**LEGEND:**

1. Within 10' on both sides of an expansion joint in the barriers and at the end of the bridge barrier, reduce spacing of reinforcement bars to half the shown spacing.
2. Extend one half of the S1, bottom transverse bars, across the full width of the overhang. The alternate bars which do not extend into the barrier and at the end of the bridge barrier, reduce spacing of reinforcement bars to half the shown spacing.
3. Design the bars listed at S1 in the reinforcement tables to each S2 bar.
4. S1 bars extend at the location of design section for negative moment.
5. S1 bars extend at the location of design section for negative moment.

**NOTES:**

1. For additional notes, see sheet 1.
2. For drip notch details, see BC-775M.
3. Barrier lap splice length: 5'-3" for S3 and S3' bars.

**CONCRETE MEDIAN BARRIER DETAIL**

*For deck slab reinforcement, see typical slab panel details, sheet 1.*

*To be used only for bridges without longitudinal joints and when concrete median barrier is specified in approach roadway.*

**CONCRETE MEDIAN BARRIER DETAIL**

*For deck slab reinforcement, see typical slab panel details, sheet 1.*

*To be used only for bridges without longitudinal joints and when concrete median barrier is specified in approach roadway.*

**CONCRETE GLARE SCREEN MEDIAN BARRIER DETAIL**

*For deck slab reinforcement, see typical slab panel details, sheet 1.*

*To be used only for bridges without longitudinal joints and when concrete glare screen is specified in approach roadway.*

**SPLIT CONCRETE DIVISOR DETAIL**

*For deck slab reinforcement, see typical slab panel details, sheet 1.*

*For type A and B divisors, set cross slope at 2.0%.

*Width and set cross slope between 1.0% and 2.0%.

*Where wider than shown divisors are used, provide undercut and set cross slope between 1.0% and 2.0%.*

**CONCRETE DIVISOR DETAIL**

*For deck slab reinforcement, see typical slab panel details, sheet 1.*

*To be used only for bridges without longitudinal joints.

*Not for use as a median barrier, see BC-788M.*

**NOTES:**

1. For additional notes, see sheet 1.
2. For drip notch details, see BC-775M.
3. Barrier lap splice length: 5'-3" for S3 and S3' bars.

**CONCRETE DECK SLAB DESIGN & DETAILS FOR BEAM BRIDGES**

**COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BUREAU OF PROJECT DELIVERY STANDARD CONCRETE DECK SLAB DESIGN & DETAILS FOR BEAM BRIDGES**
ANCHOR BOLT BAR DETAIL
MECHANICAL SPLICE AS PER BULLETIN 15

VERTICAL REINFORCEMENT
MECHANICAL SPLICE AS PER BULLETIN 15

REINFORCEMENT BAR DETAILS
MECHANICAL SPLICE AS PER BULLETIN 15

NOTES:
1. MODIFIED STRUCTURE MOUNTED GUIDE RAIL BARRIER GRANTED TL3 DESIGNATION BY FHWA.
2. FOR PA STRUCTURE MOUNTED GUIDE RAIL DETAILS SEE BD-609M.
3. FOR DRIP NOTCH DETAILS, SEE BC-775M.

CHIEF BRIDGE ENGINEER
RECOMMENDED

1. MODIFIED STRUCTURE MOUNTED GUIDE RAIL BARRIER GRANTED TL3 DESIGNATION BY FHWA.
2. FOR PA STRUCTURE MOUNTED GUIDE RAIL DETAILS SEE BD-609M.
3. FOR DRIP NOTCH DETAILS, SEE BC-775M.

