### Approach Slab Guideline Notes

**APPRAOCH SLAB SELECTION CRITERIA TABLE**

<table>
<thead>
<tr>
<th>Type of Approach Slab</th>
<th>Minimum Depth</th>
<th>Minimum Width</th>
<th>Minimum Length</th>
<th>Minimum Height</th>
<th>Minimum Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>45</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Flexible</td>
<td>45</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Notes:**
1. **Concrete** slabs are used for permanent structures without expansion joints.
2. **Flexible** slabs are used for temporary structures with expansion joints.
3. Minimum dimensions are based on the standard PennDOT guidelines.
4. Details are subject to review and approval by PennDOT.

---

**Instructions to Designer Notes**

1. The information shown in this standard is provided for use in the development of the contract documents. It is understood that the Designer is responsible for the preparation of all required details and notes.
2. This standard is to be used in conjunction with the PennDOT Design Manual and other applicable PennDOT standards.
3. **Approach Slab** details are provided for use in the design of the bridge approach slab and should be reviewed and approved by PennDOT.
4. Refer to PennDOT Design Manual for additional information.
5. Approach slab types are permitted for use in the design of the bridge approach slab. Designs are subject to review and approval by PennDOT.
6. Details are subject to review and approval by PennDOT.

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**Approach Slab Guideline Notes**

The following guidelines are provided to help the designer determine the appropriate approach slab to be used and to provide the details required for the construction of the approach slab.

1. **Concrete** slabs are used for permanent structures without expansion joints.
2. **Flexible** slabs are used for temporary structures with expansion joints.
3. Minimum dimensions are based on the standard PennDOT guidelines.
4. Details are subject to review and approval by PennDOT.
5. Approach slab types are permitted for use in the design of the bridge approach slab.
6. Designs are subject to review and approval by PennDOT.

---

**Commonwealth of Pennsylvania Department of Transportation Bureau of Project Delivery**

**Standard Bridge Approach Slabs General Notes - 2**

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**Contract Drawing Notes**

The following notes are to be placed on the contract drawings:

1. **Concrete** slabs are used for permanent structures without expansion joints.
2. **Flexible** slabs are used for temporary structures with expansion joints.
3. Transverse construction joints are not permitted in the concrete approach slab.
4. Provide any other notes as required.
**TYPE 1 AND 3 APPROACH SLABS**

**PAVING NOTCH FORMING DETAILS**

NOTE: FOR ROUND AxLE SUPPORTED APPROACH PLAS (VERTICALS 4 AND 5) AND TYPE 4 APPROACH PLAS, OME THE AKTETOP AND CLOSED CELL NEOPRENE SPONGE ABOVE THE WATERSTOP.

**TYPE 2 APPROACH SLABS**

**DESCRIPTION OF DETAILS FOR TYPE 1 AND 2 APPROACH SLABS**

**NOTE:**
- Type 1 and Type 2 Approach Slabs
- Paving Notch Forming Details
- Joint Preparation Notes:
  1. The joint opening is to be formed by a two-stage sawing operation where the opening must be wide enough to accommodate the anticipated absence of the joint seal (Type E1 or E2). The first saw cut is to be made at least 1/16" for the bonded edge of the joint seal and for the bonded edge of the joint seal. The second saw cut is to be made at least 1/16" for the bonded edge of the joint seal and for the bonded edge of the joint seal.
  2. The depth of the joint opening equals the height of the joint seal (Type E1 or E2). The second saw cut should be made far enough from the joint seal opening to form the proper opening for the concrete surface elevation at the time of sawing, see manufacturer's product information.
  3. Before installing the seal, abrasive blast the bonding surfaces to provide positive drainage to the outside of the structure.
  4. The joint opening is to be formed by a two-stage sawing operation where the opening must be wide enough to accommodate the anticipated absence of the joint seal (Type E1 or E2). The first saw cut is to be made at least 1/16" for the bonded edge of the joint seal and for the bonded edge of the joint seal. The second saw cut is to be made at least 1/16" for the bonded edge of the joint seal and for the bonded edge of the joint seal.

**COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF TRANSPORTATION**

**BUREAU OF PROJECT DELIVERY**

**STANDARD BRIDGE APPROACH SLABS TYPE 1 AND 2**

**SECTIONS AND DETAILS**

**SECTION A-A**

**DESCRIPTION OF PLANS FOR TYPE 1 AND 2 APPROACH SLABS**

**NOTE:**
- Type 1 and Type 2 Approach Slabs
- Paving Notch Forming Details
- Joint Preparation Notes:
  1. The joint opening is to be formed by a two-stage sawing operation where the opening must be wide enough to accommodate the anticipated absence of the joint seal (Type E1 or E2). The first saw cut is to be made at least 1/16" for the bonded edge of the joint seal and for the bonded edge of the joint seal. The second saw cut is to be made at least 1/16" for the bonded edge of the joint seal and for the bonded edge of the joint seal.
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  3. Before installing the seal, abrasive blast the bonding surfaces to provide positive drainage to the outside of the structure.
  4. The joint opening is to be formed by a two-stage sawing operation where the opening must be wide enough to accommodate the anticipated absence of the joint seal (Type E1 or E2). The first saw cut is to be made at least 1/16" for the bonded edge of the joint seal and for the bonded edge of the joint seal. The second saw cut is to be made at least 1/16" for the bonded edge of the joint seal and for the bonded edge of the joint seal.

**COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF TRANSPORTATION**

**BUREAU OF PROJECT DELIVERY**

**STANDARD BRIDGE APPROACH SLABS TYPE 1 AND 2**

**SECTIONS AND DETAILS**

**SECTION A-A**

**DESCRIPTION OF PLANS FOR TYPE 1 AND 2 APPROACH SLABS**

**NOTE:**
- Type 1 and Type 2 Approach Slabs
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- Joint Preparation Notes:
  1. The joint opening is to be formed by a two-stage sawing operation where the opening must be wide enough to accommodate the anticipated absence of the joint seal (Type E1 or E2). The first saw cut is to be made at least 1/16" for the bonded edge of the joint seal and for the bonded edge of the joint seal. The second saw cut is to be made at least 1/16" for the bonded edge of the joint seal and for the bonded edge of the joint seal.
  2. The depth of the joint opening equals the height of the joint seal (Type E1 or E2). The second saw cut should be made far enough from the joint seal opening to form the proper opening for the concrete surface elevation at the time of sawing, see manufacturer's product information.
  3. Before installing the seal, abrasive blast the bonding surfaces to provide positive drainage to the outside of the structure.
  4. The joint opening is to be formed by a two-stage sawing operation where the opening must be wide enough to accommodate the anticipated absence of the joint seal (Type E1 or E2). The first saw cut is to be made at least 1/16" for the bonded edge of the joint seal and for the bonded edge of the joint seal. The second saw cut is to be made at least 1/16" for the bonded edge of the joint seal and for the bonded edge of the joint seal.
PLAN 3

TYPE 1 AND TYPE 2
FULL WIDTH APPROACH SLAB DETAIL
ATTACHED BARRIERS WITH LONG U-WINGS

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. INLET TO BE LOCATED SUCH THAT ITS OUTFLOW PIPE MISSES TYPE 1-5 FOOT WIDTH APPROACH SLAB.

NOTES

SECTION F-F

Commonwealth of Pennsylvania
Department of Transportation

Bureau of Project Delivery

CHIEF BRIDGE ENGINEER
RECOMMENDED
SEPTEMBER 11, 2012

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PLAN 4

TYPE 1 AND TYPE 2

MOMENT SLAB ADJACENT TO TYPE 1 APPROACH SLAB WITH ATTACHED BARRIERS
MOMENT SLAB ADJACENT TO TYPE 2 APPROACH SLAB

NOTES
1. FOR NOTES, SEE SHEETS 1 AND 2.
2. FOR SECTION E-E, SEE SHEET 8.
3. FOR SECTION A-A, SEE SHEET 3.
4. PROVIDE THE FOLLOWING JOINT OPENINGS:
   - APPROACH SLAB ADJACENT TO CONCRETE OR FLEXIBLE PAVEMENT: 1-3/4" MIN. EXPANSION JOINT

