Prestressed Clay Brickwork Bridge Abutments

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Abstract:

A prestressed clay brickwork diaphragm wall, represent part of a 21' -8" (6.6m) high bridge abutment, was built in the laboratory. The wall was test loaded by a system of hydraulic rams fixed to a similarly constructed reaction wall. The rams were arranged to simulate both the longitudinal load applied to the abutment at carriageway level and the earth pressure forces acting on the back face. In the test, no cracking was observed in the brickwork until the applied loading was well in excess of the loads corresponding to the design service condition. At the final stage of the test there was no indication of impending shear or bending failure. The bending moment and shear force resisted by the abutment at this stage were greater than those produced by the design ultimate loads as defined in the British Code of Practice for bridge Design.

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