A46 Newark Bypass

Scheme Number: TR010065

7.67 Cross sections requested by the Environment Agency

APFP Regulations 8(1)(k)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2010

Volume 7

MarchFebruary 2025

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

A46 Newark Bypass

Development Consent Order 202[**x**]

Cross sections requested by the Environment Agency

Regulation Number:	Regulation 8(1)(k)
Planning Inspectorate Scheme Reference	TR010065
Application Document Reference	7.67
Author:	A46 Newark Bypass Project Team, National Highways

Version	Date	Status of Version
Rev 1	February 2025	Deadline 5 submission
Rev 2	March 2025	Deadline 7 submission

Contents

1 Introduction

1.1.1 At the Issue Specific Hearing 3 held on the 8th December 2024 [EV9-005 the Applicant stated that they would provide cross sections for the Slough Dyke and the Scheme's interaction with the Cree's Lane and Newark Roundabout flood defence embankments. These details are provided within this document and ~~have been~~were presented to the Environment Agency during a technical meeting on the 27th January 2025.

~~1.1.1~~1.1.2 This document has been updated for Deadline 7 following the Environment Agency comments received at Deadline 6 [REP6-035] to present further detail to describe the interaction with the Scheme and the Newark Roundabout flood defense embankment. This information was presented to the Environment Agency at a meeting held on the 11th March in which the open items within the Statement of Common Ground were discussed.

2 Slough Dyke.

2.1.1 The Applicant has produced a cross section of the diversion of the Slough Dyke as requested by the Environment Agency. A plan and cross section are included within Appendix A of this document.

2.1.2 The Slough Dyke is shown on sheet 7 of the Environmental Master Plan [AS-026] and described in section 4 of the Hydraulic Modelling Technical Note [REP3-034].

3 Defence Embankments

3.1 Cree's Lane embankment

3.1.1 The Crees Lane embankment is a 239 metre long flood defence embankment located on the south bank of the River Trent between the A46 and Cress Lane (figure 3-1). The embankment is constructed from clay with a clay key penetrating one metre below ground level. An access track, incorporating Newark bridleway 3, is located on top of the embankment.

