

# **VOLUME V – PART 3**

## **CURRENT DETAILS**



**VIRGINIA DEPARTMENT OF  
TRANSPORTATION**



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

**Gregory A. Whirley**  
COMMISSIONER

May 3, 2013

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

## MEMORANDUM

**TO:** Holders of Volume V – Part 3: Current Details (Standards)

The approach slab standards are revised due to concerns by bridge contractors as to grooving requirements for approach slabs (at grade, with asphalt overlay or buried) and whether the grooving should be in accordance with the *VDOT Road and Bridge Specifications*, Section 316 or Section 404. For simplicity, the standards are revised rather than the specifications. The payment for grooving on the approach slabs was previously addressed in the July 9, 2012 revision to the Manual of the Structure and Bridge Division, Volume V – Part 2, Chapter 3: Estimates quantities tables for superstructure. The note is added on the standard sheets for the Contractor's information.

## VOIDED:

None

## NEW ISSUES:

None

## REVISIONS:

<u>File Number</u>	<u>Description of change(s)</u>
--------------------	---------------------------------

TOC-1 thru -4	Revised date of sheets.
---------------	-------------------------

Page 2  
May 3, 2013

BAS-11 thru 20AR

Added note for grooving requirements and quantities.

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

**Gregory A. Whirley**  
COMMISSIONER

March 27, 2013

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

## MEMORANDUM

**TO:** Holders of Volume V – Part 3: Current Details (Standards)

### VOIDED:

<u>File Number</u>	<u>Description of change(s)</u>
BCF-1-1and BCF-1-2,	Contents of standard divided over two sheets.
BCF-2-1and BCF-2-2	Standard and notes deleted. General details for curved girder bridge cross frames are shown in Volume V – Part 2, Chapter 11.

### NEW ISSUES:

<u>File Number</u>	<u>Description of change(s)</u>
BCF-4-1and BCF-5-1	Replaced BCF-1-1
BCF-4-2 and BCF-5-2	Notes to Designer for standard sheets.

### REVISIONS:

TOC-1 and 2	Revised applicable names and dates.
-------------	-------------------------------------

Page 2  
March 27, 2012

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

**Gregory A. Whirley**  
COMMISSIONER

December 14, 2012

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

## MEMORANDUM

**TO:** Holders of Volume V – Part 3: Current Details (Standards)

### VOIDED:

None

### NEW ISSUES:

<u>File Number</u>	<u>Description of change(s)</u>
BPPS-1-1, BPPS-2-1, and BPPS-3-1	Added Pier Protection System standards. Supplemental information has been added to Manual of the Structure and Bridge Division, Volume V – Part 2, Chapter 15.
BPPS-1-2, BPPS-1-3, BPPS-2-2, BPPS-3-2, and BPPS-3-3	Notes to Designer for standard sheets.

### REVISIONS:

<u>File Number</u>	<u>Description of change(s)</u>
TOC-1, 5 and 8 thru 12	Revised date of sheet and updated to reflect the inclusion of new standards.
BCR-3-1 and BCR-4-1	Notes: Deleted reference to terminal walls; Revised the note to remove reference to dimensions and to omit reference to different cross slopes and slab depths; Reinforcing Steel: Deleted pin diameter for RU0502 rebar; PIERS: Revised detail to show 1'-7" depth of deflection joint.

**REVISIONS (cont'd):**

<u>File Number</u>	<u>Description of change(s)</u>
BCR-3-2 and BCR-4-2	Notes to Designer: Revised note defining Contractor's responsibility; Omitted requirement to add lengths for rebars in steel schedule.
BCR-6-1 and BCR-7-1	Notes: Added notes for bevels, Contractor's responsibility, class of concrete and bid item for terminal wall; ELEVATION: Added RW0403 to spacing; SECTION B-B: Added RW0403 rebar; Reinforcing steel Schedule: Added RW0403 bar.
BCR-6-2 and BCR-7-2	Notes to Designer: Revised note defining Contractor's responsibility and note pertaining to AW Series bars.
BCR-8-1 and BCR-9-1	Notes: Added notes for bevels, contractor responsibility, class of concrete and bid item for terminal wall.
BCR-8-2 and BCR-9-2	Notes to Designer: Revised note defining Contractor's responsibility.
BIR-1-1 and BIR-2-1	Notes: Omitted reference to BIR-1; SECTION B-B: Added 12 in. dimension to rebar RW0402; Reinforcing steel Schedule: Omitted 11 in. dimension and length for RG0501 rebar.
BIR-1-2 and BIR-2-2	Notes to Designer: Revised note defining Contractor's responsibility, added a note for AW series bars.
BIR-1-3 and BIR-2-3	Reinforcing steel Schedule: Replaced RL04 series with RG0501.
BIR-3-1	Notes: Revised the note to omit reference to different cross slopes and slab depths.
BIR-4-1 and BIR-5-1	Notes: Omitted reference to BIR-1; Reinforcing steel Schedule: Omitted 11 in. dimension and length for RG0501 rebar.
BIR-4-2 and BIR-5-2	Notes to Designer: Revised note defining Contractor's responsibility.
BIR-4-3 and BIR-5-3	Reinforcing steel Schedule: Replaced RL04 series with RG0501.
BMB-3A-1 and BMB-5A-1	Notes: Added note for class of concrete, revised the note to omit reference to different cross slopes and slab depths.
BMB-3A-2 and BMB-5A-2	Notes to Designer: Revised note defining Contractor's responsibility.

**REVISIONS (cont'd):**

<u>File Number</u>	<u>Description of change(s)</u>
BPB-3A-1 and BPB-3B-1	Notes: Revised the note to omit reference to different cross slopes and slab depths; SECTION D-D: Added 12 in. dimension to rebar RW0402.
BPB-3A-2	Notes to Designer: Revised note defining Contractor's responsibility, added a note for AW series bars.
BPB-3B-2	Notes to Designer: Revised note defining Contractor's responsibility, added a note for AW series bars; Reinforcing steel Schedule: Omitted the length for RL04 series bars.
BPB-3C-1 and BPB-3D-1	Notes: Revised the note to omit reference to different cross slopes and slab depths.
BPB-3C-2	Notes to Designer: Revised note defining Contractor's responsibility; Reinforcing steel Schedule: Omitted the length for RL04 series bars.
BPB-3D-2	Notes to Designer: Revised note defining Contractor's responsibility.
BPB-3D-3	Reinforcing steel Schedule: Omitted the length for RL04 series bars.
BPF-3-1, BPF-4-1 and BPF-5-1	Revised the note pertaining to grounding framing posts and railing.
BR27C-12-1, BR27C-13-1 BR27C-14-1 and BR27C-15-1	Notes: Added note for rounded edges, revised the note to omit reference to different cross slopes and slab depths.
BR27C-12-2 and BR27C-15-2	Notes to Designer: Revised note defining Contractor's responsibility.
BR27C-14-2	Notes to Designer: Revised note pertaining to rail connections.
BR27C-12-3 and BR27C-15-3	Reinforcing steel Schedule: Omitted the length for RL04 series bars.
BR27C-13-3 and BR27C-14-3	Notes to Designer: Revised note defining Contractor's responsibility; Reinforcing steel Schedule: Omitted the length for RL04 series bars.

**REVISIONS (cont'd):**

<u>File Number</u>	<u>Description of change(s)</u>
BR27D-8-1, BR27D-9-1 and BR27D-10-1	Notes: Added note for rounded edges, revised the note to omit reference to different cross slopes and slab depths.
BR27D-8-2	Notes to Designer: Revised note defining Contractor's responsibility.
BR27D-8-3	Reinforcing steel Schedule: Omitted the length for RL04 series bars.
BR27D-9-3 and BR27D-10-3	Notes to Designer: Revised note defining Contractor's Responsibility; Reinforcing steel Schedule: Omitted the length for RL04 series bars.
BR27T-1-1 thru BR27T-9-1	Notes: Added notes for bevels, Contractor's responsibility, class of concrete and bid item for terminal wall; Title block: Added "C" and "D" to BR27 series.
BR27T-1-2, BR27T-2-2, BR27T-5-2, BR27T-6-2	Notes to Designer: Revised note defining Contractor's responsibility and note pertaining to AW Series bars.
BR27T-3-2, BR27T-4-2, BR27T-7-2, BR27T-8-2 BR27T-9-2	Notes to Designer: Revised note defining Contractor's responsibility.

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

**Gregory A. Whirley**  
COMMISSIONER

August 30, 2012

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

## MEMORANDUM

**TO:** Holders of Volume V – Part 3: Current Details (Standards)

The revision is intended to clarify modifications to standards. Design waivers/exceptions are required when changes to the standards are made.

### VOIDED:

None

### NEW ISSUES:

None

### REVISIONS:

<u>File Number</u>	<u>Description of change(s)</u>
TOC-1	Revised date of sheet.
INSTR-1	Revised modification policy; added instructions for completing the sheet.

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

**Gregory A. Whirley**  
COMMISSIONER

August 7, 2012

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

## MEMORANDUM

**TO:** Holders of Volume V – Part 3: Current Details (Standards)

### NOTES:

Standards are revised for corrosion resistant reinforcing (CRR) steel designations (Class I, II or III) that will be effective with the March 2013 ad date. For projects going to ad prior to that date, CRR steels that are designated on the standards must be changed to one or more of the following:

- corrosion resistant reinforcing steel – low carbon chromium
- corrosion resistant reinforcing steel – stainless clad
- corrosion resistant reinforcing steel – solid stainless

For more information on CRR, see the current IIM-S&B-81.

### VOIDED:

None

### NEW ISSUES:

None

**REVISIONS:**

<u>File Number</u>	<u>Description of change(s)</u>
TOC-1, 4 thru 12	Revised date of applicable sheets.
BBD-8	Deleted Chamfer Detail and stud shear connector details in SECTIONS A-A and B-B. Under Notes, added sheet reference and deleted note for sole plate to be galvanized.
BCR-3-1 and BCR-4-1	Notes: Added "Class ..." to Corrosion Resistant Reinforcing Steel; revised note for different cross slopes and slab depths.
BCR-6-1 thru BCR-9-1	Notes: Added "Class ..." to Corrosion Resistant Reinforcing Steel.
BCR-3-2, BCR-4-2 and BCR-6-2 thru BCR-9-2	Notes: Replaced "type" with "Class I, II or III."
BCS-28A-1, BCS-30A-1 thru BCS-33A-1	Notes: Added "Class ..." to Corrosion Resistant Reinforcing Steel.
BCS-28A-3 and BCS-30A-3 thru BCS-33A-3	Notes: Replaced "type" with "Class I, II or III."
BGL-1-1	Notes: Type of bolt to use with galvanized and unpainted angles.
BGL-2-1	Notes: H. S. bolts for angles to be galvanized.
BIR-1-2, BIR-2-2, BIR-4-2 and BIR-5-2	Notes to Designer: Deleted fourth note.
BIR-3-1	Notes: Added "Class ..." to Corrosion Resistant Reinforcing Steel; added ASTM references for round head bolts, nuts and washers in fifth note; revised note for different cross slopes and slab depths.
BIR-3-2	Notes: Replaced "type" with "Class I, II or III."
BMB-3A-1 and BMB-5A-1	Notes: Added "Class ..." to Corrosion Resistant Reinforcing Steel; revised note for different cross slopes and slab depths.
BMB-3A-2 and BMB-5A-2	Notes to Designer: Deleted second note and replaced "type" with "Class I, II or III."

