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**Kosciuszko Bridge Phase 2 – Erecting a Cable Stayed Bridge in a
Dense Urban Environment**

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ABSTRACT

The Kosciuszko Bridge (K-Bridge) is a new pair of independent cable stayed bridge that cross Newtown Creek, connecting the New York City boroughs of Brooklyn and Queens. This paper focuses on the erection engineering challenges of constructing the new Phase 2 cable stayed bridge, which is located in a dense urban environment. The challenges include: close proximity to the completed Phase 1 Bridge, the presence of Newtown Creek, limited site access at ground level, and the need for complex temporary supports that avoid the foundation remnants of the original 1931 bridge during construction.

Keywords: Cable stayed bridge, long span bridge, erection engineering, construction engineering

1 INTRODUCTION

The Kosciuszko Bridge is a pair of new cable-stayed structure that cross Newtown Creek, linking the New York City boroughs of Brooklyn and Queens via the Brooklyn-Queens Expressway. Known locally as the "K-bridge," the original crossing, which opened in 1931 was described by The New York Times as "perhaps the city's most notorious [bridge], hated and feared by drivers and synonymous in traffic reports with bottlenecks, stop-and-go and general delay."



Figure 1: Elevation showing Phase 1 & Phase 2 Bridges

A pair of new signature bridges (the Phase 1 and Phase 2 Bridges) replaced the 77-year-old existing Kosciuszko Bridge. The new bridges increased capacity and flow of traffic and include a shared use path with incredible views of the New York City skyline. Completed in 2017, the Phase 1 Bridge was constructed using the Design-Build project delivery