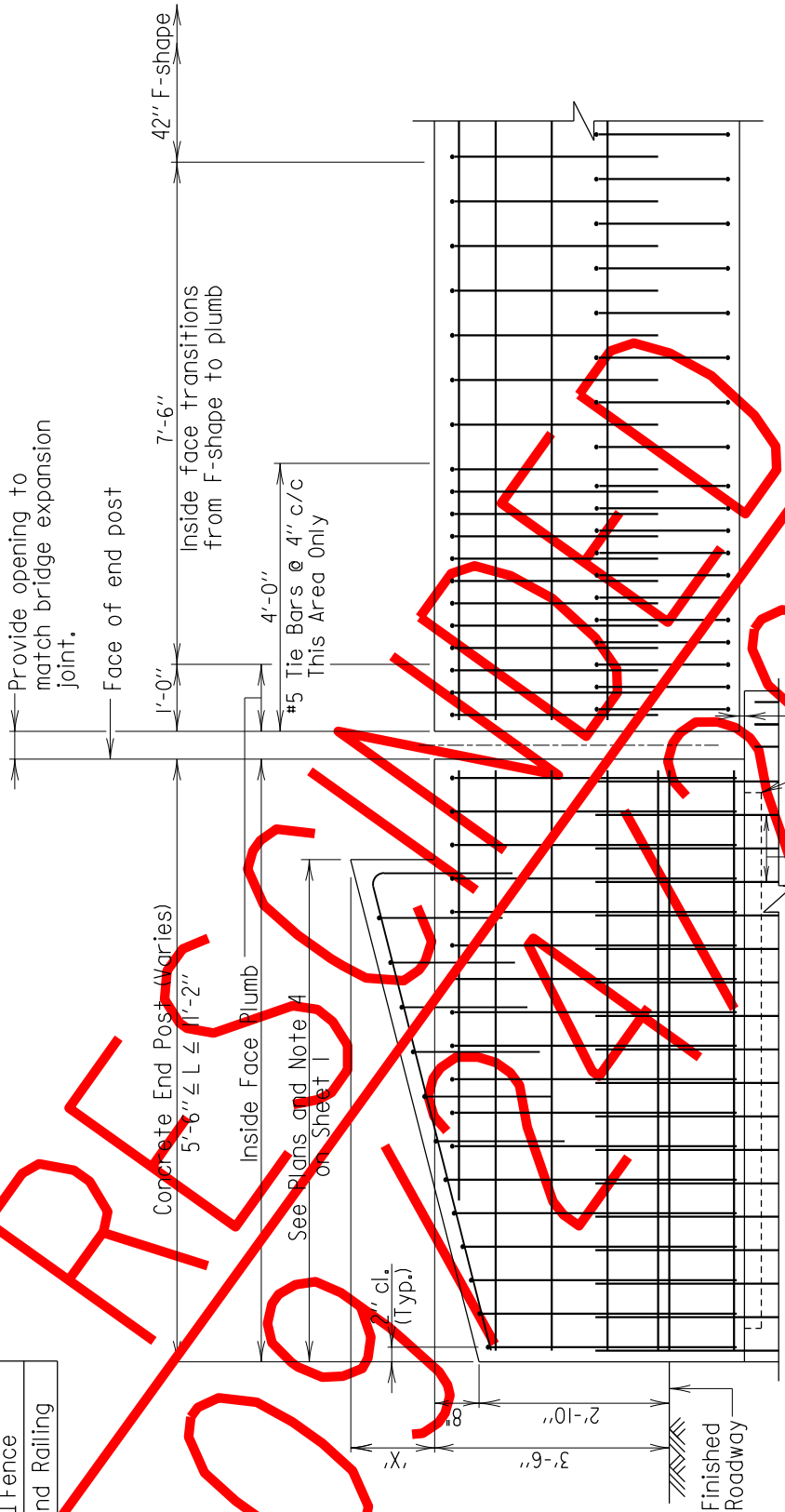
DETAIL NO. SUB-EP(42F)-103 IS RESCINDED. APPROACH END F-SHAPE END POSTS ARE FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL
<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE END POST WITH FENCING OR RAILING (END POST LENGTH < = 11'-2")	
DETAIL NO. SUB-EP(42)-103	SHEET <u>1</u> OF <u>4</u>

Fence or Railing Type
One Strand Railing
Type II Fence
Two Strand Railing

DETAIL NO. SUB-EP(42F)-103 IS RESCINDED
 APPROACH END F-SHAPE END POSTS ARE
 FOUND IN DETAIL NO. SUB-EP(42F)-101



1" cl. to underside of superstructure
 Construction joint with 3" x 6" key

SECTION A-A
 Scale: 3/8" = 1'-0"

- Notes:
- For parapet reinforcing details see sheets 3 and 4.
 - If applicable, reinforcing for coping not shown.
 - Normal deck reinforcing not shown.
 - Fencing or railing not shown.

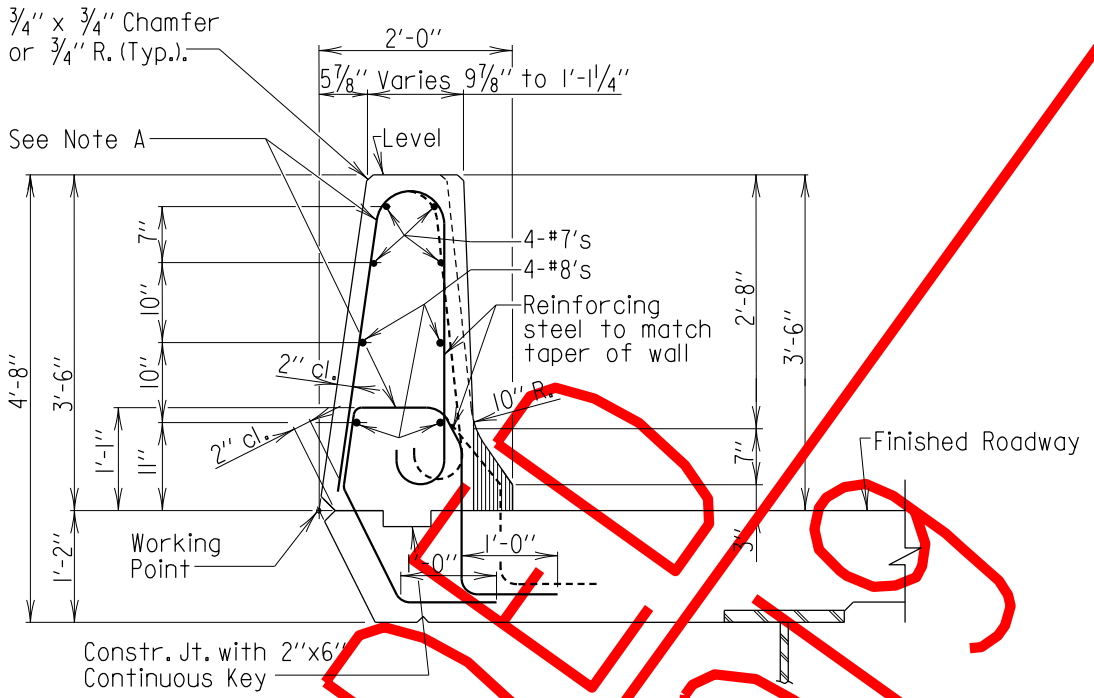
Note to Designer:
 This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

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

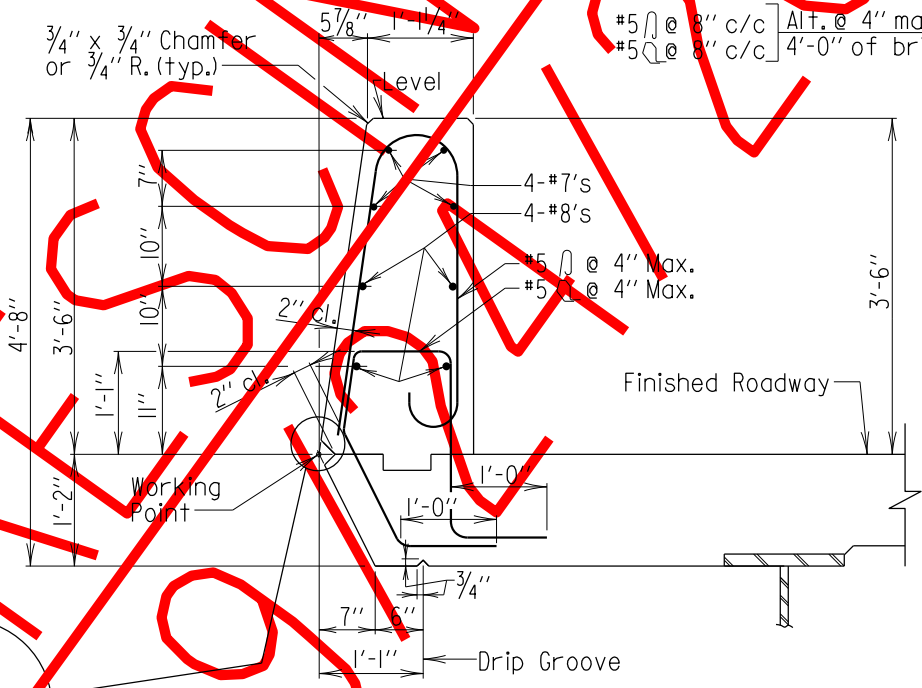
**42" F-SHAPE END POST WITH FENCING OR RAILING
 (END POST LENGTH < = 11'-2")**

DETAIL NO. SUB-EP(42F)-103 SHEET 2 OF 4

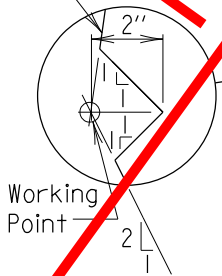


SECTION B-B
Scale: 1/2" = 1'-0"

Note A:
 #5 @ 4" c/c Within end 4'-0"
 #5 @ 4" c/c of bridge deck
 #5 @ 8" c/c Alt. @ 4" max. beyond end
 #5 @ 8" c/c 4'-0" of bridge deck



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



Note:
Normal deck reinforcing not shown.

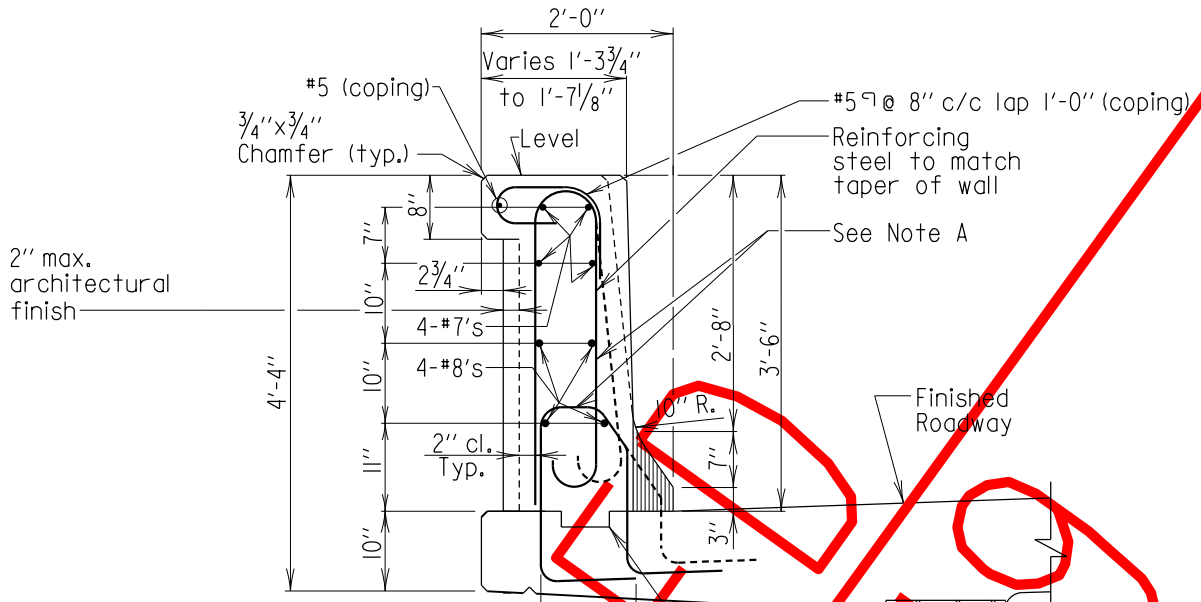
DETAIL NO. SUB-EP(42F)-103 IS RESCINDED
 APPROACH END F-SHAPE END POSTS ARE
 FOUND IN DETAIL NO. SUB-EP(42F)-101

42'' DIAMOND BACK

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42'' F-SHAPE END POST WITH FENCING OR RAILING (END POST LENGTH < = 11'-2'')
DETAIL NO. SUB-EP(42F)-103
SHEET 3 OF 4

SUBSTRUCTURE - END POST



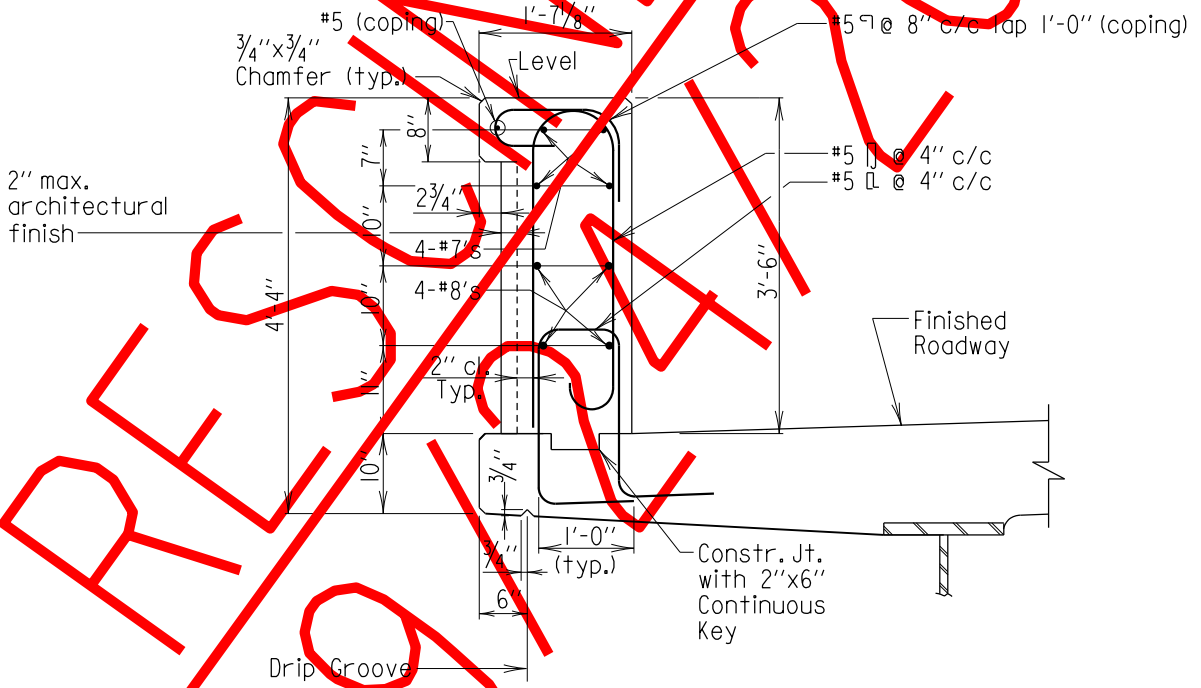
Note A:

#5 \square @ 4" c/c] Within end 4'-0"
 #5 \sqcup @ 4" c/c] of bridge deck

#5 \square @ 8" c/c] Alt. @ 4" max. beyond end
 #5 \sqcup @ 8" c/c] 4'-0" of bridge deck

SECTION B-B

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



SECTION C-C

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

42" RECESSED BACK

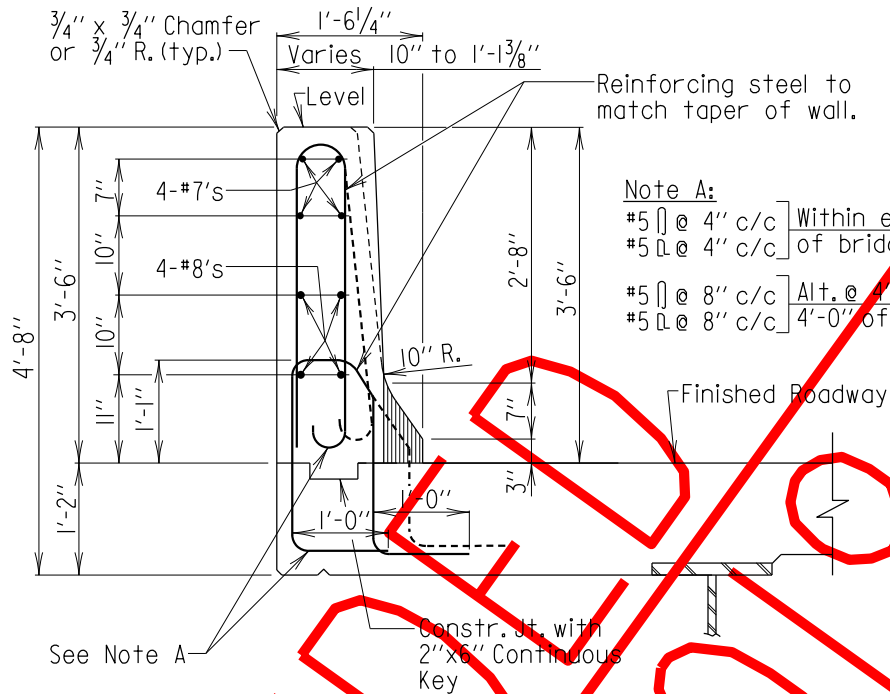
Note:
 Normal deck reinforcing not shown.

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE END POST WITH FENCING OR RAILING (END POST LENGTH < = 11'-2")	
DETAIL NO. SUB-EP(42F)-103	SHEET 3 OF 4

DETAIL NO. SUB-EP(42F)-103 IS RESCINDED
 APPROACH END F-SHAPE END POSTS ARE
 FOUND IN DETAIL NO. SUB-EP(42F)-101

SUBSTRUCTURE - END POST



Note A:
 #5 @ 4" c/c Within end 4'-0"
 #5 @ 4" c/c of bridge deck
 #5 @ 8" c/c Alt. @ 4" max. beyond end
 #5 @ 8" c/c 4'-0" of bridge deck

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



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

42" STRAIGHT BACK

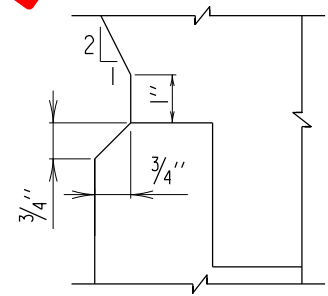
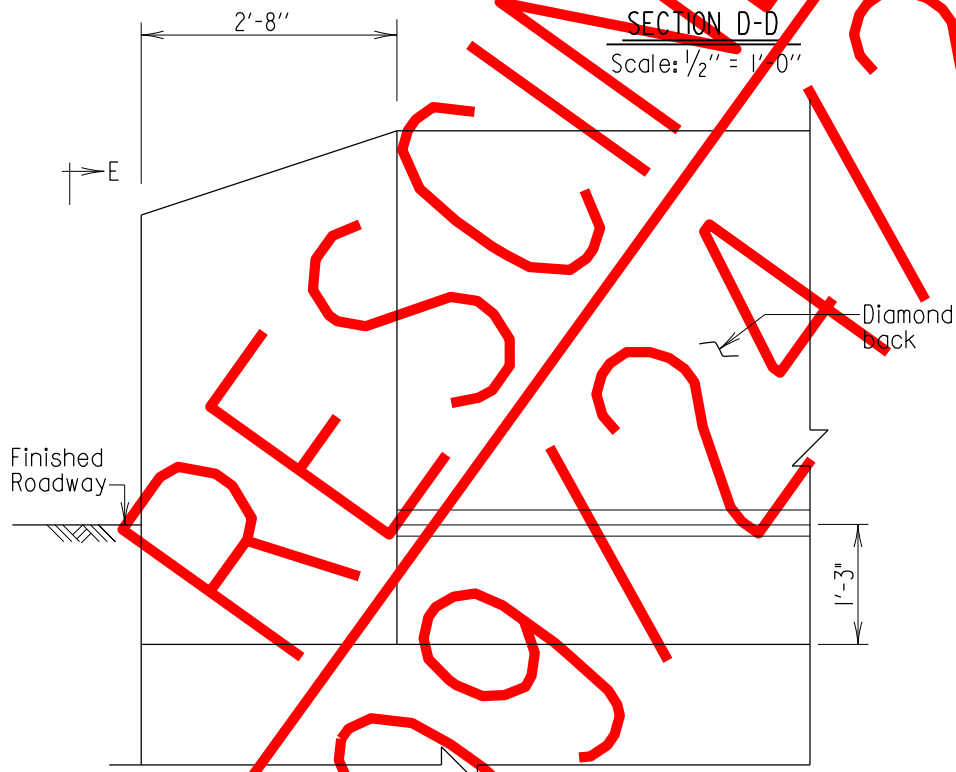
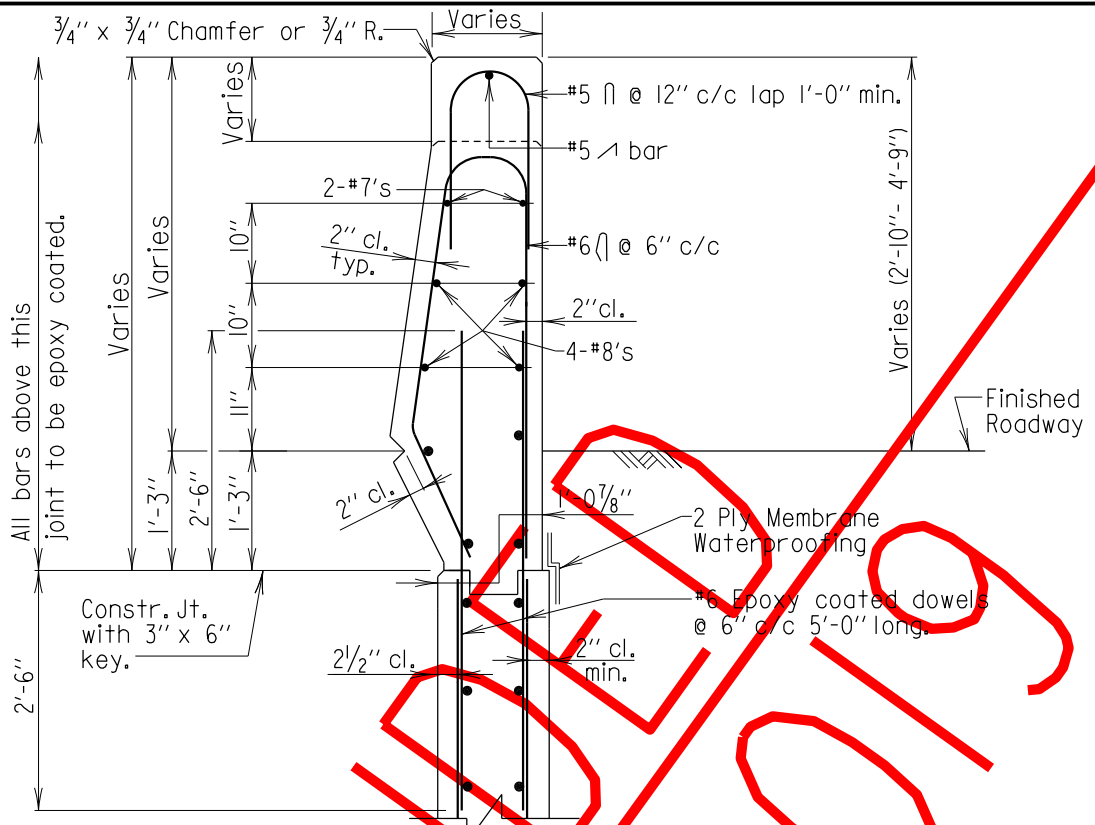
Note:
 Normal deck reinforcing not shown.

DETAIL NO. SUB-EP(42F)-103 IS RESCINDED.
 APPROACH END F-SHAPE END POSTS ARE
 FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE END POST WITH FENCING OR RAILING (END POST LENGTH < = 11'-2")	
DETAIL NO. SUB-EP(42F)-103	SHEET 3 OF 4

SUBSTRUCTURE - END POST



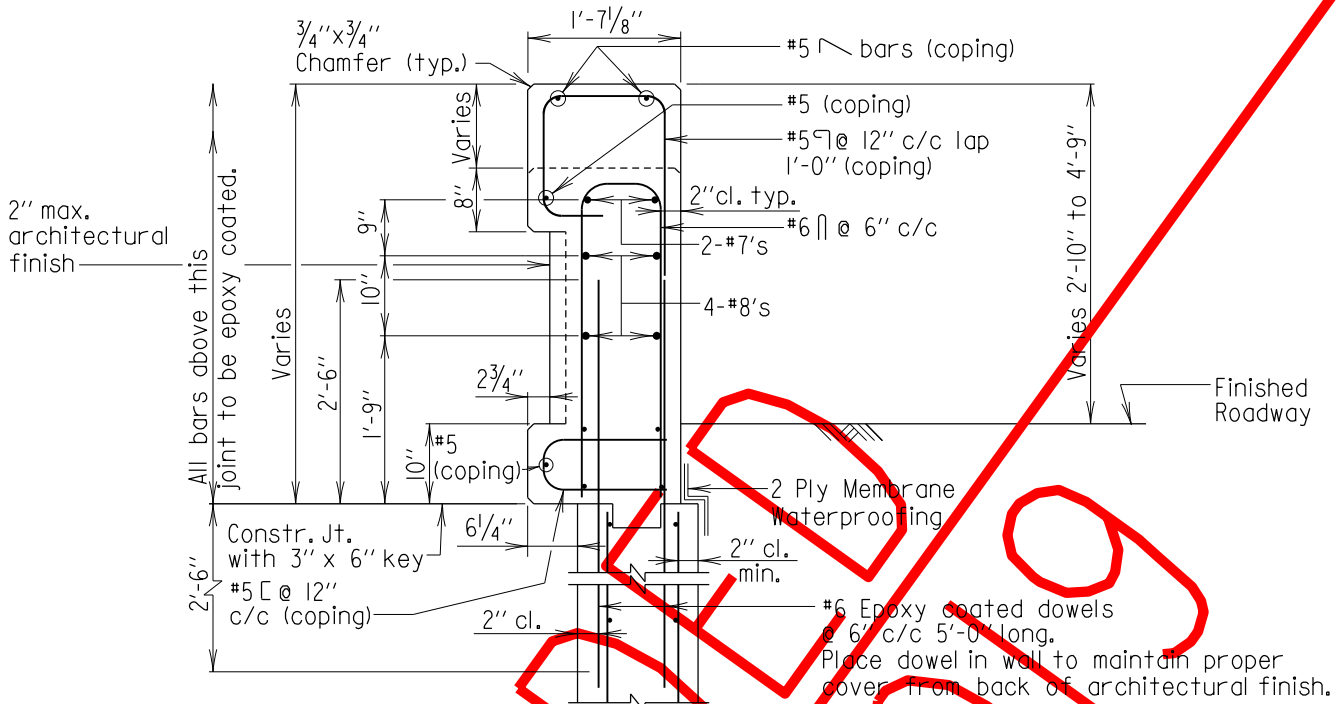
DETAIL NO. SUB-EP(42F)-103 IS RESCINDED
APPROACH END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-101

Note:
All longitudinal bars are #5 spaced
as shown unless noted otherwise.

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

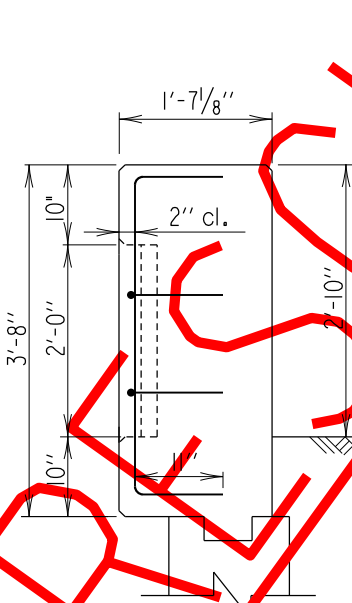
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE END POST WITH FENCING OR RAILING (END POST LENGTH < = 11'-2")	
DETAIL NO. SUB-EP(42F)-103	SHEET 4 OF 4

SUBSTRUCTURE - END POST



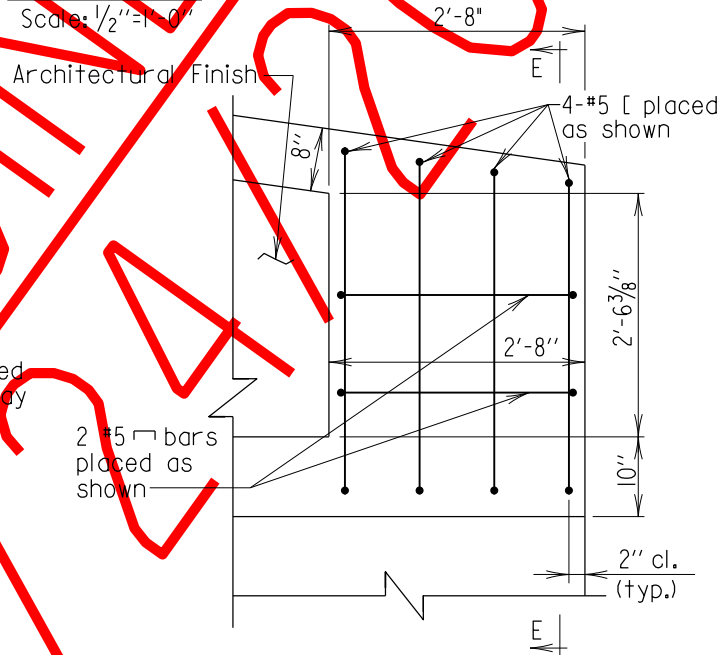
SECTION D-D

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



SECTION E-E

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



PARTIAL REAR ELEVATION

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

42" RECESSED BACK

Note:
All longitudinal bars are #5 spaced as shown unless noted otherwise.

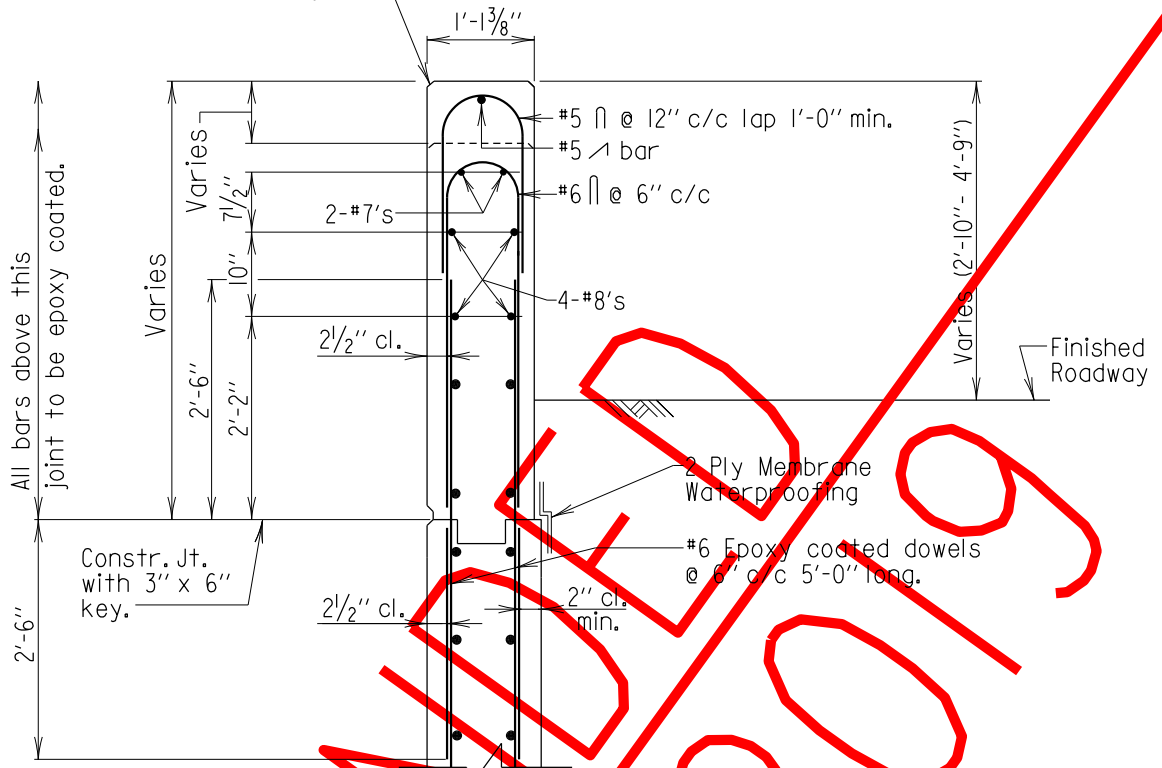
DETAIL NO. SUB-EP(42F)-103 IS RESCINDED. APPROACH END F-SHAPE END POSTS ARE FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE END POST WITH FENCING OR RAILING (END POST LENGTH < = 11'-2")
DETAIL NO. SUB-EP(42F)-103
SHEET 4 OF 4

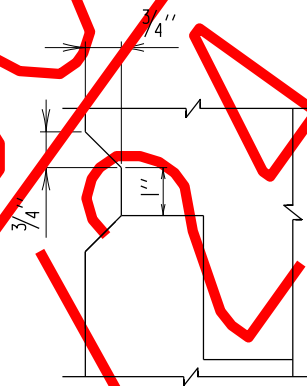
SUBSTRUCTURE - END POST

3/4" x 3/4" Chamfer or 3/4" R. (typ.)



SECTION D-D

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



GROOVE DETAIL

Scale: 3" = 1'-0"

PRELIMINARY

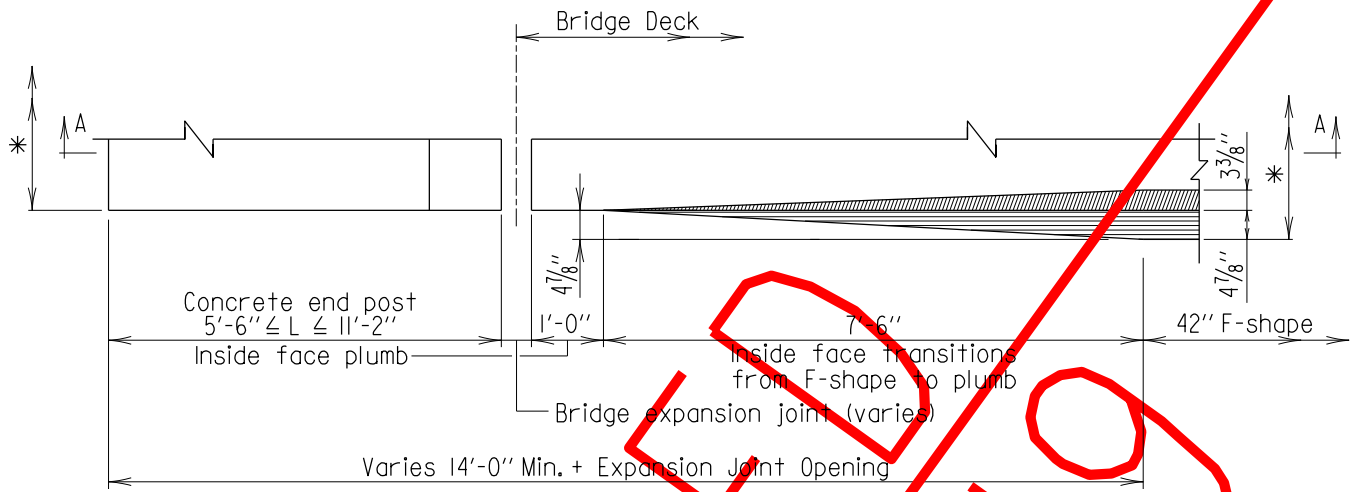
42" STRAIGHT BACK

Note:
All longitudinal bars are #5 spaced as shown unless noted otherwise.

DETAIL NO. SUB-EP(42F)-103 IS RESCINDED.
 APPROACH END F-SHAPE END POSTS ARE
 FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL
<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

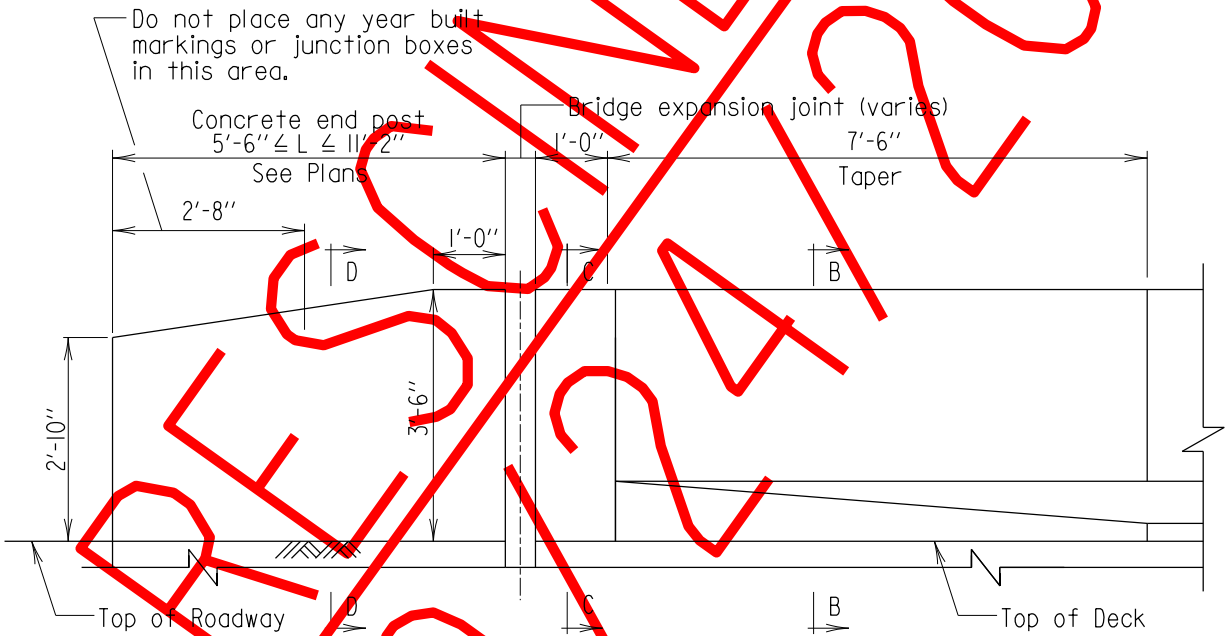
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE END POST WITH FENCING OR RAILING (END POST LENGTH < = 11'-2")
DETAIL NO. SUB-EP(42F)-103



PLAN

Scale: 3/8" = 1'-0"

*For overall parapet dimension see sheets 3 and 4.



ELEVATION

Scale: 3/8" = 1'-0"

Note to Designer:

This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

Notes:

1. Use on approach end of bridge when end post is less than 11'-2".
2. Three Beam Traffic Barrier attachment not shown.
3. Taper barrier height to 2'-10" when Three Beam is required. Continue at 3'-6" and eliminate transition of F-Shape when adjacent to concrete F-Shape barrier.