**REVISIONS (cont'd)**

<u>File Number</u>	<u>Description of change(s)</u>
BPB-3A-1, BPB-3B-1, BPB-3C-1 and BPB-3D-1	Reinforcing Steel Schedule: Revised the dimensions and length of reinforcing bar RV0502; SECTION A-A: Added 2 in. dimension from reinforcing bar to face of curb; Notes: Added "Class ..." to Corrosion Resistant Reinforcing Steel; revised note for different cross slopes and slab depths.
BPB-3A-2, BPB-3B-2, BPB-3C-2, BPB-3D-2 and BPB-3D-3	Notes to Designer: Deleted note and replaced "type" with "Class I, II or III."
BPP-1-1	Added PROJECTING BAR CLIP DETAIL and revised clip note in PILE BUILD UP ELEVATION.
BR27C-12-1 thru BR27C-15-1 and BR27D-8-1 thru BR27D-10-1	Notes: Added "Class ..." to Corrosion Resistant Reinforcing Steel; added ASTM references for round head bolts, nuts and washers; revised diameter of bolt and hole to 3/4" and 7/8" respectively in seventh note; deleted nut cover and revised bolt extensions; revised cross slopes and slab depths. BASE PLATE DETAIL: Added "Not to scale" and redrew slots to proper scale.
BR27C-16-1 and BR27D-11-1	Moved notes to this sheet.
BR27C-12-3 thru BR27C-15-3 and BR27D-8-3 thru BR27D-10-3	Notes: Replaced "type" with "Class I, II or III."
BR27T-1-1 thru BR27T-9-1	Notes: Added "Class ..." to Corrosion Resistant Reinforcing Steel.
BR27T-1-2, BR27T-2-2, BR27T-3-3, BR27T-4-3, BR27T-5-2, BR27T-6-2, BR27T-7-3, BR27T-8-3 and BR27T-9-2	Notes: Replaced "type" with "Class I, II or III."
BTB-1-1	SIDE ELEVATION: Corrected location of the 3" dimension from bolt to top of deck; PLAN VIEW: Revised to show corrected post at SECTION A-A; ELEVATION VIEW: Revised to show corrected posts and align the end of bridge in both views. Added "Not to Scale" to sheet.
BTC-4-1 thru BTC-7-1	Added payment note.

**REVISIONS (cont'd)**

<u>File Number</u>	<u>Description of change(s)</u>
BTC-4-1 and BTC-5-1	Notes: Added type of bolt to use with galvanized and unpainted angles.
BTC-6-1 and BTC-7-1	Notes: H. S. bolts for angles to be galvanized.
BWL-1-1	Notes: Added type of bolt to use with galvanized and unpainted angles.
BWL-2-1	Notes: H. S. bolts for angles to be galvanized.

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

**Gregory A. Whirley**  
COMMISSIONER

April 6, 2012

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

## MEMORANDUM

**TO:** Holders of Volume V – Part 3: Current Details (Standards)

### VOIDED:

<u>File Number</u>	<u>Description of change(s)</u>
BCR-1-1; BCR-2-1; and BCR-5-1 BCR-1-2; BCR-2-2 and BCR-5-2 BR27C-1-1 thru BR27C-11-1; BR27C-1-2 thru BR27C-11-2; BR27C-1-3; BR27C-2-3; BR27C-4-3 thru BD27C-11-3 BR27D-1-1 thru BR27D-7-1; BR27D-1-2 thru BR27D-7-2; BR27D-1-3; BR27D-2-3 and BR27D-4-3 thru BR27D-7-3	Replaced with series showing terminal wall shown either on abutment wingwall or superstructure

**NEW ISSUES:**

<u>File Number</u>	<u>Description of change(s)</u>
BCR-7-1	Added new standard showing cast-in-place terminal wall on abutment U-back wingwall.
BCR-7-2	Added notes to designer.
BCR-8-1 and BCR-9-1	Added new standard showing cast-in-place terminal wall on superstructure.
BCR-8-2, BCR-9-2 and BCR-9-3	Added notes to designer.
BIR-1-3 and BIR-2-3	Added notes to designer.
BIR-4-1 and BIR-5-1	Added new standard showing cast-in-place terminal wall on superstructure.
BIR-4-2; BIR-4-3; BIR-5-2 and BIR-5-3	Added notes to designer.
BPB-3C-1 and BPB-3D-1	Added new standard showing cast-in-place terminal wall on superstructure.
BPB-3C-2, BPB-3D-2 and BPB-3D-3	Added notes to designer.
BR27C-12-1	Replaced BR27C-1. Added notes referring to railing, base plate details and details showing continuity between railing and terminal wall on superstructure. Moved terminal wall and U back wing details to BR27T-1. Added reinforcing steel schedule for railing and sheet references.
BR27C-12-2	Replaced BR27C-1-2. Revised first note and miscellaneous details note. Added a note defining the Contractor's responsibility to determine the number of reinforcing bars and other details required.
BR27C-12-3	Replaced BR27C-1-3. Added a note to complete the type of corrosion resistant reinforcing steel required and the dimensions and lengths of rebars in schedule. Added sheet references.

**NEW ISSUES (cont'd)**

<u>File Number</u>	<u>Description of change(s)</u>
BR27C-13-1	Replaced BR27C-6. Added notes referring to railing, base plate details and details showing continuity between railing and terminal wall on superstructure. Deleted terminal wall and U back wing details. Added reinforcing steel schedule for railing and sheet references.
BR27C-13-2	Replaced BR27C-6-2. Revised miscellaneous details note.
BR27C-13-3	Replaced BR27C-6-3. Added a note to complete the type of corrosion resistant reinforcing steel required and the dimensions and lengths of rebars in schedule. Added a note defining the Contractor's responsibility to determine the number of reinforcing bars and other details required. Added sheet references.
BR27C-14-1	Replaced BR27C-8. Added notes referring to railing, base plate details and details showing continuity between railing and terminal wall on superstructure. Moved terminal wall and U back wing details to BR27T-5. Added reinforcing steel schedule for railing and sheet references.
BR27C-14-2	Replaced BR27C-8-2. Revised first note and miscellaneous details note.
BR27C-14-3	Replaced BR27C-8-3. Added a note to complete the type of corrosion resistant reinforcing steel required and the dimensions and lengths of rebars in schedule. Added a note defining the Contractor's responsibility to determine the number of reinforcing bars and other details required. Added sheet references.
BR27C-15-1	Replaced BR27C-10-1. Added notes referring to railing, base plate details and details showing continuity between railing and terminal wall on superstructure. Moved terminal wall and U back wing details to BR27T-5. Added reinforcing steel schedule for railing and sheet references.
BR27C-15-2	Replaced BR27C-10-2. Revised first note and miscellaneous details note. Added a note defining the Contractor's responsibility to determine the number of reinforcing bars and other details required.

**NEW ISSUES (cont'd)**

<u>File Number</u>	<u>Description of change(s)</u>
BR27C-15-3	Replaced BR27C-10-3. Added a note to complete the type of corrosion resistant reinforcing steel required and the dimensions and lengths of rebars in schedule. Added sheet references.
BR27C-16-1	Replaced BR27C-3-1. Removed base plate detail and reinforcing steel schedule. Omitted all notes except fabricator notes. Added sheet references.
BR27C-16-2	Replaced BR27C-3-2. Revised first note. Omitted notes pertaining to reinforcing steel and the note defining the Contractor's responsibility to determine the number of reinforcing bars and other details required.
BR27D-8-1	Replaced BR27D-1. Added notes referring to railing, base plate details and details showing continuity between railing and terminal wall on superstructure. Moved terminal wall and U back wing details to BR27T-1. Added reinforcing steel schedule for railing and sheet references.
BR27D-8-2	Replaced BR27D-1-2. Revised first note and miscellaneous details note. Added a note defining the Contractor's responsibility to determine the number of reinforcing bars and other details required.
BR27D-8-3	Replaced BR27D-1-3. Added a note to complete the type of corrosion resistant reinforcing steel required and the dimensions and lengths of rebars in schedule. Added sheet references.
BR27D-9-1	Replaced BR27D-4. Added notes referring to railing, base plate details and details showing continuity between railing and terminal wall on superstructure. Deleted terminal wall and U back wing details. Added reinforcing steel schedule for railing and sheet references.
BR27D-9-2	Replaced BR27D-4-2. Revised miscellaneous details note.
BR27D-9-3	Replaced BR27D-4-3. Added a note to complete the type of corrosion resistant reinforcing steel required and the dimensions and lengths of rebars in schedule. Added a note defining the Contractor's responsibility to determine the number of reinforcing bars and other details required. Added sheet references.

**NEW ISSUES (cont'd)**

<u>File Number</u>	<u>Description of change(s)</u>
BR27D-10-1	Replaced BR27D-6-1. Added notes referring to railing, base plate details and details showing continuity between railing and terminal wall on superstructure. Moved terminal wall and U back wing details to BR27T-5. Added reinforcing steel schedule for railing and sheet references.
BR27D-10-2	Replaced BR27D-6-2. Revised miscellaneous details note.
BR27D-10-3	Replaced BR27D-6-3. Added a note defining the Contractor's responsibility to determine the number of reinforcing bars and other details required. Added a note to complete the type of corrosion resistant reinforcing steel required and the dimensions and lengths of rebars in schedule. Added sheet references.
BR27D-11-1	Replaced BR27D-3-1. Removed base plate detail and reinforcing steel schedule. Omitted all notes except fabricator notes. Added sheet references.
BR27D-11-2	Replaced BR27D-3-2. Revised first note. Omitted notes pertaining to reinforcing steel and the note defining the Contractor's responsibility to determine the number of reinforcing bars and other details required.
BR27T-1-1 and BR27T-5-1	Added new standard showing cast-in-place terminal wall on abutment U-back wingwall. Revised distance to bolts in View A-A.
BR27T-1-2; BR27T-1-3; BR27T-2-2; BR27T-2-3; BR27T-3-2; BR27T-3-3; BR27T-4-2; BR27T-4-3; BR27T-5-2; BR27T-5-3; BR27T-6-2; BR27T-6-3; BR27T-7-2; BR27T-7-3; BR27T-8-2; BR27T-8-3; BR27T-9-2 and BR27T-9-3	Added notes to designer. Revised distance to bolts in notes.
BR27T-2-1 and BR27T-6-1	Added new standard showing cast-in-place terminal wall on abutment wingwall. Revised distance to bolts in View A-A.

