

Please relay all of the below comments onto the planners (National Highways and / or directly to TEG and Ground and Project Consultants) as we will require further analysis for our recommendation for discharge of planning condition 19.

Review of Noise Bund Proposals by HCC Geotechnics Group (14/03/2023) – First Set of Comments

The overall stability of the bunds is of interest to both HCC Highways and National Highways (NH) due to the proximity of our networks and whilst the bunds are not adoptable by us or NH, large scale settlements or bearing capacity failure has the potential to impact on the highway/highway user.

As it stands, we are not satisfied that sufficient data has been provided for the discharge of condition 19. The assumed bearing pressure, assumed soil parameters, proposed fill materials and anticipated settlements should be reviewed and resubmitted to us for the proposed bunds with reinforced soil slopes (RSS). Full details below of what we require covered in Points A to H;

A. Full output of settlement analysis

- We will want to know the soil model that has been used (i.e number of layers and layers thicknesses, until rigid boundary) and a time element should be provided.
- Ground and Project Consultants have suggested constructing the bund in two stages. Does the settlement analysis take into account the proposed surcharging. How does this affect estimated settlements once bund is constructed?
- The plan area of the bunds should be taken into account in the settlement assessment. As it stands it is not clear what size area of ground was loaded.
- Ground and Project Consultants have recommended ground movement monitoring. This seems sensible. Has a monitoring programme been prepared? If so, please provide a copy.

- The anticipated settlements will need to be taken into account in the TEG RSS design. The GDR will then need to be updated.
- TEG will need to consult with the geotechnical advisor for the scheme to agree how much settlement is acceptable to the bunds before instability of the RSS will be an issue.

B. Bearing Capacity calculations

- A bearing pressure of 100 kPa has been assumed by Ground and Project Consultants Ltd for the capping material. This does not appear to take into account pressure bulbs applying load onto landfill materials. The plan area of the bunds should be taken into account in this assessment as the area that the bund will cover will take loads into the landfill materials I would expect.
- How will the formation layer be reinforced to be of sufficient strength and stiffness?
- Will a starter layer be placed on formation layer?

C. Suitability of capping materials – to be confirmed by Earthworks Spec and Materials Management Plan (geotechnical advisor to provide)

- It is understood that it is proposed to re-use the capping materials to the historic landfill.
- TES have assumed the engineered fill is Class 2 – stoney cohesive fill. That information although not explicitly stated implies Class 2A. Further testing on site won soils will be required.
- How will the anticipated variability in capping materials (granular in east and cohesive in west) be taken into account?
- The TEG report implies that it will be end product specification, which is not set out in Series 600 as that covers method specification. This should be addressed by the preparation of an earthworks specification. This spec will also need to include any granular soils for replacing soft spots, starter layers and 6I/6J on 70 degree slopes.
- The site won capping material appears to be too wet of optimum so will need some modification. This will need to be commented on in the earthworks spec.
- Asbestos was identified at two locations (CP04 and TP3) within the capping material (amosite and chrysotile). I haven't seen any quantification tests to confirm that these soils can be re-used. It would be suggested that further contamination testing is undertaken to confirm that the materials are suitable.
- An earthworks specification will be required for the scheme and the re-use of site won materials will need to be covered by a Materials Management Plan to deal with the contamination aspects.

D. Topsoil Cover

- I understand that 600 mm of clean cover is required in soft landscaping areas. The landscape architect has suggested that only 450 mm of topsoil is required for a suitable growing medium, but a minimum of 600 mm of clean topsoil is required to protect against potential asbestos contamination in the capping materials.

E. Geotechnical Design Report (to be updated and re-submitted by TEG)

- An updated GDR report – to be provided by TEG, following consultation with the geotechnical advisor for the scheme for the bearing capacity, settlements and suitable fill, plus any improvements required to the formation level. The ground conditions supporting the bund are very poor (i.e household landfill material).



- The landfill material raises most of our concerns and hence our request for further information.
- Will the reinforced soil slopes be able to accommodate differential settlements?
- How much settlement can the Reinforced Soil slope (RSS) tolerate?
- Why have deep seated rotational failures been excluded by TEG?
- What is the design life of the RSS?

F. Assumed Soil Properties

- The undrained shear strength of the capping material is assumed to be 30 kPa by TEG and 100 kPa by Ground and Project Consultants Ltd. I am more inclined to agree with TEG that it will probably be closer to 30 kPa than 100 kPa.
- I would suggest that undrained shear strength tests on re-molded samples are undertaken on the proposed cohesive capping materials.

G. Trees

- Has the stability of the proposed bund taken into account the proposed tree planting?

H. Other

- I assume that Ground and Project Consultants will act as geotechnical advisor for the scheme. Has this been confirmed? As it stands this is stated as TBC by TEG Ltd.

Kind Regards
Holly

Holly Drury BSc (Hons) MSc MCIHT
Principal Transport Planner – Highways Development Planning
Hampshire 2050
Hampshire County Council
1st Floor EII Court West, Winchester
Hampshire, SO23 8UJ

Tel: 0370 779 3193

E-mail: holly.drury@hants.gov.uk