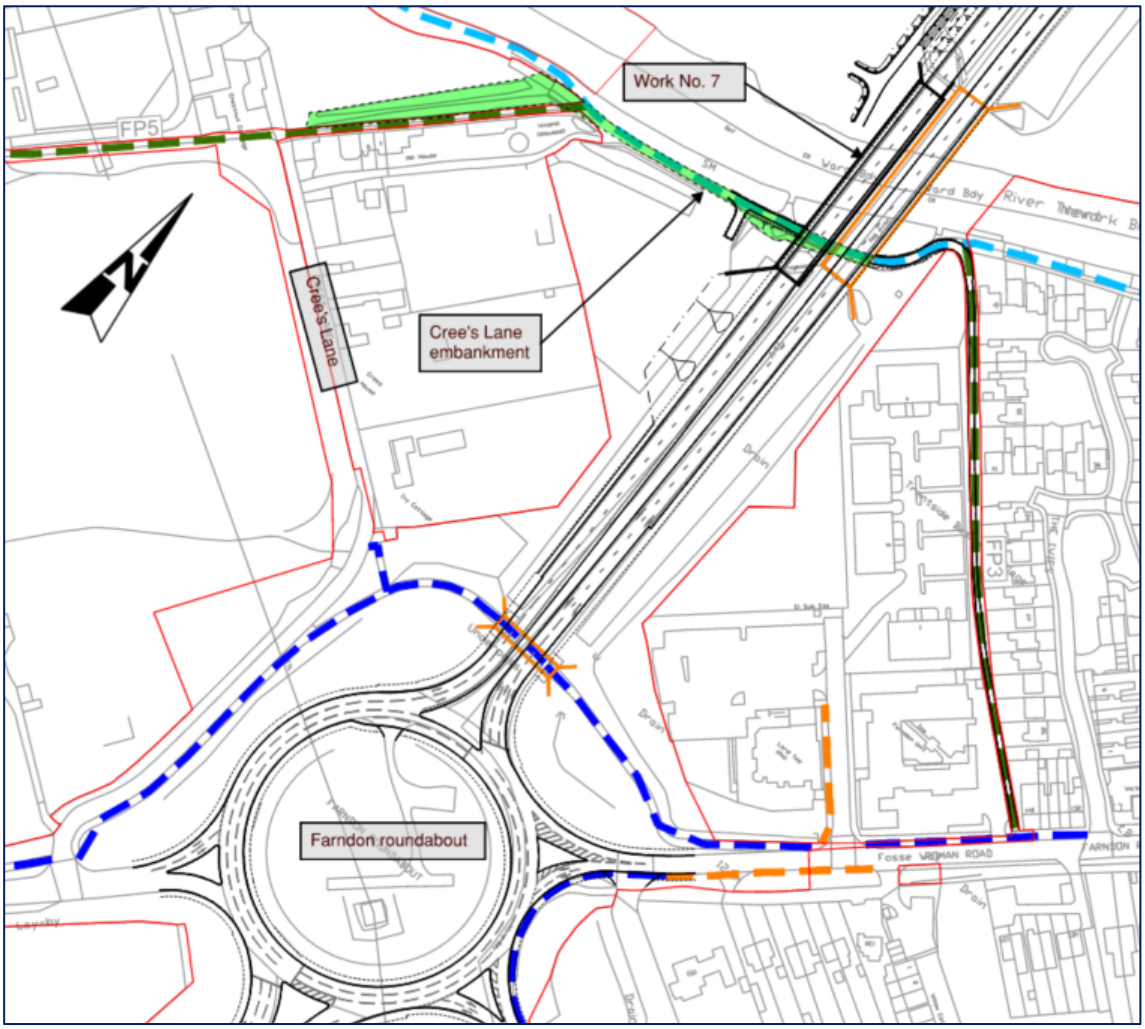


Figure 3-1 Location of Cree's Lane embankment.

3.1.2 The new Windmill viaduct, Works No 7 on the Works Plans [REP3-002] spans over the flood defence embankment with no permanent detriment to its location or structure.

3.1.3 The temporary works area for the construction of the bridge (Works No 127) will require a crushed stone platform to be laid to support the construction plant that will be required to construct the bridge, such as piling rigs and cranes. This stone platform would be laid against the existing flood structure and will not reduce its structural integrity (figure 3-2).

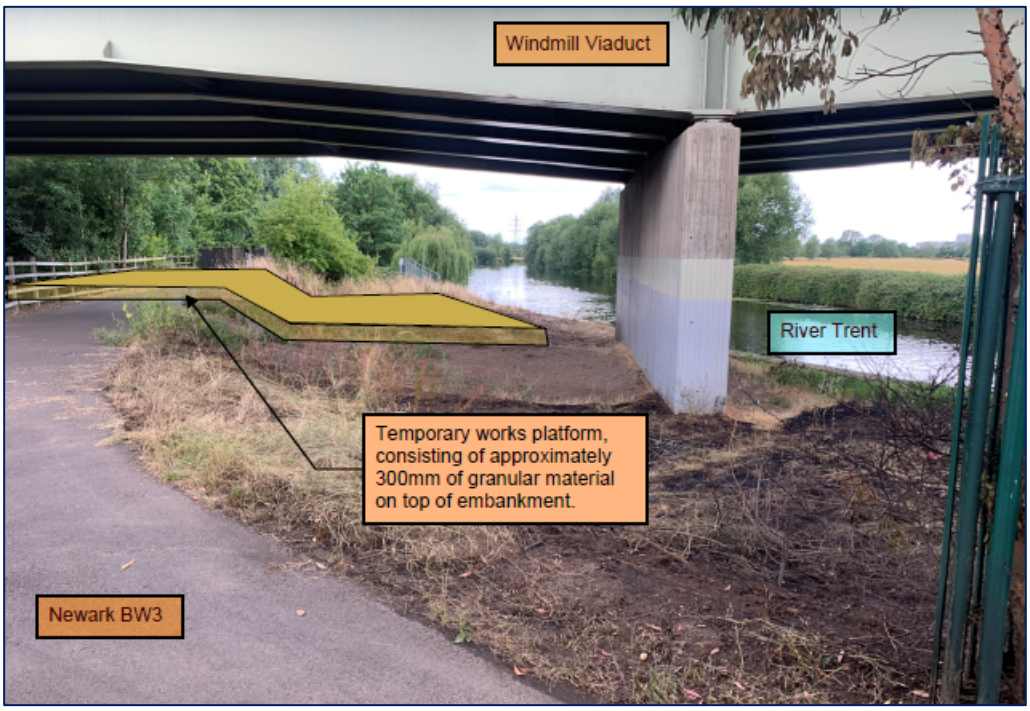


Figure 3-2 Interface with Cree's Lane embankment

3.1.4 Upon completion of the new bridge structure the temporary works will be removed and the land reinstated to previous use. The bridleway (BW2) and access track (Works No 6) are re-opened following completion of construction of the bridge and the reinstatement of Works No 127. Works No 6 provides vehicle and foot access to the Crees Lane Embankment for inspection and maintenance works.

