GENERAL NOTES
1. USE OF THIS STANDARD REQUIRES PERMISSION FROM THE DISTRICT BRIDGE ENGINEER. THE STANDARD IS INTENDED TO BE UTILIZED BY DESIGNERS OF ACCELERATED BRIDGE CONSTRUCTION PROJECTS AND CONTRACTORS FOR VALUE ENGINEERING OF DESIGN-BUILD PROJECTS.
2. THIS STANDARD APPLIES TO STRAIGHT SPANS WITH A SKEW BETWEEN BEAMS AND AS DESIGNED, CONSISTED OF EITHER PRECASTED OR IN-PLACE STEEL REINFORCEMENT.
3. SPAN CROSSING ROUDES AND BRIDGES SHALL USE REALLY BULB-T EE BEAM AND DECKS SHALL USE STEEL- FILL FORMWORK. ALL OTHER SPANS SHALL USE IN-PLACE MASONRY FORMWORK. SEE SHEET 4 FOR REMOVAL INSTRUCTIONS.
4. IF SCUPPER IS DETERMINED TO BE REQUIRED IN THE DECK SLAB, DESIGNER MUST ENSURE THE DECK SLAB REINFORCEMENT ADJACENT TO SCUPPER IS IN ACCORDANCE WITH LONGITUDINAL POST-TENSIONING DUCT SPECIFICATION.

DESIGN NOTES
1. MINIMUM STRUCTURAL THICKNESS OF PRECAST CONCRETE DECK PANELS SHALL BE 8". PRECAST PANELS MAY BE REQUIRED TO ACCOMMODATE POST-TENSIONING ANCHORAGE AND NURSE REINFORCEMENT. PRECAST CONCRETE DECK PANEL THICKNESS SHALL INCLUDE A 0.5" ALLOWANCE FOR GRINDING.
2. WEARING SURFACE SHALL BE EPOXY OR A GRANULAR MATERIAL BASED SURFACE TREATMENT FOR BRIDGE DECKS. 0.5% THICKNESS OF LIVE LOAD SHEET TO DETERMINE THE SERVICE LOAD DUE TO MOMENT REDUCTION.
3. UNLAMINATED PERFORMANCE CONCRETE IS RECOMMENDED FOR DECKS. DESIGNER SHALL PROVIDE THE NUMBER, LOCATION, FORCE AND STRESS (IF REQUIRED). GROUT DUCTS WITHIN 3 CALENDAR DAYS AFTER POST-TENSIONING FORCE INCLUDING THE ASSUMPTIONS USED FOR LOSS CALCULATIONS.
4. IF SCUPPER IS DETERMINED TO BE REQUIRED ON THE DECK SLAB, DESIGNER SHOULD CHECK WITH MANUFACTURER TO DETERMINE APPROPRIATE MATERIAL FOR PROJECT SCHEDULE.
5. THE INSIDE FACES OF THE SHEAR BLOCKOUTS AND ALL SHEAR KEYS SHALL BE BLAST CLEANED TO HAVE AN EXPOSED CONCRETE f'c = 5 KSI MIN. (DECK AND BARRIER)
6. PLACE FORMWORK FOR TRANSVERSE JOINTS WITH SHEARING RESISTANCE IN ACCORDANCE WITH ULTRA HIGH PERFORMANCE CONCRETE STANDARD SPECIAL PROVISION. IF APPLICABLE OR WITH EPOXY NON-SHRINK GROUT PER SECTION 1160.2 OF PENNDOT PUB.408.
7. PLACE FORMWORK FOR LONGITUDINAL JOINTS = 1" WITH THE CURRENT VERSION OF THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408. 3000 FFL.
8. INSTALL POST-TENSIONING STRANDS IN DUCTS AND TENSION TO SPECIFIED STRENGTH IF REQUIRED. CONCRETE PANELS SHALL USE ULTRA HIGH PERFORMANCE CONCRETE IN ACCORDANCE WITH ULTRA HIGH PERFORMANCE CONCRETE STANDARD SPECIAL PROVISION.
9. DESIGN OF THE DECK OVERHANG AND BRIDGE BARRIER REINFORCING SHALL BE PERFORMED BY THE CONTRACTOR. THE DESIGNER SHALL VERIFY THAT THE PANELS ARE FILL SHEAR BLOCKOUTS AND HAUNCHES WITH ULTRA HIGH PERFORMANCE CONCRETE. ALL OTHER SPANS SHALL USE IN-PLACE MASONRY FORMWORK. ALL OTHER SPANS SHALL USE IN-PLACE MASONRY FORMWORK. THE DESIGNER SHALL PROVIDE THE NUMBER, LOCATION, FORCE AND STRESS (IF REQUIRED). FILL TRANSVERSE JOINTS WITH ULTRA HIGH PERFORMANCE CONCRETE INCLUDING A 0.250 KSI MINIMUM PRESTRESS OF 0.250 KSI IN DECK UNDER ALL SERVICE LOADING CONDITIONS.
10. PLACE FORMWORK FOR LONGITUDINAL JOINTS = 1" WITH THE CURRENT VERSION OF THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408. 3000 FFL.
11. PLACE FORMWORK FOR TRANSVERSE JOINTS WITH SHEARING RESISTANCE IN ACCORDANCE WITH ULTRA HIGH PERFORMANCE CONCRETE STANDARD SPECIAL PROVISION. IF APPLICABLE OR WITH EPOXY NON-SHRINK GROUT PER SECTION 1160.2 OF PENNDOT PUB.408.
12. DESIGNER SHALL PROVIDE THE NUMBER, LOCATION, FORCE AND STRESS (IF REQUIRED). GROUT DUCTS WITHIN 3 CALENDAR DAYS AFTER POST-TENSIONING FORCE INCLUDING THE ASSUMPTIONS USED FOR LOSS CALCULATIONS.
13. PLACE FORMWORK FOR LONGITUDINAL JOINTS WITH SHEARING RESISTANCE IN ACCORDANCE WITH ULTRA HIGH PERFORMANCE CONCRETE STANDARD SPECIAL PROVISION. IF APPLICABLE OR WITH EPOXY NON-SHRINK GROUT PER SECTION 1160.2 OF PENNDOT PUB.408.
14. DESIGNER SHALL PROVIDE THE NUMBER, LOCATION, FORCE AND STRESS (IF REQUIRED). GROUT DUCTS WITHIN 3 CALENDAR DAYS AFTER POST-TENSIONING FORCE INCLUDING THE ASSUMPTIONS USED FOR LOSS CALCULATIONS.
15. DESIGNER SHALL PROVIDE THE NUMBER, LOCATION, FORCE AND STRESS (IF REQUIRED). GROUT DUCTS WITHIN 3 CALENDAR DAYS AFTER POST-TENSIONING FORCE INCLUDING THE ASSUMPTIONS USED FOR LOSS CALCULATIONS.