DETAIL NO. SUB-EP(42F)-104 IS RESCINDED
 APPROACH END F-SHAPE END POSTS ARE
 FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL
<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE END POST WITHOUT FENCING OR RAILING (APPROACH END, END POST LENGTH < = 11'-2")
DETAIL NO. SUB-EP(42F)-104
SHEET <u>1</u> OF <u>4</u>

SUBSTRUCTURE - END POST



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

Note to Designer:
This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

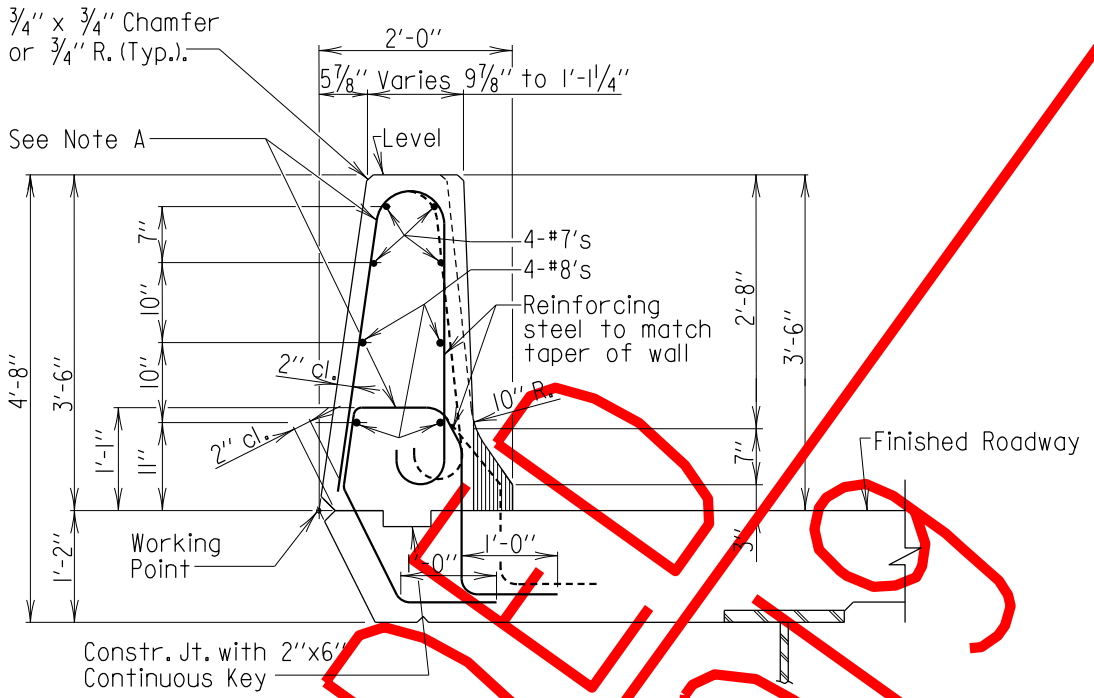
- Notes:
1. For parapet reinforcing details see sheets 3 and 4.
 2. If applicable, reinforcing for coping not shown.
 3. Normal deck reinforcing not shown.

DETAIL NO. SUB-EP(42F)-104 IS RESCINDED. APPROACH END F-SHAPE END POSTS ARE FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL
<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

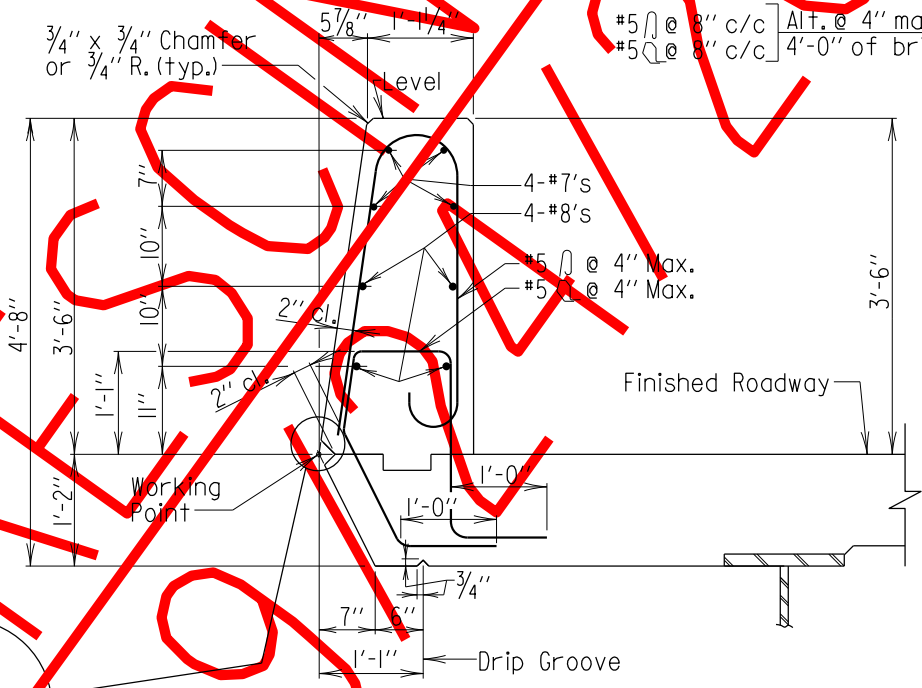
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE END POST WITHOUT FENCING OR RAILING (APPROACH END, END POST LENGTH < = 11'-2")	
DETAIL NO. SUB-EP(42F)-104	SHEET 2 OF 4

SUBSTRUCTURE - END POST

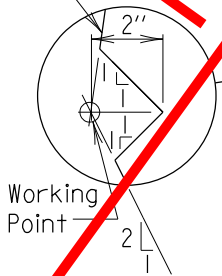


SECTION B-B
Scale: 1/2" = 1'-0"

Note A:
 #5 @ 4" c/c Within end 4'-0"
 #5 @ 4" c/c of bridge deck
 #5 @ 8" c/c Alt. @ 4" max. beyond end
 #5 @ 8" c/c 4'-0" of bridge deck



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



Outside face of parapet

Note:
Normal deck reinforcing not shown.

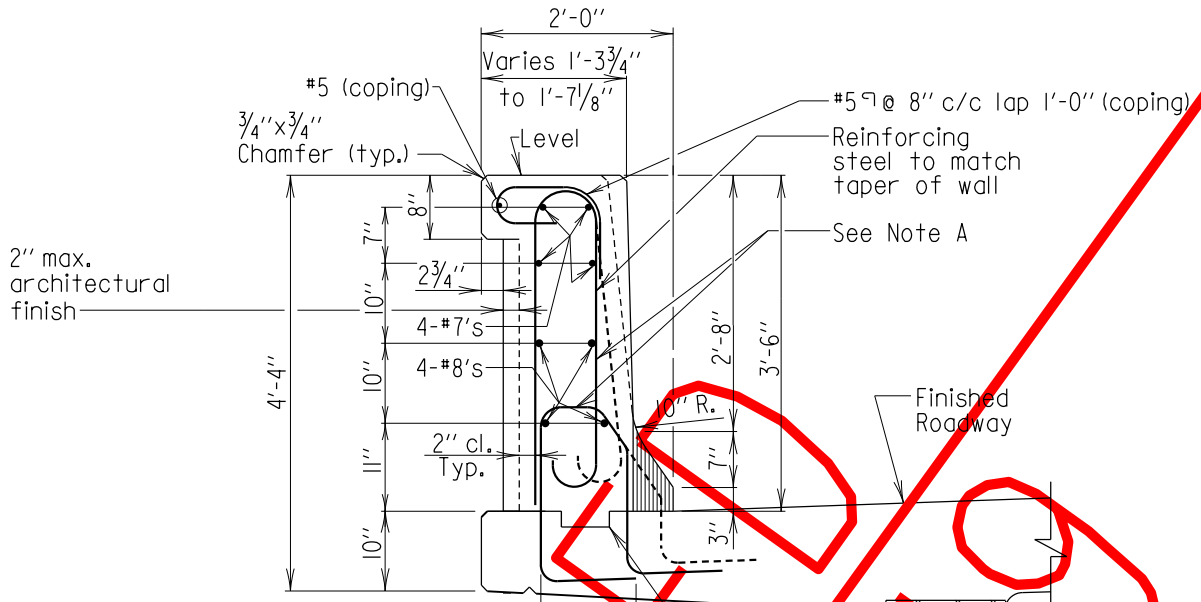
DETAIL NO. SUB-EP(42F)-104 IS RESCINDED.
APPROACH END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-101

42" DIAMOND BACK

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE END POST WITHOUT FENCING OR RAILING (APPROACH END, END POST LENGTH < = 11'-2")
DETAIL NO. SUB-EP(42F)-104
SHEET 3 OF 4

SUBSTRUCTURE - END POST



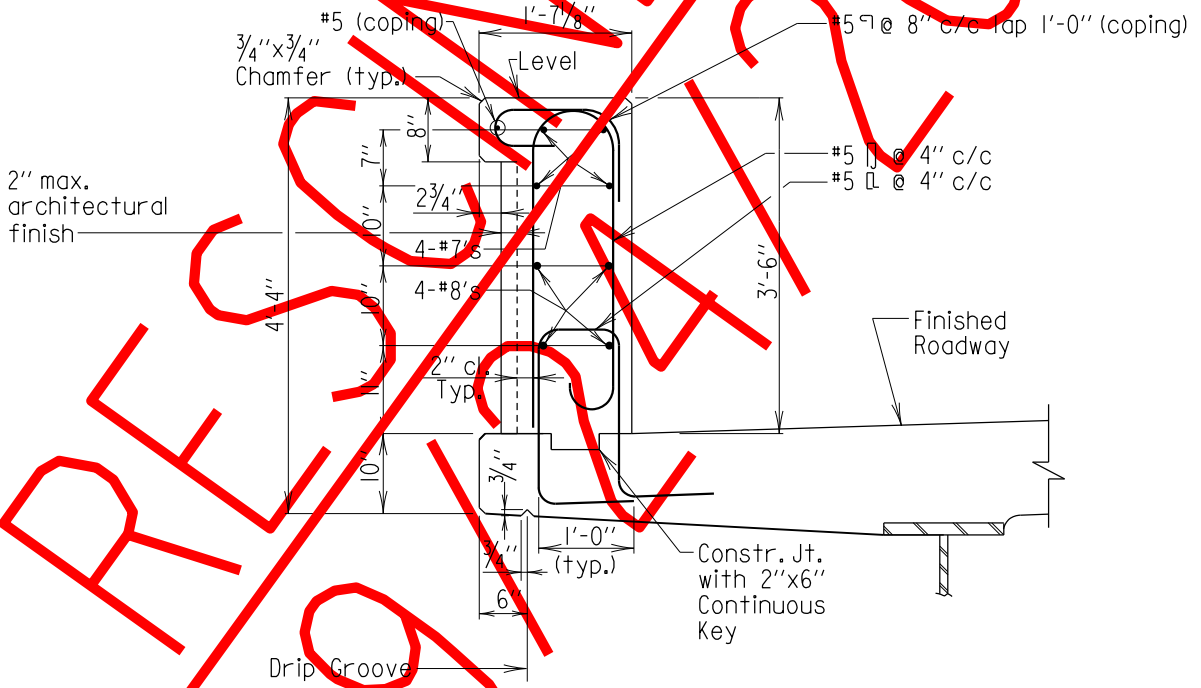
Note A:

#5 \square @ 4" c/c] Within end 4'-0"
 #5 \sqcup @ 4" c/c] of bridge deck

#5 \square @ 8" c/c] Alt. @ 4" max. beyond end
 #5 \sqcup @ 8" c/c] 4'-0" of bridge deck

SECTION B-B

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



SECTION C-C

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

42" RECESSED BACK

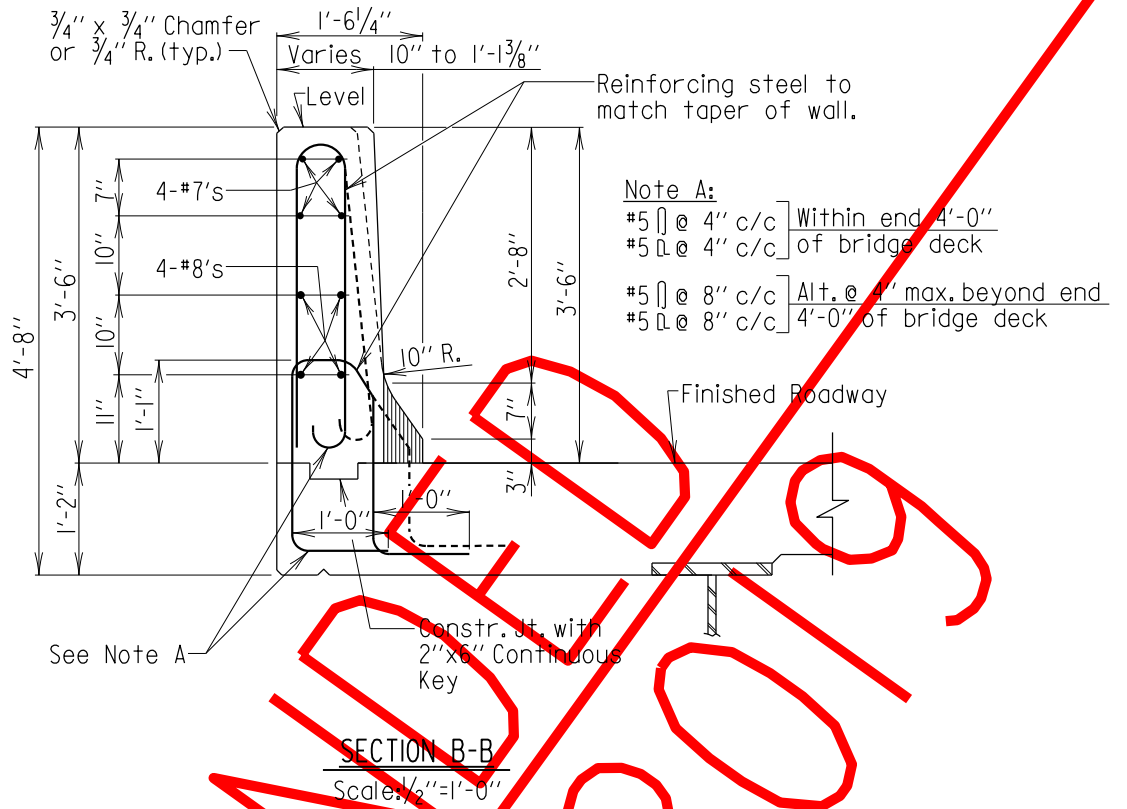
Note:
 Normal deck reinforcing not shown.

DETAIL NO. SUB-EP(42F)-104 IS RESCINDED.
 APPROACH END F-SHAPE END POSTS ARE
 FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE END POST WITHOUT FENCING OR RAILING (APPROACH END, END POST LENGTH < = 11'-2")
DETAIL NO. SUB-EP(42F)-104
SHEET 3 OF 4

SUBSTRUCTURE - END POST



42" STRAIGHT BACK

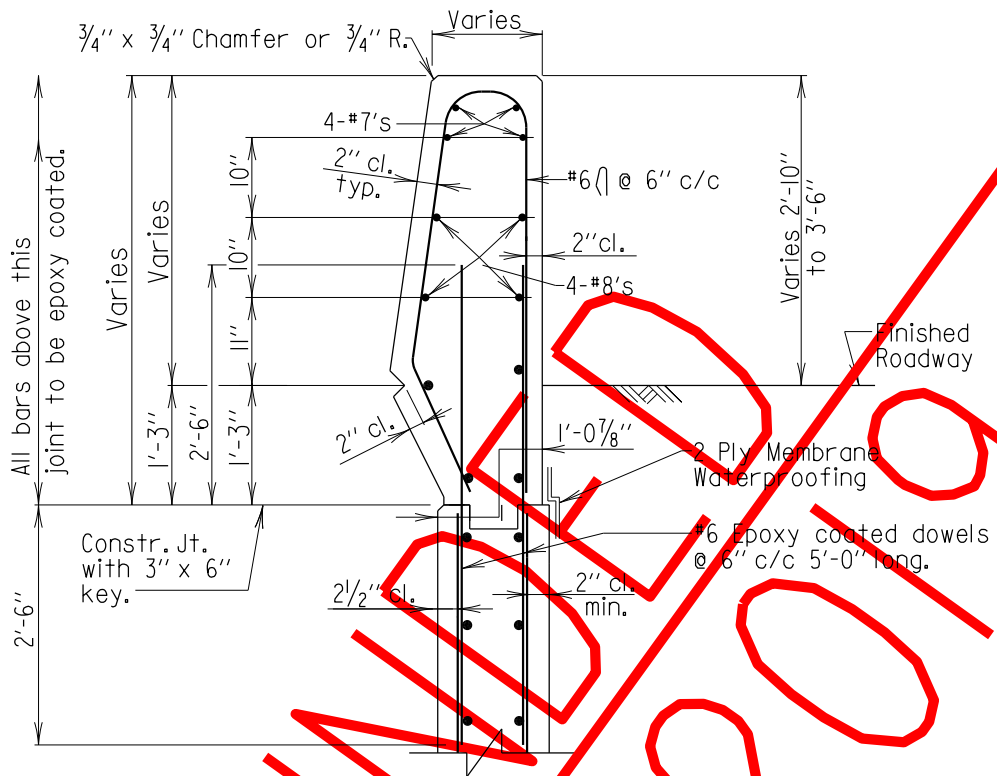
Note:
Normal deck reinforcing not shown.

DETAIL NO. SUB-EP(42F)-104 IS RESCINDED.
APPROACH END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-101

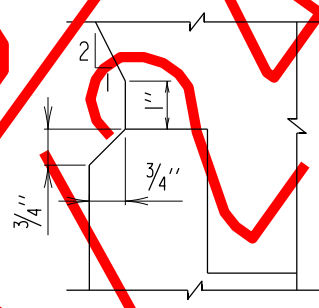
APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 07/24/2001
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE END POST WITHOUT FENCING OR RAILING (APPROACH END, END POST LENGTH < = 11'-2")
DETAIL NO. SUB-EP(42F)-104
SHEET 3 OF 4

SUBSTRUCTURE - END POST



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



GROOVE DETAIL
Scale: 3" = 1'-0"

RESERVED

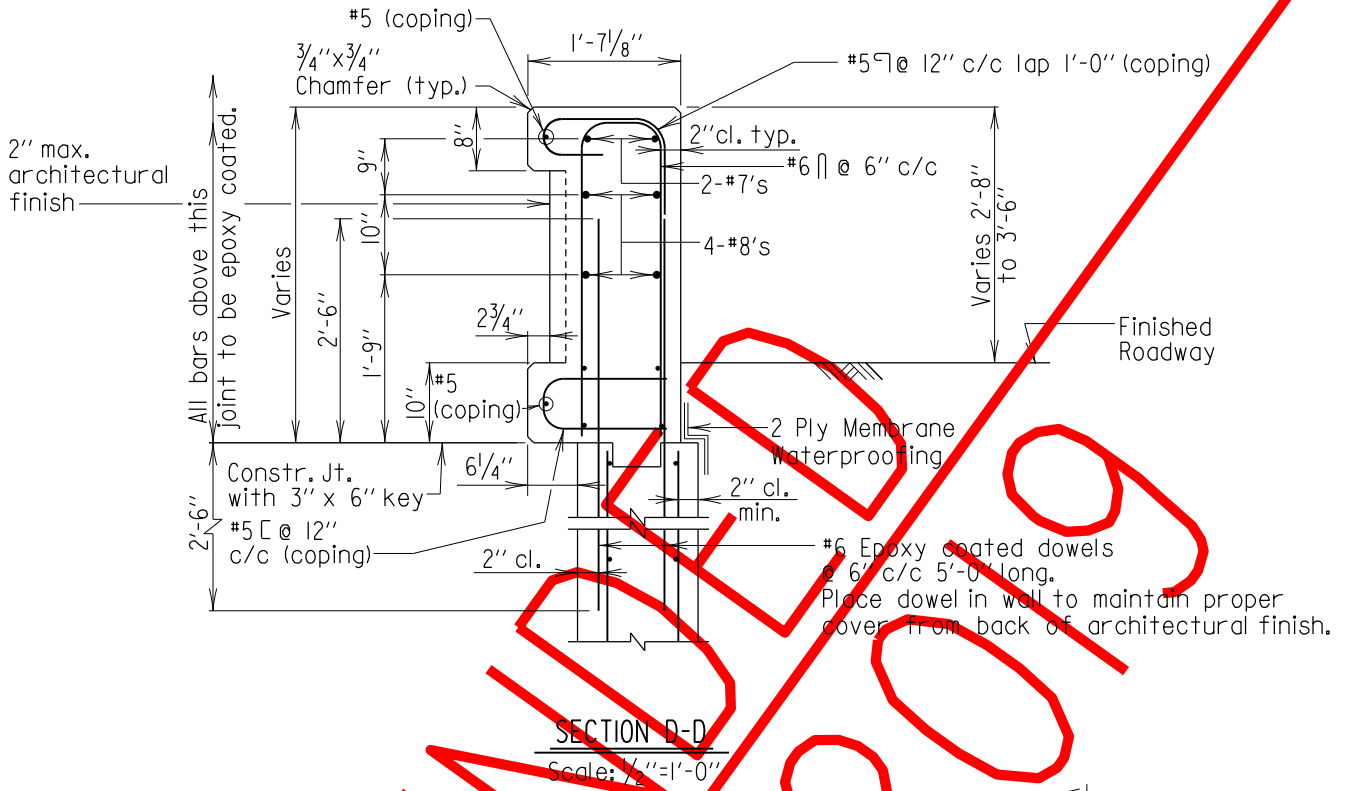
Note:
All longitudinal bars are #5 spaced as shown unless noted otherwise.

DETAIL NO. SUB-EP(42F)-104 IS RESCINDED. APPROACH END F-SHAPE END POSTS ARE FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE END POST WITHOUT FENCING OR RAILING (APPROACH END, END POST LENGTH < = 11'-2")
DETAIL NO. SUB-EP(42F)-104

42" DIAMOND BACK



42" RECESSED BACK

Note:
All longitudinal bars are #5 spaced as shown unless noted otherwise.

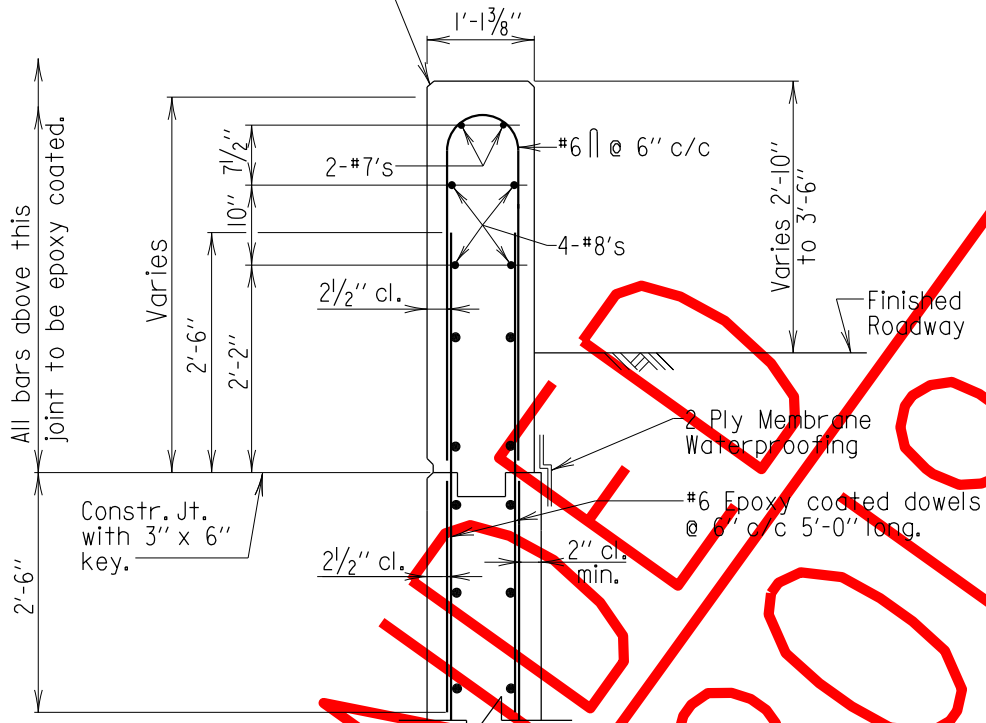
DETAIL NO. SUB-EP(42F)-104 IS RESCINDED. APPROACH END F-SHAPE END POSTS ARE FOUND IN DETAIL NO. SUB-EP(42F)-101

APPROVAL
<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE END POST WITHOUT FENCING OR RAILING (APPROACH END, END POST LENGTH < = 11'-2")
DETAIL NO. SUB-EP(42F)-104
SHEET 4 OF 4

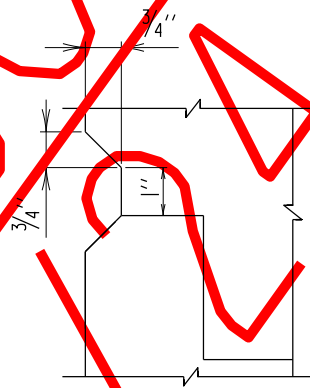
SUBSTRUCTURE - END POST

3/4" x 3/4" Chamfer or 3/4" R. (typ.)



SECTION D-D

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



GROOVE DETAIL

Scale: 3" = 1'-0"

42" STRAIGHT BACK

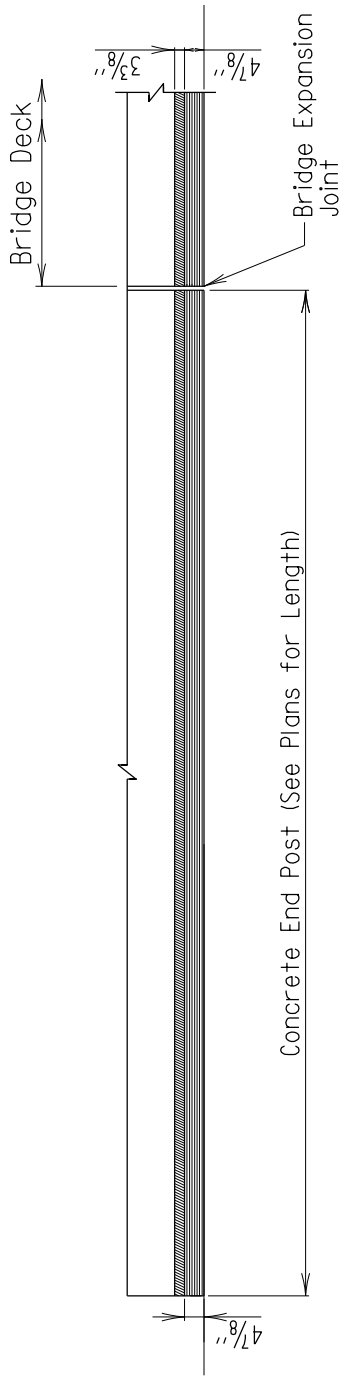
Note:
All longitudinal bars are #5 spaced as shown unless noted otherwise.

DETAIL NO. SUB-EP(42F)-104 IS RESCINDED. APPROACH END F-SHAPE END POSTS ARE FOUND IN DETAIL NO. SUB-EP(42F)-101

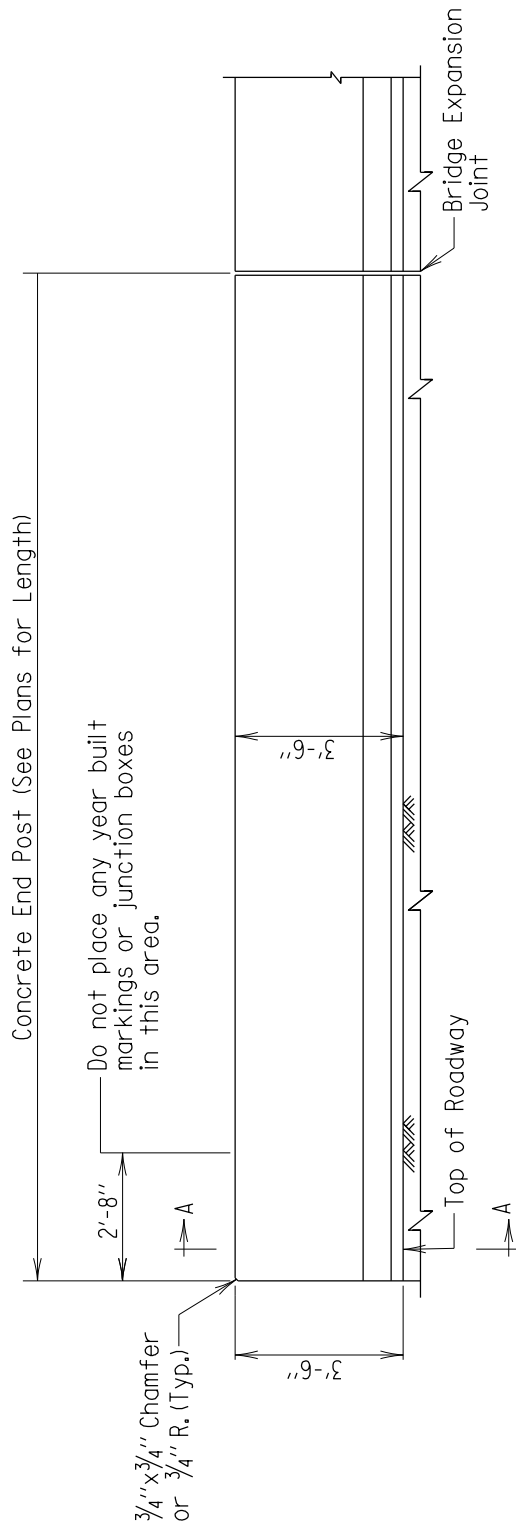
APPROVAL
<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE END POST WITHOUT FENCING OR RAILING (APPROACH END, END POST LENGTH < = 11'-2")
DETAIL NO. SUB-EP(42F)-104
SHEET 4 OF 4

SUBSTRUCTURE - END POST



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



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

- Notes:
1. Use on the trail end of one way bridges.
 2. W-Beam Traffic Barrier not shown.
 3. For fence layout and details, see Plans.

Note to Designer:
This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
[Signature] DIRECTOR OFFICE OF STRUCTURES DATE: 09/24/2019	
VERSION	42" F-SHAPE PARAPET END POST TRAIL END
2.0	

DETAIL NO. SUB-EP(42F)-105

SHEET 1 OF 3

Provide opening to match bridge expansion joint.

Concrete End Post (See Plans for Length)

$\frac{3}{4}$ " x $\frac{3}{4}$ " Chamfer or $\frac{3}{4}$ " R. (Typ.)

Face of End Post.

#6 dowel bars @ 12" c/c Epoxy coated. (Typ.)
1" cl. to underside of superstructure.

Construction Joint with 3" x 6" key.

Note to Designer:
This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

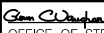
ELEVATION - Reinforcing

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

Notes:
1. Fencing not shown.

3'-6"

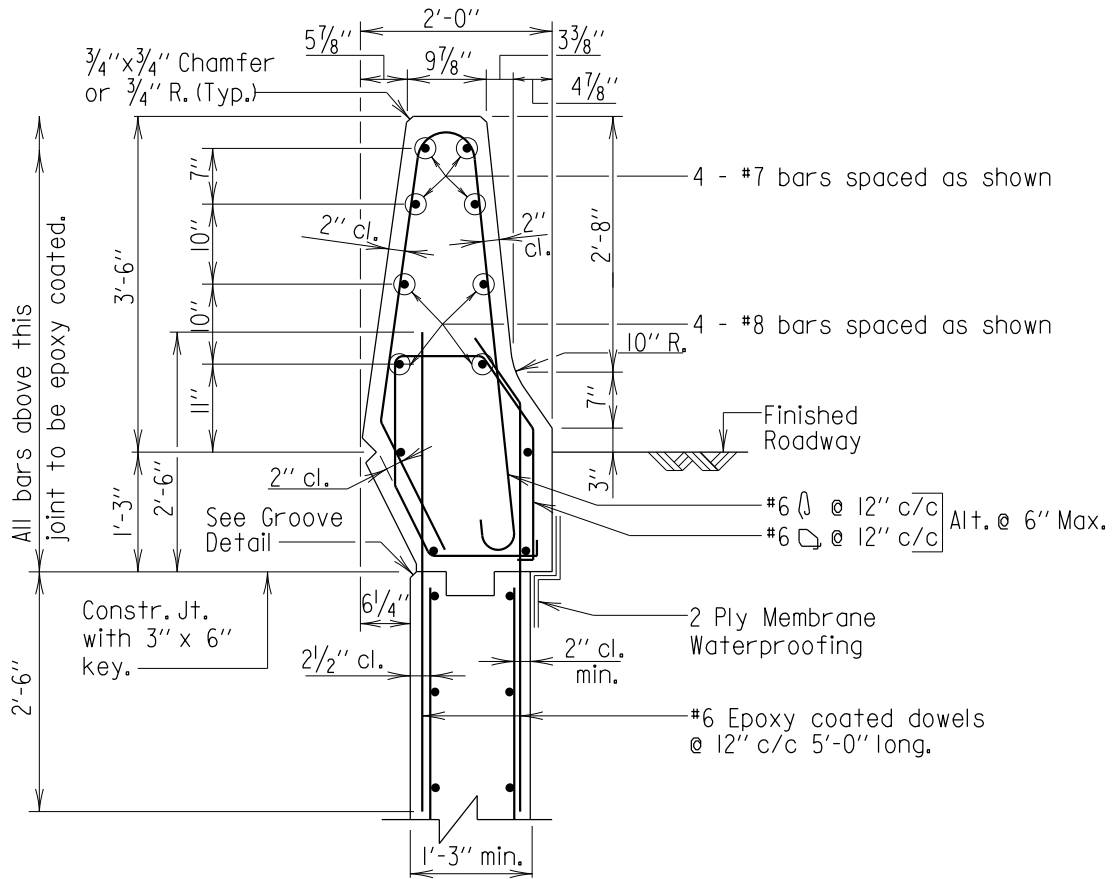
Finished Roadway

APPROVAL	
	DIRECTOR OFFICE OF STRUCTURES
DATE: 09/24/2019	
VERSION	
2.0	

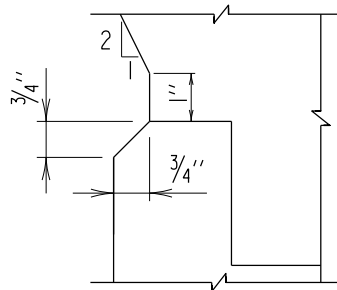
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

**42" F-SHAPE PARAPET
END POST TRAIL END**

DETAIL NO. SUB-EP(42F)-105 SHEET 2 OF 3



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



GROOVE DETAIL
Scale: 3"=1'-0"

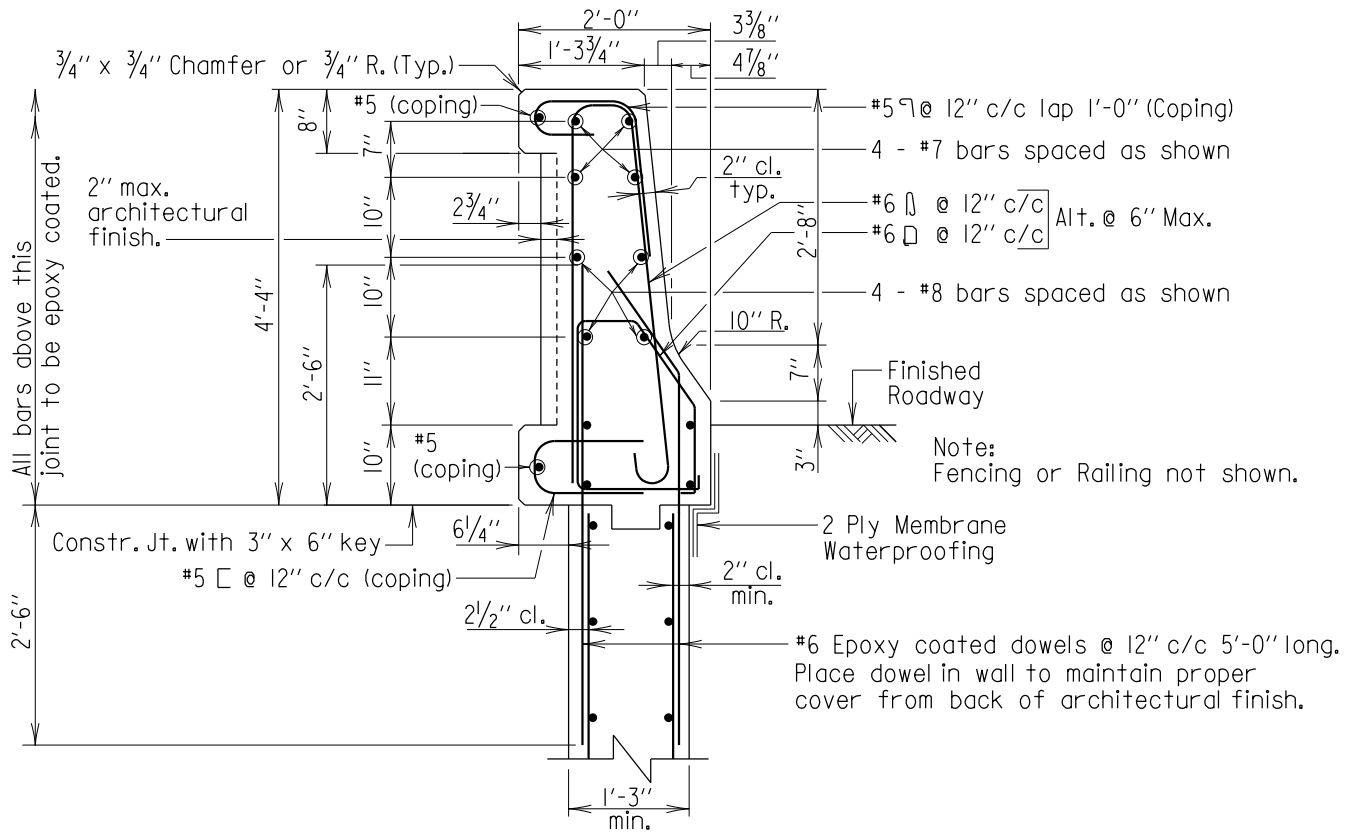
Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

42" DIAMOND BACK

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/24/2019
VERSION
2.0

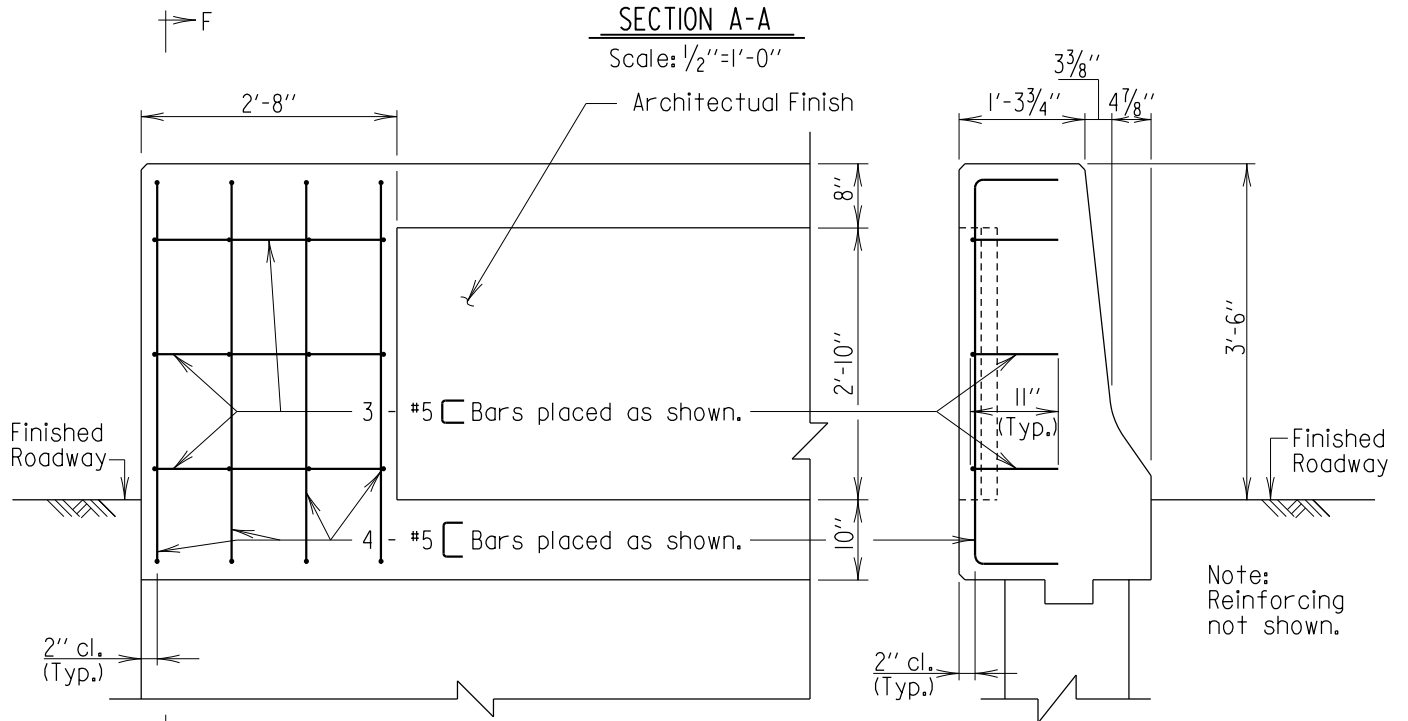
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE PARAPET END POST TRAIL END
DETAIL NO. SUB-EP(42F)-105
SHEET 3 OF 3

