## General Notes

1. **Design Specifications**:
   - Where local bridge design specifications and as supplemented by the design manual, part 4, structures.
   - Design in accordance with the load and resistance factor design method (LRFD).

2. **Construction Specifications and Requirements**:
   - Provide materials and products noted in accordance with the current version of the Commonwealth of Pennsylvania Department of Transportation Procurement Publication 12-001.
   - Provide the following:
     - Integral abutment
     - Concrete approach slab
     - Integral concrete drain trough and tooth expansion dam
     - Tooth expansion dam for prestressed concrete and steel beam bridges
     - Reinforced concrete compression seal joint for prestressed concrete and steel beam bridges
     - Steel beam wall for prestressed concrete and steel beam bridges
     - Reinforced concrete compression seal joint for integral concrete drain trough and tooth expansion dam

3. **All Dimensions Shown Are Horizontal, Unless Noted**.
4. **Dimensions Shown Are For a Normal Temperature of 68 Degrees F.**
5. **Provision for Specific Details May Be Made to the Chief Bridge Engineer.**
6. **If Needed Details Are Not Found in This Standard a Special Submission Requesting Approval for Specific Details May Be Made to the Chief Bridge Engineer.**

## Materials Notes

1. **Provide the Following Concrete Classes**:
   - Type 1, 2, and 4: Concrete conforming to AASHTO M270, Grade 36 unless noted otherwise.
   - Type 3: Concrete conforming to AASHTO M270, Grade 60 unless noted otherwise.

2. **Provide Class A or Class AA cement for concrete approaching slabs, barriers, and approach slabs.**
3. **Provide integral abutments and integral concrete drain troughs.**
4. **Provide tooth expansion dams.**
5. **Provide materials and details in accordance with BC-762M.**
6. **Provide grade 60 deformed reinforcing bars that meet the requirements at no additional cost to the Department.**
7. **Provide minimum lap and embedment length for reinforcing bars in accordance with BC-736M.**
8. **Provide details and materials in accordance with BC-754M.**

## Approach Slab Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concrete Approach Slab</td>
</tr>
<tr>
<td>2</td>
<td>Concrete Approach Slab with Tooth Expansion Dam</td>
</tr>
<tr>
<td>3</td>
<td>Concrete Approach Slab for Type 4 Bridge Barrier</td>
</tr>
<tr>
<td>4</td>
<td>Concrete Approach Slab with Integral Sound Barrier Wall</td>
</tr>
</tbody>
</table>

**Notes:**
- Tooth expansion dam is not permitted on approach slab types 1, 3, 4, and 5.
INSTRUCTIONS TO DESIGNER NOTES

1. THE INFORMATION SHOWN IN THIS STANDARD IS PROVIDED FOR USE IN THE DEVELOPMENT OF THE CONTRACT DRAWINGS. THE DESIGNER IS RESPONSIBLE FOR THE SELECTION OF ALL NECESSARY DETAILS AND NOTES.

2. PROVIDE THE FOLLOWING Information ON THE CONTRACT DRAWINGS:
   a. Provide complete information for all details and notes.
   b. Provide a complete file of all notes related to the contract drawings.
   c. Provide a complete file of all notes related to the contract drawings.
   d. Provide a complete file of all notes related to the contract drawings.

3. REFER TO APPROACH SLAB SELECTION CRITERIA TABLE FOR ADDITIONAL INFORMATION.

4. APPROACH SLAB TYPE DETAILS ARE TO BE DETERMINED FOR EACH INDIVIDUAL SITUATION.

5. CONTRACT DRAWINGS:
   a. Provide complete details and notes as required.
   b. Provide complete information for all details and notes.
   c. Provide complete information for all details and notes.

6. CONTRACT DRAWINGS NOTES:
   a. The following notes are to be placed on the contract drawings:
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8. APPROACH SLAB GUIDELINE NOTES:
   a. The following guidelines are provided to help in the application of the appropriate type of approach slab to be specified on the contract drawings.
   b. The following guidelines are provided to help in the application of the appropriate type of approach slab to be specified on the contract drawings.
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NOTES