BUREAU OF PROJECT DELIVERY

NOV. 21, 2014

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
STANDARD CONCRETE DECK SLAB
FOR BEAM BRIDGES

SHEET 5 OF 10

PA STRUCTURE MOUNTED GUIDE RAIL
FOR BEAM BRIDGES

NOV. 21, 2014

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
STANDARD CONCRETE DECK SLAB
FOR BEAM BRIDGES

SHEET 5 OF 10

PA STRUCTURE MOUNTED GUIDE RAIL
FOR BEAM BRIDGES

NOV. 21, 2014

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
STANDARD CONCRETE DECK SLAB
FOR BEAM BRIDGES

SHEET 5 OF 10

PA STRUCTURE MOUNTED GUIDE RAIL
FOR BEAM BRIDGES

NOV. 21, 2014
**REINFORCEMENT DETAILS**

**REINFORCEMENT BAR NOTES**

1. REINFORCEMENT BAR DIMENSIONS ARE OUT TO OUT OF BAR.
2. DIMENSIONS ALONG CURVED PORTIONS OF BAR ARE MEASURED ALONG THE OUTSIDE EDGE.

**NOTES:**

FOR NOTES, SEE SHEET 1.
**Table 3**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>A</th>
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<th>C</th>
<th>D</th>
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</tbody>
</table>

Notes: When more than shown dividers are used, provide width and A, B, C, D, and E dimensions.

**Table 4**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>A</th>
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<th>C</th>
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</table>

Notes: When more than shown dividers are used, provide width and A, B, C, D, E, and F dimensions.

**Reinforcement Bar Notes**

1. Reinforcement bar dimensions are out to out of bar.
2. Dimensions along curved portions of bar are measured along the outside edge.

**Notes:**

For notes, see Table 1.
LOCATION OF DESIGN SECTION FOR NEGATIVE MOMENT IN DECK SLABS

HAUNCH REINFORCEMENT DETAILS

INSTRUCTIONS FOR DETAILING HAUNCH REINFORCEMENT ON CONSTRUCTION PLANS

1. DETAIL HAUNCH REINFORCEMENT ON THE REINFORCEMENT BAR SCHEDULE.
2. SHOWN HAUNCH REINFORCEMENT DETAILS ON THE CONSTRUCTION PLANS.
3. SHOW THE LIMITS OF HAUNCH REINFORCEMENT ALONG THE LENGTH OF EACH REINFORCED STEEL BEAM ON THE SLAB PLAN OR ON ANOTHER APPROPRIATE DETAIL.
4. INCLUDE ONE OF THE FOLLOWING NOTES ON THE PLANS:

THE HAUNCH REINFORCEMENT QUANTITY SHOWN ON THE REINFORCEMENT BAR SCHEDULE PROVIDES THE AMOUNT NECESSARY TO COVER THE LIMITS SHOWN ON SHEET **. PROVIDE ADDITIONAL HAUNCH REINFORCEMENT IN OTHER REGIONS ALONG THE LENGTH OF THE BEAM WHERE ACTUAL HAUNCHES EXCEED THE THICKNESSES SPECIFIED IN SECTION.

H A N C H  R E I N F O R C E M E N T  D E T A I L

NOTES:

FOR NOTES, SEE SHEET 1.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY
STANDARD
CONCRETE DECK SLAB
DESIGN & DETAILS
FOR BEAM BRIDGES

BUREAU OF PROJECT DELIVERY
SHEETS 1, 2, 3 AND 4.

MONOLITHIC CONSTRUCTION
P/S CONCRETE BOX BEAMS
STEEL BEAMS
P/S CONCRETE I BEAMS & PA BULB-TEE BEAMS
P/S CONCRETE BEAM
NEXT BEAMS

STEEL BEAMS

PROVIDE WHEN HAUNCH THICKNESS IS 3" OR GREATER ANYWHERE ACROSS WIDTH OF HAUNCH

AASHTO TYPE P/S CONC. I-BEAM
(P/S SPREAD BOX BEAM SIMILAR)

PROVIDE WHEN HAUNCH THICKNESS IS 5" OR GREATER ANYWHERE ACROSS WIDTH OF HAUNCH

LONGITUDINAL REINF. > #6
2" MIN.

