



MetroWest+

Portishead Branch Line (MetroWest Phase 1)

TR040011

Applicant: North Somerset District Council

2.22 Avon Road Underbridge

General Arrangement Proposed Sheets 1 and 2 and Avon Road Underbridge Embankment Regrades

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009, regulation 5(2)(o)
Planning Act 2008

Author: Arup

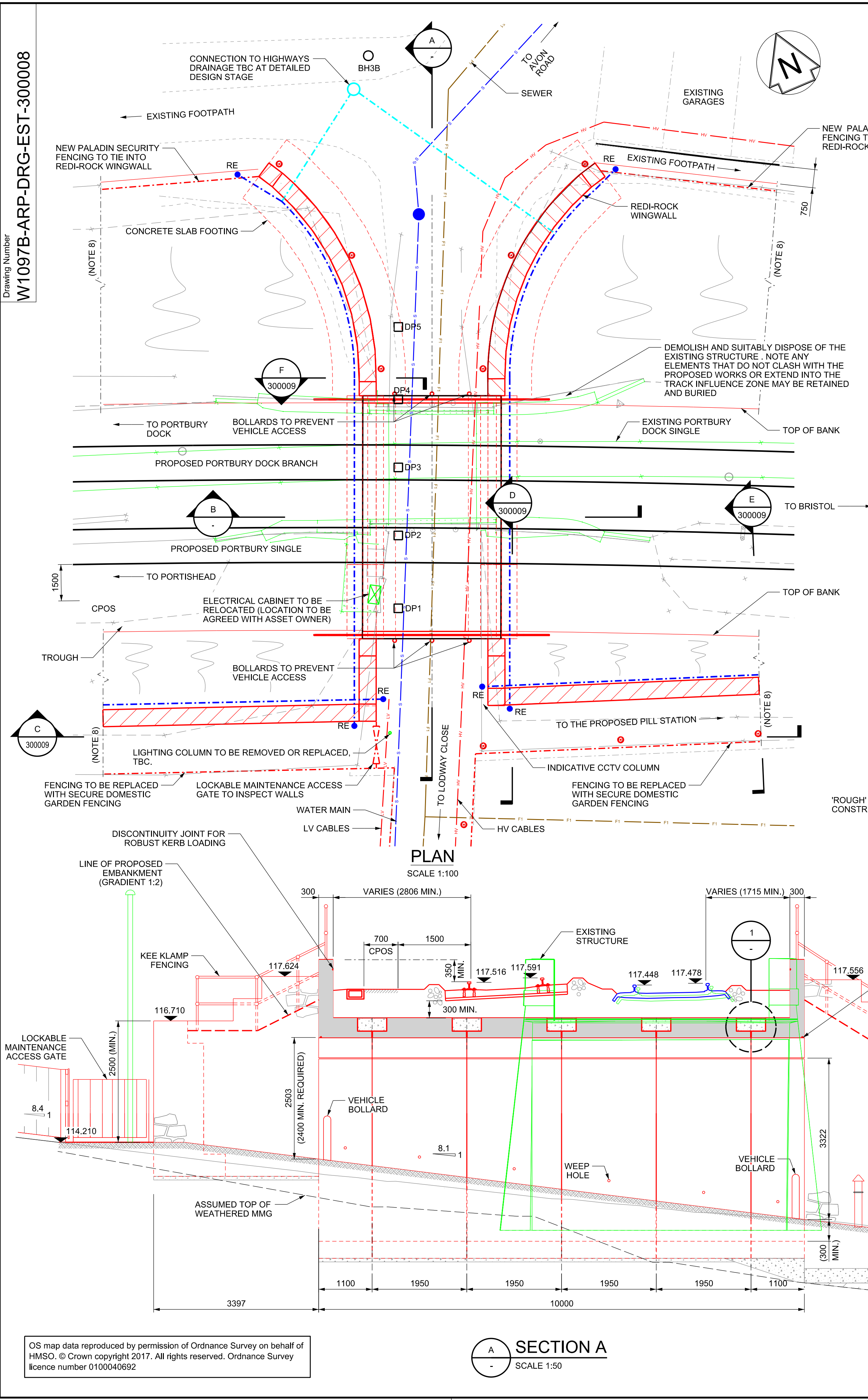
Date: November 2019



Document Index

2.22	Avon Road Underbridge General Arrangement Proposed (Sheet 1 & 2)*	The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009, regulation 5(2)(o)	W1097B-ARP-DRG-EST-300008-9 Rev A01
	Avon Road Underbridge Embankment Regrades	The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009, regulation 5(2)(o)	W1097B-ARP-DRG-ECV-300005 Rev A01

