Bridge Approach
# Bridge Approach

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<tr>
<td>BR-241</td>
<td>04-18-17</td>
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</tr>
</tbody>
</table>
Sections and details apply to Standard Road Plans BR-112 and BR-102 through BR-107.

1. Design Shoulder width.
2. Reinforced Bridge Approach Section.
3. Build curb. See Detail 'C'. Refer to PV-102 for runout details.
4. Reinforcing Bar.
5. Temporary paving block removed by paving contractor.
6. Bridge Abutment.
7. Longitudinal Joint (PV-101):
   - Single pour - Saw cut joint per Detail B.
   - Two pours - Use 'KS-1' joint.
8. Secure polymer grid on top of paving notch.
10. If bridge is skewed, place additional #5 bar parallel to skewed face.
11. T = 10 inches.

### JOINT TYPE FOR MOVABLE ABUTMENT BRIDGES

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<tr>
<th>Joint</th>
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<th>Steel Grid Maximum Bridge Length</th>
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<td>CF-3</td>
<td>575'</td>
<td>400'</td>
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Possible Contract Item:
Bridge Approach, Two Lane

Possible Tabulation:
112-6
For joint details, see PV-101.

1. Build curb to end of Reinforced Bridge Approach Section. See Curb Location Details (Section B-B on BR-101).
3. Longitudinal Joint (PV-101):
   Single Pour - Saw cut joint per Detail B.
   Two Pours - Use KS-1 joint.
4. 'CD' Joints required up to 300 feet each way from end of Reinforced Bridge Approach Section.
5. Excavation limits of Modified Subbase 2 feet outside of pavement edge, see BR-101.
6. Slope subdrain to drain.
7. Place an "X" in the plastic concrete near the 'EF' joint at the outside edge of pavement.
8. Place 'RD' joint where PCC shoulder. Place 'B' joint otherwise.

Possible Contract Item:
Bridge Approach, Two Lane
Possible Tabulation:
112-6

BR-102
STANDARD ROAD PLAN
BRIDGE APPROACH SECTION
(TWO-LANE, ABUTTING PCC PAVEMENT)
For joint details, see PV-101.

1. Build curb to end of Reinforced Bridge Approach Section. See Curb Location Details (Section B-B on BR-101).
3. Longitudinal Joint (PV-101):
   - Single Pour - Saw cut joint per Detail B. Two Pours - Use 'KS-1' joint.
   - Minimum 1 panel, maximum 3 panels. 15-foot minimum, 20 foot maximum panel length. Use 'CD' joints.
   - Excavation limits of Modified Subbase 2 feet outside of pavement edge, see BR-101.
4. Slope subdrain to drain.
5. Place an 'X' in the plastic concrete near the 'EF' joint at the outside edge of pavement.
6. Place 'RD' joint where PCC shoulder. Place 'B' joint otherwise.

Possible Trench:
Bridge Approach, Two Lane

Possible Tabulation:
112-6

Reinforced Section
As required by skew angle (20' Min.)
Non-Reinforced Section
Possible CD Joint
Pay Limits for Contract Item
0' Min.
Existing Joint or Crack
Existing Pavement

SECTION THRU CENTERLINE

Dowel PCC Pavement

DETAIL 'B'

Reinforced Section
See Detail 'C'

Bridge Floor
PCC Pavement

PLAN VIEW

Reinforced Section
Non-Reinforced Section
Possible CD Joint
Existing Joint or Crack
Existing Pavement

Possible Contract Item:
Bridge Approach, Two Lane

REVISION: 1
12-17-17

STANDARD ROAD PLAN
BR-103
Sheet 1 of 1

APPROVED BY DESIGN METHODS ENGINEER

BRIDGE APPROACH SECTION
(TWO-LANE FOR BRIDGE RECONSTRUCTION, PCC PAVEMENT)
See Detail 'C'

Approach Roadway

Bridge Floor

Reinforced Section

Non-Reinforced Section

Modified Subbase

Polymer Grid (if applicable)

HMA Pavement

Design Shoulder

(See Project Typical Drawings)

SECTION THRU CENTERLINE

PLAN VIEW

Pay Limits for Contract Item

Reinforced Section

Non-Reinforced Section

As required by skew angle (20' Min.)

20'

20'

'CD' Joint

For joint details, see PV-101.

1. Build curb to end of Reinforced Bridge Approach Section. See Curb Location Details (Section B-B on BR-101).
3. Longitudinal Joints (PV-101):
   Single Pour - Saw cut joint per Detail B. Two Pours - Use 'KS-1' joint.
4. Excavation limits of Modified Subbase 2 feet outside of pavement edge, see BR-101.
5. The Contractor may need to saw cut the HMA pavement full depth to accommodate the 'B' joint.
6. Place 'RD' joint where PCC shoulder. Place 'B' joint otherwise.