SEQUENCE OF CONSTRUCTION
1. ERECT BEAMS AND INSTALL DIAMONDS.
2. IF STAY-IN-PLACE MASONRY FORMWORK IS APPLICABLE, PLACE FORMWORK PER DETAILS ON SHEET 4. REMOVE FORMWORK IF APPLICABLE OR WITH EPOXY NON-SHRINK GROUT PER SECTION 1160.2 OF PENNDOT PUB.408.
3. PREPARATE PANELS BY PRE-SETTING THE VERTICAL ADJUSTMENT DEVICES AND ADJUST ELEVATION OF VERTICAL ADJUSTMENT DEVICES TO PROPERLY DISTRIBUTE DIE AND DEAD LOAD TO BEAMS AS DIRECTED BY DESIGNER.
4. PLACE FORMWORK FOR TRANSVERSE JOINTS WITH SHEARING RESISTANCE IN ACCORDANCE WITH ULTRA HIGH PERFORMANCE CONCRETE STANDARD SPECIAL PROVISION. IF APPLICABLE OR WITH EPOXY NON-SHRINK GROUT PER SECTION 1160.2 OF PENNDOT PUB.408.
5. PLACE FORMWORK FOR TRANSVERSE JOINTS WITH SHEARING RESISTANCE IN ACCORDANCE WITH ULTRA HIGH PERFORMANCE CONCRETE STANDARD SPECIAL PROVISION. IF APPLICABLE OR WITH EPOXY NON-SHRINK GROUT PER SECTION 1160.2 OF PENNDOT PUB.408.
6. INSTALL POST-TENSIONING STRANDS IN DUCTS AND TENSION TO SPECIFIED STRENGTH IF REQUIRED. CONCRETE PANELS SHALL USE ULTRA HIGH PERFORMANCE CONCRETE IN ACCORDANCE WITH ULTRA HIGH PERFORMANCE CONCRETE STANDARD SPECIAL PROVISION. IF APPLICABLE OR WITH EPOXY NON-SHRINK GROUT PER SECTION 1160.2 OF PENNDOT PUB.408.
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9. DESIGNER SHALL PROVIDE THE NUMBER, LOCATION, FORCE AND STRESS (IF REQUIRED). GROUT DUCTS WITHIN 3 CALENDAR DAYS AFTER POST-TENSIONING FORCE INCLUDING THE ASSUMPTIONS USED FOR LOSS CALCULATIONS.
10. PLACE FORMWORK FOR LONGITUDINAL JOINTS WITH SHEARING RESISTANCE IN ACCORDANCE WITH ULTRA HIGH PERFORMANCE CONCRETE STANDARD SPECIAL PROVISION. IF APPLICABLE OR WITH EPOXY NON-SHRINK GROUT PER SECTION 1160.2 OF PENNDOT PUB.408.
11. PLACE FORMWORK FOR LONGITUDINAL JOINTS WITH SHEARING RESISTANCE IN ACCORDANCE WITH ULTRA HIGH PERFORMANCE CONCRETE STANDARD SPECIAL PROVISION. IF APPLICABLE OR WITH EPOXY NON-SHRINK GROUT PER SECTION 1160.2 OF PENNDOT PUB.408.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
SUKUR OF PROJECT DELIVERY
STANDARD
FULL DEPTH PRECAST CONCRETE DECK PANELS FOR PRESTRESSED CONCRETE PA BULB-T EE BEAM AND STEEL I-BEAM/1-CRIDER BRIDGES

