

Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order

Condition 5b(x): Environmental Design Plan (Land Contamination and Hydrogeology) – Stage 3

Document reference: 151667-TSA-00-TRU-REP-W-EN-001235

Network Rail

April 2023



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1. INTRODUCTION

1.1 Background

- 1.1.1 The Scheme is part of a wider programme of works under the Transpennine Route Upgrade (TRU) which will improve the Transpennine railway between Manchester, Huddersfield, Leeds and York and improve connections between key towns and cities across the north of England.
- 1.1.2 Planning Direction for the Huddersfield to Westtown (Dewsbury) section of the TRU was received from the Department for Transport, referenced TWA/21/APP/03, dated 13 October 2022.
- 1.1.3 This document sets out details in relation to Condition 5b(x) of the Deemed Planning Permission.

2. STAGED APPROACH TO DISCHARGE

- 2.1.1 As set out in document ref 151667-TSA-00-TRU-REP-W-EN-001189 version 3 (submitted in relation to Condition 3 of the Deemed Planning) a staged approach is proposed in relation to discharge of the deemed planning conditions.
- 2.1.2 This document sets out details in relation to the Stage 3 works for the Huddersfield to Westtown (Dewsbury) Scheme.
- 2.1.3 Stage 3 comprises of the mining remediation works required in advance of construction of the Scheme. The mining remediation works required are set out in Table 2-1 and remediation methodologies described in paragraph 2.1.4, with location details set out in drawing 151667-TSA-00-TRU-REP-W-EN-001288 P04 in Appendix A.

Table 2-1 Proposed mining remediation mitigation measures

Area ID	Location of works	Mitigation measures
W3.1	Huddersfield South Tunnel	<ul style="list-style-type: none"> Grouting of 2 mine shafts and 2 wells. All from tunnel level and below.
W3.1-3.3	Huddersfield Station	<ul style="list-style-type: none"> Grid probing and grouting of voids for new structures: canopies, footbridge and subway extension. Probe hole at proposed locations of Overhead Line Equipment (OLE) foundations. Grouting of voids if encountered. Geosynthetic reinforcement for mining for track
W3.2-1, W3.2-3	Hillhouse Mainline	<ul style="list-style-type: none"> Probe hole at proposed locations of OLE foundations. Grouting of voids if encountered. Geosynthetic reinforcement for mining for track
W3.3	West of Deighton Station (Area of Peels Pit underbridge)	<ul style="list-style-type: none"> Capping and if necessary grouting of 2 mine shafts.
W3.3-1	Area of Bradley's No. 2 (BBW/1) Overbridge (MVL3/105)	<ul style="list-style-type: none"> Grid probing and grouting of voids for track, OLE and adit.
W3.3-3	East of Bradley Junction - Earthworks E9	<ul style="list-style-type: none"> Probe hole at proposed locations of OLE foundations. Grouting of voids if encountered. Geosynthetic reinforcement for mining for track
W3.4-1 W3.4-3	Heaton Lodge curve (MVL3 and MVN4)	<ul style="list-style-type: none"> Probe hole at proposed locations of OLE foundations. Grouting of voids if encountered.
W3.5-1	Mirfield Station	<ul style="list-style-type: none"> Geosynthetic reinforcement for mining for track
W3.5-2	West of Sands Lane	<ul style="list-style-type: none"> Probe hole at proposed locations of OLE foundations. Grouting of voids if encountered. Geosynthetic reinforcement for mining for track

- 2.1.4 The following measures will be employed:

- Probe and grout – this will typically comprise of rotary open holes on a 6m grid, closing to 3m and finer if required. The area of the grid will be enclosed on the down dip side by perimeter holes at 3m closing to 1.5m spacing to confine grouting in the area of the grid, and prevent grout escaping beyond the area of works. Where voids are encountered around the perimeter, these will be filled with pea gravel and a viscous grout, to form an underground cutoff. In the area of the main grid of open holes, these will be filled with grout, with grout takes monitored, and paused at certain grout takes. Works will generally target new foundations and new structures, where considered necessary. Water will be needed during the drilling and grouting process. The wastewater will be treated on site (Siltbuster) and this water will be fed back into the water tank for reuse within the process. Any waste material will be removed from site by a licenced carrier.
- Track – where shallow workings are anticipated underneath the track alignment, a high strength geosynthetic reinforcement will be employed below the track bed.
- Where required at locations of OLE foundations, a targeted probe hole will be drilled, and any voids will be grouted (process above).
- Adits – where assessed as requiring treatment, these will be sealed/excavated out depending on depth and relationship to the main works. Where necessary probing and grouting may be used on shallow adits.
- Shafts – where assessed as requiring treatment, shafts will typically either be capped (reinforced concrete slab, typically 2x shaft diameter) or infilled with grout / bulk fill and grout.

2.1.5 Mining remediation works covering the Ravensthorpe area are considered within the Stage 1 documentation (previously submitted planning application ref 2022/44/93858/W).

2.1.6 It is anticipated that works within Stage 3 will commence in July 2023 and are anticipated to be completed by September 2024.

3. INFORMATION INCLUDED IN THIS SUBMISSION

3.1.1 The wording of Condition 5b is reproduced in Table 3-1. Based on the scope of works detailed in Section 2, Table 3-1 sets out how this document details the information required in conjunction with Condition 5b(x).

Table 3-1 Details of Condition 5b

Condition reference	Details of condition	Section reference
Condition 5b (Sub-section x)	<p>Part B of the CoCP (as defined in the Environmental Statement: Volume 3, Appendix 2-1 Code of Construction Practice (Part A), Section 1.2.5) must include the following plans and programmes, for each stage as defined in condition 3:-</p> <p>x. An Environmental Design Plan (EDP) (Land Contamination and Hydrogeology) – setting out the environmental requirements during the detailed design stage.</p>	Section 4

4. METHODOLOGY TO ACHIEVE MITIGATION MEASURES

4.1 Introduction

4.1.1 The Environmental Statement (ES) sets out the details of mitigation measures that would be included within the Environmental Design Plan (Land Contamination and Hydrogeology, hereafter referred to as “the EDP”. The mitigation measures are summarised as follows:

- The mining risk assessment and details of design decisions will be recorded in design statements and/or the geotechnical design reports, the outcomes of which will be discussed and agreed with the Coal Authority as part of the permitting process.

4.2 Land contamination/gas – potentially unacceptable risks

4.2.1 Based on the proposed mining risk mitigation measures of grid probing, grouting of voids and track bed reinforcement, the following risks from contamination to human health and controlled waters receptors relating to contamination would be applicable arising from the mining remediation activities:

- Migration of mine gas following displacement as a result of void grouting;
- Migration of contaminated groundwater where grouting displaces contaminated mine waters; and
- Vertical migration of contaminants during probing and grouting works.

4.2.2 The risks to human health and controlled waters receptors from the other construction activities and for the final development have been or will be addressed in other reports (Stages 4-8) as the Scheme progresses.