Possible Contract Item:
Bridge Approach, Two Lane

Possible Tabulation:
112-6

BRIDGE APPROACH SECTION
(TWO-LANE, HMA PAVEMENT)
Approach Roadway

Bridge Floor

Detail 'A'

See 2' Modified Subbase
Granular Backfill line
Excavate to existing 4'' Polymer Grid
See Detail 'B'

'CD' Joint
20'
Non-Reinforced Section - 40' Min.

Reinforced Section

Subbase (if applicable)
HMA Pavement
Polymer Grid
Modified Subbase
4''
'B' Joint

Pay Limits for Contract Item

20''
20''

As required by skew angle (20' Min.)

Design Shoulder (See Project Typical Drawings)

Possible Contract item:
Bridge Approach, Two Lane
Possible Tabulation:
112-6

Possible Tabulation:
PV-101.

For joint details, see PV-101.

1. Build curb to end of Reinforced Bridge Approach Section. See Curb Location Details (Section B-B on BR-101).
3. Longitudinal Joint (PV-101):
   Single Pour - Saw cut joint per Detail B.
   Two Pours - Use 'KS-1' joint.
4. Minimum 2 panels, maximum 3 panels, 20 foot panel length. Use 'CD' joints.
5. Excavation limits of Modified Subbase 2 feet outside of pavement edge, see BR-101.
6. The Contractor may need to saw cut the HMA pavement full depth to accommodate the 'B' joints.
7. Place 'RD' joint where PCC shoulder. Place 'B' joint otherwise.

Possible Tabulation:
BR-106

REVISION: 04-21-15
SHEET 1 of 1

APPROVED BY DESIGN METHODS ENGINEER

BRIDGE APPROACH SECTION
(TWO-LANE FOR BRIDGE RECONSTRUCTION, HMA PAVEMENT)
Approach Roadway

PLAN

#8 Bars at 12'' Centers

(See Project Typical Drawings)

Design Shoulder

(See Project Typical Drawings)

Non-Reinforced Section

Design Shoulder

Reinforced Section

See Detail 'C'

Floor Bridge

See Detail 'A'

For joint details, see PV-101.

① Build curb to end of Reinforced Bridge Approach Sections. See Curb Location Details (Section B-B on BR-101).

② See BR-101.

③ Longitudinal Joints (PV-101):
   Single Pour - Saw cut joint per Detail B.
   Two- Pours - Use "K-1" joint.

④ Excavation limits of Modified Subbase 2 feet outside of pavement edge, see BR-101.

⑤ Minimum 2 panels, maximum 3 panels 20 foot panel length. Use "CD" joints.

⑥ The contractor may need to saw cut the HMA pavement full depth to accommodate the 'B' joint.

⑦ Place "RD" joint where PCC shoulder. Place "B" joint otherwise.

Possible Contract Item:

Bridge Approach, Two Lane

PV-101

112-6
### SECTION A-A

#### JOINT REBUILDING REQUIREMENTS

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<th>CONSTRUCTION METHOD REQUIRED</th>
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<td>0 to 1&quot;</td>
<td>Cut to 1/2&quot; width, See Detail 'A'</td>
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<tr>
<td>1&quot; to 2&quot;</td>
<td>See Detail 'A'</td>
</tr>
<tr>
<td>Greater than 2&quot;</td>
<td>See Detail 'E'</td>
</tr>
</tbody>
</table>

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#### TYPICAL PLAN VIEW

- **Bridge**
- **Reinforced Section**
- **Existing 'CF' or 'C' Joint**
- **Existing C or C Joint U.A.C.**
- **Approach Roadway**
- **Non-Reinforced Section**
- **Bridge Deck**

---

#### TYPICAL SECTION THRU CENTERLINE

- **Bridge Approach Pavement**
- **Bridge Abutment**
- **Sealer**
- **Backer Rod**
- **Light Sand Blasting**

---

#### DETAIL 'A'

- **Bridge Deck**
- **Dowel Bars at 12" centers**
- **Existing Thickness**
- **2" min. Overlay Depth**
- **Existing PCC Pavement**

---

#### DETAIL 'B'

- **Bridge Approach Pavement**
- **Sealer**
- **Backer Rod**
- **Light Sand Blasting**

---

#### DETAIL 'C'

- **Existing Joint**
- **Existing Thickness**
- **2" min. Overlay Depth**
- **Existing PCC Pavement**
- **Existing Joint**
- **Existing PCC Pavement**

---

#### DETAIL 'D'

- **Bridge Approach Pavement**
- **Sealer**
- **Backer Rod**
- **Light Sand Blasting**

---

#### DETAIL 'E'

- **Bridge Approach Pavement**
- **Sealer**
- **Backer Rod**
- **Light Sand Blasting**

---

### REVISIONS:

- **04-21-15**

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### PCC OVERLAY OF REINFORCED BRIDGE APPROACH SECTION

- **Approach Roadway**
- **Bridge Deck**
- **Reinforced Section**
- **Existing 'CF' or 'C' Joint**
- **Existing C or C Joint U.A.C.**
- **Approach Roadway**
- **Non-Reinforced Section**

---

### STANDARD ROAD PLAN

- **BR-111**

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### Note:

- **New**
- **Approved by Design Methods Engineer**

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### Additional Notes:

1. **Routing at joints will be measured and paid for as "Class A Deck Repair" according to Section 2413 of the Standard Specifications.**
2. **Overlaying of the bridge approach pavement with PCC will be paid for at the contract unit price for "Deck Overlay" according to Section 2413 of the Standard Specifications.**
3. **Scarification to the depth required is incidental to "Deck Overlay".**
4. **Sealed joints installed at locations of existing joints will not be paid separately, but are incidental to "Deck Overlay".**
5. **For raising HMA shoulder to match the PCC overlay of the bridge approach pavement, Class II compaction is required as specified in Section 2303 of the Standard Specifications. Asphalt binder and tack coat are incidental.**
6. **Construct "Granular Shoulders, Type B" according to Section 2121 of the Standard Specifications when other than paved shoulders exist.**
7. **For joint details, refer to PV-101.**
Keep traffic in adjacent lanes.

If existing "CF" joint is located approximately 60 feet from the new "B" or "RT" joint, the joint is to be recut to a width of 4 inches and new form joint material installed. If no "CF" exists, construct a new "CF" joint approximately 60 feet from the new "B" or "RT" joint.

Modified Subbase under paved shoulder panels adjacent to the bridge approach is incidental to "Paved Shoulder, P.C. Concrete", unless measured and paid for elsewhere on the project plans.

For joint details, see PV-101.

Build curb to end of Reinforced Bridge Approach Section. See Curb Location Details (Section B-B on BR-101).

Place RD' joint if P.C. Shoulder, 'B' joint otherwise.

Optional 'KS-1' joint.

See Typical Paving Cross-Sections.

Slope Subdrain to drain.

Place 'RT' joint if existing pavement is P.C., 'B' joint otherwise.

If bridge is skewed, place additional #5 bar parallel to skewed face.

T=10 inches.

See BR-101.

Possible Contract Items:
Bridge Approach, Two Lane Paved Shoulder, P.C. Concrete

Possible Tabulation:
BR-112-6
Use the same concrete for the bridge approach section as is used for the remainder of the project pavement.

For joint details, see PV-101.

1. If bridge is skewed, place additional #5 bar parallel to skewed face.
2. T is the same thickness as is required for the remainder of the project pavement.

Quantity for 20 foot long approach section for 24 foot pavement is 53.33 square yards of "Bridge Approach."

### Joint Type for Movable Abutment Bridges

<table>
<thead>
<tr>
<th>Joint</th>
<th>Minimum Beam Maximum Bridge Length</th>
<th>Steel Girder Maximum Bridge Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF-1</td>
<td>320'</td>
<td>250'</td>
</tr>
<tr>
<td>CF-2</td>
<td>400'</td>
<td>320'</td>
</tr>
<tr>
<td>CF-3</td>
<td>465'</td>
<td>400'</td>
</tr>
</tbody>
</table>

Possible Contract Items:
- Bridge Approach, Secondary Roads
- Standard or Slip-Form PCC Pavement

Possible Tabulation:
- 112-6

For joint details, see PV-101.
Granular Backfill line
Excavate to existing
Modified Subbase
Backfill placed with bridge

SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)

Pay Limits for Contract Item

Double Reinforced Section
As required by skew angle (20'-0" min.)

Single Reinforced Section
20'-0"

Non-Reinforced Sections
20'-0"

10'-0"

'DW' or 'RT' Joint
Abutting PCC or Composite Pavement

CD Joint

EF Joint

Subbase (if applicable)

Polymer Grid

Modified Subbase

SECTION THRU CENTERLINE
(Not Abutting PCC or Composite Pavement)

Pay Limits for Contract Item

Double Reinforced Section
As required by skew angle (20'-0" min.)

Single Reinforced Section
20'-0"

Non-Reinforced Sections
20'-0"

10'-0"

'DW' or 'RT' Joint
Abutting HMA Pavement

CD Joint

EF Joint

Subbase (if applicable)

Polymer Grid

Modified Subbase

If abutting pavement (PCC or HMA) is not in place, refer to: BR-213

4" Perforated Subdrain

4" SUBDRAIN LOCATION

- Pay Limits for Contract Item

- Modified Subbase
- Subbase (if applicable)
- Polymer Grid
- 4" Perforated Subdrain

If abutting pavement (PCC or HMA) is not in place, refer to: BR-213
Approach Roadway

#4 bars at 12" Centers

D=2"

SECTION A-A

SECTION B-B

DETAIL 'E'

DETAIL 'G'

Curb per Detail 'G'

DETAIL 'D'

Sloped Curb

APPROACH PAVEMENT LAYOUT AT A SKEW

Excavation Limits

Modified Subbase

Polymer Grid

Earth

24"

20'-0" min.

15'-0" min.