SUBSTRUCTURE - END POST



SECTION A-A

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



PARTIAL REAR ELEVATION

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

SECTION F-F

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

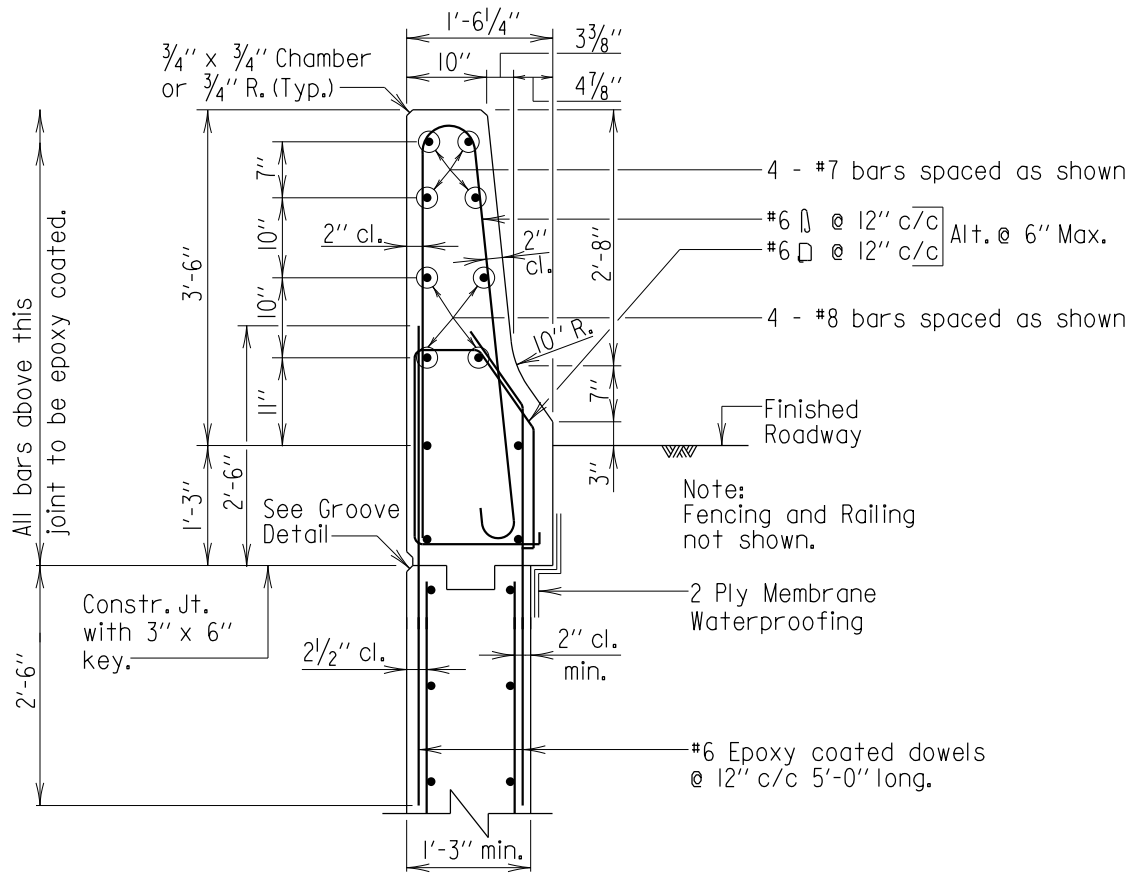
42" RECESSED BACK

Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

APPROVAL
<i>Ben C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/24/2019
VERSION
2.0

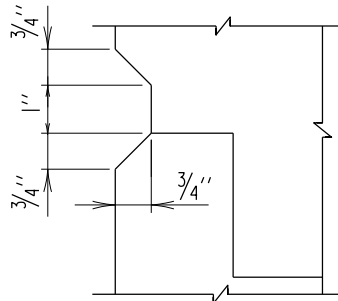
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE PARAPET END POST TRAIL END	
DETAIL NO. SUB-EP(42F)-105	SHEET 3 OF 3

SUBSTRUCTURE - END POST



SECTION A-A

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



GROOVE DETAIL

Scale: 3"=1'-0"

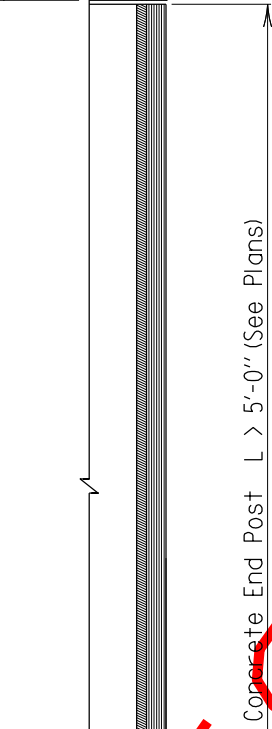
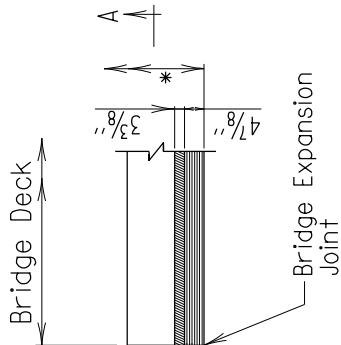
Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

42" STRAIGHT BACK

APPROVAL
<i>Tom O'Donoghue</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/24/2019
VERSION
2.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE PARAPET END POST TRAIL END
DETAIL NO. SUB-EP(42F)-105
SHEET 3 OF 3

SUBSTRUCTURE - END POST

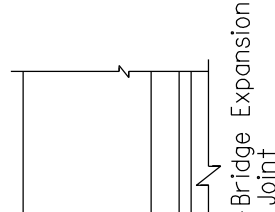
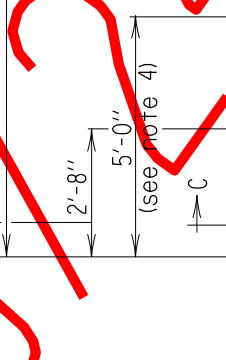


* For overall Parapet dimensions, see sheets 3 and 4 of 4.

PLAN

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

Do not place any year built markings or junction boxes in this area.



ELEVATION

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

- Notes:
1. Use on the trail end of one way bridges.
 2. W-Beam Traffic Barrier not shown.
 3. For fence or Railing layout and details, see Plans.
 4. Taper barrier height to 2'-10" when Thrie Beam is required. Taper to 3'-6" when adjacent to concrete F-Shape Barrier.

Note to Designer:
This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

DETAIL NO. SUB-EP(42F)-106 IS RESCINDED
TRAIL END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-105

APPROVAL
<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING TRAIL END	
DETAIL NO. SUB-EP(42F)-106	SHEET <u>1</u> OF <u>4</u>

Provide opening to match bridge expansion joint.

Concrete End Post L > 5'-0" (See Plans)

5'-0" (See note 4 on sheet 1)

2 - #7 bars to follow slope

Face of End Post.

#6 dowel bars @ 12" c/c Epoxy coated. (Typ.) 1" dia. to underside of superstructure.

Construction Joint with 3" x 6" key.

Note to Designer:
This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

SECTION A-A

Scale: 3/8" = 1'-0"

- Notes:
1. For Parapet Reinforcing Details, see sheets 3 and 4.
 2. Fencing or railing not shown.
 3. If applicable, reinforcing for coping not shown.



DETAIL NO. SUB-EP(42F)-106 IS RESCINDED
TRAIL END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-105

APPROVAL
DIRECTOR OFFICE OF STRUCTURES
DATE: <DATE>
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING TRAIL END	
DETAIL NO. SUN-EP(42F)-106	SHEET 2 OF 4



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

Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

DETAIL NO. SUB-EP(42F)-106 IS RESCINDED
TRAIL END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-105

42' DIAMOND BACK

APPROVAL
<i>C.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING TRAIL END
DETAIL NO. SUB-EP(42F)-106



All bars above this joint to be epoxy coated.

2" max. architectural finish.

Finished Roadway

Note: Fencing or Railing not shown.

2 Ply Membrane Waterproofing

#6 Epoxy coated dowels @ 12" c/c 5'-0" long. Place dowel in wall to maintain proper cover from back of architectural finish.

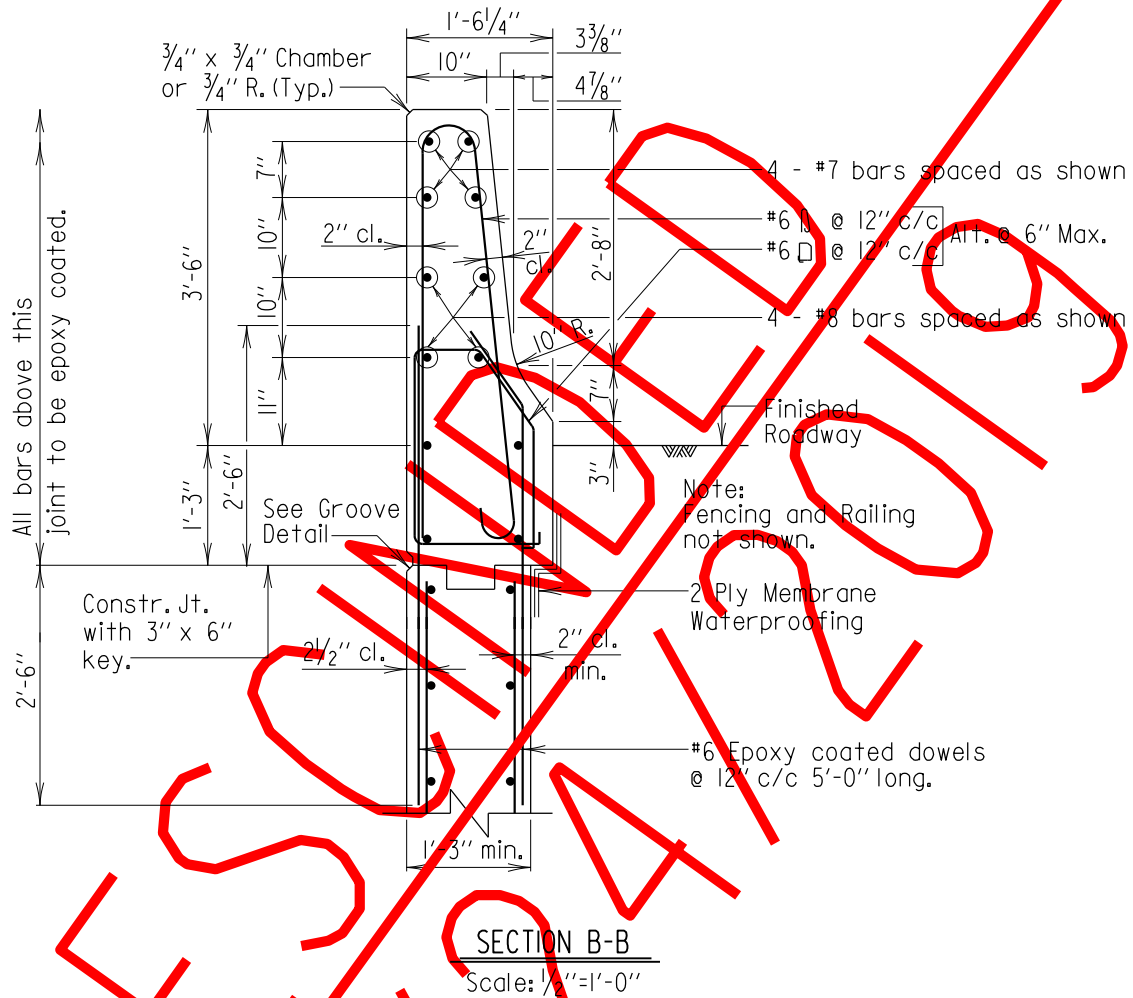
Note: All longitudinal bars are #5 spaced as shown, unless noted otherwise.

DETAIL NO. SUB-EP(42F)-106 IS RESCINDED TRAIL END F-SHAPE END POSTS ARE FOUND IN DETAIL NO. SUB-EP(42F)-105

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING TRAIL END
DETAIL NO. SUB-EP(42F)-106
SHEET 3 OF 4

SUBSTRUCTURE - END POST



All bars above this joint to be epoxy coated.

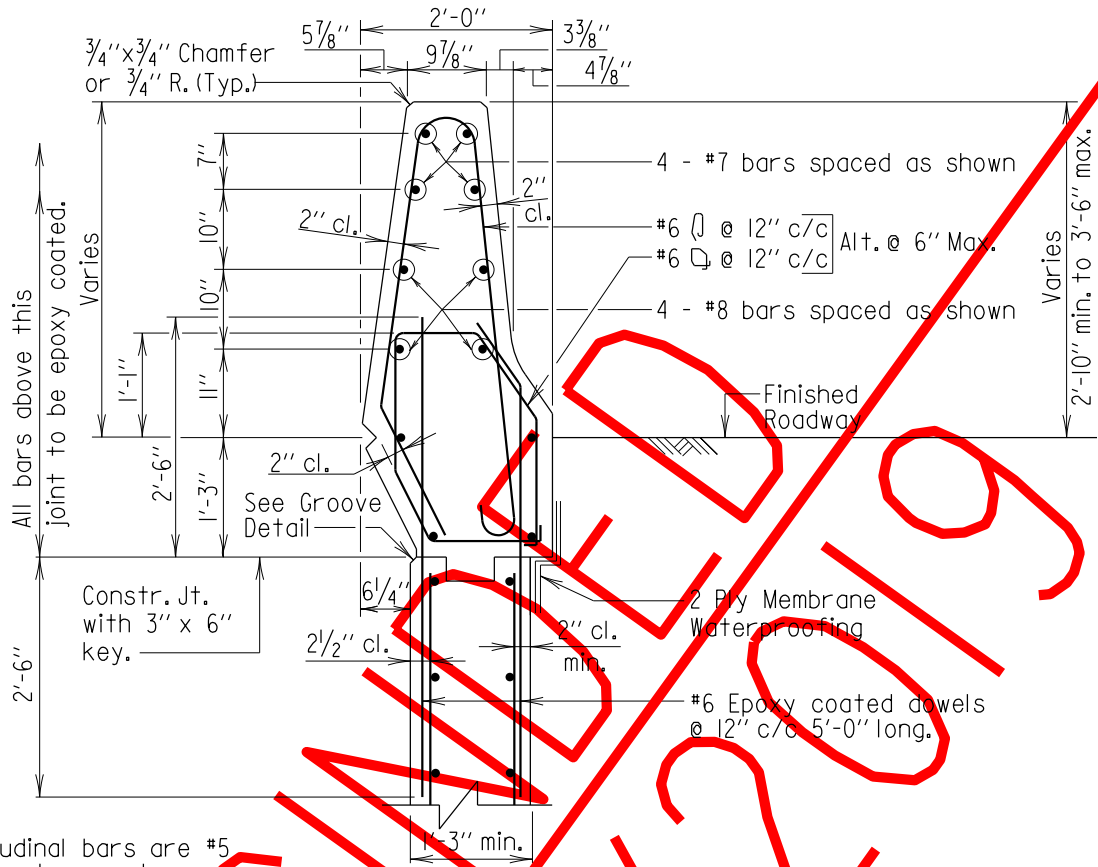
Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

DETAIL NO. SUB-EP(42F)-106 IS RESCINDED
TRAIL END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-105

42'' STRAIGHT BACK

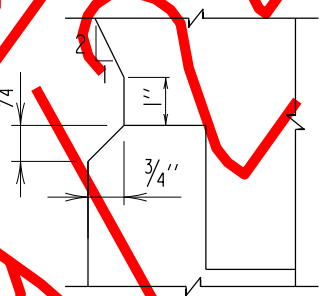
APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42'' F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING TRAIL END
DETAIL NO. SUB-EP(42F)-106



Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

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



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

RESERVED

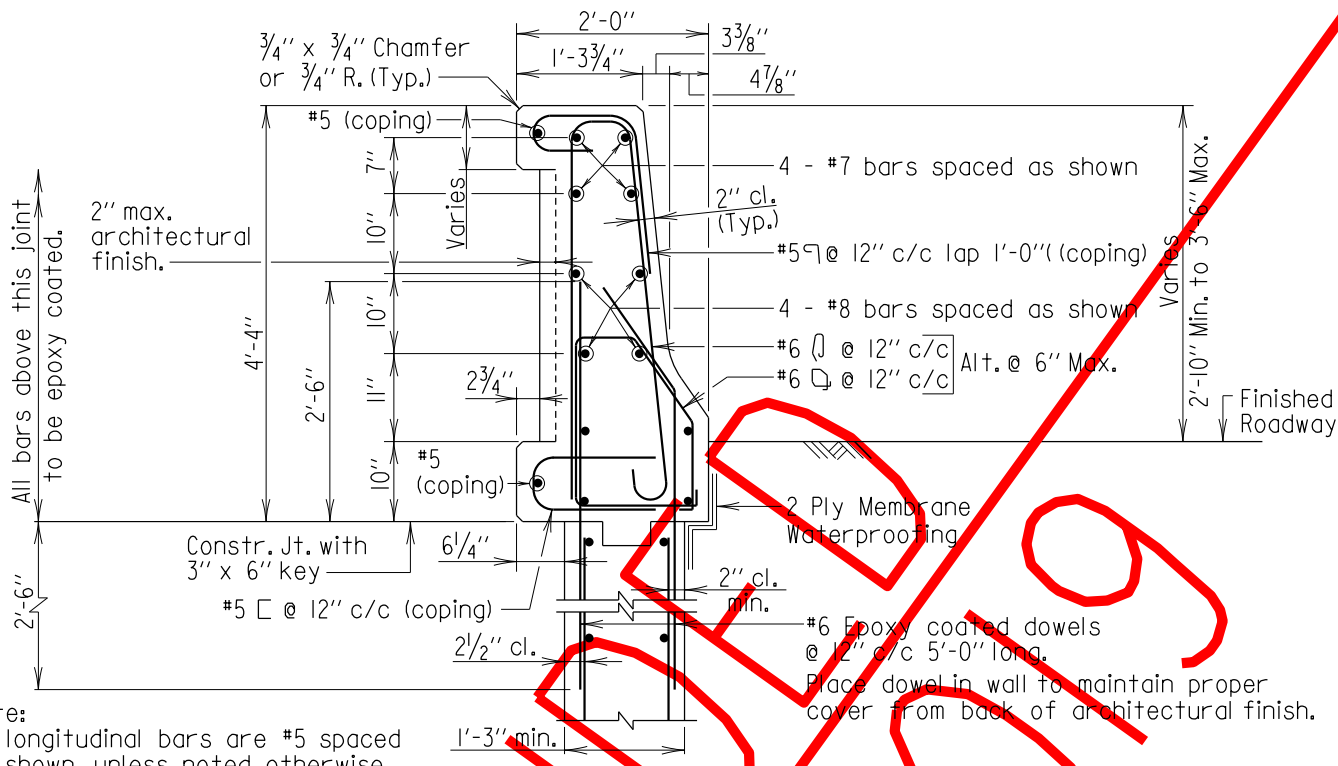
42" DIAMOND BACK

APPROVAL
<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING TRAIL END	
DETAIL NO. SUB-EP(42F)-106	SHEET 4 OF 4

DETAIL NO. SUB-EP(42F)-106 IS RESCINDED
TRAIL END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-105

SUBSTRUCTURE - END POST

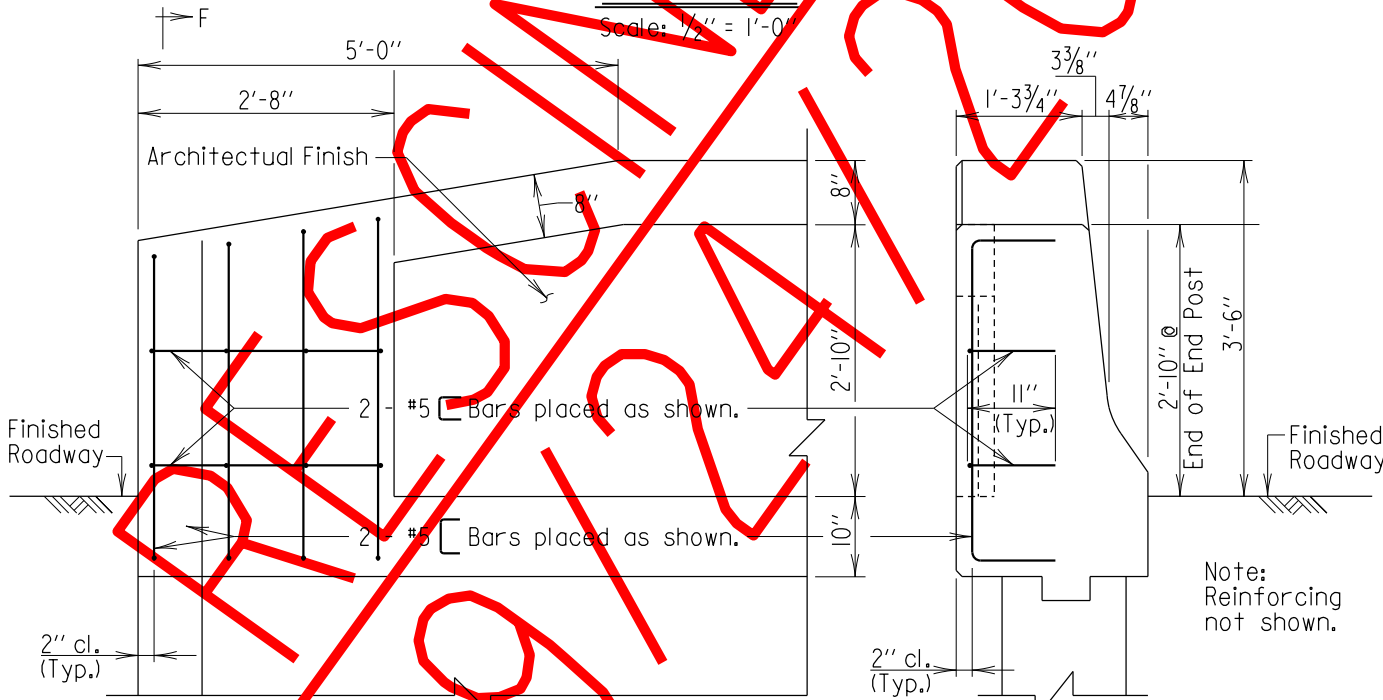


Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

#6 Epoxy coated dowels @ 12" c/c 5'-0" long.
Place dowel in wall to maintain proper cover from back of architectural finish.

SECTION C-C

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



PARTIAL REAR ELEVATION

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

SECTION F-F

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

42" RECESSED BACK

Notes:

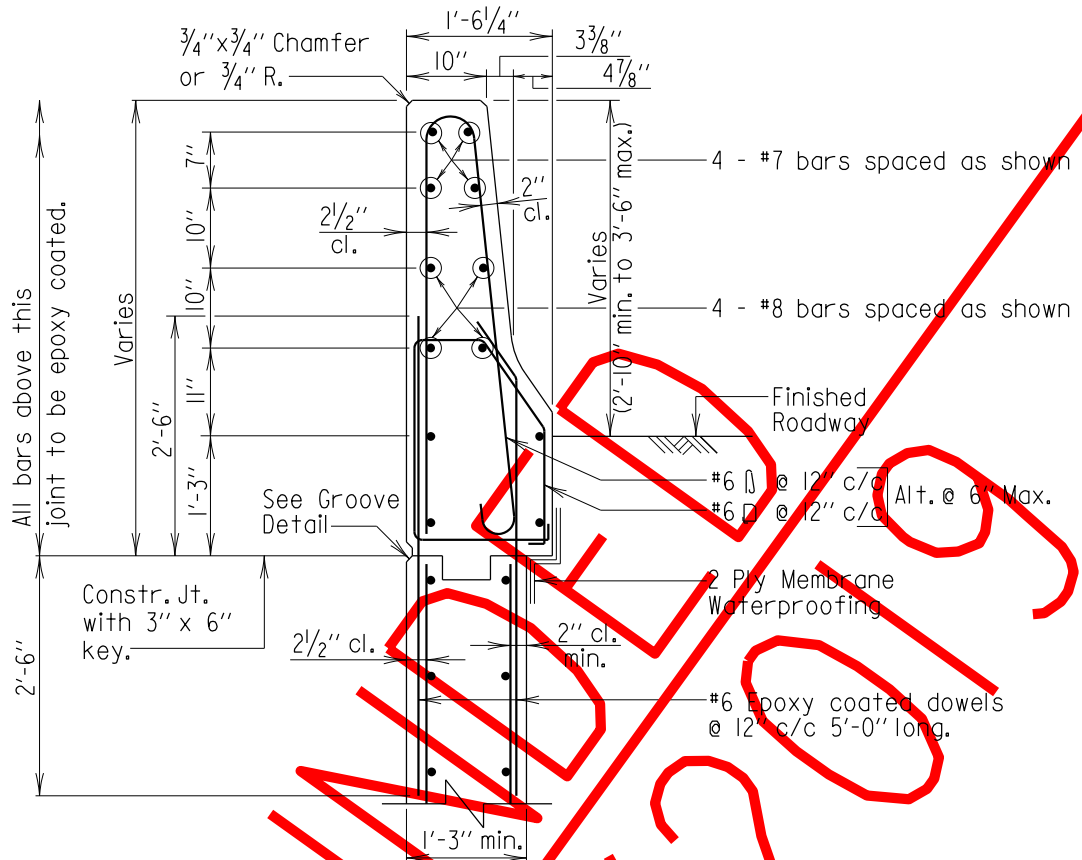
1. Taper of coping to begin at concrete lug.
2. There is no View E-E for the 42" Recessed Back End Post.

DETAIL NO. SUB-EP(42F)-106 IS RESCINDED
TRAIL END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-105

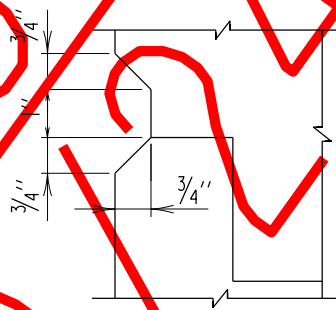
APPROVAL
<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING TRAIL END	
DETAIL NO. SUB-EP(42F)-106	SHEET 4 OF 4

SUBSTRUCTURE - END POST



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



GROOVE DETAIL
Scale: 3\"/>

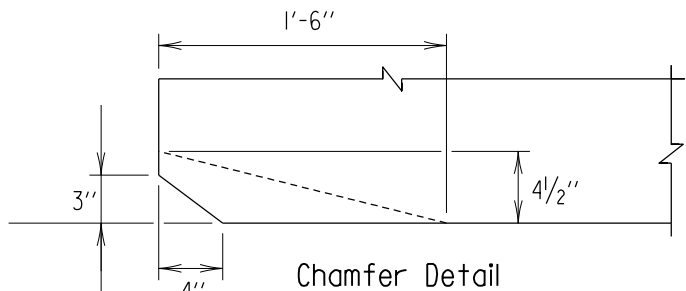
Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

DETAIL NO. SUB-EP(42F)-106 IS RESCINDED
TRAIL END F-SHAPE END POSTS ARE
FOUND IN DETAIL NO. SUB-EP(42F)-105

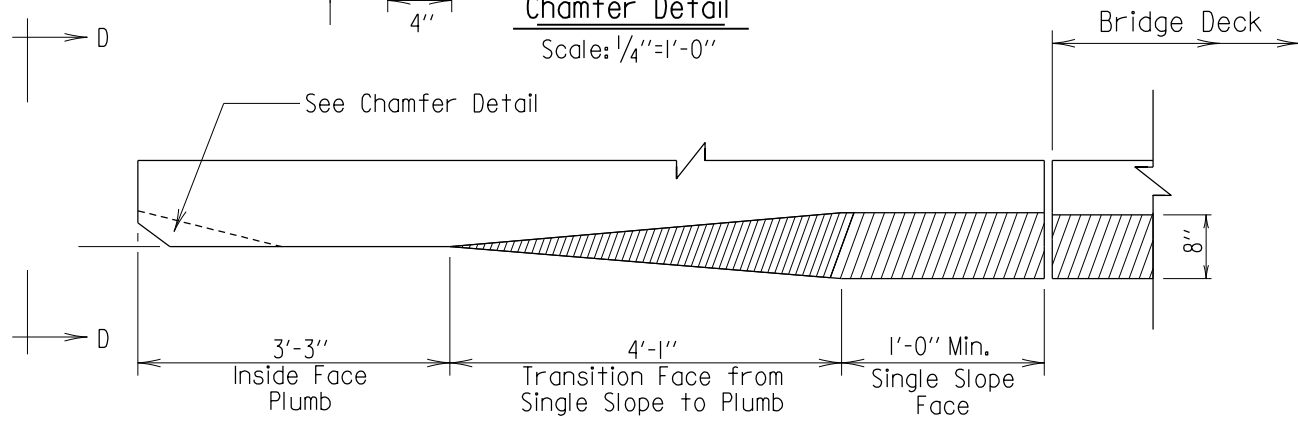
42'' STRAIGHT BACK

APPROVAL
<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 06/01/2005
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42'' F-SHAPE PARAPET END POST WITHOUT FENCING OR RAILING TRAIL END
DETAIL NO. SUB-EP(42F)-106

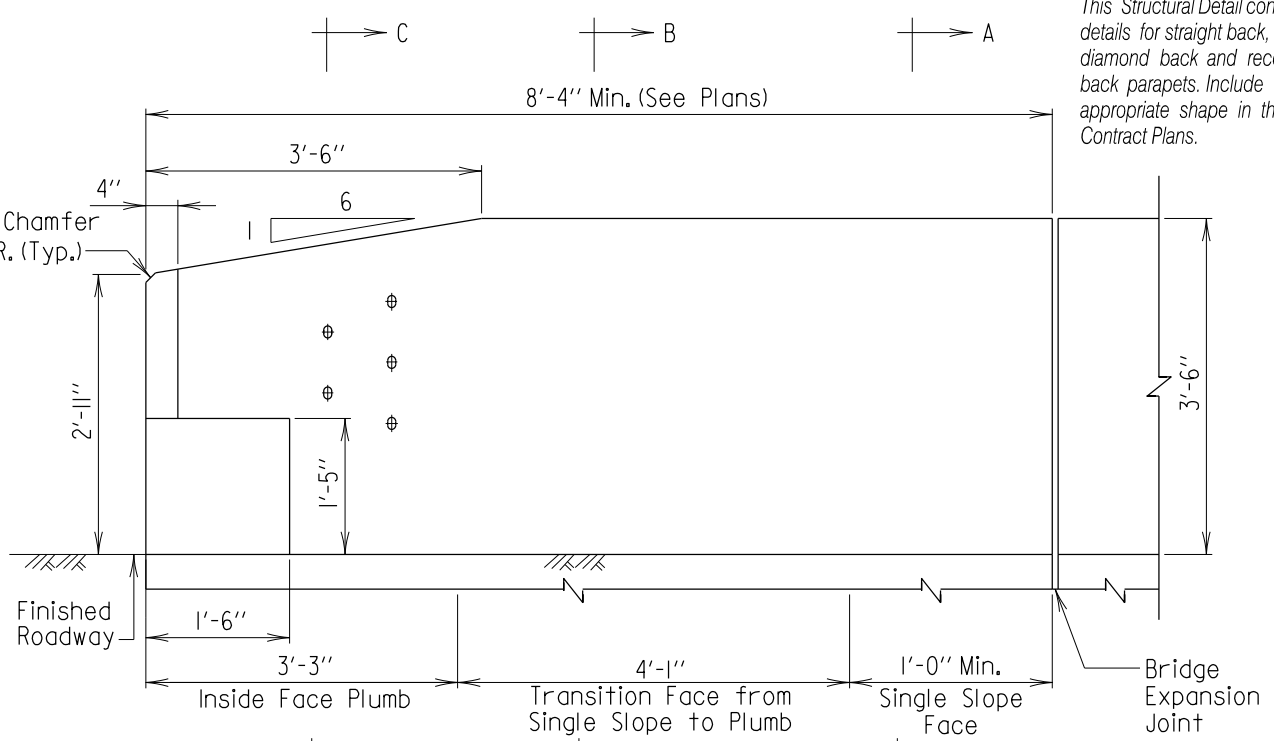


Chamfer Detail
Scale: 1/4"=1'-0"



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

Note to Designer:
This Structural Detail contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.



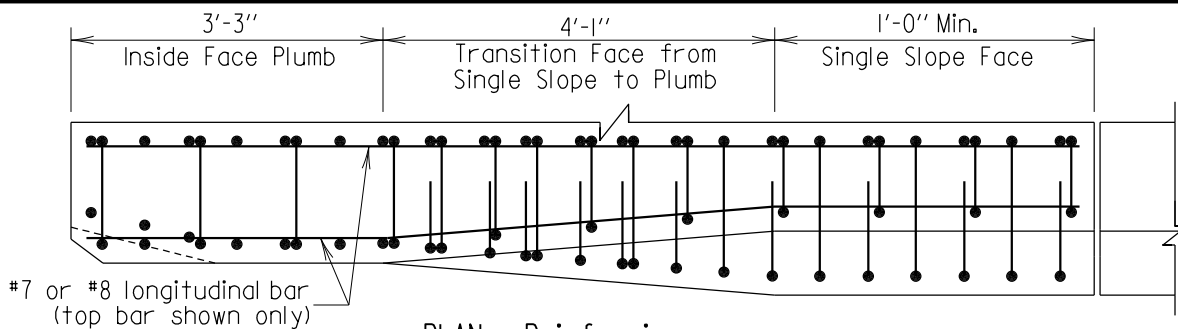
ELEVATION
Scale: 1/2"=1'-0"

- Notes:
1. Thrie Beam Traffic Barrier not shown.
 2. See Highway Standards for more information on Thrie Beam connection.
 3. Do not place any year built markings or junction boxes in the plumb face before the transition area.

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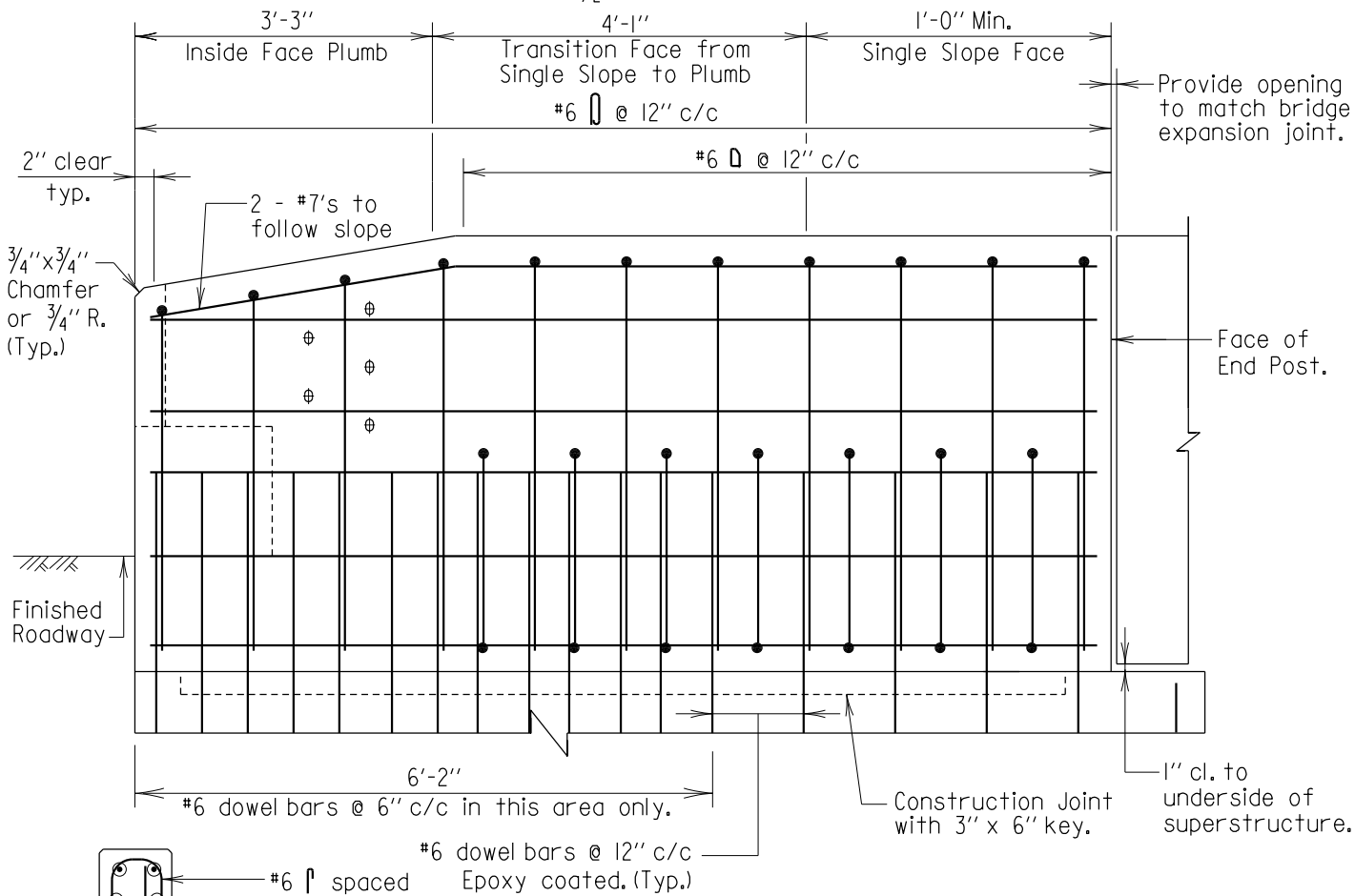
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" SINGLE SLOPE PARAPET END POST THRIE BEAM APPROACH END	
DETAIL NO. SUB-EP(42SS)-101	SHEET <u>1</u> OF <u>4</u>

SUBSTRUCTURE - END POST



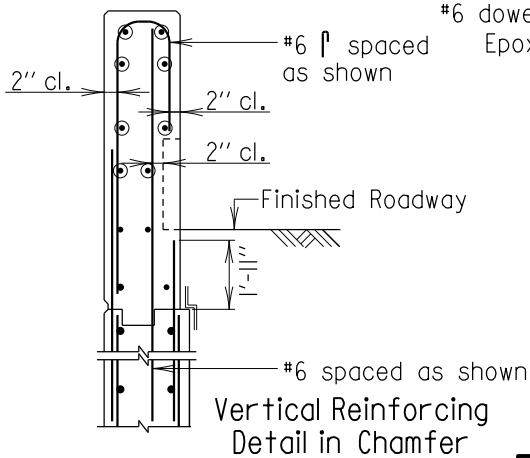
PLAN - Reinforcing

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



ELEVATION - Reinforcing

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



Vertical Reinforcing Detail in Chamfer

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

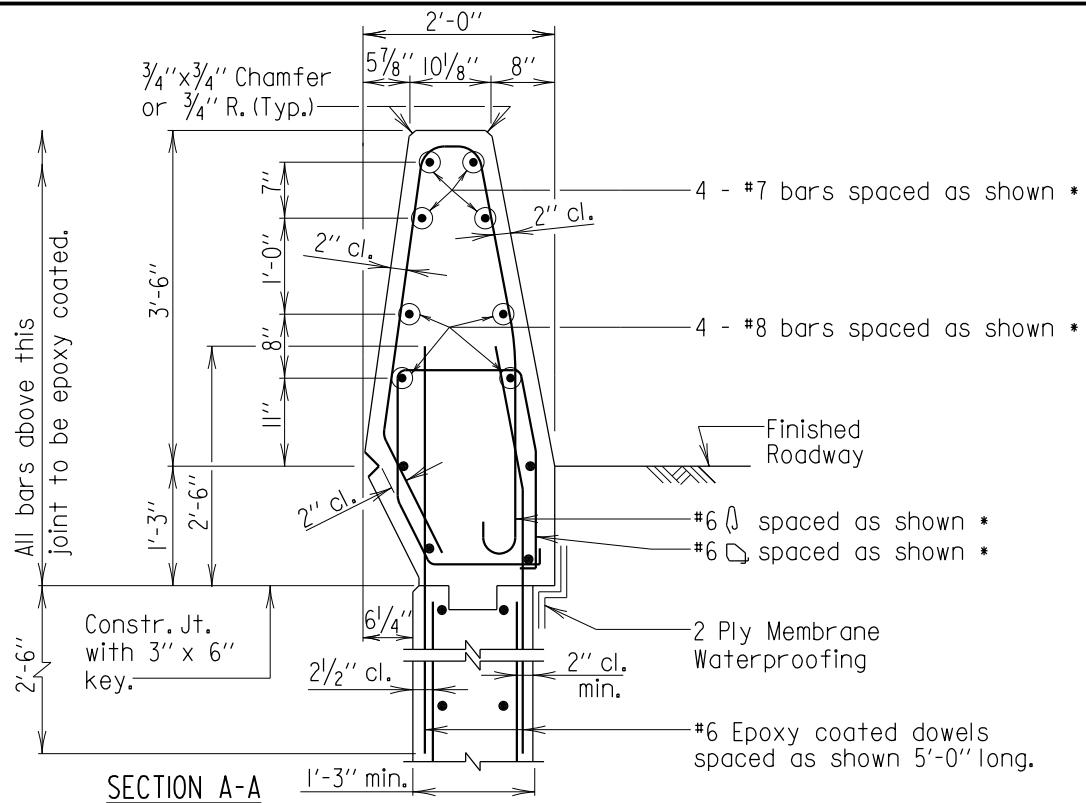
Notes for Chamfer Detail:

1. All dimensions and spacing not shown shall match sheet 4 of 4.
2. Field bend longitudinal reinforcing around end chamfers.
3. Reinforcing shown for straight back parapet. Recessed back and diamond back are similar.