1. FOR NOTES, SEE SHEETS 1 AND 2.
2. FOR SECTION A-A, SEE SHEET 2.
3. FOR ADDITIONAL MOMENT SLAB DETAILS REFER TO BD-627.
4. ELIMINATE THE Tie BARS OR TIE BOLTS ALONG LENGTH INDICATED.
5. PROVIDE PAVING OUTSIDE SHEET.
6. PROVIDE TYPE 2-SC GUIDE RAIL WITH POSTS AT 3'-1½" SPA. ALONG CURVE AFTER APPROACH END TRANSITION.
7. INLET TO BE LOCATED SUCH THAT ITS OUTFLOW PIPE MISSES TYPE 2-SC POSTS IN GUIDE RAIL TRANSITION.
SHOULDER/LANE LINE
KEYED CONSTRUCTION JOINT
OVERLAY
SUPERPAVE ASPHALT
APPROACH SLAB
CONCRETE
WITH ASPHALT OVERLAY
MATERIAL
JOINT SEALING
SEE DETAIL
JOINT SEALING MATERIAL,
SEE DETAIL
JOINT SEALING DETAIL
OPTIONAL CONSTRUCTION JOINT AT SHOULDER/LANE LINE
DETAIL B
OPTIONAL CONSTRUCTION JOINT AT SHOULDER/LANE LINE
DETAIL C
NOTES
1. FOR NOTES, SEE SHEETS 1 AND 2.
2. FOR SECTION A-A, SEE SHEET 3.
3. FOR SECTION E-E, SEE SHEET 8.
4. PROVIDE TYPE 5-SC GUIDE RAIL WITH POSTS AT 3'-1" SPA. ALONG SAW CUT FOR JOINT SEAL.
5. INLET TO BE LOCATED SUCH THAT ITS OUTFLOW PIPE MISSES TYPE 2-SC POSTS IN GUIDE RAIL TRANSITION.
6. TYPE 1 AND TYPE 2 APPROACH SLAB STRUCTURAL BACKFILL, REFER TO RC-12M.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY
STANDARD
BRIDGE APPROACH SLABS
TYPE 1 AND TYPE 2 - PLAN 2

PLAN 2
TYPE 1 AND TYPE 2
FULL WIDTH APPROACH SLAB WITH SUPERPAVE ASPHALT OVERLAY
WITH PLANTED BERM OR SHORT U-RINGS

SECTION C-C
TYPE 3, 4, OR 5 - CONCRETE APPROACH SLAB
WITH SUPERPAVE ASPHALT OVERLAY

DETAIL C
6'-0" ADJACENT TO PAVEMENT RELIEF JOINT
OR CONCRETE PAVEMENT
5'-0" ADJACENT TO FLEXIBLE PAVEMENT
SKEW ANGLE TO APPROACH SLAB
MATCH BRIDGE SKEW

NOTE A:
BD-628M
STANDARD
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY
BRIDGE APPROACH SLABS
TYPE 1 AND TYPE 2 - PLAN 2

DETAIL B
OPTIONAL CONSTRUCTION JOINT AT SHOULDER/LANE LINE

CHIEF BRIDGE ENGINEER
RECOMMENDED
1. FOR NOTES, SEE SHEETS 1 AND 2.
2. FOR SECTION A-A, SEE SHEET 3.
3. FOR SECTION E-E, SEE SHEET 8.
4. PROVIDE TYPE 5-SC GUIDE RAIL WITH POSTS AT 3'-1" SPA. ALONG SAW CUT FOR JOINT SEAL.
5. INLET TO BE LOCATED SUCH THAT ITS OUTFLOW PIPE MISSES TYPE 2-SC POSTS IN GUIDE RAIL TRANSITION.
6. TYPE 1 AND TYPE 2 APPROACH SLAB STRUCTURAL BACKFILL, REFER TO RC-12M.
PLAN 4

TYPE 1 AND TYPE 2
FULL WIDTH APPROACH SLAB WITH ATTACHED BARRIERS
WITH FLARED WINGS OR SHORT U-WINGS WITH MOMENT SLABS

NOTES
1. FOR NOTES, SEE SHEETS 1 AND 2.
2. FOR SECTION A-A, SEE SHEET 3.
3. FOR SECTION G-G, SEE SHEET 8.
4. PROVIDE THE FOLLOWING JOINT OPENINGS:
   - APPROACH SLAB ADJACENT TO CONCRETE OR FLEXIBLE PAVEMENT
     - 1/2" FLUSH EXPANSION JOINT
     - APPROACH SLAB ADJACENT TO PAVEMENT RELIEF JOINT
     - 10'-0" MIN.
   - PROVIDE GLIDING PLATE IN ACCORDANCE WITH THE DETAILS SHOWN ON BD-627M.
5. PROVIDE TYPE 2-SC GUIDE RAIL, WITH POSTS AT 3'-1" SPA, ALONG CURVE AFTER APPROACH END TRANSITION.
6. INLET TO BE LOCATED SUCH THAT ITS OUTLET PIPE MISSES TYPE 2-SC POSTS IN CURVE RAIL TRANSITION.
7. INLET TO BE LOCATED SUCH THAT ITS OUTFLOW PIPE MISSES TYPE 2-SC POSTS IN CURVE RAIL TRANSITION.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