REFERENCE DRAWINGS

BD-605M

APR. 29, 2016
SHEET 1 OF 6

e-Notification No. 63, dated Nov. 21, 2016
**Typical Deck Layout**

1. **Normal Panel Length**
   - 10'-0" Max.

2. **Direction of Traffic**
   - Transverse joint (typ.)
   - Longitudinal closure pour (typ.)

3. **Details**
   - See Detail B

4. **Approach Slab or Bearing**
   - See Sheet 6.

5. **Approach Slab or Bearing**
   - See Sheet 6.

6. **Approach Slab or Bearing**
   - See Sheet 6.

7. **Approach Slab or Bearing**
   - See Sheet 6.

8. **Approach Slab or Bearing**
   - See Sheet 6.

**TYPICAL PANEL LAYOUTS**

- **Interior Panel**
  - See Note 2

- **End Panel**
  - See Note 2

**Notes:**

1. For additional notes, see Sheet 1.

2. Panel length to be determined by designer.

3. Bridge barriers shall be cast integral with deck panel and panel prior to erection. Bridge barrier may be cast-in-place at the option of the contractor.

4. Panels shown with transverse post-tensioning details for bridge barrier options. Panel with longitudinal post-tensioning shown.

5. For deck panel reinforcement details, see Sheet 3.

6. For haunch details and shear connector blockout detail, see Sheet 4.

7. For vertical adjustment device details and post-tensioning details, see Sheet 5.

8. For bridge barrier details, see Sheet 5.

9. For bridge barrier details, see Sheet 5.

**COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF TRANSPORTATION**

**BUREAU OF PROJECT DELIVERY**

**STANDARD**

FULL DEPTH PRECAST CONCRETE DECK PANELS FOR PRESTRESSED CONCRETE PA BULB-TEE BEAM AND STEEL I-BEAM/I-GIRDER BRIDGES
CHIEF BRIDGE ENGINEER
RECOMMENDED
RECOMMENDED
BUREAU OF PROJECT DELIVERY
SHEET 3 OF 6

STANDARD
FULL DEPTH PRECAST CONCRETE DECK PANELS FOR Prestressed Concrete PA BULB-TEE BEAM AND STEEL I-BEAM/I-GIRDER BRIDGES

