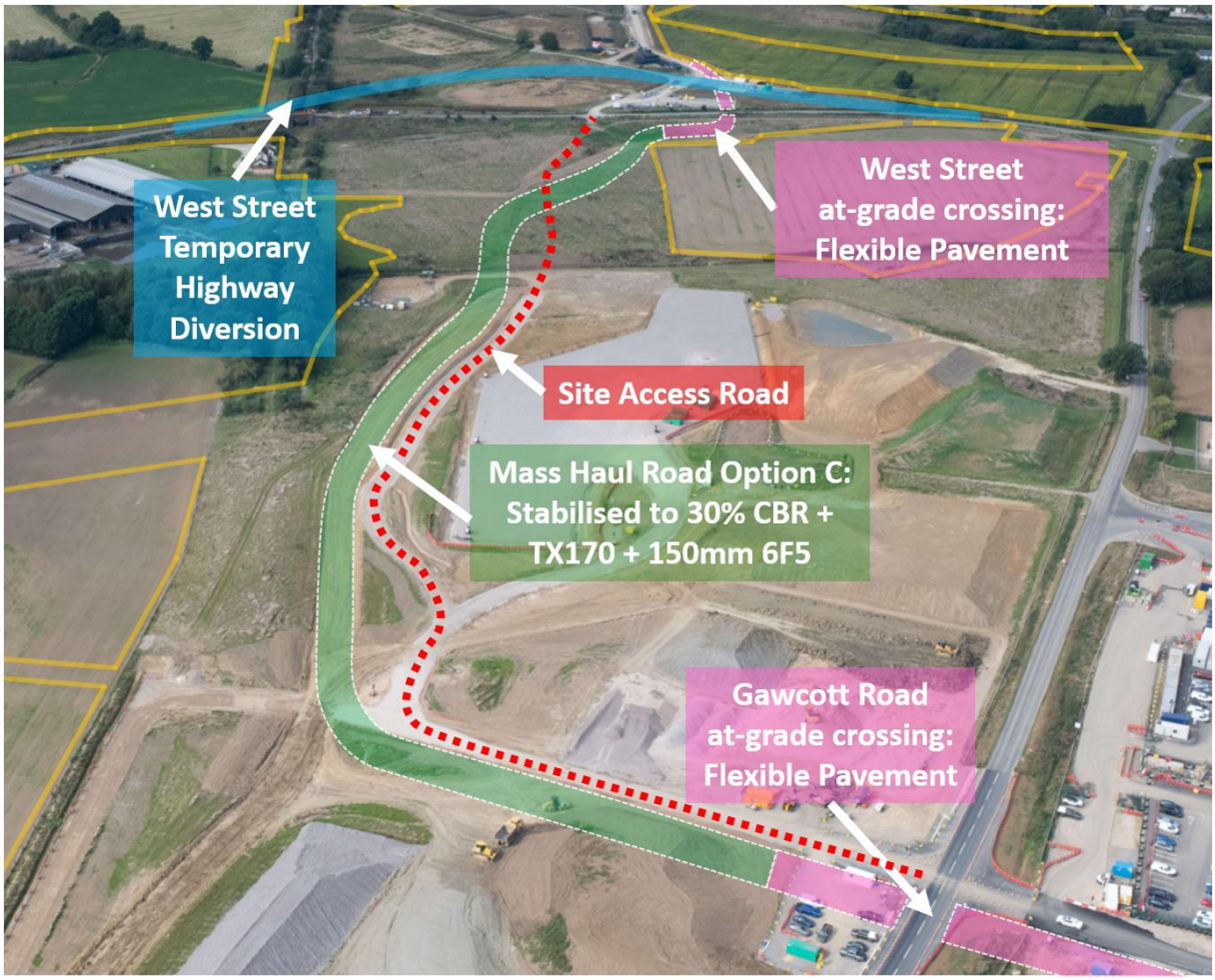
JJ Mac Ltd

Ground Stabilisation

CASE STUDY

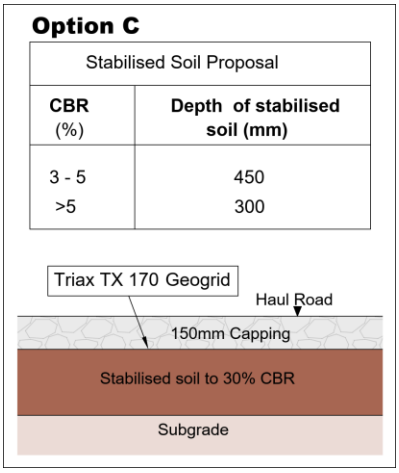
Stevenage - Embankment Stabilisation

Project	JJM2628 - Stabilisation for Haul Road
Location	North Calvert
Client	Buckingham
Key works delivered	Soil Modification and Stabilisation using Lime and Cement
Project Duration	May 2022 - 4 weeks
Stabilised Area	10,000m2
Earthworks	By Buckingham



PROJECT OVERVIEW

- New Haul Road for future Earth Works and Large-Scale muck shifting
- Two-part process required with Lime and Cement Binders
- 5,000m3 of 7A material excavated from nearby Attenuation Pond which was modified with Lime to create the embankment
- Client Requirement min >30% CBR on 300mm Layer



- JJMac tested and classified the material as suitable to achieve these requirements

PROJECT CHALLENGES

The project was very challenging due to the loading required from 300mm Layer. The Haul Road is to be used to cart excavated material with some 50No 45tn Dump trucks trafficking every day.

A combination of Lime and Cement was used to acheive the required loadings. A period of mellowing was required to allow the Lime to breakdown the Clays. The mellowing period and follow on cement works had to be co-ordinated to ensure all works were trimmed and compacted before the end of each shift.

Management of Logistics and deliveries of Binder are challenging on HS2 with prebooking and certifified delivery trucks etc only allowed on site.

ENGINEERING AND SOLUTIONS TO OVERCOME THE CHALLENGES

To overcome the project challenges set by the client, our team:

- Worked with the client and advised on the findings of the site won material testing and classification.
- Setting out a programme of works for each area broken down into Lime and Cement activities with the Mellowing periods indicated. The challenge being to **Modify** the In-situ material by mixing with lime to Modify and then mixing with Cement to Stabilise. All complying with the stringent testing schedule for the 7A material.

Modification and Stabilisation during Construction Phase

JJMac Site HS2 Team

7A Soil being mixed after mellowing with Lime

7A material ready for Cement Stabilisation

Completed Works

ADVANTAGES

The works had numerous advantages to this site.

- Utilise site won material from Excavations for Modification
- Elimination of Primary Aggregates for Haul Road Capping Base
- Elimination of Stone Lorries from the Villages and surrounding Roads

BENEFITS TO CLIENT