STANDARD
BRIDGE APPROACH SLABS
TYPE 1 AND TYPE 2 - PLAN 4

RECOMMENDED APR. 29, 2016
BUREAU OF PROJECT DELIVERY

BD-628M

SECTION H-H

SECTION G-G
NOTES

1. DETAIL J SHOWN FOR TYPE 2-STRUCTURE SUPPORTED APPROACH SLABS.
2. FOR TYPE 2-BACKWALL SUPPORTED APPROACH SLAB, USE WATERSTOP AND 1/2" CLOSED CELL NEOPRENE SPONGE ABOVE WATERSTOP.

1. DETAIL J SHOWN FOR TYPE 2-BACKWALL SUPPORTED APPROACH SLABS.
1. FOR NOTES, SEE SHEETS 1 AND 2.
2. USE ONLY APPROVED SEALS, AS LISTED IN BULLETIN 15.
3. SEE MANUFACTURER'S DATA.

3. FOR WORKING AND WATERSTOP DETAILS, SEE SHEET 3.
4. WIDTH OF OPENING SHOULD BE ADJUSTED TO ACCOUNT FOR THE CONCRETE SURFACE TEMPERATURE AT THE TIME OF SAWING.
5. SEE MANUFACTURER'S DATA.

DETAIL J NOTES

1. DETAIL J SHOWN FOR TYPE 2-STRUCTURE SUPPORTED APPROACH SLABS.
2. FOR TYPE 2-BACKWALL SUPPORTED APPROACH SLAB, USE WATERSTOP AND 1/2" CLOSED CELL NEOPRENE SPONGE ABOVE WATERSTOP.

1. DETAIL J SHOWN FOR TYPE 2-BACKWALL SUPPORTED APPROACH SLABS.
1. FOR NOTES, SEE SHEETS 1 AND 2.
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3. SEE MANUFACTURER'S DATA.

3. FOR WORKING AND WATERSTOP DETAILS, SEE SHEET 3.
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5. SEE MANUFACTURER'S DATA.

DETAIL J NOTES

1. DETAIL J SHOWN FOR TYPE 2-STRUCTURE SUPPORTED APPROACH SLABS.
2. FOR TYPE 2-BACKWALL SUPPORTED APPROACH SLAB, USE WATERSTOP AND 1/2" CLOSED CELL NEOPRENE SPONGE ABOVE WATERSTOP.

1. DETAIL J SHOWN FOR TYPE 2-BACKWALL SUPPORTED APPROACH SLABS.
1. FOR NOTES, SEE SHEETS 1 AND 2.
2. USE ONLY APPROVED SEALS, AS LISTED IN BULLETIN 15.
3. SEE MANUFACTURER'S DATA.

3. FOR WORKING AND WATERSTOP DETAILS, SEE SHEET 3.
4. WIDTH OF OPENING SHOULD BE ADJUSTED TO ACCOUNT FOR THE CONCRETE SURFACE TEMPERATURE AT THE TIME OF SAWING.
5. SEE MANUFACTURER'S DATA.
TYPE 1 APPROACH SLAB (WITHOUT OVERLAY) - DETAIL 6

Appalachian Slab Supported on Prestressed Concrete
Adjacent Box Beams for Beam Depths 27" and Greater

TYPE 2 APPROACH SLAB (WITH OVERLAY) - DETAIL 6

Approach Slab Supported on Prestressed Concrete
Adjacent Box Beams for Beam Depths 30" and Greater

NOTES
1. For Notes, See Sheets 1 and 2.
2. Burn Off, To Top of Slab, Reinforcement and/or Lifting Devices Protruding into Approach Slab.
3. Details Shown May Only Be Used If The Beam Depth Is Equal To or Exceeds The Depths Indicated. If Required Beam Depth Is Less Than Indicated Refer to Detail 10.
4. For Forming and Waterstop Details, See Sheet 3.
TYPE 1 APPROACH SLAB (WITHOUT OVERLAY) - DETAIL 7