SECTION H-H

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

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

NOTE
- FOR ADDITIONAL MOMENT SLAB DETAILS REFER TO BD-627M.
- PROVIDE TYPE 2-SC GUIDE RAIL WITH POSTS AT 3'-1" SPA ALONG CURB AFTER APPROACH END TRANSITION.
- J-AUX EXPANSION JOINTS.
- PROVIDE TYPE 2-SC SLIDING PLATE IN ACCORDANCE WITH THE DETAILS SHOWN ON BD-627M.
- PROVIDE THE FOLLOWING JOINT OPENINGS:
  - APPROACH SLAB ADJACENT TO CONCRETE OR FLEXIBLE PAVEMENT: 1-3/4" MIN. EXPANSION JOINT
  - APPROACH SLAB ADJACENT TO PAVEMENT RELIEF JOINT:

SECTION G-G

NOTE
- FOR ADDITIONAL MOMENT SLAB DETAILS REFER TO BD-627M.
- PROVIDE TYPE 2-SC SLIDING PLATE IN ACCORDANCE WITH THE DETAILS SHOWN ON BD-627M.
- PROVIDE TYPE 2-SC SLIDING PLATE IN ACCORDANCE WITH THE DETAILS SHOWN ON BD-627M.
- PROVIDE TYPE 2-SC SLIDING PLATE IN ACCORDANCE WITH THE DETAILS SHOWN ON BD-627M.
- PROVIDE TYPE 2-SC SLIDING PLATE IN ACCORDANCE WITH THE DETAILS SHOWN ON BD-627M.
SECTION E-E

TYPE 1 - CONCRETE APPROACH SLAB WITH ATTACHED BARRIERS

TYPE 2 - CONCRETE APPROACH SLAB WITH ATTACHED BARRIERS AND SUPERPAVE ASPHALT OVERLAY

NOTES
1. FOR NOTES, SEE SHEETS 1 AND 2.
**Commonwealth of Pennsylvania**

**Department of Transportation**

**Bridge Approach Slabs**

*Measured normal to abutment*

**Blockout Limits of 2-Ply Bitumen Bond Breaker**

**Type 1 Approach Slab (Without Overlay) - Detail 4**

**Type 2 Approach Slab (With Overlay) - Detail 4**

**Optional Backwall**

**Detail H Notes**

1. For notes, see Sheets 1 and 2.
2. Design to determine backwall shape, refer to [BD-628M](#).
3. Use only approved materials, referred to [BD-628M](#).
4. For forming and waterstop details, see Sheet 3.

**Notes**

- For Notes, see Sheets 1 and 2.
- Design to determine backwall shape, refer to [BD-628M](#).
- Use only approved materials, referred to [BD-628M](#).
- For forming and waterstop details, see Sheet 3.
**BRIDGE APPROACH SLABS**

**DETAIL J**

**TYPE 1 APPROACH SLAB (WITHOUT OVERLAY) - DETAIL 5**

- APPROACH SLAB SUPPORTED ON ABUTMENT
- BACKWALL WITH TOOTH EXPANSION DAM

**TYPE 2 APPROACH SLAB (WITH OVERLAY) - DETAIL 5**

- APPROACH SLAB SUPPORTED ON ABUTMENT
- BACKWALL WITH TOOTH EXPANSION DAM

**NOTES**

1. DETAIL J SHOWN FOR TYPE 2-STRUCTURE SUPPORTED APPROACH SLABS.
2. DETAIL J SHOWN FOR TYPE 2-STRUCTURE SUPPORTED APPROACH SLABS.
3. FOR FORMING AND WATERSTOP DETAILS, SEE SHEET 3.

**COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF TRANSPORTATION**

**BUREAU OF PROJECT DELIVERY**
TYPE 1 APPROACH SLAB (WITHOUT OVERLAY) - DETAIL 6

Approach slab supported on P/S concrete adjacent to beam for beam depths ≥ 21" and greater.

