

Product:

Spliced Post-Tensioned Concrete U-Girder Standards
Central Atlantic Bridge Associates (CABA)
PennDOT Drawing # 15-601-BDTD

Approval Date:

May 31, 2016

Initiated By SOL:

483-16-04

Application/Use:

Spliced Post-Tensioned Concrete U-Girder Standards developed by Central Atlantic Bridge Associates has been approved for use as Design Build Projects or as an Alternate Bridge Type at the discretion of the District Executive. This bridge type should not be included as the “As-Designed” Bridge without approval of the Chief Bridge Engineer.

- Minimum and Maximum length of a Continuous Unit: 250' – 1200'
- Minimum and Maximum end span length: 75' – 250'
- Minimum and Maximum inner span length: 100'-300'
- Maximum Beam Depth: 8 ft for constant depth girders and 11 ft for haunched girder
- Minimum pier beam length: 40' -120' (max)
- Maximum pier beam depth: 11 ft.
- Maximum beam segment weight: 175 tons
- Maximum single tendon length: 1200'
- Minimum skew angle: 30°
- Bridges with a central angle less than 12° within all spans can be analyzed as a straight girder and torsion can be ignored. Bridges with a degree of curvature between 12° and 34° in any span require a curved girder line model. Bridges with a curvature greater than 34° in any span require a refined 3 dimensional analysis.
- Minimum Radius: 750', although tighter radii have been successfully used.
- Structure configuration: simple span or full continuity for deck dead load, superimposed dead loads, and live load. Structures may also be straight or horizontally curved.
- Minimum Beam Spacing: 12'
- Maximum Beam Spacing: 26'

The Spliced Post-Tensioned Concrete U-Girders are to be designed/analyzed to meet AASHTO, Design Manual, Part 4 criteria, and these standards provided details, erection alternates and grouting specifications. A Load Rating Table and Rating Procedure must be incorporated on the Contract Drawings based on both the actual post-tensioned tendon configuration and an equivalent number of single strand configuration. Contact the Bridge Design & Technology Division (BDTD) for design and/or analysis questions.

As part of the construction contract, a special provision is to be included requiring the contractor to use a design engineer as well as an independent peer review engineer. The independent peer review engineer is to ensure the final moments, shears and deflections are accurate. In addition, the erection method, creep and shrinkage analysis and re-decking analysis need to be designed in design stage and reviewed by the independent peer review engineer.

Specifications:

Design/Material/Construction Specifications for this product are specified on PennDOT Drawing 15-601-BDTD dated on May 31, 2016 for your use.

Comments:

None.