APPORACH SLAB SUPPORTED ON PRESTRESSED CONCRETE SPREAD BOX BEAMS AND FULL DEPTH CONCRETE END DIAPHRAGMS FOR BEAM DEPTHS 24" AND GREATER

NOTE:
1. FOR BEAM DEPTHS 24" AND GREATER, BOX BEAMS AND FULL DEPTH CONCRETE END DIAPHRAGMS ARE REQUIRED.
2. BURN OFF, TO TOP OF BEAM, REINFORCEMENT AND/OR LIFTING DEVICES PROTRUDING INTO APPROACH SLAB.
3. DETAILS SHOWN MAY ONLY BE USED IF THE BEAM DEPTH IS EQUAL TO OR EXCEEDS THE DEPTHS INDICATED. IF REQUIRED BEAM DEPTH IS LESS THAN INDICATED, REFER TO DETAIL 11.
4. FOR FORMING AND WATERSTOP DETAILS, SEE SHEET 3.
5. FOR NOTES, SEE SHEETS 1 AND 2.
6. REFER TO BD-661M.

TYPE 2 APPROACH SLAB (WITH OVERLAY) - DETAIL 7

APPORACH SLAB SUPPORTED ON PRESTRESSED CONCRETE SPREAD BOX BEAMS AND FULL DEPTH CONCRETE END DIAPHRAGMS FOR BEAM DEPTHS 30" AND GREATER

NOTE:
1. FOR BEAM DEPTHS 30" AND GREATER, BOX BEAMS AND FULL DEPTH CONCRETE END DIAPHRAGMS ARE REQUIRED.
2. BURN OFF, TO TOP OF BEAM, REINFORCEMENT AND/OR LIFTING DEVICES PROTRUDING INTO APPROACH SLAB.
3. DETAILS SHOWN MAY ONLY BE USED IF THE BEAM DEPTH IS EQUAL TO OR EXCEEDS THE DEPTHS INDICATED. IF REQUIRED BEAM DEPTH IS LESS THAN INDICATED, REFER TO DETAIL 11.
4. FOR FORMING AND WATERSTOP DETAILS, SEE SHEET 3.
5. FOR NOTES, SEE SHEETS 1 AND 2.
6. REFER TO BD-661M.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

STANDARD
BRIDGE APPROACH SLABS
TYPE 1 AND TYPE 2 - DETAIL 7
(P/S CONCRETE SPREAD BOX BEAMS WITHOUT BACKWALL)

RECOMMENDED APR. 29, 2016
RECOMMENDED APR. 29, 2016
SHEET 13 OF 35
BD-628M
TYPE 1 APPROACH SLAB (WITHOUT OVERLAY) - DETAIL 8

APPROACH SLAB SUPPORTED ON PRESTRESSED CONCRETE
I-BEAMS AND FULL DEPTH CONCRETE END DIAPHRAGMS

TYPE 2 APPROACH SLAB (WITH OVERLAY) - DETAIL 8

APPROACH SLAB SUPPORTED ON PRESTRESSED CONCRETE
I-BEAMS AND FULL DEPTH CONCRETE END DIAPHRAGMS

NOTES

1. FOR NOTES, SEE SHEETS 1 AND 2.
2. BURN OFF, TO TOP OF BEAM, REINFORCEMENT AND/OR LIFTING DEVICES PROTRUDING INTO APPROACH SLAB.
3. FOR FORMING AND WATERSTOP DETAILS, SEE SHEET 3.

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BUREAU OF PROJECT DELIVERY

STANDARD
BRIDGE APPROACH SLABS
TYPE 1 AND TYPE 2 - DETAIL 8
(P/S CONCRETE I-BEAMS WITHOUT BACKWALL)
TYPE 1 APPROACH SLAB (WITHOUT OVERLAY) - DETAIL 9

APPROACH SLAB SUPPORTED ON STEEL I-BEAMS AND FULL DEPTH CONCRETE END DIAPHRAGMS FOR BEAM DEPTHS 2'-1½" AND GREATER

1. FOR NOTES, SEE SHEETS 1 AND 2.
2. DETAILS SHOWN MAY ONLY BE USED IF THE BEAM DEPTH IS EQUAL TO OR EXCEEDS THE DEPTHS INDICATED. IF REQUIRED BEAM DEPTH IS LESS THAN INDICATED REFER TO DETAIL 12.
3. FOR PONDS AND WATERSTOP DETAILS, SEE SHEET 3.

