

MAIN STREET BRIDGE PROJECT

City of Winnipeg

Winnipeg, Manitoba



Project Description

KGS Group provided all geotechnical and structural engineering services (foundation investigations, foundation and structural design and construction inspection) for the abutment and pier components of the recently constructed two-span twin bridges in downtown Winnipeg over the Assiniboine River.

Foundation investigations focused on foundation design and slope stability investigations, requiring the drilling of testholes to refusal, coring of bedrock at individual caisson locations, installation of piezometers and slope indicator casings.

Foundation design included complex finite element modeling of the abutment structures to estimate the load / deformation behavior of the structure and caissons. The modeling incorporated the interaction of the concrete structure with the surrounding soil and bedrock under full abutment vertical and lateral loading.

Geotechnical design also included cofferdam design for pier construction, assessment of dewatering requirements during construction, design and design review of construction shoring. Hydraulic modeling of river flows was also required as part of the design of in-stream works.