Pavement Lug

Steel Rod x 24"

" dia. x 24"

Pavement Lug

(Back of Curb Placement)

DETAIL 'G'

Bridge Rail End Section

Bridge Rail

Earth

Curb per Detail 'G'

End Section

Bridge Rail End Section

Bridge Floor

SEEN DETAIL 'E'

DETAIL 'D'

(Bjoint Placement)

End Section

Bridge Rail

Earth

Curb per Detail 'G'

End Section

Bridge Rail End Section

Bridge Floor

SEEN DETAIL 'E'

DETAIL 'D'

(Back of Curb Placement)

DETAIL 'G'

See Detail 'E'

Excavation Limits

Modified Subbase

Polymer Grid

Earth

24"

20'-0" min.

15'-0" min.

Pavement Lug

Steel Rod x 24"

" dia. x 24"

Pavement Lug

(Back of Curb Placement)

DETAIL 'G'

Bridge Rail End Section

Bridge Rail

Earth

Curb per Detail 'G'

End Section

Bridge Rail End Section

Bridge Floor

SEEN DETAIL 'E'

DETAIL 'D'

(Bjoint Placement)

End Section

Bridge Rail End Section

Bridge Floor

SEEN DETAIL 'E'

DETAIL 'D'

(Back of Curb Placement)

DETAIL 'G'

See Detail 'E'

Excavation Limits

Modified Subbase

Polymer Grid

Earth

24"

20'-0" min.

15'-0" min.

Pavement Lug

Steel Rod x 24"

" dia. x 24"

Pavement Lug

(Back of Curb Placement)

DETAIL 'G'

Bridge Rail End Section

Bridge Rail

Earth

Curb per Detail 'G'

End Section

Bridge Rail End Section

Bridge Floor

SEEN DETAIL 'E'

DETAIL 'D'

(Bjoint Placement)

End Section

Bridge Rail End Section

Bridge Floor

SEEN DETAIL 'E'

DETAIL 'D'

(Back of Curb Placement)

DETAIL 'G'

See Detail 'E'

Excavation Limits

Modified Subbase

Polymer Grid

Earth

24"

20'-0" min.

15'-0" min.

Pavement Lug

Steel Rod x 24"

" dia. x 24"

Pavement Lug

(Back of Curb Placement)

DETAIL 'G'

Bridge Rail End Section

Bridge Rail

Earth

Curb per Detail 'G'
250' Joint
CF-1
CF-2
CF-3
Maximum Bridge Length
370' or Slab
Concrete Beam
320'
Steel Girder
465'
575'

MOVEABLE ABUTMENT

For joint details, see PV-101.
For curb details, see Detail 'G'.
All Transverse Bars are #5.
See BR-211 or BR-212 for shoulders.

1. 2" to 2 1/2" clear to bent bar.
2. Minimum lap length: #5 bars - 18 inches
   #6 bars - 27 inches
   #8 bars - 48 inches
3. If bridge is skewed, place additional #5 bar parallel
to skewed face.

Possible Contract Item:
Bridge Approach, BR-202
Possible Tabulation:
BR-211
BR-212
PV-101

JOINT TYPE FOR
MOVEABLE ABUTMENT BRIDGES

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<th>CF-1</th>
<th>CF-2</th>
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<td>250'</td>
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DETAIL 'A'

DETAIL 'B'

For joint details, see PV-101.
For curb details, see Detail 'G'.
All Transverse Bars are #5.
See BR-211 or BR-212 for shoulders.

1. 2" to 2 1/2" clear to bent bar.
2. Minimum lap length: #5 bars - 18 inches
   #6 bars - 27 inches
   #8 bars - 48 inches
3. If bridge is skewed, place additional #5 bar parallel
to skewed face.

Possible Contract Item:
Bridge Approach, BR-202
Possible Tabulation:
BR-211
BR-212
PV-101

JOINT TYPE FOR
MOVEABLE ABUTMENT BRIDGES

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DETAIL 'A'

DETAIL 'B'

For joint details, see PV-101.
For curb details, see Detail 'G'.
All Transverse Bars are #5.
See BR-211 or BR-212 for shoulders.

1. 2" to 2 1/2" clear to bent bar.
2. Minimum lap length: #5 bars - 18 inches
   #6 bars - 27 inches
   #8 bars - 48 inches
3. If bridge is skewed, place additional #5 bar parallel
to skewed face.

Possible Contract Item:
Bridge Approach, BR-202
Possible Tabulation:
BR-211
BR-212
PV-101

JOINT TYPE FOR
MOVEABLE ABUTMENT BRIDGES

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If bridge is skewed, place additional #5 bar parallel to skewed face.