TYPE 2 APPROACH SLAB (WITH OVERLAY) - DETAIL 9

APPROACH SLAB SUPPORTED ON STEEL I-BEAMS AND FULL DEPTH CONCRETE END DIAPHRAGMS FOR BEAM DEPTHS 2'-1½" AND GREATER

1. FOR NOTES, SEE SHEETS 1 AND 2.
2. DETAILS SHOWN MAY ONLY BE USED IF THE BEAM DEPTH IS EQUAL TO OR EXCEEDS THE DEPTHS INDICATED. IF REQUIRED BEAM DEPTH IS LESS THAN INDICATED REFER TO DETAIL 12.
3. FOR PONDS AND WATERSTOP DETAILS, SEE SHEET 3.
TYPE 1 APPROACH SLAB (WITHOUT OVERLAY) - DETAIL 11

Approach slab supported on abutment corbel adjacent to prestressed concrete spread box beam and full depth concrete end diaphragm. For beam depths less than 24".

TYPE 2 APPROACH SLAB (WITH OVERLAY) - DETAIL 11

Approach slab supported on abutment corbel adjacent to prestressed concrete spread box beam and full depth concrete end diaphragm. For beam depths less than 30".

NOTES
1. For notes, see sheets 1 and 2.
2. For forming and waterstop details, see sheet 3.
3. For abutment corbel reinforcement detail, see sheet 16.
TYPE 1 APPROACH SLAB (WITHOUT OVERLAY) - DETAIL 12

- Steel I-beams and full depth concrete end diaphragms
- Approach slab supported on abutment corbel adjacent to steel I-beams and full depth concrete end diaphragms for beam depths less than 2'-1½".

NOTES:
1. For notes, see sheets 1 and 2.
2. For forming and waterstop details, see sheet 11.
3. For abutment corbel reinforcement detail, see sheet 16.

TYPE 2 APPROACH SLAB (WITH OVERLAY) - DETAIL 12

- Steel I-beams and full depth concrete end diaphragms
- Approach slab supported on abutment corbel adjacent to steel I-beams and full depth concrete end diaphragms for beam depths less than 2'-6½".

- Provides more information and details about the bridge approach slabs.
DIRECTOR, BUREAU OF PROJECT DELIVERY

CHIEF BRIDGE ENGINEER

BD-628M

SECTION Z-Z

APR. 29, 2016

RECOMMENDED

SHEET 21 OF 35

SLEEPER SLAB AND TOP OF SLEEPER SLAB BETWEEN BOTTOM OF PLATE

TYPE 3 - PLAN 3

EXTERIOR SIDE

STEEL PLATE

caster in place (typ.) with concrete insert countersunk machine screw and curb with barrier with barrier (roadway item)

8'-6" adjacent to pavement relief joint

5'-0" adjacent to flexible pavement

7'-6" adjacent to concrete pavement

10'-0" min.

NOTE: DESTINED TO DETERMINE LENGTH (L) OF PLATE. PLATE AND OTHER ITEMS INCIDENTAL TO COST OF NEOPRENE STRIP SEAL DAM.

8" DIA. HOLES

#5 @ 12"

#8 @ 12" top & bottom

OPTIONAL KEYED WASHERS WITH THREADED A325 BOLTS WITH GALVANIZED

1/8" DIAL GALVANIZED STEEL PLATE

NOTE: DESTINED TO DETERMINE LENGTH (L) OF PLATE. PLATE AND OTHER ITEMS INCIDENTAL TO COST OF NEOPRENE STRIP SEAL DAM.

5" STEEL PLATE CAST IN PLACE (TYP.)

COUNTERSUNK MACHINE SCREW

EXPANSION JOINT

TOP OF CURB

EXPANSION JOINT

TOP OF CURB

TOP OF CURB

PLATE (ROADWAY ITEM)

1-0" X 1-0" WASH. AS REQUIRED (TYP.)