3.2 Newark Roundabout embankment

3.2.1 The Newark Roundabout Embankment is a 325 metre long and 2- to 3- meter -high earthwork embankment located to the southeast of the A46 between Kelham Road and the southeast quadrant of the Cattle Market Roundabout (figure 3.3). The embankment is constructed from local Marl with a shear key that protrudes 1 metre into the ground under the centre of the bund. There are also two grout curtain walls through the bund. The embankment was constructed as part of the original Newark Rrelief Road between 1987 and 1990 and is described as the Kelham Road Floodbank within the Geotechnical Feedback Report for the project (November 1991, Department for Transport). A cross sectional detail of the embankment is provided in figure 3.4.~~The Newark Roundabout embankment is a 325 metre long embankment located to the southeast of the A46 between Kelham Road and the southeast quadrant of the Cattle Market Roundabout. (figure 3-3).~~

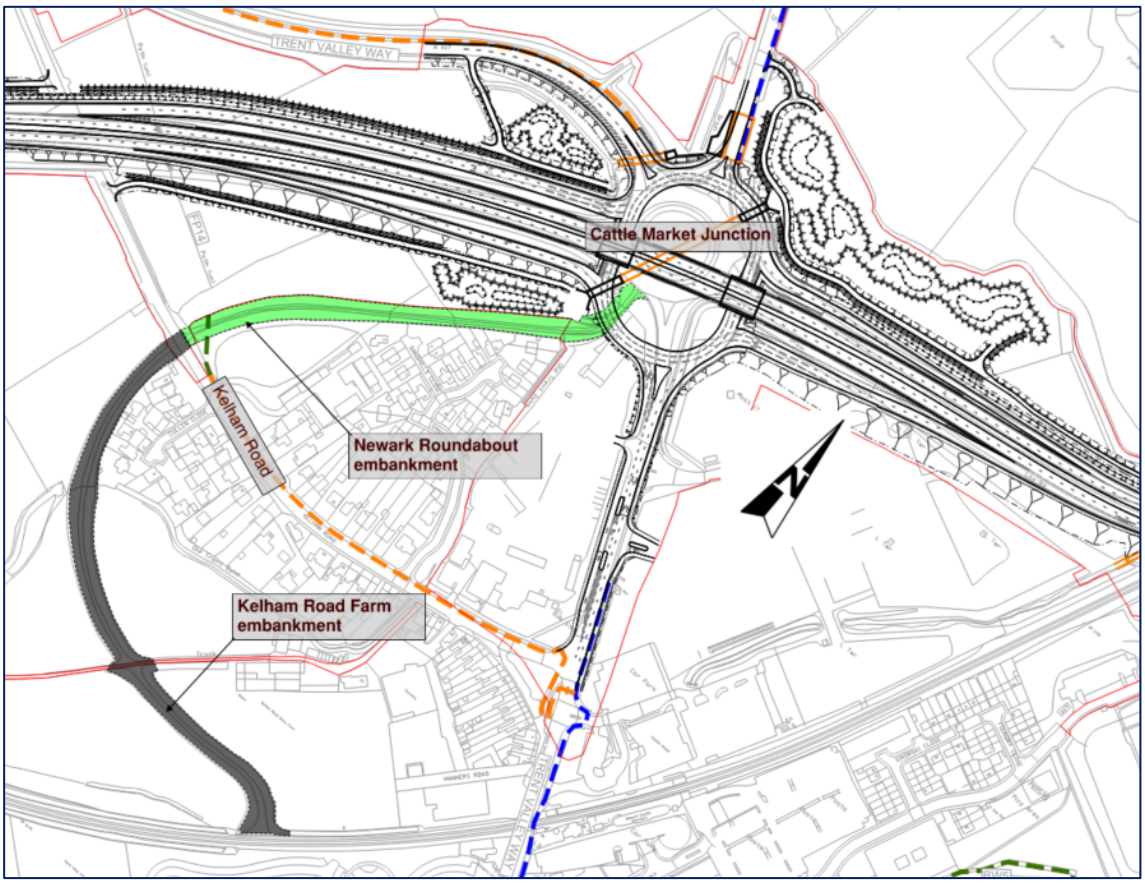