**NEW ISSUES (cont'd)**

<u>File Number</u>	<u>Description of change(s)</u>
BR27T-3-1; BR27T-4-1; BR27T-7-1 and BR27T-8-1	Added new standard showing cast-in-place terminal wall on superstructure. Revised distance to bolts in View A-A.
BR27T-9-1	Added new standard showing cast-in-place terminal wall on approach slab. Revised distance to bolts in View A-A.

**REVISIONS:**

<u>File Number</u>	<u>Description of change(s)</u>
TOC-1, 5 and 8 thru 11	Revised dates of applicable sheets.
BCR-3-1	Added notes referring to railing and details showing continuity between railing and terminal wall on superstructure. Omitted terminal wall reinforcing steel from schedule. Added sheet references.
BCR-3-2	Revised miscellaneous details note. Added a note to complete the type of corrosion resistant reinforcing steel required and the dimensions and lengths of rebars in schedule. Added sheet references.
BCR-4-1	Added notes referring to railing and details showing continuity between railing and terminal wall on superstructure. Omitted terminal wall reinforcing steel from schedule. Added sheet references.
BCR-4-2	Revised miscellaneous details note. Added a note to complete the type of corrosion resistant reinforcing steel required and the dimensions and lengths of rebars in schedule. Added sheet references.
BCR-6-1	Added reinforcing steel schedule. Omitted notes referring to railing. Revised distance to bolts in View A-A. Added sheet references.
BCR-6-2	Added a note defining the Contractor's responsibility to determine the number of reinforcing bars and other details required. Under View A-A, revised distance to bolts. Added sheet references.

**REVISIONS (cont'd)**

<u>File Number</u>	<u>Description of change(s)</u>
BIR-1-1	Revised distance to bolts in View A-A.
BIR-1-2	Revised distance to bolts in notes.
BIR-2-1	Revised distance to bolts in View A-A.
BIR-2-2	Revised distance to bolts in notes.
BIR-3-1	Revised copyright date.
BIR-3-2	Revised usage of standard to include BIR-4 and BIR-5. Added sheet reference.
BPB-3A-1 and BPB-3B-1	Revised distance to bolts in Section D-D. Corrected misspelled word, "guardrail".
BPB-3A-2 and BPB-3B-2	Revised distance to bolts in notes. Added note to complete lengths of rebars in schedule and sheet references.

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

Gregory A. Whirley  
COMMISSIONER

September 9, 2010

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

## MEMORANDUM

**TO:** Holders of Volume V – Part 3: Current Details (Standards)

## REVISIONS:

<u>File Number</u>	<u>Description of change(s)</u>
TOC-1, TOC-9, TOC-10 and TOC-11	Revised dates of applicable sheets.
BR27C-1, BR27C-2 BR27C-6, BR27C-7 BR27C-8, BR27C-9 BR27C-10 and BR27C-11	Decreased clearance of RG04 series to face of rail from 2” to 1 ½” in Section E-E.
BR27C-3	Revised RG0401 and RG0402 dimension from 6½” to 7” in Reinforcing Steel Schedule.
BR27C-1-2 and BR27C-2-2	Revised section depiction header.
BR27C-2-3	Removed “and U-back Wing” from sheet header.
BR27C-6-2, BR27C-7-2, BR27C-8-2, BR27C-9-2, BR27C-10-2 and BR27C-11-2	Revised usage language to include all pedestrian and/or bicycle facilities.
BR27D-1 and BR27D-2	Decreased clearance of RG04 series to face of rail from 2” to 1 ½” in Section E-E and removed RG0402 callout from “PIERS – Continuous – without joint in slab” detail.

**REVISIONS (cont'd)**

<u>File Number</u>	<u>Description of change(s)</u>
BR27D-3	Revised RG0401 and RG0402 dimension from 6½” to 7” in Reinforcing Steel Schedule. Revised detail layout to look similar to standard BR27C-3.
BR27D-4 and BR27D-5 BR27D-6 and BR27D-7	Decreased clearance of RG04 series to face of rail from 2” to 1 ½” in Section E-E.
BR27D-1-2 and BR27D-2-2	Revised section depiction header.
BR27D-4-2 and BR27D-5-2	Revised usage language to include all pedestrian and/or bicycle facilities and revised 1’-6” to 1’-7” in final note regarding Section D-D.
BR27D-6-2 and BR27D-7-2	Revised usage language to include all pedestrian and/or bicycle facilities.

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

**Gregory A. Whirley**  
Acting COMMISSIONER

June 14, 2010

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

## MEMORANDUM

**TO:** Holders of Volume V – Part 3: Current Details (Standards)

### VOIDED:

<u>File Number</u>	<u>Description of change(s)</u>
BPF-3-3	Contents moved to previous sheet. Omitted note pertaining to threaded inserts.
BPF-4-3 and BPF-5-3	Contents moved to previous sheet.
BR27C-4 and BR27C-5	These rails are no longer used for sidewalk (pedestrian) applications.
BR27C-4-2, BR27C-4-3, BR27C-5-2 and BR27C-5-3	Notes are no longer needed.

### NEW ISSUES:

<u>File Number</u>	<u>Description of change(s)</u>
None	

**REVISIONS:**

<u>File Number</u>	<u>Description of change(s)</u>
TOC-1 thru -12	Revised dates of applicable sheets.
BAS-11A thru BAS-20AR	Revised notes: Add "Cost included in select backfill" to third paragraph.
BBD-8-1	Added a note to call for the sole plate to be galvanized. Revise distance to stud from 5 in. to 6 in. in Section A-A and B-B. Corrected location of arrowhead in Section A-A.
BCR-1-1	Revised the detail at pier with continuous slab to add "Top of slab." Revised length of rebar AB0402 from 7'-9" to 7'-0" in the reinforcing steel schedule.
BCR-2-1	Revised the detail at pier with continuous slab to delete the curb and add "Top of slab." Revised length of rebar AB0402 from 7'-9" to 7'-0" in the reinforcing steel schedule.
BCR-3-1	Revised length of deflection joint from 1'-9" to 2'-2" and added "Top of slab" in detail at pier with continuous slab. Revised length of rebar AB0402 from 7'-9" to 7'-0" in the reinforcing steel schedule.
BCR-4-1	Revised the detail at pier with continuous slab to delete the curb, revise length of deflection joint from 1'-9" to 2'-2" and added "Top of slab." Revised length of rebar AB0402 from 7'-9" to 7'-0" in the reinforcing steel schedule.
BCR-5-1 and BCR-6-1	Revised terminal wall length from 8'-0" to 7'-3."
BCS-31A-1	Removed extra wording "the post clears" in last note.
BEJ-6-1 and BEJ-7-1	Revised first note to delete "Unless otherwise noted." Added clip in Part Section at Abutment.
BEJ-6/7/10/11/12-6	Revised excess temperature allowance from "25%" to "20%" in third note.
BGL-1 and BGL-2	Revised the note for galvanization of miscellaneous hardware and added a note for structural steel for angles.
BIR-1-1	Revised reinforcing steel schedule and the designation for steel rail tubing from "TS" to "HSS" in all locations. Modified 7'-3" and 6'-9" dimension lines in Terminal Wall View. Noted location of the RL04 series reinforcement in Elevation View.

## REVISIONS (cont'd)

<u>File Number</u>	<u>Description of change(s)</u>
BIR-2-1	Revised reinforcing steel schedule and designation for steel rail tubing from "TS" to "HSS" in all locations. Noted location of the RL04 series reinforcement in Elevation View.
BIR-3-1	Revised designation for steel rail tubing from "TS" to "HSS" in all locations.
BPF-3-1	Modified Notes, PLAN, and Section A-A.
BPF-4-1	Modified Notes, and PLAN.
BPF-5-1	Revised misspelled word "welded" in tenth note. Modified Notes, and PLAN.
BPF-3-2, BPF-4-2 and BPF-5-2	Deleted the guidelines and considerations for placement of fence. Added a reference to new Volume V – Part 2, Chapter 30, Fencing (Pedestrian) for placement guidelines.
BR27C-1 and BR27C-2	Deleted "or top of sidewalk" from Section D-D and "without sidewalk" from Section E-E.
BR27C-1-2 and BR27C-2-2	Notes to Designer revised to delete the sidewalk (pedestrian) application for these rails and the modified detail for sidewalk applications. Railing standard is to be used only as a traffic barrier.
BR27C-3-1	Corrected misspelled word "Contractor" in eighteenth note. Revise designation for steel rail tubing from "TS" to "HSS" in all locations.
BR27C-3-2	Notes to Designer revised to delete reference to standards BR27C-4 and BR27C-5 which are voided.
BR27C-6-2, BR27C-7-2, BR27C-8-2, BR27C-9-2, BR27C-10-2 and BR27C-11-2	Notes to Designer revised to replace "multi-use" with "shared use."
BR27D-1 and BR27D-2	Deleted "or top of sidewalk" from Section D-D, "without sidewalk" from Section E-E (without sidewalk), Section E-E (with sidewalk) and reference to rebar RG0402 in Elevation View.
BR27D-1-2 and BR27D-2-2	Notes to Designer revised to delete the sidewalk (pedestrian) application for these rails and the detail for sidewalk applications.

**REVISIONS (cont'd)**

<u>File Number</u>	<u>Description of change(s)</u>
BR27D-3-1	Corrected misspelled word "Contractor" in eighteenth note. Revised designation for steel rail tubing from "TS" to "HSS" in Section A-A.
BR27D-4-2, BR27D-5-2, BR27D-6-2 and BR27D-7-2	Notes to Designer revised to replace "multi-use" to "shared use."
BTC-4	Revised the note for steel fittings/rods and the note for structural steel for angles.
BTC-5	Revised the note for steel fittings/rods and the note for structural steel for angles. Corrected misspelled word "positive" in fourth note.
BTC-6	Revised the note for structural steel for angles and moved the fifth note for threaded couplings to the fourth note position.
BTC-7	Revised the note for structural steel for angles.
BWL-1 and BWL-2	Revised the note for galvanization of miscellaneous hardware and added a note for structural steel for angles.