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. Details shown may only be used if the beam depth is equal to or exceeds the depth indicated. If required beam depth is less than indicated, refer to detail 1b.
4. For forming and waterstop details, see sheet 3.
5. Minimum deck thickness:
   - Type 1 and Type 2 - Detail 6
   - P/S concrete adjacent box beams for beam depths 27" and greater
   - P/S concrete adjacent box beams for beam depths 30" and greater

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

STANDARD
BRIDGE APPROACH SLABS
TYPE 1 AND TYPE 2 - DETAIL 6
(P/S CONCRETE ADJACENT BOX BEAMS WITHOUT BACKWALL)

SHEET 12 OF 35
BD-628M
STANDARD COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLABS

2-PLY BIT. PAPER BOND BREAKER,
END OF BEAM
BATTER AS REQUIRED

* MEASURED NORMAL TO ABUTMENT

TYPE 1 APPROACH SLAB (WITHOUT OVERLAY) - DETAIL 7
APPROACH SLAB SUPPORTED ON P/S CONCRETE SPREAD BOX BEAMS AND FULL DEPTH CONCRETE ENDS DIAPHRAGMS FOR BEAM DEPTHS 24" AND GREATER

TYPE 2 APPROACH SLAB (WITH OVERLAY) - DETAIL 7
APPROACH SLAB SUPPORTED ON P/S CONCRETE SPREAD BOX BEAMS AND FULL DEPTH CONCRETE ENDS DIAPHRAGMS FOR BEAM DEPTHS 30" AND GREATER

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. 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.

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)

WASHINGTON, D.C. 20590
AUG. 31, 2012
AUG. 31, 2012

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CHIEF BRIDGE ENGINEER
RECOMMENDED
RECOMMENDED

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BD-628M
TYPE 1 APPROACH SLAB (WITHOUT OVERLAY) - DETAIL 8

APPROACH SLAB SUPPORTED ON P/S CONCRETE
I-BEAMS AND FULL DEPTH CONCRETE END DIAPHRAGMS

* MEASURED NORMAL TO ABUTMENT

TYPE 2 APPROACH SLAB (WITH OVERLAY) - DETAIL 8

APPROACH SLAB SUPPORTED ON P/S CONCRETE
I-BEAMS AND FULL DEPTH CONCRETE END DIAPHRAGMS

* MEASURED NORMAL TO ABUTMENT

NOTES

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

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

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

RECOMMENDED AUG. 31, 2012
RECOMMENDED AUG. 31, 2012
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 THE BEAM DEPTH IS LESS THAN INDICATED REFER TO DETAIL 12.
3. FOR FORMING AND WATERSTOP DETAILS, SEE SHEET 3.
4. IF REQUIRED BEAM DEPTH IS LESS THAN INDICATED REFER TO DETAIL 12.
5. FOR BEAM DEPTHS 2'-6" AND GREATER I-BEAMS AND FULL DEPTH CONCRETE END DIAPHRAGMS APPROACH SLAB SUPPORTED ON STEEL MIN. 9" OVERLAY (ROADWAY ITEM) SUPERPAVE ASPHALT CLASS AA CEMENT CONCRETE BRIDGE APPROACH SLAB (WITH OVERLAY) - DETAIL 9 APPROACH SLAB SUPPORTED ON STEEL I-BEAMS AND FULL DEPTH CONCRETE END DIAPHRAGMS FOR BEAM DEPTHS 2'-6" AND GREATER 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'-11½" AND GREATER

NOTES
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 THE BEAM DEPTH IS LESS THAN INDICATED REFER TO DETAIL 12.
3. FOR FORMING AND WATERSTOP DETAILS, SEE SHEET 3.

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BUREAU OF PROJECT DELIVERY STANDARD BRIDGE APPROACH SLABS TYPE 1 AND TYPE 2 - DETAIL 9 (STEEL BEAMS WITHOUT BACKWALL) SHEET 10 OF 35
TYPE 1 APPROACH SLAB (WITHOUT OVERLAY) - DETAIL 12

Approach slab supported on abutment adjacent to steel I-beams and full depth concrete end diaphragms for beam depths less than 2'-1".