Figure 3-3 Location of the Newark roundabout embankment

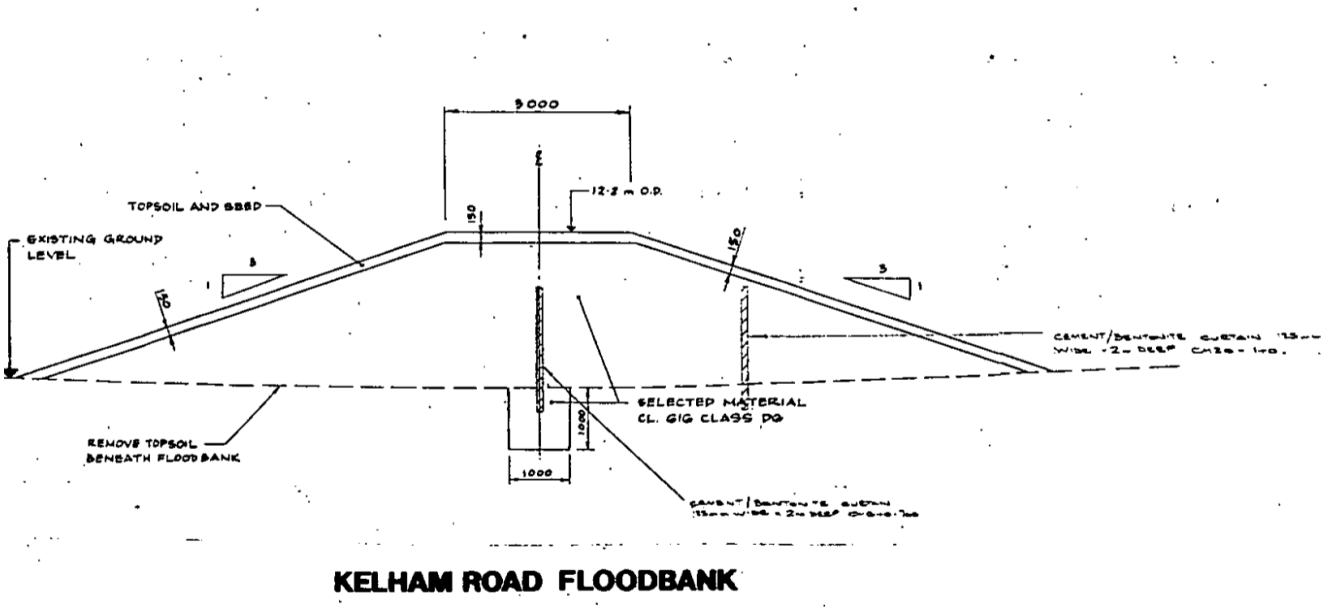


Figure 3-4 Cross section through the Newark Roundabout flood defence embankment.

~~3.2.2 The embankment is constructed from Marl with a shear key that protrudes 1 metre into the ground under the center of the bund. There are two grout curtain walls through the bund.~~

3.2.2 Photographs of the existing flood defense embankment are included in Appendix B.

3.2.3 Works No 40 is required for the widening for the new Cattle Market junction and interfaces with the eastern end of the flood defence. The southeast corner of the new roundabout will incorporate the last 10 meters of the eastern end of the flood embankment within the earthworks for the new roundabout (figure 3-4).

3.2.4 The new earthworks will be benched into the existing embankment to form a solid, homogeneous structure (figures 3-5 and 3-6).

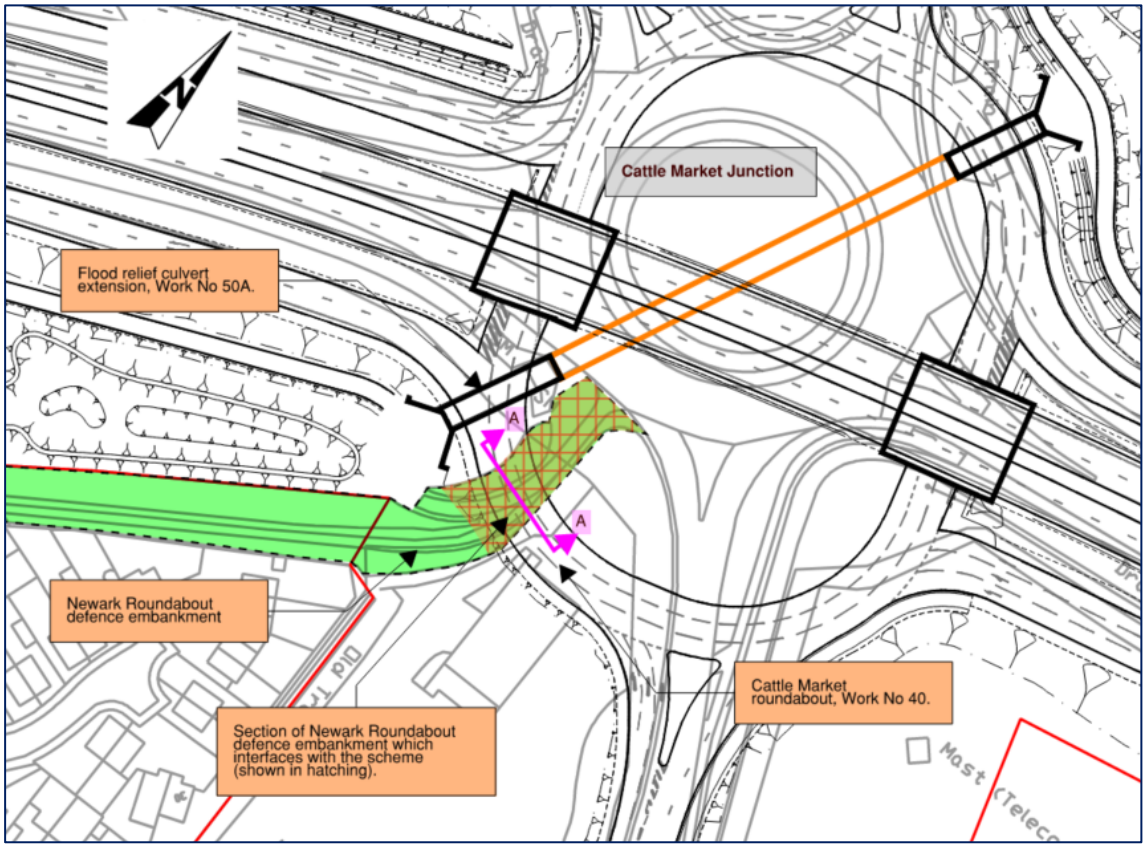
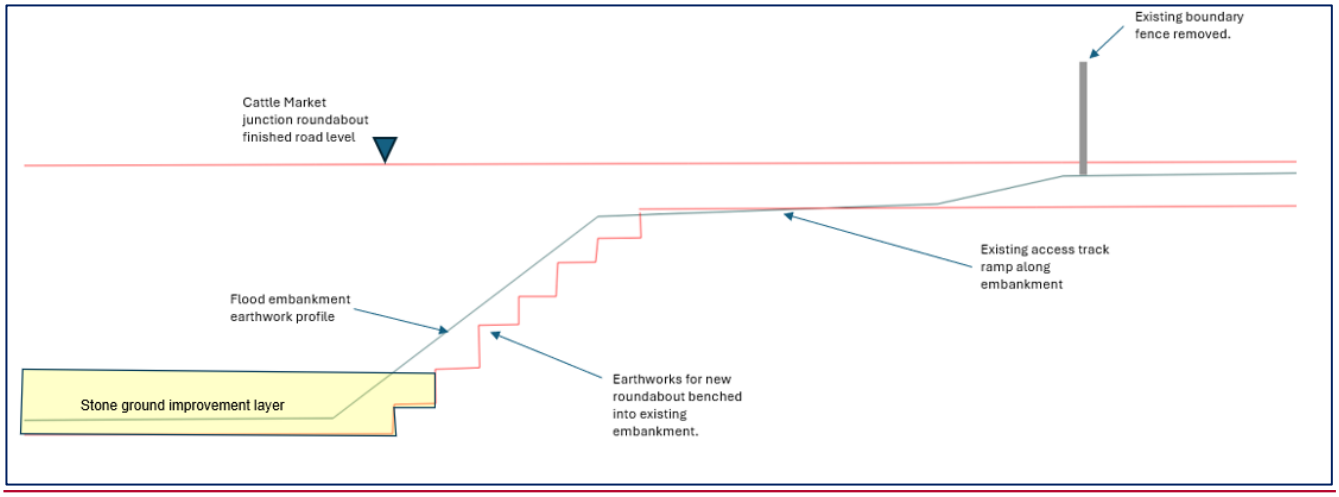


