Bridge Approach

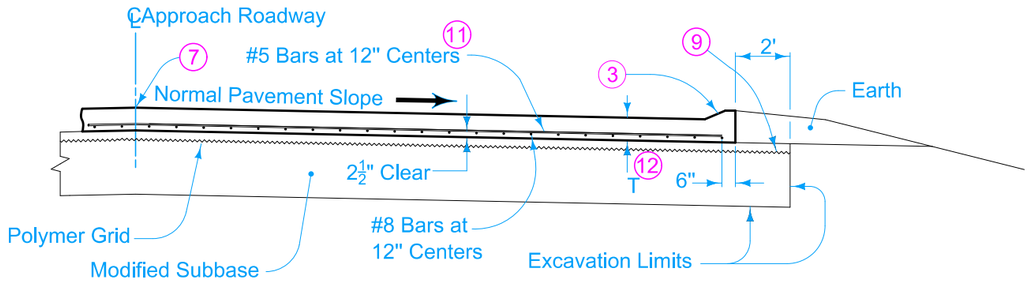
BR

SECTION

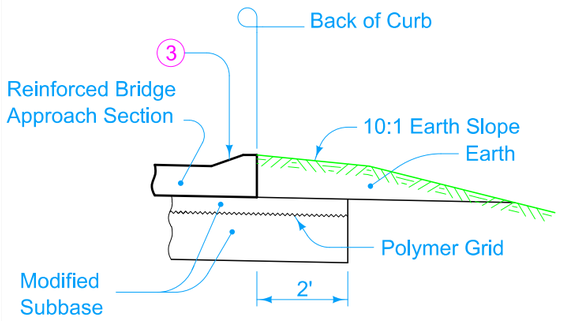
BR

Bridge Approach

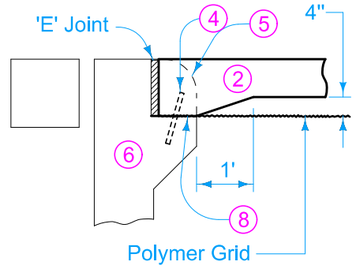
NO.	DATE	TITLE
BR-101	10-15-24	Bridge Approach Section (General Details)
BR-102	10-15-24	Bridge Approach Section (Two-Lane, Abutting PCC Pavement)
BR-103	10-15-24	Bridge Approach Section (Two-Lane for Bridge Reconstruction, PCC Pavement)
BR-104	10-15-24	Bridge Approach Section (at Existing Bridges, PCC Pavement)
BR-105	10-15-24	Bridge Approach Section (Two-Lane, HMA Pavement)
BR-106	10-15-24	Bridge Approach Section (Two-Lane for Bridge Reconstruction, HMA Pavement)
BR-107	10-15-24	Bridge Approach Section (at Existing Bridges, HMA Pavement)
BR-110	10-15-24	PCC Overlay of Bridge Approach Section
BR-112	10-15-24	Bridge Approach Details (in Conjunction with Bridge Deck Overlay)
BR-121	10-15-24	Bridge Approach Details (Secondary Roads)
BR-201	10-15-24	Double Reinforced 10" Approach
BR-202	10-15-24	Double Reinforced 10" Approach with Variable Depth Paving Notch
BR-203	10-15-24	Double Reinforced 12" Approach
BR-204	10-15-24	Double Reinforced 12" Approach with Variable Depth Paving Notch
BR-205	10-15-24	Double Reinforced 12" Approach (Slab Bridge)
BR-211	10-18-22	Bridge Approach (Abutting PCC or Composite Pavement)
BR-212	10-15-24	Bridge Approach (Abutting HMA Pavement)
BR-213	10-19-21	Bridge Approach (Abutting Pavement)
BR-231	10-18-22	Bridge Approach (Multi-Lane, Curbed Roadway)
BR-241	10-15-24	Double Reinforced 10" Approach On Gravel Roads



SECTION A-A

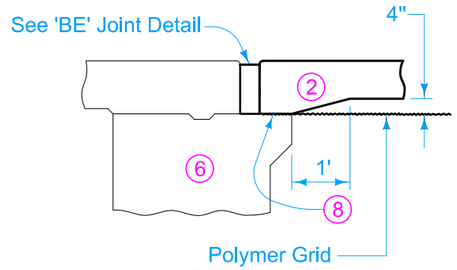


SECTION B-B

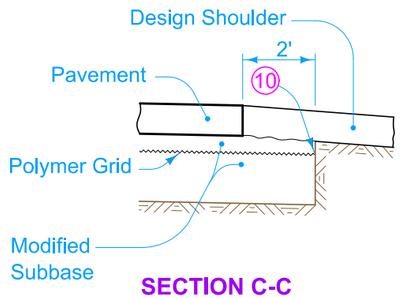


DETAIL 'A'

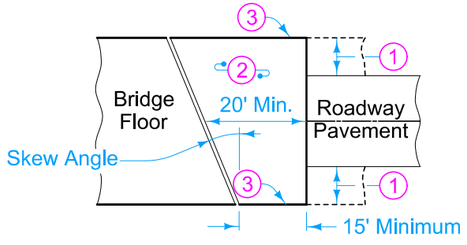
Fixed Abutment Bridge



DETAIL 'A'

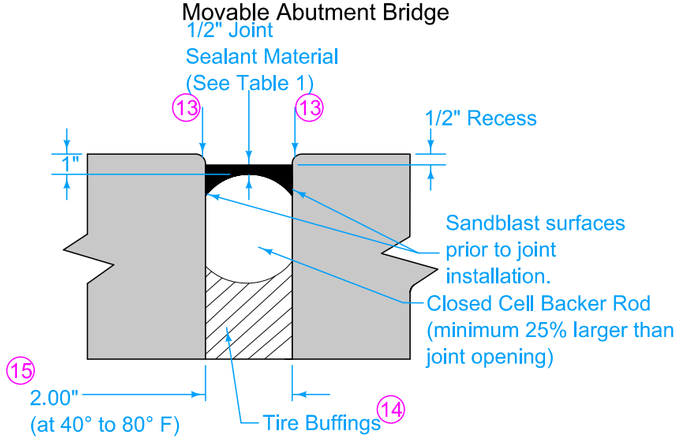


SECTION C-C



TWO LANE APPROACH PAVEMENT
LAYOUT AT A SKEW

Movable Abutment Bridge



'BE'JOINT
DETAIL

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.
9. Extend polymer grid to 2 feet outside edge of pavement.
10. Trim fabric to edge of excavation.
11. If bridge is skewed, place additional #5 bar parallel to skewed face.
12. T = 10 inches.

Sections and details apply to Standard Road Plans BR-112 and BR-102 through BR-107.

13. Edge with ¼ inch tool for length of joint indicated if formed; edging not required when cut with diamond blade saw.
14. Compact tire buffings by spading with a square-nose shovel. Tire buffings shall not be larger than ½ inch.
15. Setting Width Notes:

    - Width is perpendicular to abutment.

    - Temperature of concrete deck on the underside or shaded portion of the deck shall be between 40 to 80 degrees Farenheit when placing approach slab concrete.

    -This 'BE' joint and the setting temperatures may be used for all concrete beam or slab bridges up to 575' in length and for all steel girder bridges up to 400' in length.

Possible Contract Item:
Bridge Approach, Two Lane
Longitudinal Grooving in Concrete, Bridge Deck
Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
112-6

Table 1
Approved List of Sealant
Dow - Dowsil 902 RCS
Sika - Sikasil 728 RCS
Watson Bowman Acme - Wabo SiliconeSeal
Pecora - 322FC

IOWA DOT

REVISION
2 | 10-15-24

STANDARD ROAD PLAN

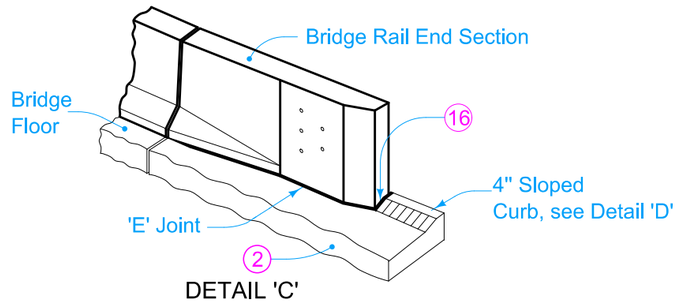
BR-101

SHEET 1 of 2

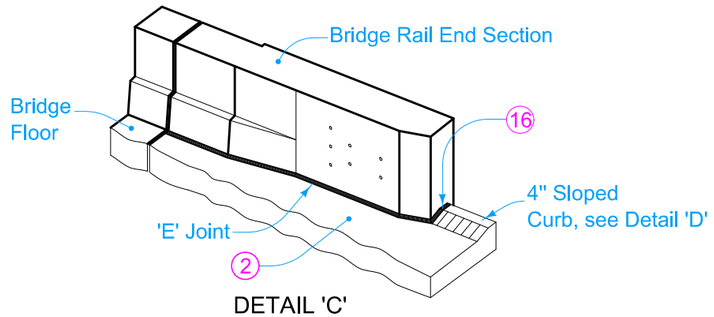
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

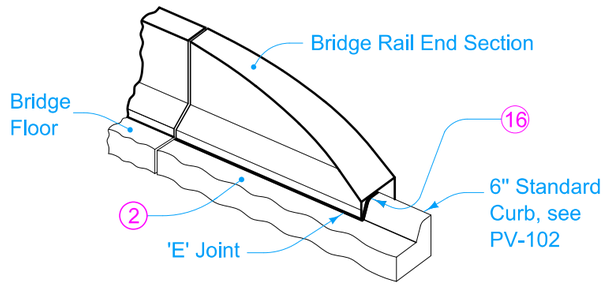
BRIDGE APPROACH SECTION (GENERAL DETAILS)



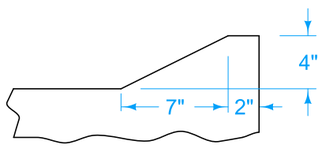
DETAIL 'C'
Five Hole Bridge Rail End Section



DETAIL 'C'
Retrofit Bridge Rail End Section



DETAIL 'C'
Low Speed Bridge Rail End Section



DETAIL 'D'
4" Sloped Curb

CURB ALIGNMENT AND
JOINT PLACEMENT

(2) Reinforced Bridge Approach Section.

(16) 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 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 4136 of the Standard Specifications. Set width of gap to 2 inches. Joint length as required to completely fill from back side of curb to front face of bridge wing.

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	10-15-24

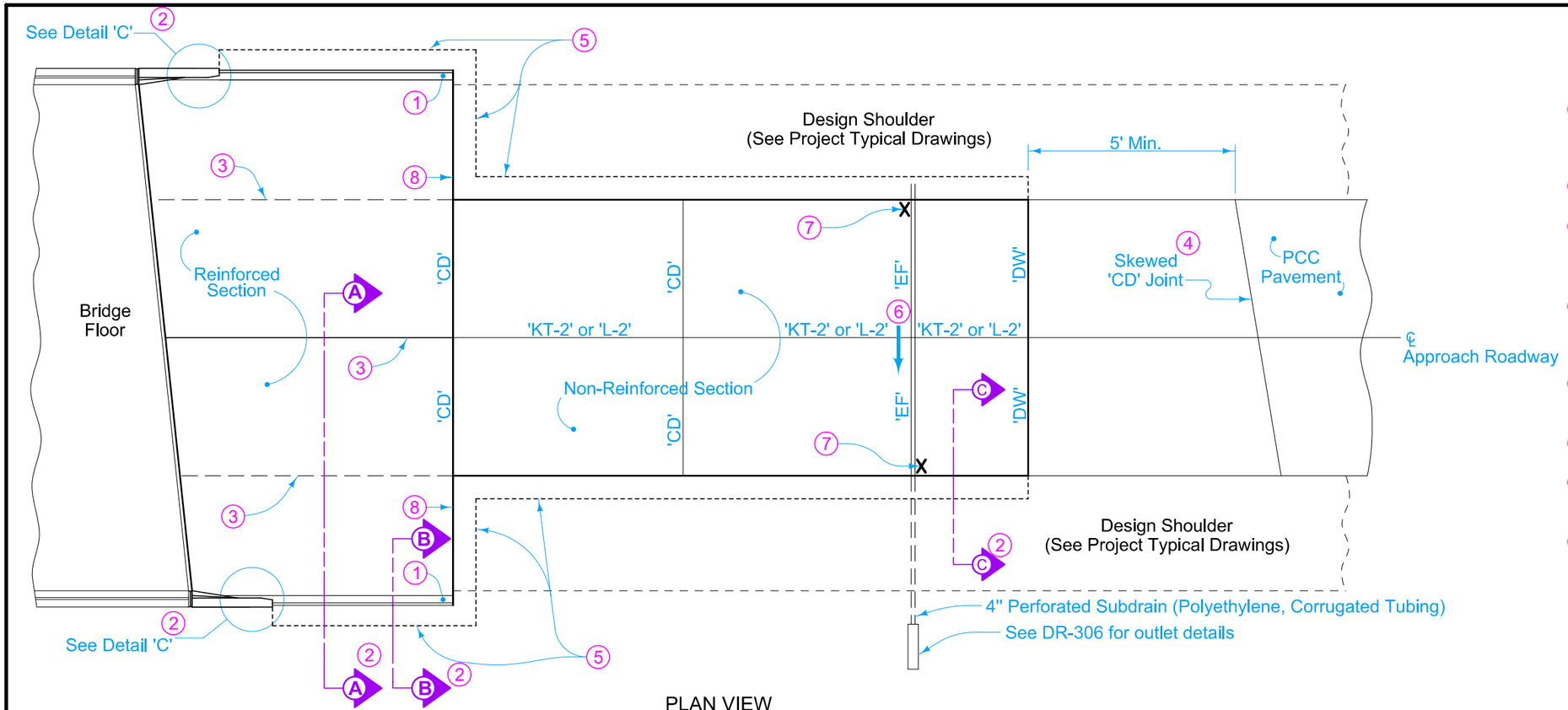
BR-101

SHEET 2 of 2

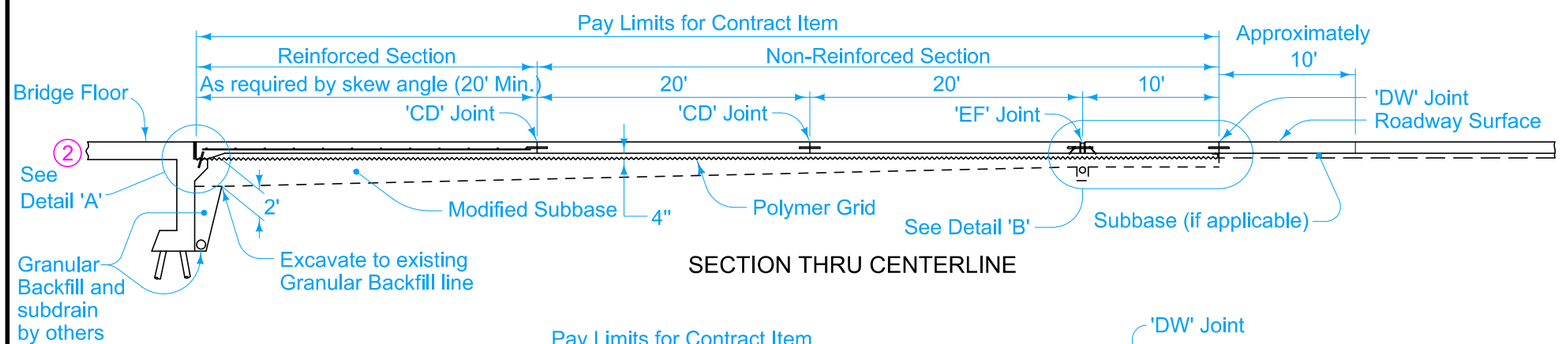
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

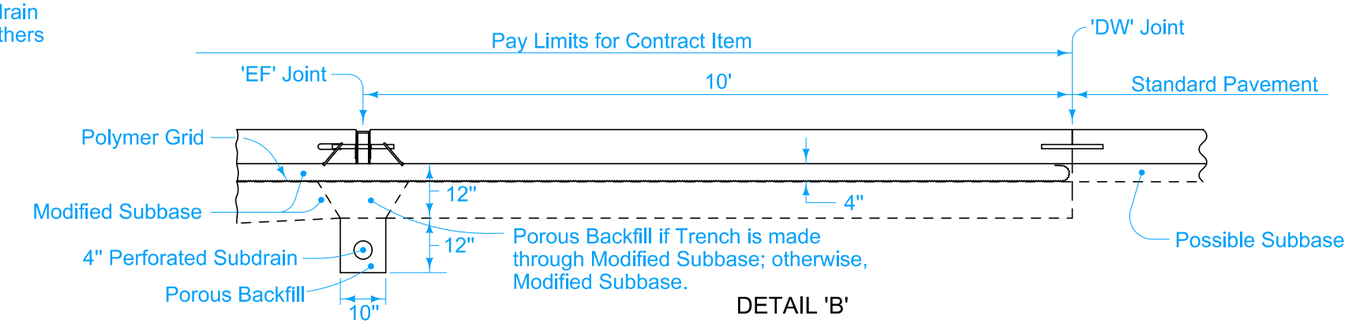
BRIDGE APPROACH SECTION
(GENERAL DETAILS)



PLAN VIEW



SECTION THRU CENTERLINE



DETAIL 'B'

Doweled 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).
2. See 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
- Longitudinal Grooving in Concrete, Bridge Deck
- Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
- 112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	10-15-24

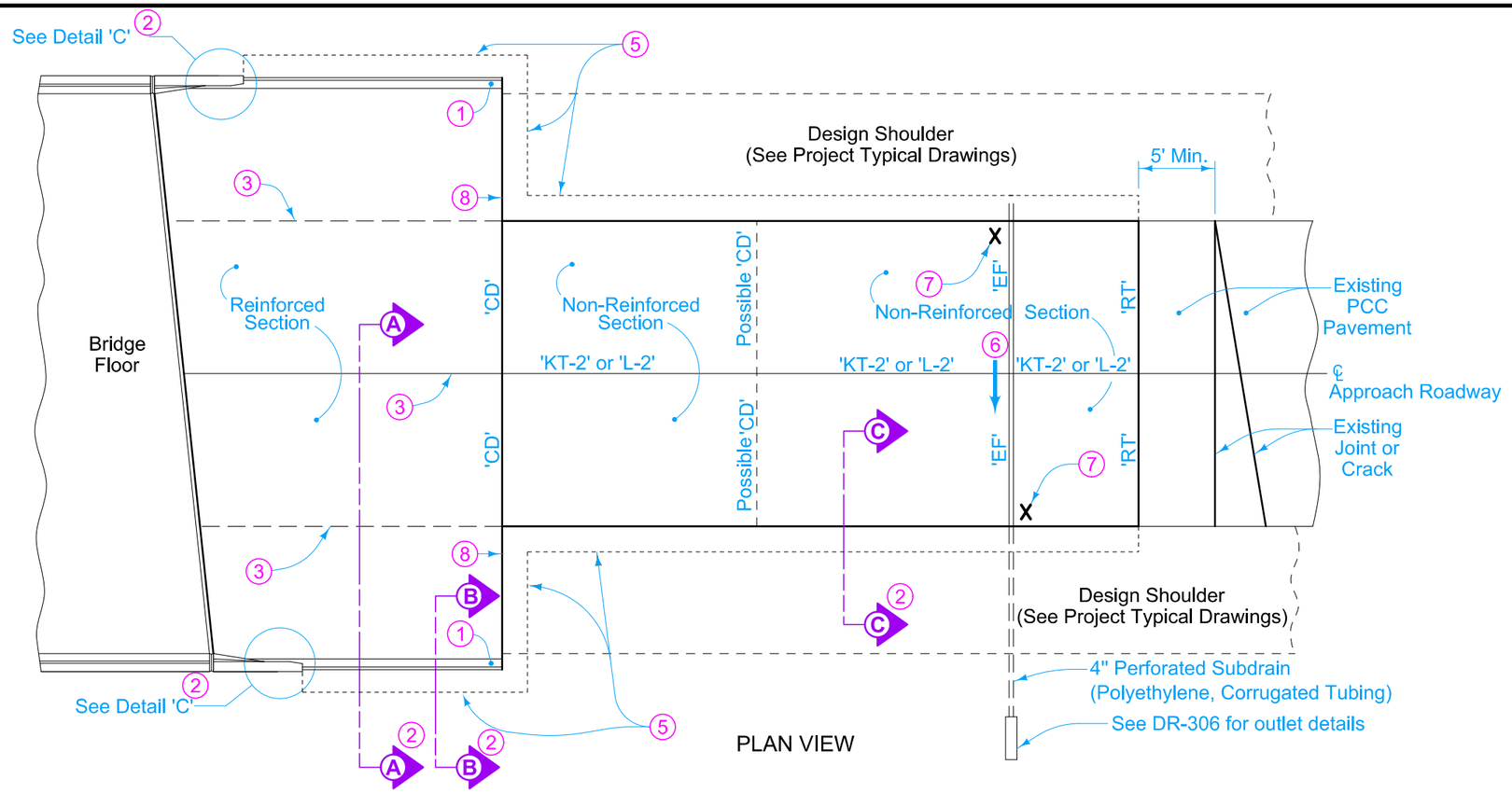
BR-102

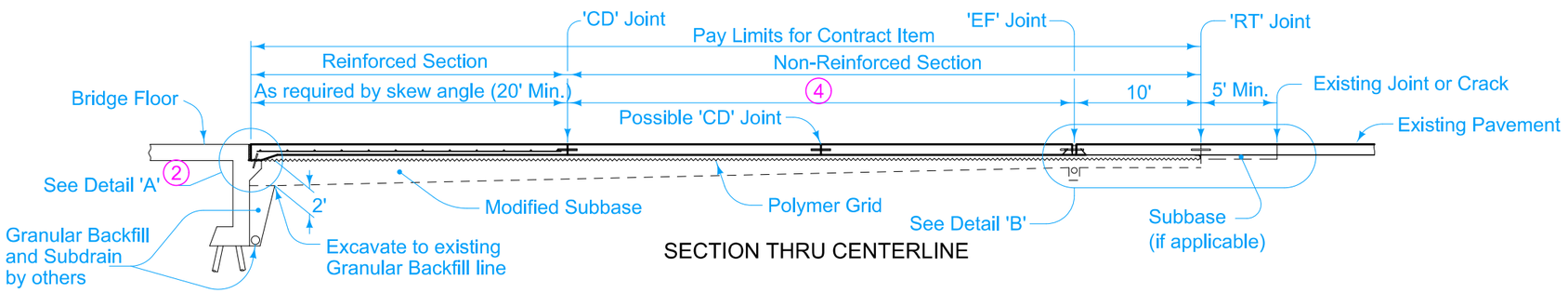
SHEET 1 of 1

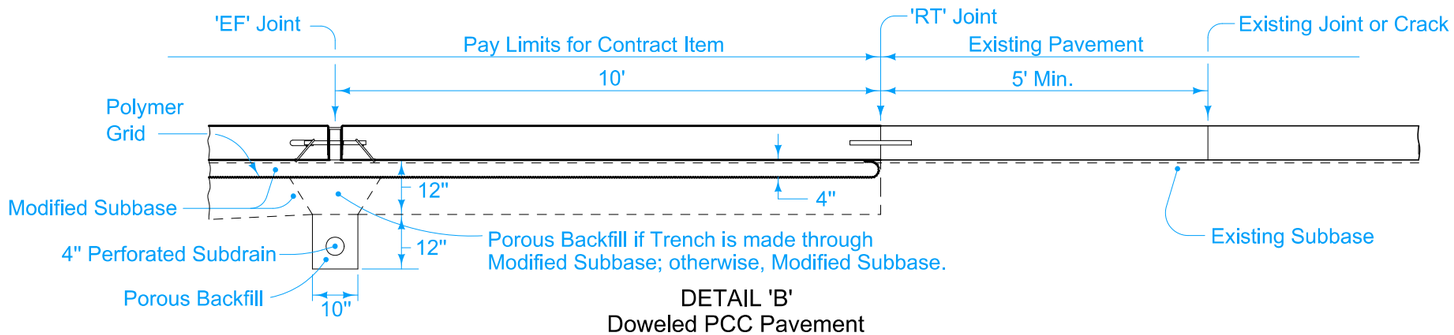
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.

APPROVED BY DESIGN METHODS ENGINEER

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).
2. See BR-101.
3. Longitudinal Joint (PV-101):
   Single Pour - Saw cut joint per Detail B.
   Two Pours - Use 'KS-1' joint.
4. Minimum 1 panel, maximum 3 panels. 15 foot minimum, 20 foot maximum panel length. Use 'CD' joints.
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
Longitudinal Grooving in Concrete, Bridge Deck
Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	10-15-24

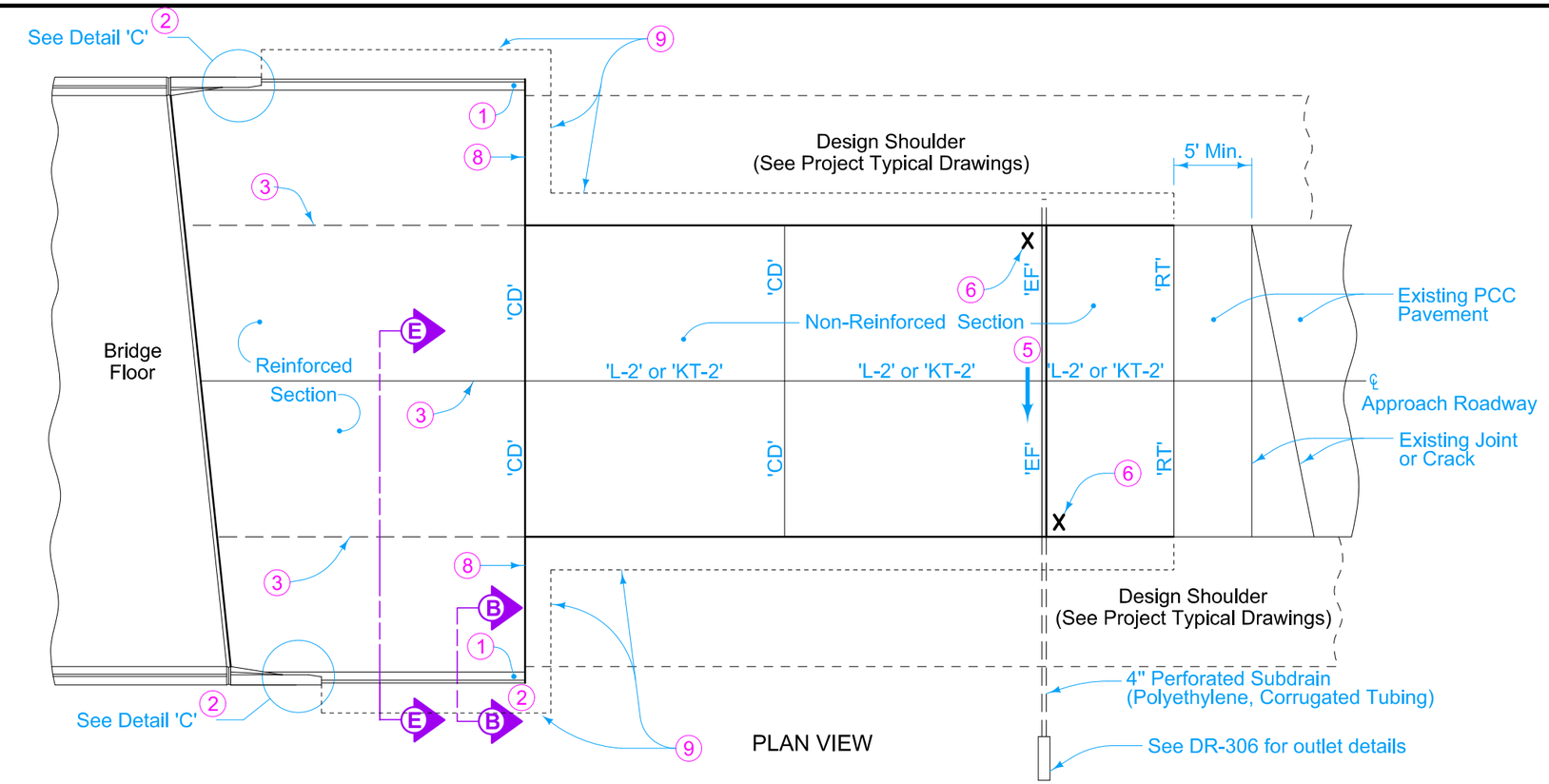
BR-103

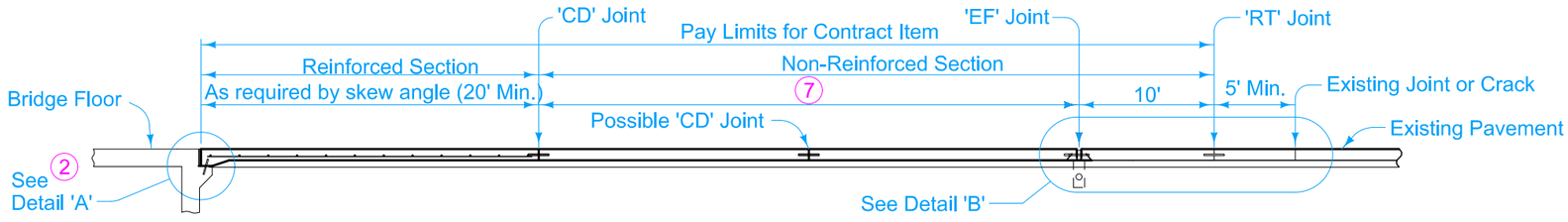
SHEET 1 of 1

REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.

