

Millers Chapel Rd, Graves County (042C00006N) Bid Report

Graves County has requested for Bridge ID 042C00006N to be submitted for the County & City Bridge Improvement Program. This bridge is located on Millers Chapel Rd at the 0.06 mile point. Based on the latest Inspection Report, created on 10/02/2024, the Deck rating is a 7, the Superstructure rating is a 6, and the Substructure rating is a 2. This bridge is closed as of 10/02/2024.

The Inspection Photos, created on 10/02/2024, were utilized in tandem with the Inspection Report as a preliminary diagnosis on the issues pertaining to Bridge ID 042C00006N. The biggest issues found were the condition of the timber piles. There is approximately 24 feet of CS3 scouring for the end bents/piles. Meanwhile, there is 5 each of CS4 decay/section loss and 3 each of CS3 decay for the timber piles.

Once preliminary notes were made based on the Inspection Report, a team of Engineers from KYTC D1 went to the site to compare the report to current issues. The team took notes and measurements on-site. The measurements taken at Bridge ID 042C00006N were found to be:

- 40 ft structure length,
- 21 in. depth of super,
- 18 ft roadway width,
- 22 ft streambed width,
- 25 ft end bent width (both end bents),
- 12.5 ft tall (measure from streambed to bottom of beams)

The notes consisted of a Standard Template of a side elevation view of a bridge consisting of the deck/beam, abutments, piles, slopes, streambed, and piers (if applicable to the bridge). Notes were made on the Template when on-site to report issues found during the inspection, as well as possible fixes for said issues. The Standard Template with notes made will be attached to this report for reference.

Inspection was made at Bridge ID 042C00006N with KYTC D1 engineers. While on-site, it was determined that a total replacement would be needed since the channel has grown wider than what the total length of the bridge can handle. It would need to be extended from a 40 ft span to a 70 ft span to ensure the piles are not undermined by the channel.

Based on these findings, work to be done for Bridge ID 042C00006N would include:

- Replace old timber piles with new steel piles as well as new end bents, also correct the channel flow through the middle of the bridge. This would provide protection against scouring for the piles/abutments and improve the rating for the Substructure.
- Replace Channel Beams with Precast Prestressed Box Beams due to the delamination and cracks present in all current beams. This would improve the rating for the Deck and Superstructure.
- Create a slope at new End Bents to provide bearing and protection for the piles against scour. This would improve the Substructure rating.

The work done based on the above suggestions should follow the KYTC Standard Specifications and, if applicable, Standard Drawings. All work done for Precast Prestressed Box Beams will include, but not be limited to:

- *Elastomeric Bearing Pads per Drawing BBP-003-02*
- *Railing System Type II Guardrail Treatment per Drawing BHS-007-07*
- *Precast Prestress Box Beams General Notes per Drawing BDP-001-05*
- *Box Beam Bearing Details per Drawing BDP-002-03*
- *Box Beam Tension Rod Details per Drawing BDP-004-03*
- *Railing System Type II per Drawing BDP-005-05*
- *Box Beam B33 Details per Drawing BDP-010-04*
- *HP12x53 Steel Pile per Drawing BPS-003-09*
- *Pile End Bent 0 Degree Skew BSE-001*
- *Grout per Section 601.03.03*