National Asset Delivery

Technical Surveys and Testing

Site Information for A21 Powdermill Lane

Topographical Survey

1 SITE INFORMATION

1.1 Site boundary, extents and access arrangements

The site is located on the A21 trunk road, along the Tonbridge Bypass, near Leigh in Kent. Adjacent to the north bound carriageway prior to the Powder Mill Lane underbridge. The OS National Grid references for the site are E556049, N146451 to E556139, N146193.

Figure 1.1: Site location plan

Approximately 100m to the west are a small number of residential/commercial property. Adjacent to the site are arable fields and small areas of woodland. To the east adjacent to the east bound carriageway is a small number of residential properties and commercial properties.

For the survey works the site can be accessed with traffic management via a lane one closure. Alternativity the site can be accessed via Powder Mill Lane for short site visits.

1.2 Pavement

Pavement surveys were carried out prior to the soil slip in 2015, based on the nearest core log to the embankment failure show the pavement to be constructed from:

Layer	Depth		Thickness (mm)	Description	Binder
	From	To			
1	0	40	40	Asphalt Surfacing (voided)	Bitumen
2	40	60	20	Hot Rolled Asphalt	Bitumen
3	60	132	72	Asphalt Concrete	Bitumen
4	132	195	63	Asphalt Concrete	Bitumen

5	195	267	72	Hot Rolled Asphalt	Bitumen
6	267	395	128	Hot Rolled Asphalt	Bitumen
				Loose Granular Material	

1.3 Drainage

Highways drainage was updated in 1994 and consists of a concrete channel and gullies connecting to a carrier pipe. There is also a fin drain within the verge. The outfall is at the southern end of the embankment. The condition of the drainage could not be ascertained from HADDMS records where only a validation survey has been undertaken to confirm drainage asset types, not condition.

1.4 Geotechnical

The embankment was constructed as part of the Tonbridge Bypass which opened in 1969. The underlying strata, at the site, is Lower Grinstead Clay and the Ardingly Sandstone Member. Existing ground investigations do not cover these strata. The embankment is assumed to be constructed from similar material to nearby earthworks, described as firm to stiff orange brown/ grey mottled slightly sandy CLAY.

The site is situated on embankment approximately 4.7m high with a slope angle of 28º. The embankment was constructed to raise the level of the A21 for the approach to the A21 Medway Viaduct.

The failed earthwork has a large backscar on the slope and slope bulge, subsidence has also been identified in lane one, in addition to the pavement subsidence, the channel drain and vehicle restraint system (VRS) are affected. The VRS is lower that the required height and drainage is not into the gulley at the end of the channel due to the differentiation in height.

1.5 Soft Estate and Environment

There multiple records of, and suitable habitat for protected species (dormice, badgers, nesting birds and reptiles) in the wider scheme environment. Toolbox talks for protected species will be briefed to all operatives prior to start of shifts.

1.6 Structures and Buildings

Immediately north of the site is the A21 Powder Mill Lane Underbridge, the structure will not be affected by the works.

1.7 Statutory Undertakers

Within the site there is plant of three statutory undertakers:

- UKPN (abandoned) - under the northern tip of the earthwork and under the carriageway.
- BT — possibly ducted in the parapet and terminates under the concrete drainage channel at the top of the earthwork.

- South East Water — under the embankment in the location of the exploratory holes there are a series of mains and valves. Material of pipe. 3inch cast iron main

1.8 Traffic

A21 at this location is a dual carriageway with a national speed limit of 70mph. The two-way traffic flow (AADT) for 2018 is 45121 with 4.86% HGVs.