JOINT OPENING AS REQUIRED FOR NEOPRENE STRIP SEAL

JOINT OPENING AS REQUIRED FOR NEOPRENE STRIP SEAL (TYP. EACH SIDE)

FOR NEOPRENE STRIP SEAL JOINT OPENING AS REQUIRED

T-H X 4" ADJACENT TO CONCRETE PAVEMENT T-H X 4" ADJACENT TO PAVEMENT RELIEF JOINT

T-H X 4" ADJACENT TO PAVEMENT RELIEF JOINT

8" 6" FLUSH (TYP. EACH SIDE)

FOR NEOPRENE STRIP SEAL JOINT OPENING AS REQUIRED

#10 bot.

#5 top

CURB (ROADWAY ITEM)

OF BARRIER

OF SAW CUT FOR JOINT SEAL

OF BARRIER, SEE BC-766M. EXTEND WATERSTOP TO FACE IN ACCORDANCE WITH

OMIT CAULKING COMPOUND IN AREA OUTSIDE FACE OF BARRIER, SEE

SEEC DETAILS BC-752M (TYP).

4. FOR SECTION J-J, SEE SHEET 19.

2. FOR SECTION C-C, SEE SHEET 5.

3. FOR SECTION E-E, SEE SHEET 8.

1. FOR NOTES, SEE SHEETS 1 AND 2.

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF TRANSPORTATION

BUREAU OF PROJECT DELIVERY

STANDARD

BRIDGE APPROACH SLABS

TYPE 3 - PLAN 3

RECOMMENDED APR. 29, 2016

RECOMMENDED APR. 29, 2016

SHEET 21 OF 35

BD-628M

NOTES

1. FOR NOTES, SEE SHEETS 1 AND 2.

2. FOR SECTION C-C, SEE SHEET 5.

3. FOR SECTION E-E, SEE SHEET 8.

4. FOR SECTION J-J, SEE SHEET 19.

5. USE GUIDE RAIL TRANSITION SIMILAR TO DETAIL ON BC-739M.

6. PIPE TO BE LOCATED SUCH THAT ITS OUTFLOW PIPE MISSES

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5. USE GUIDE RAIL TRANSITION SIMILAR TO DETAIL ON BC-739M.
Type 5 Approach Slab - Detail 16

End of Approach Slab
Adjacent to Flexi Pavement

Type 5 Approach Slab - Detail 17

End of Approach Slab
Adjacent to Concrete Pavement

Refer to RC-20M
Type E Joint

Notes

1. For notes, see Sheets 1 and 2.
2. Thoroughly moisten and place 2 layers of a nonadhesive polyethylene sheeting as bond breaker.
3. Use joint only when limited movement is anticipated in the roadway otherwise use detail 18.
4. Structural backfill, refer to RC-12M.
TABLE A

<table>
<thead>
<tr>
<th>BEAM TYPE</th>
<th>MINIMUM BEAM DEPTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA BULB-TEE BEAMS</td>
<td>41.25&quot;</td>
</tr>
<tr>
<td>6&quot;/63</td>
<td>50</td>
</tr>
</tbody>
</table>

NOTES:

1. FOR NOTES, SEE SHEETS 1 AND 2.
2. CURT WITH AN APPROVED EPOXY BONDING COMPOUND BEFORE PLACING APPROACH SLAB CONCRETE.
3. DETAILS SHOWN MAY NOT BE USED IF THE BEAM DEPTH IS LESS THAN THE DEPTHS INDICATED IN TABLE A.
4. FOR FORMING AND WATERSTOP DETAILS, SEE SHEET 3.
5. DETAIL 0 ON SHEET 10 MAY BE SPECIFIED AS AN ALTERNATE JOINT SEAL TYPE, AS DIRECTED BY THE DISTRICT BRIDGE ENGINEER.
6. SEE STANDARD DRAWING BC-767M FOR JOINT OPENING "A".
1. FOR NOTES, SEE SHEETS 1 AND 2.
2. FOR SECTION E-E, SEE SHEET 8.
4. FOR SECTION R-R, SEE SHEET 33.
5. FOR DRAIN TRough DETAILS, SEE SHEETS 28 - 34.
6. PROVIDE TYPE 2-SC GUIDE RAIL WITH POSTS AT 3'-1½" SPA.
7. INLET TO BE LOCATED SUCH THAT ITS OUTFLOW PIPE MISSES TYPE 2-SC POSTS IN GUIDE RAIL TRANSITION.