TYPICAL PANEL REINFORCEMENT LAYOUTS

INTERIOR PANEL

NOTES:
1. BARRIER REINFORCEMENT NOT SHOWN FOR CLARITY.
2. TOP PANEL REINFORCEMENT SHOWN. BOTTOM PANEL REINFORCEMENT NOT SHOWN FOR CLARITY.
3. POST-TENSIONING ANCHORAGE ZONE REINFORCEMENT NOT SHOWN FOR CLARITY.
4. PROVIDE LONGITUDINAL STEEL FOR DISTRIBUTION SPACE UNIFORMLY BETWEEN BEAMS.
5. PROVIDE LONGITUDINAL STEEL FOR DISTRIBUTION SPACE UNIFORMLY BETWEEN POST-TENSIONING DUCTS.
6. PROVIDE CONTINUOUS TRANSVERSE REINFORCEMENT FOR STRUCTURAL HUBS.
7. PROVIDE DISCONTINUOUS TRANSVERSE REINFORCEMENT BETWEEN SHEAR CONNECTOR BLOCKOUTS AS REQUIRED FOR TEMPERATURE AND SHRINKAGE.
8. IN SKEWED END PANELS, ADJUST SIZE AND SPACING OF SHEAR CONNECTOR BLOCKOUTS AS REQUIRED FOR TEMPERATURE AND SHRINKAGE.
9. FOR SKEWED PANELS, TRANSVERSE REINFORCEMENT IS REQUIRED FOR TEMPORARY SUPPORT OF CAST-IN-FEED VISIBILITIES.
10. PROVIDE PANEL FINISH CONSTRUCTION JOINT WHEN SHAFT IS NOT CAST INTEGRALLY WITH DECK PANEL.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY
STANDARD
FULL DEPTH PRECAST CONCRETE DECK PANELS FOR PRESTRESSED CONCRETE PA BULB-TEE BEAM AND STEEL I-BEAM/I-GIRDER BRIDGES

RECOMMENDED 2/16/16
RECOMMENDED 3/20/16
BD-605M
**CHIEF BRIDGE ENGINEER**

**RECOMMENDED**

**BUREAU OF PROJECT DELIVERY**

**SHEET 4 OF 6**

**STANDARD FULL DEPTH PRECAST CONCRETE DECK PANELS FOR PRESTRESSED CONCRETE PA BULB-TEE BEAM AND STEEL I-BEAM/I-GIRDER BRIDGES**

**BD-605M COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION**

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**NOTES:**

1. MORTAR MATERIAL, ATTACHMENT HARDWARE AND PATCHING MATERIAL ARE INCIDENTAL ITEMS TO THE PRECAST DECK.

2. PAINT ALL EXPOSED STEEL WITH APPROVED GALVANIZED SPRAY CONTAINING A MINIMUM OF 92% ZINC.

3. MAXIMUM SPACING OF FORM SUPPORT/ATTACHMENT DEVICES IS 4' - 0".

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**COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BUREAU OF PROJECT DELIVERY STANDARD FULL DEPTH PRECAST CONCRETE DECK PANELS FOR PRESTRESSED CONCRETE PA BULB-TEE BEAM AND STEEL I-BEAM/I-GIRDER BRIDGES**

**BD-605M**

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**APR. 29, 2016**

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**DIRECTOR, BUR. OF PROJECT DELIVERY**
CHIEF BRIDGE ENGINEER

RECOMMENDED

BUREAU OF PROJECT DELIVERY

SHEET 5 OF 6

STANDARD

FULL DEPTH PRECAST CONCRETE DECK PANELS FOR PRESTRESSED CONCRETE PA BULB-TEE BEAM AND STEEL I-BEAM/I-GIRDER BRIDGES

BD-605M

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
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REINFORCED TRANSVERSE JOINT DETAILS

(To be used for decks with longitudinal post-tensioning)

SECTION D-D

(SHORING JOINT ADJUSTMENT)

LONGITUDINAL CLOSURE POUR BETWEEN BEAMS/GIRDERS

LONGITUDINAL CLOSURE POUR OVER BEAM

CONCRETE BRIDGE BARRIER DETAIL

(Typical barrier shown, others per design)

SECTION B-B

(SHOWING JOINT DIMENSIONS)

SECTION D-D

(SHOWING JOINT ALIGNMENT)

SECTION B-B

(KNIFE EDGE DETAILED)

CONCRETE BRIDGE BARRIER DETAIL

(Typical barrier shown, others per design)