4.3 Geohazards and coal mine related features

4.3.1 The degree of risk posed by geo-hazards and coal mining features is dependent on a combination of the type of hazard, the site-specific ground conditions and the activities proposed in each area.

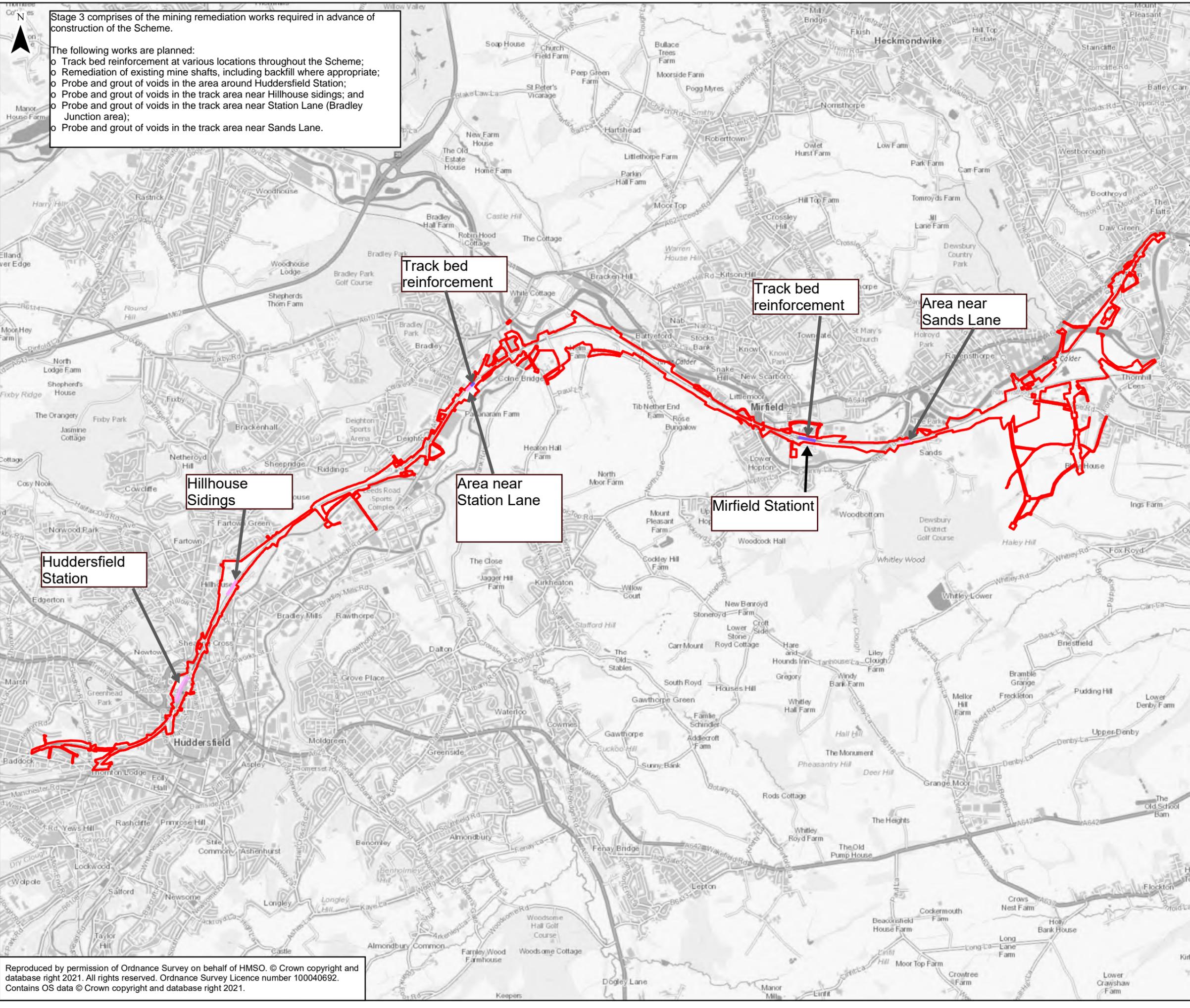
4.3.2 A Mining Risk Mitigation Remit (MRMR) report has been prepared for the Scheme (document ref: 151667-TSA-W3-000-REP-W-GE-030512) in compliance with the Network Rail Mining Manual (NR/L2/CIV/191/05). The MRMR presents the high-level approach taken to the mitigation of mining hazards identified in the Mining Risk Assessments (MRAs) prepared for the Scheme.

4.3.3 The design and implementation of the mining risk mitigation measures have been designed and will be undertaken in accordance with the measures set out in the MRA and MRMR reports and in accordance with relevant Coal Authority guidance such as ‘Guidance on managing the risk of hazardous gases when drilling or piling near coal’. These measures have been discussed with the Coal Authority and are being agreed through the permitting process.

4.3.4 The MRMR assesses and summarises the parts of the Scheme identified as high risk in the MRAs and makes recommendations for mitigation as considered appropriate. The recommendations for the high risk areas are set out in Table 2-1 of this report. The MRMR also provides a high-level identification of residual risks and how these should be managed following the completion of the project. These risks and management strategies will be developed with the mitigation designs and agreed with the Coal Authority through the permitting process.

Appendices

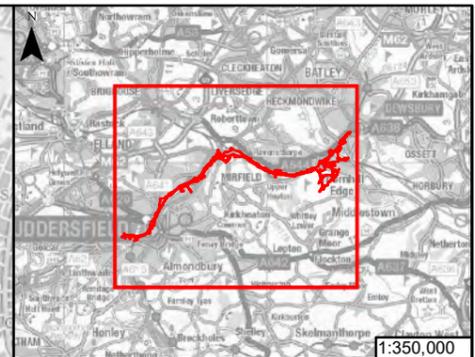
APPENDIX A – LOCATIONS OF MINING REMEDIATION WORKS



Stage 3 comprises of the mining remediation works required in advance of construction of the Scheme.

The following works are planned:

- o Track bed reinforcement at various locations throughout the Scheme;
- o Remediation of existing mine shafts, including backfill where appropriate;
- o Probe and grout of voids in the area around Huddersfield Station;
- o Probe and grout of voids in the track area near Hillhouse sidings; and
- o Probe and grout of voids in the track area near Station Lane (Bradley Junction area);
- o Probe and grout of voids in the track area near Sands Lane.