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

David S. Ekern, P.E.  
COMMISSIONER

January 7, 2010

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

## MEMORANDUM

**TO:** Holders of Volume V – Part 3: Current Details (Standards)

## VOIDED STANDARDS:

None

## NEW ISSUES:

<u>File Number</u>	<u>Description of changes(s)</u>
TOC-12	Added new sheet to Table of Contents.

## REVISIONS:

<u>File Number</u>	<u>Description of changes(s)</u>
TOC-1 and TOC-11	Revised date.
BCF-2	Made miscellaneous drafting changes.
BCR-5 and BCR-6	Revised the reinforcing steel note to call for corrosion resistant reinforcing steel (CRR).
BCR-5-2 and BCR-6-2	Added instructions for the designer to specify the type of CRR.
BCS-28A, BCS-30A, BCS-31A, BCS-32A, and BCS-33A	Revised the reinforcing steel note to call for corrosion resistant reinforcing steel (CRR).

**REVISIONS (cont'd):**

<u>File Number</u>	<u>Description of changes(s)</u>
BCS-28A-3, BCS-30A-3, BCS-31A-3, BCS-32A-3, and BCS-33A-3	Added instructions for the designer to specify the type of CRR.
BIR-3	Revised the reinforcing steel note to call for corrosion resistant reinforcing steel (CRR).
BIR-3-2	Added instructions for the designer to specify the type of CRR.
BMB-3A and BMB-5A	Revised the reinforcing steel note to call for corrosion resistant reinforcing steel (CRR).
BMB-3A-2 and BMB-5A-2	Added instructions for the designer to specify the type of CRR.
BPB-3A and BPB-3B	Revised the reinforcing steel note to call for corrosion resistant reinforcing steel (CRR).
BPB-3A-2 and BPB-3B-2	Added instructions for the designer to specify the type of CRR.
BPP-1	Revised the ninth note to call for hot dip galvanized reinforcing steel in bridges where piles are exposed.
BR27C-3 and BR27D-3	Revised the reinforcing steel note to call for corrosion resistant reinforcing steel (CRR).
BR27C-3-2 and BR27D-3-2	Added instructions for the designer to specify the type of CRR.

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

David S. Ekern, P.E.  
COMMISSIONER

November 2, 2009

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

## MEMORANDUM

**TO:** Holders of Volume V – Part 3: Current Details (Standards)

### VOIDED STANDARDS:

None

### NEW ISSUES:

<u>File Number</u>	<u>Description of changes(s)</u>
TOC-12	Added page to Table of Contents.
BTB-1-1 and BTB-1-2	Thrie-Beam Guardrail added.

### REVISIONS:

<u>File Number</u>	<u>Description of changes(s)</u>
TOC-1 to TOC-11	Updated to reflect the inclusion of new standard.

Page 2  
November 2, 2009

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

David S. Ekern, P.E.  
COMMISSIONER

May 29, 2009

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current details (Standards)

## MEMORANDUM

**TO:** Holders of Volume V – Part 3: Current Details (Standards)

**NOTE: Effective with the December Advertisement, Standards shall be sealed and signed in accordance with Volume V – Part 2, File No. 01.16.1 thru 01.16.7.**

## VOIDED STANDARDS:

<u>File Number</u>	<u>Description</u>
BEJ-8-3 and BEJ-9-4	Replaced by new standards.
BEJ-6/7/8/9-5 thru -10	NOTES TO DESIGNER: Replaced by new notes to designer.

## NEW ISSUES:

<u>File Number</u>	<u>Description of changes(s)</u>
BEJ-10-3, BEJ-11-4 and BEJ-12-5	Added at grade details for sliding plates. Eliminated skewed bearing stiffener detail. Minor drafting corrections.
BEJ-6/7/10/11/12-6 thru -11	NOTES TO DESIGNER: Sliding plate required at pedestrian and/or bicycle facilities regardless of tooth length. Added notes on use of computer program.

## REVISIONS:

<u>File Number</u>	<u>Description of changes(s)</u>
All standard sheets	All standard sheets have been revised to reflect the border for sealing and signing of plans.

**REVISIONS:**

<u>File Number</u>	<u>Description of changes(s)</u>
BAS-11-1 thru BAS-20AR-1	Minor drafting corrections.
BBD-6-1, BBD-7A-2 and BBD-7B-3	Minor corrections to Notes.
BBD-8-1	Minor drafting corrections.
BBD-8-2	NOTES TO DESIGNER: Added note on use of computer program.
BBD-9-1	Modified Notes.
BBD-9-2	NOTES TO DESIGNER: Added note on use of computer program.
BCF-1-1 and BCF-2-1	Minor drafting corrections.
BCR-1-1 thru BCR-4-1	Added dimensions to detail for slab continuous over piers and minor corrections.
BCR-5-1 thru BCR-6-1	Modified terminal section.
BCS-21A-1 thru BCS-30A-1	Minor drafting corrections.
BCS-31A-1	Corrected rebar designation in PLAN and minor drafting corrections.
BCS-32A-1	Minor drafting corrections.
BCS-33A-1	Corrected rebar designation in PLAN and minor drafting corrections.
BEJ-1-1 thru BEJ-3-1	Minor drafting corrections.
BEJ-6-1 thru BEJ-7-2	Minor drafting corrections. Updated sheet references.
BGL-1-1	Minor drafting corrections.
BGL-1-2 and BGL-2-2	NOTES TO DESIGNER: Added note on location of utilities.
BIR-1-1 and BIR-2-1	Modified terminal section and minor drafting corrections.
BIR-3-1	Minor drafting correction.
BMB-3A-1	Deleted PART PLAN and minor correction.
BMB-5A-1	Deleted PART PLAN and minor corrections.
BPB-3A-1 thru BPB-3B-1	Modified terminal section, deleted PART PLAN and minor drafting corrections.
BPF-3-1 thru BPF-5-1	Modified details to reflect larger post size required. Added note for pipe material requirements. Minor drafting corrections.
BPF-3-2 thru BPF-5-2	NOTES TO DESIGNER: Modified weight of fence per foot for use in design.
BPP-1-1	Minor drafting corrections.

**REVISIONS:**

<u>File Number</u>	<u>Description of changes(s)</u>
BR27C-1-1 thru BR27C-2-1	Modified terminal wall and minor drafting corrections.
BR27C-3-1	Corrected BASE PLATE DETAIL and minor drafting correction.
BR27C-4-1 thru BR27C-11-1	Modified terminal wall and minor drafting corrections.
BR27D-1-1 thru BR27D-2-1	Modified terminal wall and minor drafting corrections.
BR27D-3-1	Corrected BASE PLATE DETAIL and minor drafting correction.
BR27D-4-1 thru BR27D-7-1	Modified terminal wall and minor drafting corrections.
BTC-4-1 thru BTC-7-1	Minor drafting corrections.
BTC-4-2 thru BTC-7-2	Added note on location of utilities.
BWL-1-1 and BWL-2-1	Minor drafting corrections.
BWL-1-2 and BWL-2-2	Added note on location of utilities.

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

David S. Ekern, P.E.  
COMMISSIONER

July 11, 2008

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current details (Standards)

## MEMORANDUM

**TO:** Holders of Volume V – Part 3: Current Details (Standards)

All of the standard sheets in this series have been revised. Two blocks for the P.E. stamp have been added to the lower left hand corner and the copyright date has been changed to 2008. Some details have been rearranged to provide space for the P.E. stamps.

**NOTE: Standard sheets are not required to be sealed and signed at this time.**

## VOIDED STANDARDS:

<u>File Number</u>	<u>Comments</u>
BBD-4	Not cost effective. Range of designs more economical with laminated bearing pads.
BBD-5	Not cost effective. Range of designs more economical with laminated bearing pads.
BPF-2	Standard replaced with standards BPF-4 and BPF-5.

## NEW ISSUES:

<u>File Number</u>	<u>Description</u>
INSTR-2 and -3	Added instructions for external users for accessing Microstation (.dgn) files and for printing manual.

**NEW ISSUES (cont'd):**

<u>File Number</u>	<u>Description</u>
BCR-5	Adding the two blocks for the P.E. stamp to standards BCR-1 and BCR-2 required some of the details to be moved to another sheet. Therefore, the terminal wall details and notes were moved to this sheet. Note added for Contractor to adjust reinforcing steel for horizontal slope and vertical gradient.
BCR-6	Adding the two blocks for the P.E. stamp to standards BCR-3 and BCR-4 required some of the details to be moved to another sheet. Therefore, the terminal wall details and notes were moved to this sheet. Note added for Contractor to adjust reinforcing steel for horizontal slope and vertical gradient.
BCS-30A	Bridge conduit system for lighting for use with the BR27C-series without sidewalk
BCS-31A	Bridge conduit system for lighting for use with the BR27C-series with sidewalk.
BCS-32A	Bridge conduit system for lighting for use with the BR27D-series without sidewalk.
BCS-33A	Bridge conduit system for lighting for use with the BR27D-series with sidewalk.
BPF-4	Pedestrian fence details for use with the BR27C-series and BR27D-series rail without sidewalk.
BPF-5	Pedestrian fence details for use with the BR27C-series and BR27D-series rail with sidewalk.

**REVISIONS:**

<u>File Number</u>	<u>Description of change(s)</u>
TOC-1 thru -11 INSTR-1 BAS-series	Added -DGN link to each standard file. Table of contents updated. Falcon location changed. Deleted capacity note and note that approach slab is not included in bridge contract. Quantity items revised. Corners near abutments revised for skew for approach slabs with sidewalks ( BAS-18L, -18R, -19L, -19R, -20L, -20R, -18AL, -18AR, -19AL, -19AR, -20AL and 20AR).
BCF-2-1	Changed DETAIL A to DETAIL C. Notes: Added note requiring Charpy V- Notch Impact Test. Misc. drafting corrections.
BCR-1-1	Added "Face of rail" to DECK SLABS, SLAB SPANS, and TYPICAL SECTION BETWEEN POSTS. Misc. drafting corrections. Moved some details to new standard BCR-5.