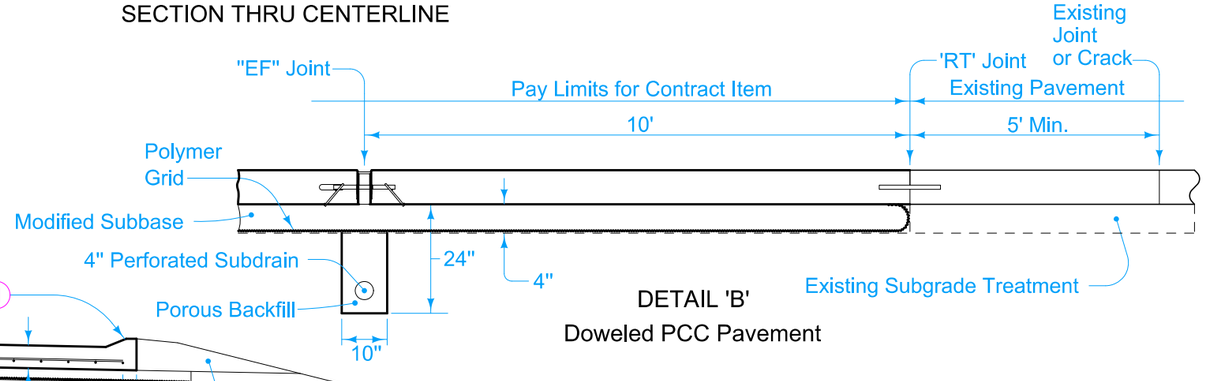
APPROVED BY DESIGN METHODS ENGINEER

BRIDGE APPROACH SECTION (TWO-LANE FOR BRIDGE RECONSTUCTION, PCC PAVEMENT)

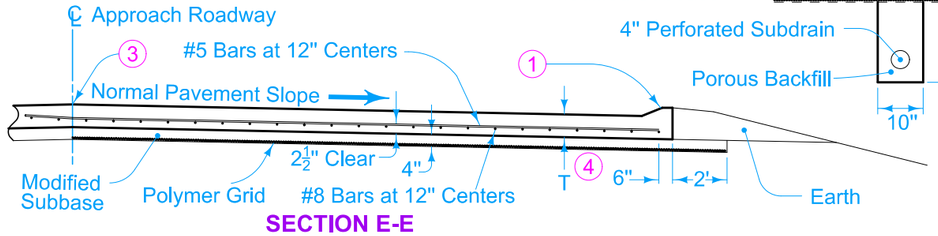




SECTION THRU CENTERLINE



DETAIL 'B'
Doweled PCC Pavement



SECTION E-E

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).
2. See BR-101.
3. Longitudinal Joint (PV-101):
   Single Pour - Saw cut joint per Detail B.
   Two Pours - Use 'KS-1' joint.
4. T = 10 inches.
5. Slope subdrain to drain.
6. Place an "X" in the plastic concrete near the 'EF' joint at the outside edge of pavement.
7. Minimum 1 panel, maximum 3 panels. 15 foot minimum, 20 foot maximum panel length. Use 'CD' joints.
8. Place 'RD' joint where PCC shoulder. Place 'B' joint otherwise.
9. Excavation limits of Modified Subbase 2 feet outside of pavement edge, see BR-101.

Possible Contract Item:
Bridge Approach, Two Lane
Longitudinal Grooving in Concrete, Bridge Deck
Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	10-15-24

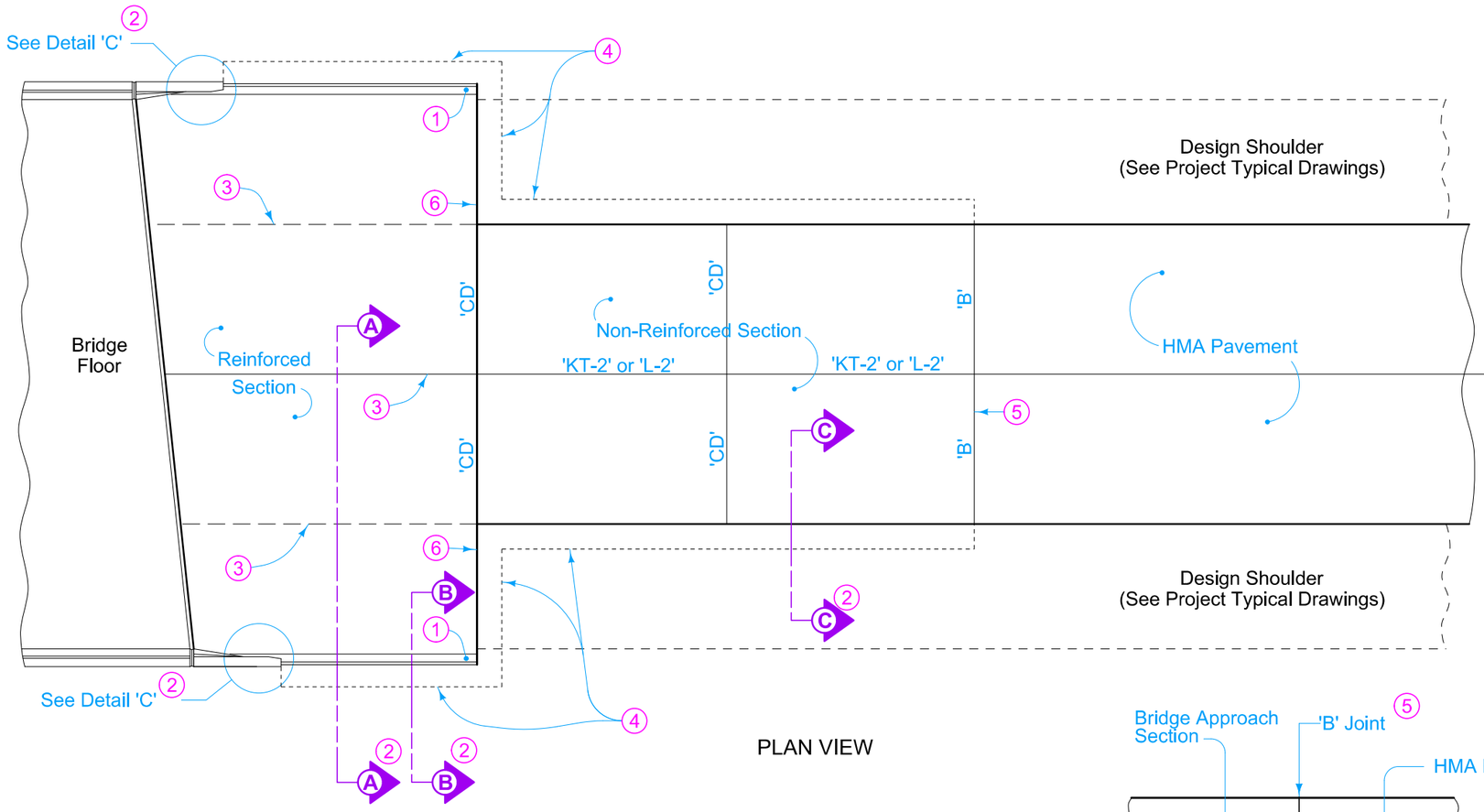
BR-104

SHEET 1 of 1

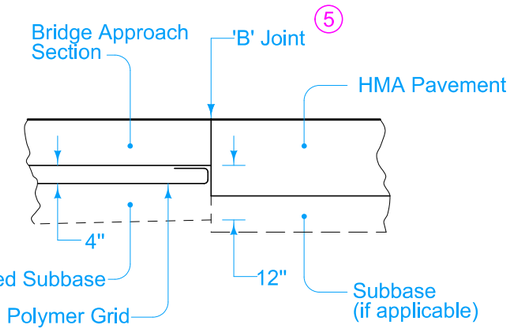
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.

APPROVED BY DESIGN METHODS ENGINEER

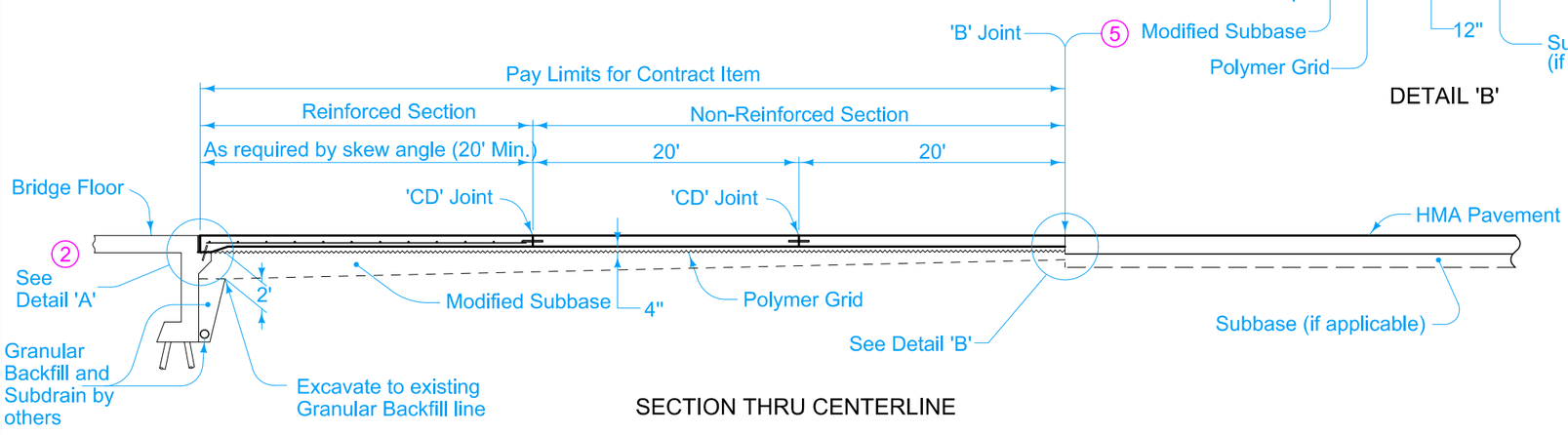
BRIDGE APPROACH SECTION (AT EXISTING BRIDGES, PCC PAVEMENT)



PLAN VIEW



DETAIL 'B'



SECTION THRU CENTERLINE

For joint details, see PV-101.

1. Build curb to end of Reinforeced Bridge Approach Section. 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 '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
Longitudinal Grooving in Concrete, Bridge Deck
Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
1	10-15-24

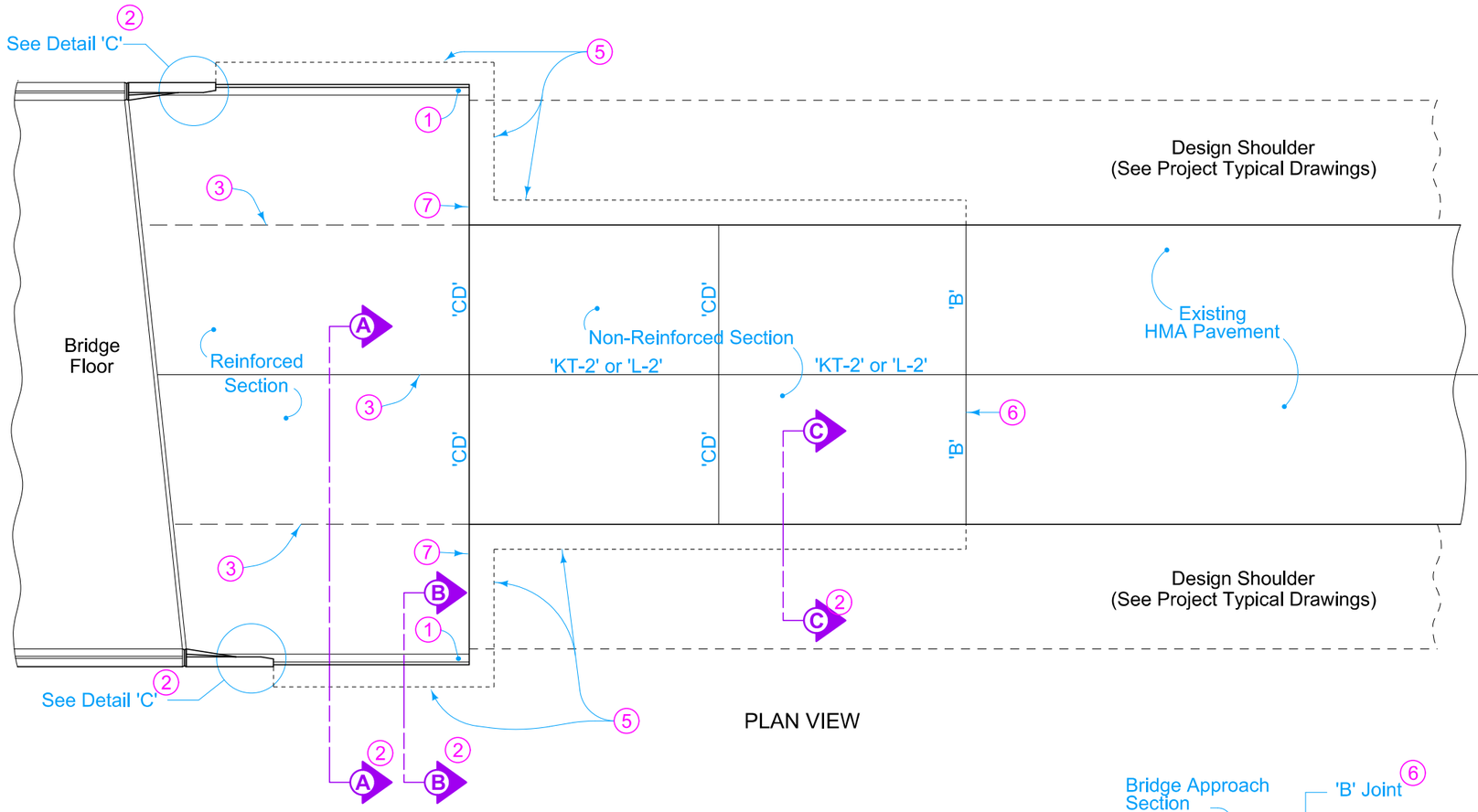
BR-105

SHEET 1 of 1

REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.

APPROVED BY DESIGN METHODS ENGINEER

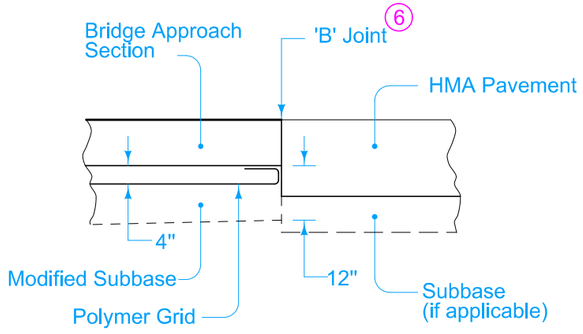
BRIDGE APPROACH SECTION
(TWO-LANE, HMA PAVEMENT)



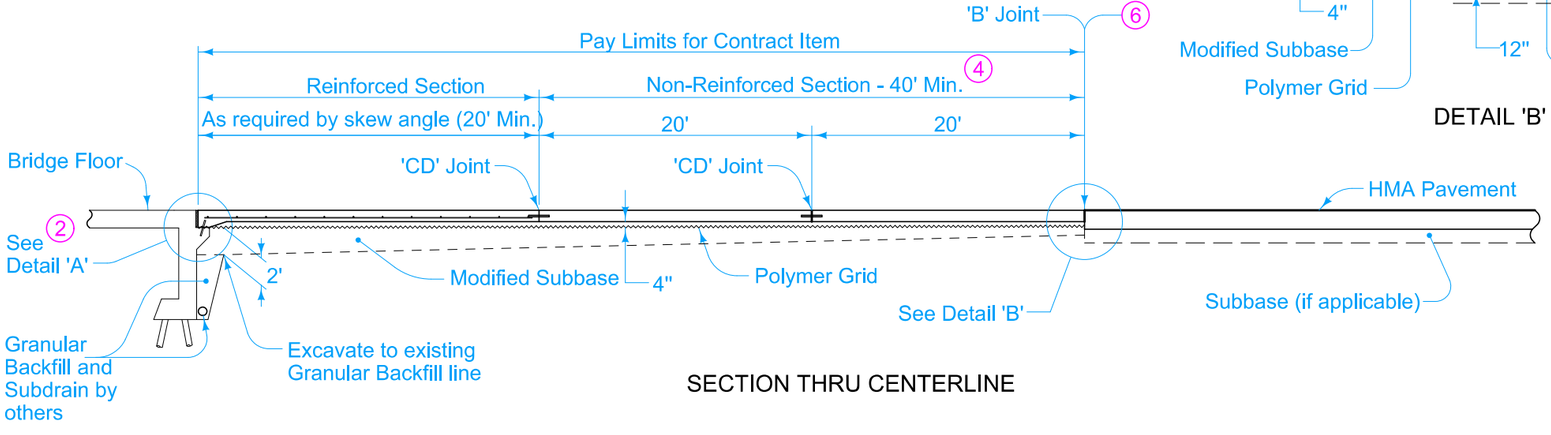
PLAN VIEW

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).
2. See 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.



DETAIL 'B'



SECTION THRU CENTERLINE

Possible Contract Item:
Bridge Approach, Two Lane
Longitudinal Grooving in Concrete, Bridge Deck
Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
1	10-15-24

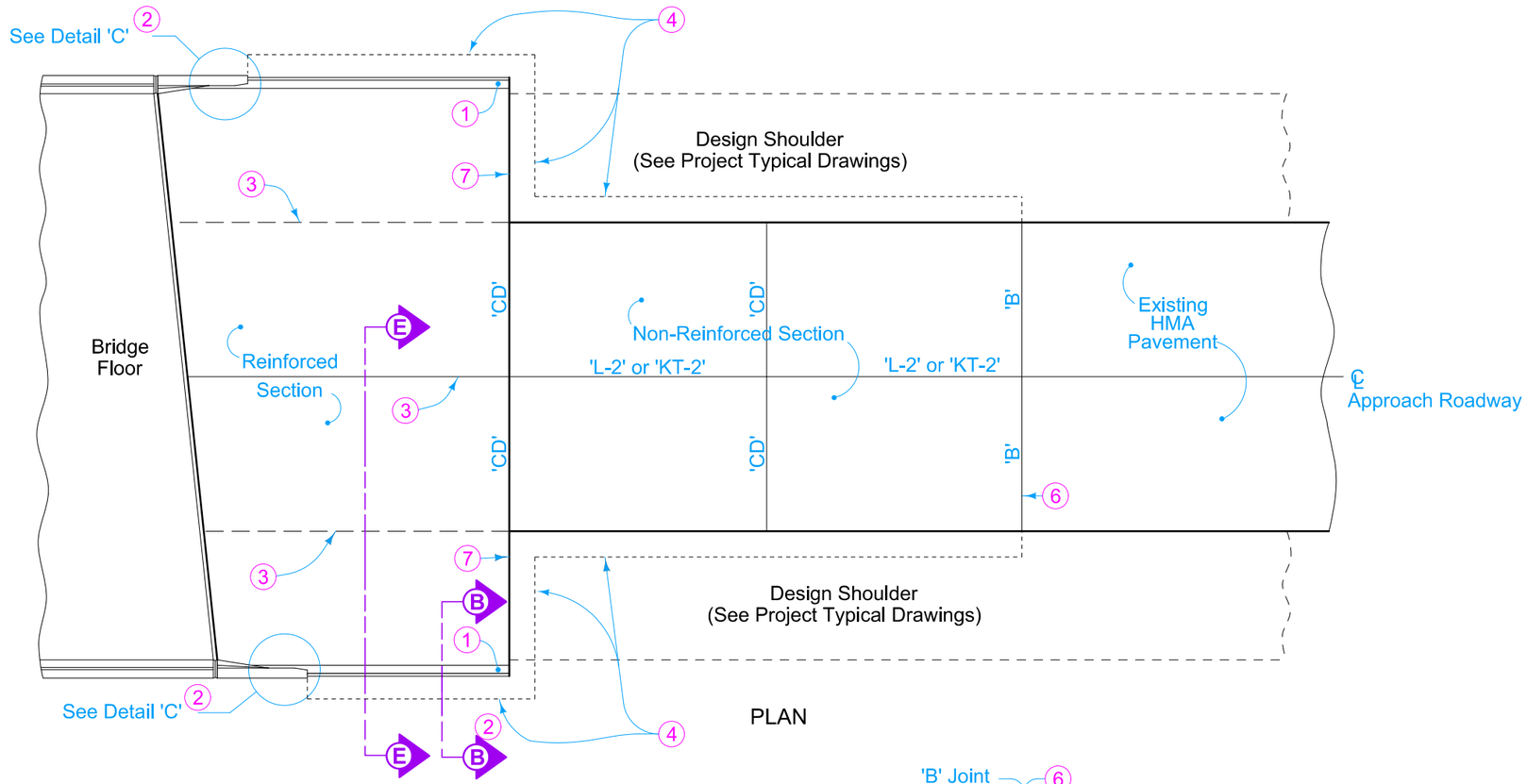
BR-106

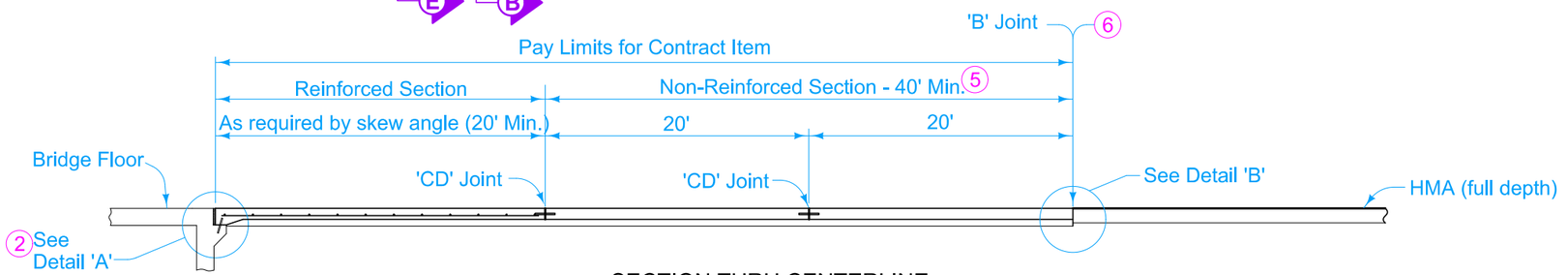
SHEET 1 of 1

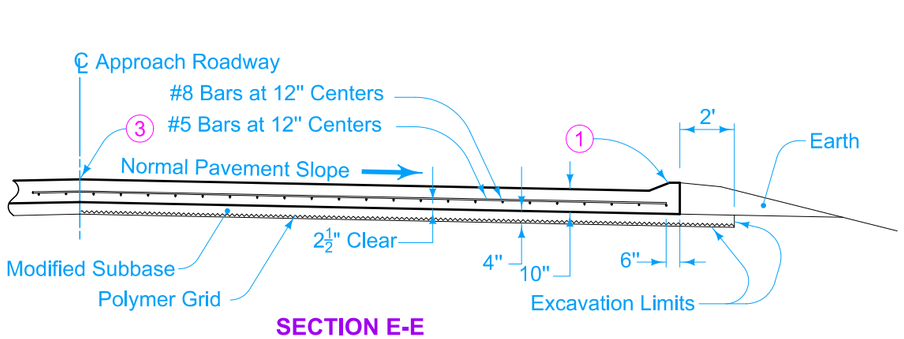
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.

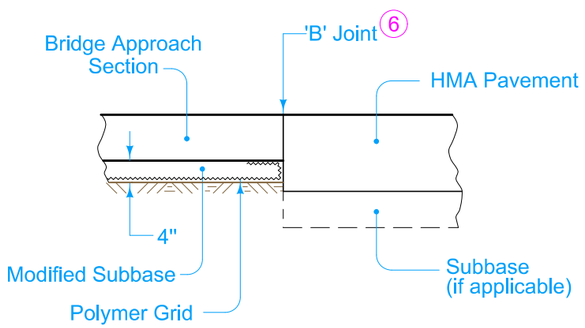
APPROVED BY DESIGN METHODS ENGINEER

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









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 'KS-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 needto 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
Longitudinal Grooving in Concrete, Bridge Deck
Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION
1 | 10-15-24

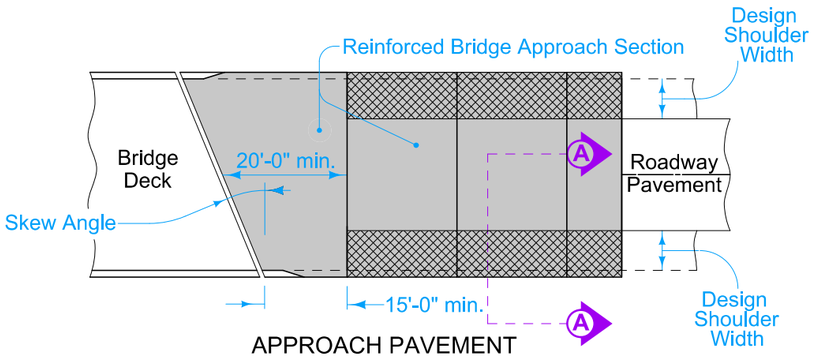
BR-107

SHEET 1 of 1

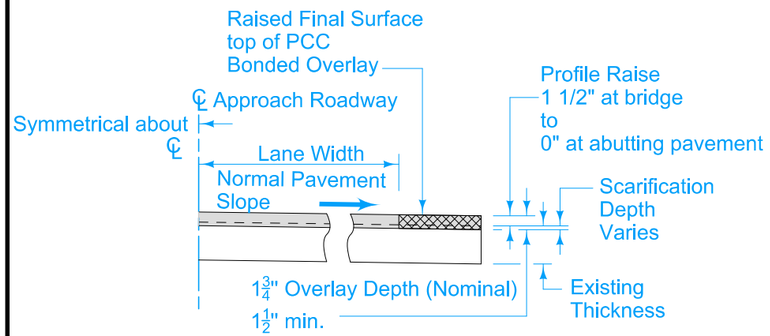
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.