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- Scheme Boundary
- Probe and grout
- Track bed reinforcement
- Works to mine shafts and adits

0 125 250 500 750 1000 1250 1500 Metres

SCALE 1:35,000

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Project
TRANSPENNINE ROUTE UPGRADE

Contract No.
151667

Scheme Title
THE NETWORK RAIL (HUDDERSFIELD TO WESTTOWN (DEWSBURY) IMPROVEMENTS) ORDER

Drawing Title
Stage 3 works

Designed	K.Stenson	Signed Electronically	Date	19/03/2021
Drawn	P.Butler	Signed Electronically	Date	06/12/2022
Checked	P.Butler	Signed Electronically	Date	06/12/2022
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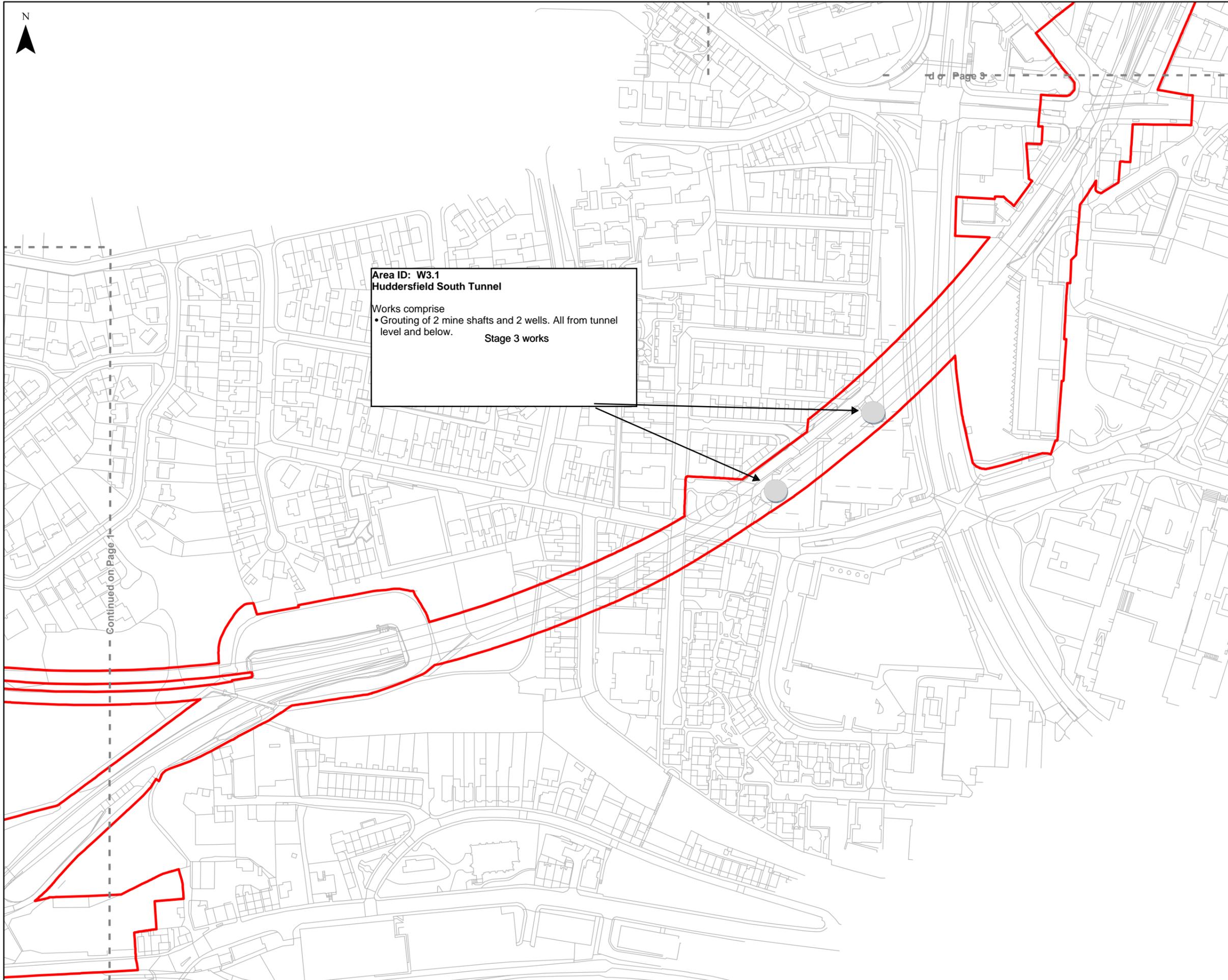
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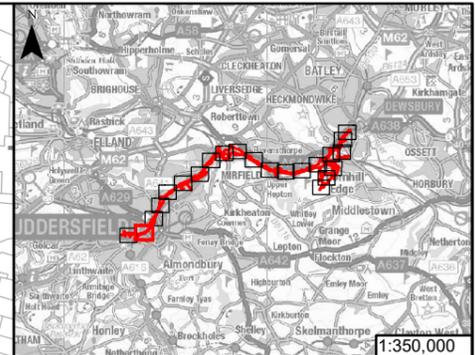


Area ID: W3.1
Huddersfield South Tunnel

Works comprise

- Grouting of 2 mine shafts and 2 wells. All from tunnel level and below.

Stage 3 works



- Scheme Boundary
- Adjacent Map Sheet
- Probe and grout
- Track bed reinforcement
- Works to mine shafts and adits



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Project
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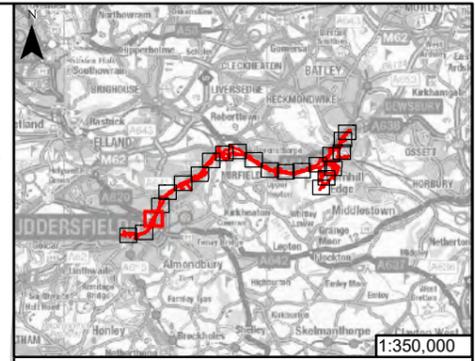
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**Area ID: W3.1-3.3
Huddersfield Station**

Works comprise

- Grid probing and grouting of voids for new structures: canopies, footbridge and subway extension.
- Probe hole at proposed locations of Overhead Line Equipment (OLE) foundations. Grouting of voids if encountered.
- Geosynthetic reinforcement for mining for track

Continued on Page 2



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-  Scheme Boundary
-  Adjacent Map Sheet
-  Probe and grout
-  Track bed reinforcement
-  Works to mine shafts and adits