**REVISIONS (cont'd):**

<u>File Number</u>	<u>Description of change(s)</u>
BCR-1-2	NOTES TO DESIGNER: Some notes deleted and moved to BCR-5-2.
BCR-2-1	Added "Face of rail" to DECK SLABS, SLAB SPANS, and TYPICAL SECTION BETWEEN POSTS. Misc. drafting corrections. Moved some details to new standard BCR-5.
BCR-2-2	NOTES TO DESIGNER: Some notes deleted and moved to BCR-5-2.
BCR-3-1	Added "Face of rail" to DECK SLABS, SLAB SPANS, and TYPICAL SECTION BETWEEN POSTS. Misc. drafting corrections. Moved some details to new standard BCR-6.
BCR-3-2	NOTES TO DESIGNER: Some notes deleted and moved to BCR-6-2.
BCR-4-1	Added "Face of rail" to DECK SLABS, SLAB SPANS, and TYPICAL SECTION BETWEEN POSTS. Misc. drafting corrections. Moved some details to new standard BCR-6.
BCR-4-2	NOTES TO DESIGNER: Some notes deleted and moved to BCR-6-2.
BCS-21A-1	NOTES: Last note: Corrected "Section 705" to "Section 700." Circle with 8 under CONDUIT LAYOUT and SECTION A-A: Changed "metal conduit" to "galvanized steel pipe" and clarified details showing 2" conduit and 1" pipe.
BCS-22A-1	NOTES: Last note: Corrected "Section 705" to "Section 700." Circle with 8 under CONDUIT LAYOUT and SECTION A-A: Changed "metal conduit" to "galvanized steel pipe" and clarified details showing 2" conduit and 1" pipe.
BCS-28A-1	NOTES: Last note: Corrected "Section 705" to "Section 700." CONDUIT LAYOUT: Added 1" galvanized pipe.
BCS-29A-1	NOTES: Last note: Corrected "Section 705" to "Section 700." CONDUIT LAYOUT: Added 1" galvanized pipe.
BEJ-3-1	NOTES: "Section 105.02" to "Section 105.10." Deleted last note referencing Section 212 of the specifications.
BIR-1-1	Moved notes to standard BIR-3.
BIR-2-1	Moved notes to standard BIR-3.
BIR-3-1	Notes from BIR-1 and BIR-2 moved to this sheet. Deleted last sentence dealing with bid items. Note added for Contractor to adjust reinforcing steel for horizontal slope and vertical gradient.
BMB-3A-1	SECTION A-A: Added "Face of median curb." Note added for Contractor to adjust reinforcing steel for horizontal slope and vertical gradient.

**REVISIONS (cont'd):**

<u>File Number</u>	<u>Description of change(s)</u>
BMB-5A-1	SECTION A-A: Added "Face of median curb." Note added for Contractor to adjust reinforcing steel for horizontal slope and vertical gradient.
BPB-3A-1	Note added for Contractor to adjust reinforcing steel for horizontal slope and vertical gradient.
BPB-3B-1	Note added for Contractor to adjust reinforcing steel for horizontal slope and vertical gradient.
BPF-3-1	NOTES: Last note: "Section 705" changed to "Section 700."
BR27C-1-1 BR27C-2-1 BR27C-4-1 thru BR27C-11-1	Moved notes to standard BR27C-3. ELEVATION views: Revised post spacing(s) near abutment and at pier.
BR27C-3-1	Moved notes from BR27C-series. Note added for Contractor to adjust reinforcing steel for horizontal slope and vertical gradient. Misc. drafting corrections.
BR27D-1-1 BR27D-2-1 BR27D-4-1 thru BR27D-7-1	Moved notes to standard BR27D-3. ELEVATION views: Revised post spacing(s) near abutment and at pier. SECTION D-D: Plate size corrected to agree with standard BR27D-3.
BR27D-3-1	Moved notes from BR27C-series. Note added for Contractor to adjust reinforcing steel for horizontal slope and vertical gradient. Misc. drafting corrections.

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3.**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

David S. Ekern, P.E.  
COMMISSIONER

August 31, 2007

## MEMORANDUM

**TO:** Holders of Manual

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details

All of the standards in the Manual of the Structure and Bridge Division Volume V – Part 3 have been revised including the NOTES TO DESIGNER. Major revisions include updating the standards to the drafting requirements of the office practice (Manual of the Structure and Bridge Division, Volume V – Part 2, Chapter 1) and conversion to MicroStation V8. Some standard sheets were congested and are now expanded to more sheets, etc. Due to the numerous changes, many editorial in nature, not all of the specific changes will be listed under REVISIONS. Only the major revisions will be noted.

**NOTE:** The three pipe aluminum rail standards used for sidewalk applications have been VOIDED. This rail was not crash tested. The standard may be used for projects through the April 2008 advertisement date. Thereafter, these standards may no longer be used. Two rails (BR27C-series and BR27D-series) that are crash tested have been developed for pedestrian/bicycle, multi-use and as traffic barriers.

### **VOIDED STANDARDS:**

The following standards are VOIDED:

- BCF-3            Cross frame details for curved steel plate girders
- BCS-15A        Bridge conduit system used with three-pipe aluminum rail (BMR-14 and -15)
- BEJ-4 and -5   Replaced with BEJ-6, -7, -8 and -9. Separated concrete and steel beams/girders. Separated details due to congestion of sheet.
- BMR-14        Three-pipe aluminum rail with terminal wall and U-back wingwall
- BMR-15        Three pipe aluminum rail with terminal wall

**VOIDED STANDARDS (cont'd):**

- BMR-18      Three pipe aluminum rail – miscellaneous details
- BTC-8        Telephone conduit system used with concrete T-beams

**NEW ISSUES:**

The following standards are new issues:

- BR27C-1 thru      Steel tubular rail crash tested for TL-4 in various configurations for use as a  
thru -11            traffic barrier and for sidewalk use (pedestrian/bicycle, multi-use).
- BR27D-1            Steel tubular rail crash tested for TL-2 in various configurations for use as a  
thru -7            traffic barrier and for sidewalk use (pedestrian/bicycle, multi-use).
- BEJ-6              Tooth expansion joint for steel beams/girders (part of voided BEJ-4)
- BEJ-7              Tooth expansion joint for concrete beams. (part of voided BEJ-4)
- BEJ-8 and -9      Tooth expansion joint: miscellaneous details (previously BEJ-5)

**REVISIONS:**

As noted in the introduction, only the major changes are noted below:

- BAS-series      Drainage apron note deleted. Since all projects require select backfill, the aggregate base material under the approach slab was deleted (SECTION B-B). For full width slabs, joint section revised.
- BBD-4            Data tables removed and added to NOTES TO DESIGNER. Table expanded requiring designer input.
- BBD-5            Data tables removed and added to NOTES TO DESIGNER. Table expanded requiring designer input.
- BBD-8            Updated sections to show Bulb-T.
- BBD-9            Alternate fixed assembly deleted. Details simplified.
- BCF-1            Added note on welding.

**REVISIONS (cont'd):**

- BCF-2 Deleted cross frames CF9, CF10, CF12 and CF13. Added note on welds. NOTES TO DESIGNER: Deleted details. Details will be placed in Chapter 11 of the office practice in the future.
- BCS-series Corrected longitudinal movement references on some sheets.
- BEJ-1 Deleted three-pipe aluminum rail from SECTION D-D. Modified section allowing for different rails/parapets.  
and -2
- BGL-2 Replaced concrete beam with Bulb-T shape.
- BPF-2 Deleted 3-pipe aluminum rail from sections and changed dimensions in TYPICAL PART SECTION.
- BPP-1 Deleted 22" pile. Changed number of strands for several pile sizes.
- BTC-6 Replaced concrete beam with Bulb-T.  
and -7
- BWL-2 Replaced concrete beam with Bulb-T.

**RETAIN THIS MEMO IN FRONT OF INDEX  
TO VOLUME V – PART 3**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.  
State Structure and Bridge Engineer



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF TRANSPORTATION

1401 EAST BROAD STREET  
RICHMOND, 23219-2000

**GREGORY A. WHIRLEY**  
ACTING COMMISSIONER

December 19, 2005

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

### MEMORANDUM:

**TO:** Holders of Volume V - Part 3: Current Details (Standards)

### REVISIONS:

<u>File No.</u>	<u>Sheet No.</u>	<u>Description of change(s)</u>
TOC-1 and 3		Changed dates for BBD-6, -7A, -7B.
BBD-6	1 of 7	Added four design notes for disc bearings.
BBD-7A	2 of 7	Added four design notes for disc bearings.
BBD-7B	3 of 7	Added four design notes for disc bearings.

**RETAIN THIS MEMO IN FRONT OF TABLE OF CONTENTS  
TO VOLUME V – PART 3.**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: George M. Clendenin, P.E.  
State Structure and Bridge Engineer

Attachments



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF TRANSPORTATION

1401 EAST BROAD STREET  
RICHMOND, 23219-2000

**PHILIP A. SHUCET**  
COMMISSIONER

**GEORGE M. CLENDENIN**  
STATE STRUCTURE AND BRIDGE ENGINEER

November 1, 2004

Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

### MEMORANDUM

**TO:** Holders of Volume V – Part 3 --- Current Details

### REVISIONS:

The following sheets are revised:

- TOC** This sheet was previously named "INDEX." Sheets that are intended to be 11 x 17 are marked with an asterisk (\*). Note added at the bottom of the sheet to explain asterisk symbol.
- INSTR** "Instructions" at top of sheet deleted. Added "GENERAL" to title at bottom of sheet.
- NOTE:** The borders on all 8 ½ x 11 sheets are now ½" except for the left which is 1". The font has been changed from Universe to Arial. In some instances the NOTES TO DESIGNER may have spilled over to additional sheet(s) due to the changes in the border and font. The 8 ½ x 11 sheets, except those revised above, have not been redistributed. They are available on the Internet..

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3.**

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: George M. Clendenin, P.E.  
State Structure and Bridge Engineer

Attachments



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, 23219-2000

GREGORY A. WHIRLEY  
ACTING COMMISSIONER

September 26, 2005

**SUBJECT:** Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

**MEMORANDUM:**

**TO:** Holders of Volume V - Part 3: Current Details (Standards)

**REVISIONS:**

<u>File No.</u>	<u>Sheet No.</u>	<u>Description of change(s)</u>
TOC-3		Changed dates for BBD-6, -7A, -7B (previously there was only -7) as well as notes to designer – from 6 to 7 sheets in this section.
BBD-6	1 of 7	Notes revised. Section A-A, Fixed Disc Bearing, Type F-F added. Updated drafting/detailing with current office practice (S&B Volume V – Part 2).
BBD-7A	2 of 7	This sheet along with BBD-7B replaces BBD-7. Notes revised. Section A-A, Guided Disc Expansion Bearing, Type EF, and Detail B added. Updated drafting/detailing with current office practice (S&B Volume V – Part 2).
BBD-7B	3 of 7	This sheet along with BBD-7A replaces BBD-7. Notes revised. Section B-B, Non-Guided Disc Expansion Bearing, Type EE added. Updated drafting/detailing with current office practice (S&B Volume V – Part 2).
BBD-6/7A&7B	4 of 7	Note 1 changed.
	5 of 7	Note 8: Reference to Special Provisions deleted; now in specs. Note 14 changed.
	6 of 7	Changed sheet number/date.
	7 of 7	Changed sheet number/date.