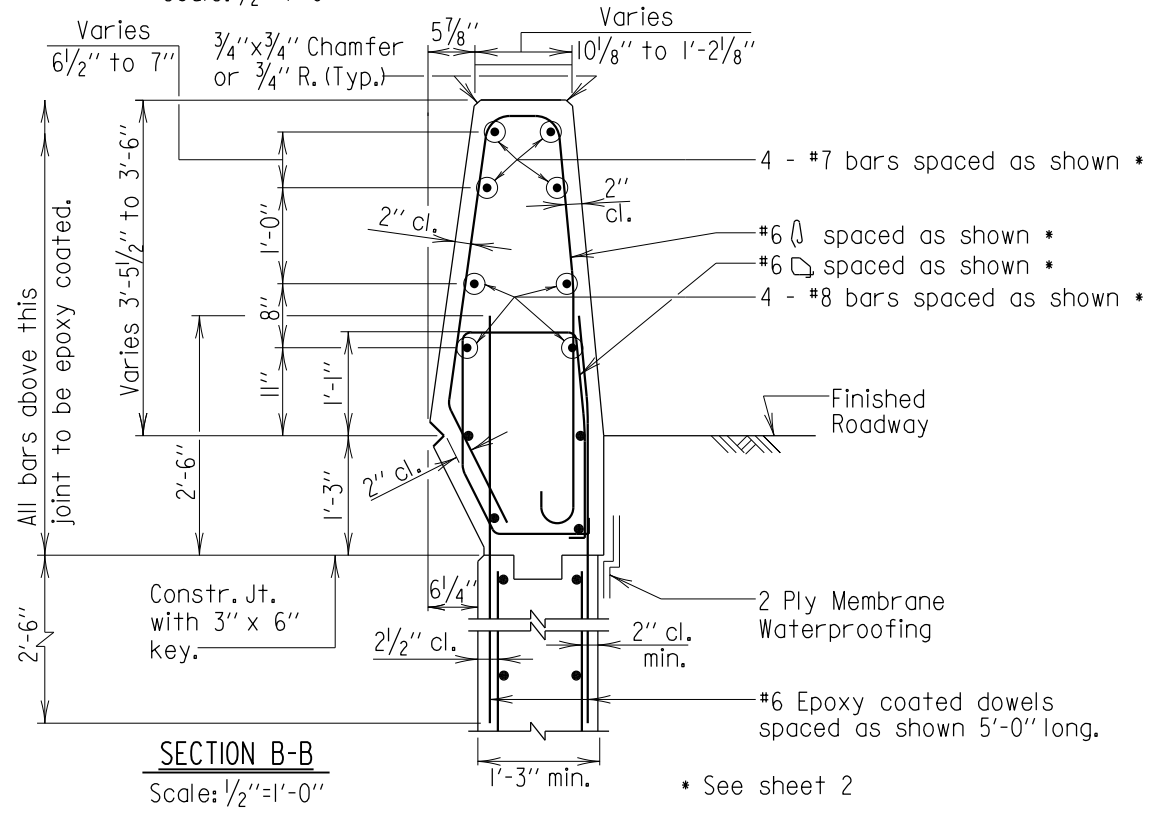
Note to Designer:
This Structural Detail contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" SINGLE SLOPE PARAPET END POST THREE BEAM APPROACH END
DETAIL NO. SUB-EP(42SS)-101



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



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

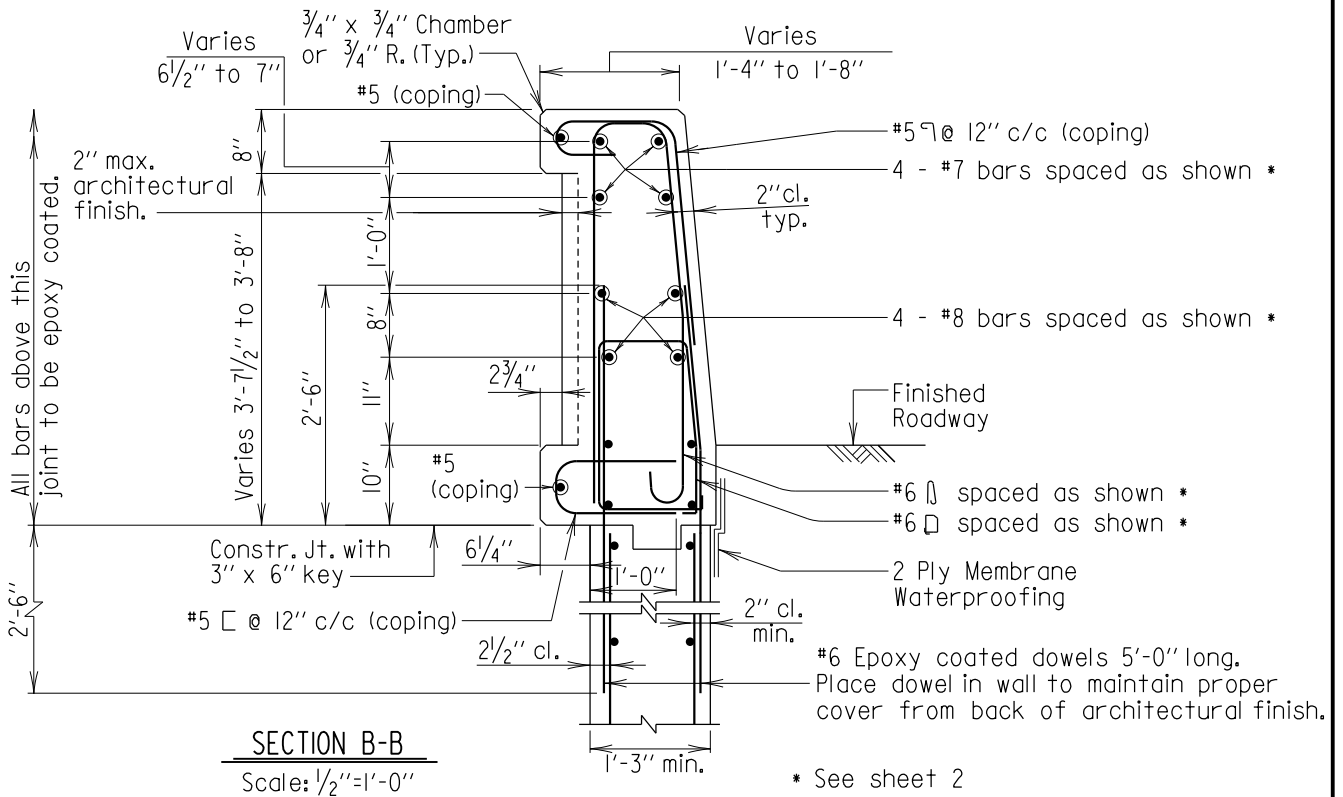
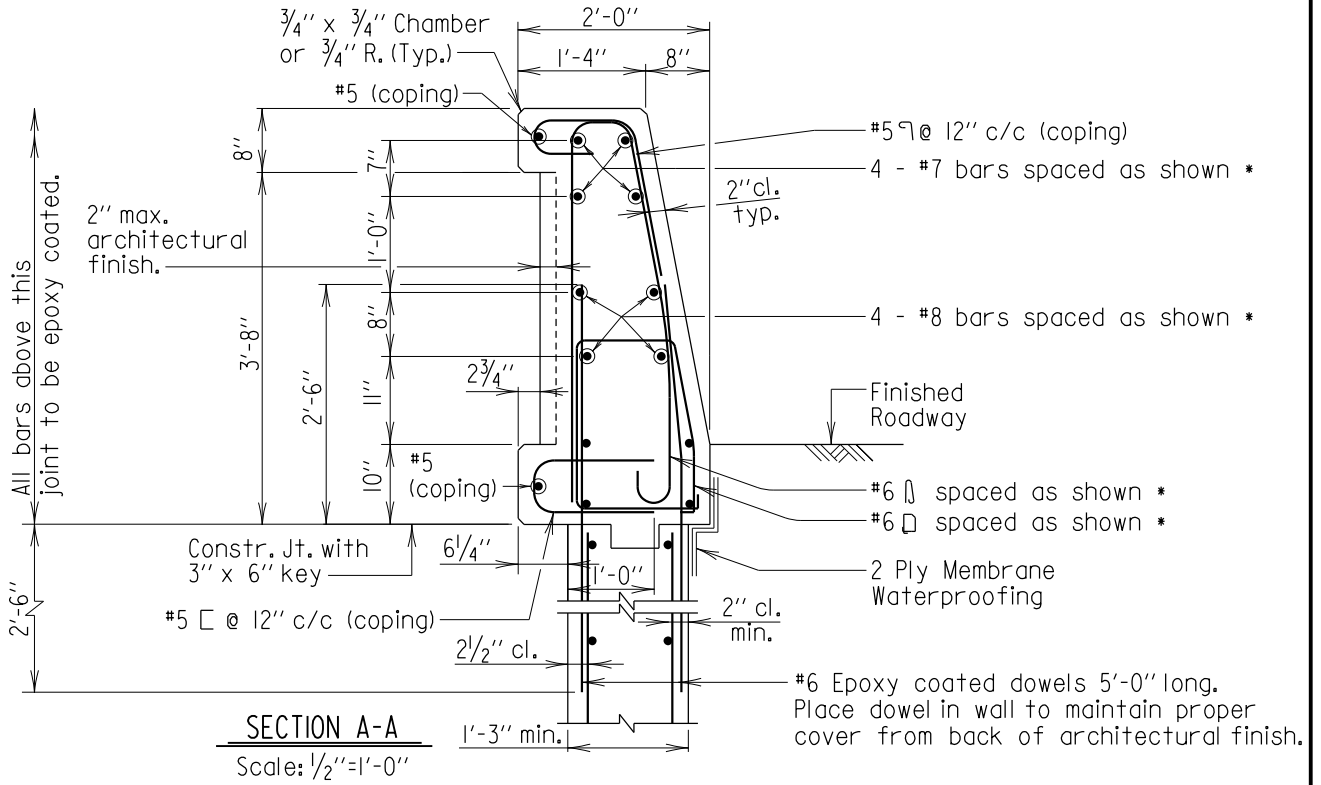
* See sheet 2

Notes:
1. All longitudinal bars are #5 spaced as shown, unless noted otherwise.

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DATE: 12/16/2019
VERSION
2.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" SINGLE SLOPE PARAPET END POST THRIE BEAM APPROACH END	
DETAIL NO. SUB-EP(42SS)-101	SHEET <u>3A</u> OF <u>4</u>

SUBSTRUCTURE - END POST



* See sheet 2

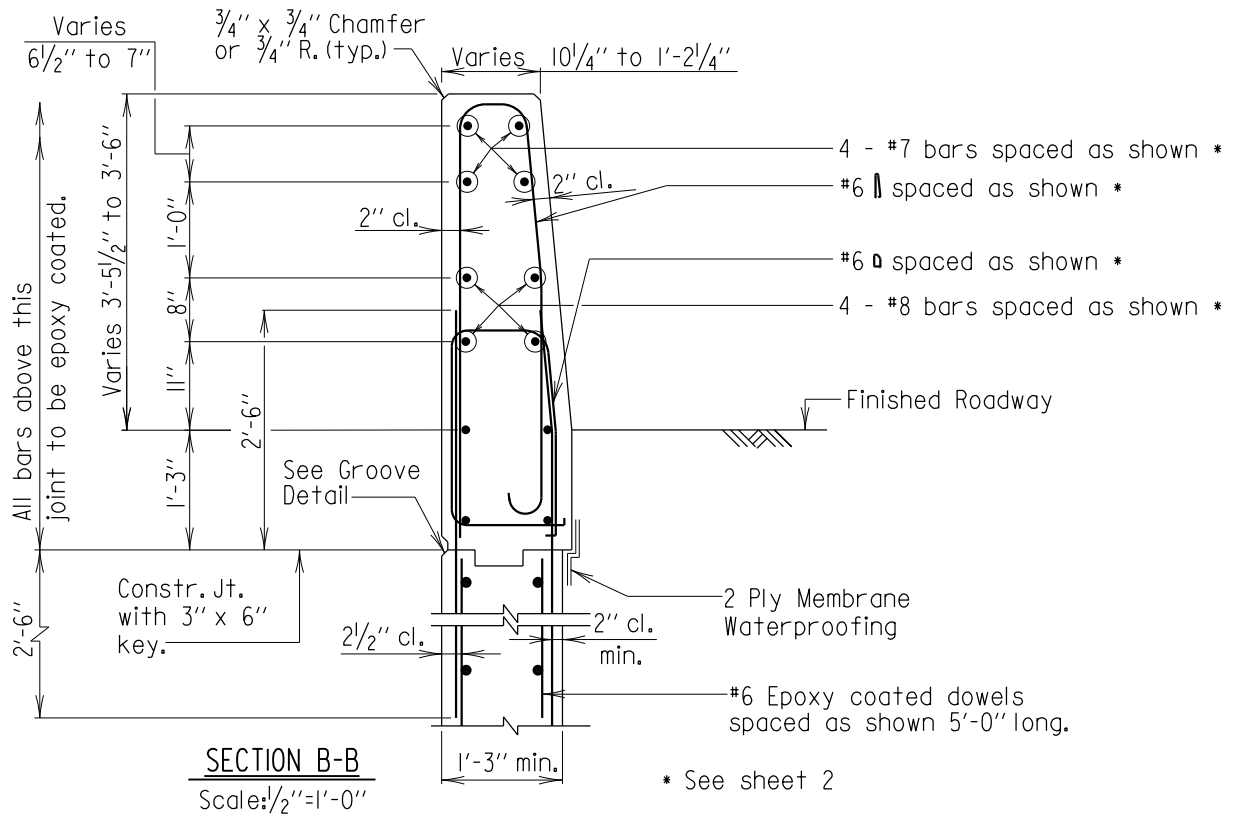
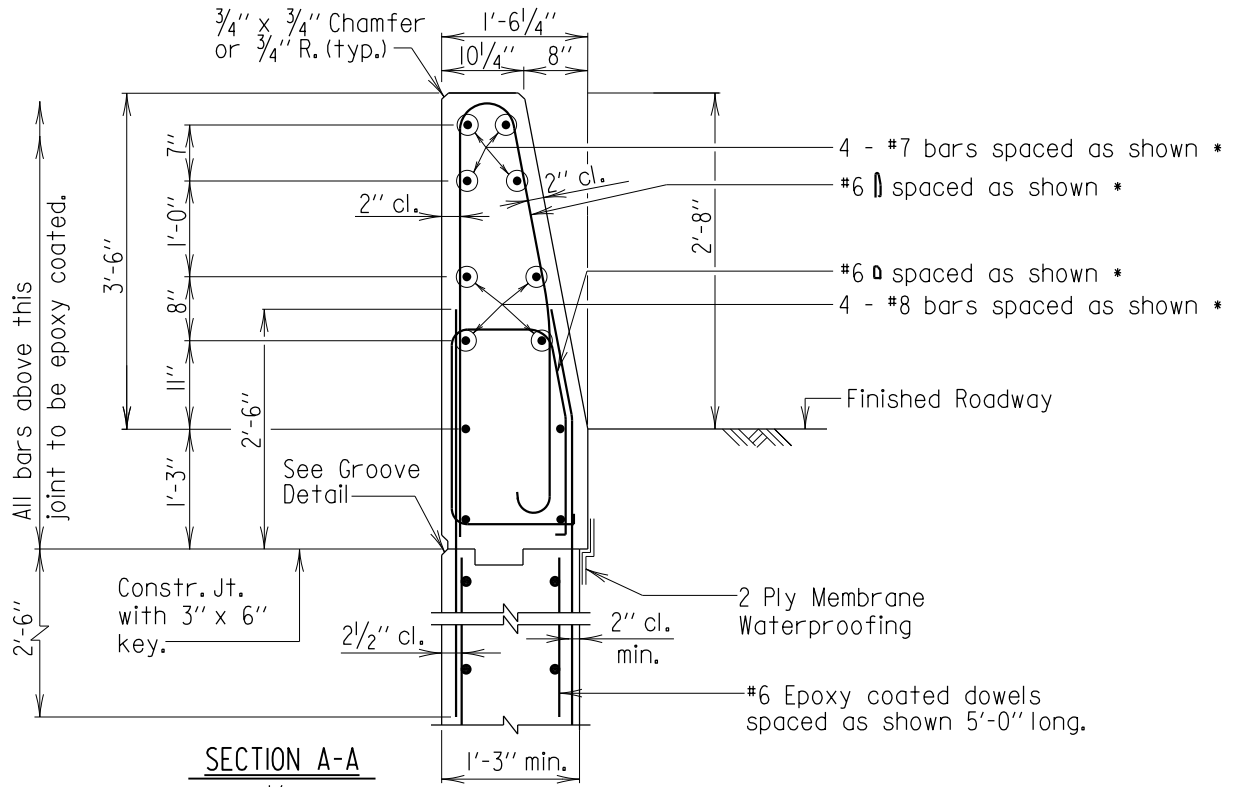
RECESSED BACK

Notes:
1. All longitudinal bars are #5 spaced as shown, unless noted otherwise.

APPROVAL
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DATE: 12/16/2019
VERSION
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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" SINGLE SLOPE PARAPET END POST THREE BEAM APPROACH END	
DETAIL NO. SUB-EP(42SS)-101	SHEET 3B OF 4

SUBSTRUCTURE - END POST



* See sheet 2

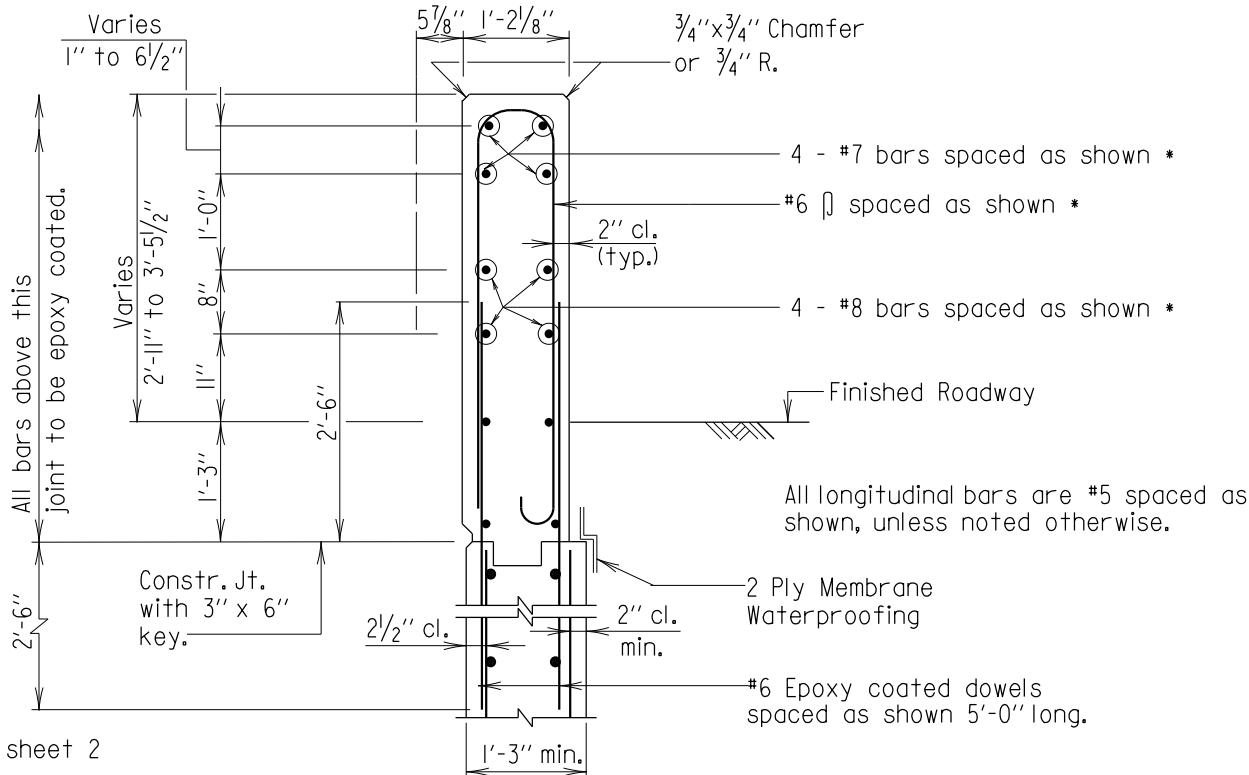
STRAIGHT BACK

Notes:
1. All longitudinal bars are #5 spaced as shown, unless noted otherwise.

APPROVAL
<i>Ben C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019
VERSION
2.0

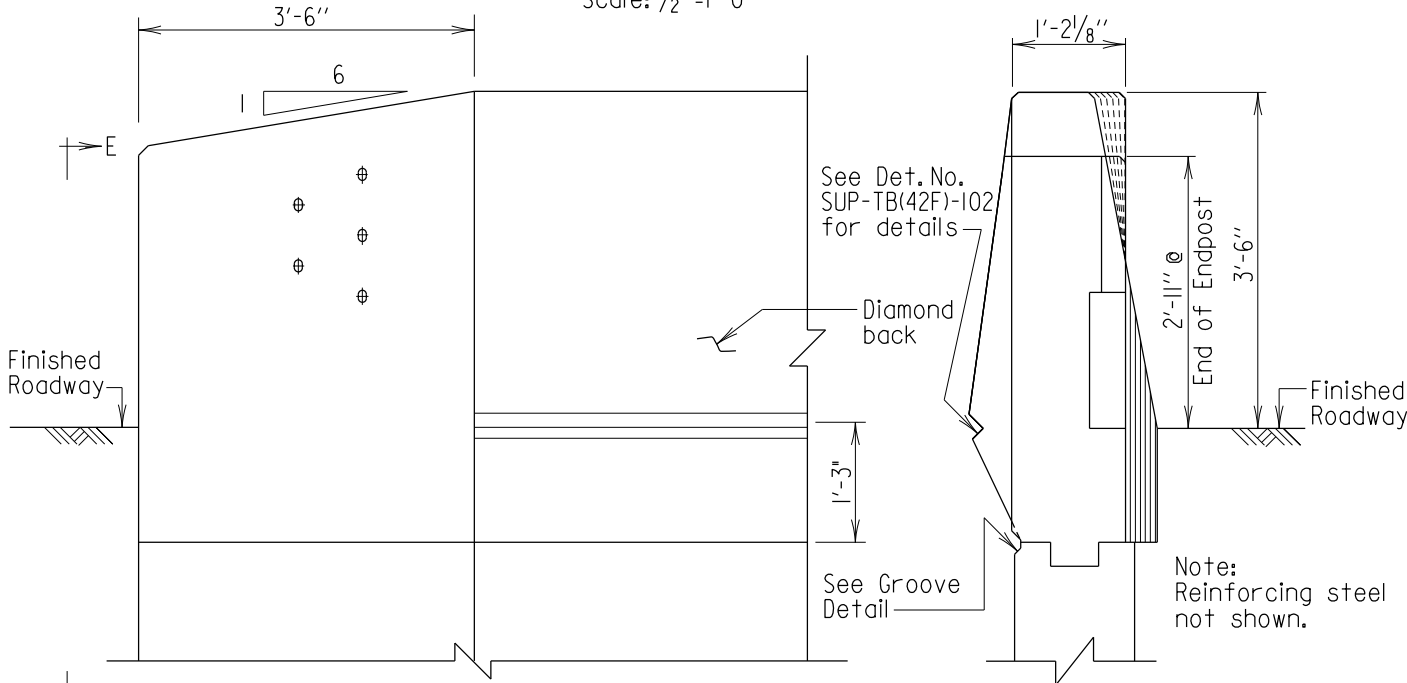
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" SINGLE SLOPE PARAPET END POST THREE BEAM APPROACH END
DETAIL NO. SUB-EP(42SS)-101
SHEET 3C OF 4

SUBSTRUCTURE - END POST



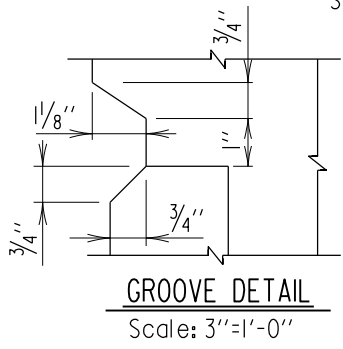
* See sheet 2

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



PARTIAL REAR ELEVATION
Scale: 1/2" = 1'-0"

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

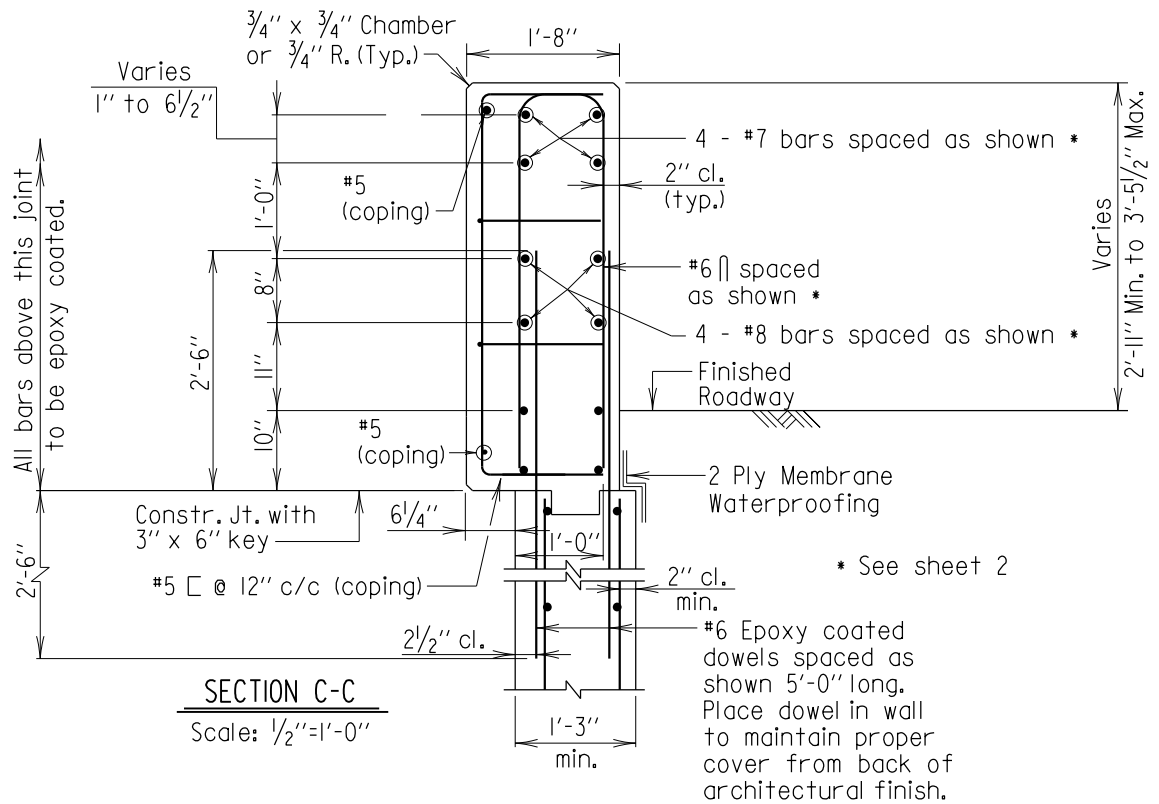


DIAMOND BACK

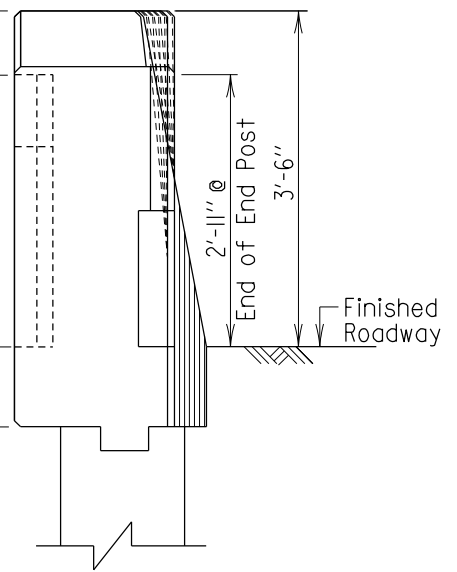
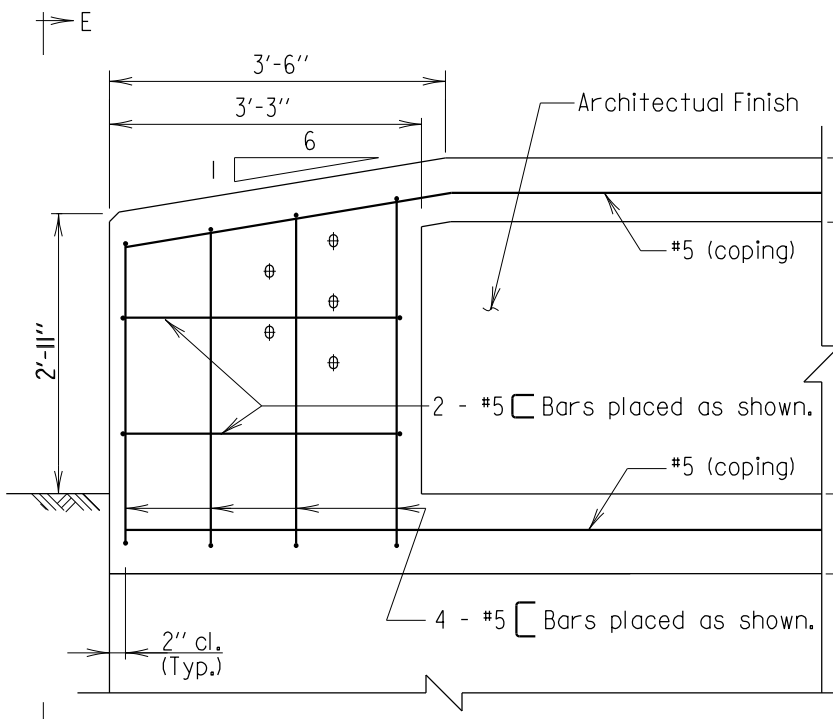
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES DATE: 12/16/2019	
VERSION	42" SINGLE SLOPE PARAPET END POST THRIE BEAM APPROACH END
2.0	

DETAIL NO. SUB-EP(42SS)-101	SHEET 4A OF 4
-----------------------------	---------------

SUBSTRUCTURE - END POST



* See sheet 2
#6 Epoxy coated dowels spaced as shown 5'-0" long. Place dowel in wall to maintain proper cover from back of architectural finish.



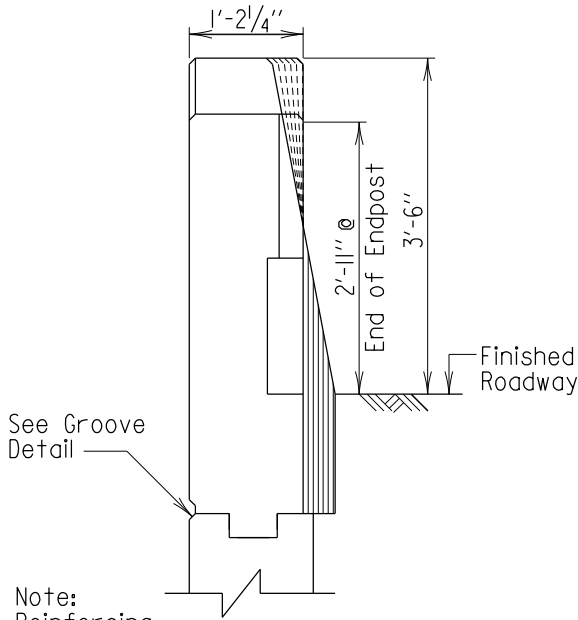
RECESSED BACK

- Notes:
- All longitudinal bars are #5 spaced as shown, unless noted otherwise.
 - There is no view D-D for the 42" Recessed End Post.
 - Reinforcing steel not shown.

APPROVAL
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DATE: 12/16/2019
VERSION
2.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" SINGLE SLOPE PARAPET END POST THREE BEAM APPROACH END	
DETAIL NO. SUB-EP(42SS)-101	SHEET 4B OF 4

SUBSTRUCTURE - END POST

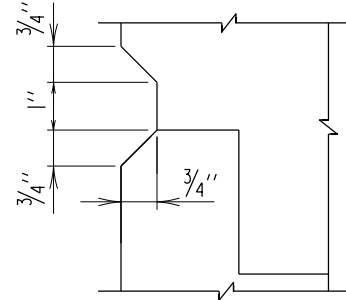


See Groove Detail

Note:
Reinforcing steel not shown.

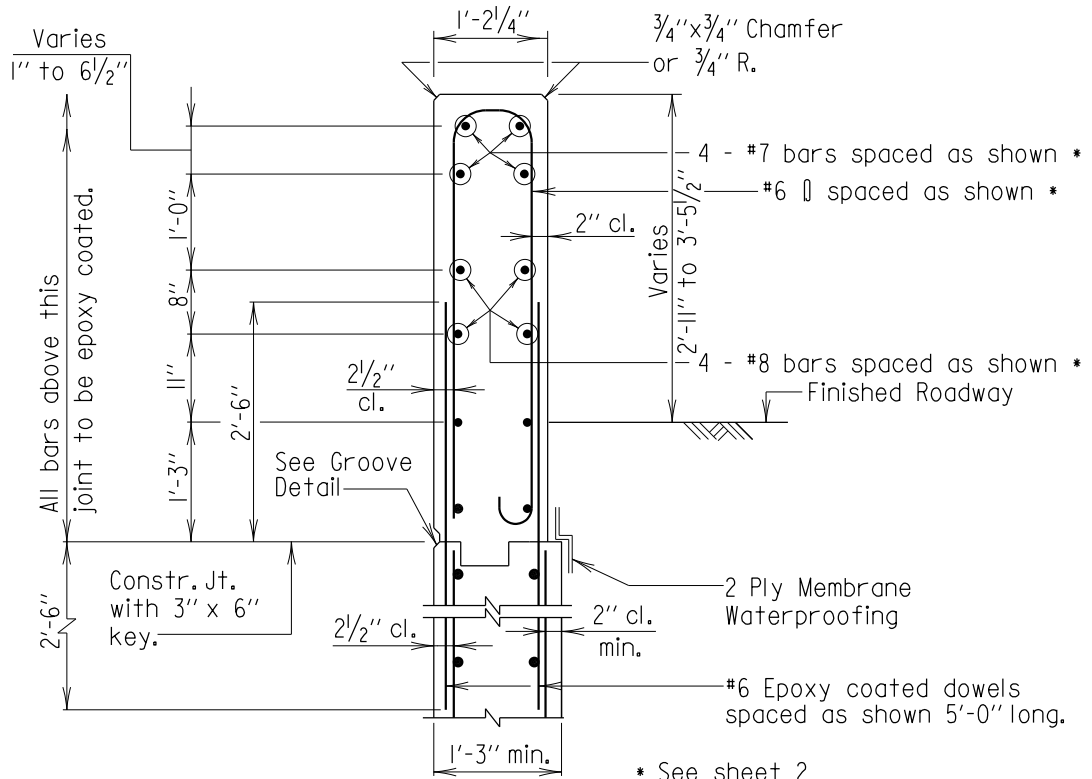
VIEW D-D

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



GROOVE DETAIL

Scale: 3"=1'-0"



SECTION C-C

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

* See sheet 2

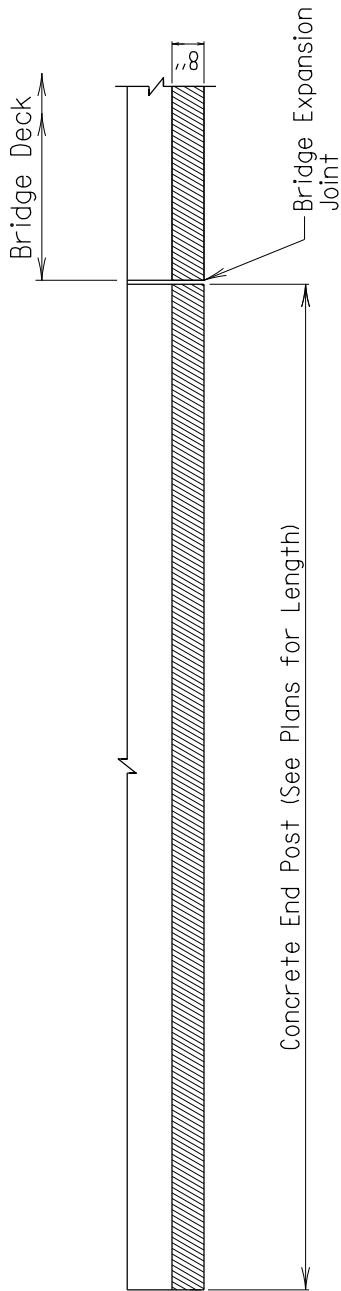
Notes:
1. All longitudinal bars are #5 spaced as shown, unless noted otherwise.

APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019
VERSION
2.0

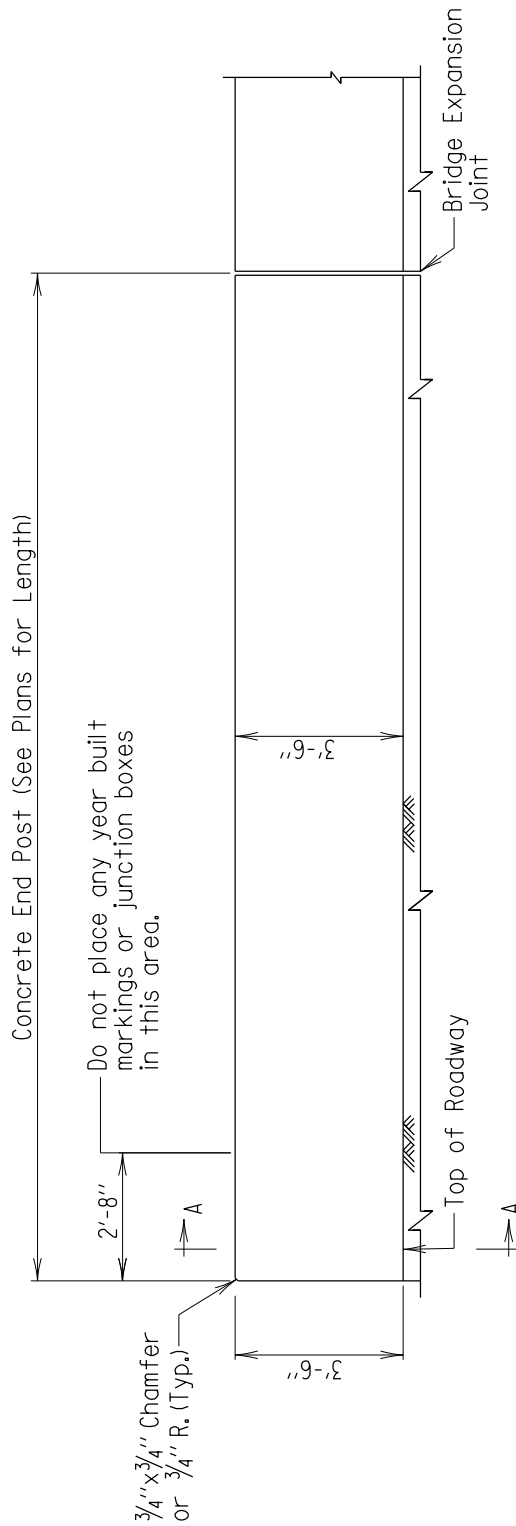
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
42" SINGLE SLOPE PARAPET END POST THREE BEAM APPROACH END	
DETAIL NO. SUB-EP(42SS)-101	SHEET 4C OF 4

SUBSTRUCTURE - END POST

STRAIGHT BACK



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



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

- Notes:
1. Use on the trail end of one way bridges.
 2. W-Beam Traffic Barrier not shown.
 3. For fence layout and details, see Plans.

Note to Designer:
This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
[Signature] DIRECTOR OFFICE OF STRUCTURES DATE: 09/24/2019	
VERSION	42" SINGLE SLOPE PARAPET END POST TRAIL END
1.0	

DETAIL NO. SUB-EP(42SS)-102

SHEET 1 OF 3

Provide opening to match bridge expansion joint.

Concrete End Post (See Plans for Length)

$\frac{3}{4}$ " x $\frac{3}{4}$ " Chamfer or $\frac{3}{4}$ " R. (Typ.)

Face of End Post.

#6 dowel bars @ 12" c/c Epoxy coated. (Typ.)
1" cl. to underside of superstructure.

Construction Joint with 3" x 6" key.

Note to Designer:
This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

ELEVATION - Reinforcing

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

Notes:
1. Fencing not shown.

3'-6"

Finished Roadway

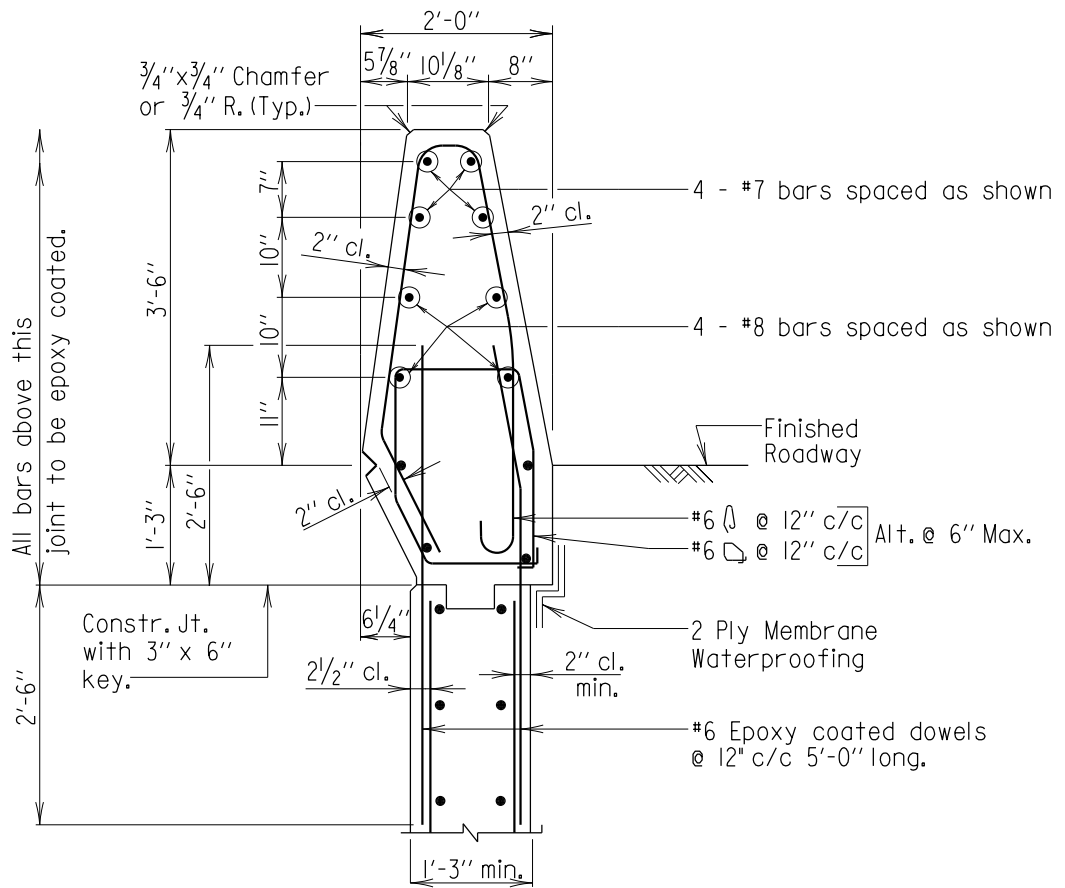
APPROVAL	
<i>Ben C. [Signature]</i>	DIRECTOR OFFICE OF STRUCTURES
DATE: 09/24/2019	
VERSION	
1.0	

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

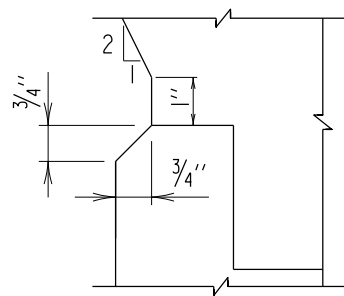
42" SINGLE SLOPE PARAPET
END POST TRAIL END

DETAIL NO. SUB-EP(42SS)-102

SHEET 2 OF 3



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



GROOVE DETAIL
Scale: 3" = 1'-0"

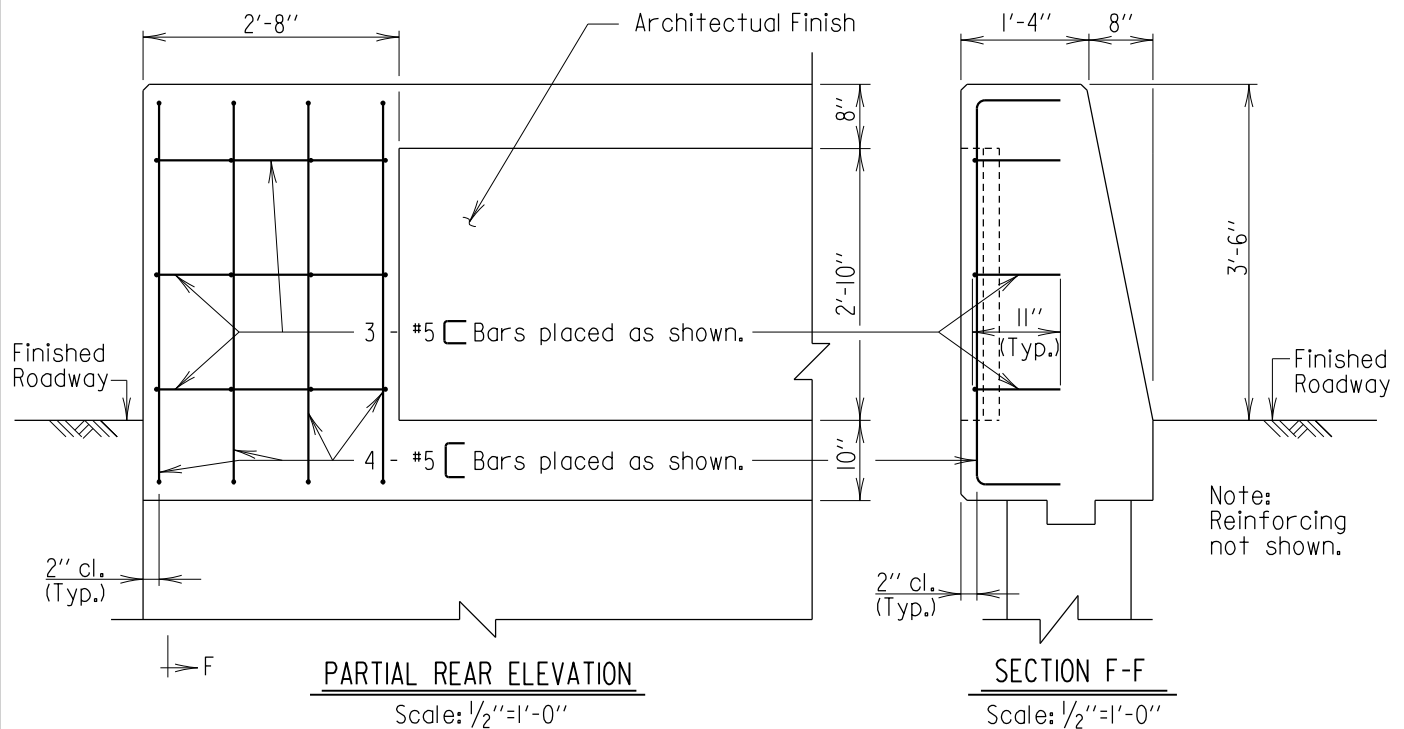
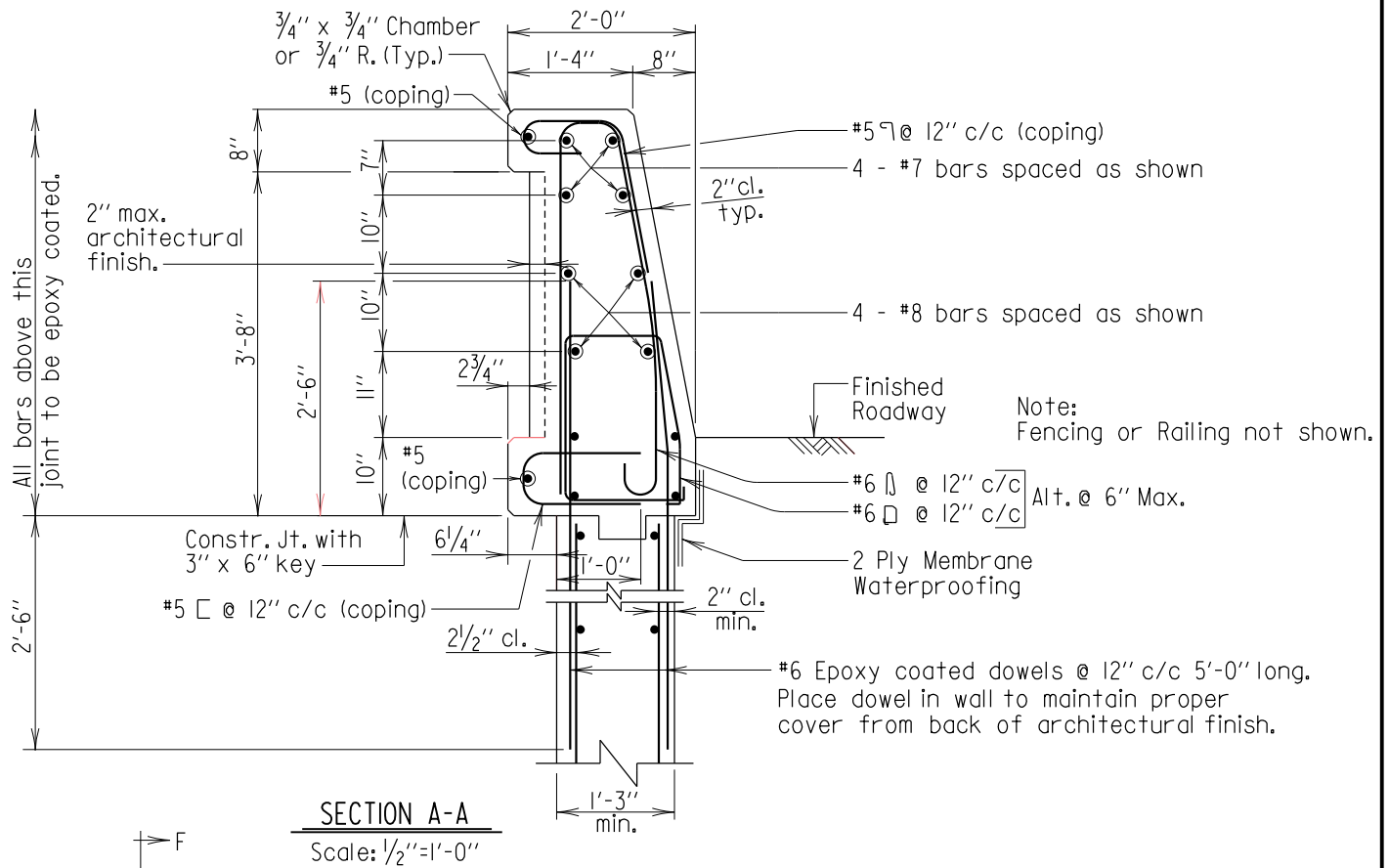
Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

42' DIAMOND BACK

APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/24/2019
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" SINGLE SLOPE PARAPET END POST TRAIL END
DETAIL NO. SUB-EP(42SS)-102
SHEET 3 OF 3

SUBSTRUCTURE - END POST



Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

APPROVAL
<i>Tom O'Donoghue</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/24/2019
VERSION
1.0

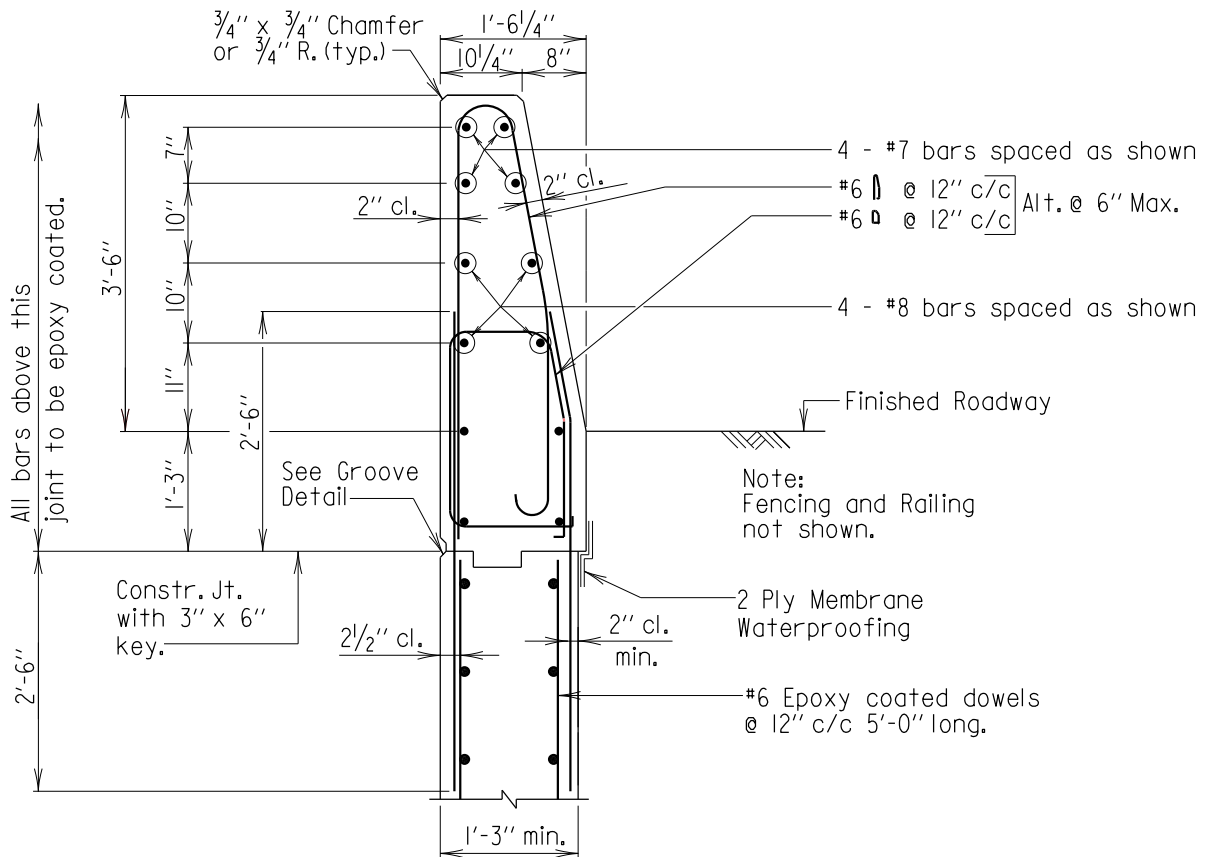
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

**42" SINGLE SLOPE PARAPET
END POST TRAIL END**

DETAIL NO. SUB-EP(42SS)-102

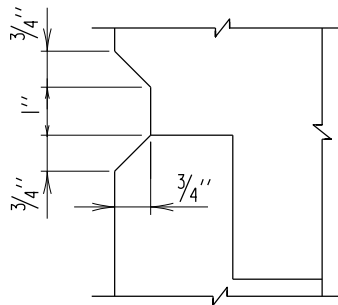
SHEET 3 OF 3

SUBSTRUCTURE - END POST



SECTION A-A

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



GROOVE DETAIL

Scale: 3" = 1'-0"

Note:
All longitudinal bars are #5 spaced as shown, unless noted otherwise.

42" STRAIGHT BACK

APPROVAL
<i>Tom Clendenen</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 09/24/2019
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
42" SINGLE SLOPE PARAPET END POST TRAIL END
DETAIL NO. SUB-EP(42SS)-102
SHEET 3 OF 3

SUBSTRUCTURE - END POST

Chapter 02 - Substructure

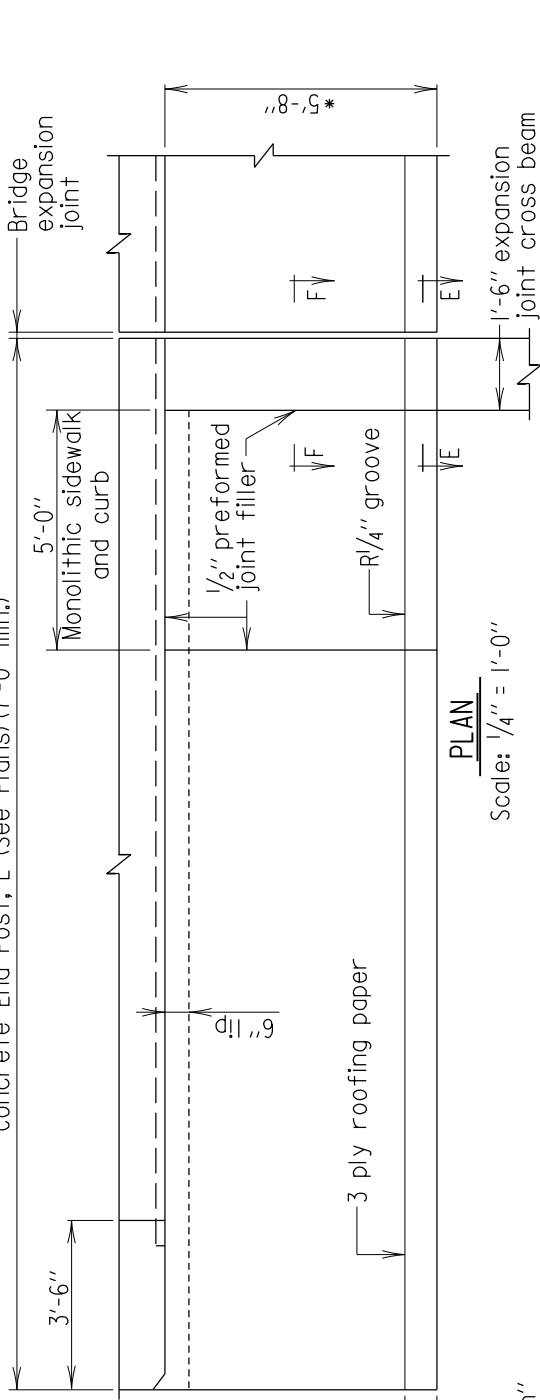
Section 07 – End Posts

SUB-SECTION 02

SIDEWALK

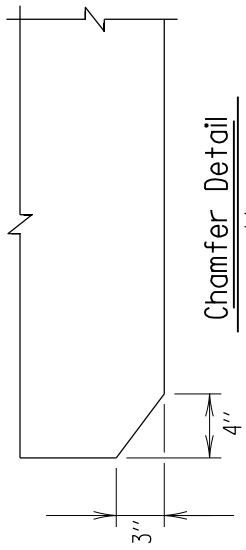
(SUB-EP(SW))

Concrete End Post, L (See Plans) (7'-0" min.)



PLAN

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



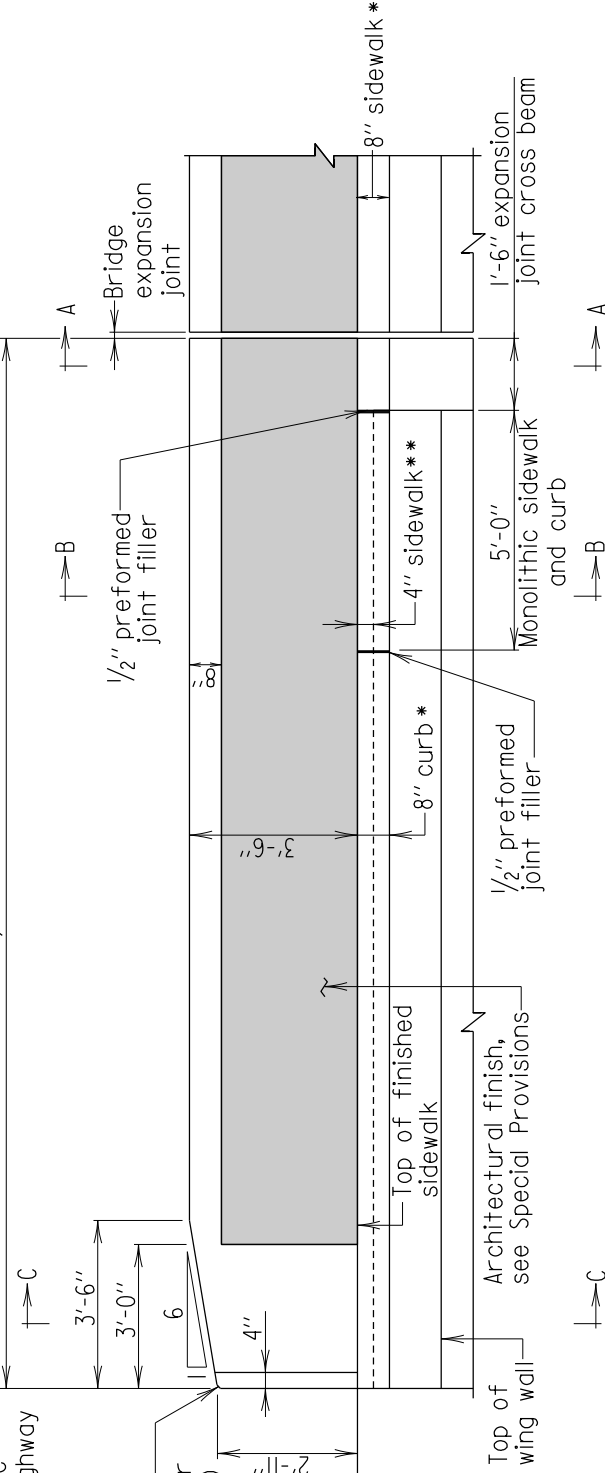
Chamfer Detail

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

* Unless otherwise indicated on "Typical Cross Section"

** Unless otherwise indicated on highway sheets.

Concrete End Post, L (See Plans) (7'-0" min.)



ELEVATION

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

ABUTMENTS WITH EXPANSION JOINT CROSS BEAM AND SIDEWALK

Notes:

1. Use on approach and trail end of bridges with sidewalks.
2. See plans for fence layout and details.
3. Thrie Beam Attachment not shown.
4. Do not place any year built markings or junction boxes within last 3'-0" of end post.

Note to Designer:
This Structural Detail contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

APPROVAL	
	DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019	
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3.0	

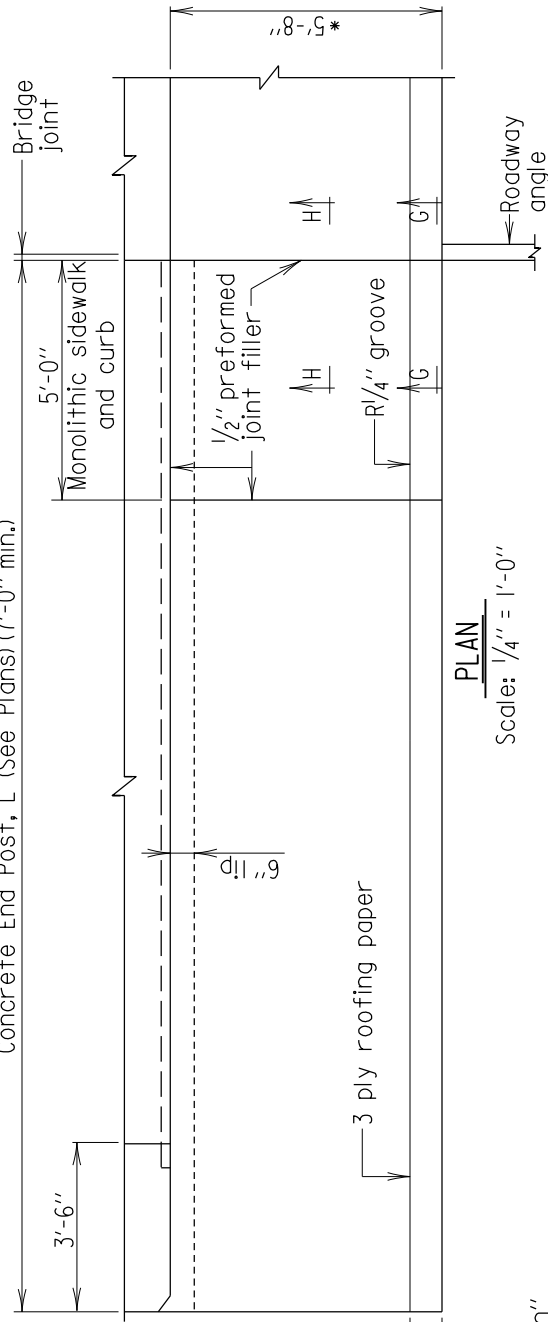
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

**PARAPET WITH SIDEWALK
END POST
WITH THRIE BEAM ATTACHMENT**

DETAIL NO. SUB-EP(SW)-101

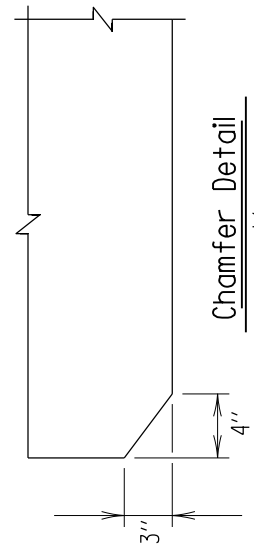
SHEET 1 OF 6

Concrete End Post, L (See Plans) (7'-0" min.)



PLAN

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



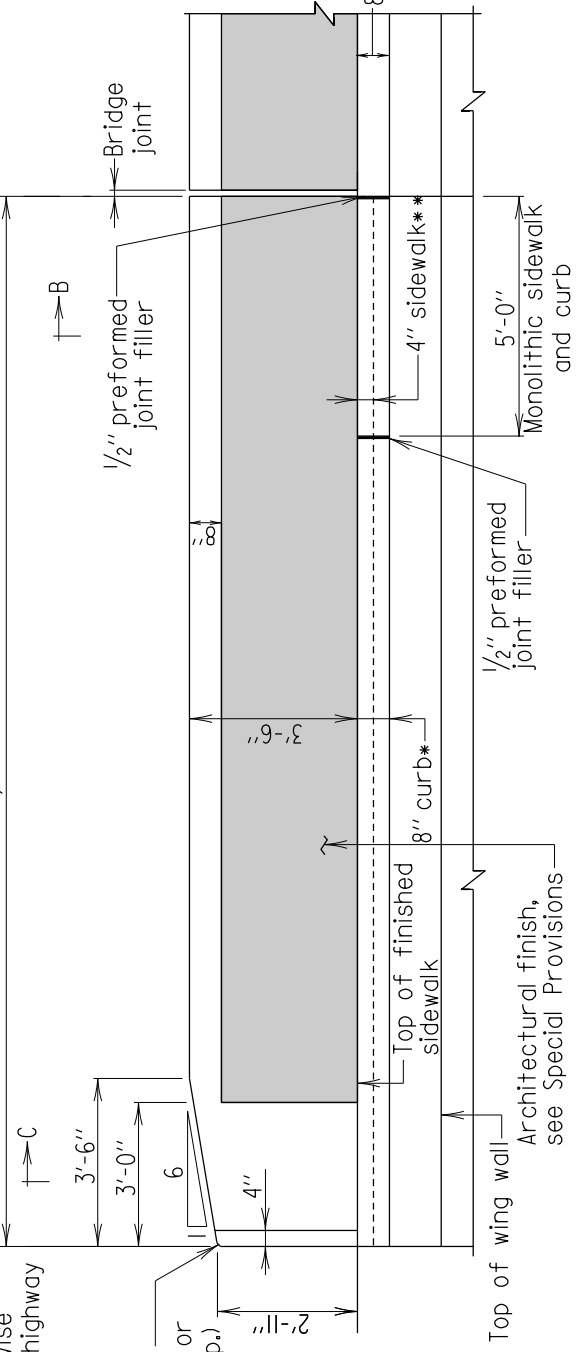
Chamfer Detail

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

* Unless otherwise indicated on "Typical Cross Section"

** Unless otherwise indicated on highway sheets.

Concrete End Post, L (See Plans) (7'-0" min.)



ELEVATION

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

ABUTMENTS WITH FIXED JOINT AND SIDEWALK

Notes:

1. Use on approach and trail end of bridges with sidewalks.
2. See plans for fence layout and details.
3. Thrie Beam Attachment not shown.
4. Do not place any year built markings or junction boxes within last 3'-0" of end post.

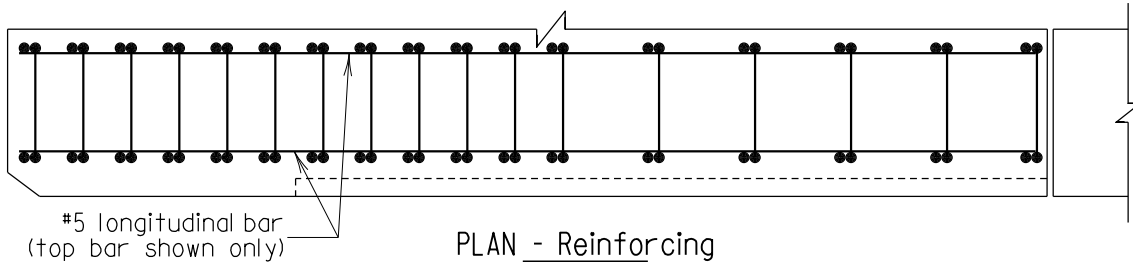
Note to Designer:
This Structural Detail contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

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	DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019	
VERSION	
3.0	

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STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

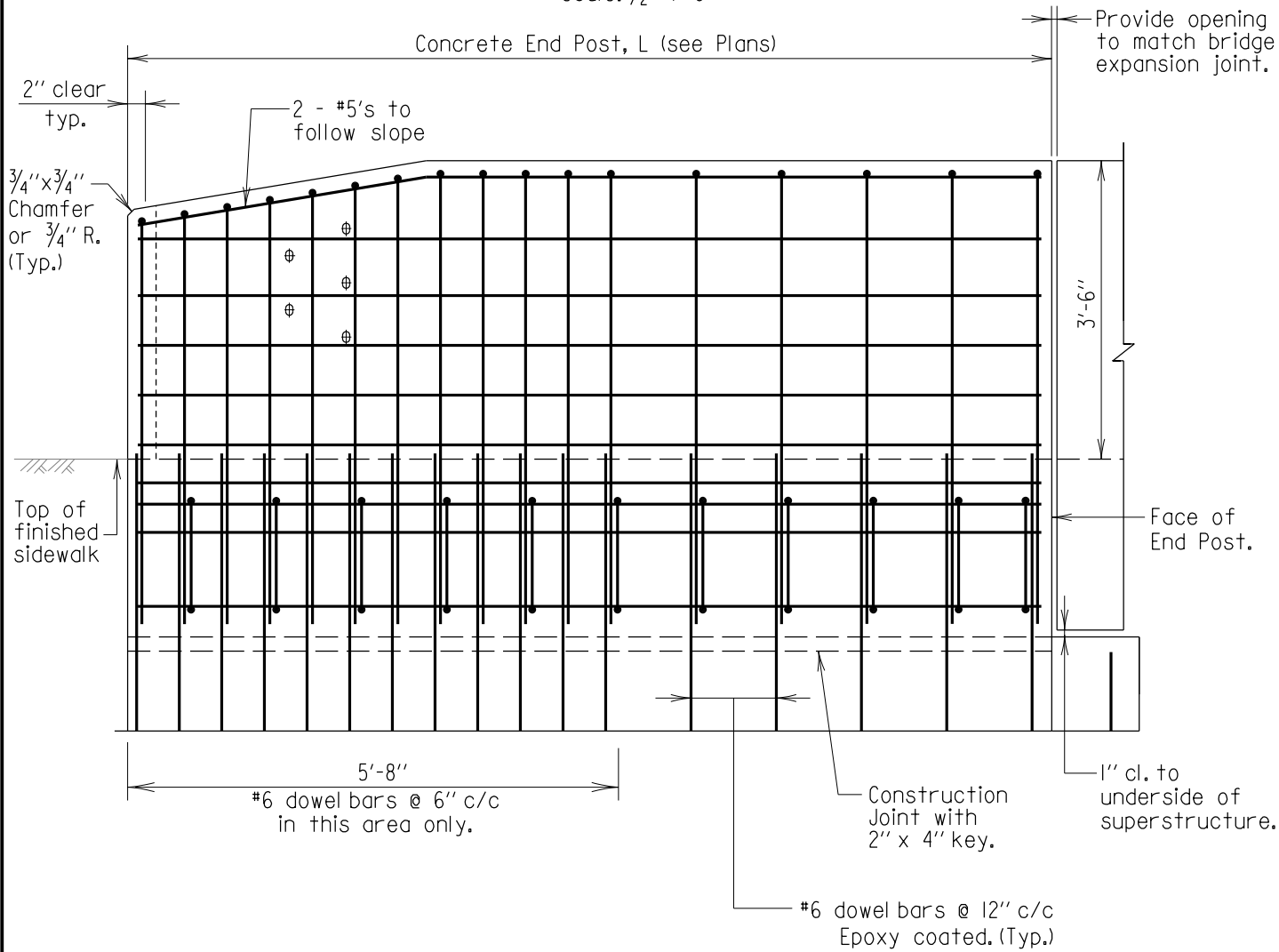
**PARAPET WITH SIDEWALK
END POST
WITH THRIE BEAM ATTACHMENT**

DETAIL NO. SUB-EP(SW)-101 SHEET 2 OF 6



PLAN - Reinforcing

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



ELEVATION - Reinforcing

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

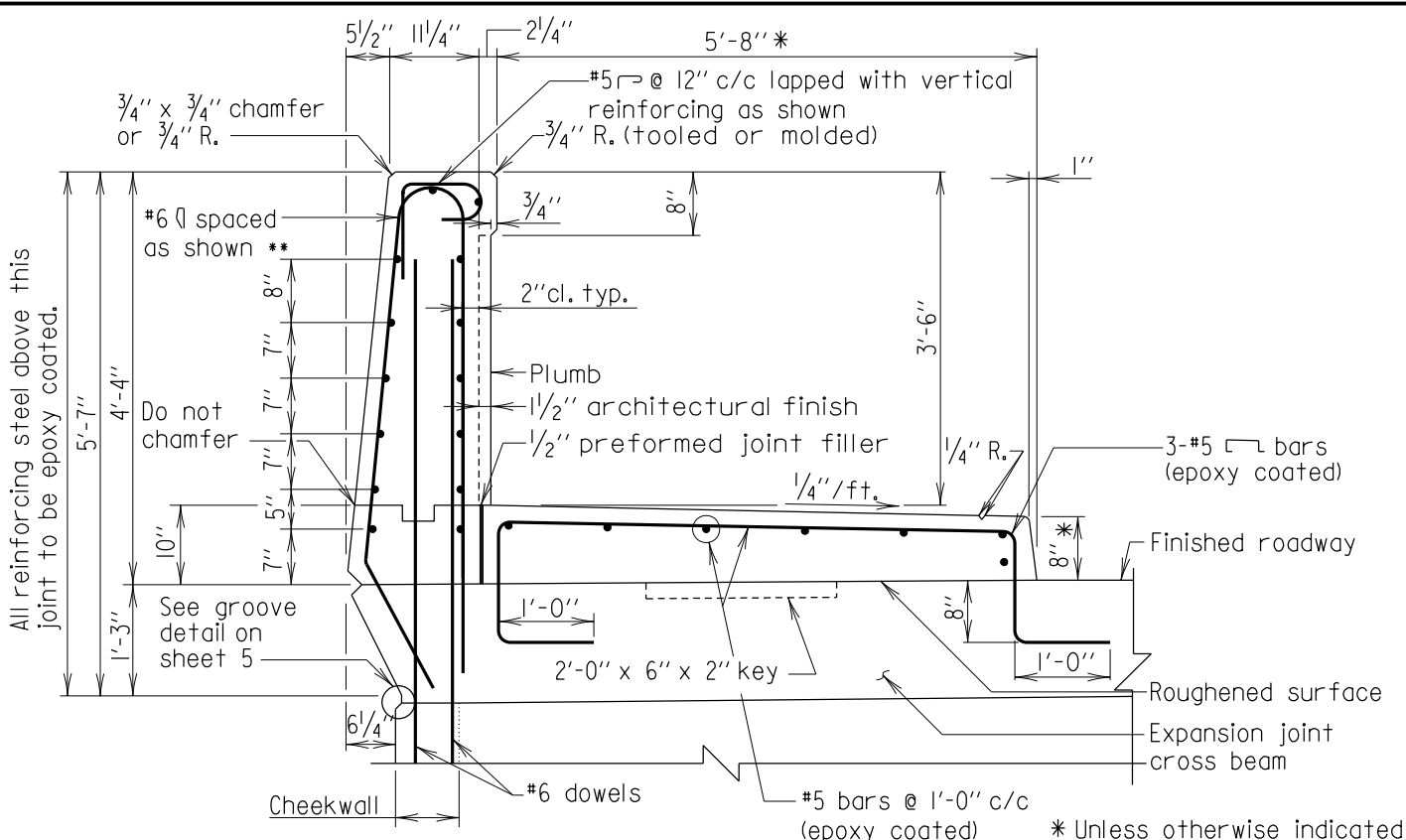
Note to Designer:
 This Structural Detail contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

Notes:
 1. If applicable, reinforcing for coping not shown.