TRANVERSE REINF. #4
2'-0" LAP (TYP.)

ALTERNATE CONTINUITY REINFORCEMENT DETAIL

COMMENTS: SHEET 1 OF 10

CHIEF BRIDGE ENGINEER
RECOMMENDED
SHEET 8 OF 10

NOTES:

1. "T" IS THE DECK THICKNESS AS INDICATED ON SHEET 1, 2, 3 AND 4.
2. PROVIDE THE SPECIFIED MINIMUM HAUNCH THICKNESSES ALONG THE FULL LENGTH OF BEAM ON THE CONSTRUCTION PLANS.
3. PROVIDE THE AMOUNT NECESSARY TO COVER THE LIMITS SHOWN ON SHEET **. PROVIDE ADDITIONAL HAUNCH REINFORCEMENT IN OTHER REGIONS ALONG THE LENGTH OF THE BEAM WHERE ACTUAL HAUNCHES EXCEED THE THICKNESSES SPECIFIED IN SECTION.
4. PROVIDE APPROPRIATE SHEET NUMBERS.

THE HAUNCH REINFORCEMENT QUANTITY SHOWN ON THE REINFORCEMENT BAR SCHEDULE PROVIDES THE AMOUNT NECESSARY TO COVER THE LIMITS SHOWN ON SHEET **. PROVIDE ADDITIONAL HAUNCH REINFORCEMENT IN OTHER REGIONS ALONG THE LENGTH OF THE BEAM WHERE ACTUAL HAUNCHES EXCEED THE THICKNESSES SPECIFIED IN SECTION.

* PROVIDE APPROPRIATE SHEET NUMBERS.

THE HAUNCH REINFORCEMENT QUANTITY SHOWN ON THE REINFORCEMENT BAR SCHEDULE PROVIDES THE AMOUNT NECESSARY TO COVER THE LIMITS SHOWN ON SHEET **. PROVIDE ADDITIONAL HAUNCH REINFORCEMENT IN OTHER REGIONS ALONG THE LENGTH OF THE BEAM WHERE ACTUAL HAUNCHES EXCEED THE THICKNESSES SPECIFIED IN SECTION.

** PROVIDE APPROPRIATE SHEET NUMBERS.

HAUNCH REINFORCEMENT IS REQUIRED.

* THE HAUNCH REINFORCEMENT QUANTITY SHOWN ON THE REINFORCEMENT BAR SCHEDULE PROVIDES FOR THE AMOUNT NECESSARY TO COVER THE LIMITS SHOWN ON SHEET **. PROVIDE ADDITIONAL HAUNCH REINFORCEMENT IN OTHER REGIONS ALONG THE LENGTH OF THE BEAM WHERE ACTUAL HAUNCHES EXCEED THE THICKNESSES SPECIFIED IN SECTION.

** PROVIDE APPROPRIATE SHEET NUMBERS.

HAUNCH REINFORCEMENT IS NOT REQUIRED BASED ON THE REINFORCEMENT BAR SCHEDULE

** THE HAUNCH REINFORCEMENT QUANTITY SHOWN ON THE REINFORCEMENT BAR SCHEDULE PROVIDES FOR THE AMOUNT NECESSARY TO COVER THE LIMITS SHOWN ON SHEET **. PROVIDE ADDITIONAL HAUNCH REINFORCEMENT IN OTHER REGIONS ALONG THE LENGTH OF THE BEAM WHERE ACTUAL HAUNCHES EXCEED THE THICKNESSES SPECIFIED IN SECTION.