NOTES
1. For notes, see sheets 1 and 2.
2. For formwork and waterstop details, see sheet 3.
3. For abutment corbel reinforcement details, see sheet 16.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

STANDARD
BRIDGE APPROACH SLABS
TYPE 1 AND TYPE 2 - DETAIL 12
(STEEL BEAMS WITH ABUTMENT CORBEL)
NOTES
1. FOR NOTES, SEE SHEETS 1 AND 2.
2. TROWEL SMOOTH AND PLACE 2 LAYERS OF 4 MIL.
   POLYETHYLENE SHEETING AS BOND BREAKER.
3. USE DETAIL 17 ONLY WHEN LIMITED MOVEMENT IS
   ANTICIPATED IN THE ROADWAY (SEE DETAIL 16).
4. REFER TO RC-24M FOR ADDITIONAL INFORMATION.
# TABLE A

<table>
<thead>
<tr>
<th>BEAM TYPE</th>
<th>MINIMUM BEAM DEPTHS</th>
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<tbody>
<tr>
<td>I-BEAM</td>
<td>37&quot;</td>
</tr>
<tr>
<td>P/S CONCRETE</td>
<td>47.25&quot;</td>
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</table>

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. DETAILS SHOWN MAY ONLY BE USED IF THE BEAM DEPTH IS EQUAL OR EXCEEDS THE DEPTHS INDICATED IN TABLE A.
4. IF REQUIRED BEAM DEPTHS LESS THAN INDICATED PROVIDE TYPE 1 OR TYPE 2 APPROACH SLAB.
5. FOR FORMING AND WATERSTOP DETAILS, SEE SHEET 3.
6. FOR NOTES, SEE SHEETS 1 AND 2.
7. ALTERNATE JOINT SEAL TYPE, AS DIRECTED BY THE DISTRICT BRIDGE ENGINEER.
8. DISTRICT BRIDGE ENGINEER.

**NOTE 5.** SHEET 10 AND SEE DETAIL H.

**NOTE 5.** SHEET 10 AND SEE DETAIL H.
STANDARD BRIDGE APPROACH SLABS

SECTION S-S

NOTES

1. FOR NOTES, SEE SHEETS 1 AND 2.
2. FOR SECTION O-O, SEE SHEET 26.
3. 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. ALONG CURVE, AFTER APPROACH-TO-END TRANSITION.
7. SHEET TO BE LOCATED SUCH THAT ITS OUTLET PIPE MISSES TYPE 2-EC POSTS IN CURVE-PARK TRANSITION.

COMMONWEALTH OF PENNSYLVANIA
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BRIDGE APPROACH SLABS
TYPE 4 - PLAN 2

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BD-628M

AUG. 31, 2012
AUG. 31, 2012

NOTES

1. FOR NOTES, SEE SHEETS 1 AND 2.
2. FOR SECTION O-O, SEE SHEET 26.
3. 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. ALONG CURVE, AFTER APPROACH-TO-END TRANSITION.
7. SHEET TO BE LOCATED SUCH THAT ITS OUTLET PIPE MISSES TYPE 2-EC POSTS IN CURVE-PARK TRANSITION.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY
1. FOR NOTES, SEE SHEETS 1 AND 2.

2. FOR SECTIONS R-R, SEE SHEET 33.

3. FOR SECTIONS Q-Q, SEE SHEET 34.

4. FOR DRAIN TROUGH DETAILS, SEE SHEETS 28 - 34.

5. PROVIDE TYPE 2-SC GUIDE RAIL WITH POSTS AT 3'-1 1/2" SPA. ALONG CURB AFTER APPROACH END ALONG CURB AFTER.

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

7. DAM (TYP. EACH SIDE) TOOTH EXPANSION AS REQUIRED FOR JOINT OPENING 7'-0" MAX. (TYP.) 4'-0" MAX.

8. OR SHORT U-WINGS

9. NO APPROACH SLAB WITH FLARED WINGS

10. STANDARD BRIDGE APPROACH SLABS

11. TYPE 4 - PLAN 3

12. TYPE 2-SC POSTS IN GUIDE RAIL TRANSITION.

13. PROVIDE 1" DIA. HOLES FOR 1" FLUSH 10'-0" MIN. 1" V-NOTCH WITH BARRIER U-WING BEND LINE.

14. PROVIDE 1" DIA. HOLES FOR " STEEL CONCRETE SCREWS, WITH SELF-TAPPING STAINLESS STEEL BATTEN SECURED TO CONCRETE (ASTM A709, GR.36 OR 50) 2"x 90° GALVANIZED STEEL EMBEDMENT (TYP.) 2'-6" MIN.