NOTES

- PROVIDE TYPE 2-SC GUIDE RAIL WITH POSTS AT 3'-1½" SPA.
- INLET TO BE LOCATED SUCH THAT ITS OUTFLOW PIPE MISSES TYPE 2-SC POSTS IN GUIDE RAIL TRANSITION.
- FOR DRAIN TRough DETAILS, SEE SHEETS 28 - 34.
- FOR NOTES, SEE SHEETS 1 AND 2.
- FOR SECTION E-E, SEE SHEET 8.
- FOR SECTION R-R, SEE SHEET 33.
THE FOLLOWING BEAMS ARE PERMITTED:
24/54, 24/60, 26/43, and 26/45

<table>
<thead>
<tr>
<th>BEAM TYPE</th>
<th>MINIMUM BEAM DEPTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>L BRG.</td>
<td>63&quot;</td>
</tr>
<tr>
<td>F/2 P/S</td>
<td>47 1/4&quot;</td>
</tr>
</tbody>
</table>

NOTES
1. FOR NOTES, SEE SHEETS 1 AND 2.
2. BURN OFF, TO TOP OF BEAM, REINFORCEMENT AND/or LIFTING DEVICES MOUNTED INTO APPROACH SLAB.
3. DETAILS SHOWN MAY ONLY BE USED IF THE REIN. DEPTH IS EQUAL TO OR EXCEEDS THE DEPTHS INDICATED. IF REQUIRED REIN. DEPTH IS LESS THAN INDICATED PROVIDE TYPE 1 OR TYPE 2 APPROACH SLAB.
4. SEE STANDARD DRAWING BD-762M FOR JOINT OPENING NOTES.
SECTION R-R

DRAIN TROUGH

SUPPORT PEDESTAL (TYP.)

1'-6" MIN.

TOP OF WALL FOR DRAIN TROUGH AND TOP OF APPROACH SLAB

PARALLEL WITH ROADWAY, SEE NOTE 2

AND BOTTOM OF APPROACH SLAB TOP OF WALL FOR DRAIN TROUGH AND TOOTH PLATE

MAX. SPA.

OUTLET PIPE (ROADWAY ITEM)

L 12" DIA. DUCTILE IRON

MIN. 1'-0"

( IF REQUIRED)

WINGWALL (IF REQUIRED)

COST OF THE TOOTH EXPANSION DAM.

ANY OTHER ITEMS SHOWN ARE INCIDENTAL TO THE STEEL CONCRETE SCREWS, NON SHRINK GROUT AND TERMINATION BARS, SELF-TAPPING STAINLESS RUBBERIZED TROUGH MATERIAL, GALVANIZED STEEL 4. STAINLESS STEEL PLATE, STUDS, ANCHOR BOLTS, FABRICATION AND CONSTRUCTION.

3. DESIGNER MAY ADJUST AS REQUIRED TO SIMPLIFY FABRICATION AND CONSTRUCTION.

FOR NOTES, SEE SHEETS 1 AND 2.

2. FOR DETAILS M AND N, SEE SHEET 32.

1. FOR NOTES, SEE SHEETS 1 AND 2.

* TO BE ADJUSTED FOR INSTALLATION TEMPERATURE FOR SPECIFIED MOVEMENT CLASSIFICATION.

TOOTH DAM SUPPORT PLAN

NOTE:

1. SEE NOTES, SEE SHEETS 1 AND 2.

2. FOR DETAILS M AND N, SEE SHEET 32.

3. DESIGNER MAY ADJUST AS REQUIRED TO SIMPLIFY FABRICATION AND CONSTRUCTION.

4. STAINLESS STEEL PLATE, STUDS, ANCHOR BOLTS, RUBBERIZED TROUGH MATERIAL, GALVANIZED STEEL TERMINATION RAILS, SELF-TAPPING STAINLESS STEEL CONCRETE SCREWS, NON SHRINK GROUT AND ANY OTHER ITEMS SHOWN ARE INCIDENTAL TO THE COST OF THE TOOTH EXPANSION DAM.
SAFETY WING PLAN