Figure 3-4 Location of interface between Scheme and Newark roundabout embankment



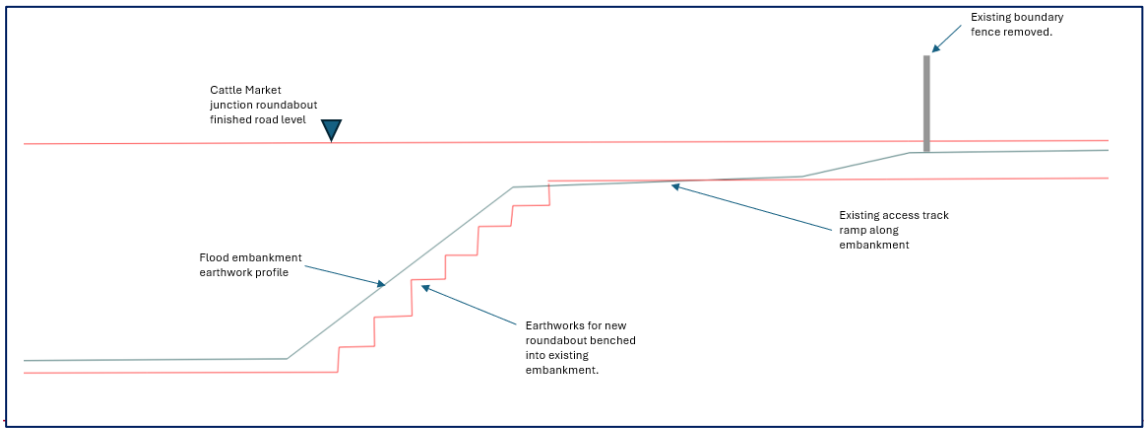


Figure 3-5 Cross section A-A through embankment

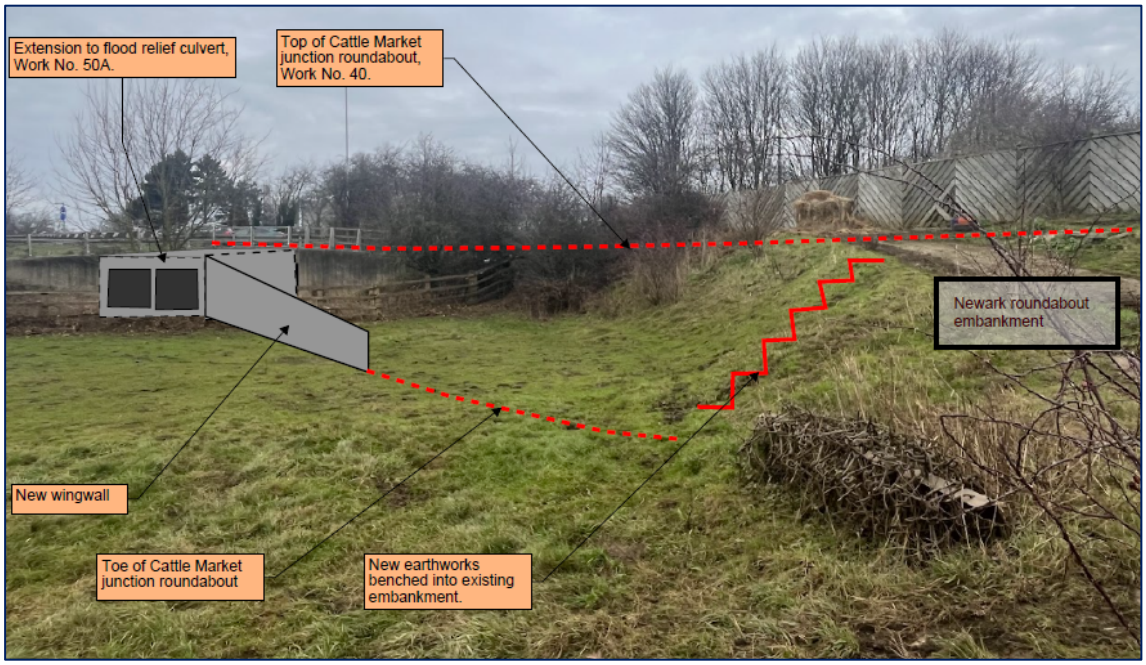


Figure 3-6 Section looking north across existing embankment.

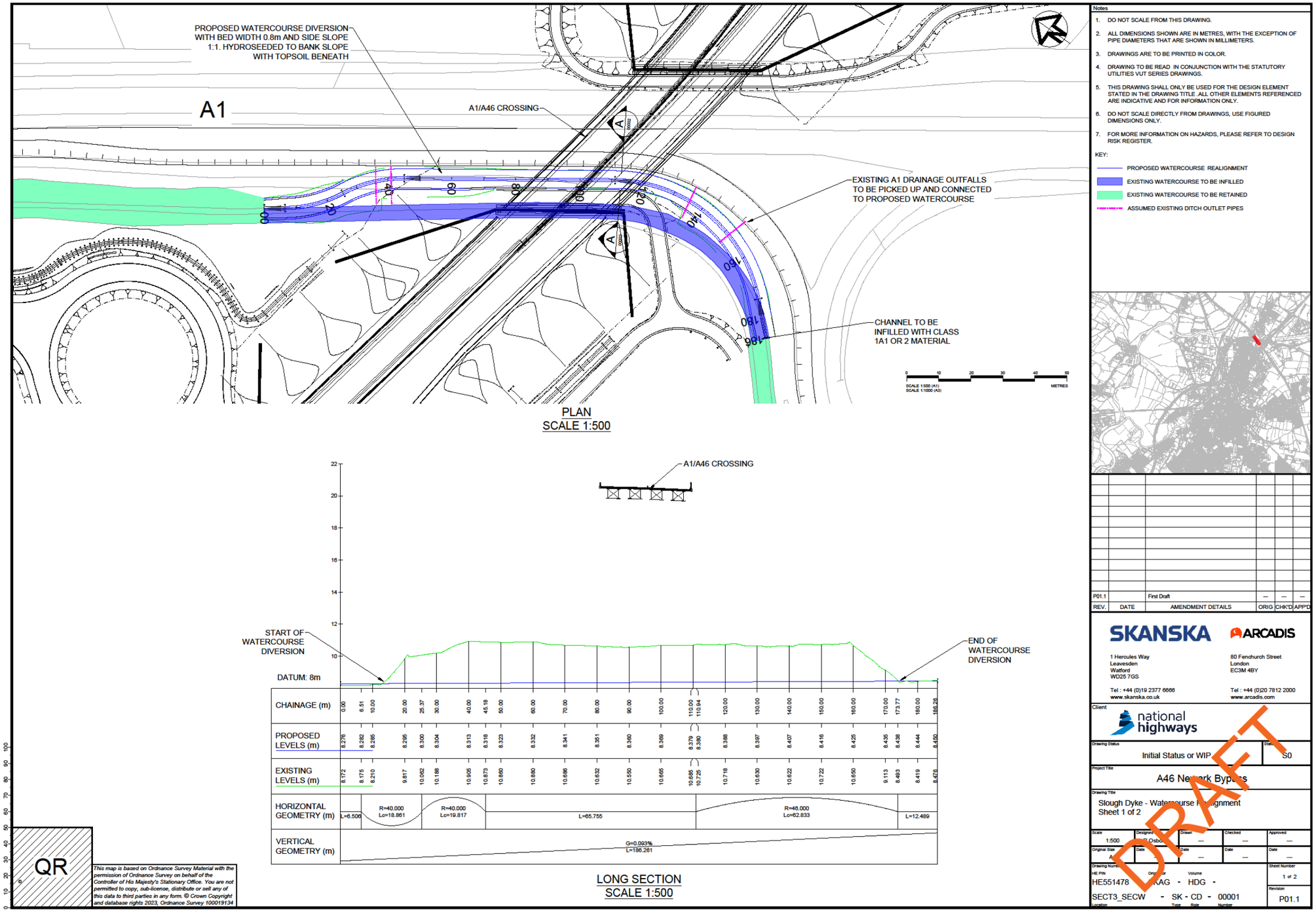
3.2.5 The risk of collapse due to weak material will be managed by the Applicant through mitigation measures set out within the Flood Risk ~~Assessment~~Activity Permit (FRAP) which will be approved by the Environment Agency prior to the benching works to the embankment commencing. These mitigation measures could include; localised testing of the bund prior to excavation to confirm its integrity and undertaking the excavation works in stages to limit the length of exposed benching.