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
PARAPET WITH SIDEWALK END POST WITH THRIE BEAM ATTACHMENT	
DETAIL NO. SUB-EP(SW)-101	SHEET 3 OF 6

SUBSTRUCTURE - END POST

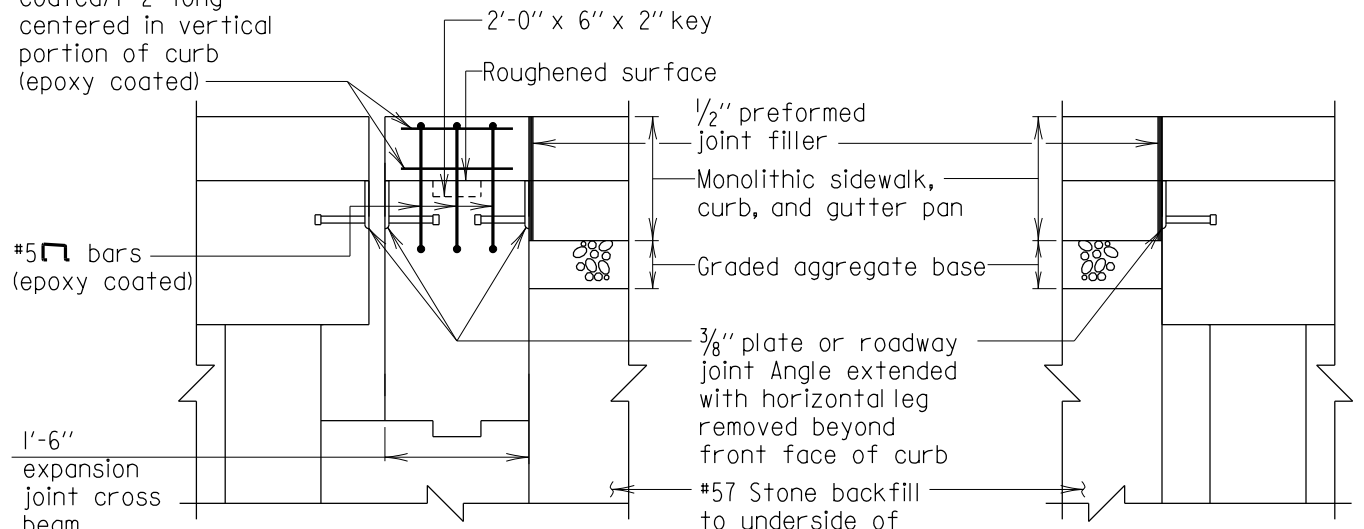


SECTION A-A

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

* Unless otherwise indicated on "Typical Cross Section".
 ** See sheet 2

2-#5 bars (epoxy coated) 1'-2" long centered in vertical portion of curb (epoxy coated)



**SECTION E-E
 CURB TREATMENT AT ABUTMENT
 WITH EXPANSION CROSS JOINT**

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

**SECTION G-G
 CURB TREATMENT AT ABUTMENT
 WITH FIXED JOINT**

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

DIAMOND BACK

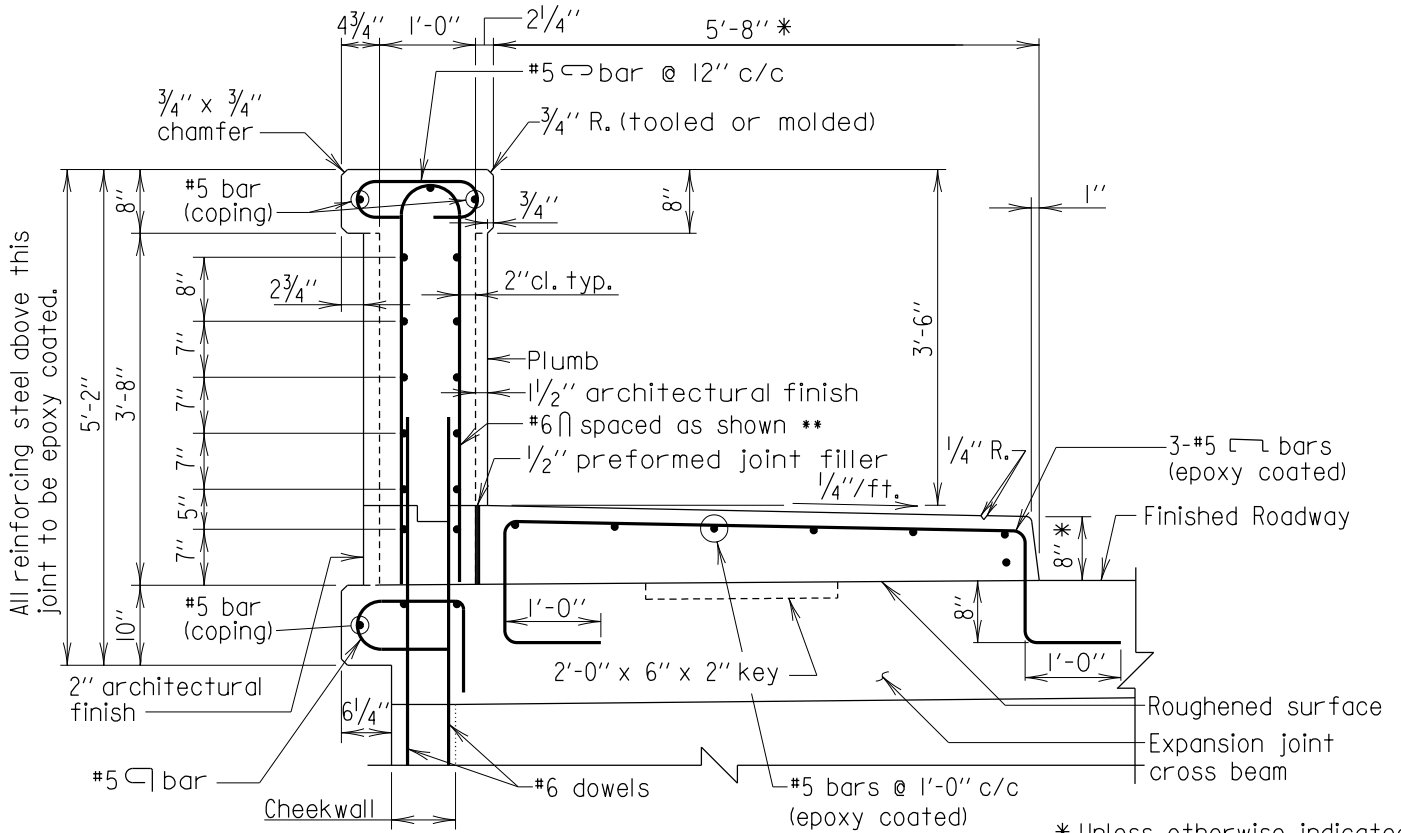
Notes:

1. All longitudinal bars are #5 spaced as shown.
2. Fencing not shown.
3. Abutment Backwall dimensions and reinforcing not shown.

APPROVAL
DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019
VERSION
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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
PARAPET WITH SIDEWALK END POST WITH THREE BEAM ATTACHMENT
DETAIL NO. SUB-EP(SW)-101
SHEET 4A OF 6

SUBSTRUCTURE - END POST

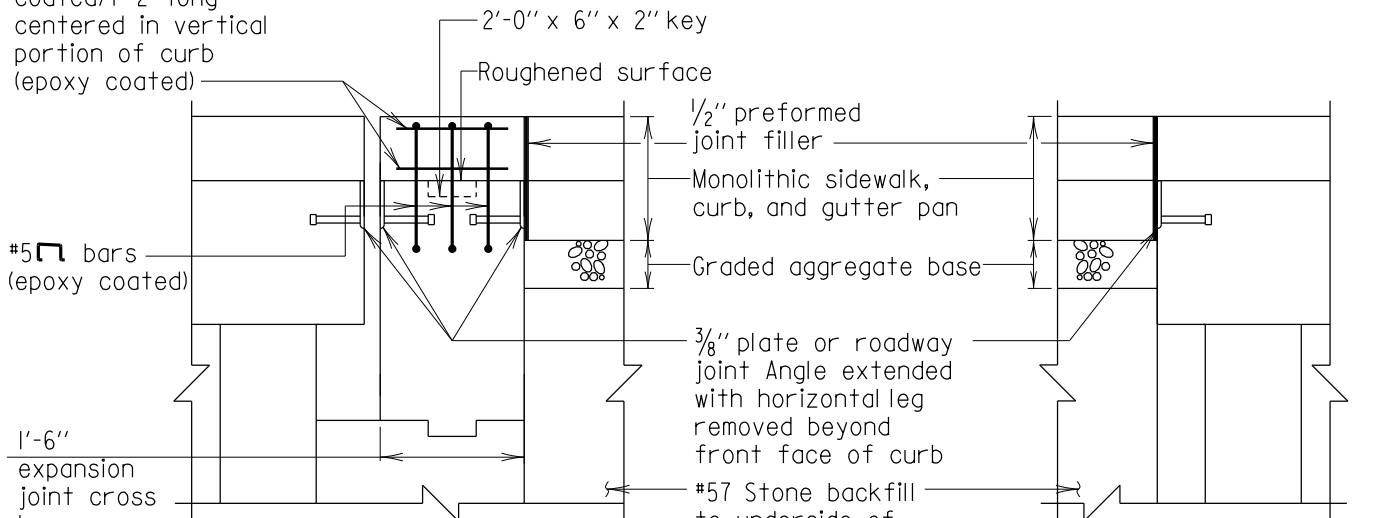


SECTION A-A

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

* Unless otherwise indicated on "Typical Cross Section".
 ** See sheet 2

2-#5 bars (epoxy coated) 1'-2" long centered in vertical portion of curb (epoxy coated)



**SECTION E-E
 CURB TREATMENT AT ABUTMENT
 WITH EXPANSION CROSS JOINT**

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

**SECTION G-G
 CURB TREATMENT AT ABUTMENT
 WITH FIXED JOINT**

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

Notes:

- All longitudinal bars are #5 spaced as shown.
- Fencing not shown.
- Abutment Backwall dimensions and reinforcing not shown.

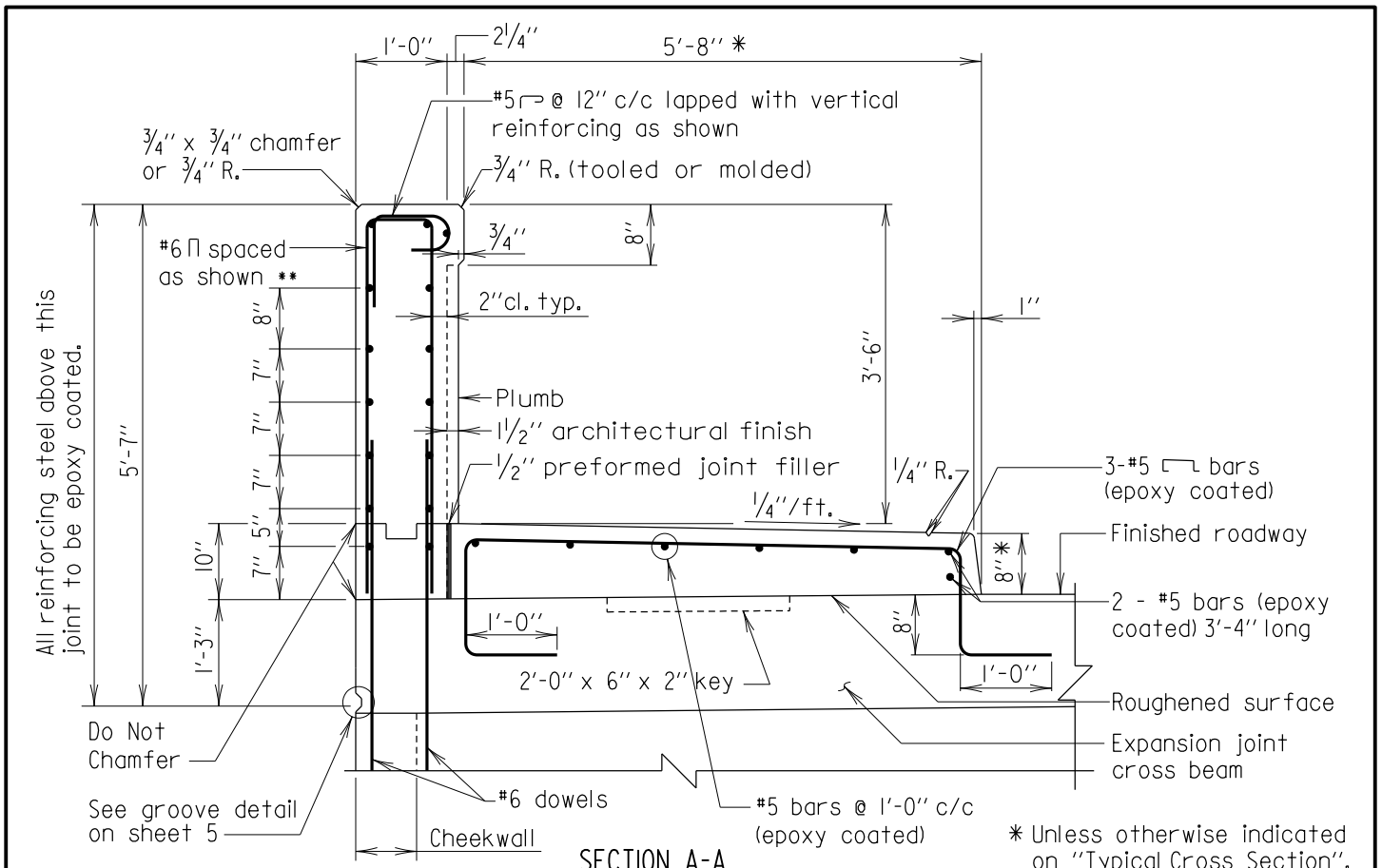
APPROVAL
<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019
VERSION
3.0

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 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF STRUCTURES

**PARAPET WITH SIDEWALK
 END POST
 WITH THRIE BEAM ATTACHMENT**

DETAIL NO. SUB-EP(SW)-101

SUBSTRUCTURE - END POST

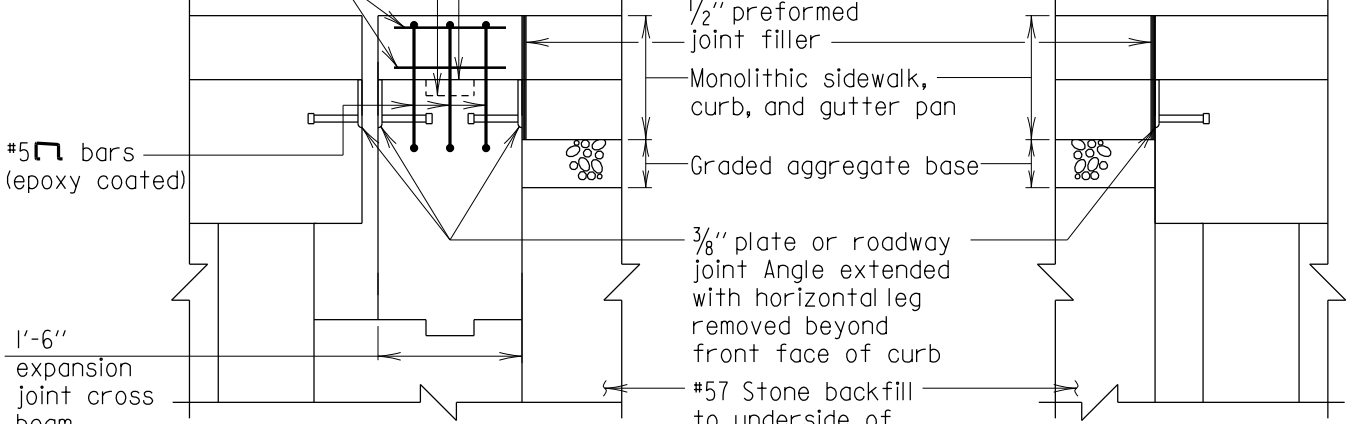


SECTION A-A

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

* Unless otherwise indicated on "Typical Cross Section".
 ** See sheet 2

2-#5 bars (epoxy coated) 1'-2" long centered in vertical portion of curb (epoxy coated)



**SECTION E-E
 CURB TREATMENT AT ABUTMENT
 WITH EXPANSION CROSS JOINT**

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

**SECTION G-G
 CURB TREATMENT AT ABUTMENT
 WITH FIXED JOINT**

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

STRAIGHT BACK

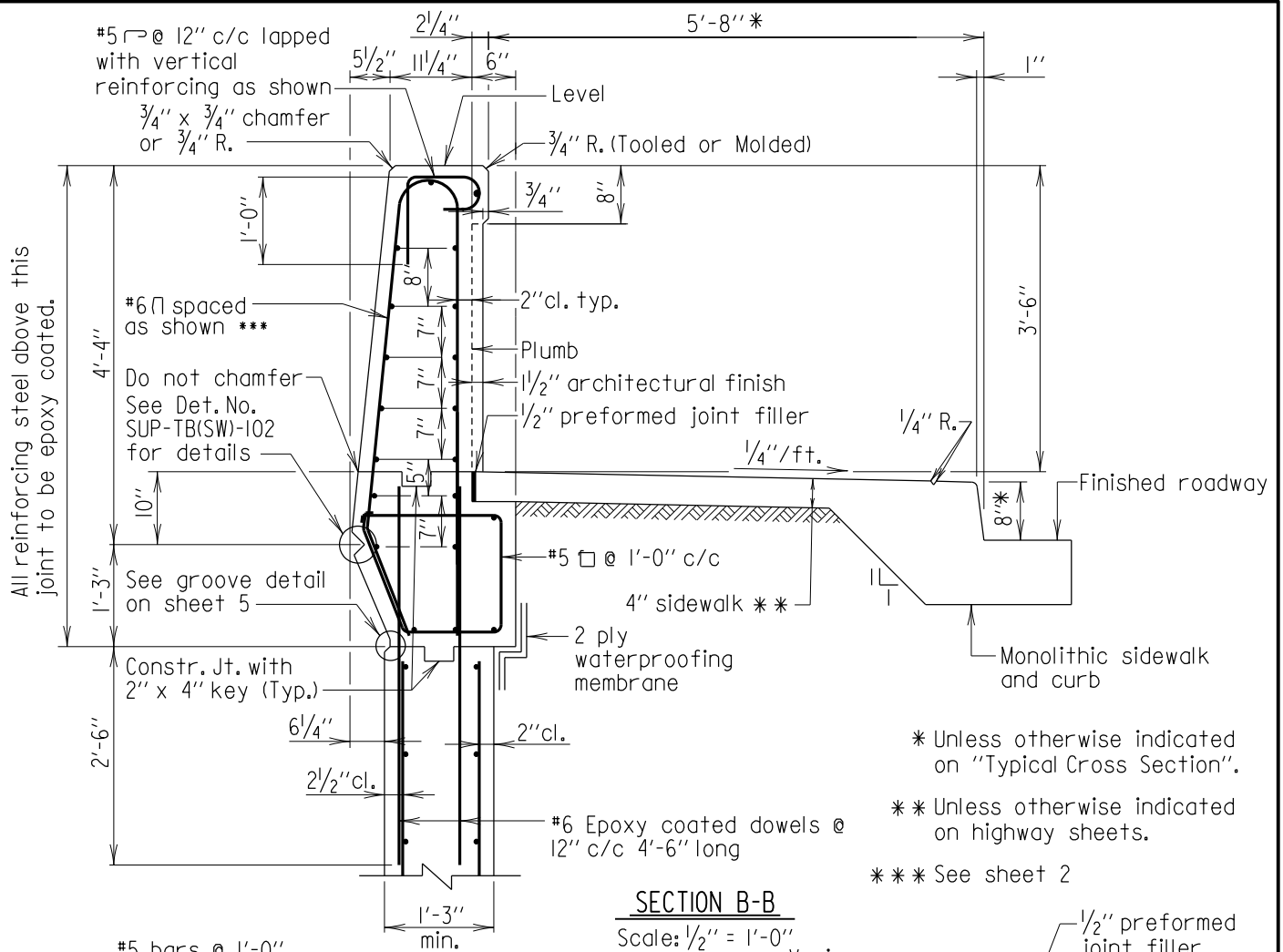
Notes:

1. All longitudinal bars are #5 spaced as shown.
2. Fencing not shown.
3. Abutment Backwall dimensions and reinforcing not shown.

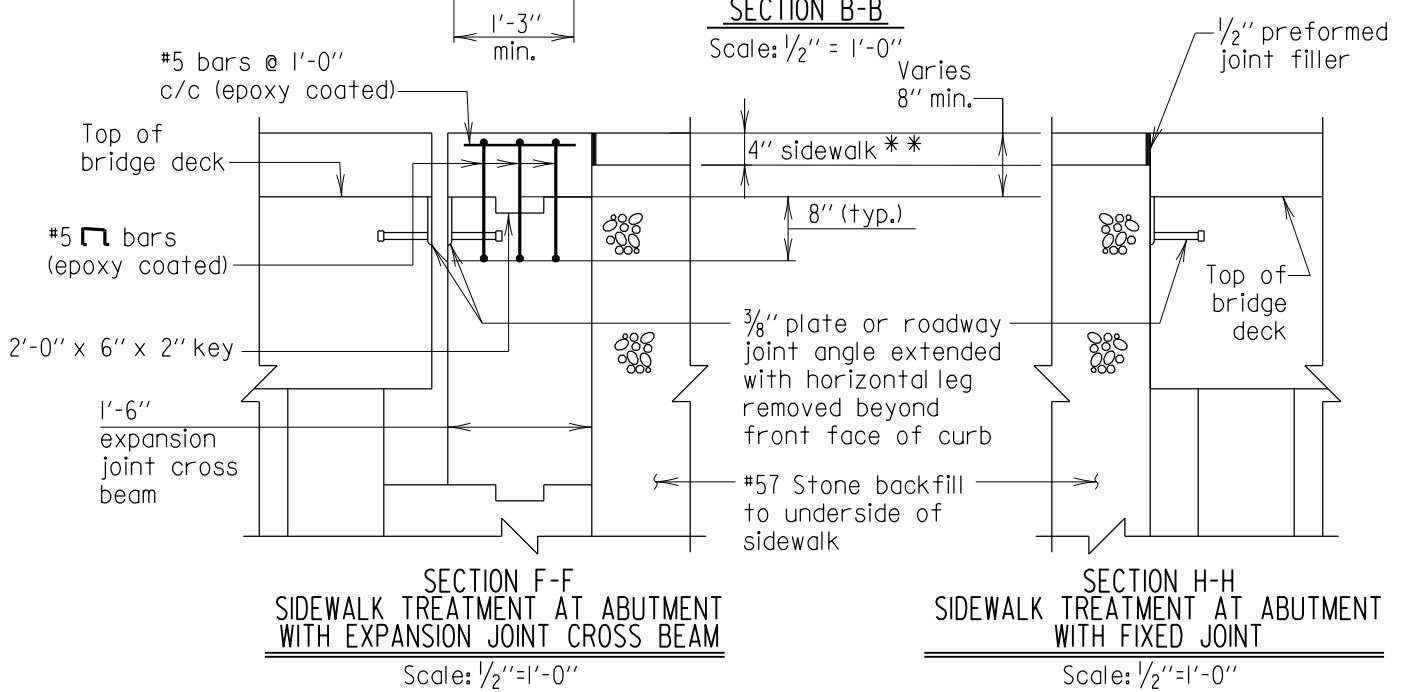
APPROVAL	
<i>[Signature]</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 12/16/2019	
VERSION	
3.0	

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
PARAPET WITH SIDEWALK END POST WITH THREE BEAM ATTACHMENT	
DETAIL NO. SUB-EP(SW)-101	SHEET 4C OF 6

SUBSTRUCTURE - END POST



- * Unless otherwise indicated on "Typical Cross Section".
- ** Unless otherwise indicated on highway sheets.
- *** See sheet 2



SECTION F-F
SIDEWALK TREATMENT AT ABUTMENT
WITH EXPANSION JOINT CROSS BEAM
 Scale: 1/2" = 1'-0"

SECTION H-H
SIDEWALK TREATMENT AT ABUTMENT
WITH FIXED JOINT
DIAMOND BACK
 Scale: 1/2" = 1'-0"

- Notes:
1. All longitudinal bars are #5 spaced as shown.
 2. Fencing not shown.

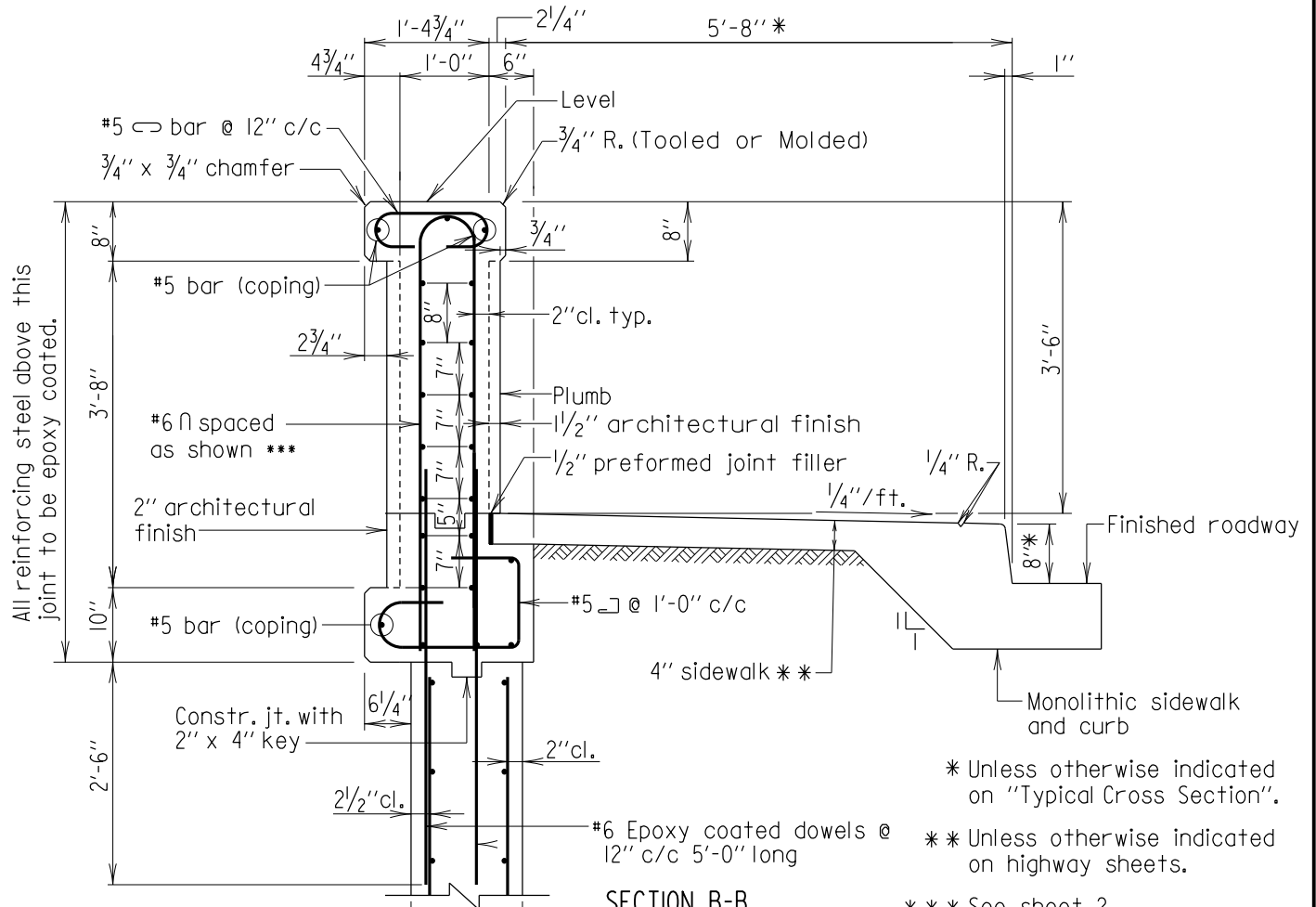
APPROVAL
<i>Ron C. ...</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019
VERSION
3.0

STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
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PARAPET WITH SIDEWALK
END POST
WITH THRIE BEAM ATTACHMENT

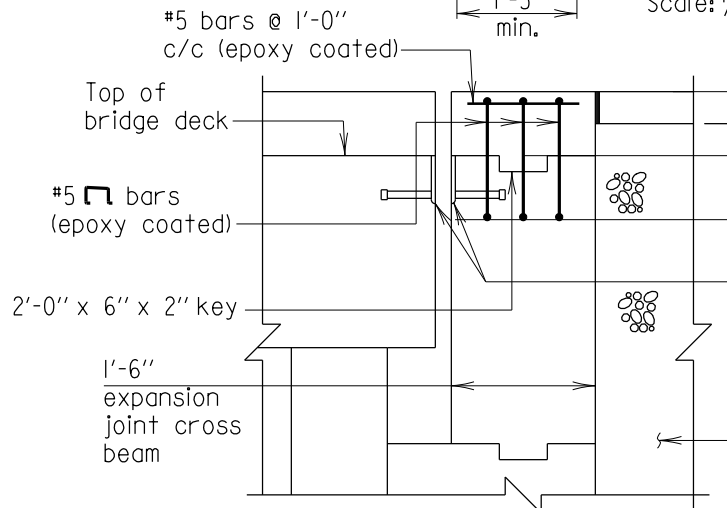
DETAIL NO. SUB-EP(SW)-101 SHEET 5A OF 6

SUBSTRUCTURE - END POST

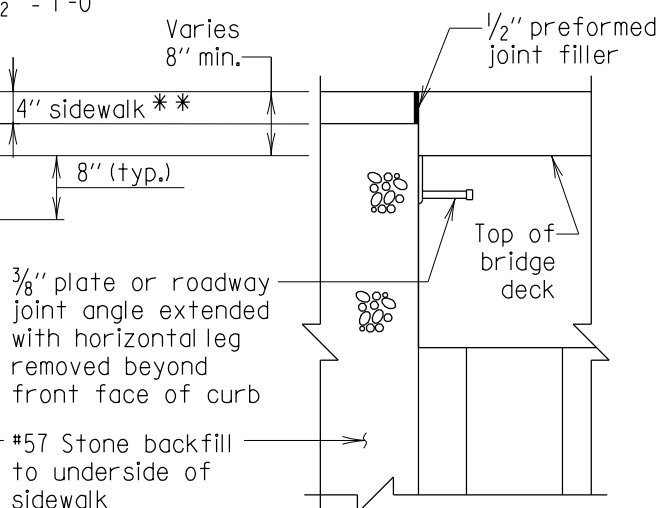


SECTION B-B
Scale: 1/2" = 1'-0"

* Unless otherwise indicated on "Typical Cross Section".
 ** Unless otherwise indicated on highway sheets.
 *** See sheet 2



SECTION F-F
SIDEWALK TREATMENT AT ABUTMENT WITH EXPANSION JOINT CROSS BEAM
Scale: 1/2" = 1'-0"



SECTION H-H
SIDEWALK TREATMENT AT ABUTMENT WITH FIXED JOINT
Scale: 1/2" = 1'-0"

RECESSED BACK

Notes:
 1. All longitudinal bars are #5 spaced as shown.
 2. Fencing not shown.

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DATE: 12/16/2019
VERSION
3.0

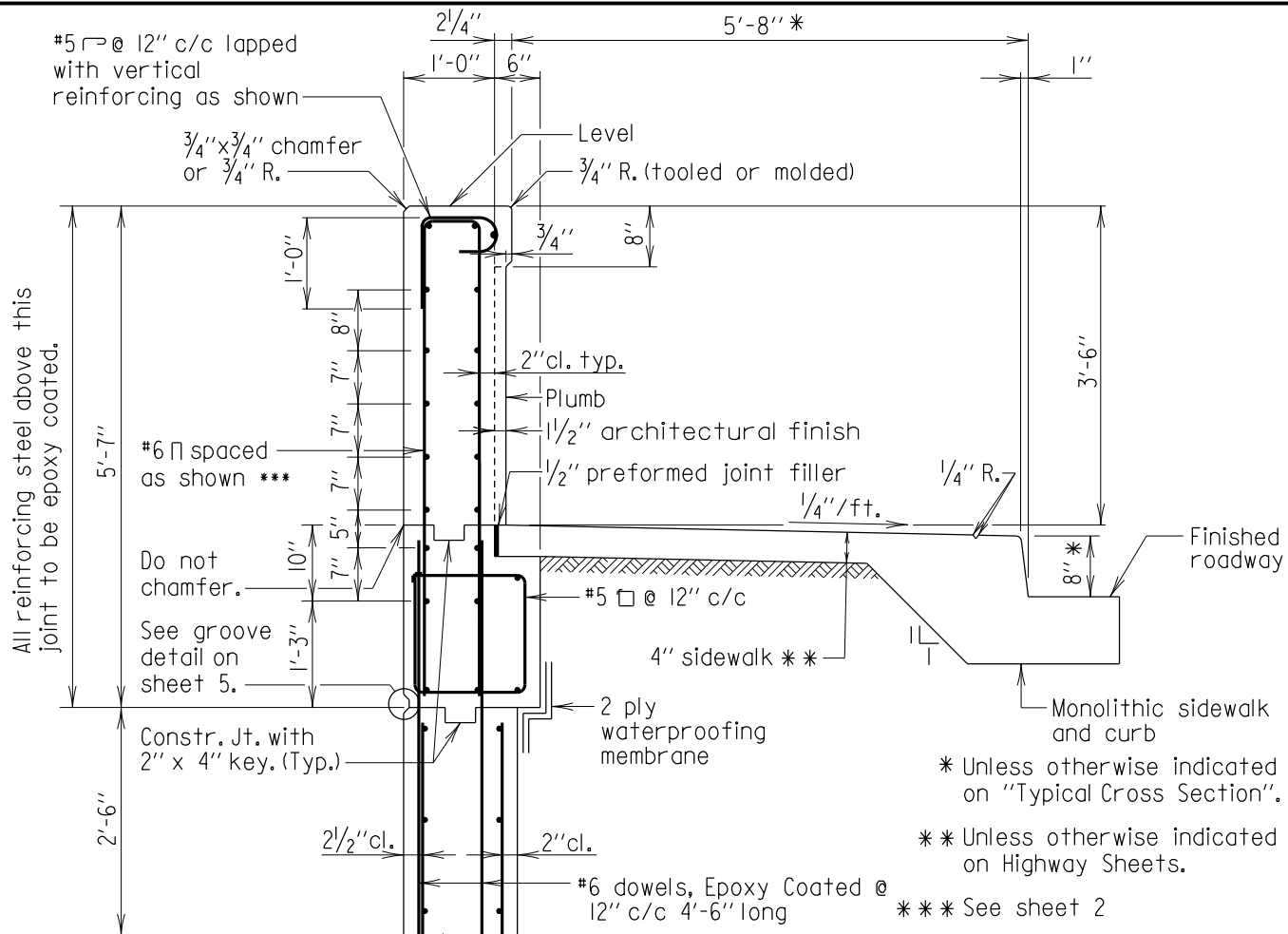
STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF STRUCTURES

**PARAPET WITH SIDEWALK
 END POST
 WITH THRIE BEAM ATTACHMENT**

DETAIL NO. SUB-EP(SW)-101

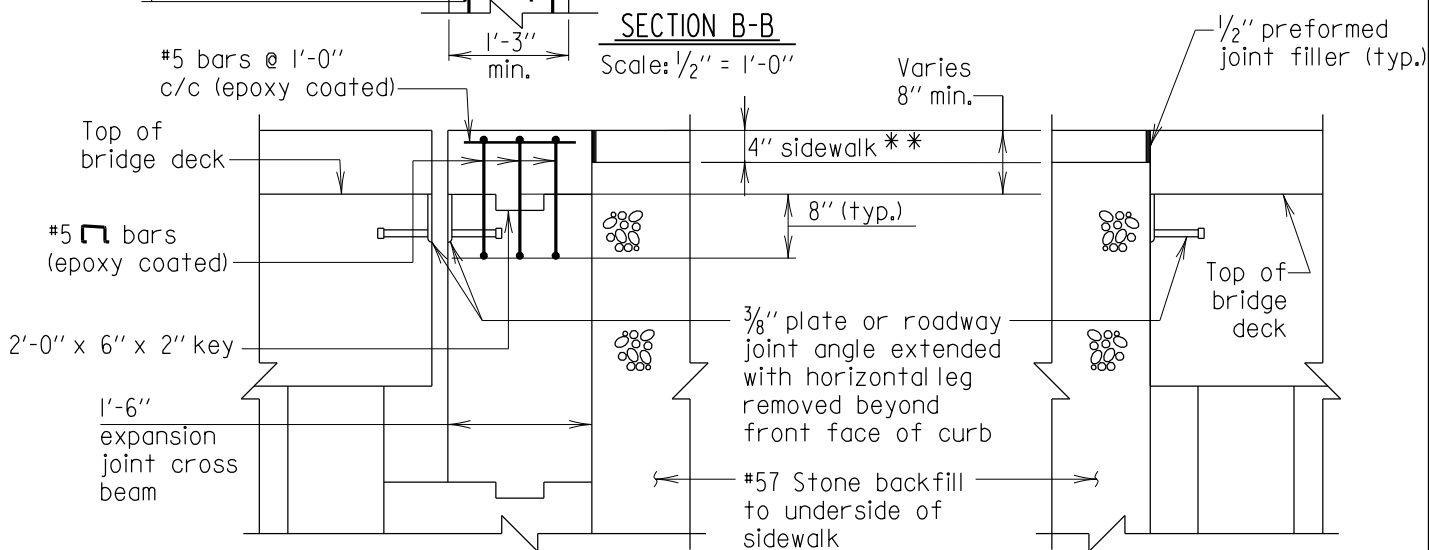
SHEET 5B OF 6

SUBSTRUCTURE - END POST



* Unless otherwise indicated on "Typical Cross Section".
 ** Unless otherwise indicated on Highway Sheets.
 *** See sheet 2

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



SECTION F-F
SIDEWALK TREATMENT AT ABUTMENT WITH EXPANSION JOINT CROSS BEAM
 Scale: 1/2" = 1'-0"

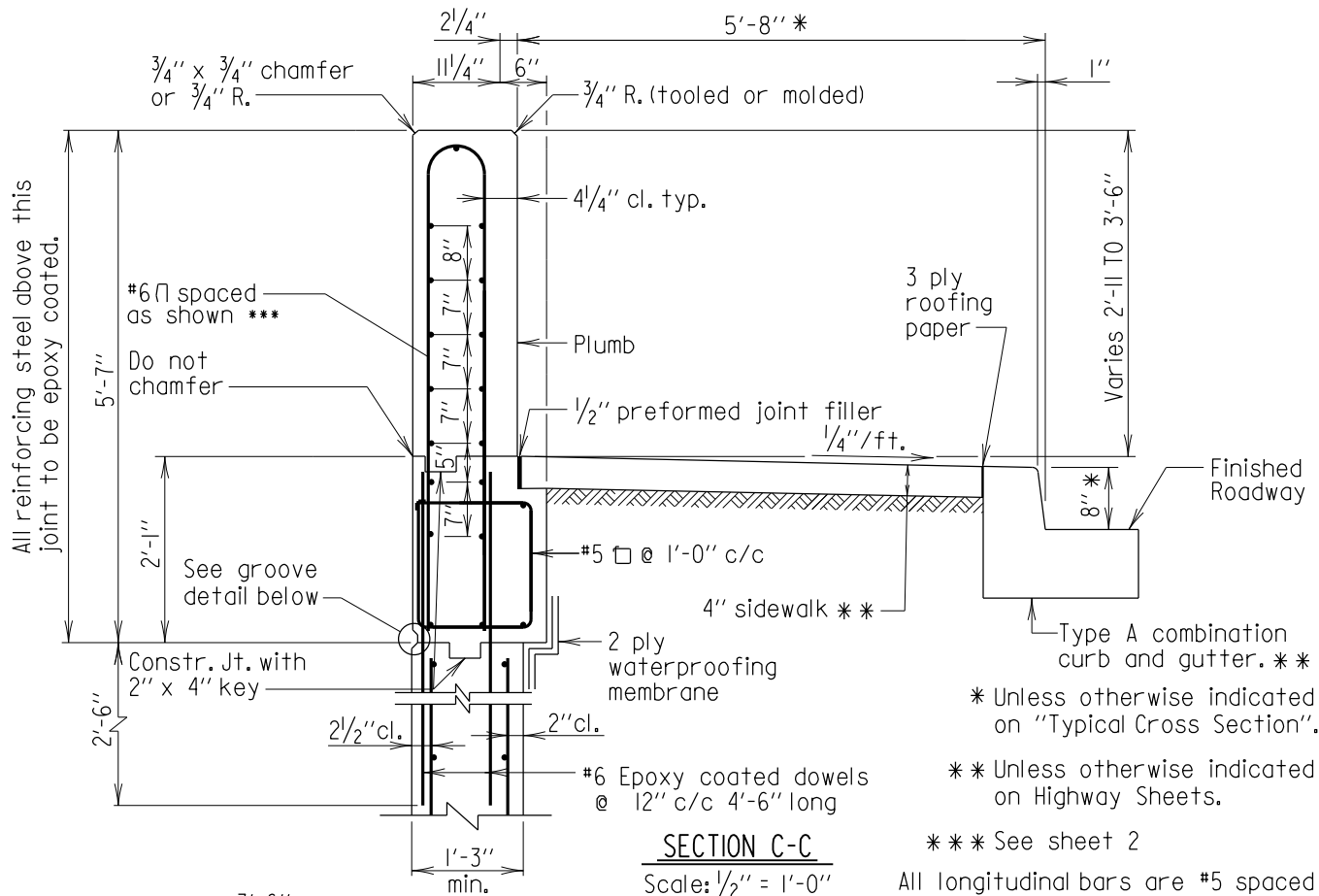
SECTION H-H
SIDEWALK TREATMENT AT ABUTMENT WITH FIXED JOINT STRAIGHT BACK
 Scale: 1/2" = 1'-0"

Notes:
 1. All longitudinal bars are #5 spaced as shown.
 2. Fencing or railing not shown.