**RETAIN THIS MEMO IN FRONT OF TABLE OF CONTENTS  
TO VOLUME V – PART 3.**

Page 2  
September 26, 2005

/original signed/  
Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: George M. Clendenin, P.E.  
State Structure and Bridge Engineer

Attachments



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF TRANSPORTATION

1401 EAST BROAD STREET  
RICHMOND, 23219-2000

**CHARLES D. NOTTINGHAM**  
COMMISSIONER

**MALCOLM T. KERLEY**  
STATE STRUCTURE AND BRIDGE ENGINEER

July 2, 2001

Manual of the Structure and Bridge Division  
Volume V – Part 3  
Current Details (Standards)

### MEMORANDUM

**TO:** Holders of Volume V – Part 3 --- Current Details

### NEW ISSUE:

The Manual of the Structure and Bridge Division, Volume V – Part 3 --- Current Details includes standards for approach slabs; bearings; joints; parapets, rails and barriers; fencing details; utilities (gas and water lines, lighting and telephone conduits), etc. The whole set of standards is being reissued with the date of July 2, 2001 (07-02-01) with new border sizes for the plan sheets.

### REVISIONS:

This reissue of the current details incorporates the new border sheet and includes an update on drafting and detailing corrections, specification updates, and numerous other corrections/revisions. Standards with a date previous to the July 2, 2001 (07-02-01) issue have been placed in a VOIDED file for archival purposes.

**RETAIN THIS MEMO IN FRONT OF INDEX TO VOLUME V – PART 3.**

Julius F. J. Völgyi, Jr., P.E.  
Assistant State Structure and Bridge Engineer

For: Malcolm T. Kerley, P.E.  
State Structure and Bridge Engineer

Attachments

**VOLUME V – PART 3  
CURRENT DETAILS**

**TABLE OF CONTENTS**

FILE NO.	TITLE	DATE
<b>TABLE OF CONTENTS &amp; GENERAL INSTRUCTIONS</b>		
TOC-1	Table of Contents.....	03May2013
TOC-2	Table of Contents.....	03May2013
TOC-3	Table of Contents.....	03May2013
TOC-4	Table of Contents.....	03May2013
TOC-5	Table of Contents.....	27Mar2013
TOC-6	Table of Contents.....	07Aug2012
TOC-7	Table of Contents.....	07Aug2012
TOC-8	Table of Contents.....	14Dec2012
TOC-9	Table of Contents.....	14Dec2012
TOC-10	Table of Contents.....	14Dec2012
TOC-11	Table of Contents.....	14Dec2012
TOC-12	Table of Contents.....	14Dec2012
INSTR-1	General Instructions.....	30Aug2012
INSTR-2	External Users: File Access Instructions .....	11Jul2008
INSTR-3	External Users: File Access Instructions .....	11Jul2008

**APPROACH SLABS –  
APPROACH ROADWAY CONCRETE**

*BAS-11	-1	Straight Crossing .....	03May2013
	-2	Notes to Designer .....	31Aug2007
	-DGN	MicroStation Drawing File	
*BAS-12L	-1	Skew 20° or less, skew left.....	03May2013
	-2	Notes to Designer .....	31Aug2007
	-DGN	MicroStation Drawing File	
*BAS-12R	-1	Skew 20° or less, skew right.....	03May2013
	-2	Notes to Designer .....	31Aug2007
	-DGN	MicroStation Drawing File	
*BAS-13L	-1	Skew 20° to 35°, skew left .....	03May2013
	-2	Notes to Designer .....	31Aug2007
	-DGN	MicroStation Drawing File	
*BAS-13R	-1	Skew 20° to 35°, skew right.....	03May2013
	-2	Notes to Designer .....	31Aug2007
	-DGN	MicroStation Drawing File	
*BAS-14L	-1	Skew 35° to 45°, skew left .....	03May2013
	-2	Notes to Designer .....	31Aug2007
	-DGN	MicroStation Drawing File	
*BAS-14R	-1	Skew 35° to 45°, skew right.....	03May2013
	-2	Notes to Designer .....	31Aug2007
	-DGN	MicroStation Drawing File	

\*Indicates 11x17 sheet, all others are 8 ½ x 11.

**VOLUME V – PART 3  
CURRENT DETAILS**

**TABLE OF CONTENTS (cont'd)**

FILE NO.	TITLE	DATE
<b>APPROACH SLABS – APPROACH ROADWAY CONCRETE (cont'd)</b>		
*BAS-15L	-1 Skew 45° to 50°, skew left .....	03May2013
	-2 Notes to Designer .....	31Aug2007
	-DGN MicroStation Drawing File	
*BAS-15R	-1 Skew 45° to 50°, skew right .....	03May2013
	-2 Notes to Designer .....	31Aug2007
	-DGN MicroStation Drawing File	
<b>APPROACH SLABS – STRUCTURE WITH SIDEWALKS APPROACH ROADWAY CONCRETE</b>		
*BAS-16	-1 Straight Crossing .....	03May2013
	-2 Notes to Designer .....	31Aug2007
	-DGN MicroStation Drawing File	
*BAS-17L	-1 Skew 20° or less, skew left .....	03May2013
	-2 Notes to Designer .....	31Aug2007
	-DGN MicroStation Drawing File	
*BAS-17R	-1 Skew 20° or less, skew right .....	03May2013
	-2 Notes to Designer .....	31Aug2007
	-DGN MicroStation Drawing File	
*BAS-18L	-1 Skew 20° to 35°, skew left .....	03May2013
	-2 Notes to Designer .....	31Aug2007
	-DGN MicroStation Drawing File	
*BAS-18R	-1 Skew 20° to 35°, skew right .....	03May2013
	-2 Notes to Designer .....	31Aug2007
	-DGN MicroStation Drawing File	
*BAS-19L	-1 Skew 35° to 45°, skew left .....	03May2013
	-2 Notes to Designer .....	31Aug2007
	-DGN MicroStation Drawing File	
*BAS-19R	-1 Skew 35° to 45°, skew right .....	03May2013
	-2 Notes to Designer .....	31Aug2007
	-DGN MicroStation Drawing File	
*BAS-20L	-1 Skew 45° to 50°, skew left .....	03May2013
	-2 Notes to Designer .....	31Aug2007
	-DGN MicroStation Drawing File	
*BAS-20R	-1 Skew 45° to 50°, skew right .....	03May2013
	-2 Notes to Designer .....	31Aug2007
	-DGN MicroStation Drawing File	

\*Indicates 11x17 sheet, all others are 8 ½ x 11.

**VOLUME V – PART 3  
CURRENT DETAILS**

**TABLE OF CONTENTS (cont'd)**

FILE NO.	TITLE	DATE
<b>APPROACH SLABS – WITH BITUMINOUS CONCRETE OVERLAY</b>		
*BAS-11A -1	Straight Crossing .....	03May2013
-2	Notes to Designer .....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-12AL -1	Skew 20° or less, skew left .....	03May2013
-2	Notes to Designer .....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-12AR -1	Skew 20° or less, skew right .....	03May2013
-2	Notes to Designer .....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-13AL -1	Skew 20° to 35°, skew left .....	03May2013
-2	Notes to Designer .....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-13AR -1	Skew 20° to 35°, skew right .....	03May2013
-2	Notes to Designer .....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-14AL -1	Skew 35° to 45°, skew left .....	03May2013
-2	Notes to Designer .....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-14AR -1	Skew 35° to 45°, skew right .....	03May2013
-2	Notes to Designer .....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-15AL -1	Skew 45° to 50°, skew left .....	03May2013
-2	Notes to Designer .....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-15AR -1	Skew 45° to 50°, skew right .....	03May2013
-2	Notes to Designer .....	31Aug2007
-DGN	MicroStation Drawing File	

**APPROACH SLABS – STRUCTURE WITH SIDEWALKS  
WITH BITUMINOUS CONCRETE OVERLAY**

*BAS-16A -1	Straight Crossing .....	03May2013
-2	Notes to Designer .....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-17AL -1	Skew 20° or less, skew left .....	03May2013
-2	Notes to Designer .....	31Aug2007
-DGN	MicroStation Drawing File	

\*Indicates 11x17 sheet, all others are 8 ½ x 11.

**VOLUME V – PART 3  
CURRENT DETAILS**

**TABLE OF CONTENTS (cont'd)**

FILE NO.	TITLE	DATE
<b>APPROACH SLABS – STRUCTURE WITH SIDEWALKS WITH BITUMINOUS CONCRETE OVERLAY (cont'd)</b>		
*BAS-17AR -1	Skew 20° or less, skew right.....	03May2013
-2	Notes to Designer.....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-18AL -1	Skew 20° to 35°, skew left.....	03May2013
-2	Notes to Designer.....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-18AR -1	Skew 20° to 35°, skew right.....	03May2013
-2	Notes to Designer.....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-19AL -1	Skew 35° to 45°, skew left.....	03May2013
-2	Notes to Designer.....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-19AR -1	Skew 35° to 45°, skew right.....	03May2013
-2	Notes to Designer.....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-20AL -1	Skew 45° to 50°, skew left.....	03May2013
-2	Notes to Designer.....	31Aug2007
-DGN	MicroStation Drawing File	
*BAS-20AR -1	Skew 45° to 50°, skew right.....	03May2013
-2	Notes to Designer.....	31Aug2007
-DGN	MicroStation Drawing File	
<b>BEARING DETAILS</b>		
*BBD-6 -1	High Load Multi-Rotational Bearings – Fixed.....	14Jun2010
*BBD-7A -2	High Load Multi-Rotational Bearings – Guided Exp.....	14Jun2010
*BBD-7B -3	High Load Multi-Rotational Bearings – Non-Guided Exp.....	14Jun2010
*BBD-6/7A/7B -4	Notes to Designer.....	31Aug2007
-5	Notes to Designer.....	31Aug2007
-6	Notes to Designer.....	31Aug2007
-7	Notes to Designer.....	31Aug2007
-DGN	MicroStation Drawing File (3 Drawing Files)	
*BBD-8 -1	Laminated Elastomeric Pad for Prestressed Beams.....	07Aug2012
-2	Notes to Designer.....	29May2009
-DGN	MicroStation Drawing File	
*BBD-9 -1	Laminated Elastomeric Pad for Steel Beams/Girders.....	14Jun2010
-2	Notes to Designer.....	29May2009
-DGN	MicroStation Drawing File	

\*Indicates 11x17 sheet, all others are 8 ½ x 11.