APPROVED BY DESIGN METHODS ENGINEER

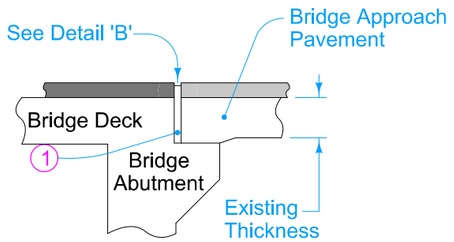
BRIDGE APPROACH SECTION
(AT EXISTING BRIDGES, HMA PAVEMENT)



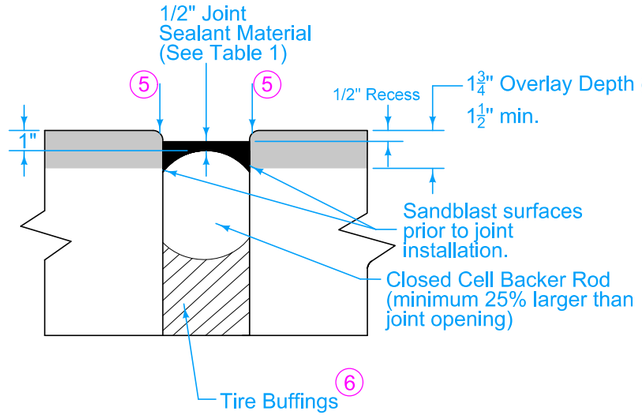
APPROACH PAVEMENT



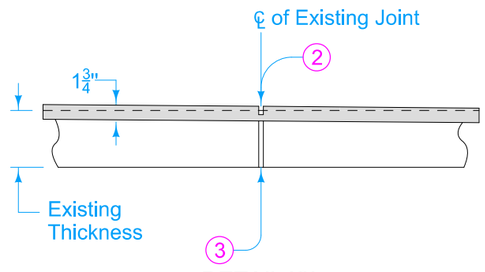
SECTION A-A



DETAIL 'A'

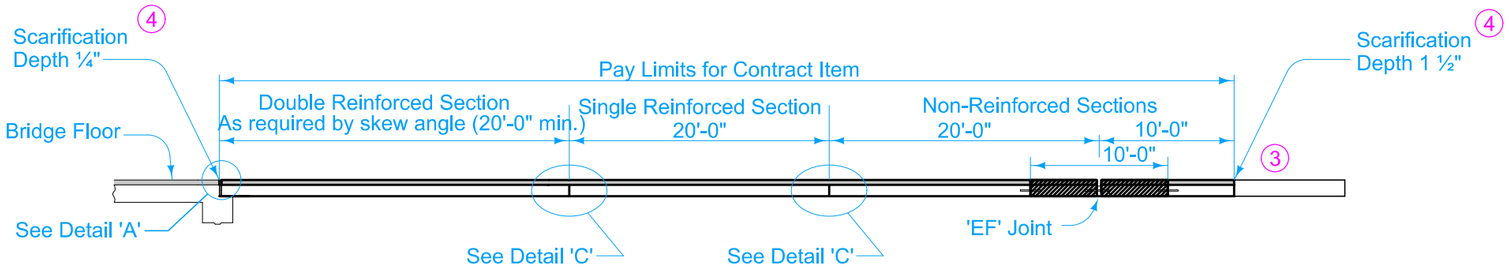


DETAIL 'B'



DETAIL 'C'

Table 1
Approved List of Sealant
Dow - Dowsil 902 RCS
Sika - Sikasil 728 RCS
Watson Bowman Acme - Wabo SiliconeSeal
Pecora - 322FC



SECTION THRU CENTERLINE

Possible full depth patch to replace EF joint (if present). To be done after overlay. Refer to PR-101

Possible shoulder.

Remove all HMA within pay limits if present. Removal of previous HMA overlays will be incidental to "Deck Overlay" and will not be paid for seperately. Full depth patch maybe required to remove HMA, see project plans.

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. Scarification to the depth required and joint sealing is incidental to "Deck Overlay".

This standard may be used with bridge overlays resulting in a profile change of up to 1.5 inches.

1. Existing joint. Remove all expansion material and clean joint area. Do not overlay and saw cut.
2. Saw and seal over existing joint. Refer to Detail 'C' on PV-101.
3. Existing joint. Remove debris and clean joint prior to overlay.
4. Depth of scarification shall transition evenly between ends of bridge approach.
5. Edge with ¼ inch tool for length of joint indicated if formed; edging not required when cut with diamond blade saw.
6. Tire buffings required when joint is 2 inches or greater. Compact tire buffings by spading with a square-nose shovel. Tire buffings shall not be larger than ½ inch.

IOWA DOT

STANDARD ROAD PLAN

REVISION
New 10-15-24

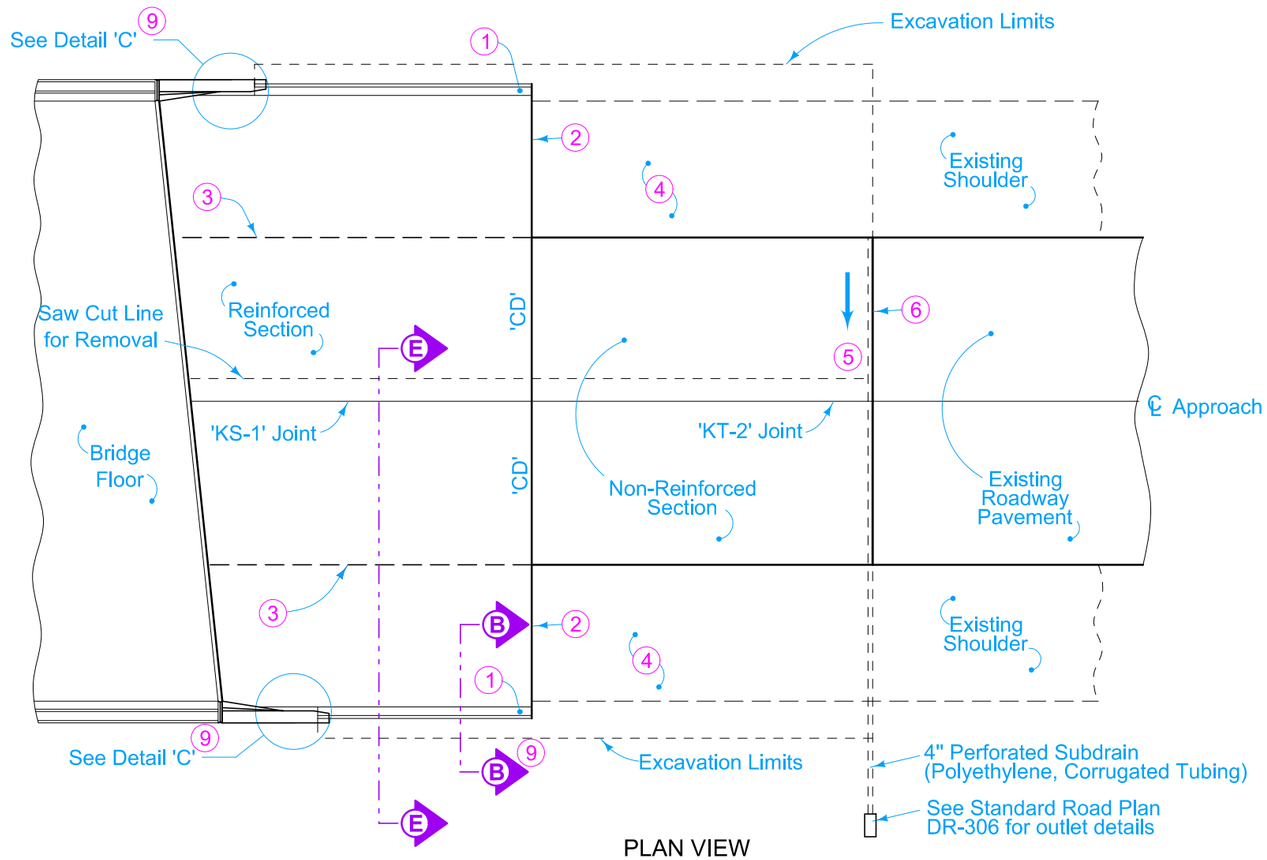
BR-110

SHEET 1 of 1

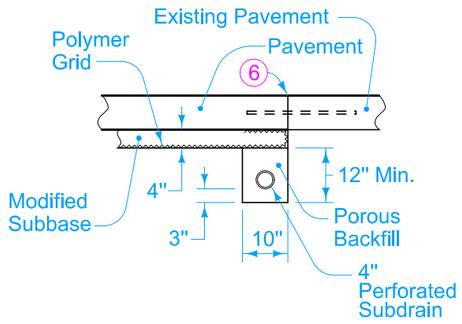
REVISIONS: New. Replaces BR-111.

APPROVED BY DESIGN METHODS ENGINEER

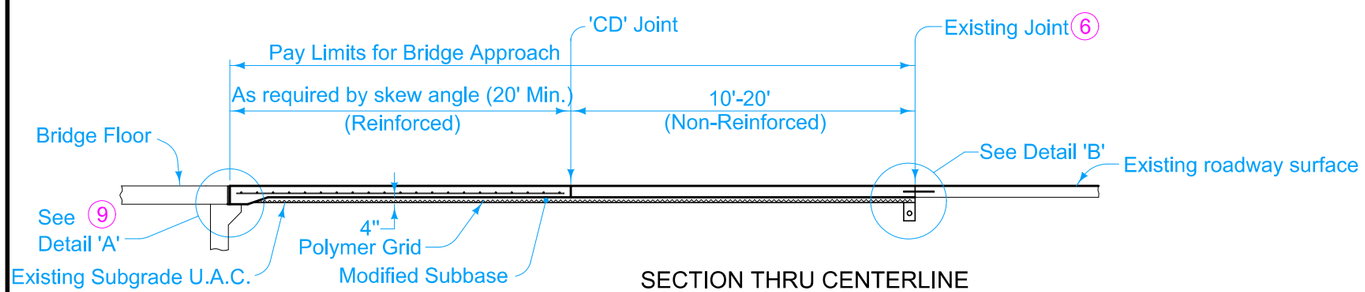
PCC OVERLAY OF BRIDGE APPROACH SECTION



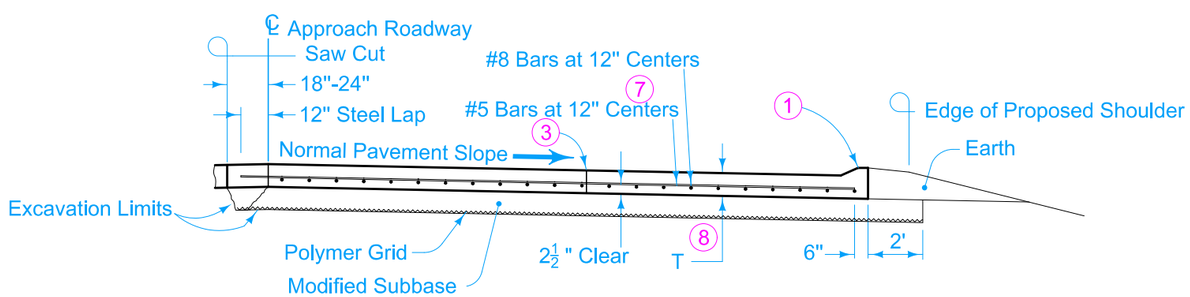
PLAN VIEW



DETAIL 'B'



SECTION THRU CENTERLINE



SECTION E-E

Maintain traffic in adjacent lanes.

For joint details, see PV-101.

If an 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.

1. Build curb to end of Reinfoced Bridge Approach Section. See Curb Location Details (Section B-B on BR-101).
2. Place 'RD' joint if P.C. Shoulder; 'B' joint otherwise.
3. Optional 'KS-1' joint.
4. See Typical Paving Cross-Sections.
5. Slope Subdrain to drain.
6. Place 'RT' joint if existing pavement is P.C., 'B' joint otherwise.
7. If bridge is skewed, place additional #5 bar parallel to skewed face.
8. T=10 inches.
9. See BR-101.

Possible Contract Items:
- Bridge Approach, Two Lane
- Paved Shoulder, P.C. Concrete
- Longitudinal Grooving in Concrete, Bridge Deck
- Longitudinal Grooving in Concrete, Pavement

PossibleTabulation:
112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	10-15-24

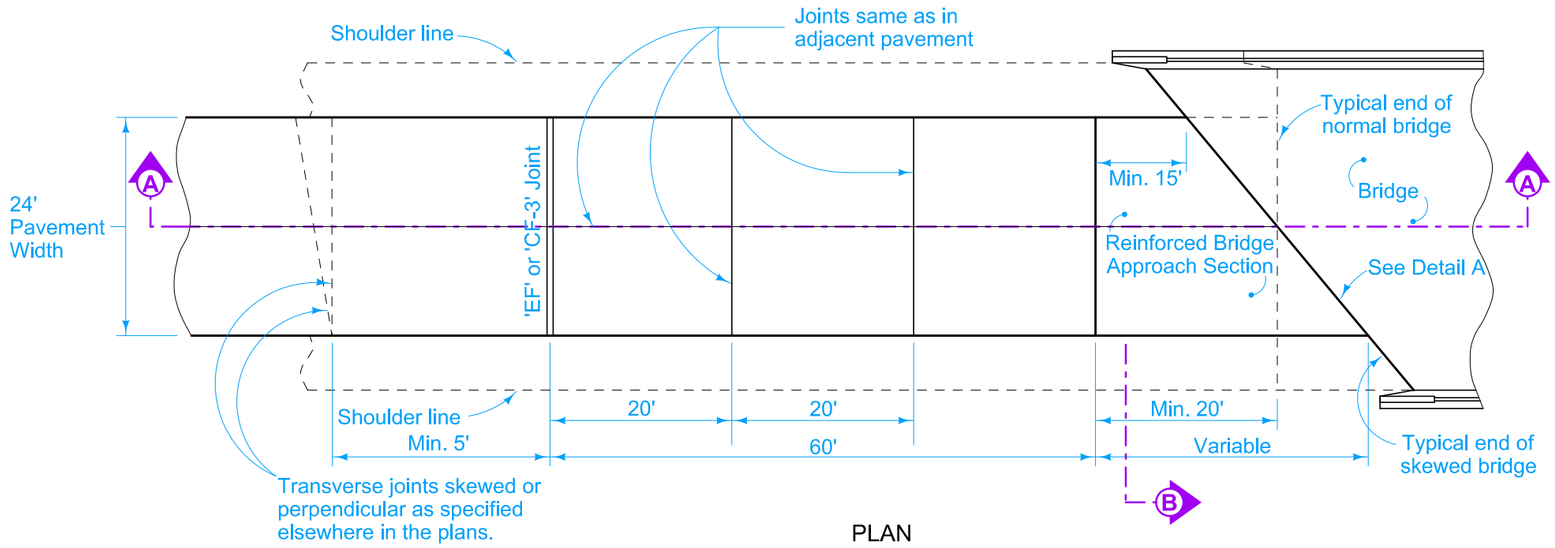
BR-112

SHEET 1 of 1

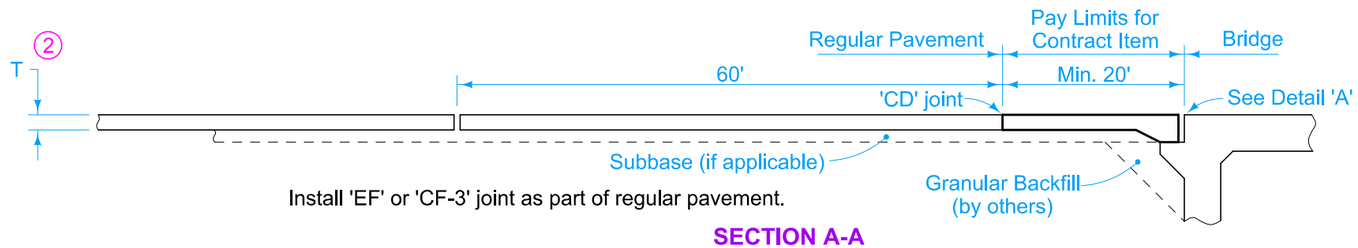
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.

APPROVED BY DESIGN METHODS ENGINEER

BRIDGE APPROACH DETAILS (IN CONJUNCTION WITH BRIDGE DECK OVERLAY)

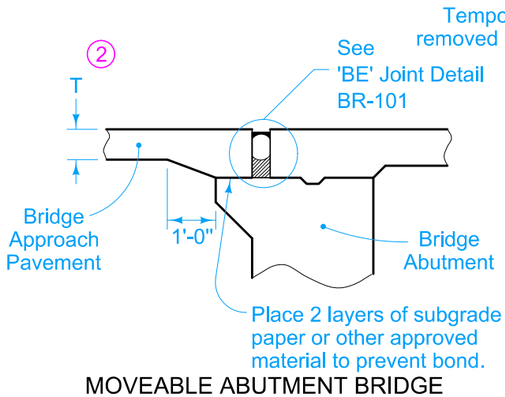


PLAN

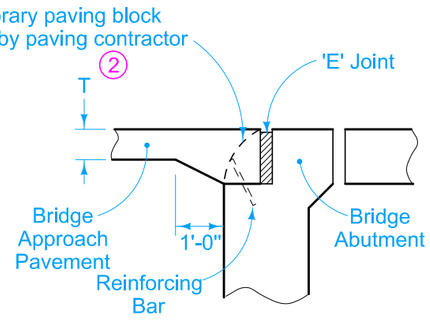


Install 'EF' or 'CF-3' joint as part of regular pavement.

SECTION A-A

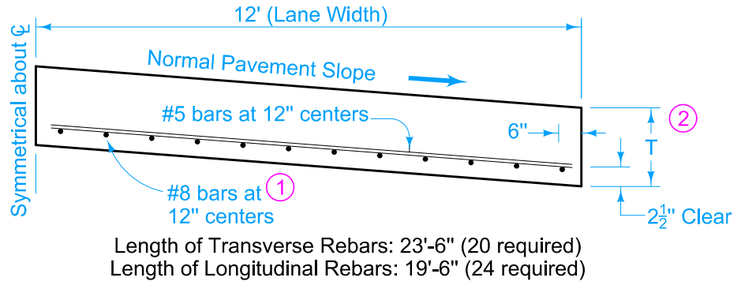


MOVEABLE ABUTMENT BRIDGE



FIXED ABUTMENT BRIDGE

DETAIL 'A'



Length of Transverse Rebars: 23'-6" (20 required)
Length of Longitudinal Rebars: 19'-6" (24 required)

TYPICAL HALF SECTION B

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."

Possible Contract Items:
- Bridge Approach, Secondary Roads
- Standard or Slip-Form PCC Pavement
- Longitudinal Grooving in Concrete, Bridge Deck
- Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
- 112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
1	10-15-24

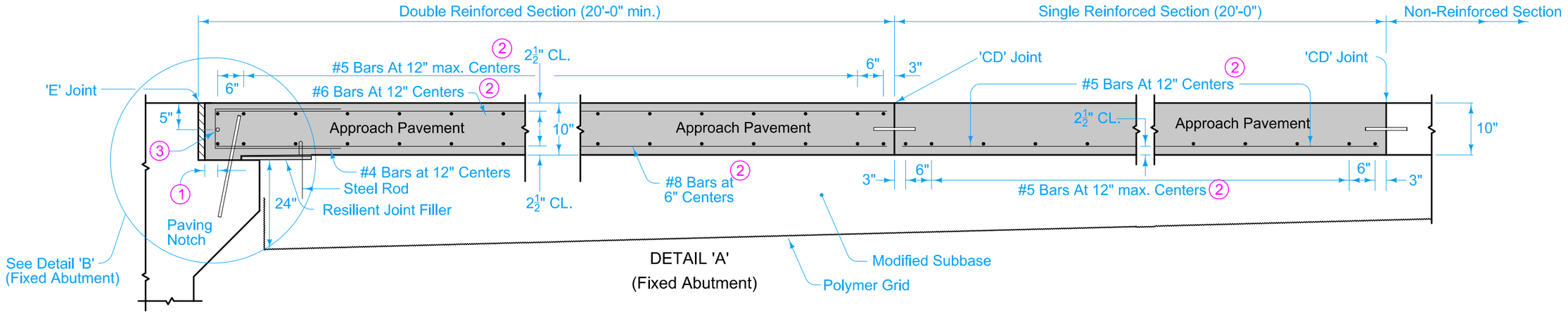
BR-121

SHEET 1 of 1

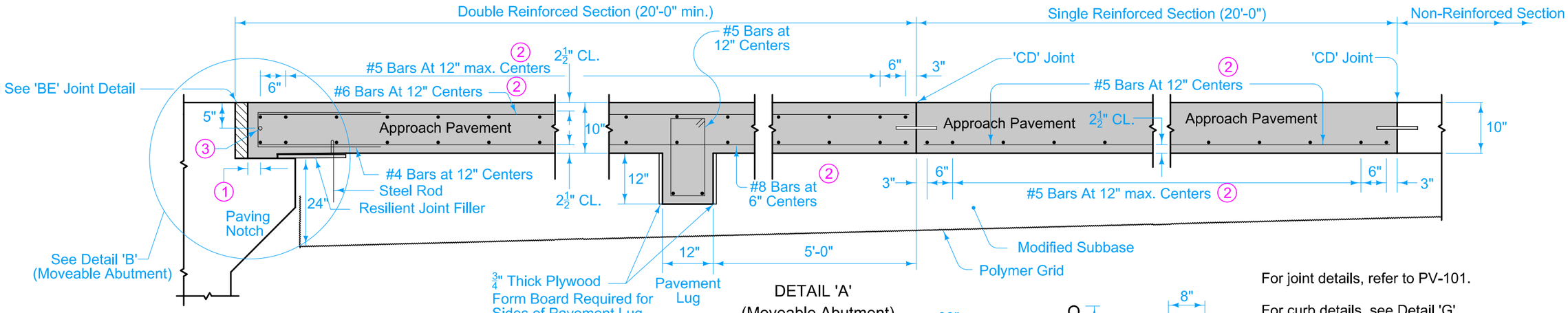
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item. Added note referring to 'BE' joint.

APPROVED BY DESIGN METHODS ENGINEER

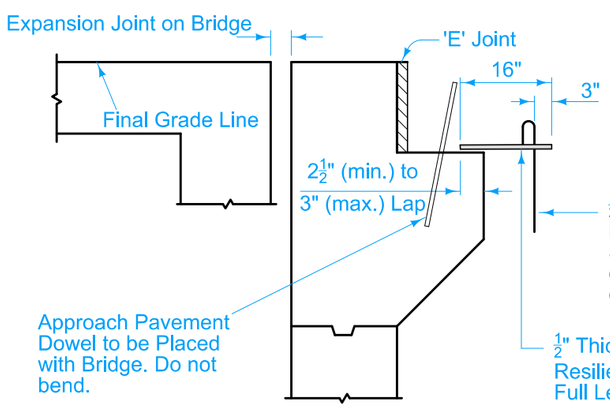
BRIDGE APPROACH DETAILS (SECONDARY ROADS)



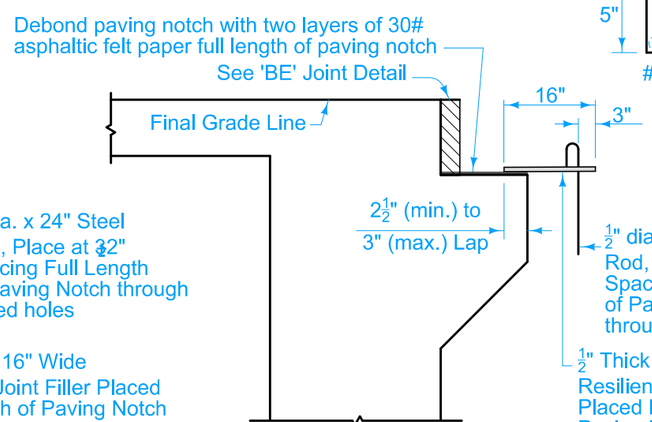
DETAIL 'A'
(Fixed Abutment)



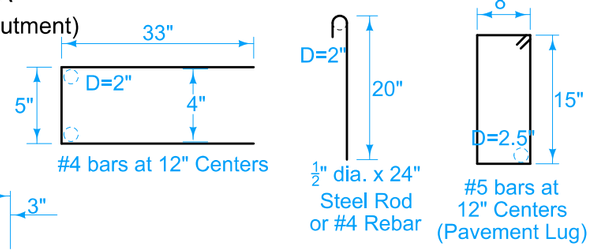
DETAIL 'A'
(Moveable Abutment)



DETAIL 'B' (Fixed Abutment)



DETAIL 'B' (Moveable Abutment)



BENT BAR SHAPES

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

For joint details, refer to PV-101.

For curb details, see Detail 'G'.

All transverse bars are #5.