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<i>[Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019
VERSION
3.0

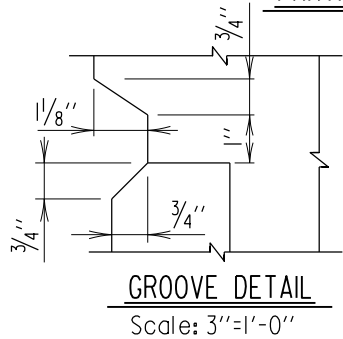
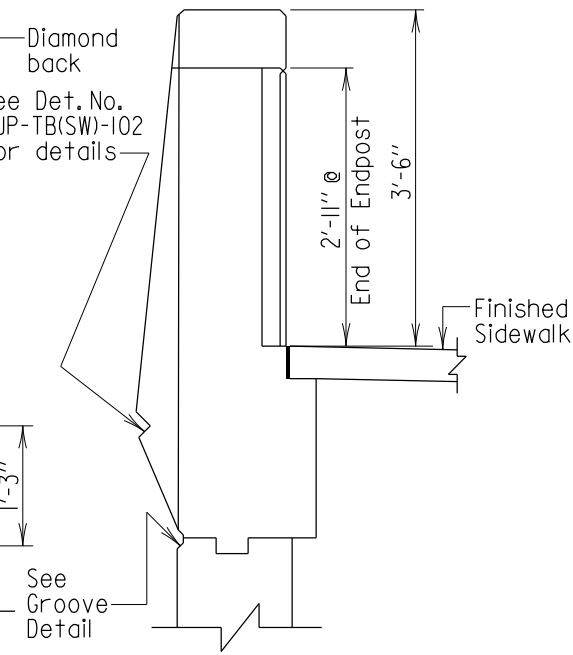
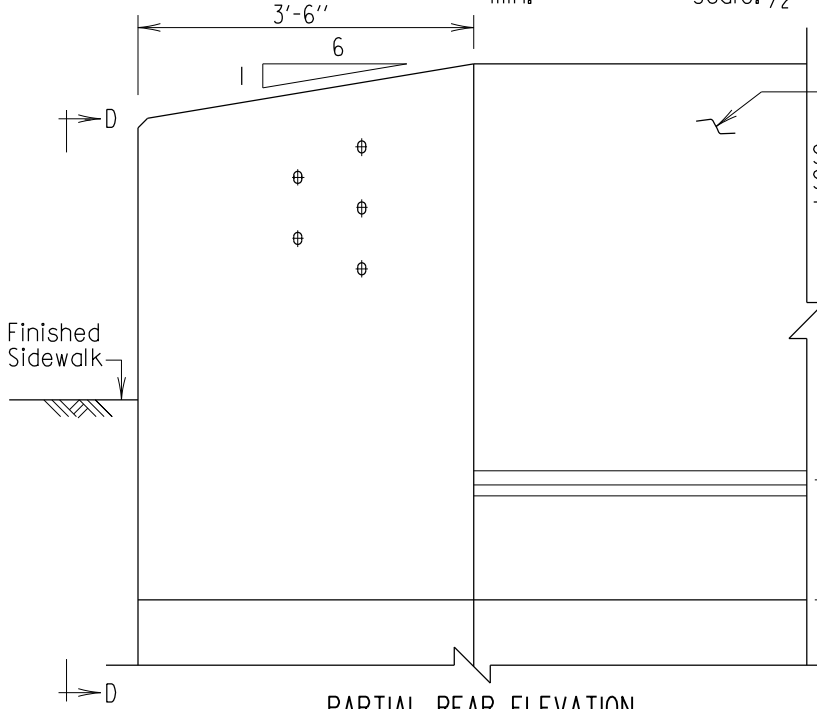
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
PARAPET WITH SIDEWALK END POST WITH THRIE BEAM ATTACHMENT	
DETAIL NO. SUB-EP(SW)-101	SHEET 5C OF 6

SUBSTRUCTURE - END POST



* Unless otherwise indicated on "Typical Cross Section".
 ** Unless otherwise indicated on Highway Sheets.
 *** See sheet 2

All longitudinal bars are #5 spaced as shown.



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DATE: 12/16/2019
VERSION
3.0

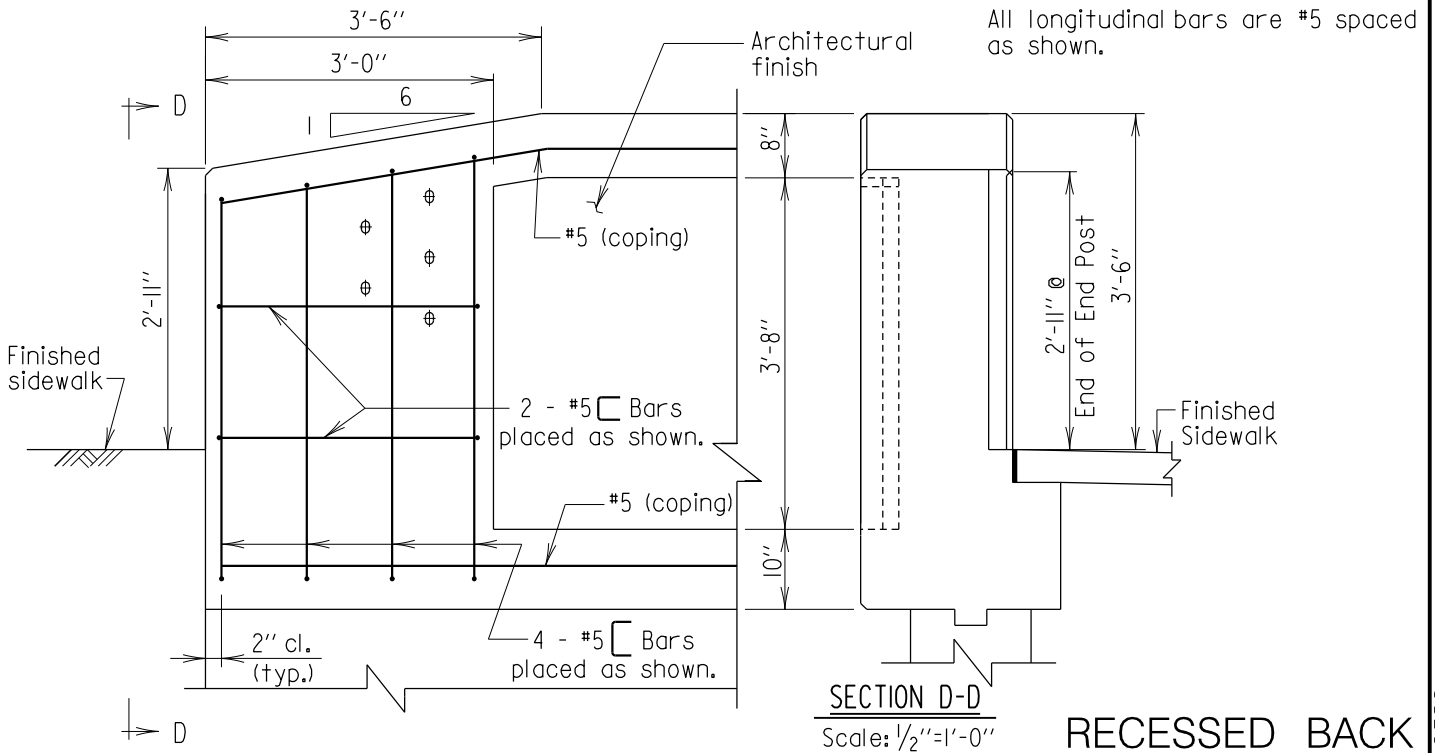
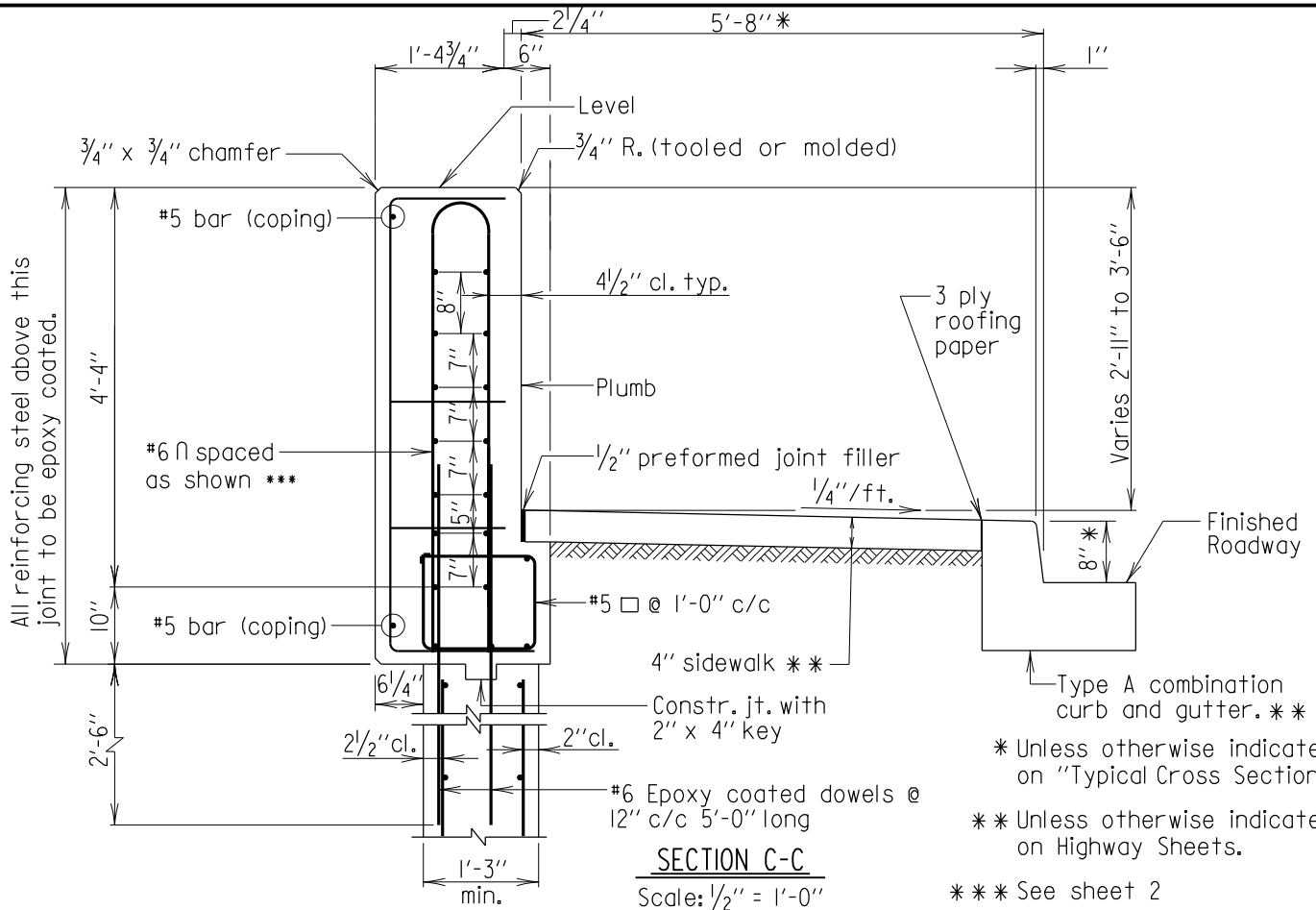
STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF STRUCTURES

**PARAPET WITH SIDEWALK
 END POST
 WITH THRIE BEAM ATTACHMENT**

DETAIL NO. SUB-EP(SW)-101

SHEET 6A OF 6

SUBSTRUCTURE - END POST



PARTIAL REAR ELEVATION
Scale: 1/2" = 1'-0"

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019
VERSION
3.0

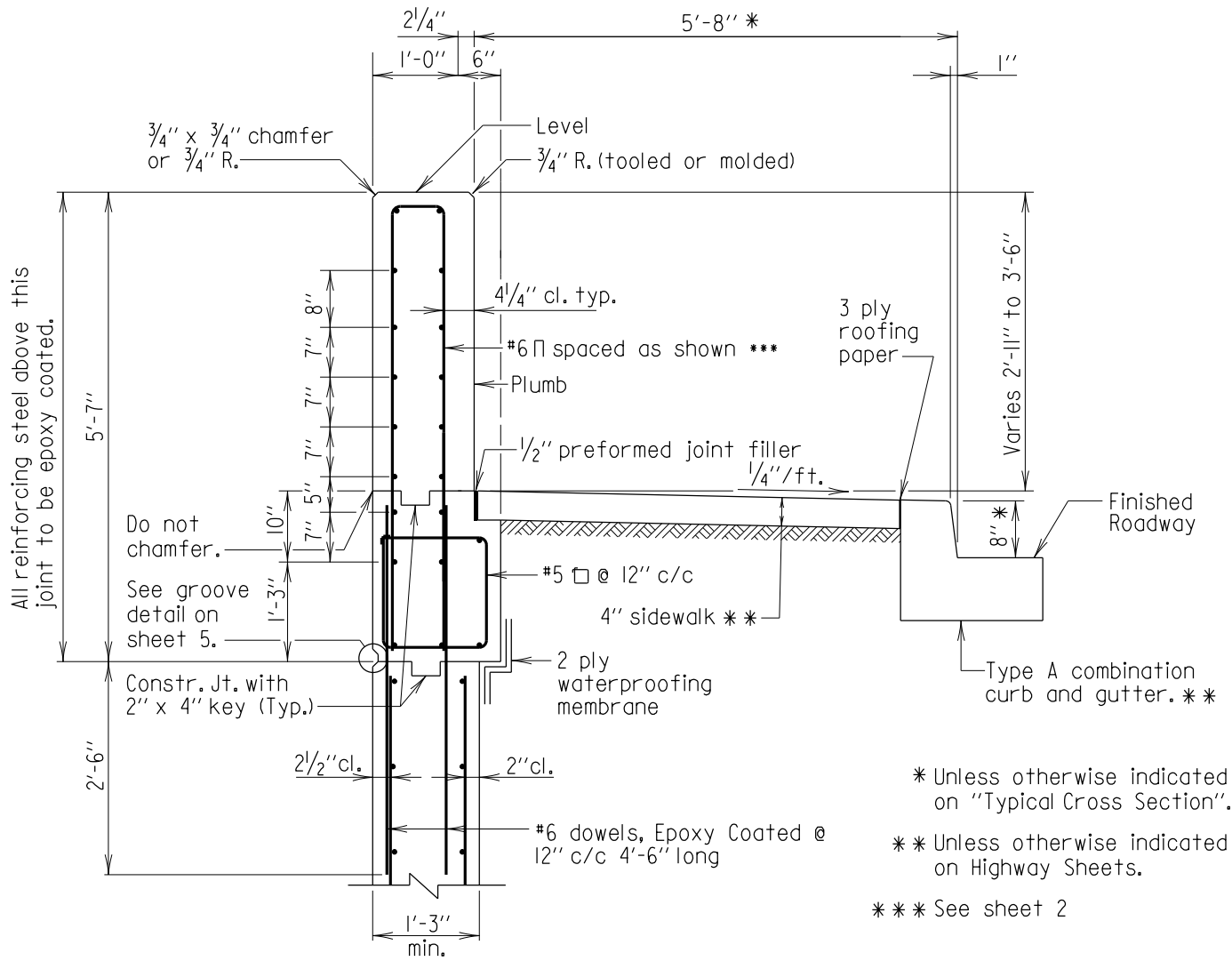
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

**PARAPET WITH SIDEWALK
END POST
WITH THRIE BEAM ATTACHMENT**

DETAIL NO. SUB-EP(SW)-101

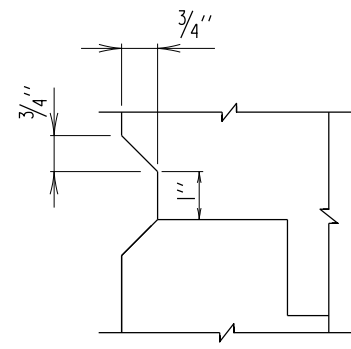
SHEET 6B OF 6

SUBSTRUCTURE - END POST



- * Unless otherwise indicated on "Typical Cross Section".
- ** Unless otherwise indicated on Highway Sheets.
- *** See sheet 2

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



GROOVE DETAIL
Scale: 3" = 1'-0"

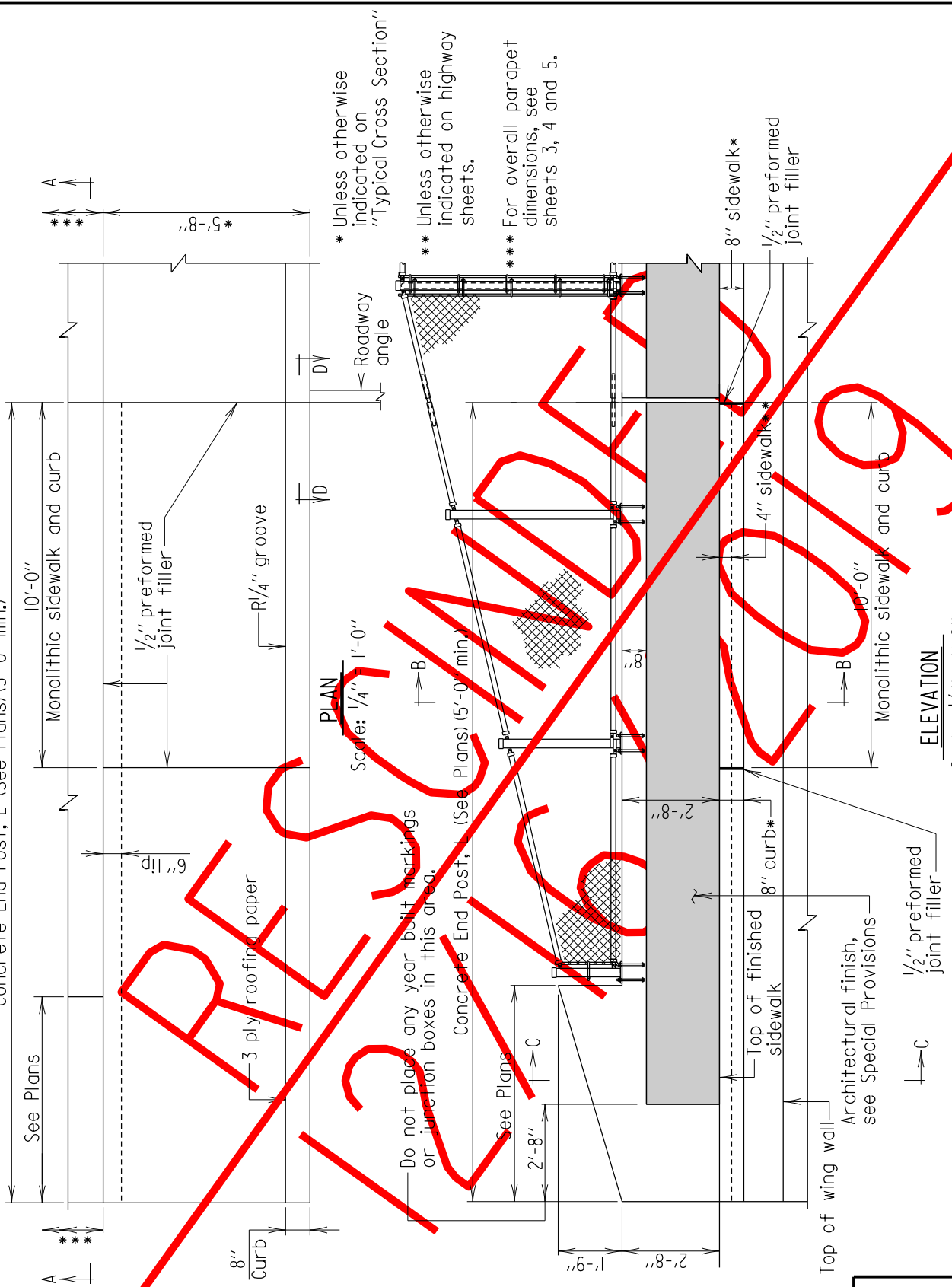
Note:
All longitudinal bars are #5 spaced as shown.

APPROVAL
<i>R. C. [Signature]</i> DIRECTOR OFFICE OF STRUCTURES
DATE: 12/16/2019
VERSION
3.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
PARAPET WITH SIDEWALK END POST WITH THRIE BEAM ATTACHMENT	
DETAIL NO. SUB-EP(SW)-101	SHEET <u>6C</u> OF <u>6</u>

SUBSTRUCTURE - END POST

Concrete End Post, L (See Plans) (5'-0" min.)



Note to Designer:
 This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.

Notes:
 1. Use on approach and trail end of bridges with sidewalks.
 2. Type I Fence shown, see plans for fence or railing layout and details.
 3. Thrive Beam Attachment not shown.

* USEABLE DRAFT *

APPROVAL
DIRECTOR OFFICE OF STRUCTURES
DATE: 09/01/2015
VERSION
1.0

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

**PARAPET ENDPOST FOR ABUTMENTS WITH
 FIXED JOINT AND SIDEWALK**

DETAIL NO. SUB-EP(SW)-201

SHEET 1 OF 4



Provide opening to match roadway joint.

Concrete End Post, L (see Plans)

See Plans

1'-2"

1'-9"

2'-8"

Face of end post

#6 dowel bars @ 12" c/c epoxy coated (Typ.)

1' cl. to underside of superstructure.

Construction joint with 2" x 4" key

SECTION A-A

Scale: 3/8" = 1'-0"

5'-0" #6 dowel bars @ 6" c/c in this area only

Top of finished sidewalk

* USEABLE DRAFT *

APPROVAL
DIRECTOR OFFICE OF STRUCTURES
DATE: 09/01/2015
VERSION
1.0

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

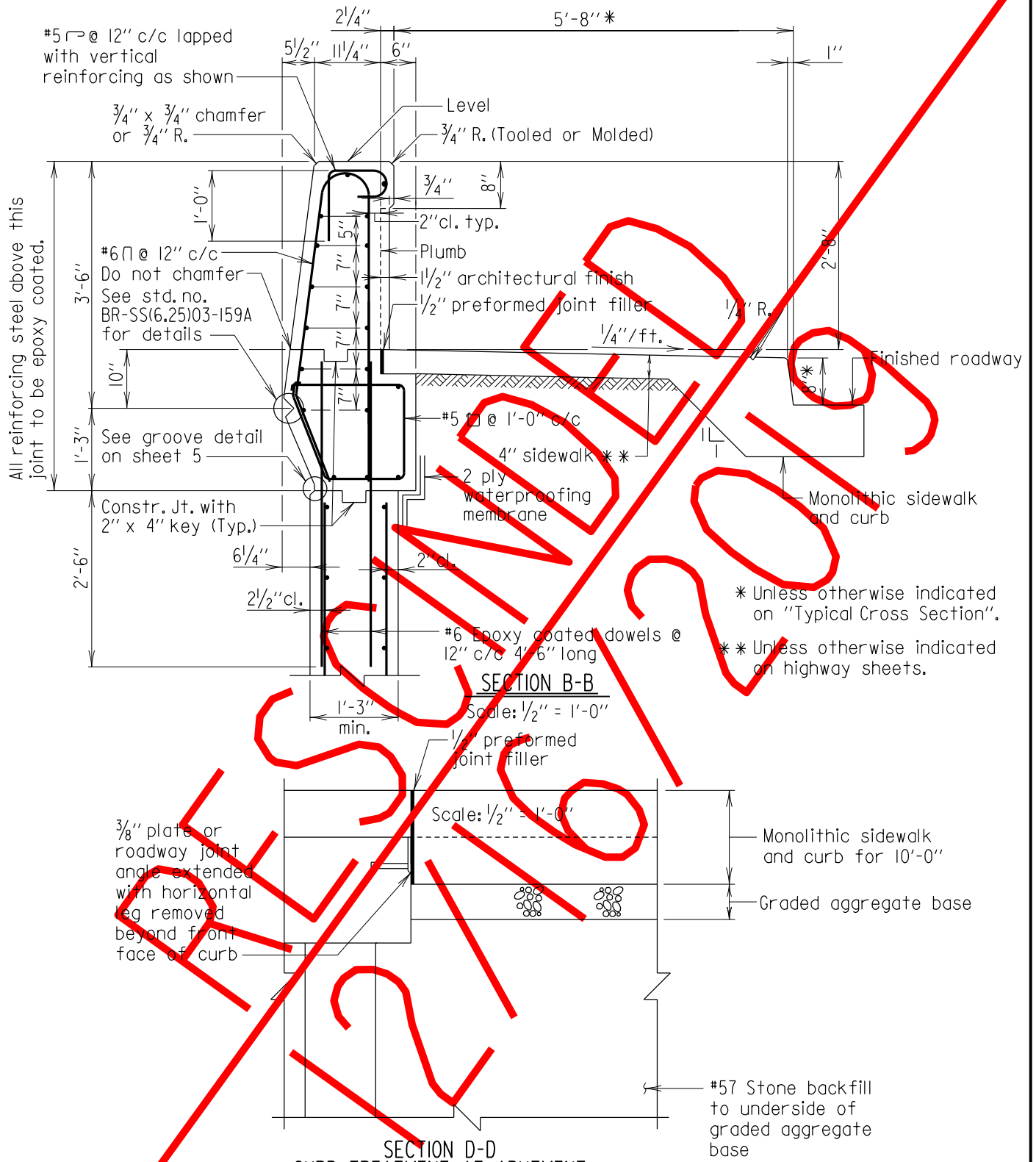
PARAPET ENDPOST FOR ABUTMENTS WITH
FIXED JOINT AND SIDEWALK

DETAIL NO. SUB-EP(SW)-201

SHEET 2 OF 4

- Notes:
1. For parapet reinforcing details, see sheets 3, 4 and 5.
 2. If applicable, reinforcing for coping not shown.
 3. Fencing or railing not shown.

Note to Designer:
This standard contains details for straight back, diamond back and recessed back parapets. Include the appropriate shape in the Contract Plans.



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

Notes:

1. All longitudinal bars are #5 spaced as shown.
2. Fencing or railing not shown.
3. Abutment Backwall dimensions and reinforcing not shown.

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

DIAMOND BACK

* USEABLE DRAFT *

APPROVAL
DIRECTOR OFFICE OF STRUCTURES
DATE: 09/01/2015
VERSION
1.0

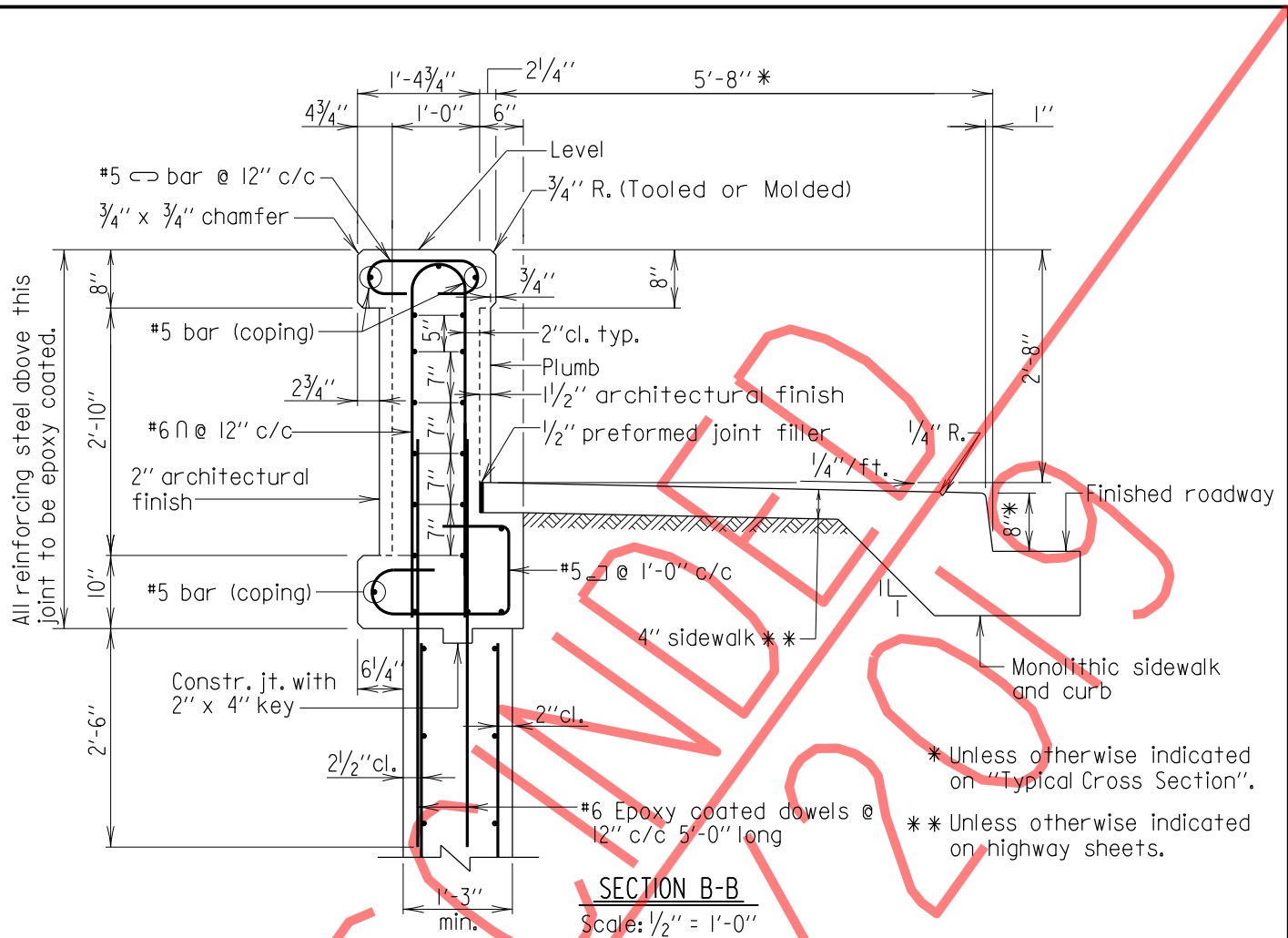
STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF STRUCTURES

PARAPET ENDPOST FOR ABUTMENTS WITH
 FIXED JOINT AND SIDEWALK

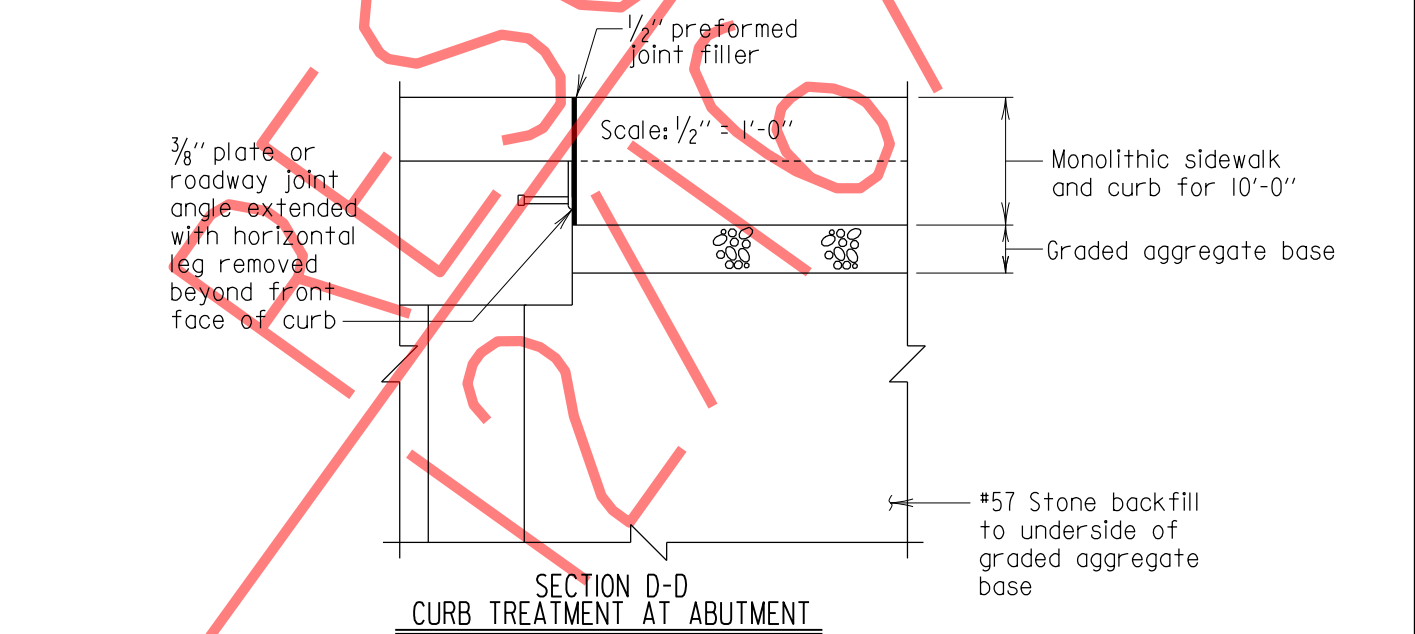
DETAIL NO. SUB-EP(SW)-201

SHEET 3 OF 4

SUBSTRUCTURE - END POST



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



SECTION D-D
CURB TREATMENT AT ABUTMENT
Scale: 1/2" = 1'-0"

- Notes:
1. All longitudinal bars are #5 spaced as shown.
 2. Fencing or railing not shown.
 3. Abutment Backwall dimensions and reinforcing not shown.

RECESSED BACK * USEABLE DRAFT *

APPROVAL
DIRECTOR OFFICE OF STRUCTURES
DATE: 09/01/2015
VERSION
1.0

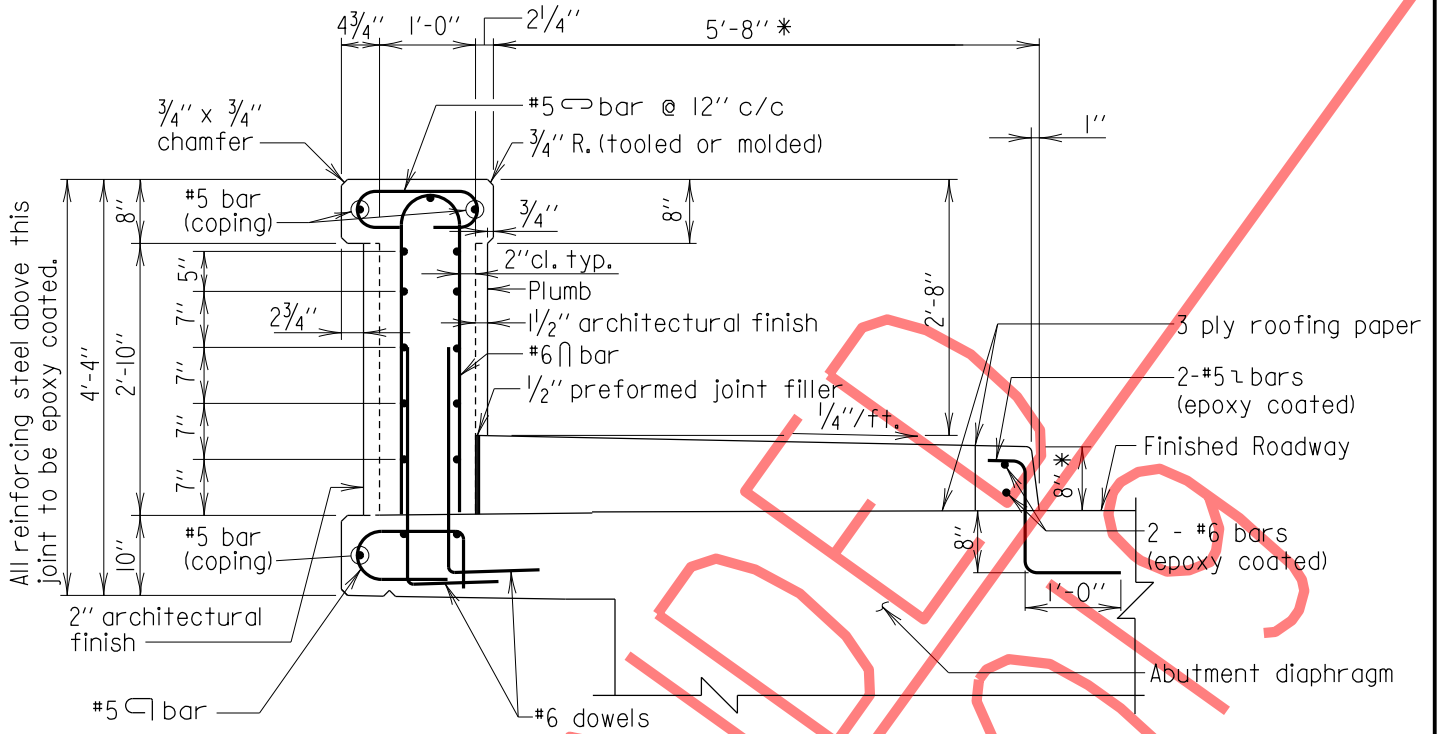
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

**PARAPET ENDPOST FOR ABUTMENTS WITH
FIXED JOINT AND SIDEWALK**

DETAIL NO. SUB-EP(SW)-201

SHEET 3 OF 4

SUBSTRUCTURE - END POST

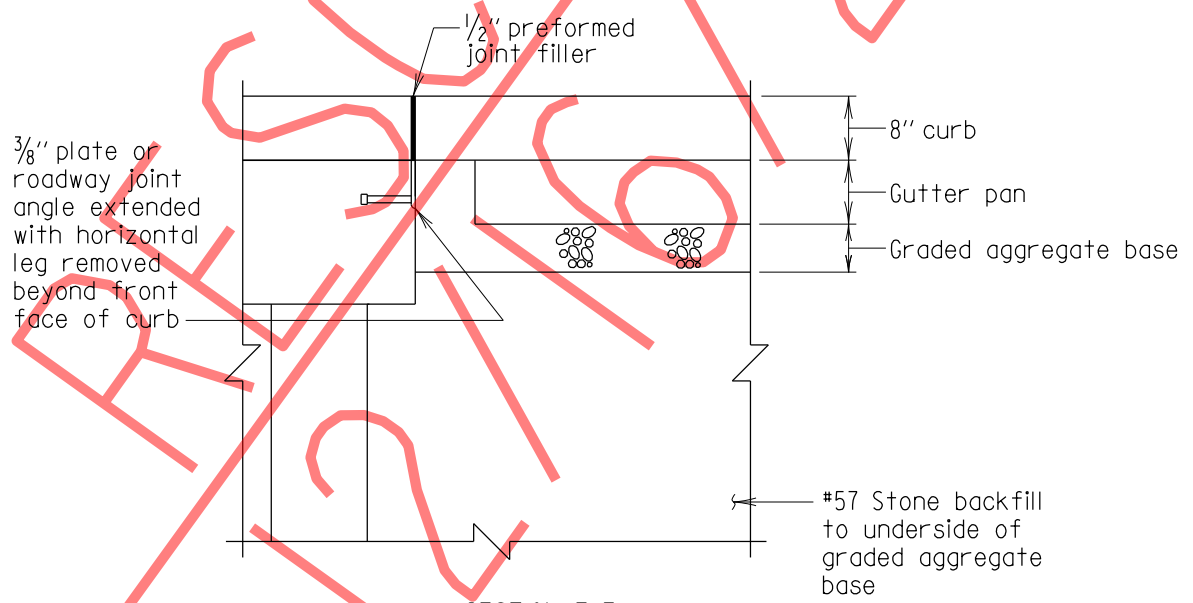


SECTION B-B

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

* Unless otherwise indicated on "Typical Cross Section".