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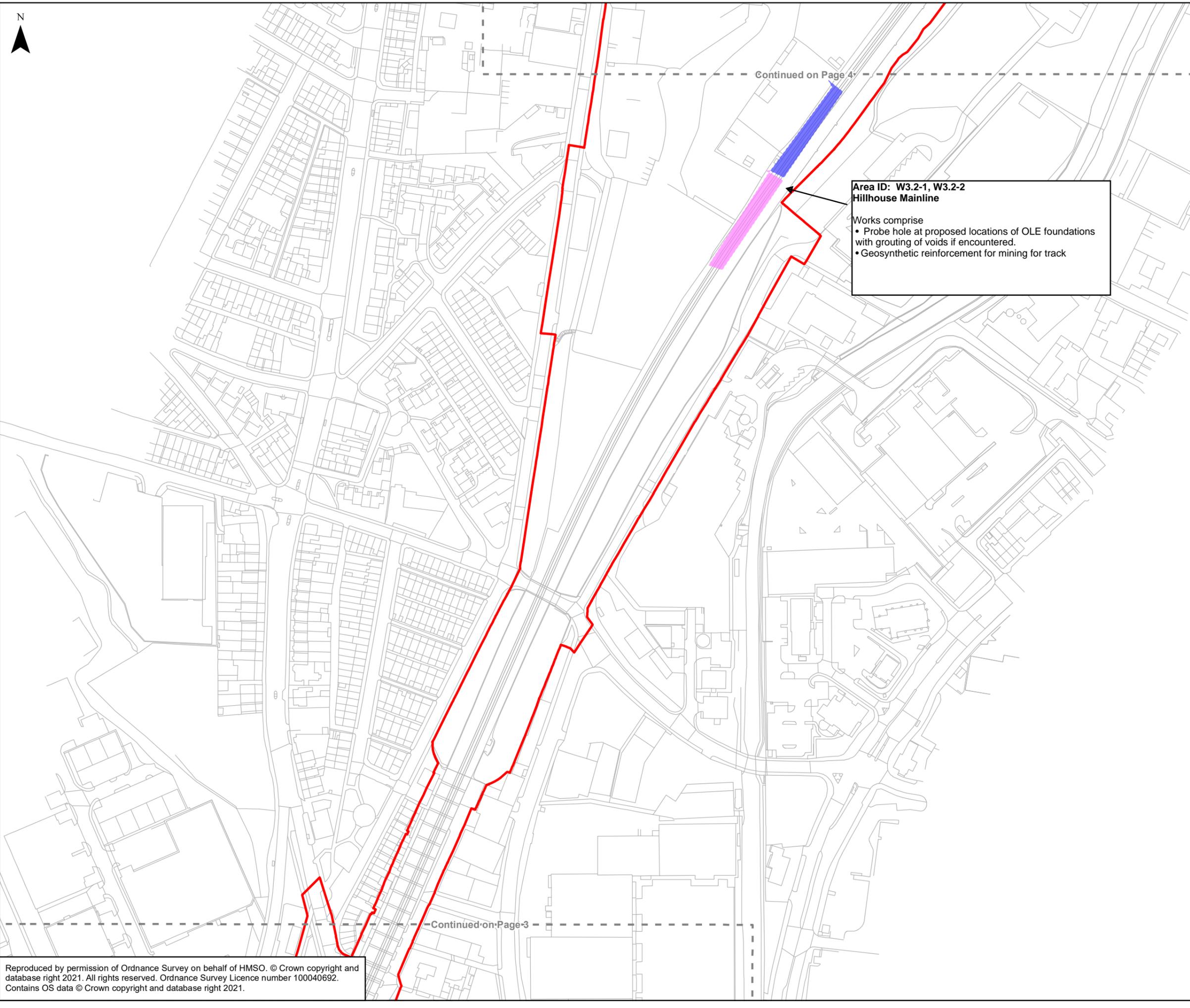
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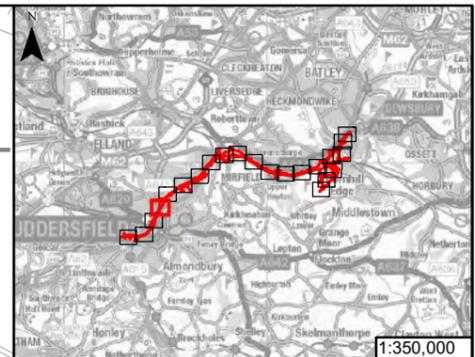
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**Area ID: W3.2-1, W3.2-2
Hillhouse Mainline**

Works comprise

- Probe hole at proposed locations of OLE foundations with grouting of voids if encountered.
- Geosynthetic reinforcement for mining for track



1:350,000

-  Scheme Boundary
-  Adjacent Map Sheet
-  Probe and grout
-  Track bed reinforcement
-  Works to mine shafts and adits



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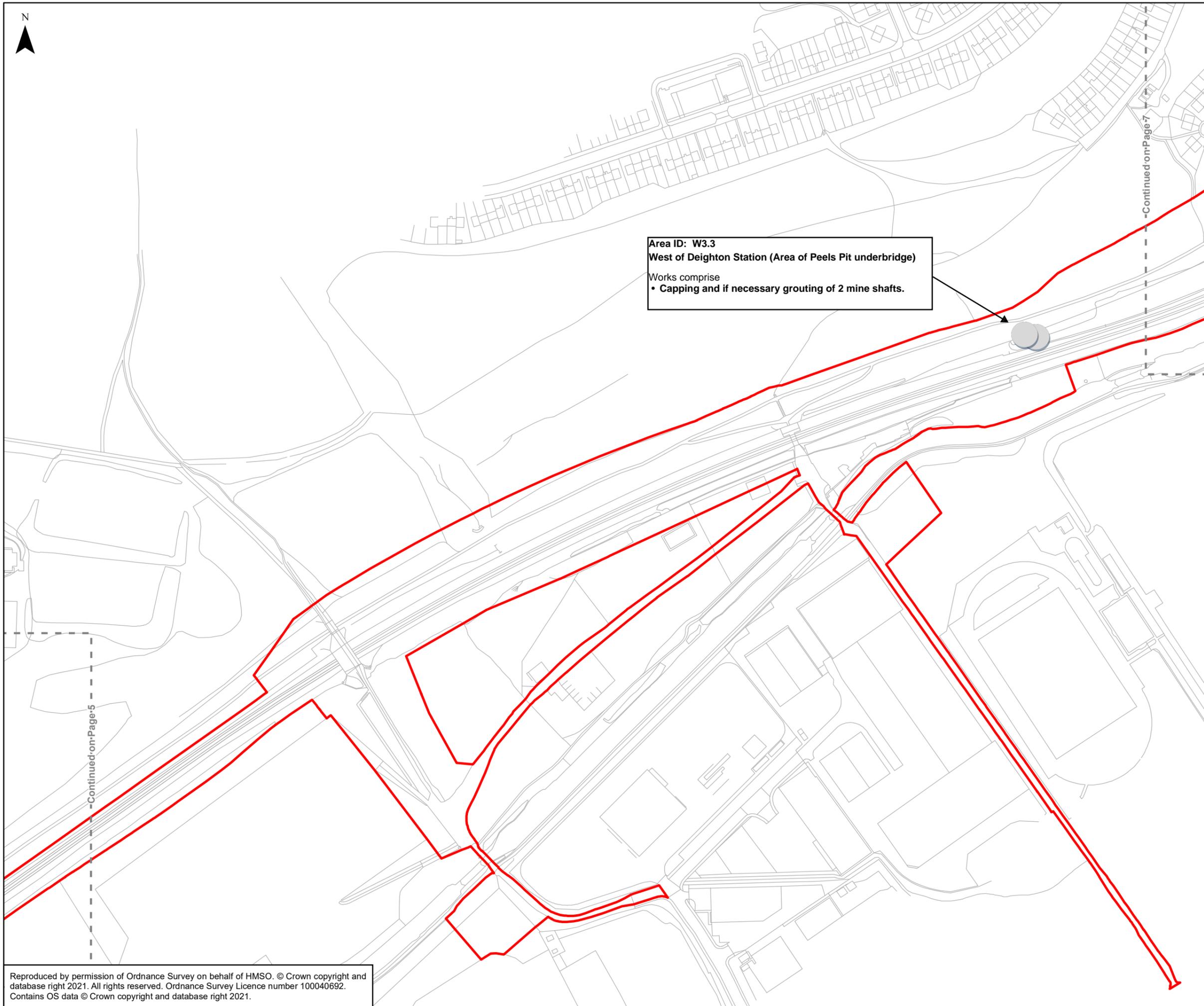
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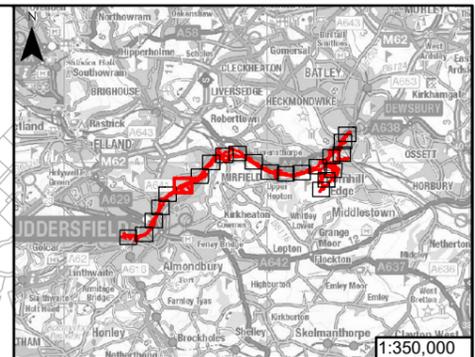
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Area ID: W3.3
West of Deighton Station (Area of Peels Pit underbridge)
 Works comprise