Possible Contract Item:
- Bridge Approach, BR-201
- Longitudinal Grooving in Concrete, Bridge Deck
- Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
- 112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

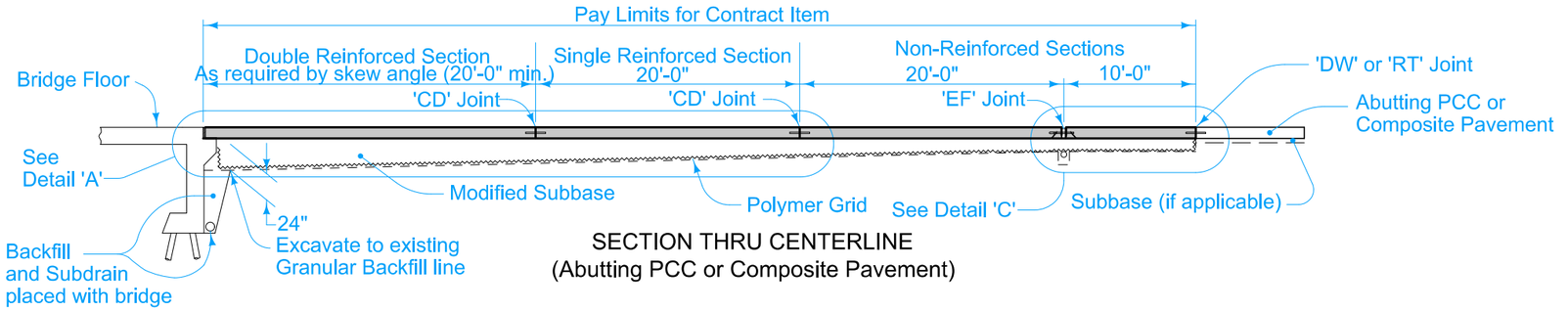
BR-201

SHEET 1 of 3

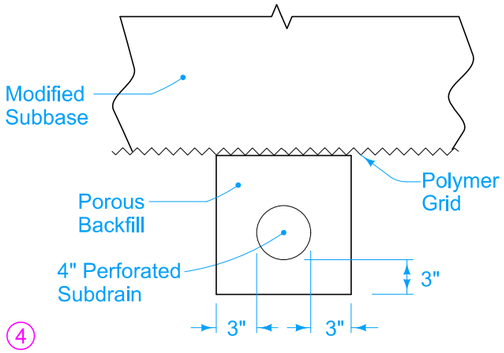
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

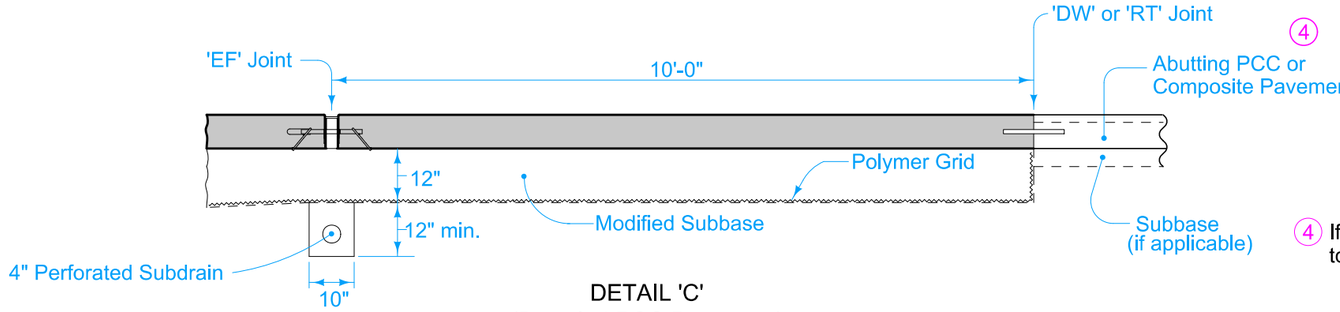
DOUBLE REINFORCED 10" APPROACH



SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)

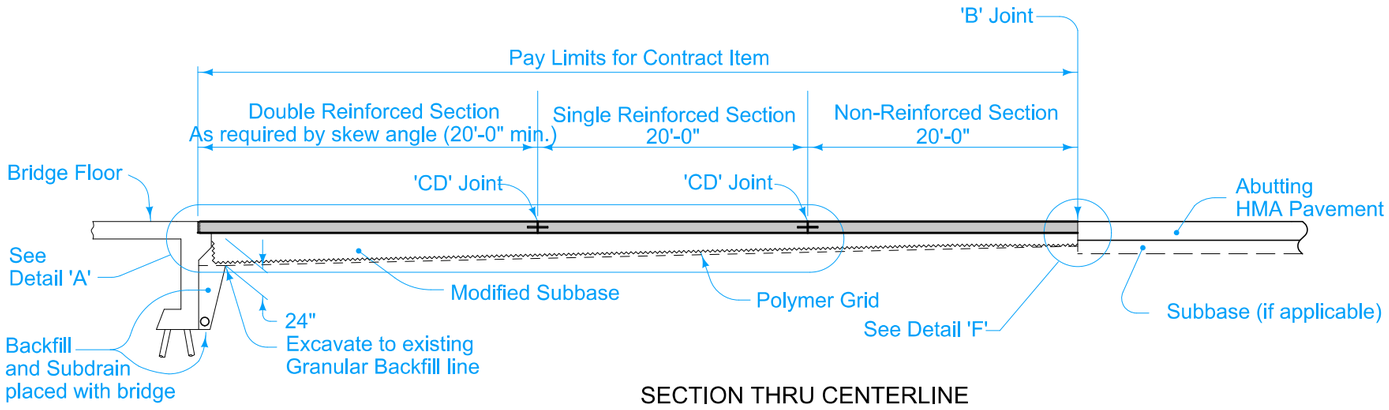


4" SUBDRAIN LOCATION

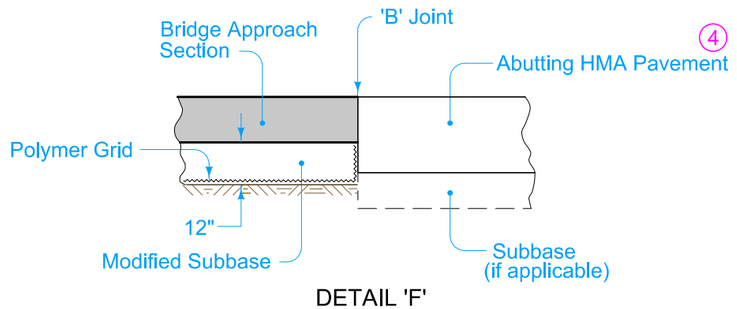


DETAIL 'C'
(Doweled PCC Pavement)

④ If abutting pavement (PCC or HMA) is not in place, refer to BR-213.



SECTION THRU CENTERLINE
(Abutting HMA Pavement)



DETAIL 'F'

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

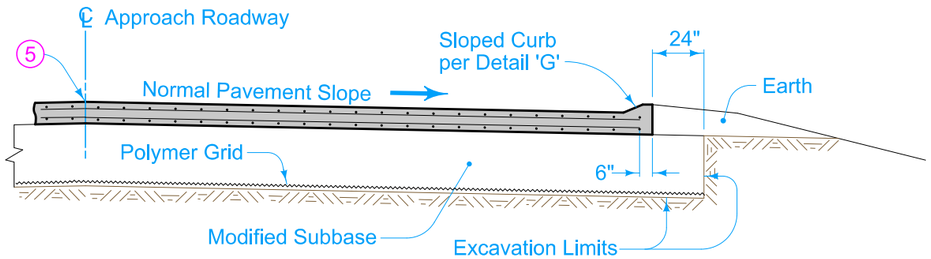
BR-201

SHEET 2 of 3

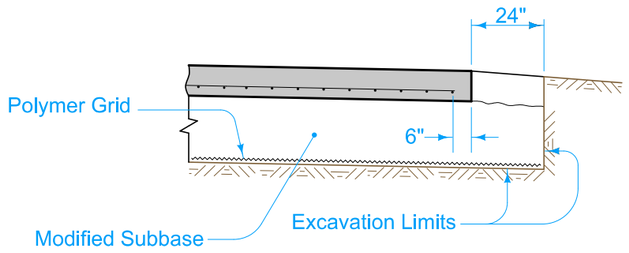
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

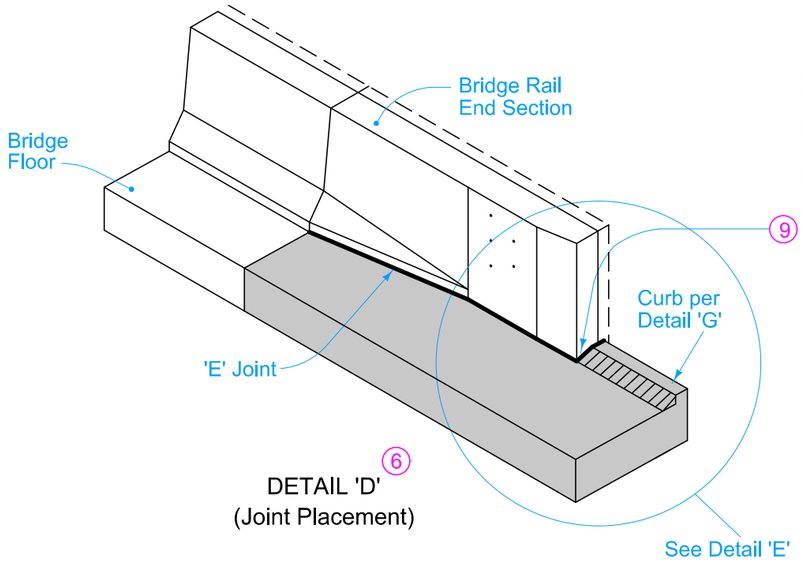
DOUBLE REINFORCED 10" APPROACH



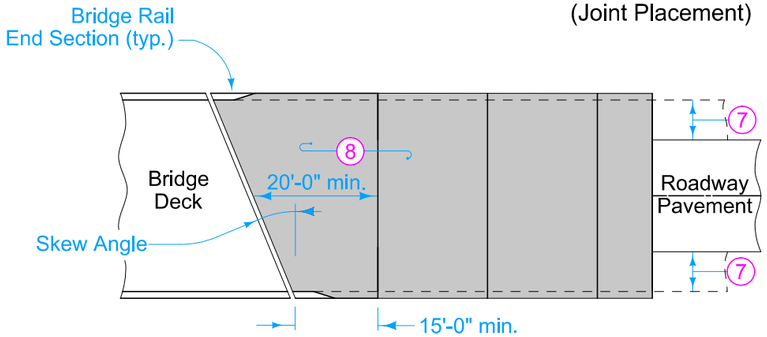
SECTION A-A (6)



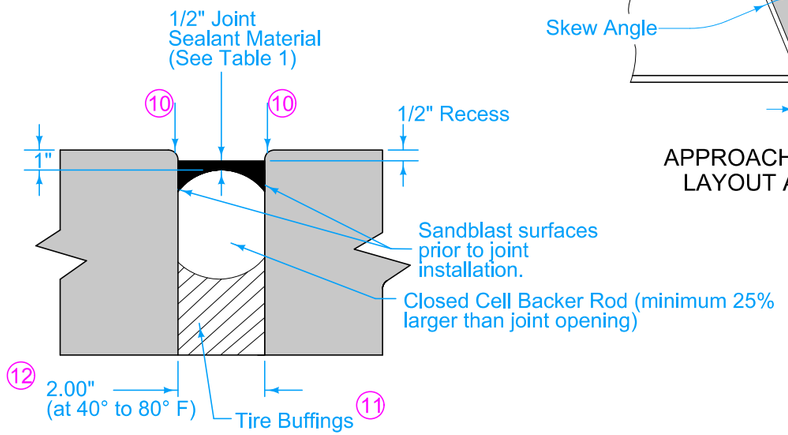
SECTION B-B (6)



DETAIL 'D' (6)
(Joint Placement)

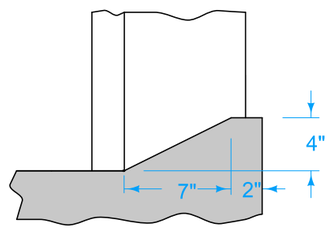


APPROACH PAVEMENT LAYOUT AT A SKEW

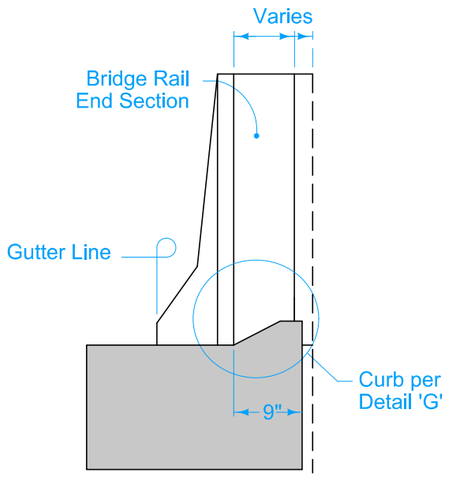


'BE'JOINT DETAIL

Table 1
Approved List of Sealant
Dow - Dowsil 902 RCS
Sika - Sikasil 728 RCS
Watson Bowman Acme - Wabo SiliconeSeal
Pecora - 322FC



DETAIL 'G'



DETAIL 'E'
(Back of Curb Placement)

(5) Longitudinal Joint (PV-101):
Single pour - Saw cut joint per Detail B.
Two pours - Use 'KS-2' Joint.

(6) Refer to BR-211, BR-212, or BR-231.

(7) Design shoulder width.

(8) Reinforced bridge approach section.

(9) Joint at end of Bridge Rail End Section: Place joint filler the full depth of the bridge approachpavement. 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 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 4136 of the Standard Specifications. Set width of gap to 2 inches. Joint length asrequired to completely fill from back side of curb to front face of bridge wing.

(10) Edge with ¼ inch tool for length of joint indicated if formededging not required when cut with diamond blade saw.

(11) Compact tire buffings by spading with a square-nose shovel. Tire buffings shall not be larger than ½ inch.

(12) Setting Width Notes:

- Width is perpendicular to abutment.
- Temperature of concrete deck on the underside or shaded portion of the deck shall be between 40 to 80 degrees Farenheit when placing approach slab concrete.
- This 'BE' joint and the setting temperatures may be used for all concrete beam or slab bridges up to 575' in length and for all steel girder bridges up to 400' in length.

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

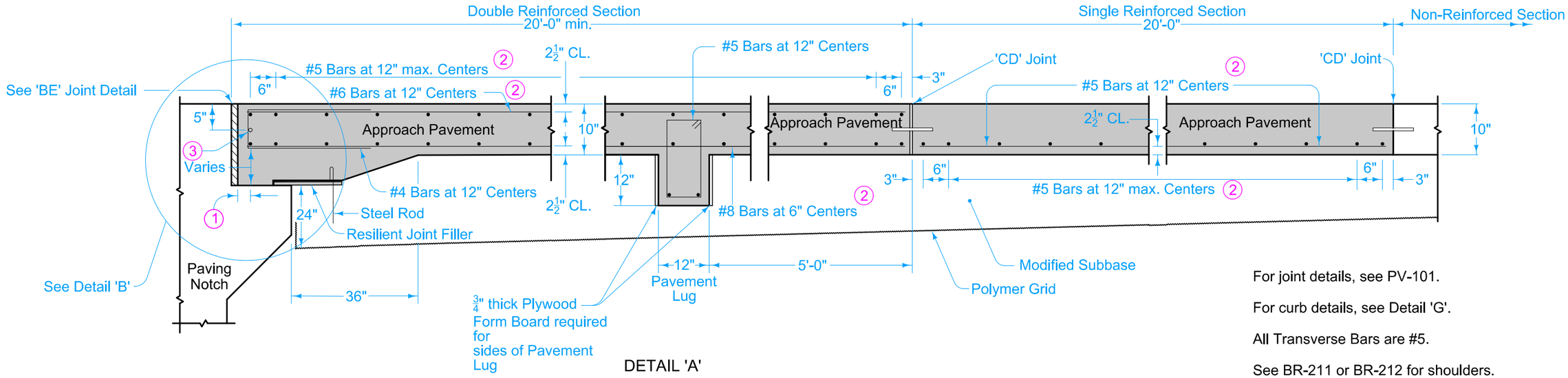
BR-201

SHEET 3 of 3

REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

DOUBLE REINFORCED 10" APPROACH



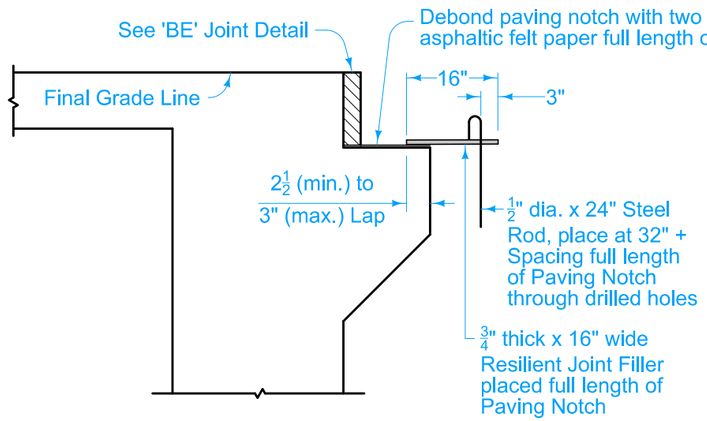
DETAIL 'A'

For joint details, see PV-101.

For curb details, see Detail 'G'.

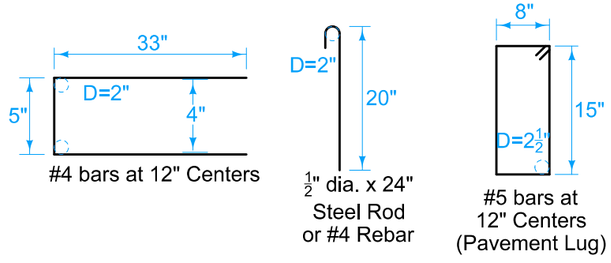
All Transverse Bars are #5.

See BR-211 or BR-212 for shoulders.



DETAIL 'B'

MOVEABLE ABUTMENT



BENT BAR SHAPES

1. 2" to 2½" 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
- Longitudinal Grooving in Concrete, Bridge Deck
- Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
- 112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

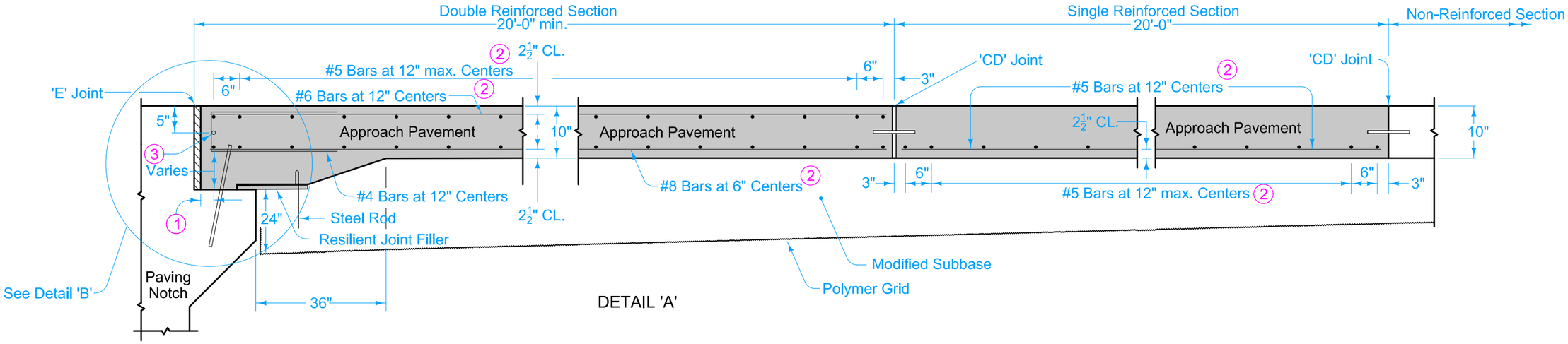
BR-202

SHEET 1 of 4

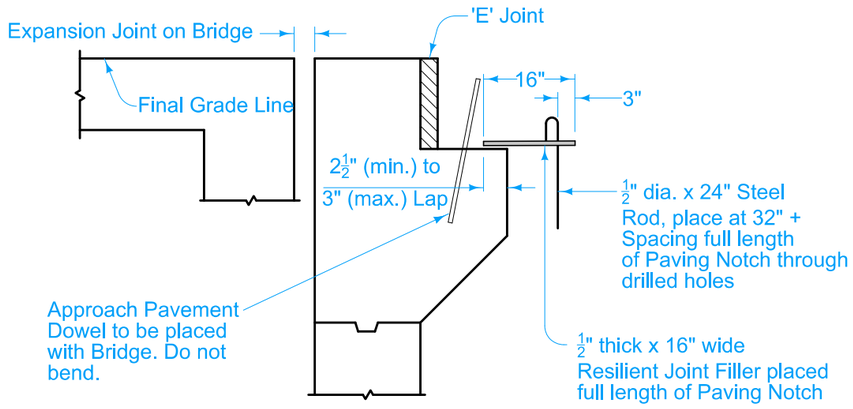
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

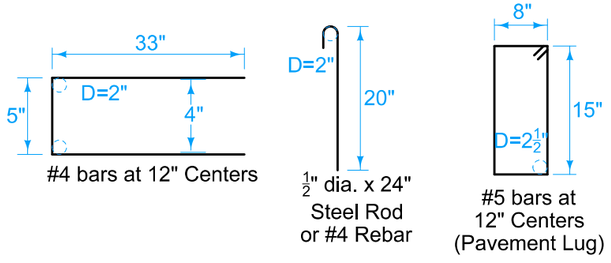
DOUBLE REINFORCED 10" APPROACH WITH VARIABLE DEPTH PAVING NOTCH



DETAIL 'A'



DETAIL 'B'



BENT BAR SHAPES

1. 2" to 2½" 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.

FIXED ABUTMENT

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

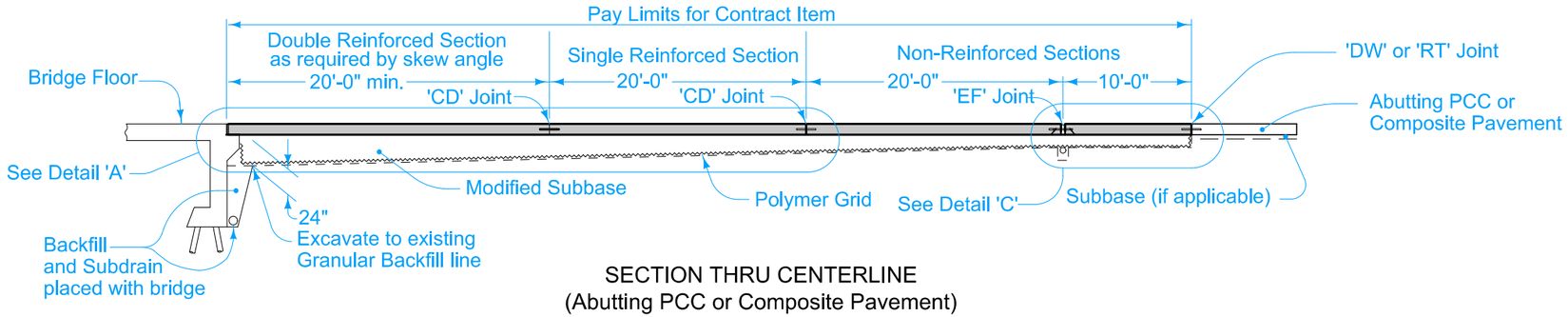
BR-202

SHEET 2 of 4

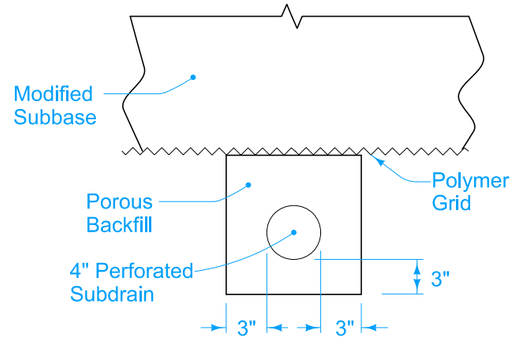
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

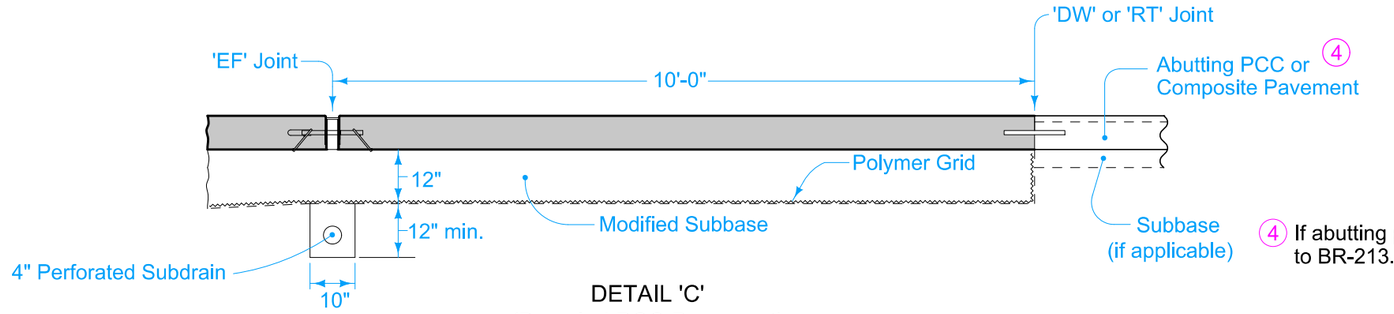
DOUBLE REINFORCED 10" APPROACH WITH VARIABLE DEPTH PAVING NOTCH



SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)

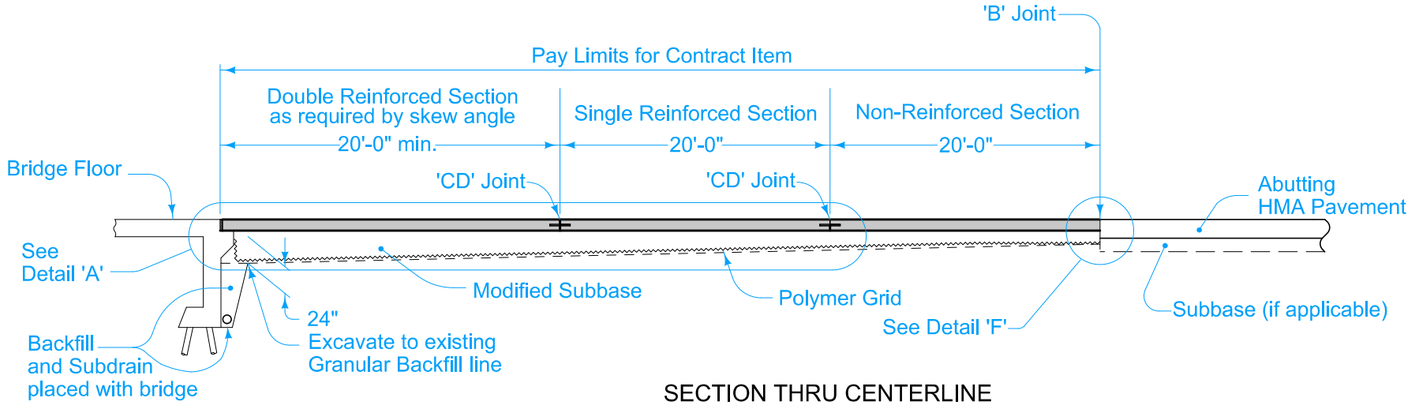


4" SUBDRAIN LOCATION

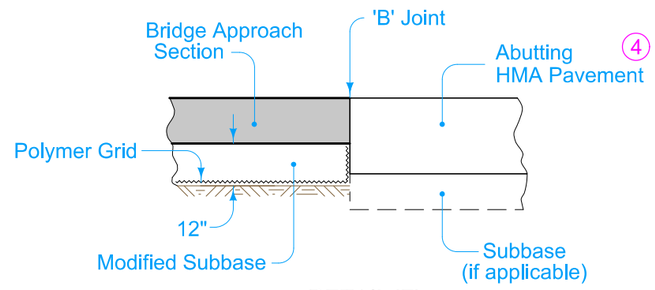


DETAIL 'C'
(Doweled PCC Pavement)