- #5 bars - 18 inches
- #6 bars - 27 inches
- #8 bars - 46 inches

2" to 2 1/2" clear to bent bar.
SECTION THRU CENTERLINE

(Abluting PCC or Composite Pavement)

DETAIL 'C'

(Downeiled PCC Pavement)

SECTION THRU CENTERLINE

(Abluting HMA Pavement)

DETAIL 'F'

4" SUBDRAIN LOCATION

BR-213

If abutting pavement (PCC or HMA) is not in place, refer to BR-213.
BENT BAR SHAPES

6 #5 bars at 12" Centers
(Pavement Lug)

6 #4 bars at 12" Centers
(Steel Rod)

DETAIL 'G'
(Back of Curb Placement)

DETAIL 'E'
(Back of Curb Placement)

APPROACH PAVEMENT
LAYOUT AT A SKEW

Expansion joint at end of Bridge Rail End Section: Place joint filler the full depth of the bridge approach pavement. In areas with curb, place full depth of pavement plus curb and shape material to fit the shape of the curb per Section 8-B of PV-101. Seal joint per Detail F of PV-101.

- Fixed Abutment Bridges: Type 'E' Joint.
- Moveable Abutment Bridges: Flexible Foam Expansion Joint Filler complying with Section 4130 of the Standard Specifications. Minimum filler width is the abutment "C" joint width. Joint length as required to completely fill from back side of curb to front face of bridge wing.

Refer to BR-211, BR-212, or BR-231.

Design shoulder width.

Reinforced bridge approach section.

Single pour - Saw cut joint per Detail B.

Longitudinal Joint (PV-101):

- Two pours - Use KS-2 Joint.

Moveable Abutment Bridges: Flexible Foam Expansion Joint Filler complying with Section 4130 of the Standard Specifications. Minimum filler width is the abutment "C" joint width. Joint length as required to completely fill from back side of curb to front face of bridge wing.

APPROACH ROADWAY

Normal Pavement Slope

Polymer Grid

Excavation Limits

Modified Subbase

SECTION A-A

SECTION B-B

6" Joint

Pavement Lug

Steel Rod

" dia. x 24"
**SECTION A-A**

**BENT BAR SHAPES**

- **Detail 'D'**
  - (Joint Placement)
  - **Reinforced bridge approach section.**

- **Detail 'E'**
  - (Back of Curb Placement)
  - **Reinforced bridge approach section.**

**Approach Roadway**

- **Normal Pavement Slope**
  - Polymers Grid
  - Excavation Limits
  - Modified Sub-base

**SECTION B-B**

- ** APPROACH PAVEMENT LAYOUT AT A SKEW**
  - **Bridge Rail End Section**
  - **Bridge Deck**
  - **Roadway**
  - **Pavement**

**Bridge Rail End Section (typ.)**

- **Bridge Deck**
  - **Roadway**
  - **Pavement**

**Longitudinal Joint (PV-101):**

- Single pour - Saw cut joint per Detail B
- Two pours - Use KS-2 joint

**Refer to:** BR-211, BR-212, or BR-231.

- **Design shoulder width.**

**Reinforced bridge approach section.**

- **Expansion joint at end of Bridge Rail End Section:** Place joint filler the full depth of the bridge approach pavement. In areas with curb, place full depth of pavement plus curb and shape material to fit the shape of the curb per Section 6-8 of PV-101. Seal joint per Detail 'F' of PV-101.

  - **Fixed Abutment Bridges:** Type 'E' joint.
  - **Moveable Abutment Bridges:** Flexible Foam Expansion Joint Filler complying with Section 4138 of the Standard Specifications. Minimum filler width is the abutment 'CF' joint width. Joint length as required to completely fill from back side of curb to front face of bridge wing.

**APPROVED BY DESIGN METHODS ENGINEER**

**REVISIONS:**

- Added shoulders to single and non-reinforced sections.

**STANDARD ROAD PLAN**

**DOUBLE REINFORCED 12'' APPROACH**

**PV-101**  
**PV-101**  
**BR-231**  
**BR-212**  
**BR-211**  
**PV-101**

**REVISION: 10-19-21**

**Sheet 3 of 3**
For joint details, see PV-101.

For curb details, see Detail 'G'.

All Transverse Bars are #5.

See BR-211 or BR-212 for shoulders.

1. 2" to $2\frac{1}{2}$" clear to bent bar.

2. Minimum lap length: #5 bars - 18 inches
   #6 bars - 27 inches
   #8 bars - 48 inches

3. If bridge is skewed, place additional #5 bar parallel to skewed face.

Possible Contract Item:

Bridge Approach, BR-204

Possible Tabulation:

112-6

DOUBLE REINFORCED 12" APPROACH
WITH VARIABLE DEPTH PAVING NOTCH

<table>
<thead>
<tr>
<th>Joint</th>
<th>Concrete Beam or Slab</th>
<th>Steel Girder</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF-1</td>
<td>37°2</td>
<td>256°</td>
</tr>
<tr>
<td>CF-2</td>
<td>46°9</td>
<td>320°</td>
</tr>
<tr>
<td>CF-3</td>
<td>57°5</td>
<td>400°</td>
</tr>
</tbody>
</table>
1. Cut 2" to $\frac{2}{3}$" clear to bent bar.
2. Minimum lap length: #5 bars - 18 inches
   #6 bars - 27 inches
   #8 bars - 48 inches
3. If bridge is skewed, place additional #5 bar parallel to skewed face.