** Unless otherwise indicated on Highway Sheets.



**SECTION F-F
CURB TREATMENT AT ABUTMENT**

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

Notes:

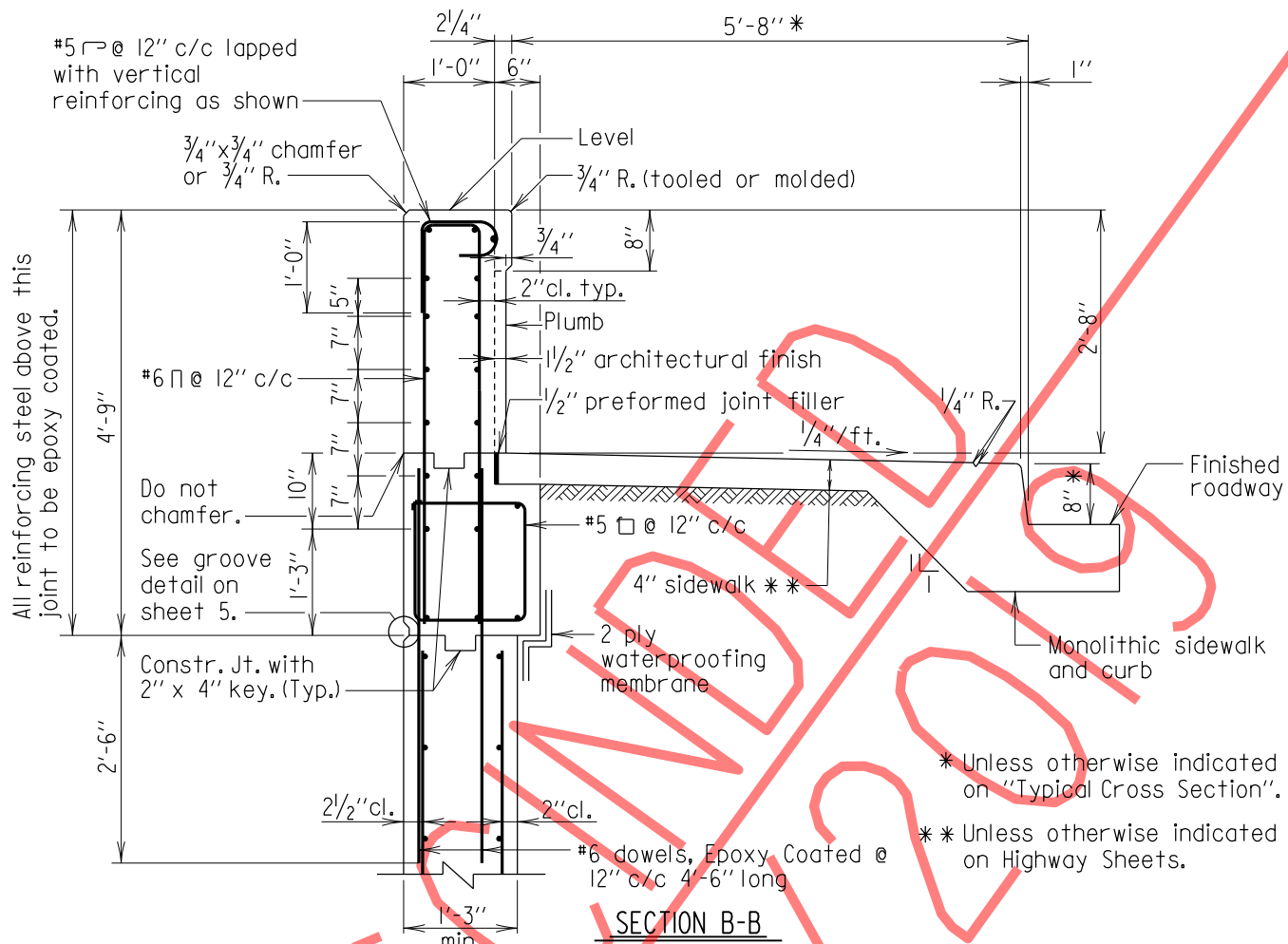
1. All longitudinal bars are #5 spaced as shown.
2. Fencing or railing not shown.
3. Abutment Backwall dimensions and reinforcing not shown.

RECESSED BACK

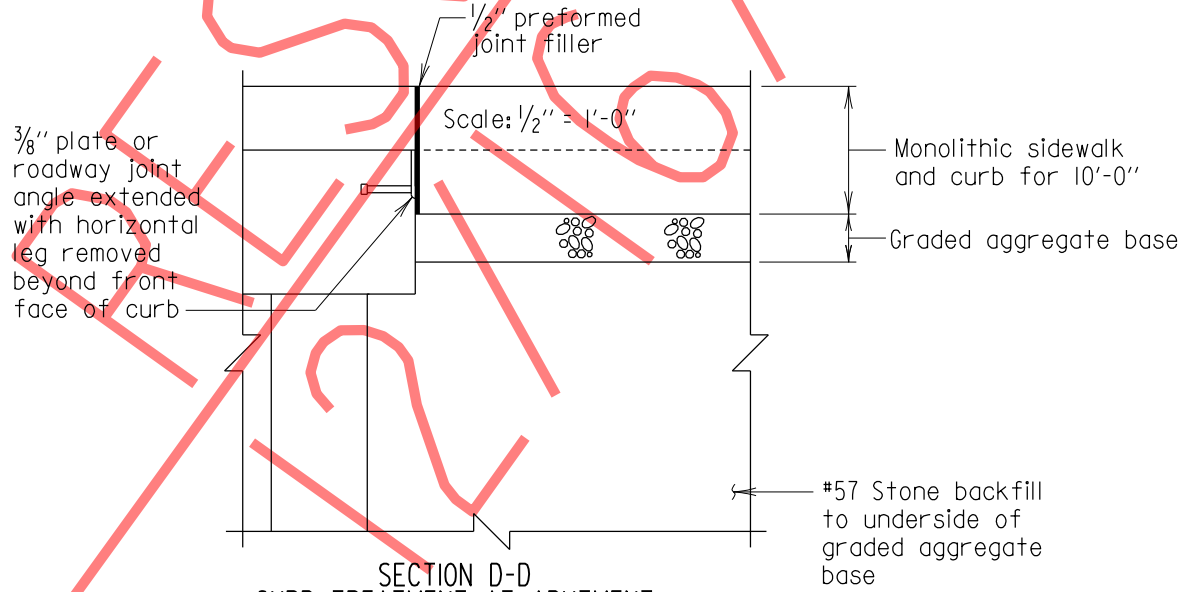
APPROVAL
DIRECTOR OFFICE OF STRUCTURES
DATE: 09/01/2015
VERSION
1.0

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
PARAPET ENDPOST FOR ABUTMENTS WITH FIXED JOINT AND SIDEWALK	
DETAIL NO. SUB-EP(SW)-201	SHEET 3 OF 5

SUBSTRUCTURE ABUT



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



SECTION D-D
CURB TREATMENT AT ABUTMENT
Scale: 1/2" = 1'-0"

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

Notes:

1. All longitudinal bars are #5 spaced as shown.
2. Fencing or railing not shown.
3. Abutment Backwall dimensions and reinforcing not shown.

STRAIGHT BACK

*** USEABLE DRAFT ***

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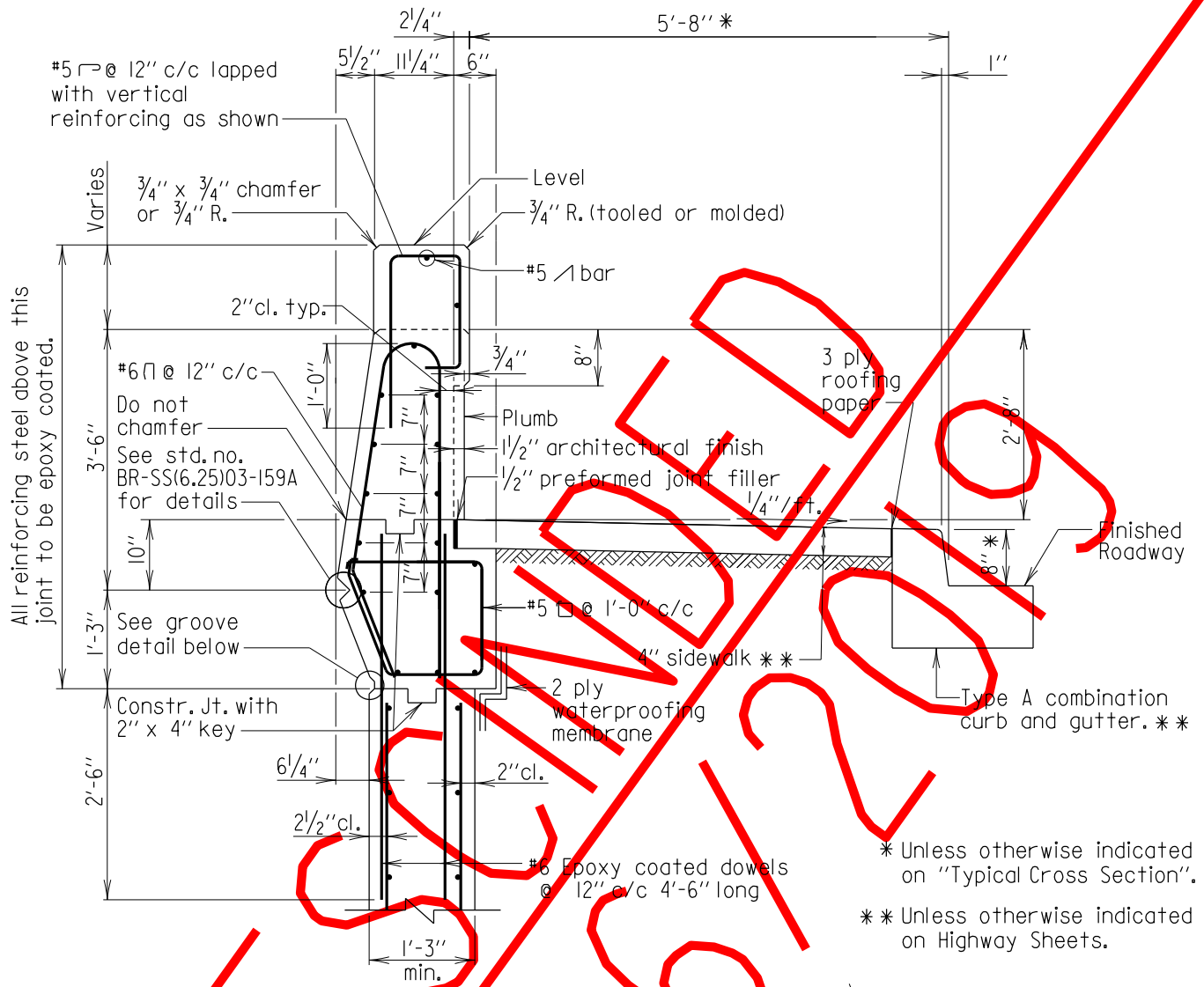
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

**PARAPET ENDPOST FOR ABUTMENTS WITH
FIXED JOINT AND SIDEWALK**

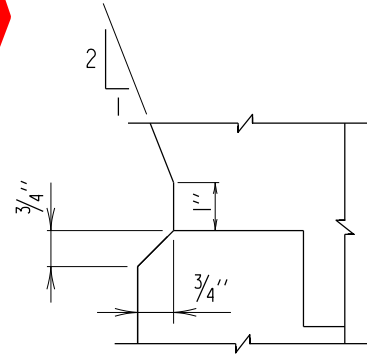
DETAIL NO. SUB-EP(SW)-201

SHEET 3 OF 4

SUBSTRUCTURE - END POST



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



GROOVE DETAIL
Scale: 3" = 1'-0"

Note:
All longitudinal bars are #5 spaced as shown.

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

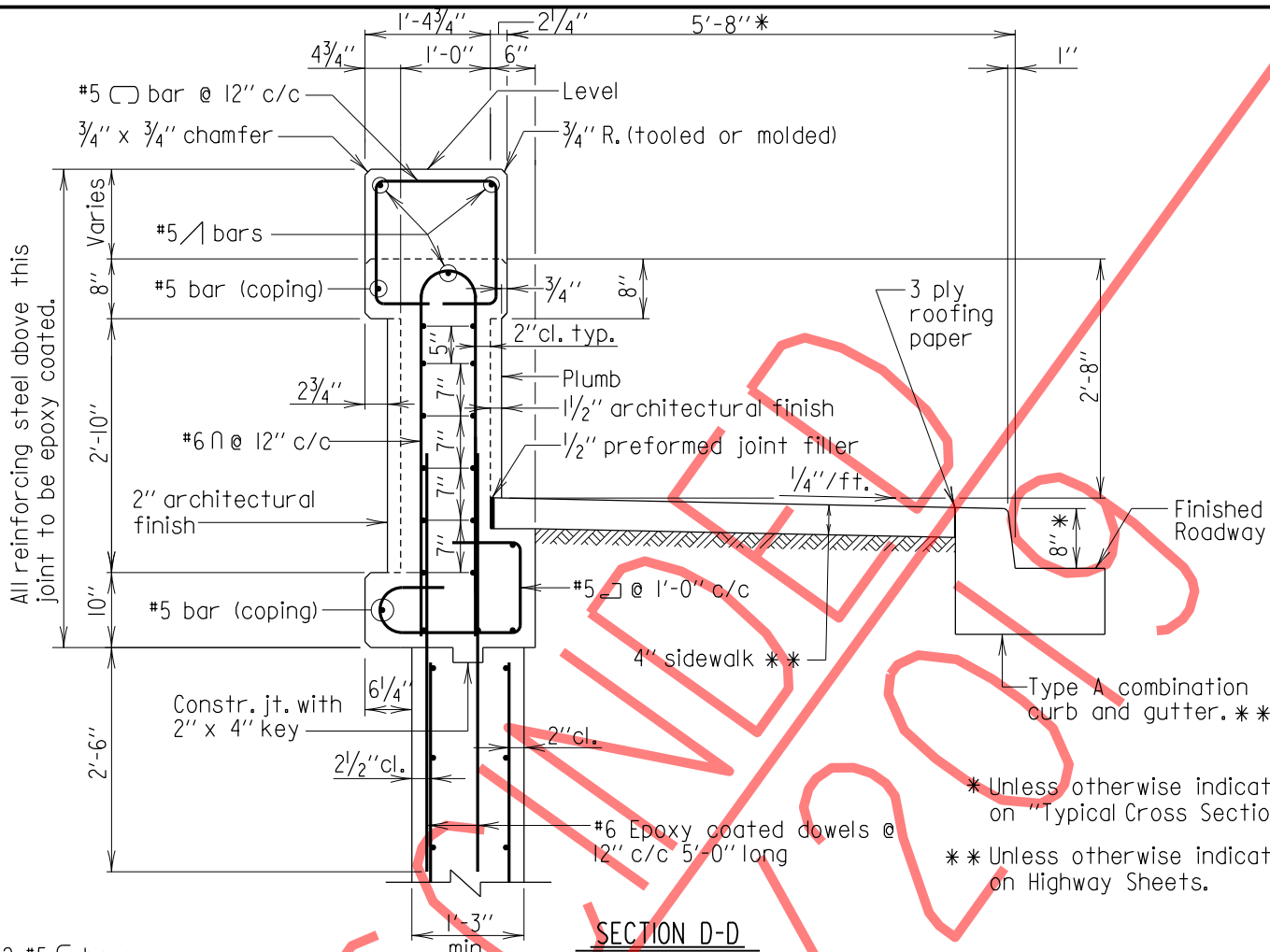
DIAMOND BACK

* USEABLE DRAFT *

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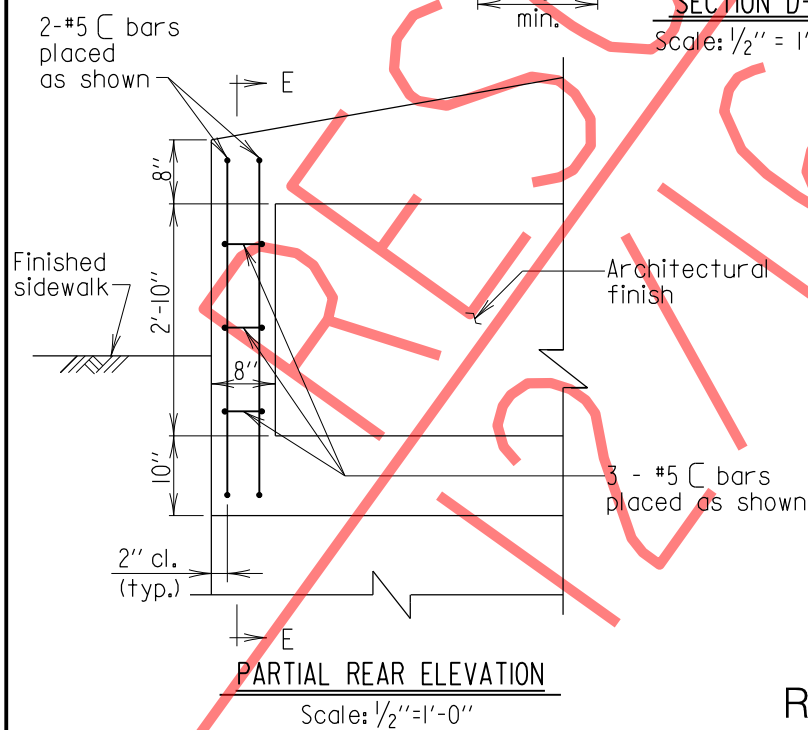
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES	
PARAPET ENDPOST FOR ABUTMENTS WITH FIXED JOINT AND SIDEWALK	
DETAIL NO. SUB-EP(SW)-201	SHEET 4 OF 4

SUBSTRUCTURE - END POST

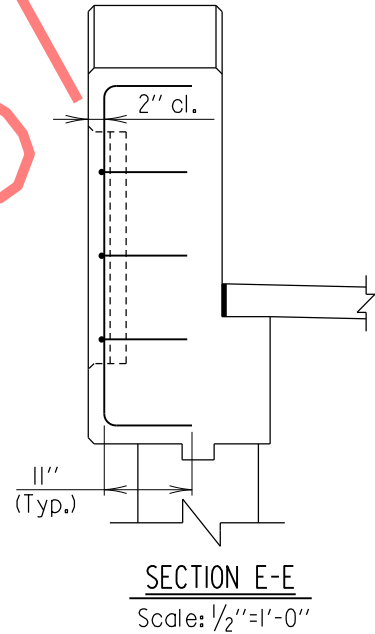


* Unless otherwise indicated on "Typical Cross Section".
 ** Unless otherwise indicated on Highway Sheets.

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



PARTIAL REAR ELEVATION
 Scale: 1/2" = 1'-0"



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

RECESSED BACK * USEABLE DRAFT *

Note:
 All longitudinal bars are #5 spaced as shown.

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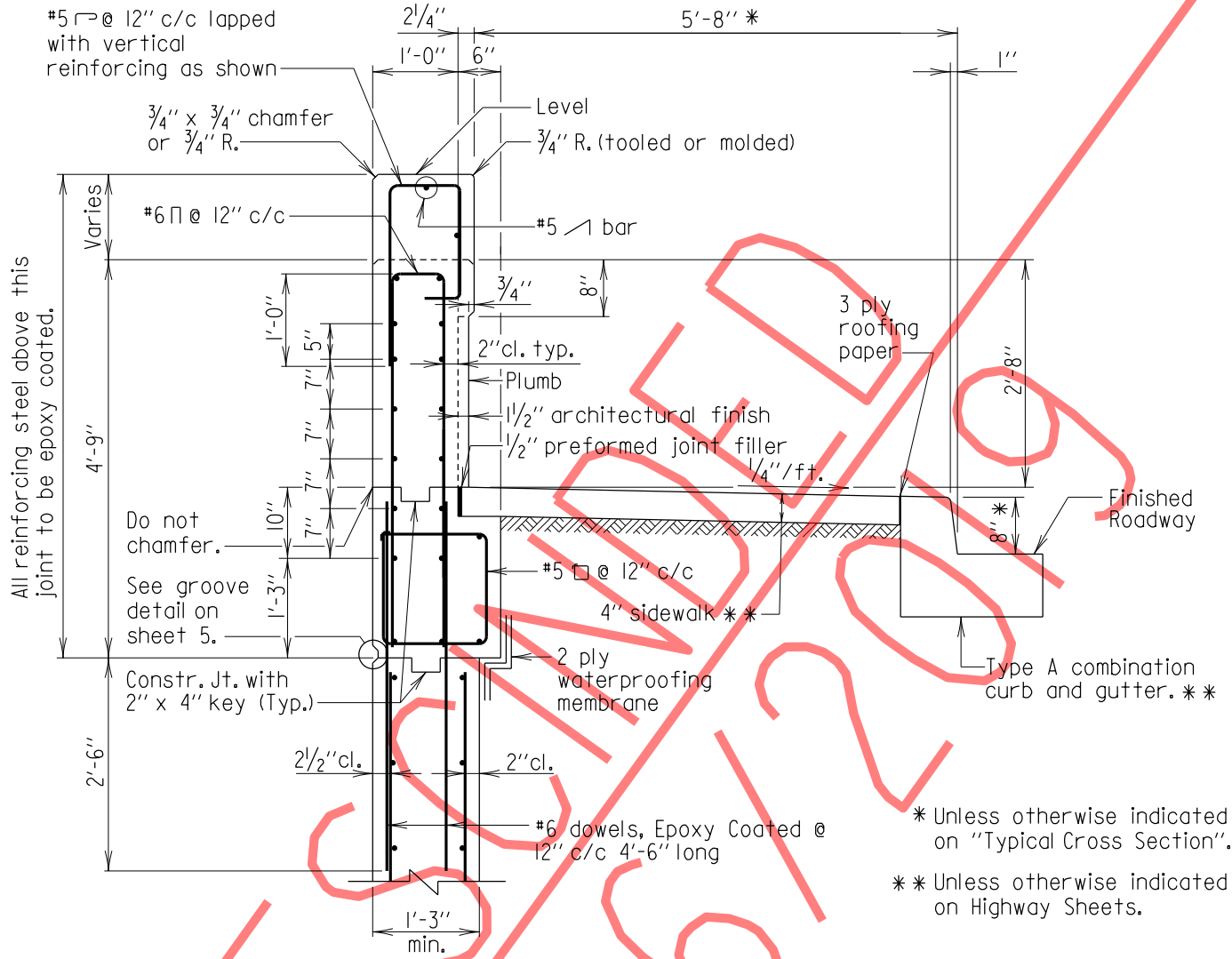
STATE OF MARYLAND
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 STATE HIGHWAY ADMINISTRATION
 OFFICE OF STRUCTURES

PARAPET ENDPOST FOR ABUTMENTS WITH
 FIXED JOINT AND SIDEWALK

DETAIL NO. SUB-EP(SW)-201

SHEET 4 OF 4

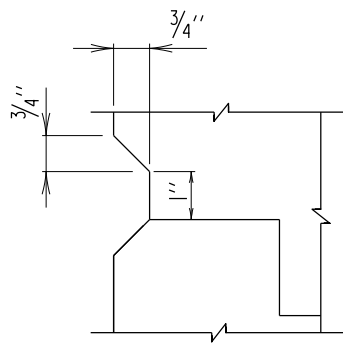
SUBSTRUCTURE - END POST



* Unless otherwise indicated on "Typical Cross Section".

** Unless otherwise indicated on Highway Sheets.

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



GROOVE DETAIL
Scale: 3" = 1'-0"

Note:
All longitudinal bars are #5 spaced as shown.

STRAIGHT BACK

*** USEABLE DRAFT ***

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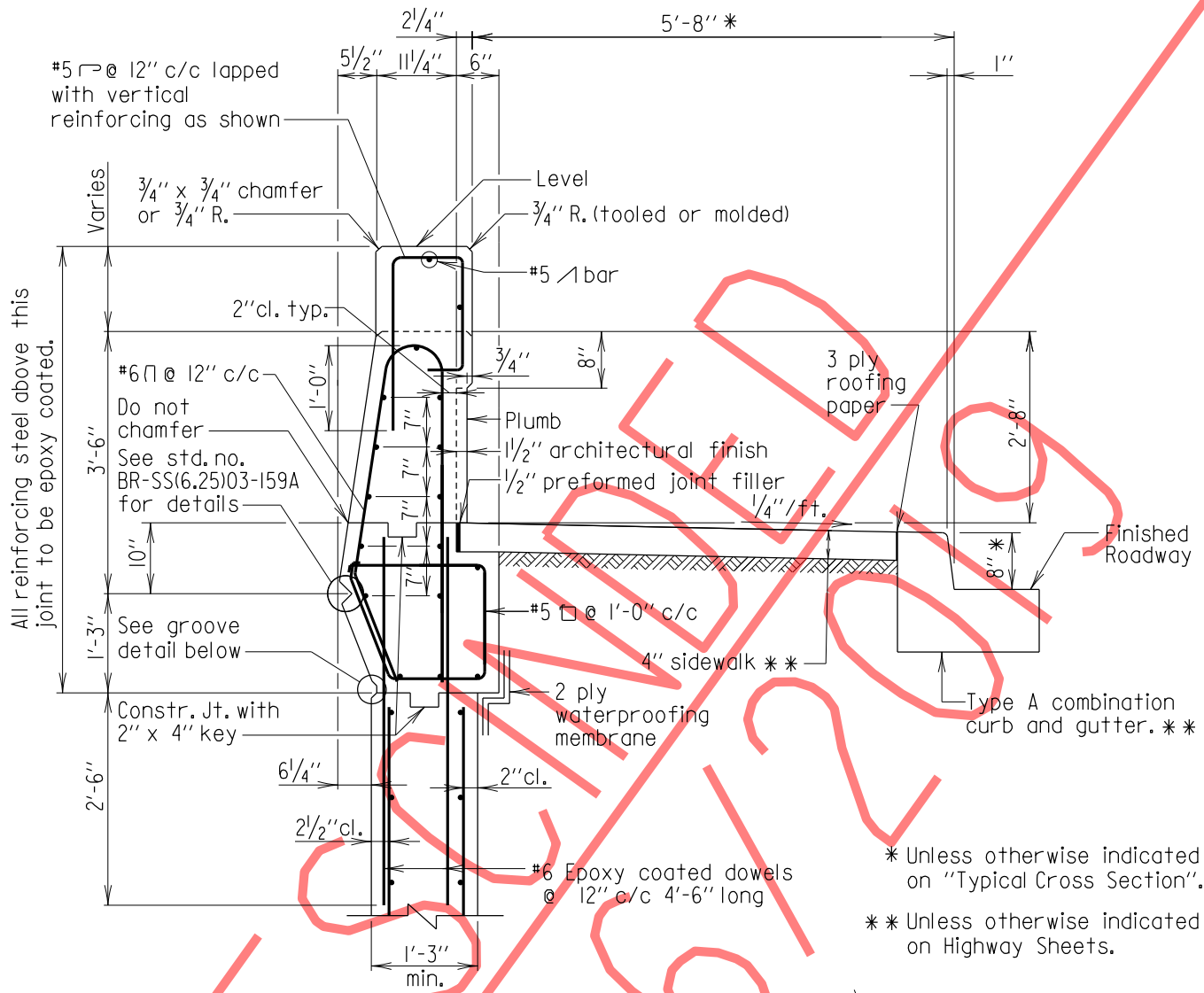
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STATE HIGHWAY ADMINISTRATION
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**PARAPET ENDPOST FOR ABUTMENTS WITH
EXPANSION JOINT CROSSBEAM AND SIDEWALK**

DETAIL NO. SUB-EP(SW)-201

SHEET 4 OF 4

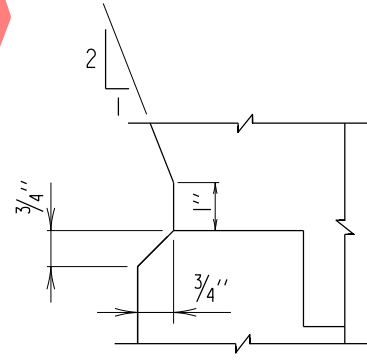
SUBSTRUCTURE - END POST



All reinforcing steel above this joint to be epoxy coated.

Note:
All longitudinal bars are #5 spaced as shown.

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



GROOVE DETAIL
Scale: 3" = 1'-0"

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

DIAMOND BACK

*** USEABLE DRAFT ***

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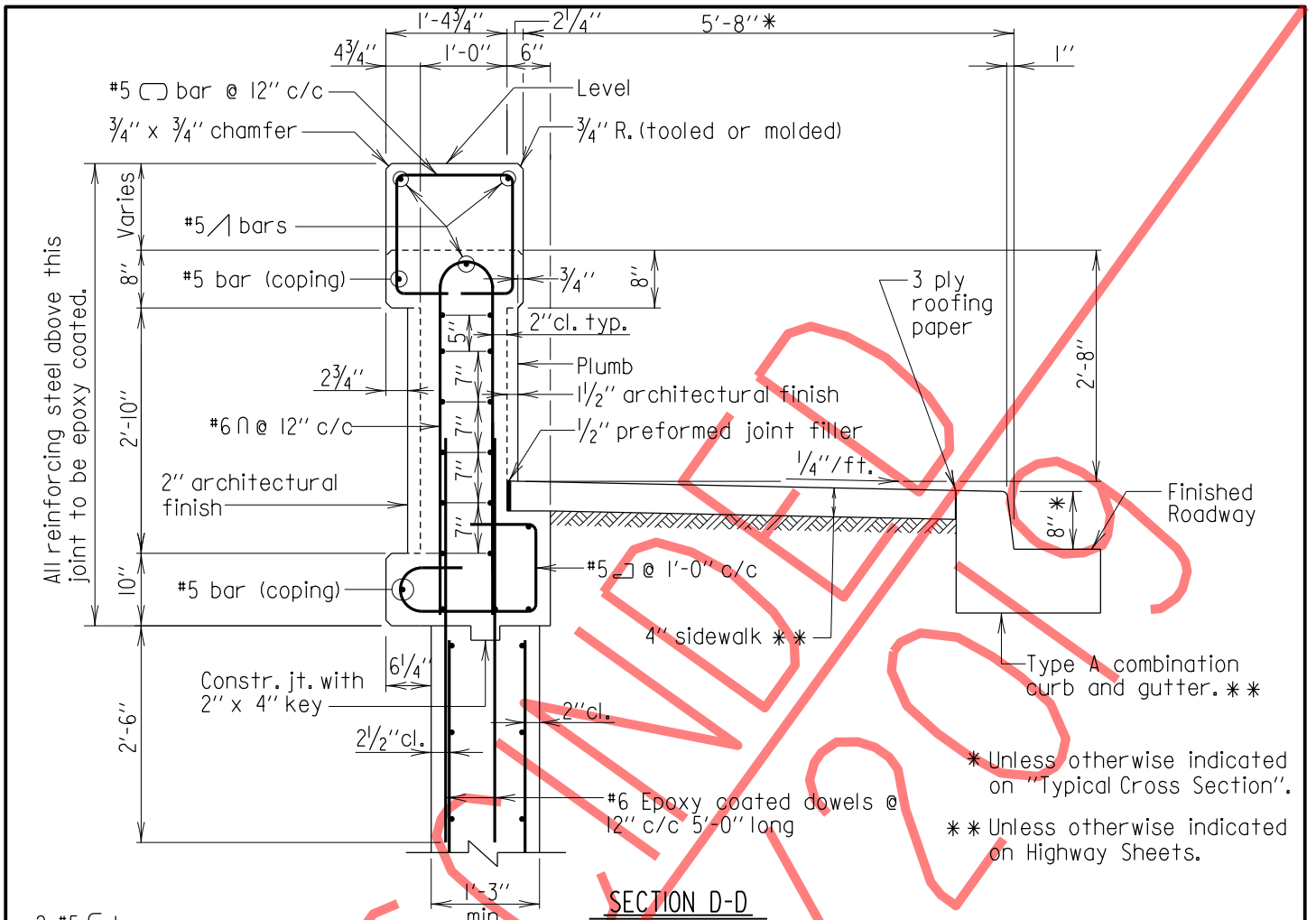
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

**PARAPET ENDPOST FOR ABUTMENTS WITH
FIXED JOINT AND SIDEWALK**

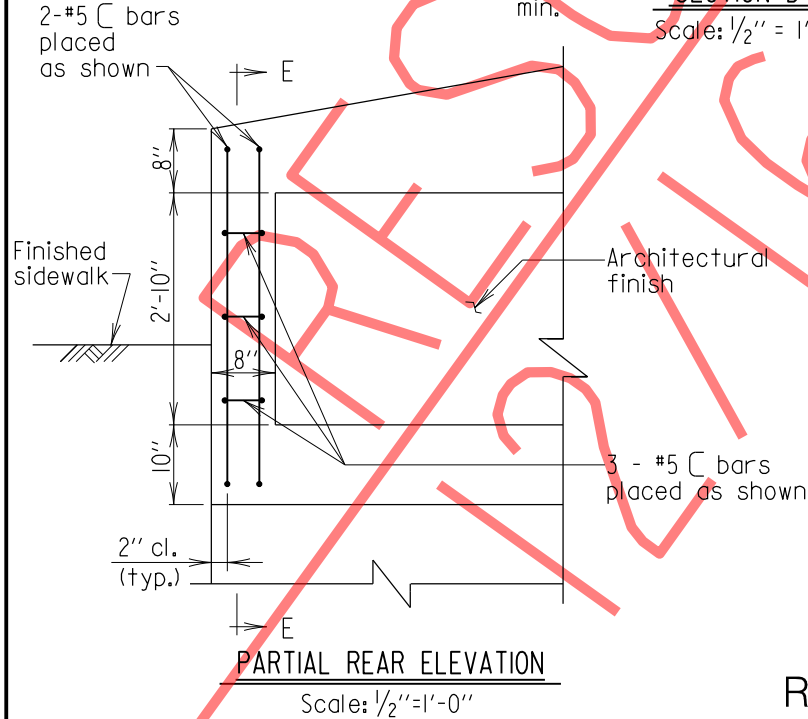
DETAIL NO. SUB-EP(SW)-201

SHEET 5 OF 5

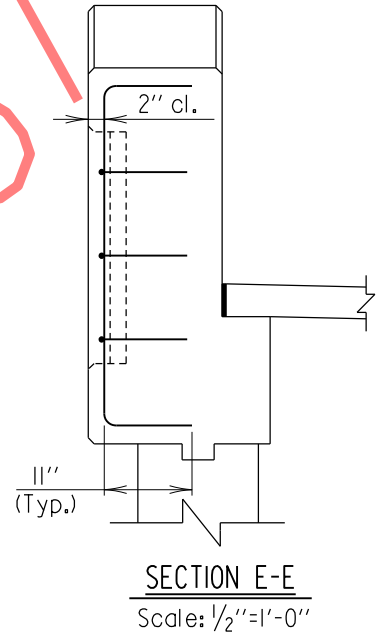
SUBSTRUCTURE - END POST



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



PARTIAL REAR ELEVATION
Scale: 1/2" = 1'-0"



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

RECESSED BACK * USEABLE DRAFT *

Note:
All longitudinal bars are #5 spaced as shown.

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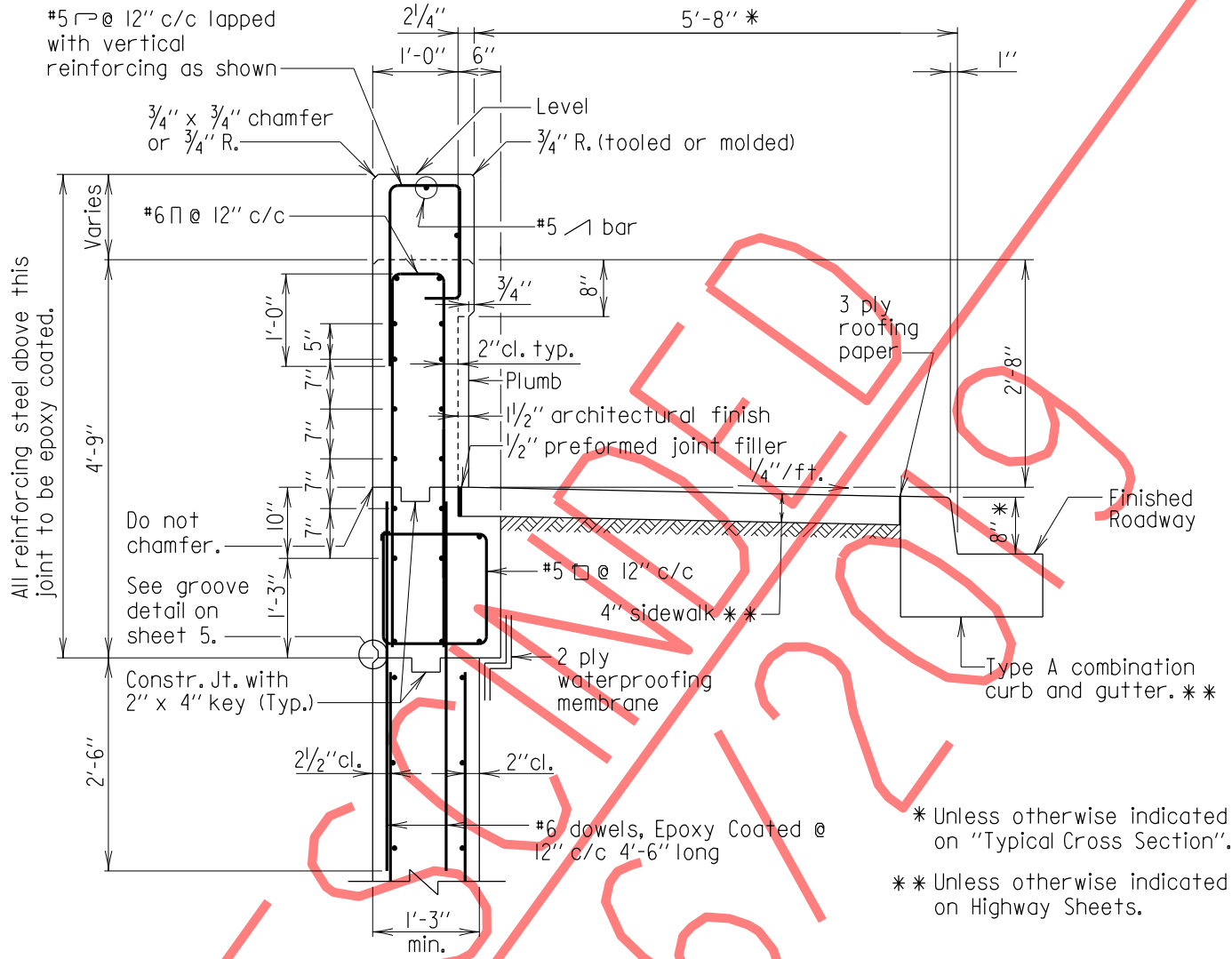
STATE OF MARYLAND
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STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

PARAPET ENDPOST FOR ABUTMENTS WITH
FIXED JOINT AND SIDEWALK

DETAIL NO. SUB-EP(SW)-201

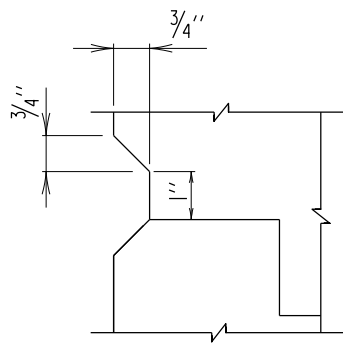
SHEET 5 OF 5

SUBSTRUCTURE - END POST



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

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



GROOVE DETAIL
 Scale: 3" = 1'-0"

Note:
 All longitudinal bars are #5 spaced as shown.

STRAIGHT BACK

*** USEABLE DRAFT ***

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PARAPET ENDPOST FOR ABUTMENTS WITH
 EXPANSION JOINT CROSS BEAM AND SIDEWALK

DETAIL NO. SUB-EP(SW)-201

SHEET 5 OF 5

SUBSTRUCTURE - END POST