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



SECTION THRU CENTERLINE
(Abutting HMA Pavement)



DETAIL 'F'

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

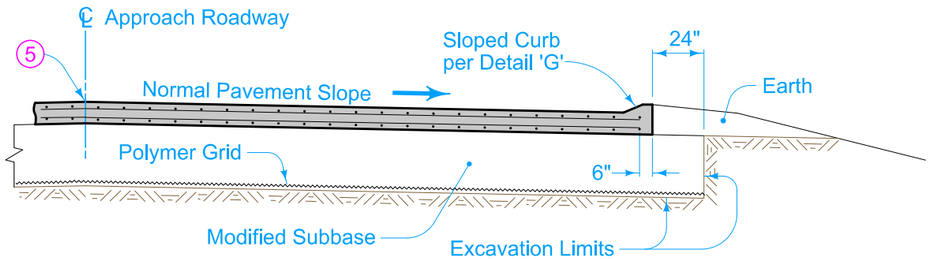
BR-202

SHEET 3 of 4

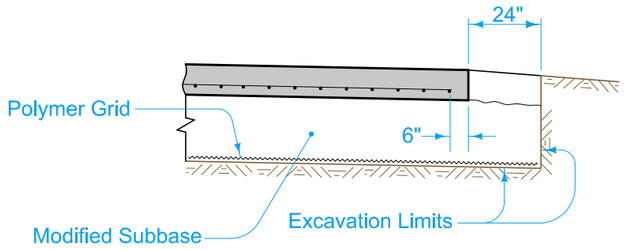
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

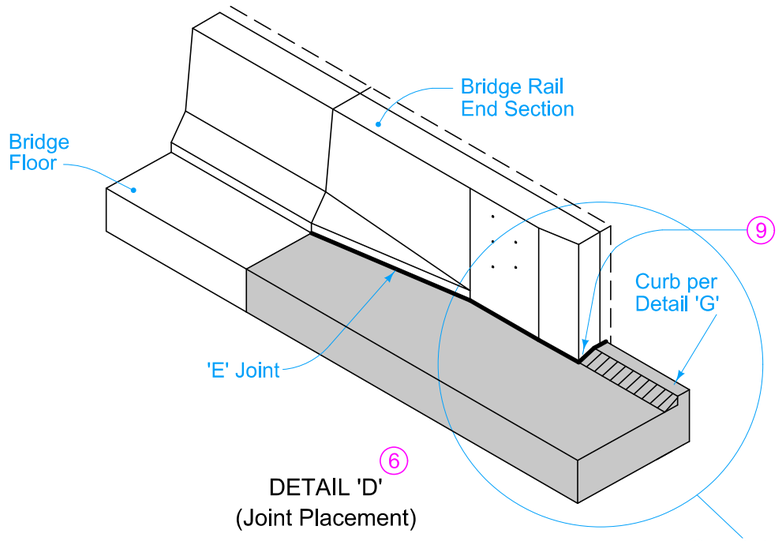
DOUBLE REINFORCED 10" APPROACH WITH VARIABLE DEPTH PAVING NOTCH



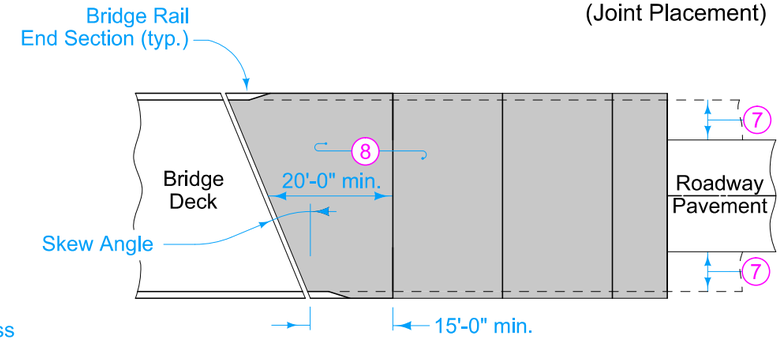
SECTION A-A (6)



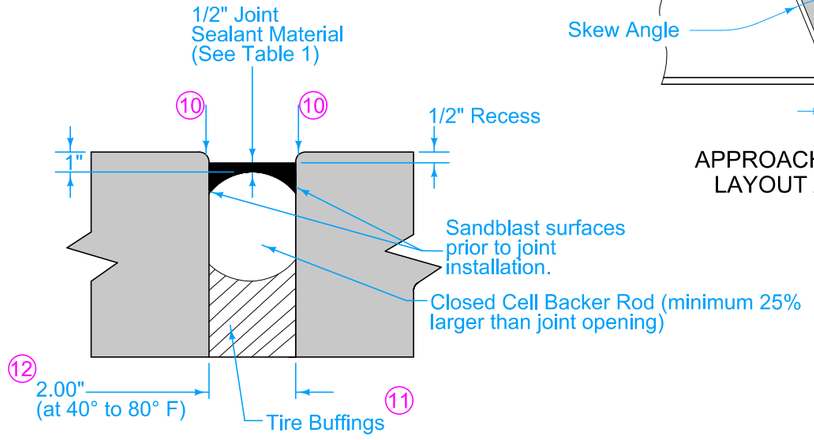
SECTION B-B (6)



DETAIL 'D' (6)
(Joint Placement)

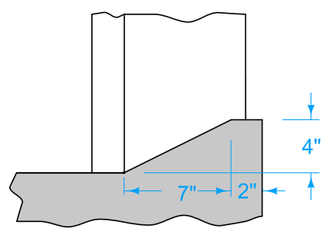


APPROACH PAVEMENT LAYOUT AT A SKEW

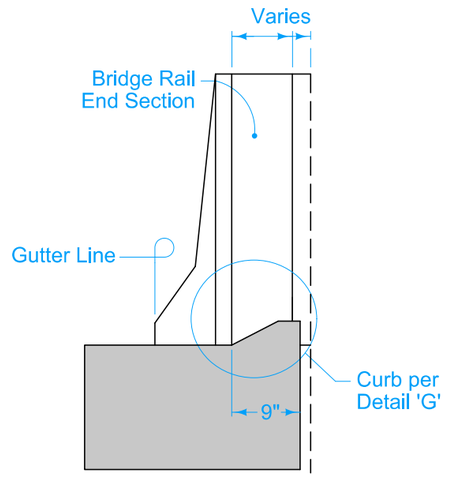


'BE'JOINT DETAIL

Table 1
Approved List of Sealant
Dow - Dowsil 902 RCS
Sika - Sikasil 728 RCS
Watson Bowman Acme - Wabo SiliconeSeal
Pecora - 322FC



DETAIL 'G'



DETAIL 'E'
(Back of Curb Placement)

(5) Longitudinal Joint (PV-101):
Single pour - Saw cut joint per Detail B.
Two pours - Use 'KS-2' Joint.

(6) Refer to BR-211, BR-212, or BR-231.

(7) Design shoulder width.

(8) Reinforced bridge approach section.

(9) 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 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 4136 of the Standard Specifications.
Set width of gap to 2 inches. Joint length as required to completely fill from back side of curb to front face of bridge wing.

(10) Edge with ¼ inch tool for length of joint indicated if formed edging not required when cut with diamond blade saw.

(11) Compact tire buffings by spading with a square-nose shovel. Tire buffings shall not be larger than ½ inch.

(12) Setting Width Notes:

- Width is perpendicular to abutment.

- Temperature of concrete deck on the underside or shaded portion of the deck shall be between 40 to 80 degrees Farenheit when placing approach slab concrete.

-This 'BE' joint and the setting temperatures may be used for all concrete beam or slab bridges up to 575' in length and for all steel girder bridges up to 400' in length.

IOWA DOT

REVISION
4 | 10-15-24

STANDARD ROAD PLAN

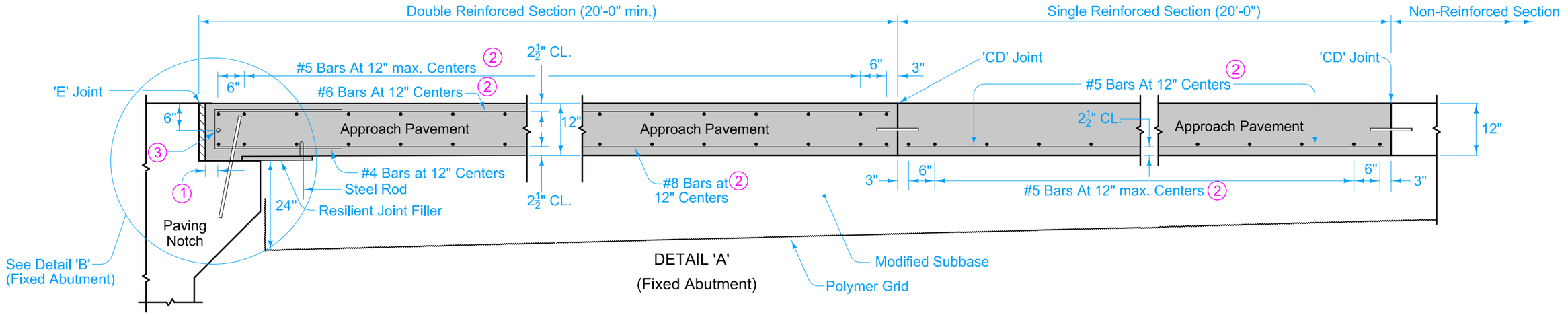
BR-202

SHEET 4 of 4

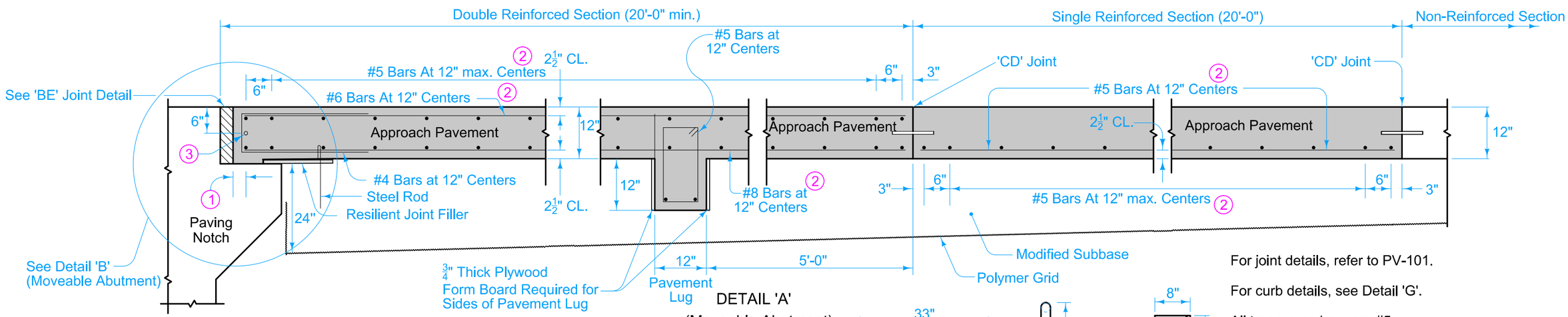
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

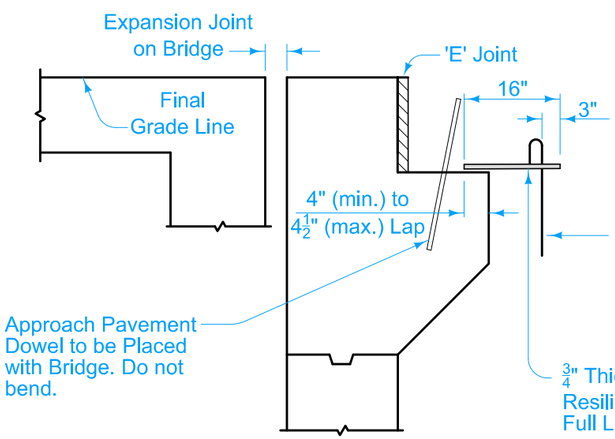
DOUBLE REINFORCED 10" APPROACH WITH VARIABLE DEPTH PAVING NOTCH



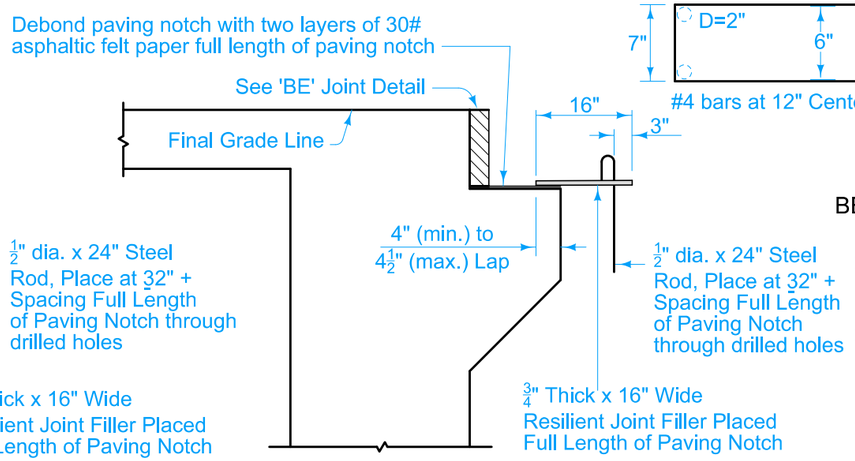
DETAIL 'A'
(Fixed Abutment)



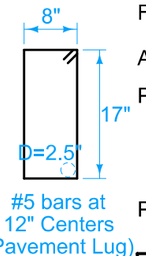
DETAIL 'A'
(Moveable Abutment)



DETAIL 'B' (Fixed Abutment)



DETAIL 'B' (Moveable Abutment)



BENT BAR SHAPES

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

For joint details, refer to PV-101.

For curb details, see Detail 'G'.

All transverse bars are #5.

Possible Contract Item:
Bridge Approach, BR-203
Longitudinal Grooving in Concrete, Bridge Deck
Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

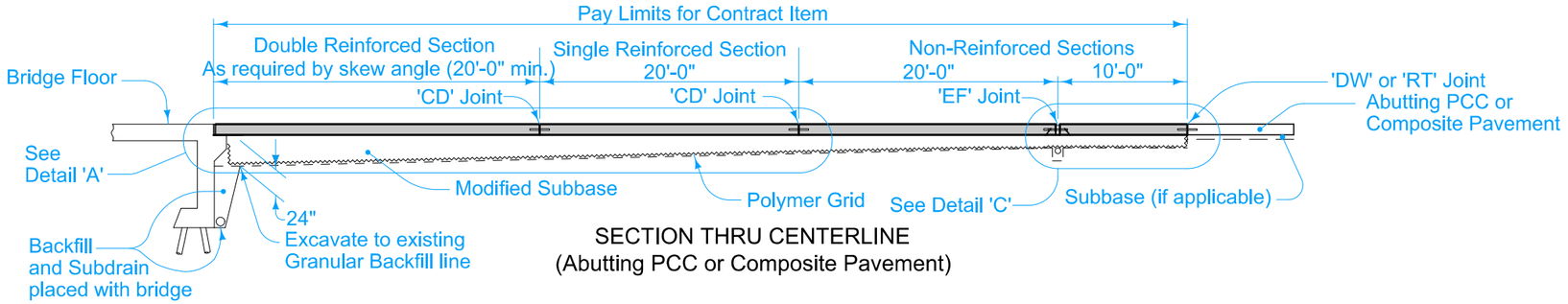
BR-203

SHEET 1 of 3

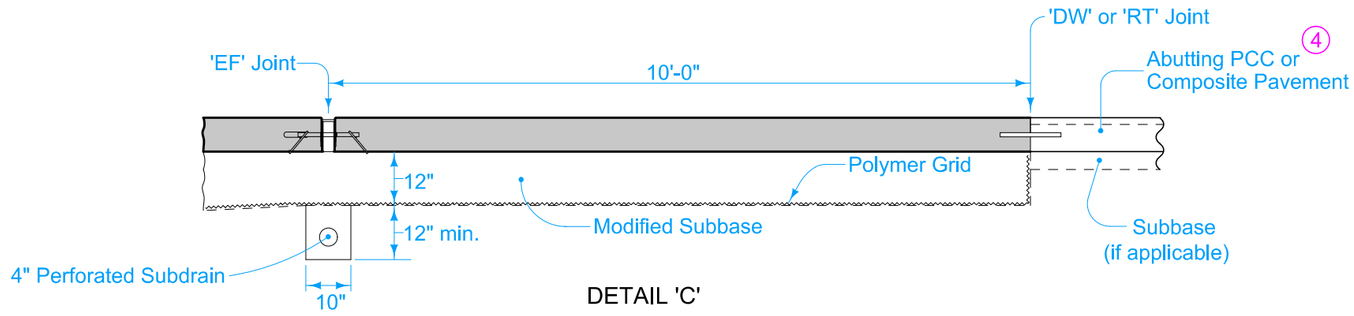
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

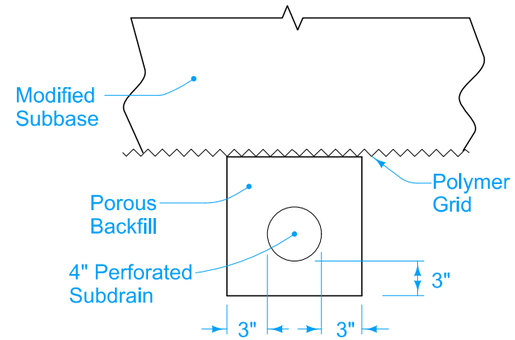
DOUBLE REINFORCED 12" APPROACH



SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)

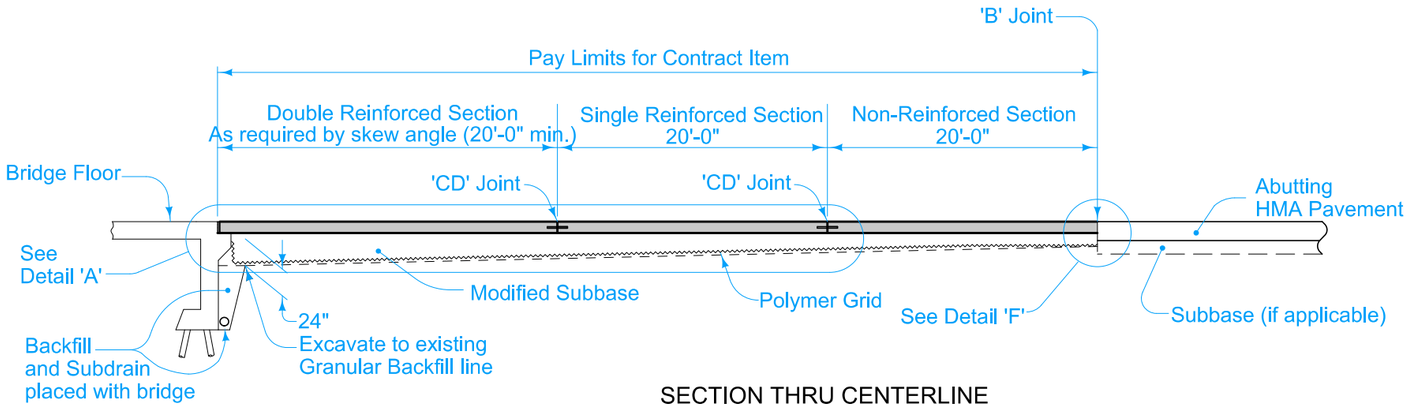


DETAIL 'C'
(Doweled PCC Pavement)

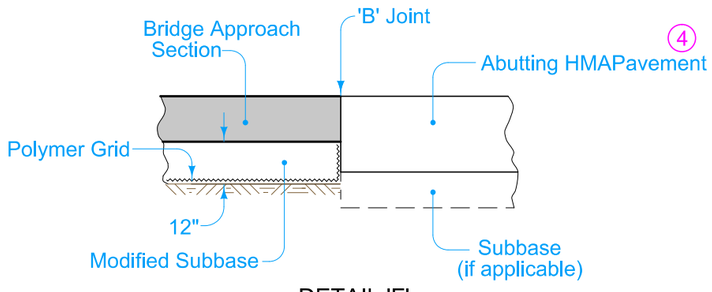


4" SUBDRAIN LOCATION

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



SECTION THRU CENTERLINE
(Abutting HMA Pavement)



DETAIL 'F'

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

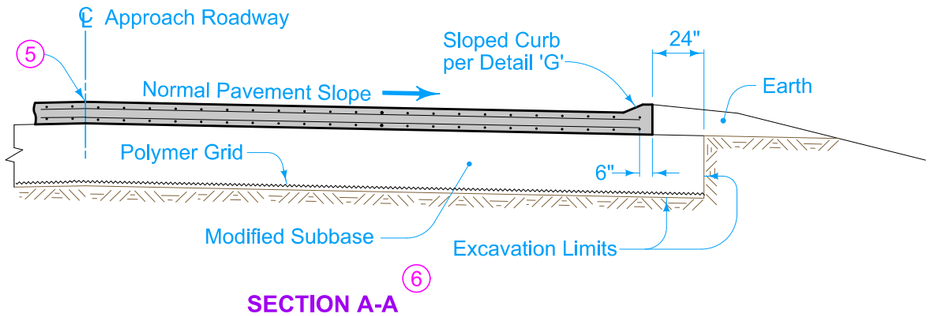
BR-203

SHEET 2 of 3

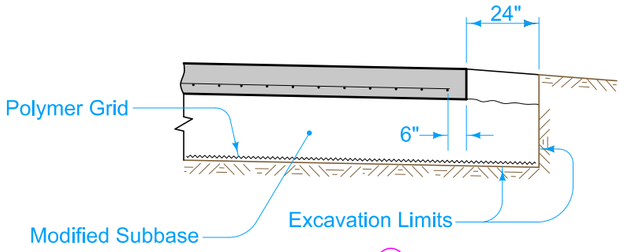
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

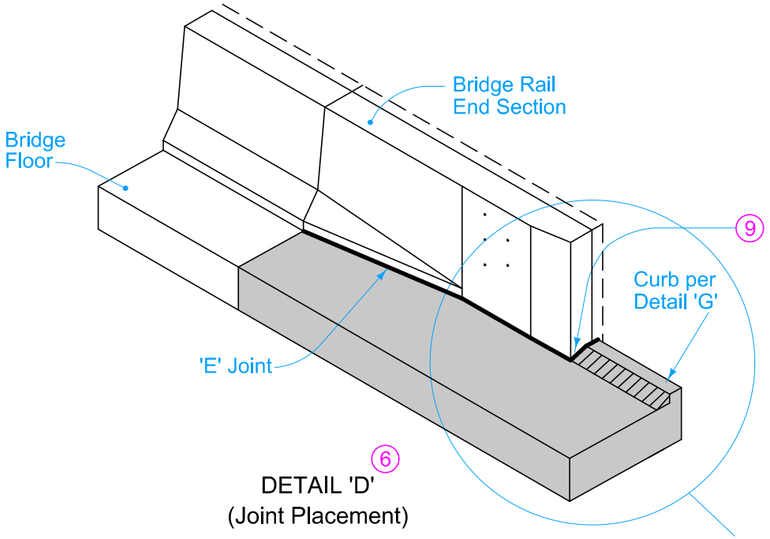
DOUBLE REINFORCED 12" APPROACH



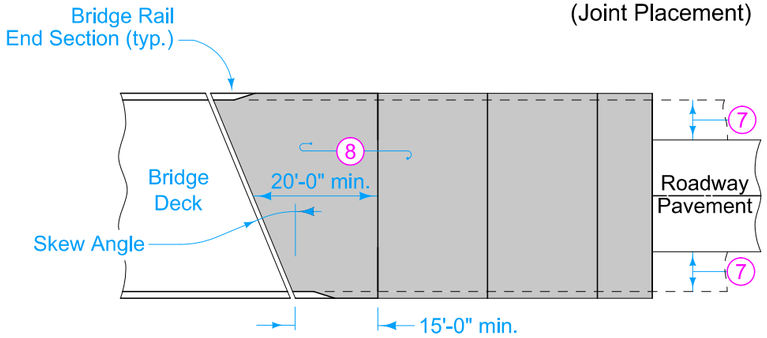
SECTION A-A



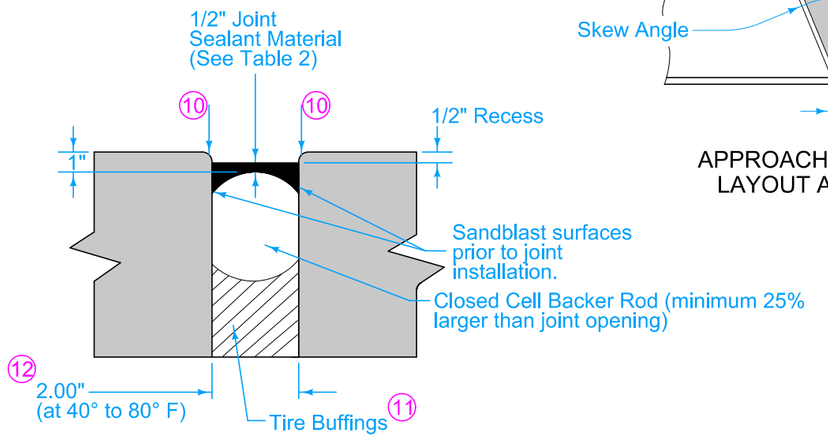
SECTION B-B



DETAIL 'D'
(Joint Placement)

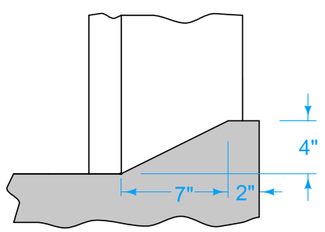


APPROACH PAVEMENT
LAYOUT AT A SKEW

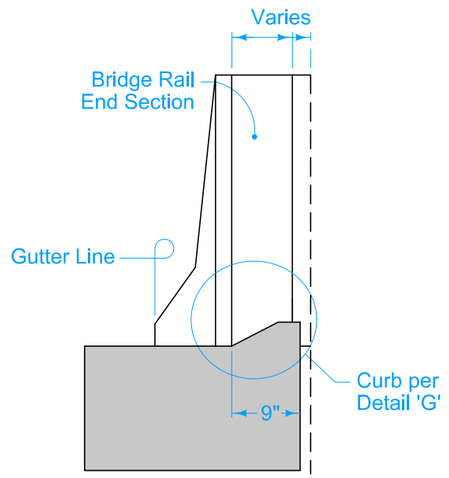


'BE'JOINT
DETAIL

Table 2
Approved List of Sealant
Dow - Dowsil 902 RCS
Sika - Sikasil 728 RCS
Watson Bowman Acme - Wabo SiliconeSeal
Pecora - 322FC



DETAIL 'G'



DETAIL 'E'
(Back of Curb Placement)

(5) Longitudinal Joint (PV-101):
Single pour - Saw cut joint per Detail B.
Two pours - Use 'KS-2' Joint.

(6) Refer to BR-211, BR-212, or BR-231.

(7) Design shoulder width.

(8) Reinforced bridge approach section.

(9) 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 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 4136 of the Standard Specifications. Set width of gap to 2 inches. Joint length as required to completely fill from back side of curb to front face of bridge wing.

(10) Edge with ¼ inch tool for length of joint indicated if formed edging not required when cut with diamond blade saw.

(11) Compact tire buffings by spading with a square-nose shovel. Tire buffings shall not be larger than ½ inch.