See Detail 'B'

**Detail 'A'**

- #4 Bars at 12" Centers
- #5 Bars at 12" Centers
- Steel Rod
- Resilient Joint Filler
- Modified Subbase
- Polymer Grid
- Approach Pavement
- Expansion Joint on Bridge
- Final Grade Line
- Dowel to be placed with bridge. Shall not be bent at any time.
- Dowel 2" x 24" Steel Rod, place at 32" ±
- Spacing full length of Paving Notch through drilled holes
- Dowel 2" thick x 16" wide Resilient Joint Filler placed full length of Paving Notch

**Detail 'B'**

- #5 Bars at 12" max. Centers
- #6 Bars at 12" Centers
- Approach Pavement
- Polymer Grid
- Modified Subbase
- Approach Pavement
- Single Reinforced Section
- Non-Reinforced Section
- Double Reinforced Section
- 20'-0" min.
- 20'-0"
- 20'-0"
- 36"
- 36"
- 36"
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SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)

DETAIL 'C'
(Dowelled PCC Pavement)

SECTION THRU CENTERLINE
(Abutting HMA Pavement)

DETIAL 'F'

If abutting pavement (PCC or HMA) is not in place, refer to BR-213.

IOWA DOT
STANDARD ROAD PLAN
BR-204
REVISION: 10-19-21
SHEET 3 of 4

DOUBBE REINFORCED 12'' APPROACH
WITH VARIABLE DEPTH PAVING NOTCH
BENT BAR SHAPES

DETAIL 'E'
(Back of Curb Placement)

DETAIL 'G'
(Back of Curb Placement)

APPROACH PAVEMENT LAYOUT AT A SKEW

SECTION A-A

SECTION B-B

Polymer Grids

Modified Subbase

Excavation Limits

Approach Roadway

Normal Pavement Slope

Polymer Grids

Excavation Limits

Modified Subbase

Curb per Detail 'G'

24" Earth

Curb per Detail 'G'

DI-2"

24" Center

DI-2"

24"

DI-2"

24" Center

DI-2"

24"

DI-2"

24" Center

DI-2"

24"

DI-2"

24"

DI-2"

24" Center

DI-2"

24" Earth

BRIDGE RAIL END SECTION

Bridge Rail

End Section (typ.)

Bridge Deck

Skew Angle

Roadway

Pavement

Bridge Floor

Bridge Rail

End Section

E Joint

See Detail 'E'

Longitudinal Joint (PV-101):

Single pour - Saw cut joint per Detail B.

Two pours - Use KS-2 Joint.

Refer to BR-211, BR-212, or BR-231.

Design shoulder width.

Reinforced bridge approach section.

Expansion joint at end of Bridge Rail End Section: Place joint filler the full depth of the bridge approach pavement. In areas with curb, place full depth of pavement plus curb and shape material to fit the shape of the curb per Section B-B or PV-101. Seal joint per Detail F of PV-101.

- Fixed Abutment Bridges: Type 'E' Joint.
- Moveable Abutment Bridges: Flexible Foam Expansion Joint Filler complying with Section 4138 of the Standard Specifications. Minimum filler width is the abutment "G" joint width.

Joint length as required to completely fill from back side of curb to front face of bridge wing.

In areas with curb, place full depth of pavement plus curb and shape material to fit the shape of the curb per Section B-B or PV-101. Seal joint per Detail F of PV-101.

- Fixed Abutment Bridges: Type 'E' Joint.
- Moveable Abutment Bridges: Flexible Foam Expansion Joint Filler complying with Section 4138 of the Standard Specifications. Minimum filler width is the abutment "G" joint width.

Joint length as required to completely fill from back side of curb to front face of bridge wing.
For joint details, see PV-101.

For curb details, see Detail ‘G’.

All transverse bars are #5.

Use epoxy coated bars for all reinforcement.

Quantities for both the 1'-9" top part of the sleeper slab and the 6'-3" portion under the approach pavement have been included in the double reinforced section quantities.

1. Build 4 inch sloped curb to end of reinforced sections.

2. Longitudinal Joint (PV-101):
   - Single Pour: Saw cut joint per Detail B.
   - Two Pours: Use ‘KS-1’ joint (Single Reinforced Section).
   - Use ‘KS-2’ joint (Double Reinforced Section).

3. Polymer Grid and excavation limits of Modified Subbase 2 feet outside of pavement edge.

4. Slope subdrain to drain.

5. Place an “X” in the plastic concrete near the ‘EF’ joint at the outside edge of pavement.

6. Place ‘RD’ joint where PCC shoulder. Place ‘B’ joint otherwise.

7. 4 inch Preformed Joint Filler and seal top.

See Detail ‘G’.

