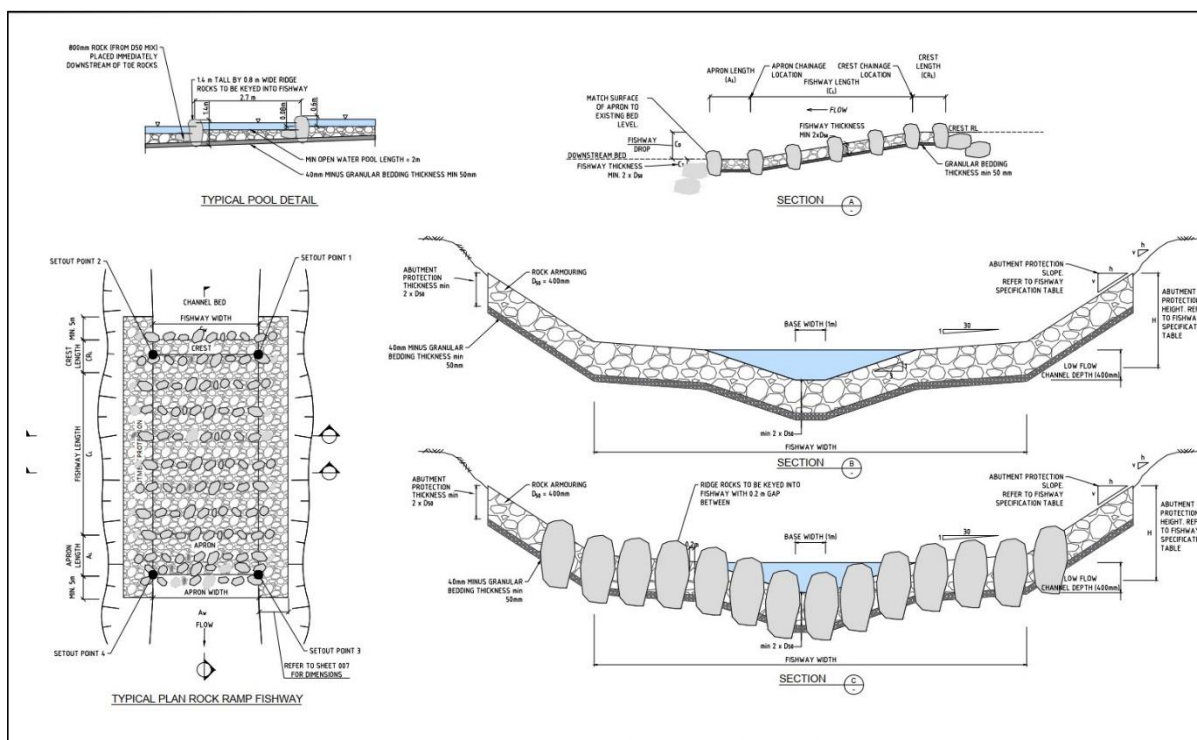


The two rock grade control structures have been installed to stabilise the riverbed and reduce erosion and widening of the river channel. The grade control structures are 40m in length and have a 1.6m change in elevation from the head to the toe of the structure. The structures help prevent the migration of erosion along the riverbed by reducing the slope of the riverbed and subsequently reducing the power and velocity of water flowing along this section of the river. Without the grade control structures, the river would continue to erode, becoming deeper and wider.

In addition to reducing erosion and deepening of the river bed and banks, the grade control structures have been designed to also work as a rock ramp fishway. These fishways help support the migration and movement of fish within this stretch of the East Barwon River and provide valuable habitat by simulating natural stream environments to create pools, runs, riffles and rapids.

Figure 1: Designs for the grade control structures in the East Barwon River that also act as rock ramp fishways to support fish populations.



The strategic placement of the rocks within a fishway provides the variety of water velocities and depth that differing species of fish and fish behaviour require when moving upstream. The edges of a

fishway provide shallower depths and lower water velocity, where as the middle of the fishway provides deeper water and higher velocity sections. This variety of velocity profiles, turbulence and interstitial spaces benefits small fish and other aquatic fauna like invertebrates, turtles and platypus. A well designed, constructed and maintained fishway can provide excellent connectivity for fish populations along a river.

Figure 2: One of the grade control structures installed in the East Barwon River as part of the East Barwon Willow Removal and Restoration Project.



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