**VOLUME V – PART 3  
CURRENT DETAILS**

**TABLE OF CONTENTS (cont'd)**

FILE NO.	TITLE	DATE
<b>CROSS FRAME DETAILS</b>		
*BCF-4	-1 Cross Frame Details (for Straight Girders, V-Bracing) .....	27Mar2013
	-2 Notes to Designer .....	27Mar2013
	-DGN MicroStation Drawing File	
*BCF-5	-1 Cross Frame Details (for Straight Girders, X-Bracing) .....	27Mar2013
	-2 Notes to Designer .....	27Mar2013
	-DGN MicroStation Drawing File	
<b>CONCRETE RAILING (KANSAS CORRAL)</b>		
*BCR-3	-1 Railing With Curbing (2'-8" height).....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BCR-4	-1 Railing Without Curbing (2'-8" height).....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BCR-6	-1 Cast-in-Place Terminal Wall on Wingwall (2'-8" height) .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BCR-7	-1 Cast-in-Place Terminal Wall on U-Back Wingwall (2'-8" height) ...	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BCR-8	-1 Cast-in-Place Terminal Wall on Superstructure (Integral and Semi-Integral) (2'-8" height).....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BCR-9	-1 Cast-in-Place Terminal Wall on Superstructure (Deck Slab Extension) (2'-8" height).....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	06Apr2012
	-DGN MicroStation Drawing File	

\*Indicates 11x17 sheet, all others are 8 ½ x 11.

**VOLUME V – PART 3  
CURRENT DETAILS**

**TABLE OF CONTENTS (cont'd)**

FILE NO.	TITLE	DATE
<b>BRIDGE CONDUIT/FUTURE LIGHTING</b>		
*BCS-21A -1	Bridge Conduit System for Future Lighting with type KC(A) parapet (F-shape).....	14Jun2010
-2	Notes to Designer.....	31Aug2007
-3	Notes to Designer.....	31Aug2007
-DGN	MicroStation Drawing File	
*BCS-22A -1	Bridge Conduit System other than bridge lighting for type KC(A)parapet (F-shape). Access to junction box from outside of parapet.....	14Jun2010
-2	Notes to Designer.....	31Aug2007
-DGN	MicroStation Drawing File	
*BCS-28A -1	Bridge Conduit System for Lighting with type KC(A) parapet (F-shape). Access to junction box from roadway.....	07Aug2012
-2	Notes to Designer.....	31Aug2007
-3	Notes to Designer.....	07Aug2012
-DGN	MicroStation Drawing File	
*BCS-29A -1	Bridge Conduit System for other than bridge lighting. Access to junction box from roadway. Parapet F-shape.....	14Jun2010
-2	Notes to Designer.....	31Aug2007
-DGN	MicroStation Drawing File	
*BCS-30A -1	Bridge Conduit System for lighting with BR27C-series Railing without sidewalk.....	07Aug2012
-2	Notes to Designer.....	11Jul2008
-3	Notes to Designer.....	07Aug2012
-DGN	MicroStation Drawing File	
*BCS-31A -1	Bridge Conduit System for lighting with BR27C-series Railing with sidewalk.....	07Aug2012
-2	Notes to Designer.....	11Jul2008
-3	Notes to Designer.....	07Aug2012
-DGN	MicroStation Drawing File	
*BCS-32A -1	Bridge Conduit System for lighting with BR27D-series Railing without sidewalk.....	07Aug2012
-2	Notes to Designer.....	11Jul2008
-3	Notes to Designer.....	07Aug2012
-DGN	MicroStation Drawing File	
*BCS-33A -1	Bridge Conduit System for lighting with BR27D-series Railing with sidewalk.....	07Aug2012
-2	Notes to Designer.....	11Jul2008
-3	Notes to Designer.....	07Aug2012
-DGN	MicroStation Drawing File	

\*Indicates 11x17 sheet, all others are 8 ½ x 11.

**VOLUME V – PART 3  
CURRENT DETAILS**

**TABLE OF CONTENTS (cont'd)**

FILE NO.	TITLE	DATE
<b>JOINTS</b>		
*BEJ-1	-1 Elastomeric Joint Sealer, Straight Crossing and Skewed Crossing Under 20° .....	14Jun2010
	-2 Notes to Designer.....	31Aug2007
	-DGN MicroStation Drawing File	
*BEJ-2	-1 Elastomeric Joint Sealer, Skewed Crossing Over 20° .....	14Jun2010
	-2 Notes to Designer.....	31Aug2007
	-DGN MicroStation Drawing File	
*BEJ-3	-1 Elastomeric Expansion Dam .....	14Jun2010
	-2 Notes to Designer.....	31Aug2007
	-3 Notes to Designer.....	31Aug2007
	-4 Notes to Designer.....	31Aug2007
	-DGN MicroStation Drawing File	
*BEJ-6	-1 Tooth Expansion Joint, Steel Beams/Girders .....	14Jun2010
*BEJ-7	-2 Tooth Expansion Joint, Concrete Beams.....	14Jun2010
*BEJ-10	-3 Tooth Expansion Joint – Miscellaneous Details.....	14Jun2010
*BEJ-11	-4 Tooth Expansion Joint – Miscellaneous Details.....	14Jun2010
*BEJ-12	-5 Tooth Expansion Joint – Miscellaneous Details.....	14Jun2010
BEJ-6/7/10/11/12	-6 Notes to Designer.....	14Jun2010
	-7 Notes to Designer.....	29May2009
	-8 Notes to Designer.....	29May2009
	-9 Notes to Designer.....	29May2009
	-10 Notes to Designer.....	29May2009
	-11 Notes to Designer.....	29May2009
	-DGN MicroStation Drawing File (5 Drawing Files)	
<b>GAS LINES</b>		
*BGL-1	-1 For Use with Steel Beams/Girders.....	07Aug2012
	-2 Notes to Designer.....	29May2009
	-DGN MicroStation Drawing File	
*BGL-2	-1 For Use with Concrete Beams .....	07Aug2012
	-2 Notes to Designer.....	29May2009
	-DGN MicroStation Drawing File	

\*Indicates 11x17 sheet, all others are 8 ½ x 11.

**VOLUME V – PART 3  
CURRENT DETAILS**

**TABLE OF CONTENTS (cont'd)**

FILE NO.	TITLE	DATE
<b>STEEL RAILING (ILLINOIS 2399)</b>		
*BIR-1	-1 Railing with Terminal Wall on U-Back Wingwall .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BIR-2	-1 Railing with Terminal Wall on Wingwall .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BIR-3	-1 Railing – Miscellaneous Details .....	14Dec2012
	-2 Notes to Designer .....	07Aug2012
	-DGN MicroStation Drawing File	
*BIR-4	-1 Railing with Terminal Wall on Superstructure (Integral and Semi-Integral) .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BIR-5	-1 Railing with Terminal Wall on Superstructure (Deck Slab Extensions) .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
<b>MEDIAN BARRIER DETAILS</b>		
*BMB-3A	-1 Cast-in-Place Concrete Median Barrier (F-Shape) .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BMB-5A	-1 Cast-in-Place Concrete Median Barrier (F-Shape) (Split Barrier) .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	

\*Indicates 11x17 sheet, all others are 8 ½ x 11.

**VOLUME V – PART 3  
CURRENT DETAILS**

**TABLE OF CONTENTS (cont'd)**

FILE NO.	TITLE	DATE
<b>PARAPET DETAILS ( F-Shape)</b>		
*BPB-3A	-1 F-Shape with Terminal Wall on U-Back Wingwall .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BPB-3B	-1 F-Shape with Terminal Wall on Wingwall .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BPB-3C	-1 F-Shape with Terminal Wall on Superstructure (Integral and Semi- Integral) .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BPB-3D	-1 F-Shape with Terminal Wall on Superstructure ( Deck Slab Extensions). .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
<b>PEDESTRIAN FENCE DETAILS</b>		
*BPF-3	-1 For Use with F-Shape Parapet (BPB-3A/3B) .....	14Dec2012
	-2 Notes to Designer .....	14Jun2010
	-DGN MicroStation Drawing File	
*BPF-4	-1 For Use with BR27C-series and BR27D-series Railing without sidewalk.....	14Dec2012
	-2 Notes to Designer .....	14Jun2010
	-DGN MicroStation Drawing File	
*BPF-5	-1 For Use with BR27C-series and BR27D-series Railing with sidewalk.....	14Dec2012
	-2 Notes to Designer .....	14Jun2010
	-DGN MicroStation Drawing File	
<b>PRESTRESSED CONCRETE PILES</b>		
*BPP-1	-1 Prestressed Square Concrete Piles: 10" to 24" .....	07Aug2012
	-2 Notes to Designer .....	31Aug2007
	-DGN MicroStation Drawing File	
<b>PIER PROTECTION SYSTEM</b>		
*BPPS-1	-1 Pier Protection System for Pier Column/Stem Clearances < 10'-0" .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	

\*Indicates 11x17 sheet, all others are 8 ½ x 11.

**CURRENT DETAILS  
VOLUME V – PART 3  
TABLE OF CONTENTS**

VOL. V - PART 3  
DATE: 14Dec2012  
SHEET 9 of 12  
FILE NO. TOC-9

**VOLUME V – PART 3  
CURRENT DETAILS**

**TABLE OF CONTENTS (cont'd)**

FILE NO.	TITLE	DATE
<b>PIER PROTECTION SYSTEM (cont'd)</b>		
*BPPS-2	-1 For Use with standard BPPS-1 .....	14Dec2012
	-2 Notes to Designers .....	14Dec2012
	-DGN MicroStation Drawing File	
*BPPS-3	-1 Pier Protection System for Pier Column/Stem Clearances $\geq 10'-0"$ but $\leq 30'-0"$ .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
<b>STEEL RAILING (BR27C-SERIES)</b>		
*BR27C-12	-1 Railing (3'-6") as Traffic Barrier .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BR27C-13	-1 Railing (4'-6") on Traffic Side, SUP Space. ....	14Dec2012
	-2 Notes to Designer .....	06Apr2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BR27C-14	-1 Railing (4'-6") on Outside, SUP Space .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BR27C-15	-1 Railing (4'-6") on Raised Sidewalk .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BR27C-16	-1 Railing Splice/Expansion Details. ....	07Aug2012
	-2 Notes to Designer .....	06Apr2012
	-DGN MicroStation Drawing File	
<b>STEEL RAILING (BR27D-SERIES)</b>		
*BR27D-8	-1 Railing (3'-6") as Traffic Barrier .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BR27D-9	-1 Railing (4'-6") on Traffic Side, SUP Space .....	14Dec2012
	-2 Notes to Designer .....	06Apr2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	

\*Indicates 11x17 sheet, all others are 8 1/2 x 11.