Possible Tabulation:

Bridge Approach, BR-205
**DETAIL 'A'**
(Slab Edge Details for CF Joint with Curb)

**PARTIAL PLAN VIEW**
(Approach Pavement)

- **#5 Bars at 12" Centers** (Sleeper Slab)
- 3" Thick and 15" Wide Resilient Joint Filler Placed Full Length of Paving Notch

**BENT BAR SHAPES**

- #8 Bars at 9" Centers (Approach Pavement)
- #6 Bars at 12" Centers

**END VIEW**
(Approach Pavement)

- #5 Bars at 12" Centers
- 3" Thick and 15" Wide Resilient Joint Filler Placed Full Length of Paving Notch

**DETAIL 'C'**
(Slab Edge Details for CF Joint with Curb)

- 2" min. to 2 1/2 max. clear to bent bar.
- Minimum lap length: #5 Bars - 18"
  #6 Bars - 27"
  #8 Bars - 48"
- If bridge is skewed, place additional #5 bar parallel to skewed face.
- #8 dowels 1'-6" long with 2 1/2" inch bottom end clearance.
  Space at 24 inches O.C.
- Space at 32" + for full length of Sleeper Slab
- 1/2 inch thick x 16 inch wide Resilient Joint Filler for full length of Sleeper Slab.
- Debond Paving Notch with 2 layers of 30# Asphaltic Felt Paper full length.
SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)

If abutting pavement (PCC or HMA) is not in place, refer to BR-213.

BR-205
DOUBLE REINFORCED 12" APPROACH
(SLAB BRIDGE)
Added shoulders to single and non-reinforced sections.

Provide 2" preformed joint filler and seal top.

See Detail 'H'

Bridge Rail End Section

Gutter Line

Curb per Detail 'G'

End Section

Bridge Rail

End Section

Floor

Bridge

End Section

Joint Filler and seal top

Provide 2" preformed joint filler and seal top.

See Detail 'H'

Detail 'F'

(Joint Placement)

Detail 'H'

(Back of Curb Placement)
Ply limits for contract item include the following areas:

- Double Reinforced Section
- Single Reinforced Section
- Non-Reinforced Section

For joint details, see PV-101.

1. Build 4 inch Sloped Curb to end of Double Reinforced Section. Refer to PV-102 for curb and runout details.
2. See BR-201, BR-202, BR-203, or BR-204.
4. Polymer Grid and excavation limits of Modified Subbase 2 feet outside of pavement edge. See BR-201, BR-202, BR-203, or BR-204.
5. Slope subdrain to drain.
6. Place an "X" in the plastic concrete near the 'EF' joint at the outside edge of pavement.

BRIDGE APPROACH
(ABUTTING PCC OR COMPOSITE PAVEMENT)
Pay limits for contract item include the following areas:

- Double Reinforced Section
- Single Reinforced Section
- Non-Reinforced Section

For joint details, see PV-101.

1. Build 4 inch Sloped Curb to end of Double Reinforced Section. Refer to PV-102 for curb and runout details.

2. See BR-201, BR-202, BR-203, or BR-204.

3. Longitudinal Joint (PV-101):
   - Single Pour - Saw cut joint per Detail B.
   - Two Pours - Use 'KS-1' joint (Single Reinforced Section).
   - Use 'KS-2' joint (Double Reinforced Section).

4. Polymer Grid and excavation limits of Modified Subbase 2 feet outside of pavement edge. See BR-201, BR-202, BR-203, or BR-204.

5. Place 'RD' joint where PCC shoulder. Place 'B' joint otherwise.

(See Project Typical Drawings)
If abutting pavement (PCC or HMA) is not in place when bridge approach pavement is constructed, the following procedure applies:

1. The paving contractor of bridge the approach pavement paves Additional Pavement (as shown in Detail 'A'), constructs 'C' joint at end of bridge approach section, and leaves in this state.

2. The paving contractor of the abutting pavement saw cuts full depth at 'C' joint and removes Additional Pavement (see Detail 'B'), then:

3. The paving contractor of the abutting pavement constructs 'RT' joint or 'B' joint, accordingly (see Detail 'C').

This work is incidental to other work as follows:

Detail 'A': Bridge Approach, BR-203.

Details 'B' and 'C': Standard or Slip Form PCC Pavement, or Hot Mix Asphalt Mixture.

For Jointing Details, see PV-101.

Additional Pavement

2' min. 'C' Joint

Bridge Approach Section

Abutting PCC Pavement

(For Abutting PCC Pavement)

DETAIL 'C'
SECTION A-A

Non-Reinforced Section

Reinforced Section

For Jointing Details, see PV-101.

Additional Pavement

2' min. 'C' Joint

Bridge Approach Section

Abutting PCC Pavement

(For Abutting PCC Pavement)

DETAIL 'C'
SECTION A-A

Non-Reinforced Section

Reinforced Section

For Jointing Details, see PV-101.

Additional Pavement

2' min. 'C' Joint

Bridge Approach Section

Abutting PCC Pavement

(For Abutting PCC Pavement)

DETAIL 'C'
SECTION A-A

Non-Reinforced Section

Reinforced Section

For Jointing Details, see PV-101.

Additional Pavement

2' min. 'C' Joint

Bridge Approach Section

Abutting PCC Pavement

(For Abutting PCC Pavement)

DETAIL 'C'
SECTION A-A

Non-Reinforced Section

Reinforced Section

For Jointing Details, see PV-101.