- Capping and if necessary grouting of 2 mine shafts.



- Scheme Boundary
- Adjacent Map Sheet
- Probe and grout
- Track bed reinforcement
- Works to mine shafts and adits



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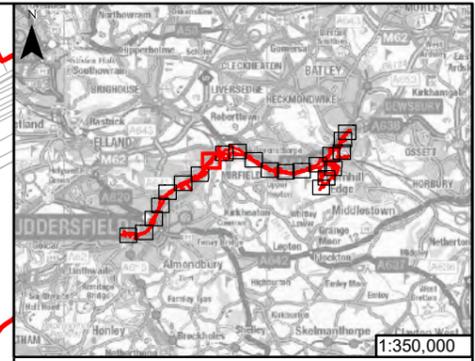
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- Scheme Boundary
- Adjacent Map Sheet
- Probe and grout
- Track bed reinforcement
- Works to mine shafts and adits

Area ID: W3.3-1
Area of Bradley's No. 2 (BBW/1)
Overbridge (MVL3/105)

Works comprise

- Grid probing and grouting of voids for track, OLE and adit.



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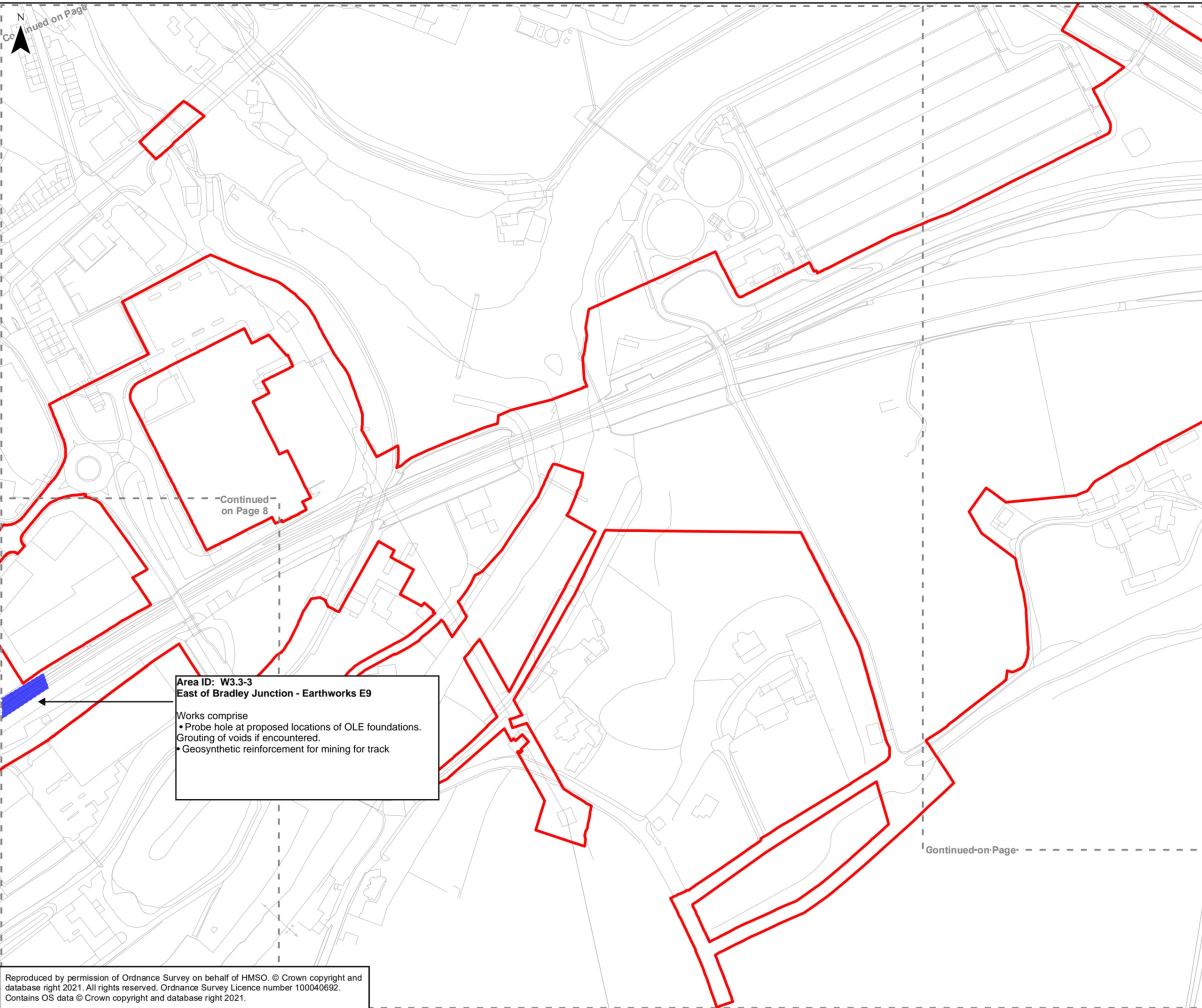
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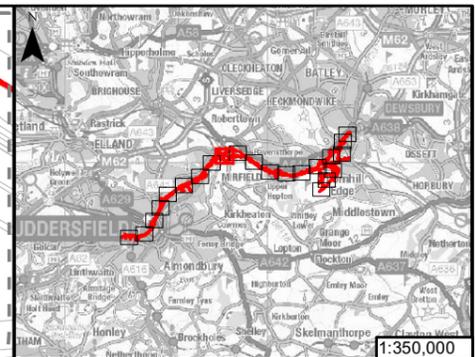
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Area ID: W3.3-3
East of Bradley Junction - Earthworks E9