SECTION Q-Q

SECTION A-A

CONCEPTUAL INSTALLATION SCHEME**

JOINT INSTALLATION NOTES:
1. CAST ANCHOR BOLTS INTO INTEGRAL CONCRETE DRAIN TROUGH.
2. INSTALL AND ADJUST FIXED PORTION OF TOOTH DAM ON TROUGH WALL TO THE PROPER LINE AND GRADE.
3. THE SURFACE OF THE BLOCKOUT MUST BE COMPLETELY CLEAN WHEN THE JOINT IS INSTALLED.
4. SUPPORT WASHABLE PORTION OF YOUTH DAM IN THE BLOCKOUT FROM THE DECK SLAB AND FIXED PORTION OF THE YOUTH DAM IN THE CONCEPTUAL INSTALLATION SCHEME.
5. ADJUST MOBILE PORTION OF YOUTH DAM TO THE PROPER LINE AND GRADE WITH THE JOINT OPENING IN SET WRT RESPECT TO THE INSTALLATION TEMPERATURE SHOWN ON THE PLAN.
6. DURING ASSEMBLY INSTALLATION TIGHTEN ANCHOR 1 AND BOTH NUTS ON STUD BOLTS 2 AND 3 MAKING SURE THE JOINT OPENING IN ALLOWS FOR MOVEMENT IN THE ASSEMBLY. ALTERNATE THE PATTERN BETWEEN NEAR SIDE AND FAR SIDE OF JOINT ON SUCCESSIVE ASSEMBLIES, I.E. LOOSEN TOP NUT ON STUD BOLT 2 IMMEDIATELY AFTER BLOCKOUT IS CAST TO PERMIT MOVEMENT.
7. IMMEDIATELY AFTER BLOCKOUT IS CAST, LOOSEN TOP NUT ON STUD BOLT 3 TO PERMIT TEMPERATURE MOVEMENT IN THE ASSEMBLY.
8. PROVIDE LOW FRICTION INTERFACE BETWEEN BOTTOM NUT AND WASHER ON STUD BOLTS AND ANGLE.
9. AFTER THE CONCRETE OF THE BLOCKOUT ACHIEVES PRESCRIBED STRENGTH IN ACCORDANCE WITH PUB 408 SECTION 1001.3(q)1, REMOVE THE TEMPORARY SUPPORT ASSEMBLY AND GRIND OFF TACK WELDS UNTIL SMOOTH.
10. APPLY TOUCH-UP PAINT.

NOTES
1. FOR NOTES, SEE SHEETS 1 AND 2.
**S H O U L D E R 3" APPROACH SLAB**

**B A R R I E R ALONG CURB AFTER BRIDGE APPROACH SLABS**

**DIRECTOR, BUR. OF PROJECT DELIVERY**

**BD-628M APR.29, 2016 APR.29, 2016**

**RECOMMENDED SHEET 35 OF 35**

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**DETAILS O**

**SECTION X-X**

**SECTION B-B**

**SECTION Y-Y**

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**DESCRIPTION OF DETAILS FOR TYPE 5 APPROACH SLAB**

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>DESCRIPTION</th>
<th>DETAIL</th>
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<tbody>
<tr>
<td>13</td>
<td>END OF APPROACH SLAB WITH NEOPRENE STRIP SEAL ADJACENT TO FLEXIBLE PAVEMENT</td>
<td>22</td>
</tr>
<tr>
<td>14</td>
<td>END OF APPROACH SLAB WITH NEOPRENE STRIP SEAL ADJACENT TO FLEXIBLE PAVEMENT</td>
<td>22</td>
</tr>
<tr>
<td>15</td>
<td>END OF APPROACH SLAB WITH NEOPRENE STRIP SEAL ADJACENT TO PAVEMENT RELIEF JOINT</td>
<td>22</td>
</tr>
<tr>
<td>16</td>
<td>END OF APPROACH SLAB ADJACENT TO FLEXIBLE PAVEMENT</td>
<td>23</td>
</tr>
<tr>
<td>17</td>
<td>END OF APPROACH SLAB ADJACENT TO CONCRETE PAVEMENT</td>
<td>23</td>
</tr>
<tr>
<td>18</td>
<td>END OF APPROACH SLAB ADJACENT TO PAVEMENT RELIEF JOINT</td>
<td>23</td>
</tr>
</tbody>
</table>

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**NOTES**

1. See notes for sheets 1 and 2.
2. For section C-C, see sheet 3.
3. For section A-A, see sheet 7.
4. Provide paving motor from curb to curb.
5. Provide paving motor from curb to curb.
6. Shear to be located such that its outlet from 25'-0" length, level of the pavement surface. Have the top edges of the contact surfaces on both sides of the seal at the same elevation.

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**COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BUREAU OF PROJECT DELIVERY**

**STANDARD BRIDGE APPROACH SLABS TYPE 5 - PLAN AND SECTION**

**BD-628M SHEET 35 OF 35**