(12) Setting Width Notes:

- Width is perpendicular to abutment.

- Temperature of concrete deck on the underside or shaded portion of the deck shall be between 40 to 80 degrees Farenheit when placing approach slab concrete.

-This 'BE' joint and the setting temperatures may be used for all concrete beam or slab bridges up to 575' in length and for all steel girder bridges up to 400' in length.

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

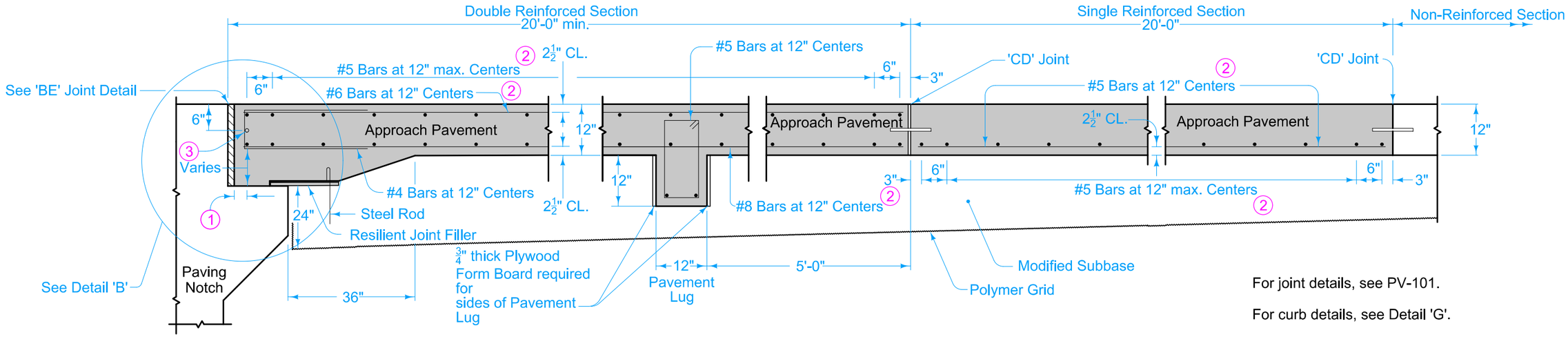
BR-203

SHEET 3 of 3

REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

DOUBLE REINFORCED 12" APPROACH



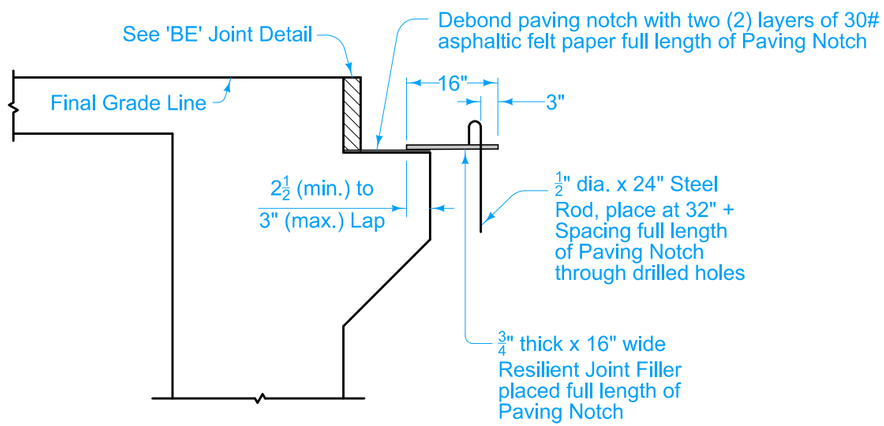
DETAIL 'A'

For joint details, see PV-101.

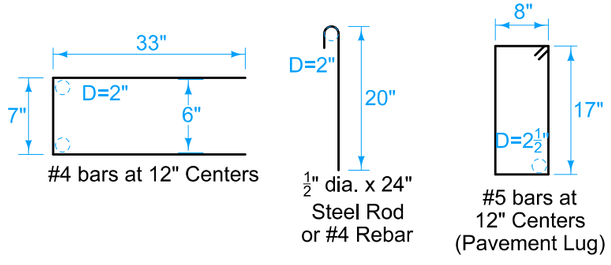
For curb details, see Detail 'G'.

All Transverse Bars are #5.

See BR-211 or BR-212 for shoulders.



DETAIL 'B'



BENT BAR SHAPES

MOVEABLE ABUTMENT

1. 2" to 2½" 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
- Longitudinal Grooving in Concrete, Bridge Deck
- Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
- 112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

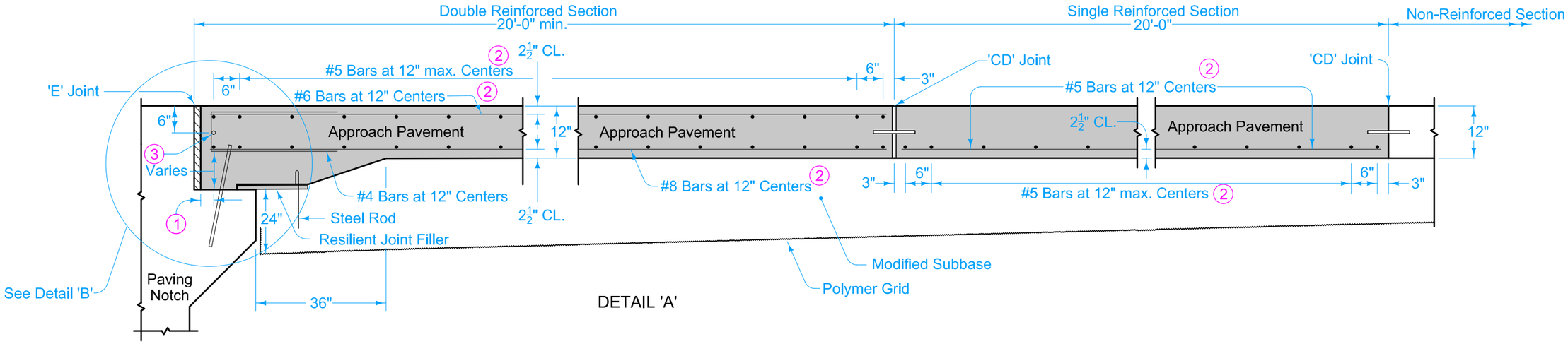
BR-204

SHEET 1 of 4

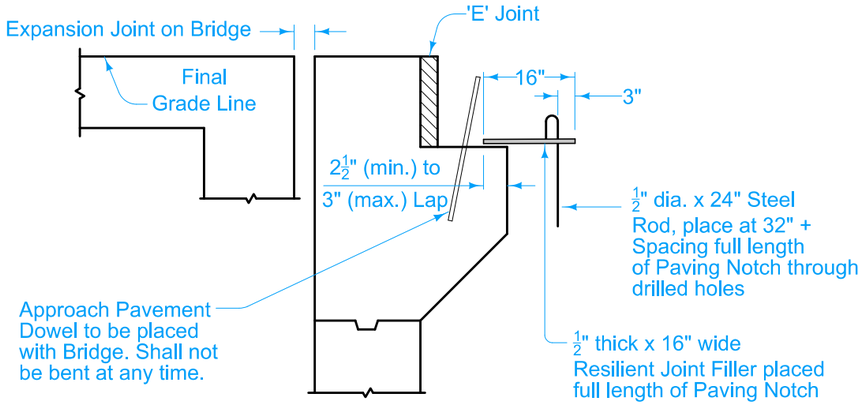
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

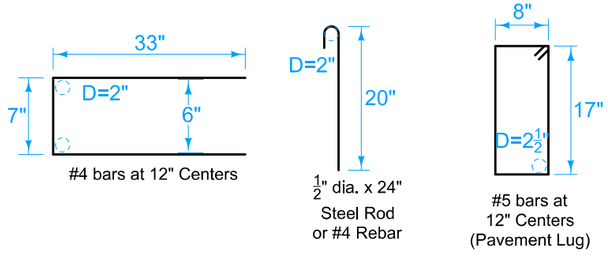
DOUBLE REINFORCED 12" APPROACH WITH VARIABLE DEPTH PAVING NOTCH



DETAIL 'A'



DETAIL 'B'



BENT BAR SHAPES

FIXED ABUTMENT

1. 2" to 2½" 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.

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

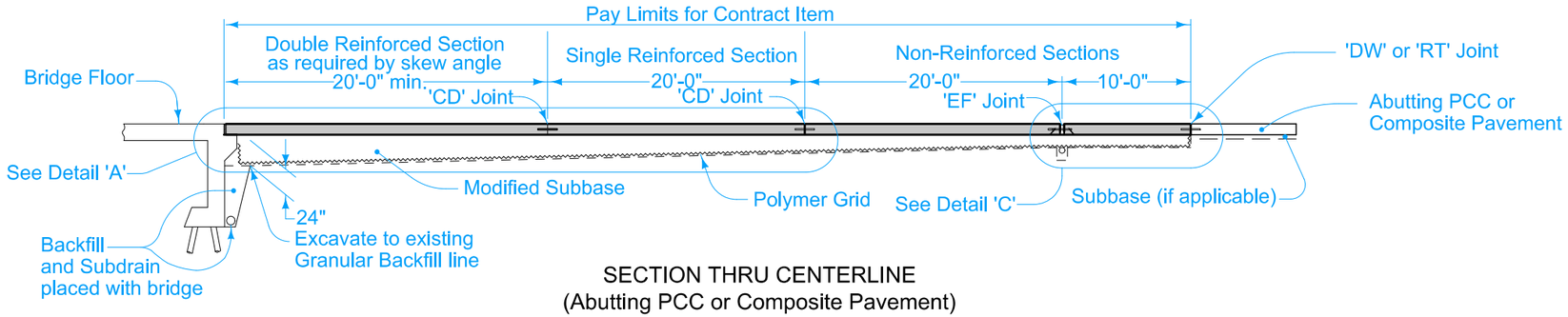
BR-204

SHEET 2 of 4

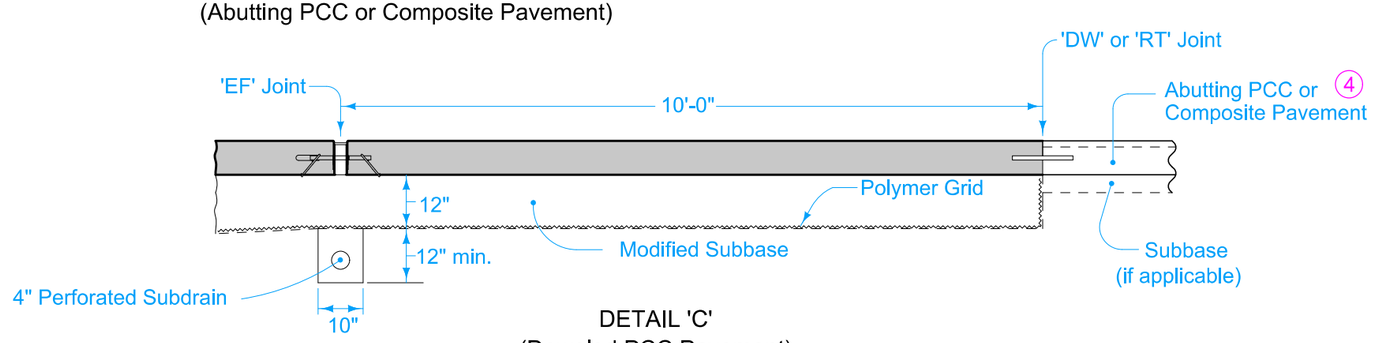
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

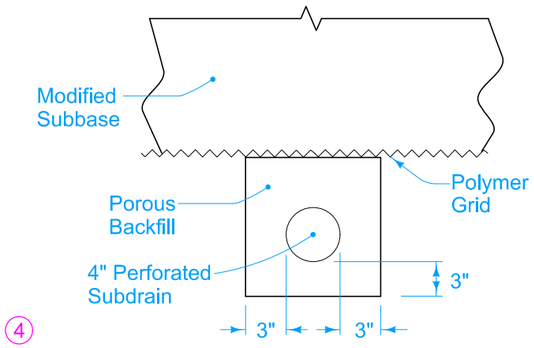
DOUBLE REINFORCED 12" APPROACH WITH VARIABLE DEPTH PAVING NOTCH



SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)

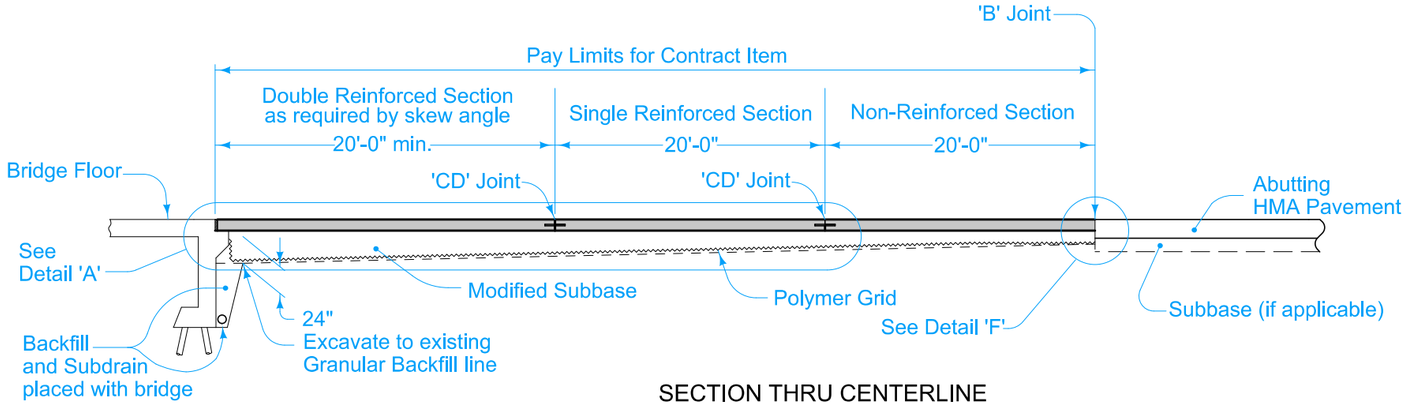


DETAIL 'C'
(Doweled PCC Pavement)

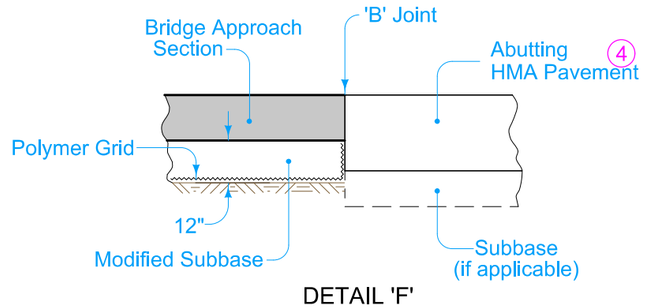


4" SUBDRAIN LOCATION

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



SECTION THRU CENTERLINE
(Abutting HMA Pavement)



DETAIL 'F'

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

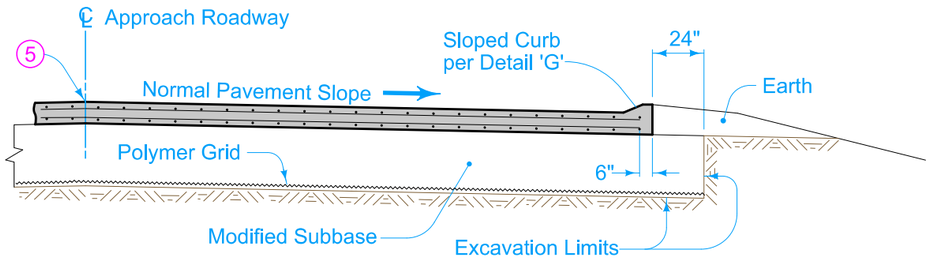
BR-204

SHEET 3 of 4

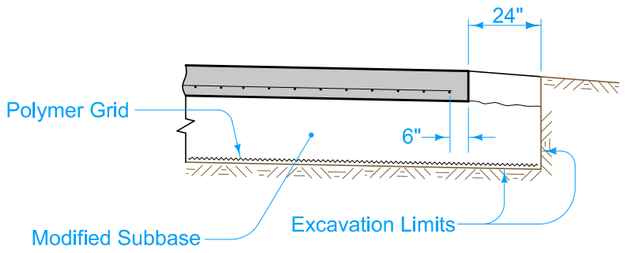
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

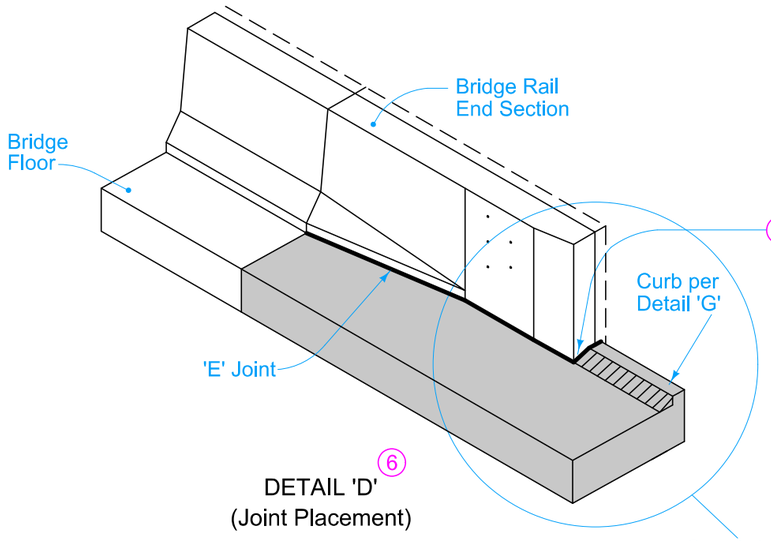
DOUBLE REINFORCED 12" APPROACH WITH VARIABLE DEPTH PAVING NOTCH



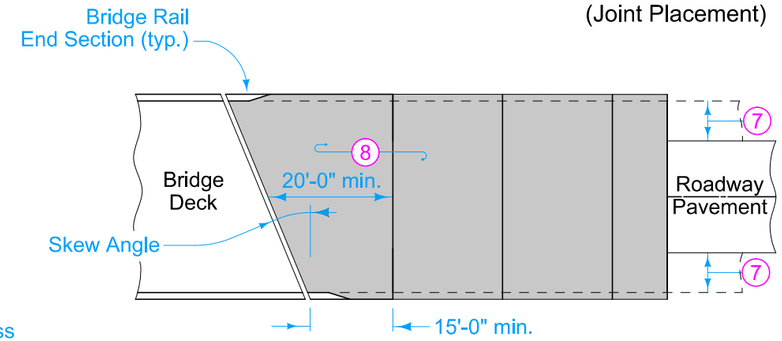
SECTION A-A (6)



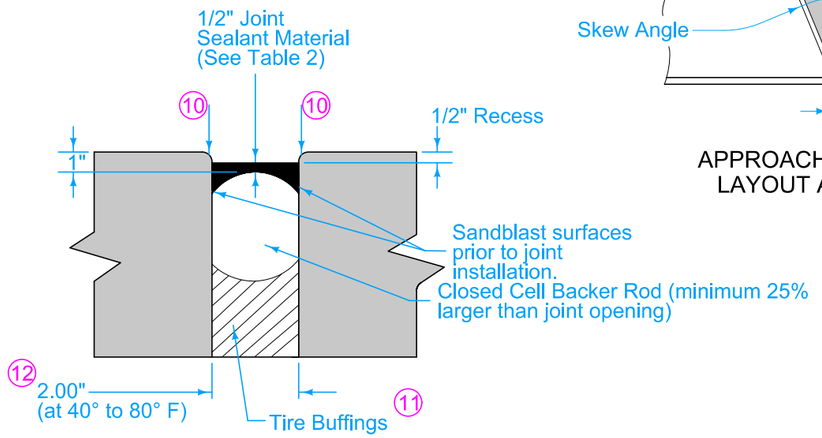
SECTION B-B (6)



DETAIL 'D' (6)
(Joint Placement)

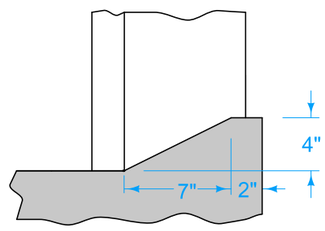


APPROACH PAVEMENT LAYOUT AT A SKEW

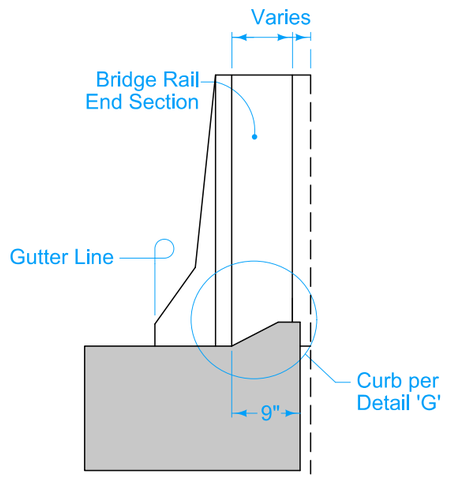


'BE'JOINT DETAIL

Table 2
Approved List of Sealant
Dow - Dowsil 902 RCS
Sika - Sikasil 728 RCS
Watson Bowman Acme - Wabo SiliconeSeal
Pecora - 322FC



DETAIL 'G'



DETAIL 'E'
(Back of Curb Placement)

(5) Longitudinal Joint (PV-101):
Single pour - Saw cut joint per Detail B.
Two pours - Use 'KS-2' Joint.

(6) Refer to BR-211, BR-212, or BR-231.

(7) Design shoulder width.

(8) Reinforced bridge approach section.

(9) 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 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 4136 of the Standard Specifications. Set width of gap to 2 inches. Joint length as required to completely fill from back side of curb to front face of bridge wing.

(10) Edge with ¼ inch tool for length of joint indicated if formed edging not required when cut with diamond blade saw.

(11) Compact tire buffings by spading with a square-nose shovel. Tire buffings shall not be larger than ½ inch.

(12) Setting Width Notes:

- Width is perpendicular to abutment.

- Temperature of concrete deck on the underside or shaded portion of the deck shall be between 40 to 80 degrees Farenheit when placing approach slab concrete.

-This 'BE' joint and the setting temperatures may be used for all concrete beam or slab bridges up to 575' in length and for all steel girder bridges up to 400' in length.

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-15-24

BR-204

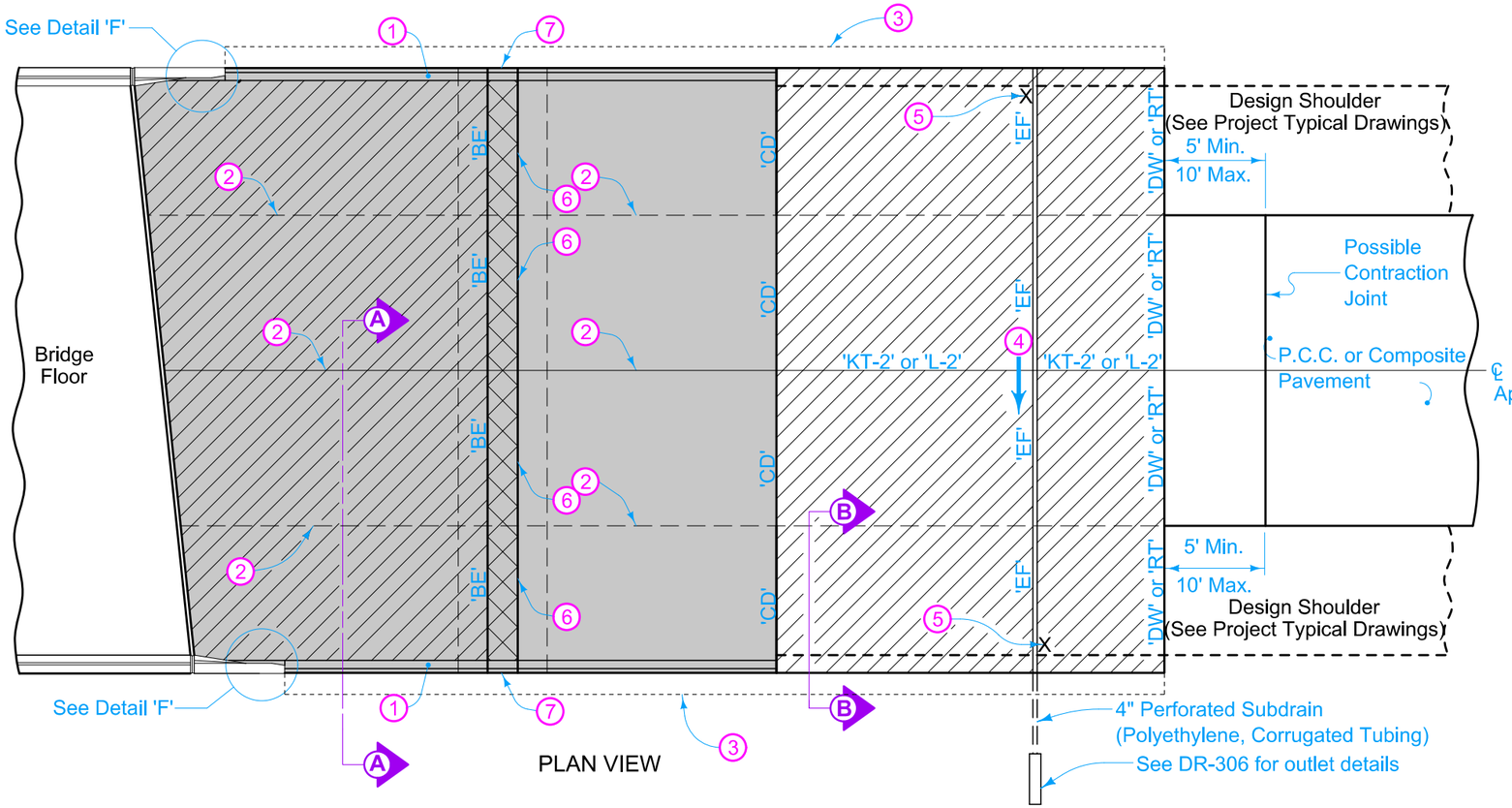
SHEET 4 of 4

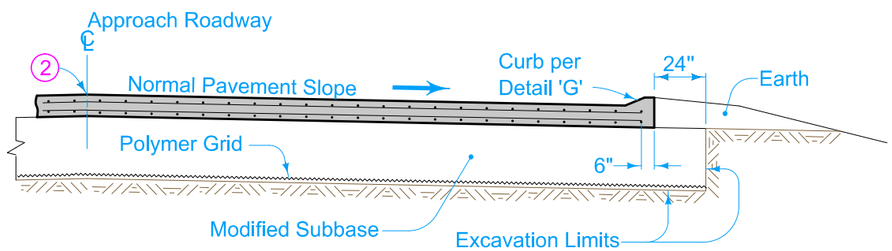
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.
Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

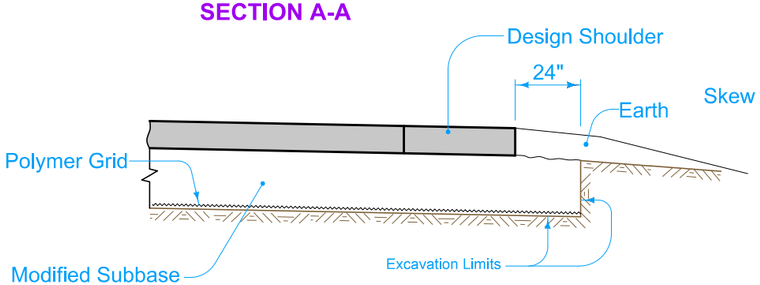
DOUBLE REINFORCED 12" APPROACH WITH VARIABLE DEPTH PAVING NOTCH

DESIGNER INFORMATION





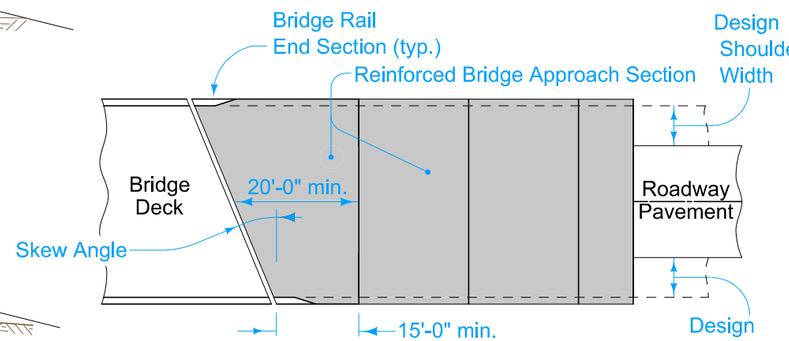
SECTION A-A



SECTION B-B

Pay limits for contract item include the following areas:

- Double Reinforced Section
- Sleeper Beam Section
- Single Reinforced Section
- Non-Reinforced Section



APPROACH PAVEMENT LAYOUT AT A SKEW

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. $\frac{1}{4}$ inch Preformed Joint Filler and seal top.
7. See Detail 'C'.