15. @ 4'-0" MAX (TYP) WT 18x75 CLIP STEEL CONCRETE SC REINFORCEMENT (TYP)

16. PROVIDE 1" DIA. HOLES FOR 1" FLUSH 10'-0" MIN. 1" V-NOTCH WITH BARRIER U-WING BEND LINE.

17. PROVIDE 1" DIA. HOLES FOR " STEEL CONCRETE SCREWS, WITH SELF-TAPPING STAINLESS STEEL BATTEN SECURED TO CONCRETE (ASTM A709, GR.36 OR 50) 2"x 90° GALVANIZED STEEL EMBEDMENT (TYP.) 2'-6" MIN.

18. @ 4'-0" MAX (TYP) WT 18x75 CLIP STEEL CONCRETE SC REINFORCEMENT (TYP)
TABLE A

<table>
<thead>
<tr>
<th>BEAM TYPE</th>
<th>MINIMUM BEAM DEPTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-475</td>
<td>2'-40&quot;</td>
</tr>
<tr>
<td>3-63</td>
<td>2'-40&quot;</td>
</tr>
<tr>
<td>2-475, 3-63, 24/63, AND 26/63</td>
<td>2'-40&quot;</td>
</tr>
</tbody>
</table>

1. THE FOLLOWING BEAMS ARE PERMITTED: 2/475, 2/60, 3/60, 2/46, AND 2/63

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. DETAILS SHOWN MAY NOT BE USED IF THE BEAM DEPTH IS EQUAL TO OR EXCEEDS THE DEPTHS INDICATED. IF REQUIRED BEAM DEPTH IS LESS THAN INDICATED PROVIDE TYPE 1 OR TYPE 2 APPROACH SLAB.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

STANDARD
BRIDGE APPROACH SLABS
TYPE 4 - DETAIL 25
(P/S CONCRETE I-BEAMS WITH BACKWALL)
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 DRAIN MUST BE COMPLETELY CLEAN WHEN THE JOINT IS INSTALLED.

4. SUPPORT MOVEABLE PORTION OF TOOTH DAM IN THE BLOCKOUT FROM THE DECK SLAB AND FIXED PORTION OF THE TOOTH DAM USING CONCEPTUAL INSTALLATION SCHEME.

5. ADJUST MOVEABLE PORTION OF TOOTH DAM TO THE PROPER LINE AND GRADE WITH THE JOINT OPENING (W) PORTION OF THE TOOTH DAM (SEE CONCEPTUAL INSTALLATION SCHEME).

6. DURING ASSEMBLY INSTALLATION TIGHTEN ANCHOR 1 AND BOTH NUTS ON STUD BOLTS 2 AND 3 SET WITH RESPECT TO THE INSTALLATION TEMPERATURE SHOWN ON THE PLANS.

7. IMMEDIATELY AFTER BLOCKOUT IS CAST, LOOSEN TOP NUT ON STUD BOLT 3 TO PERMIT TEMPERATURE 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 PREVENT ROTATION REQUIRED SHIM AS PER DISTRICT STRUCTURE CONTROL ENGINEER THE APPROVAL OF THE DISTRICT BRIDGE ENGINEER CONTRACTOR MAY USE AN ALTERNATE SCHEME WITH THE APPROVAL OF THE DISTRICT BRIDGE ENGINEER OR DISTRICT STRUCTURE CONTROL ENGINEER FOR SPECIFIED MOVEMENT CLASSIFICATION.

8. PROVIDE LOW FRICTION INTERFACE BETWEEN BOTTOM NUT AND WASHER ON STUD BOLTS AND ANGLE CAST TO PERMIT MOVEMENT.

9. AFTER THE CONCRETE OF THE BLOCKOUT ACHIEVES PRESCRIBED STRENGTH IN ACCORDANCE WITH PUB. 408 SUPPORTS TO 15/8 MAX. TO LIMIT DEFLECTION OF DAM BETWEEN 6" x 4" x 15/8 MIN. ANGLE SPACED @ 6"-0" MAX.

10. APPLY TOUCH-UP PAINT.

NOTE:
1. FOR NOTES, SEE SHEETS 1 AND 2.