Works comprise

- Probe hole at proposed locations of OLE foundations.
- Grouting of voids if encountered.
- Geosynthetic reinforcement for mining for track



Legend

- Scheme Boundary
- Adjacent Map Sheet
- Probe and grout
- Track bed reinforcement
- Works to mine shafts and adits

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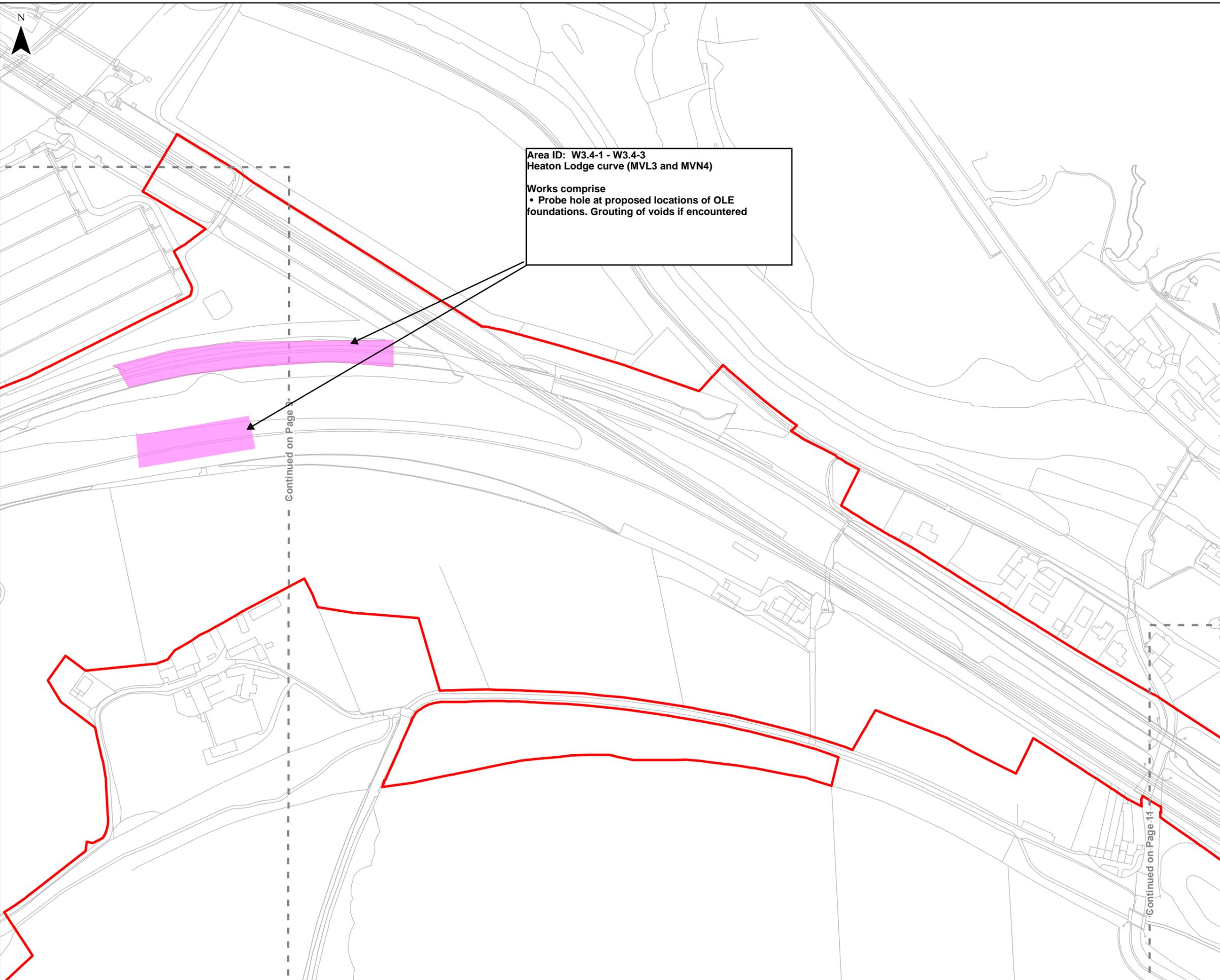
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Drawing Title
Stage 3 works

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Approved	P.Butler	Signed Electronically	Date	
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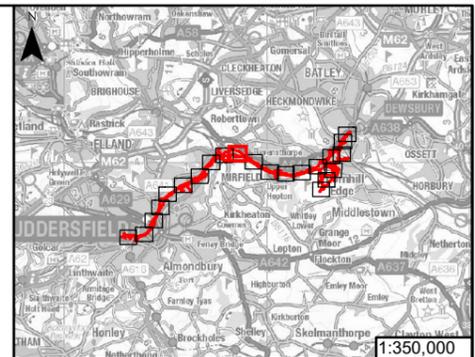
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Area ID: W3.4-1 - W3.4-3
 Heaton Lodge curve (MVL3 and MVN4)

Works comprise

- Probe hole at proposed locations of OLE foundations. Grouting of voids if encountered



- Scheme Boundary
- Adjacent Map Sheet
- Probe and grout
- Track bed reinforcement
- Works to mine shafts and adits