Additional Pavement

2' min. 'C' Joint

Bridge Approach Section

Abutting PCC Pavement

(For Abutting PCC Pavement)

DETAIL 'C'
SECTION A-A

Non-Reinforced Section

Reinforced Section

For Jointing Details, see PV-101.

Additional Pavement

2' min. 'C' Joint

Bridge Approach Section

Abutting PCC Pavement

(For Abutting PCC Pavement)

DETAIL 'C'
SECTION A-A

Non-Reinforced Section

Reinforced Section

For Jointing Details, see PV-101.

Additional Pavement

2' min. 'C' Joint

Bridge Approach Section

Abutting PCC Pavement

(For Abutting PCC Pavement)

DETAIL 'C'
SECTION A-A

Non-Reinforced Section

Reinforced Section

For Jointing Details, see PV-101.

Additional Pavement

2' min. 'C' Joint

Bridge Approach Section

Abutting PCC Pavement

(For Abutting PCC Pavement)

DETAIL 'C'
SECTION A-A

Non-Reinforced Section

Reinforced Section

For Jointing Details, see PV-101.

Additional Pavement

2' min. 'C' Joint

Bridge Approach Section

Abutting PCC Pavement

(For Abutting PCC Pavement)

DETAIL 'C'
SECTION A-A

Non-Reinforced Section

Reinforced Section

For Jointing Details, see PV-101.

Additional Pavement

2' min. 'C' Joint

Bridge Approach Section

Abutting PCC Pavement

(For Abutting PCC Pavement)

DETAIL 'C'
SECTION A-A

Non-Reinforced Section

Reinforced Section

For Jointing Details, see PV-101.

Additional Pavement

2' min. 'C' Joint

Bridge Approach Section

Abutting PCC Pavement

(For Abutting PCC Pavement)

DETAIL 'C'
SECTION A-A

Non-Reinforced Section

Reinforced Section

For Jointing Details, see PV-101.

Additional Pavement

2' min. 'C' Joint

Bridge Approach Section

Abutting PCC Pavement

(For Abutting PCC Pavement)

DETAIL 'C'
SECTION A-A

Non-Reinforced Section

Reinforced Section

For Jointing Details, see PV-101.
Build 4 inch Sloped Curb, unless noted otherwise in the plans. Refer to PV-102 for curb and runout details.

See BR-201, BR-202, BR-203, or BR-204.

Longitudinal Joint (PV-101):
- Single Pour - Saw cut joint per Detail B
- Two Pours - Use 'KS-1' joint (Single Reinforced Section)
- Use 'KS-2' joint (Double Reinforced Section)

Polymer Grid and excavation limits of Modified Subbase 2 feet outside of pavement edge. See BR-201, BR-202, BR-203, or BR-204.

Slope subdrain to drain.

Place an "X" in the plastic concrete near the 'EF' joint at the outside edge of pavement.

4 inch perforated subdrain (polyethylene, corrugated tubing).

See DR-303 or DR-306 for outlet details.

"DW" or "RT" joint.

For joint details, see PV-101.
For joint details, refer to PV-101.
For curb details, see Detail 'F'.
All transverse bars are #5.

1. 2" min. to 2 1/2" max. clear to bent bar.
2. Minimum lap length:
   - #5 Bars - 38''
   - #6 Bars - 45''
   - #8 Bars - 59''
3. If bridge is skewed, place additional #5 bar parallel to skewed face.

Possible Tabulation:
Bridge Approach, BR-241
Possible Contract Item:
(All Abutments)

DETAIL 'A'
(All Abutments)

DETAIL 'B'

DETAIL 'C'
(Pavement Bevel)

DOUBLE REINFORCED 10'' APPROACH
ON GRAVEL ROADS
Longitudinal Joint (PV-101):
Single pour - Saw cut joint per Detail B.
Two pours - Use KS-2 joint.

Section A-A

PLAN VIEW

SECTION THRU CENTERLINE

Pay Limits for Contract Item
Double Reinforced Section
As required by skew angle
(20'-0" min @ CL Roadway)

Abutting Gravel Roadway

Excavation Limits

Normal Pavement Slope

SECTION A-A

Curb per Detail F

Earth

0'-0"

Special Backfill

Excavation Limits

Special Backfill

Approach Gravel Roadway

Approach Roadway

Bridge Deck

Skew Angle

Approach Gravel Roadway

Abutting Gravel Roadway

Bridge Rail End
Section (tp)

20'-0" min

15'-0" min

12"
DETAIL 'D'
(Joint Placement and Curb)

DETAIL 'E'
(Back of Curb Placement)

DETAIL 'F'

Bridge Rail End Section

Curb per Detail 'E'

Bridge Deck

末Joint

9" 7"
2"
1"
4"
8"

Curb per Detail 'F'

8-3/4" Curb Rootout

12" Bevel Area

Gutter Line

4" 2" 1"

See Detail 'E'