3.2.6 The following construction methodology and sequencing is proposed by the Applicant and will be confirmed within the FRAP application for acceptance by the Environment Agency:-

i) Interface with embankments identified on the design hazard log and included in pre-construction information and health and safety file.
ii) Install warning signs for buried services and defence embankment.
iii) Install boundary fencing along the Order Limit, along the toe of the defence embankment.
iv) Site clearance. Removal of vegetation and existing fences.

v) Excavate 0.5m by 0.5m benches into the west face of the flood defence embankment with a 360-degree tracked excavator.
vi) Install stone starter layer to form temporary working platform for culvert extension and installation of ground improvement under the new slip road embankment.
vii) Install over pumping system for the culvert extension.
viii) Excavate for foundations of culvert extension and construct reinforced concrete culvert and wingwalls.
ix) Place and compact fill material between the flood relief culvert and the defence embankment to form the earthworks to the new Cattle Market roundabout.
x) Place and compact road capping and subbase layers. Install drainage, kerbs, ducting and street furniture.
xi) Surfacing to roundabout.
xii) As built surveys of new infrastructure. Provided to asset owner to allow GIS database to be updated.
xiii) Hazard Log and Health and Safety File updated.

Appendix A


PROPOSED WATERCOURSE DIVERSION WITH BED WIDTH 0.8m AND SIDE SLOPE 1:1. HYDROSEEDED TO BANK SLOPE WITH TOPSOIL BENEATH
A1
A1/A46 CROSSING
EXISTING A1 DRAINAGE OUTFALLS TO BE PICKED UP AND CONNECTED TO PROPOSED WATERCOURSE
CHANNEL TO BE INFILLED WITH CLASS 1A1 OR 2 MATERIAL
PLAN
SCALE 1:500
A1/A46 CROSSING
START OF WATERCOURSE DIVERSION
END OF WATERCOURSE DIVERSION
DATUM: 8m
CHAINAGE (m)
PROPOSED LEVELS (m)
EXISTING LEVELS (m)
HORIZONTAL GEOMETRY (m)
VERTICAL GEOMETRY (m)
R=40.000 Lo=18.861
R=40.000 Lo=19.817
L=65.755
R=46.000 Lo=62.833
L=6.500
L=12.489
G=0.093% L=186.261
LONG SECTION
SCALE 1:500
Notes
1. DO NOT SCALE FROM THIS DRAWING.
2. ALL DIMENSIONS SHOWN ARE IN METRES, WITH THE EXCEPTION OF PIPE DIAMETERS THAT ARE SHOWN IN MILLIMETERS.
3. DRAWINGS ARE TO BE PRINTED IN COLOR.