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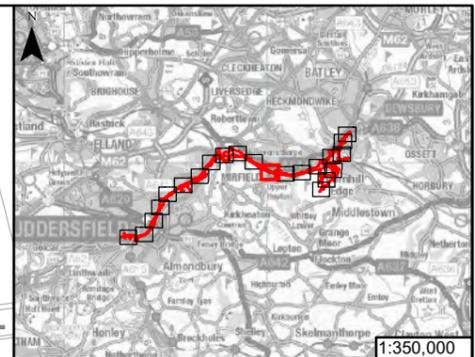
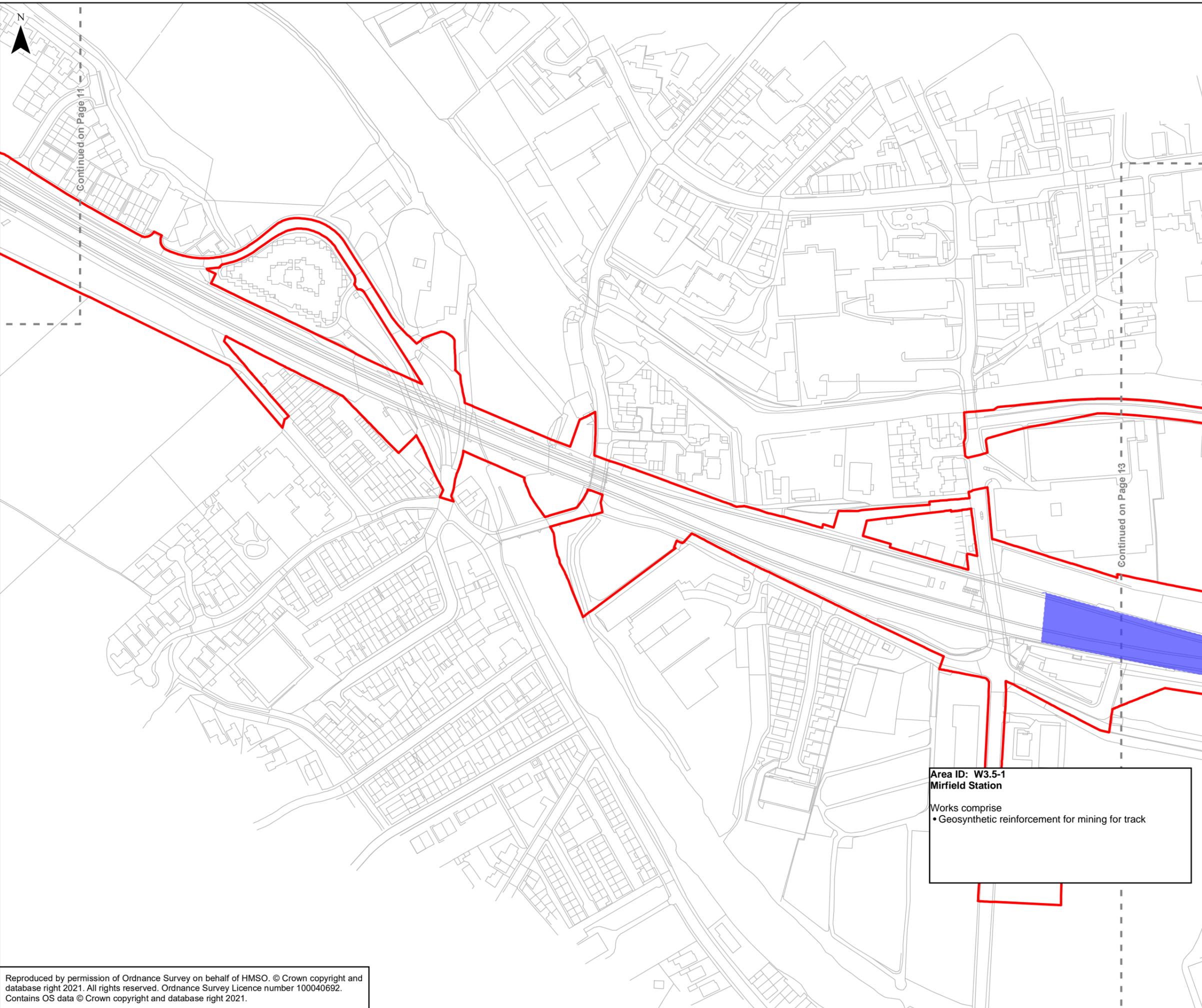
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THE NETWORK RAIL (HUDDERSFIELD TO WESTTOWN (DEWSBURY) IMPROVEMENTS) ORDER

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Stage 3 works			
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- Scheme Boundary
- Adjacent Map Sheet
- Probe and grout
- Track bed reinforcement
- Works to mine shafts and adits



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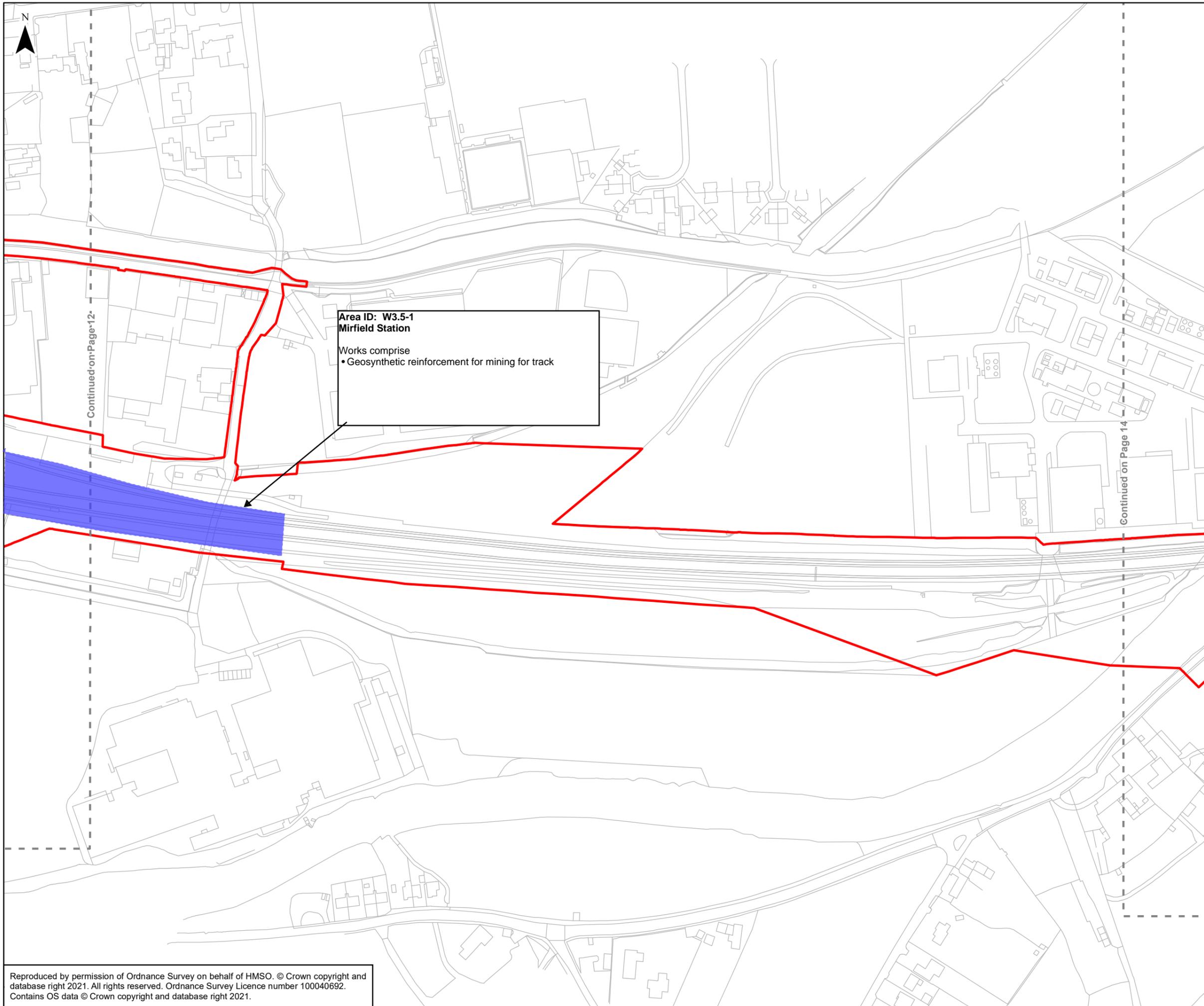
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Area ID: W3.5-1
Mirfield Station