**VOLUME V – PART 3  
CURRENT DETAILS**

**TABLE OF CONTENTS (cont'd)**

FILE NO.	TITLE	DATE
<b>STEEL RAILING (BR27D-SERIES) (Cont'd)</b>		
*BR27D-10	-1 Railing (4'-6") on Outside, SUP Space or Raised Sidewalk .....	14Dec2012
	-2 Notes to Designer .....	06Apr2012
	-3 Notes to Designer .....	14Dec2012
	-DGN MicroStation Drawing File	
*BR27D-11	-1 Railing Splice/Expansion Details .....	07Aug2012
	-2 Notes to Designer .....	06Apr2012
	-DGN MicroStation Drawing File	
<b>STEEL RAILING – TERMINAL WALL (BR27C/BR27D RAILS)</b>		
*BR27T-1	-1 Cast in Place Terminal Wall (3'-6") on U-Back Wingwall .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	06Apr2012
	-DGN MicroStation Drawing File	
*BR27T-2	-1 Cast in Place Terminal Wall (3'-6") on Wingwall .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	06Apr2012
	-DGN MicroStation Drawing File	
*BR27T-3	-1 Cast in Place Terminal Wall (3'-6") on Superstructure .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	07Aug2012
	-DGN MicroStation Drawing File	
*BR27T-4	-1 Cast in Place Terminal Wall (3'-6") on Superstructure .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	07Aug2012
	-DGN MicroStation Drawing File	
*BR27T-5	-1 Cast in Place Terminal Wall (4'-6") on U-Back Wingwall .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	06Apr2012
	-DGN MicroStation Drawing File	
*BR27T-6	-1 Cast in Place Terminal Wall (4'-6") on U-Back Wingwall .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	06Apr2012
	-DGN MicroStation Drawing File	
*BR27T-7	-1 Cast in Place Terminal Wall (4'-6") on Superstructure .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	07Aug2012
	-DGN MicroStation Drawing File	

\*Indicates 11x17 sheet, all others are 8 ½ x 11.

**VOLUME V – PART 3  
CURRENT DETAILS**

**TABLE OF CONTENTS (cont'd)**

FILE NO.	TITLE	DATE
<b>STEEL RAILING – TERMINAL WALL (Cont'd) (BR27C/BR27D RAILS)</b>		
*BR27T-8	-1 Cast in Place Terminal Wall (4'-6") on Superstructure .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	07Aug2012
	-DGN MicroStation Drawing File	
*BR27T-9	-1 Cast in Place Terminal Wall (4'-6") on Approach Slab .....	14Dec2012
	-2 Notes to Designer .....	14Dec2012
	-3 Notes to Designer .....	06Apr2012
	-DGN MicroStation Drawing File	
<b>THRIE-BEAM GUARDRAIL</b>		
*BTB-1	-1 Thrie-Beam Guardrail .....	07Aug2012
	-2 Notes to Designer .....	02Nov2009
	-DGN MicroStation Drawing File	
<b>TELEPHONE CONDUITS</b>		
*BTC-4	-1 PVC Conduit for Use With Steel Beams/Girders .....	07Aug2012
	-2 Notes to Designer .....	29May2009
	-DGN MicroStation Drawing File	
*BTC-5	-1 FRE Conduit for Use With Steel Beams/Girders .....	07Aug2012
	-2 Notes to Designer .....	29May2009
	-DGN MicroStation Drawing File	
*BTC-6	-1 PVC Conduit for Use With Concrete Beams .....	07Aug2012
	-2 Notes to Designer .....	29May2009
	-DGN MicroStation Drawing File	
*BTC-7	-1 FRE Conduit for Use With Concrete Beams .....	07Aug2012
	-2 Notes to Designer .....	29May2009
	-DGN MicroStation Drawing File	
<b>WATER LINES</b>		
*BWL-1	-1 For Use With Steel Beams/Girders .....	07Aug2012
	-2 Notes to Designer .....	29May2009
	-3 Notes to Designer .....	29May2009
	-DGN MicroStation Drawing File	
*BWL-2	-1 For Use With Concrete Beams .....	07Aug2012
	-2 Notes to Designer .....	29May2009
	-3 Notes to Designer .....	29May2009
	-DGN MicroStation Drawing File	

\*Indicates 11x17 sheet, all others are 8 ½ x 11.

## MANUAL OF THE STRUCTURE AND BRIDGE DIVISION

### VOLUME V – PART 3 CURRENT DETAILS

The current details include miscellaneous standards for approach slabs; bearings; joints; parapets, rails and barriers; fencing details, utilities (gas and water lines, lighting and telephone conduits), etc.

Refer to NOTES TO DESIGNER for specific comments on each standard sheet.

Completion of the project block, title block and lower left corner shall be in accordance with the requirements of File Nos. 04.04-1 thru -2 of the Manual of the Structure and Bridge Division, Volume V - Part 2 and as specified herein.

If a standard sheet is modified by the designer, the letters "MOD." (without quotes) shall be added behind the standard designation in the lower left portion of the border, e.g., BBD-4 MOD. Completing items on the standard that are indicated in the NOTES TO DESIGNER are not considered to be modifications. Changes/modifications beyond these item(s) must be requested to the State Structure and Bridge Engineer as a design waiver using the Form LD-448 unless noted as a design exception in the Manual of the Structure and Bridge Division, Volume V – Part 2. Design exception must be requested to the State Structure and Bridge Engineer using Form LD-440.

In general, in the title block (lower right hand corner of sheet) Designed, Drawn and Checked are blank and need to be filled in with the appropriate initials. For standard sheets without any design or detailing requirements, Designed, Drawn and Checked are filled in with "S&B DIV." If the design or details are modified, these fields should be filled in with initials as appropriate.

The CADD standard detail sheets are located in Falcon [...\PROJECTS\br-stand\sbr\current] directory (central office environment). The drawing file name for the standard sheet corresponds with the file number (name of standard sheet) as listed in the Table of Contents (minus the dash). For example, standard BAS-11 is drawing bas11.dgn.

### CURRENT DETAILS GENERAL INSTRUCTIONS

VOL. V - PART 3  
DATE: 30Aug2012  
SHEET 1 of 3  
FILE NO. INSTR-1



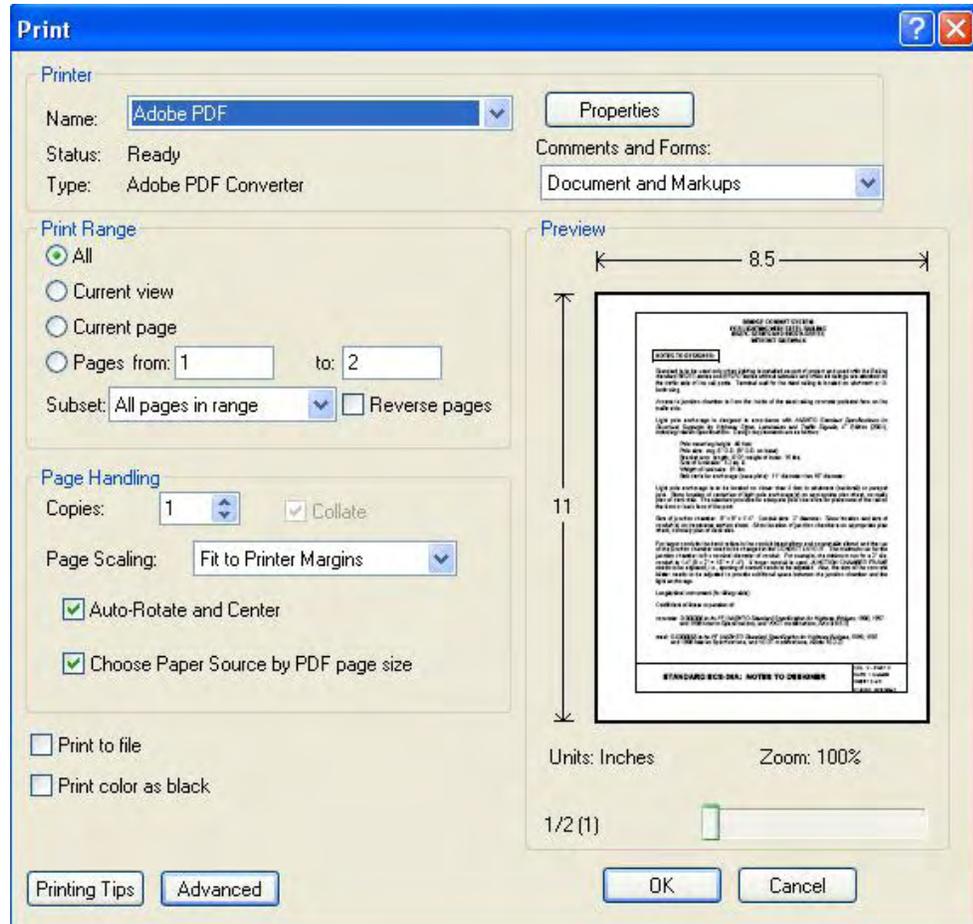
# MANUAL OF THE STRUCTURE AND BRIDGE DIVISION

## VOLUME V – PART 3 CURRENT DETAILS

To simplify printing of this manual, a PDF of the complete manual in one PDF file with no links may be accessed by clicking on the link below.

[Full manual no links](#)

If the printer has both 8 ½ x 11 and 11 x 17 paper sizes available, the drawings and notes to designer may be printed on the correct paper size by placing a check next to the item “Choose Paper Source by PDF page size” as shown in the dialog below:



If the printer only has 8 ½ x 11 paper, the drawings will default to the reduced paper size.

Depending on the printer margins, the 11 x 17 drawing(s) may not be true half-size drawing(s).