Possible Contract Item:
Bridge Approach, BR-205
Longitudinal Grooving in Concrete, Bridge Deck
Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
9	10-15-24

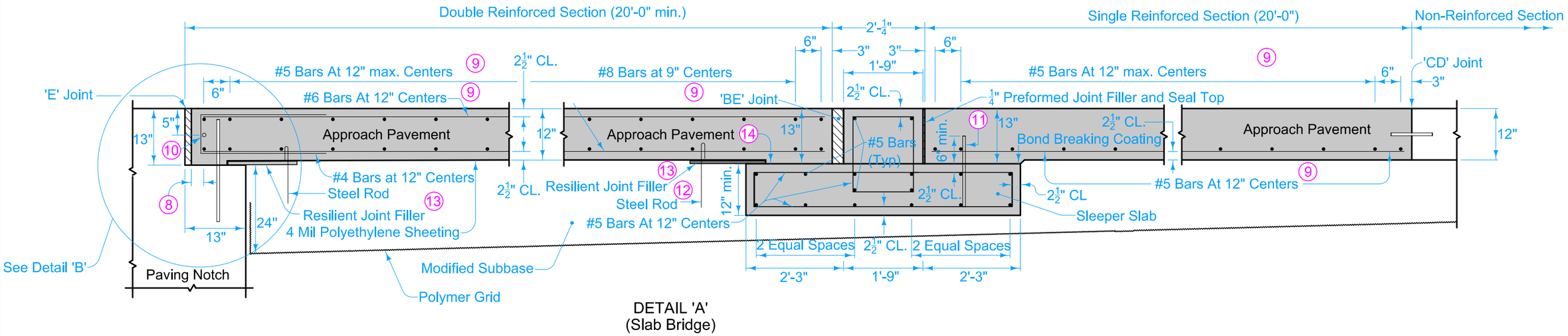
BR-205

SHEET 1 of 4

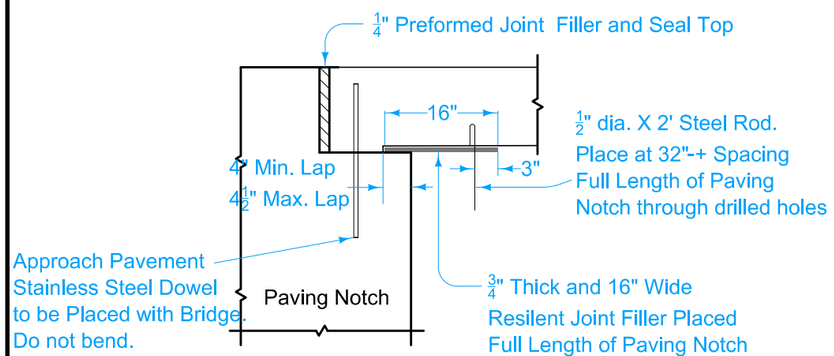
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item. Removed notes pertaining to shoulders. Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

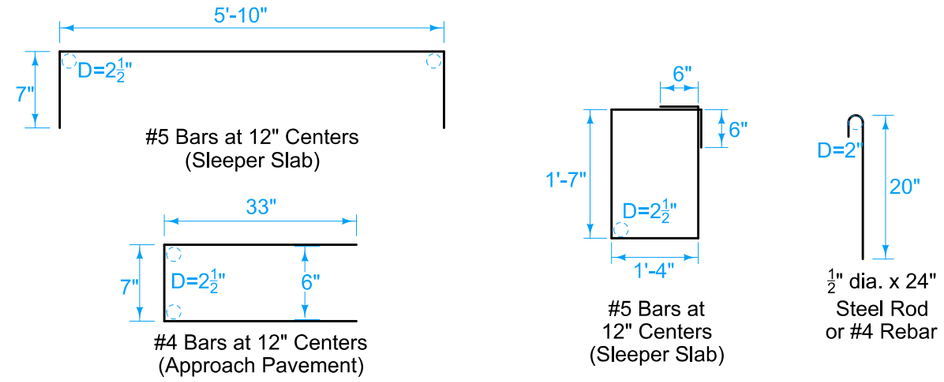
DOUBLE REINFORCED 12" APPROACH (SLAB BRIDGE)



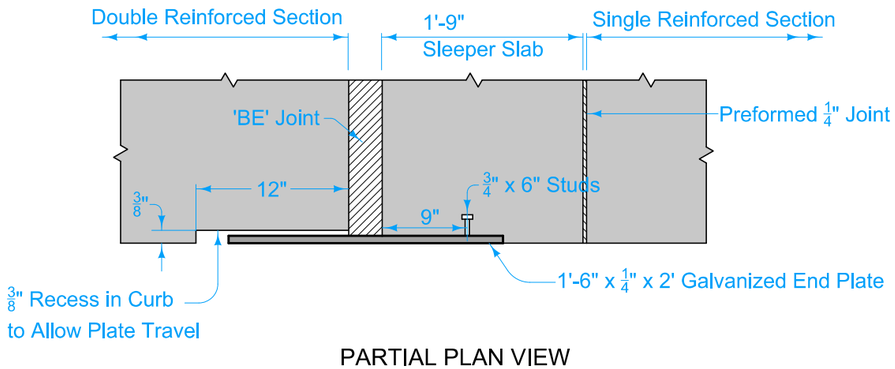
DETAIL 'A'
(Slab Bridge)



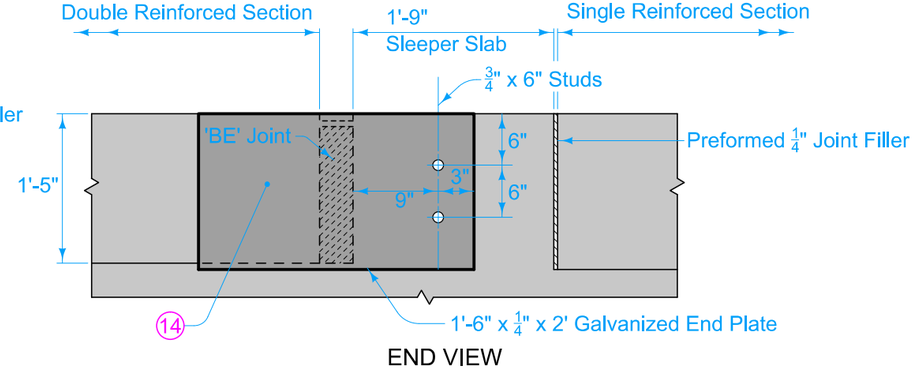
DETAIL 'B'



BENT BAR SHAPES



PARTIAL PLAN VIEW
(Slab Edge Details for 'BE' Joint with Curb)



END VIEW
(Slab Edge Details for 'BE' Joint with Curb)

DETAIL 'C'

(8) 2" min. to 2 1/2" max. clear to bent bar.

(9) Minimum lap length: #5 Bars - 18"
#6 Bars - 27"
#8 Bars - 48"

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

(11) #8 dowels 1'-6" long with 2½ inch bottom end clearance. Space at 24 inches O.C.

(12) Space at 32" + for full length of Sleeper Slab.

(13) ¾ inch thick x 16 inch wide Resilient Joint Filler for full length of Sleeper Slab.

(14) Debond Paving Notch with 2 layers of 30# Asphaltic Felt Paper full length.

IOWA DOT
STANDARD ROAD PLAN

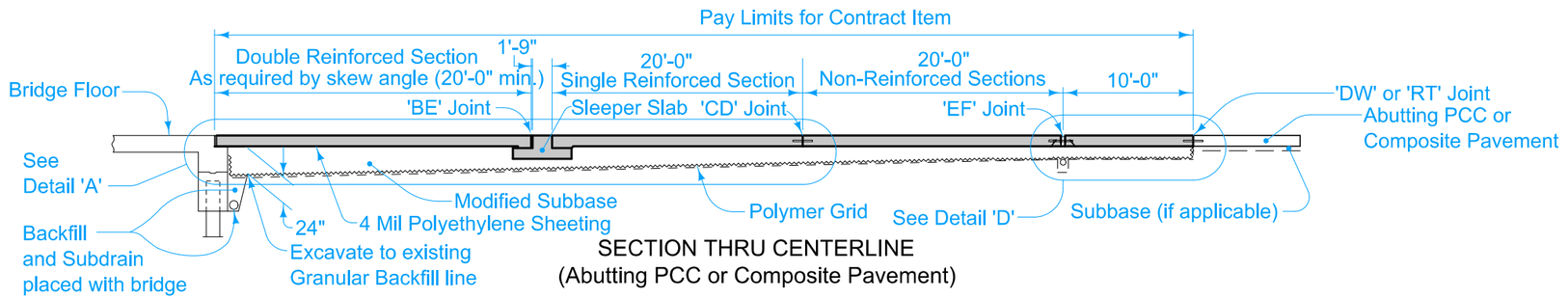
REVISION	
9	10-15-24

BR-205
SHEET 2 of 4

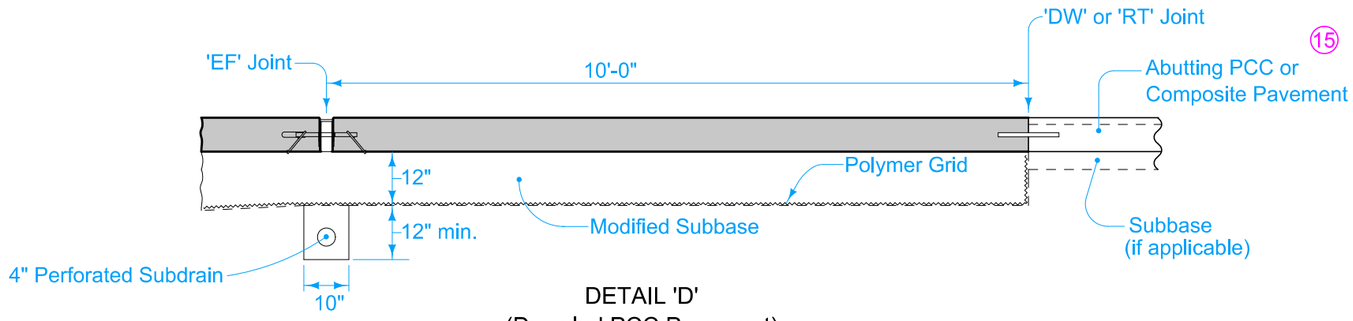
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item. Removed notes pertaining to shoulders. Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

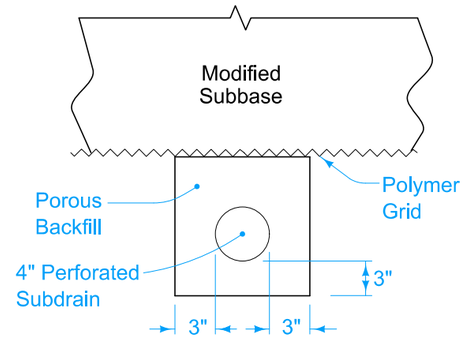
DOUBLE REINFORCED 12" APPROACH (SLAB BRIDGE)



SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)

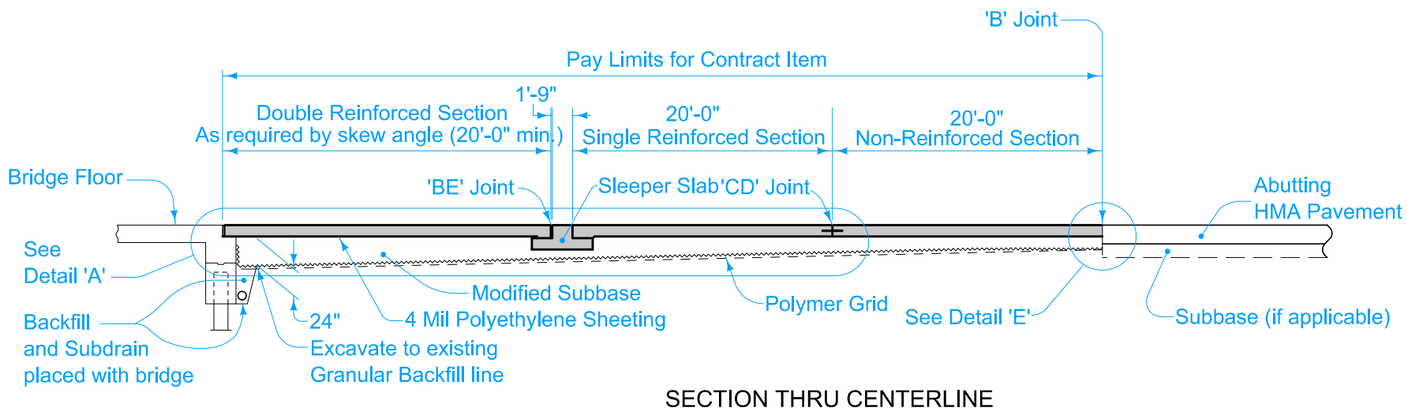


DETAIL 'D'
(Doweled PCC Pavement)

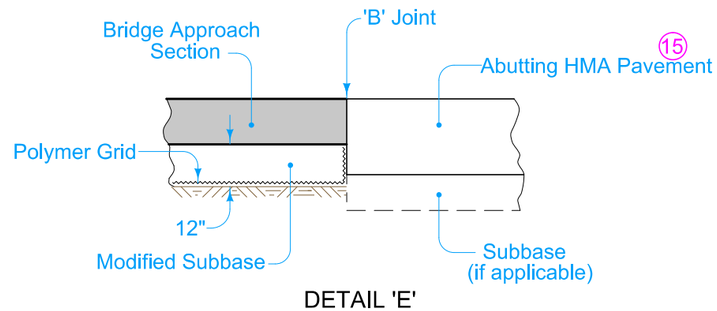


4" SUBDRAIN LOCATION

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



SECTION THRU CENTERLINE
(Abutting HMA Pavement)



DETAIL 'E'

IOWA DOT

STANDARD ROAD PLAN

REVISION	
9	10-15-24

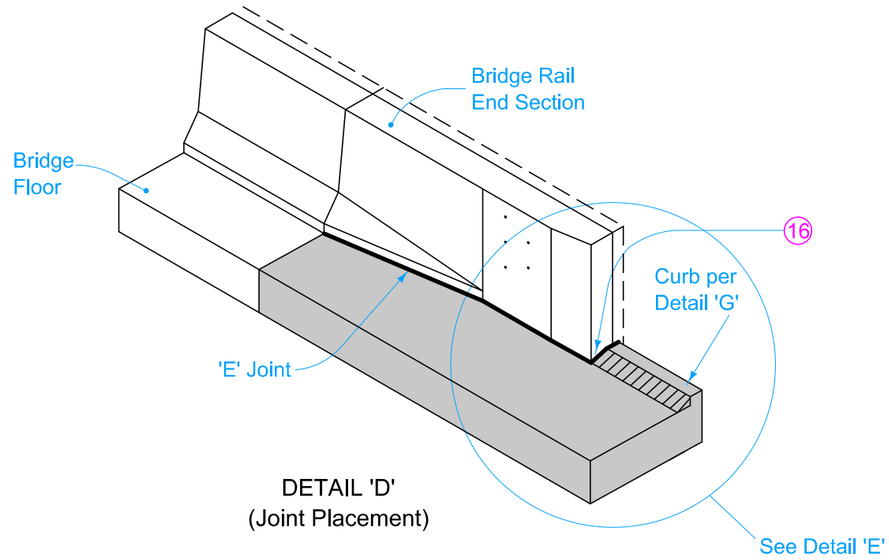
BR-205

SHEET 3 of 4

REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item. Removed notes pertaining to shoulders. Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

DOUBLE REINFORCED 12" APPROACH (SLAB BRIDGE)



DETAIL 'D'
(Joint Placement)

16 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 of PV-101. Seal joint per Detail F of PV-101.

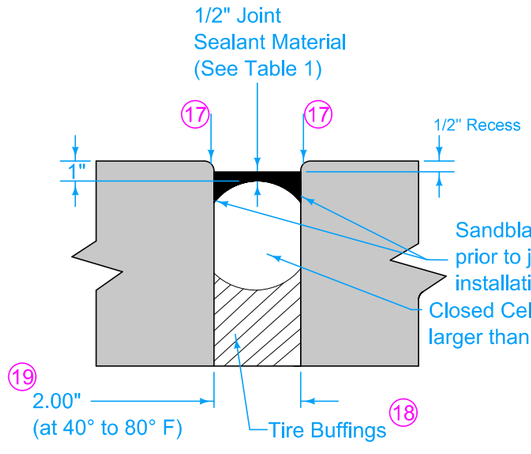
- Fixed Abutment Bridges: Type 'E' Joint.
- Moveable Abutment Bridges: Flexible Foam Expansion Joint Filler complying with Section 4136 of the Standard Specifications. Set width of gap to 2 inches. Joint length as required to completely fill from back side of curb to front face of bridge wing.

17 Edge with ¼ inch tool for length of joint indicated if formed edging not required when cut with diamond blade saw.

18 Compact tire buffings by spading with a square-nose shovel. Tire buffings shall not be larger than ½ inch.

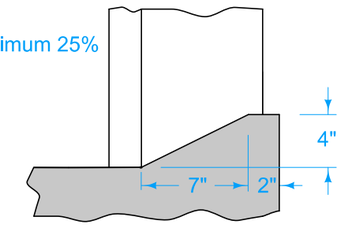
19 Setting Width Notes:

- Width is perpendicular to abutment.

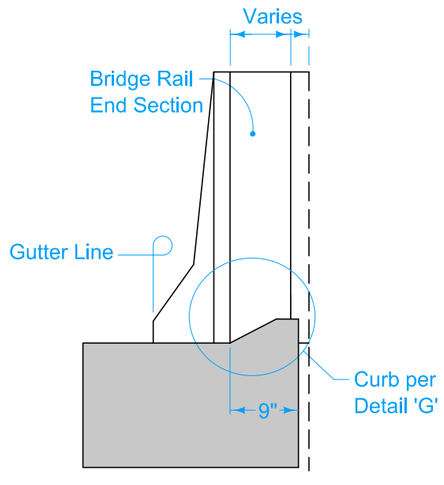


'BE'JOINT
DETAIL

Table 1
Approved List of Sealant
Dow - Dowsil 902 RCS
Sika - Sikasil 728 RCS
Watson Bowman Acme - Wabo SiliconeSeal
Pecora - 322FC



DETAIL 'G'



DETAIL 'E'
(Back of Curb Placement)

IOWA DOT

STANDARD ROAD PLAN

REVISION	
9	10-15-24

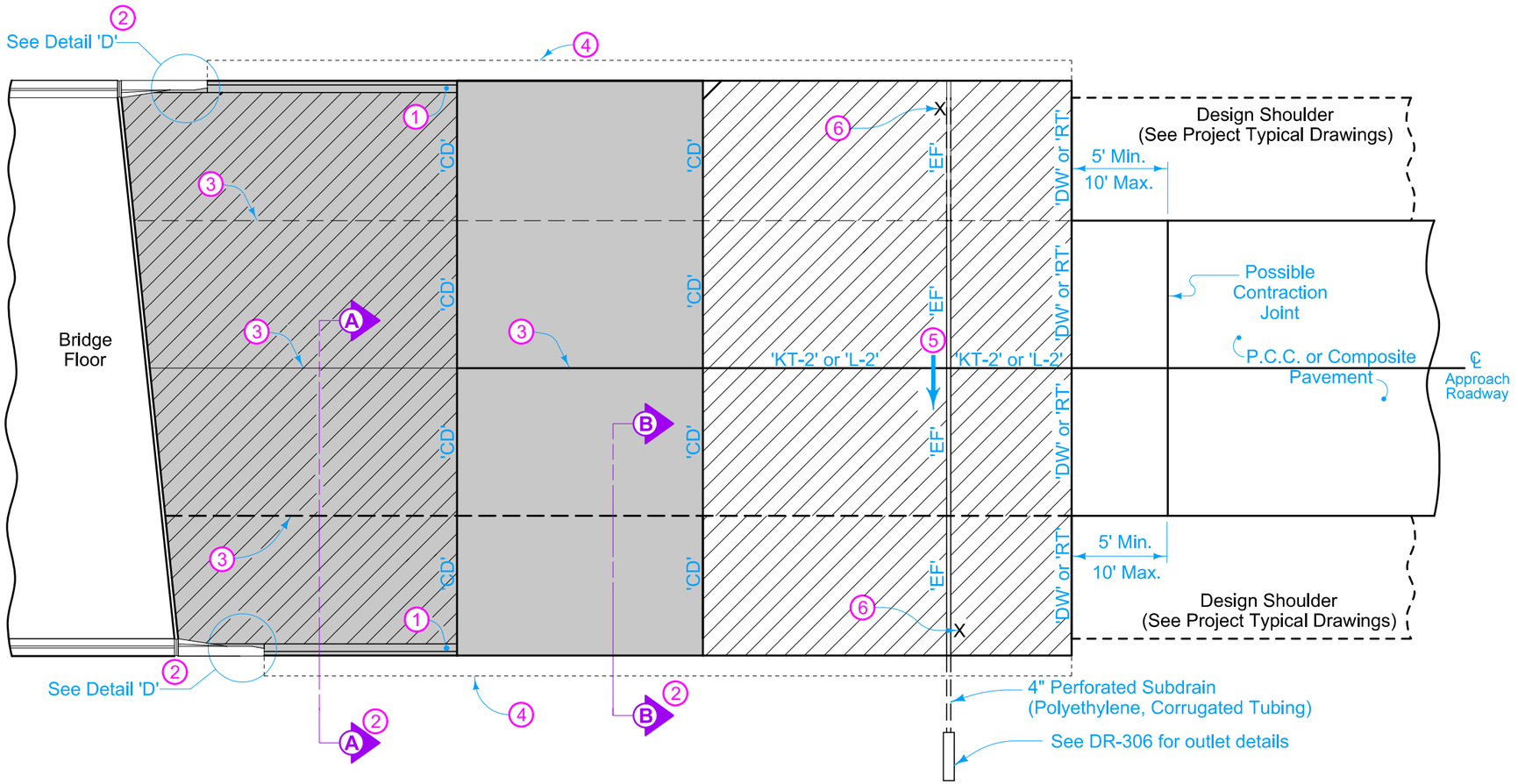
BR-205

SHEET 4 of 4

REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item. Removed notes pertaining to shoulders. Added 'BE' joint detail.

APPROVED BY DESIGN METHODS ENGINEER

DOUBLE REINFORCED 12" APPROACH (SLAB BRIDGE)



PLAN VIEW

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. Slope subdrain to drain.
6. Place an "X" in the plastic concrete near the 'EF' joint at the outside edge of pavement.

Pay limits for contract item include the following areas:

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

IOWA DOT

STANDARD ROAD PLAN

REVISION	
3	10-18-22

BR-211

SHEET 1 of 1

REVISIONS: Revised curb note.

APPROVED BY DESIGN METHODS ENGINEER

BRIDGE APPROACH (ABUTTING PCC OR COMPOSITE PAVEMENT)

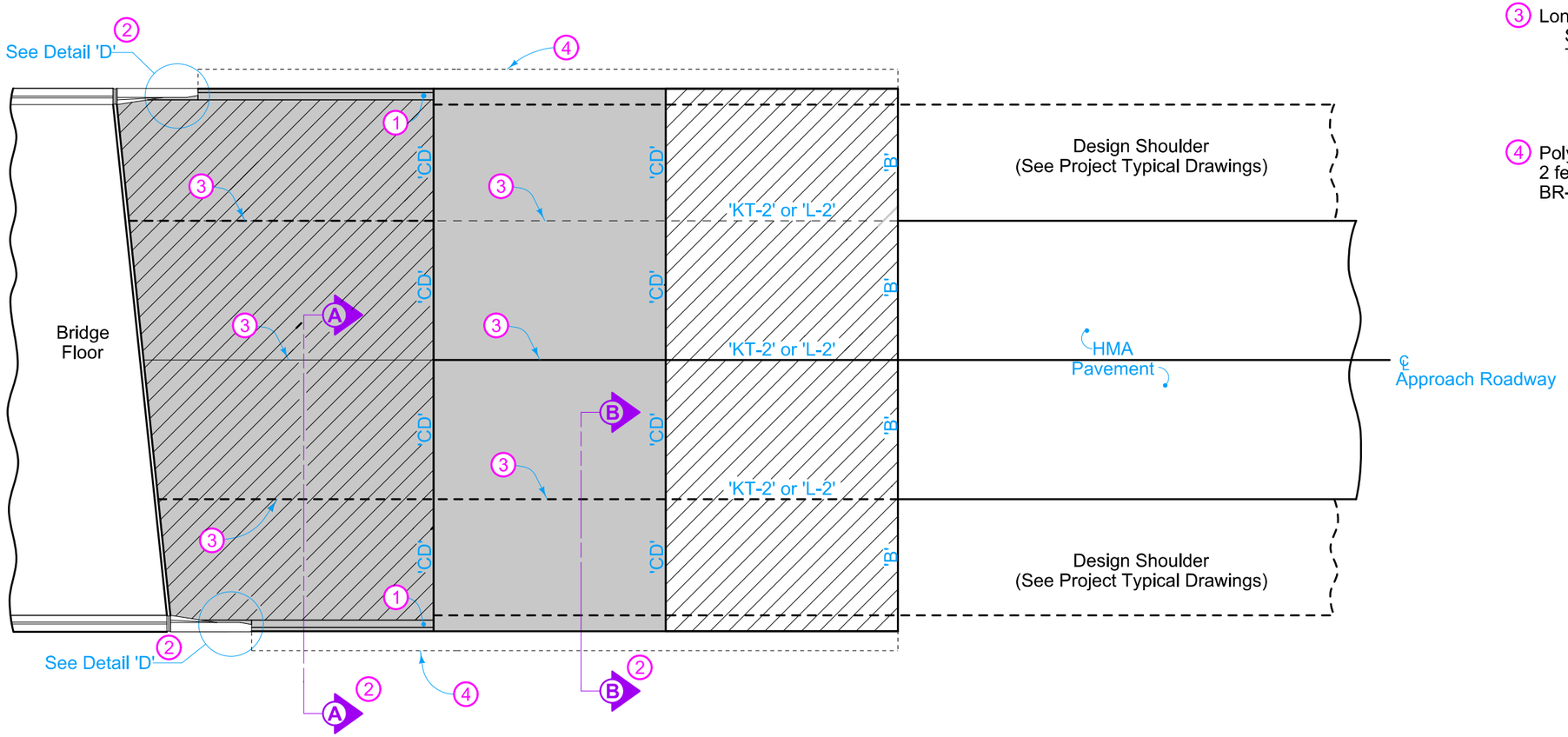
For joint details, see PV-101.