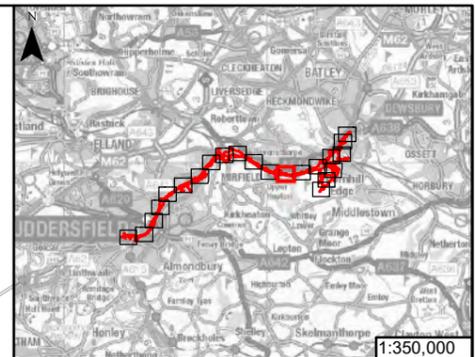
Works comprise

- Geosynthetic reinforcement for mining for track

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**Area ID: W3.5-1
Mirfield Station**
Works comprise
• Geosynthetic reinforcement for mining for track



1:350,000

Scheme Boundary
Adjacent Map Sheet

Stage 3 works

Probe and grout

Track bed reinforcement

Works to mine shafts and adits

0 10 20 40 60 80 100 Metres
SCALE 1:2,500

P01	12/02/21	FIRST ISSUE	RB	PB	PB
Rev	Date	Description of Revisions	Drwn	Chkd	Appr
Status					Suitability
SHARED					



Project
TRANSPENNINE ROUTE UPGRADE

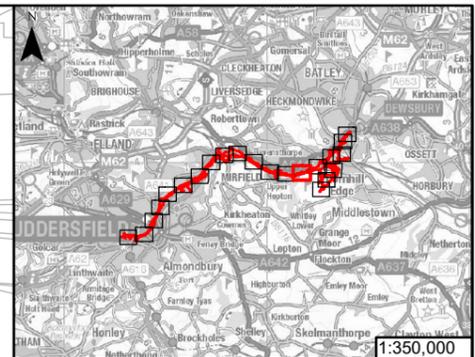
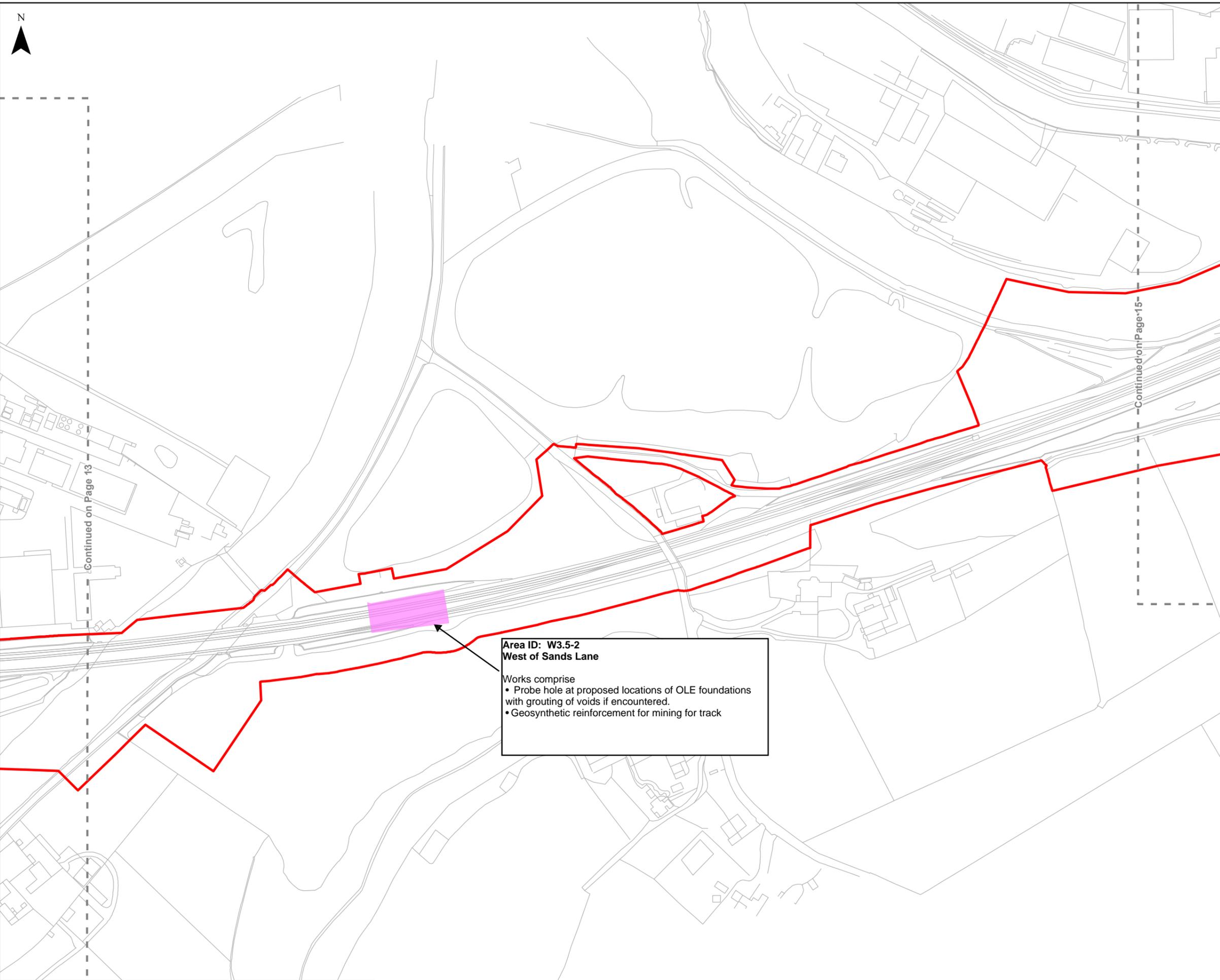
Contract No.
151667

Scheme Title
THE NETWORK RAIL (HUDDERSFIELD TO WESTTOWN (DEWSBURY) IMPROVEMENTS) ORDER

Drawing Title
Stage 3 works

Designed	R.Bowes	Signed Electronically	Date	12/02/2021
Drawn	R.Bowes	Signed Electronically	Date	12/02/2021
Checked	P.Butler	Signed Electronically	Date	12/02/2021
Approved	P.Butler	Signed Electronically	Date	12/02/2021
Scale(s)	1:2,500	ELR & Project Chainage	---	
Alternative Reference	---			Sheet 10 of 11
Drawing Number	151667-TSA-00-TRU-REP-W-EN-001288			Revision P04

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- Scheme Boundary
- Adjacent Map Sheet
- Probe and grout
- Track bed reinforcement
- Works to mine shafts and adits



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Scale(s)
1:2,500

ELR & Project Chainage

Alternative Reference

Sheet
11 of 11

Drawing Number
151667-TSA-00-TRU-REP-W-EN-001288

Revision
P04

**Area ID: W3.5-2
West of Sands Lane**

Works comprise

- Probe hole at proposed locations of OLE foundations with grouting of voids if encountered.
- Geosynthetic reinforcement for mining for track

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