0191 234 2244
enquiries@southbaycivils.co.uk

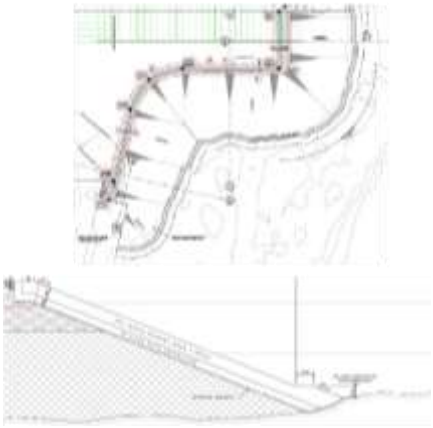
PROJECT: RIVERSIDE QUAY EXTENSION ROCK ARMOUR

VALUE:	£375,000
ROLE:	MAIN CONTRACTOR
START DATE:	DECEMBER 2015
COMPLETION:	JANUARY 2016

CLIENT: PORT OF TYNE AUTHORITY
MARITIME HOUSE
SOUTH SHIELDS
NE33 9PT

- Restricted Tidal Working (Spring Tides)
- Placement and construction of two size Rock Armour (60 – 300 kg and 300 - 1,000 kg)
- 12,000 tonnes of Rock Armour Supplied and Installed
- Restricted access/egress to construct Rock Armour
- Restricted working room during the construction
- Significant depth of water
- Use of divers and special plant to construct toe

Part of the larger project – Riverside Quay Extension, Southbay took on a Design and Build Lump Sum fixed price to construct a new revetment consisting of 130,000 tonnes of engineering fill complete with rock armour protection.
The location of the revetment and rock armour is situated in the existing basin of the historical Tyne Dock, South Shields. Were anticipated wave action and swells would reach 1.5m. Due to the minimal wave action foreseen the rock armour underlayer and primary layer were value designed and reduce in size.
Prior to placement of rock armour, a silt dredge was required to mitigate any future scour to the revetment, due to the depth of water, this silt dredge was carried out by a plough dredging vessel, once removed the importation of the engineering fill could commence then followed soon by the placement of the rock armour.
The rock armour was constructed to the face of the revetment during spring tides due to the depth of water and toe detail required, using special plant, site reduced the revetment area and between tides initially placed and laid a geotextile membrane then the rock armour underlayer. Diver assistance was required to ensure the toe of the geotextile and rock armour were positioned correctly. The revetment had a design loading of 100 KN/m2, therefore it was essential to maintain a minimum gradient of 1 in 2.5.



Plan & Section through Rock Armour and Revetment

Underlayer Rock Armour Construction with diver assistance

CHALLENGES

Site and material access were difficult due to the live Port Operations and works to the Quay Extension. The depth of water resulted in the works being aided by divers and special equipment.

PROGRAMME

The revetment in its temporary state was utilised as the main working platform to construct the quay extension, this housed up to 3 crawler cranes ranging from 135t to 300t. The construction of the rock armour was a vital part to protecting the temporary platform therefore the programme consisted of working 2 consecutive spring tides.