(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.



PLAN VIEW

Pay limits for contract item include the following areas:

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

IOWA DOT

STANDARD ROAD PLAN

REVISION 3 10-15-24

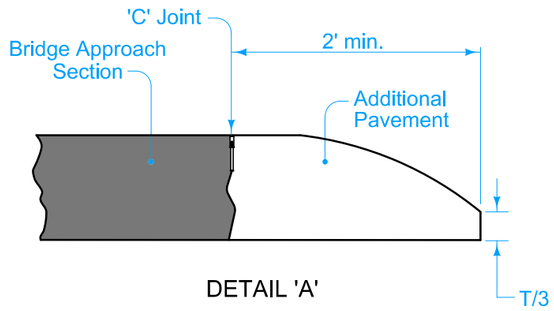
BR-212

SHEET 1 of 1

REVISIONS: Removed note pertaining to shoulder.

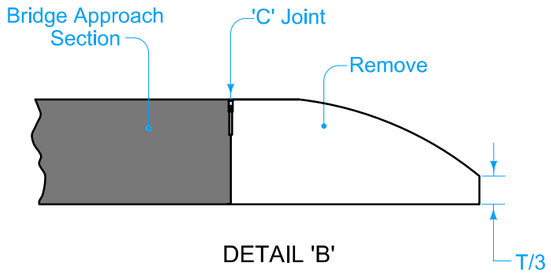
APPROVED BY DESIGN METHODS ENGINEER

BRIDGE APPROACH (ABUTTING HMA PAVEMENT)



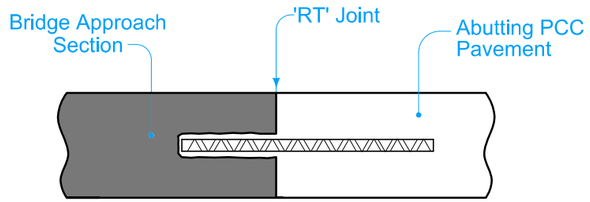
DETAIL 'A'

SECTION A-A



DETAIL 'B'

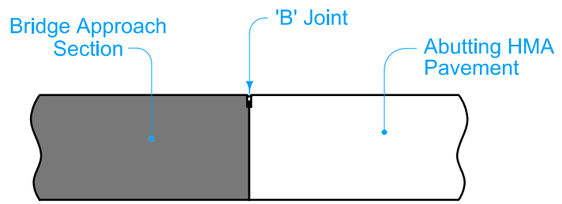
SECTION A-A



(For Abutting PCC Pavement)

DETAIL 'C'

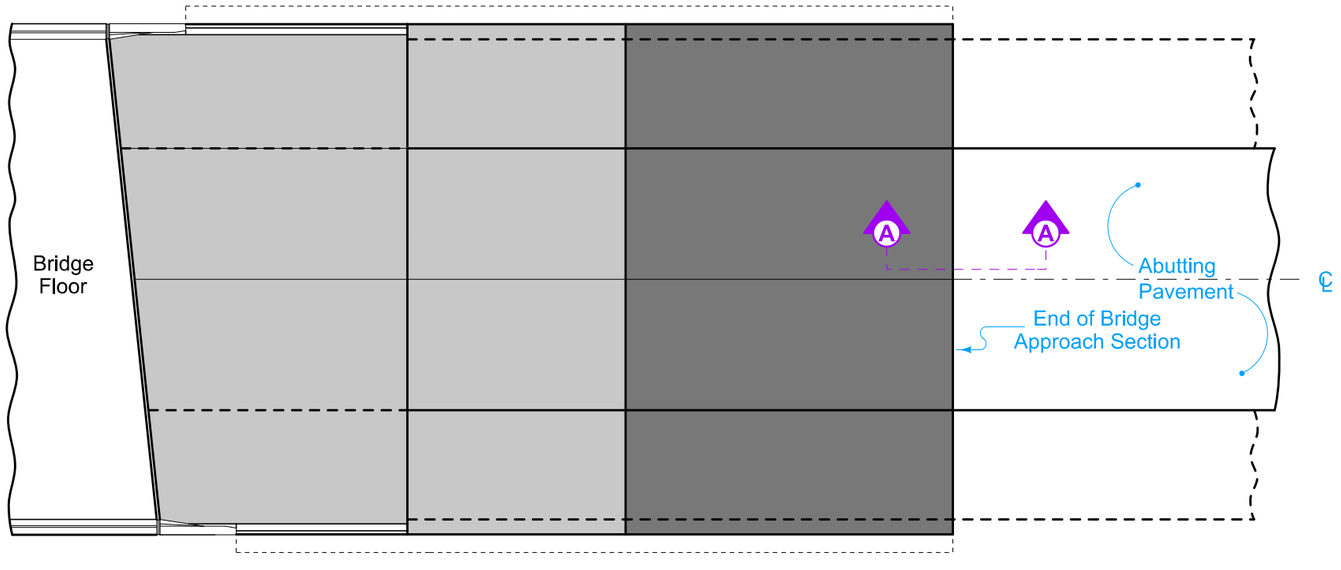
SECTION A-A



(For Abutting HMA Pavement)

DETAIL 'C'

SECTION A-A



PLAN VIEW

For Jointing Details, see PV-101.

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 Addtional 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.

Reinforced Section

Non-Reinforced Section

IOWA DOT

STANDARD ROAD PLAN

REVISION	
1	10-19-21

BR-213

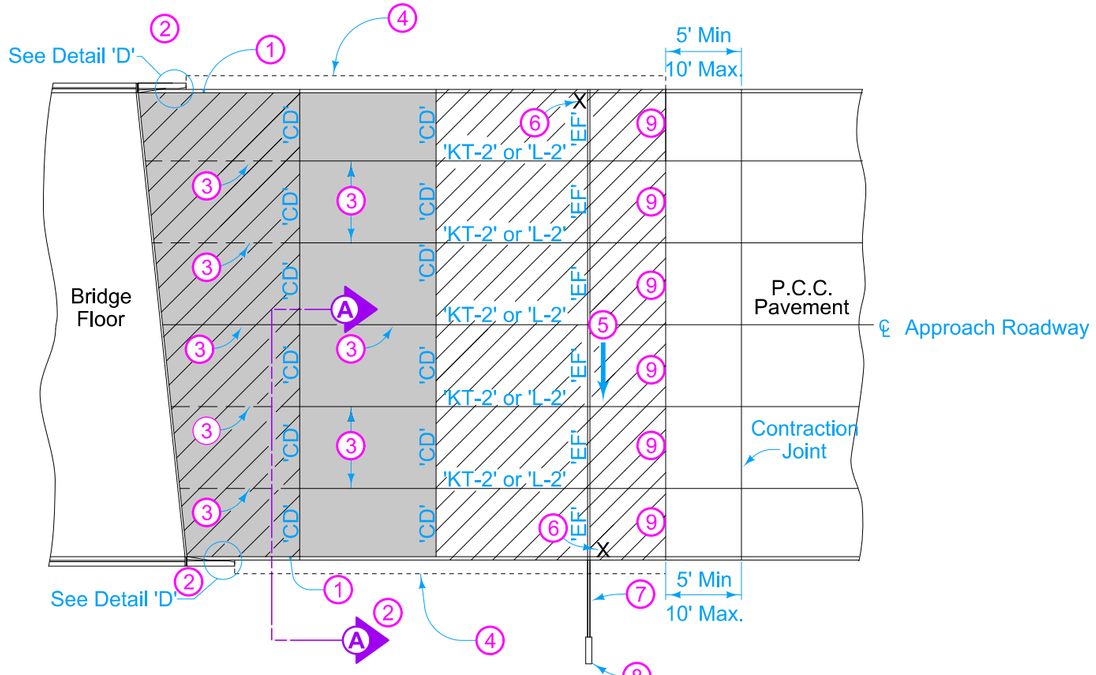
SHEET 1 of 1

REVISIONS: Added shoulders to single and non-reinforced sections.

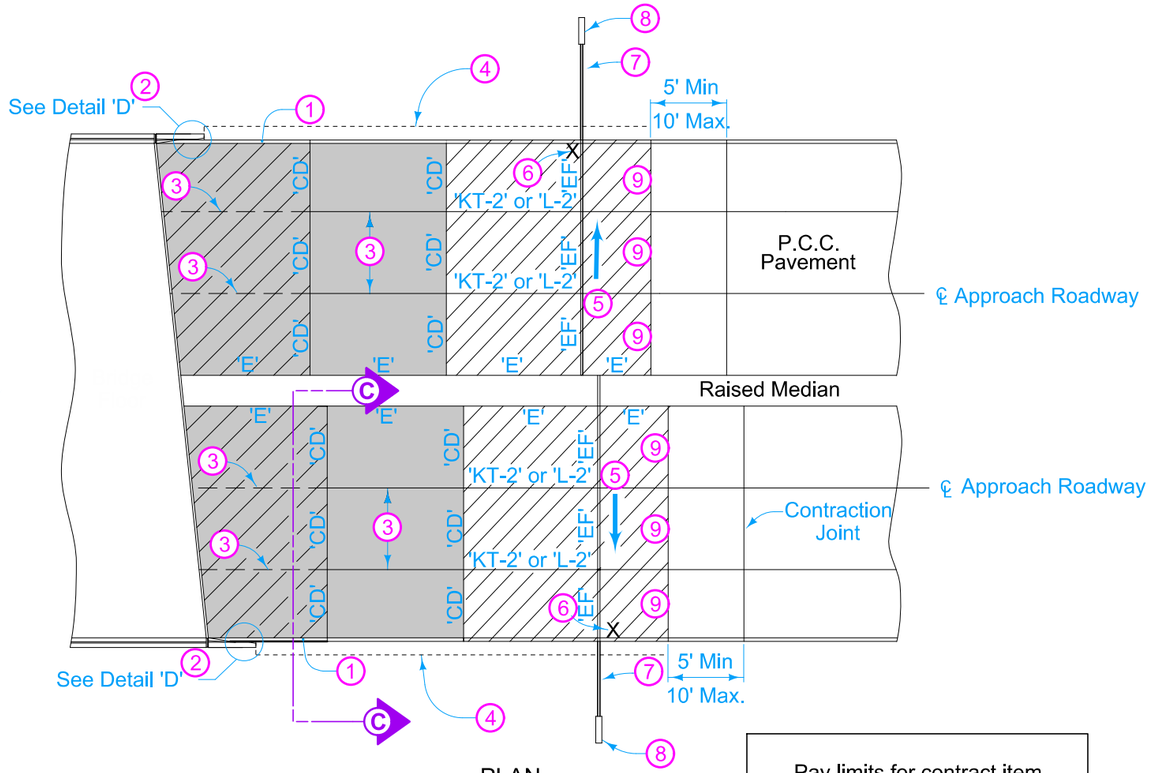
APPROVED BY DESIGN METHODS ENGINEER

BRIDGE APPROACH (ABUTTING PAVEMENT)

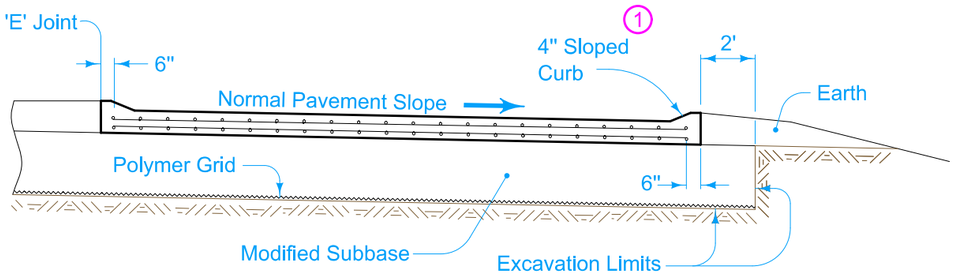
For joint details, see PV-101.



PLAN



PLAN



SECTION C-C

1. Build 4 inch Sloped Curb, unless noted otherwise in the plans. 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. Slope subdrain to drain.
6. Place an "X" in the plastic concrete near the 'EF' joint at the outside edge of pavement.
7. 4 inch perforated subdrain (polyetheylene, corrugated tubing).
8. See DR-303 or DR-306 for outlet details
9. 'DW' or 'RT' joint.

Pay limits for contract item include the following areas:

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

IOWA DOT

STANDARD ROAD PLAN

REVISION 2 10-18-22

BR-231

SHEET 1 of 1

REVISIONS: Revised curb note.

APPROVED BY DESIGN METHODS ENGINEER

BRIDGE APPROACH (MULTI-LANE, CURBED ROADWAY)

DESIGNER INFORMATION

For joint details, refer to PV-101.

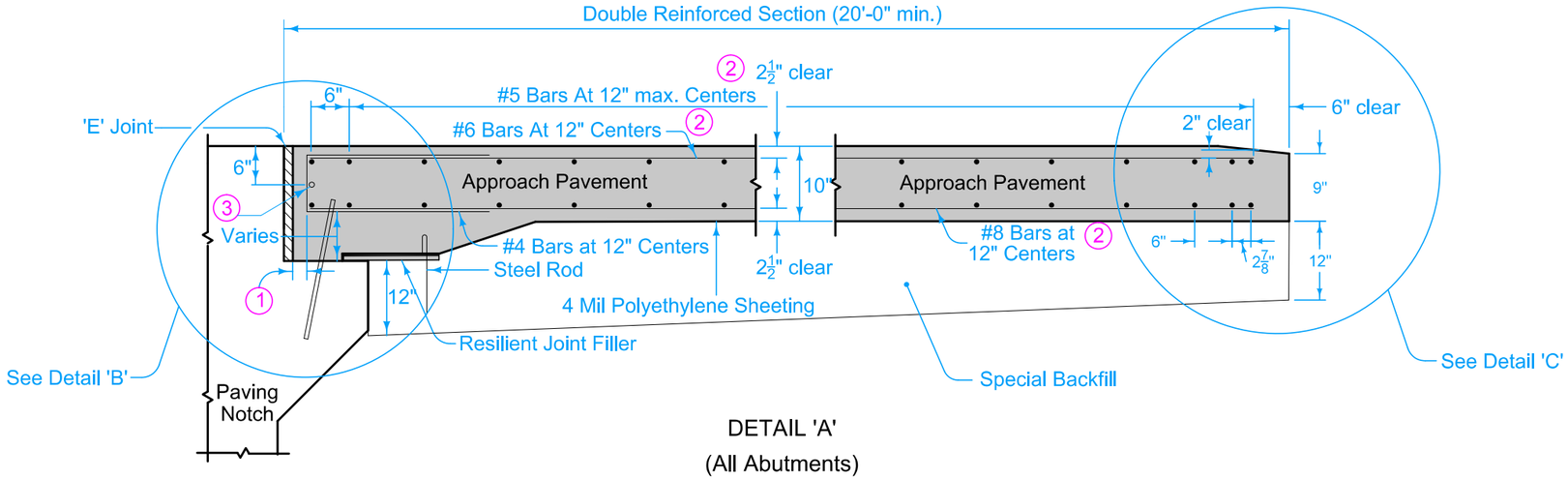
For curb details, see Detail 'F'.

All transverse bars are #5.

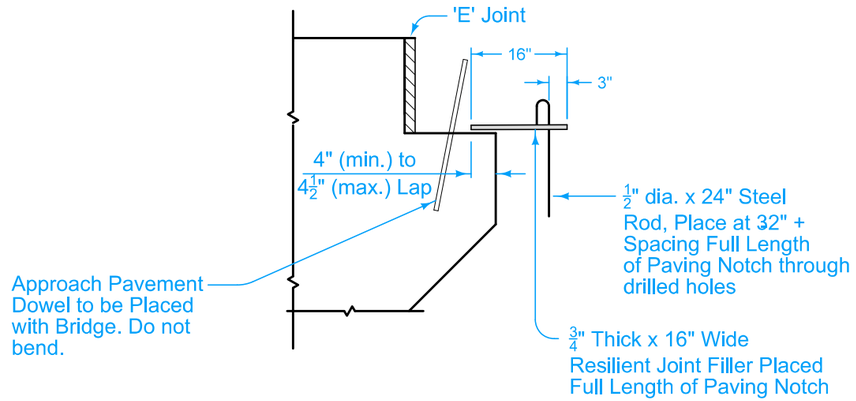
(1) 2" min. to 2 1/2" max. clear to bent bar.

(2) Minimum lap length: #5 Bars - 38"
#6 Bars - 45"
#8 Bars - 59"

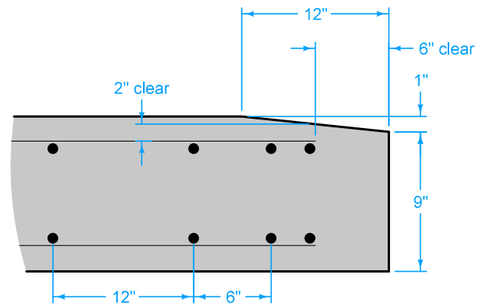
(3) If bridge is skewed, place additional #5 bar parallel to skewed face.



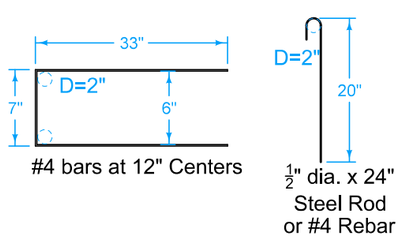
DETAIL 'A'
(All Abutments)



DETAIL 'B'



DETAIL 'C'
(Pavement Bevel)



BENT BAR SHAPES

Possible Contract Item:
Bridge Approach, BR-241
Longitudinal Grooving in Concrete, Bridge Deck
Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
112-6

IOWA DOT

STANDARD ROAD PLAN

REVISION 2 10-15-24

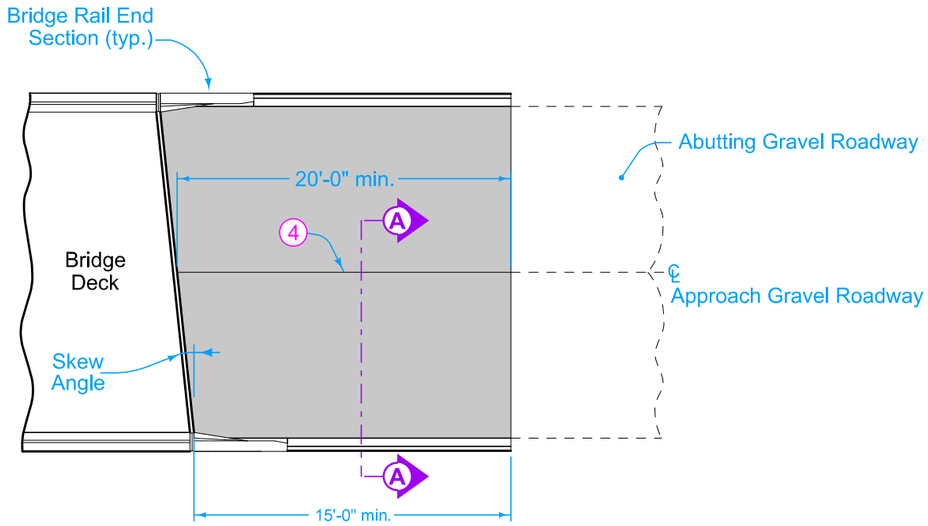
BR-241

SHEET 1 of 3

REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.

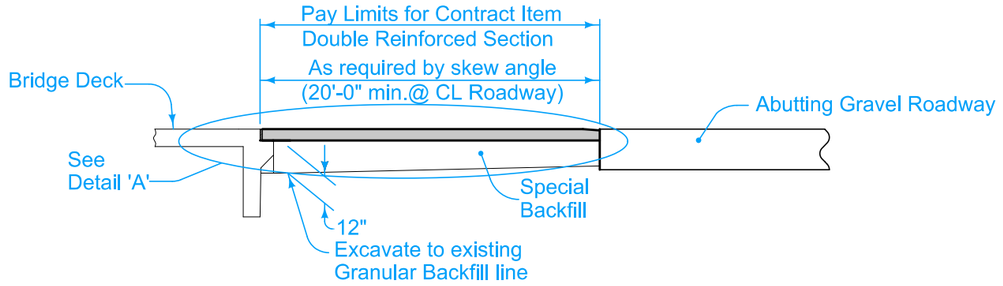
APPROVED BY DESIGN METHODS ENGINEER

DOUBLE REINFORCED 10" APPROACH ON GRAVEL ROADS

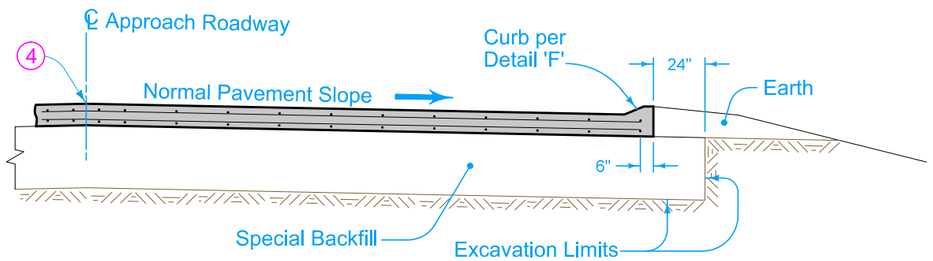


PLAN VIEW

4 Longitudinal Joint (PV-101):
Single pour - Saw cut joint per Detail B.
Two pours - Use 'KS-2' joint.



SECTION THRU CENTERLINE



SECTION A-A

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	10-15-24

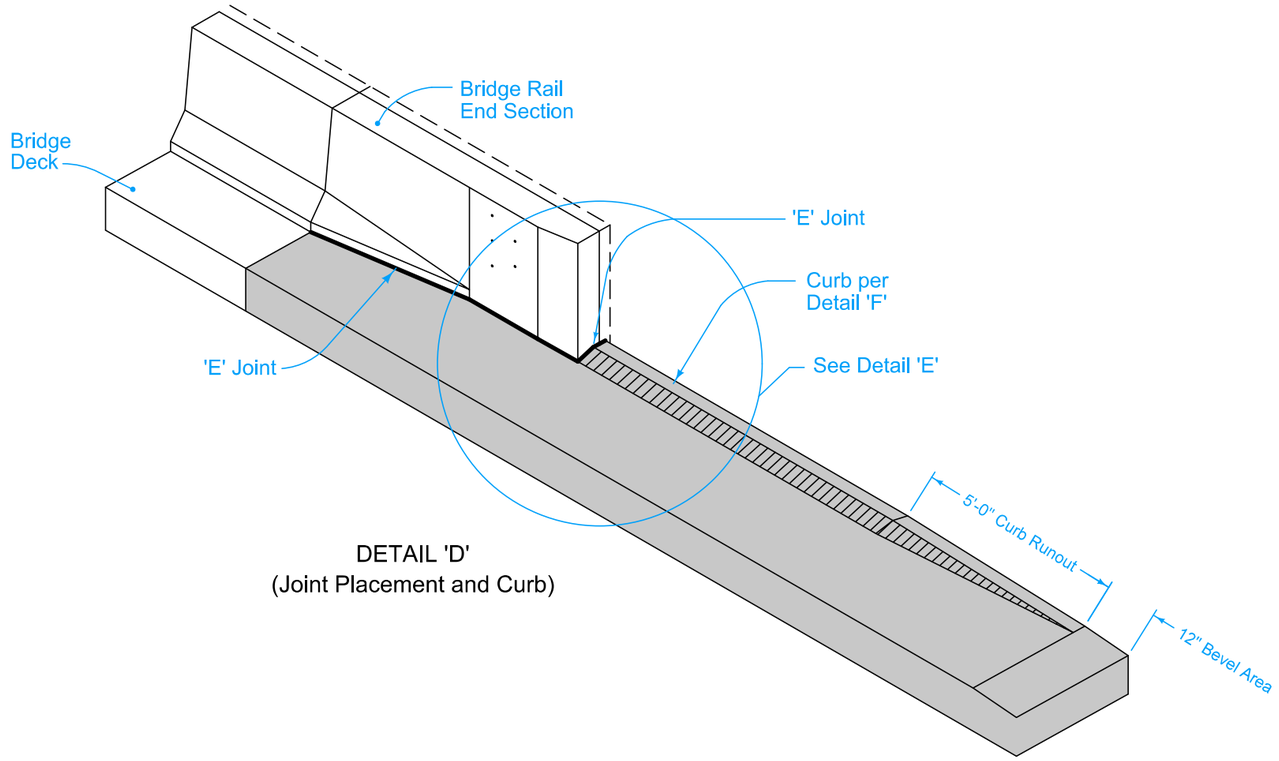
BR-241

SHEET 2 of 3

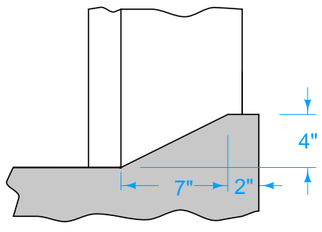
REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.

APPROVED BY DESIGN METHODS ENGINEER

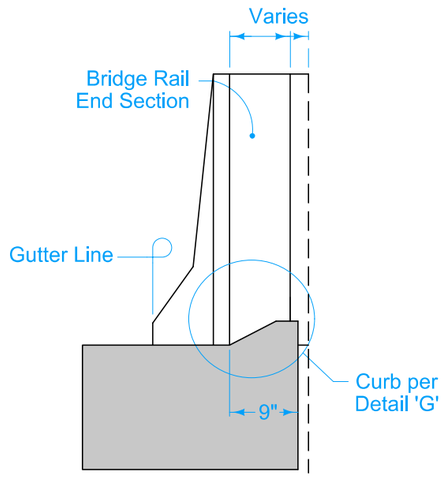
DOUBLE REINFORCED 10" APPROACH ON GRAVEL ROADS



DETAIL 'D'
(Joint Placement and Curb)



DETAIL 'G'



DETAIL 'E'
(Back of Curb Placement)

IOWA | DOT

STANDARD ROAD PLAN

REVISION	
2	10-15-24

BR-241

SHEET 3 of 3

REVISIONS: Added Longitudinal Grooving in Concrete to possible contract item.

APPROVED BY DESIGN METHODS ENGINEER

DOUBLE REINFORCED 10" APPROACH ON GRAVEL ROADS