** PROVIDE APPROPRIATE SHEET NUMBERS.

TABLE 1: MINIMUM HAUNCH THICKNESSES

<table>
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P/S CONC. I-BEAMS, PA BULB-TEE AND SPREAD BOX BEAMS

PLAN CAMBER | H
-------------|---
ALL | 3/4"
CHIEF BRIDGE ENGINEER

1. MATERIALS
   - Prestressed Spread Box Beams
   - Prestressed 1-Beam with Top Flanges
   - Steel 1-Beam with Top Flanges

2. OVERHANGS
   - 3'-9" for overhangs supporting barriers or 3'-8" for overhangs supporting split
     bars 1".

3. DESIGN NOTES
   - For other cases not listed, refer to the sections of the tables above. Determine the distance from
     the design section for negative moment to the centerline of the beam and the section for positive
     moment to the centerline of each beam equal to the calculated distance.

4. REFERENCES
   - BD-601M

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY
STANDARD
CONCRETE DECK SLAB
DESIGN & DETAILS
FOR BEAM BRIDGES

RECOMMENDED PCC-2
RECOMMENDED PCC-3
BD-601M
RECOMMENDED PCC-2
RECOMMENDED PCC-3
BD-601M

DEFINITION OF So COVERAGE LENGTH

TABLE 1: DISTANCE FROM DESIGN SECTION FOR NEGATIVE MOMENT

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TABLE 2: DISTANCE FROM DESIGN SECTION FOR NEGATIVE MOMENT

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TABLE 3: DISTANCE FROM DESIGN SECTION FOR NEGATIVE MOMENT

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TABLE 4: DISTANCE FROM DESIGN SECTION FOR NEGATIVE MOMENT

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TABLE 5: DISTANCE FROM DESIGN SECTION FOR NEGATIVE MOMENT

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CONSTRUCTION DETAILS

LIGHTING POLE ANCHORAGE DETAILS

SHEET 2

BARRIER DETAIL SEE SHEET 1.

SECTION A-A

NOTES:

1. PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PUBLICATION 408.

2. SET ANCHOR BOLTS ACCURATELY BY THE TEMPLATE FURNISHED BY THE MANUFACTURER, TO THE CORRECT ELEVATION AND ALIGNMENT AND SECURELY BRACE AGAINST DISPLACEMENT BEFORE THE SURROUNDING CONCRETE IS PLACED. ANCHOR BOLT DIAMETER AS REQUIRED BY LIGHTING POLE MANUFACTURER.

3. SEAL CONDUIT AND PROTECT THREADS FOR FUTURE LIGHTING PROVISIONS, SEE CHART ON THIS SHEET.

4. PROVIDE 2" CLEAN ON ALL REINFORCEMENT UNLESS NOTED.

5. SET LIGHTING POLES TRULY VERTICAL WITH BASES LEVEL USING LEVELING NUTS.

6. PROVIDE 2" CLEAR ON ALL REINFORCEMENT UNLESS NOTED.

7. SET ANCHOR BOLTS ACCURATELY BY THE TEMPLATE FURNISHED BY THE MANUFACTURER, TO THE CORRECT ELEVATION AND ALIGNMENT AND SECURELY BRACE AGAINST DISPLACEMENT BEFORE THE SURROUNDING CONCRETE IS PLACED. ANCHOR BOLT DIAMETER AS REQUIRED BY LIGHTING POLE MANUFACTURER.

8. FOR GEOMETRIC AND REINFORCEMENT DETAILS OF THE BARRIER NOT SHOWN, SEE SHEET 2.

9. FOR LIGHTING POLE LOCATIONS WITHIN A SPAN, THE LUMINARIES SHOULD BE DESIGNED BY THE ENGINEER TO DISTRIBUTE LOAD TO BOTH FASCIA AND FIRST INTERIOR BEAM.

10. FOR LIGHTING POLE LOCATIONS WITHIN A SPAN, THE LUMINARIES MUST BE EQUAL TO THE SPAN FOR EQUAL DEFLECTION.

REINFORCEMENT TABLE

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

STANDARD
CONCRETE DECK SLAB
LIGHTING POLE ANCHORAGE DETAILS
FOR BEAM BRIDGES

Recommended Nov. 14
Recommended Nov. 14
Sheet 10 of 10
BD-601M