

# Reference Project

# Bridge Construction

**This 55m long suspension bridge replaces the original vehicle bridge across the beautiful Nile River at Charleston**

**Location** Waitakere (Nile) River, Charleston.  
**Date** May 2021  
**Client** Kawatiri Coastal Trail Trust & Waka Kotahi NZTA  
**Consultant** Abseil Access design team

The Kawatiri Coastal Trail is a great addition to the network of cycle trails throughout the Westcoast of the South Island. Abseil Access was invited to design and build this last bridge on the trail where it ends in Charleston. Its location on the Nile River tidal estuary, where the original timber road bridge once stood, is spectacular and serene.

**The work included:**

- Design and engineering of the 55m bridge with a load capacity of 20 persons with a 6 x safety factor.
- High flood clearance
- Width of 1500mm and suitable for cyclists passing both directions and meeting the NZ cycle trail code grade 2.
- 4 x 300kN cable anchors drilled into rock
- Aesthetic design and integration into the environment with dark stained timber.
- 316 Stainless steel throughout for 50 year life in harsh coastal environment
- H4 tanalised timber and locally sourced totara hardwood for handrail inserts.

Main cable anchors are drilled 6m into the granite rock to provide a working load capability of over 300kN. The twin 20mm 316 stainless steel IWRC main cables support 10 tons of deck as well as 48kN live load. Additional deck stability was achieved with a unique continuously laminated kickboard and under deck catenary cables

Public interest in the project was huge with local visiting the site every day and keeping a close eye on the build team!

