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Wales Route- Shrewsbury Delivery Unit

Recover, Reuse, Recycle. Utilisation of BJB Concrete Sleepers

Site Specific Details and Problem

The site is at Sandilands, Tywyn. This is a section of line on the Cambrian Coast. The area was badly damaged on the 3rd January 2014. Large tides, a force 8 Westerly gale and tidal surge swamped the sea defences



The damage



The Site

This specific section suffered from severe sea defence damage along with a loss of the land side embankment totalling approximately 3000 tonnes of fill. This fill was replaced and compacted but with following high tides was simply washed through and undermined.

The Solution

We sought to create an engineered solution of an interlocking structural embankment retention system. A form of structural gabions. The requirement being to form an embankment retention, utilising rock fill to allow good drainage, allow for natural plants to re-colonise the area and primarily support the track formation.

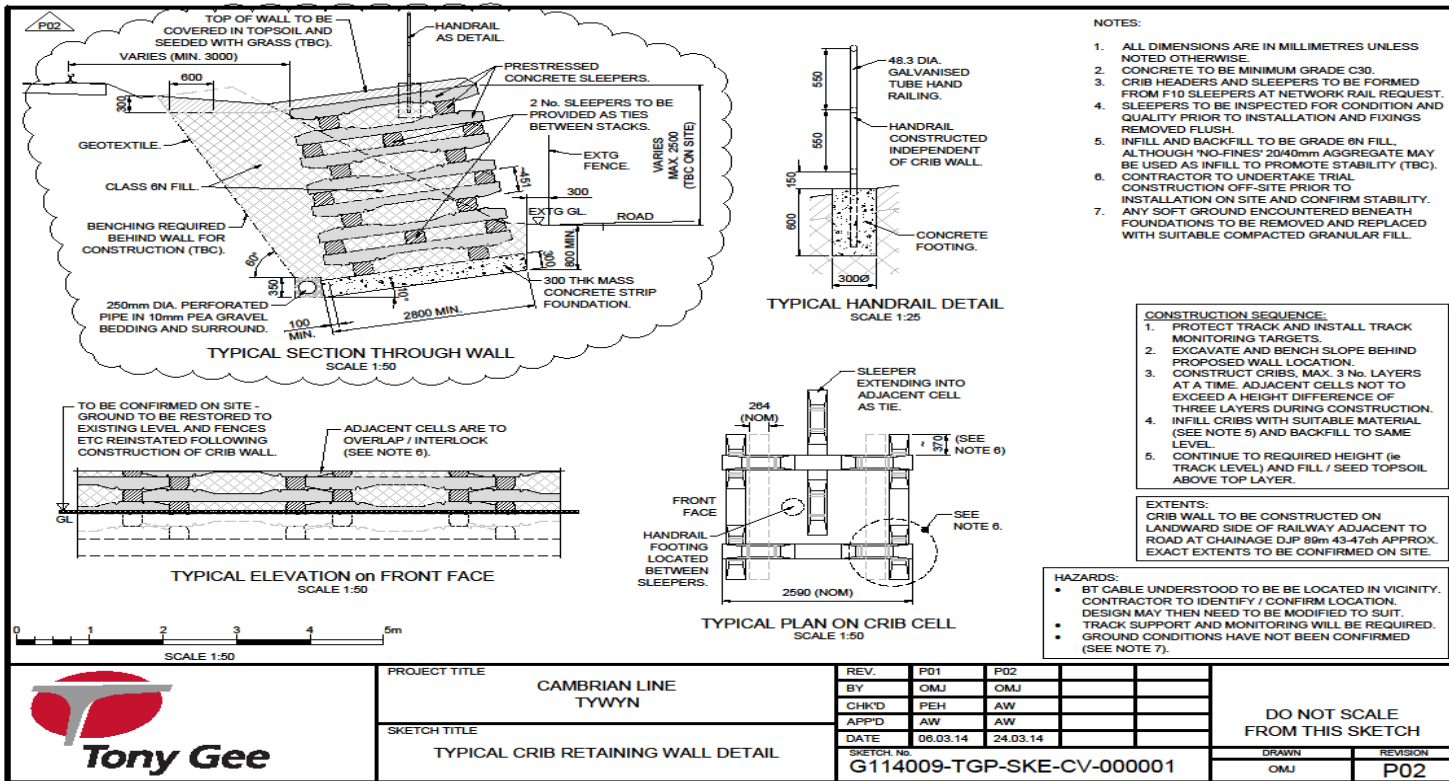
We had in excess of 3000 scrap BJB concrete sleepers in a yard close by. We sought to utilise these and AMCO Construction along with their designers Tony Gee and our Route Asset Manager (civils) we developed the attached design.

The sleepers were de-chaired, positioned and secured as per the design. This was a fast and efficient process. Once in position, a simple mesh cover was fixed in place across the rear elevation of the wall and the rock fill installed.



Benefits

- A quick solution to stabilise the embankment between high tides
- Minimal plant required and obstructions on the public highway
- A good re-use of an abundant supply of scrap concrete BJB Sleepers, with no operational cascade options
- Good, simple, railway engineering. Something we have done before and successful for many years. Lets not forget what we have learnt before.



PROJECT TITLE
**CAMBRIAN LINE
TYWYN**

SKETCH TITLE
TYPICAL CRIB RETAINING WALL DETAIL

REV.	P01	P02		
BY	OMJ	OMJ		
CHKD	PEH	AW		
APPD	AW	AW		
DATE	06.03.14	24.03.14		
SKETCH No.	G114009-TGP-SKE-CV-000001			

**DO NOT SCALE
FROM THIS SKETCH**

DRAWN	REVISION
OMJ	P02