4. DRAWING TO BE READ IN CONJUNCTION WITH THE STATUTORY UTILITIES VUT SERIES DRAWINGS.
5. THIS DRAWING SHALL ONLY BE USED FOR THE DESIGN ELEMENT STATED IN THE DRAWING TITLE. ALL OTHER ELEMENTS REFERENCED ARE INDICATIVE AND FOR INFORMATION ONLY.
6. DO NOT SCALE DIRECTLY FROM DRAWINGS, USE FIGURED DIMENSIONS ONLY.
7. FOR MORE INFORMATION ON HAZARDS, PLEASE REFER TO DESIGN RISK REGISTER.
KEY:
PROPOSED WATERCOURSE REALIGNMENT
EXISTING WATERCOURSE TO BE INFILLED
EXISTING WATERCOURSE TO BE RETAINED
ASSUMED EXISTING DITCH OUTLET PIPES
P01.1 First Draft
REV. DATE AMENDMENT DETAILS ORIG CHK'D APP'D
SKANSKA
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ARCADIS
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www.arcadis.com
Client
national highways
Initial Status or WIP
S0
A46 Newark Bypass
Slough Dyke - Watercourse Realignment
Sheet 1 of 2
1:500
HE551478 - XAG - HDG -
SECT3_SECW - SK - CD - 00001
P01.1
DRAFT
QR
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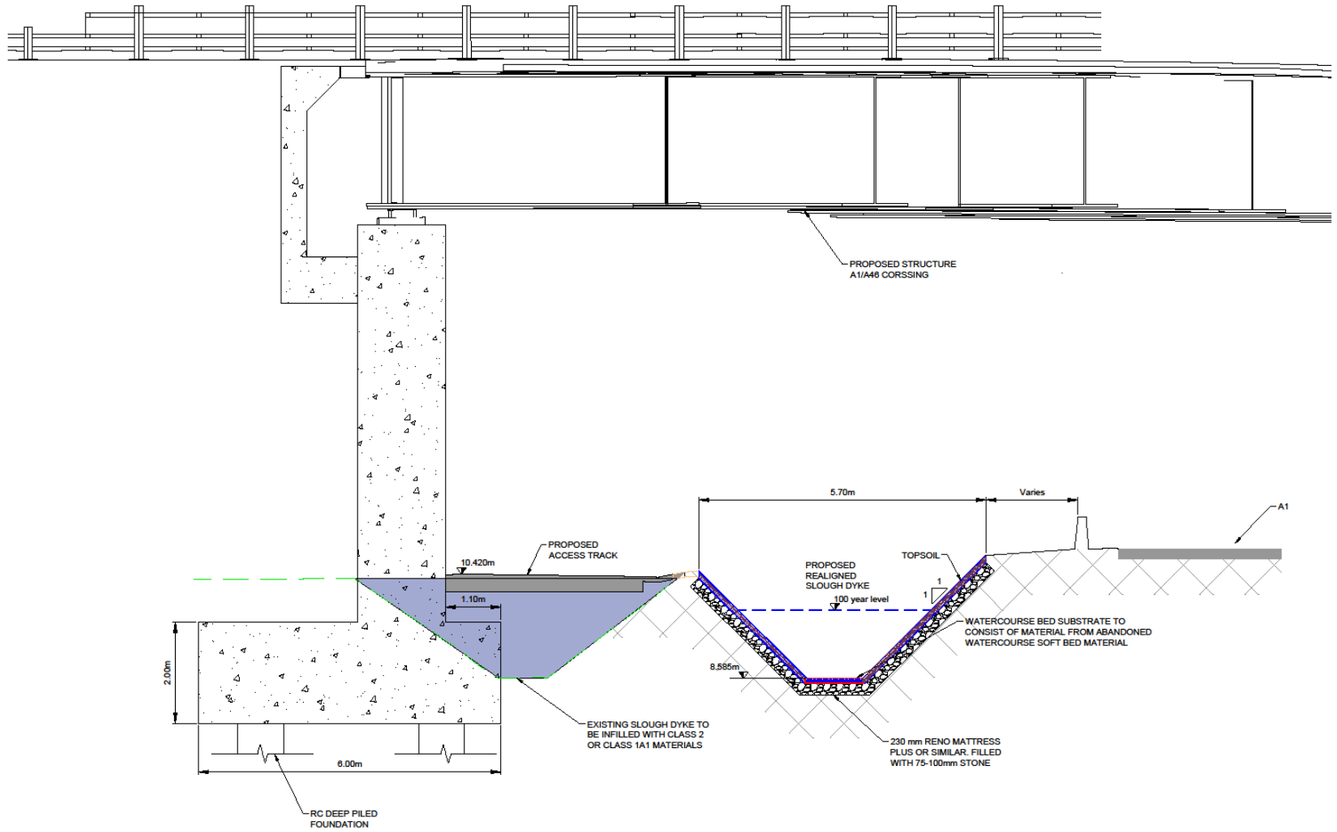

SECTION A - A
SCALE 1:50

Notes

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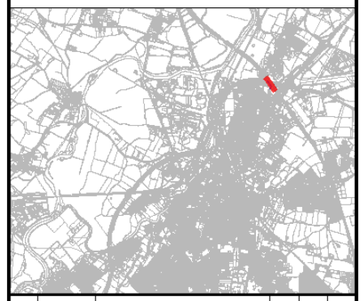

REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
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SKANSKA
1 Hercules Way
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Watford
WD25 7GS
Tel : +44 (0)19 2377 6666
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ARCADIS
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Client: national highways

Drawing Status: Initial Status or WIP — Status: S0

Project Title: A46 Newark Bypass

Drawing Title: Slough Dyke - Watercourse Realignment
Sheet 1 of 2

Scale	Designed	Drawn	Checked	Approved
1:500	[illegible]	--	--	--
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A1	--	--	--	--

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Sheet Number: 2 of 2
Revision: P01.1

SCALE 1:200 (A1)
SCALE 1:400 (A3)
METRES

Appendix B

Looking south along the defence embankment from the gated access in the southwest quadrant of the Cattle Market roundabout.

Looking south along the defence embankment from the northern east end of the embankment

Looking north along the toe of the defence embankment towards the Cattle Market roundabout.