

## In-river retaining Wall and Carriageway Reconstruction,

### Bram Cragg at St Johns in the Vale



Completed downstream retaining wall



Completed upstream retaining wall

Client: Cumbria County Council	Value: £506,000
Location: St Johns in the Vale, nr Keswick	Duration: 8 weeks

#### **Project information**

Design & Build of an in-river retaining wall structure to support a 106.5m length of the B5322 road near St Johns in the Vale alongside a watercourse named St. John's Beck. The retaining wall structure replaced the existing masonry retaining wall which was in a state of disrepair post Storm Desmond.

Sheets piling was undertaken first and embedded 2.5m into the riverbed, then excavation 0.5m below the river bed, this to facilitate construction of the levelling pad, the sheet piles are in front of the mass concrete plinth (supporting the existing masonry wall) and provides scour protection in the long term. The blocks are supported on an in-situ mass concrete levelling pad cast below the west verge. Construction comprised a Marshalls proprietary mass concrete gravity wall utilising interlocking precast modular blocks with a Ledgestone finish. The retained height of the new structure will vary from 1.95m to 3.15m

Construction to place during the summer months when river flows were generally at their lowest. This allowed the concrete pad to be cast behind the embedded sheet piles, once the existing concrete plinth, masonry wall and earthworks have been removed. The interlocking precast modular blocks were dry laid, thus the wall construction progressed as soon as the concrete levelling pad was cast and cured.

The road cross section retained by the structure consists of a 4.7m wide carriageway with a minimum 1.1m wide grass verge on the west side and a 0.45m wide grass verge on the east side, the carriageway was fully reconstructed over the whole length and completed with road markings and fencing.