* The footpath to the station has been removed from scope, and there are no longer plans to provide CCTV as shown on drawings W1097B-ARP-DRG-EST-300008 and W1097B-ARP-DRG-EST-300009



LEGEND (PLAN)

- 200ø FULLY PERFORATED PIPE (1:300 MIN. FALL)
- 200ø PVC PIPE (NON-PERFORATED)
- RE RODDING EYE
- INDICATIVE FOOTPATH LIGHTING (TBC IN SEPARATE M&E SUBMISSION)
- BH3B BOREHOLE LOCATION. REFER TO FORM 001 FOR LOG DATA.
- DP(n) DYNAMIC PIT LOCATION. REFER TO FORM 001 FOR LOG DATA.
- DEVELOPMENT CONSENT ORDER (DCO) LAND BOUNDARY

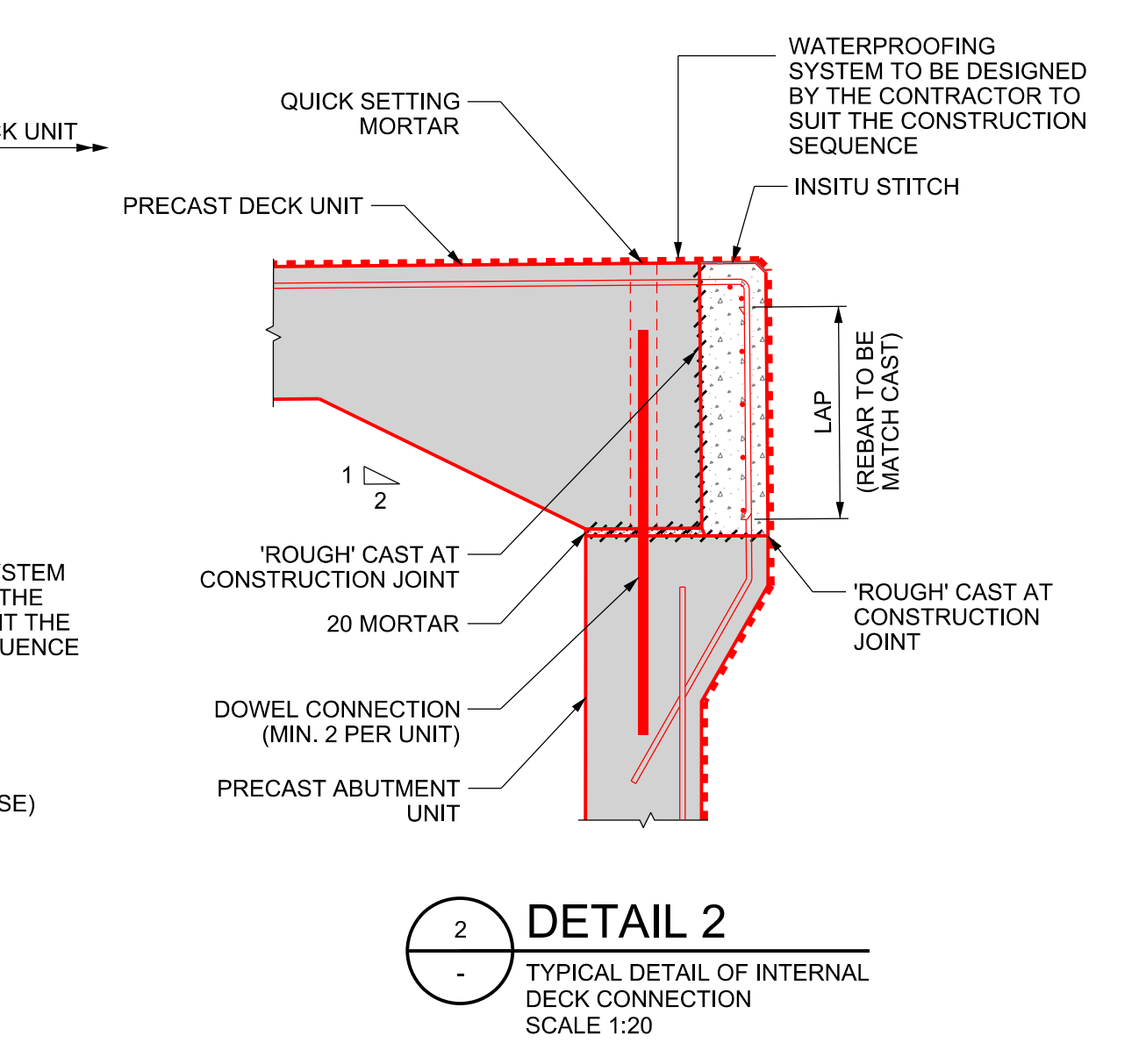
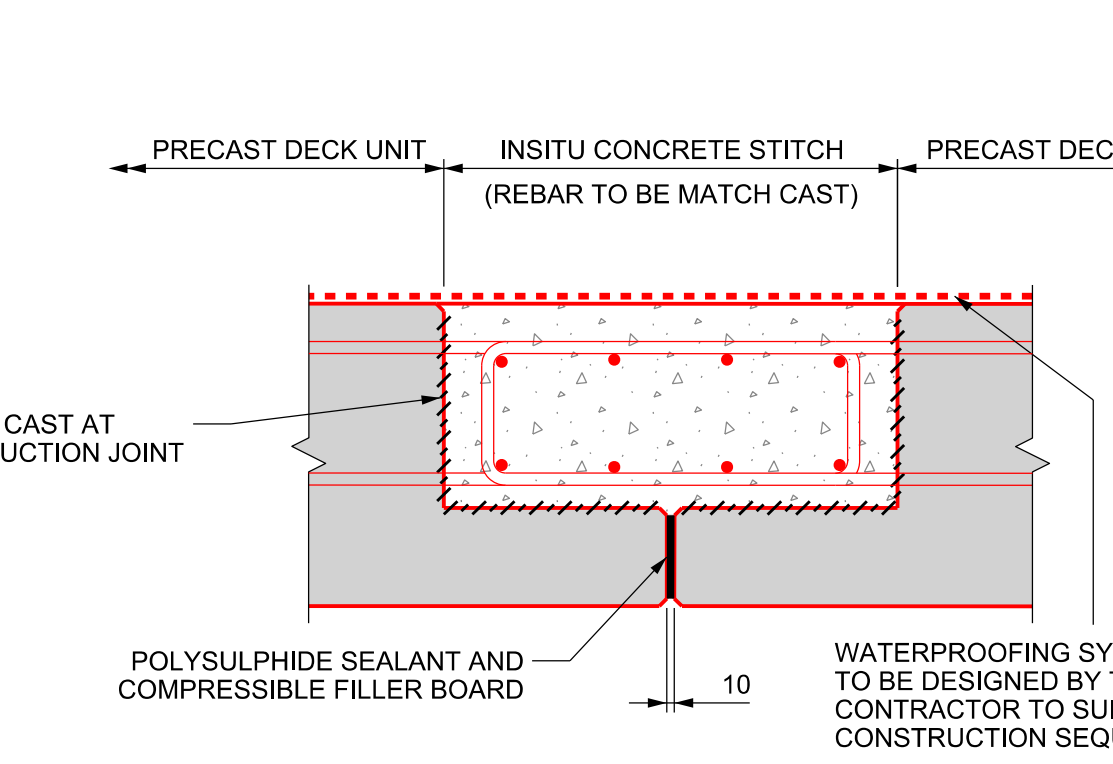
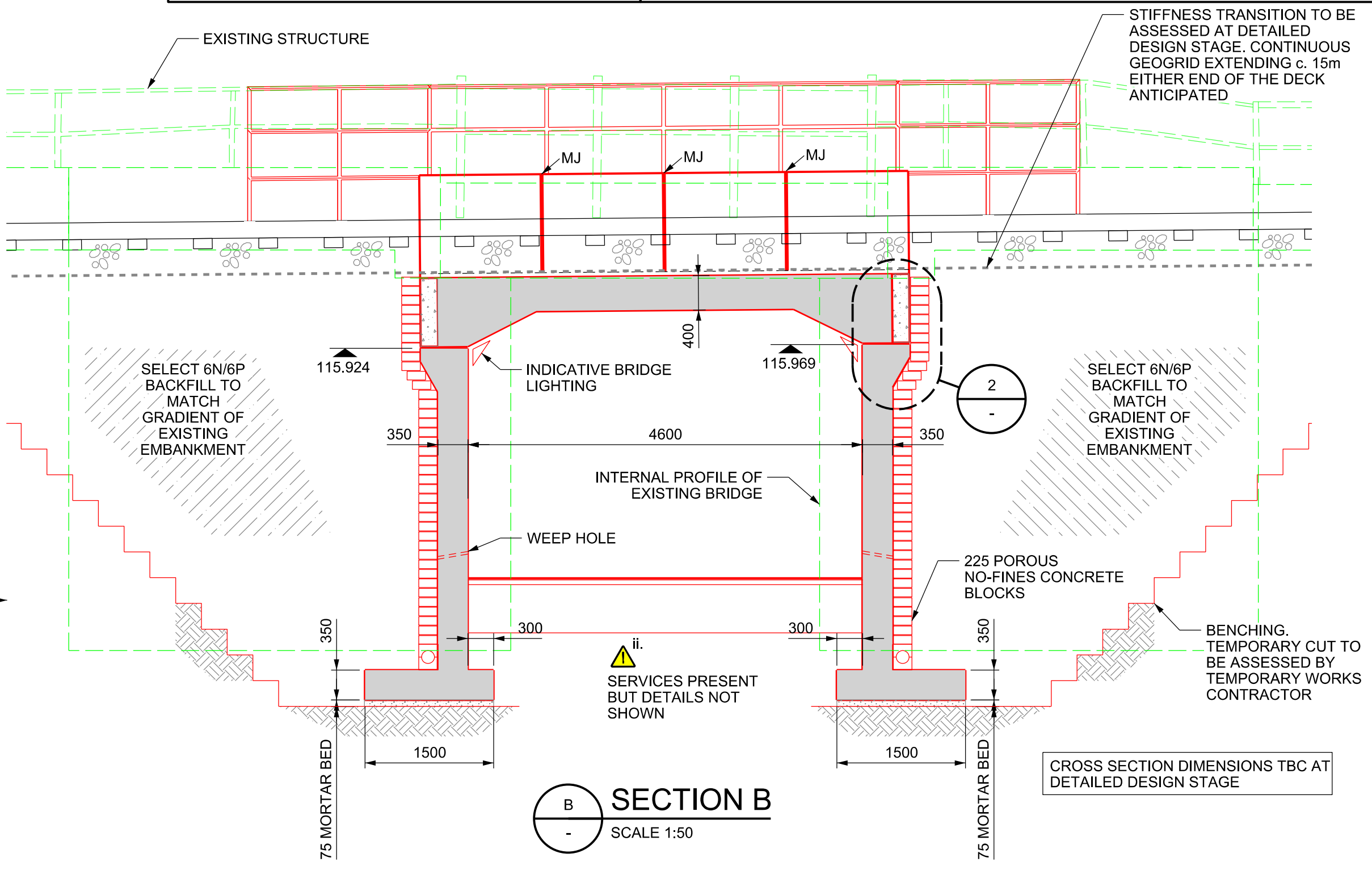
SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THIS TYPE OF WORK, SPECIAL ATTENTION SHOULD BE GIVEN TO:

- AS DRAWN, THE NOMINAL WEIGHTS OF THE ABUTMENT, INTERNAL DECK AND EXTERNAL DECK UNITS = 11 TONNES EACH. TO BE CONFIRMED FOLLOWING DETAILED DESIGN.
- BURIED SERVICES ARE PRESENT ACROSS THE SITE. THE PRECISE POSITIONS OF THESE ARE TO BE VERIFIED BY THE CONTRACTOR PRIOR TO DETAILED DESIGN. CONSULTATION WITH ASSET OWNERS IS TO BE UNDERTAKEN AT DETAILED DESIGN FOR PROTECTION OR DIVERSION REQUIREMENTS. THERE IS RESIDUAL RISK THAT ONEROUS REQUIREMENTS MAY SIGNIFICANTLY AFFECT THE PROPOSED WORKS.
- THERE IS LIMITED TOPOGRAPHIC SURVEY AVAILABLE AT THIS SITE AND THE FORM F001 DESIGN IS BASED ON INTERPRETATION OF LIDAR DATA. FULL TOPOGRAPHIC SURVEY IS REQUIRED PRIOR TO DETAILED DESIGN.

GENERAL NOTES

- ALL DIMENSIONS ARE IN MILLIMETRES (MM).
- ALL LEVELS ARE IN METRES ABOVE SNAKE GRID RBEPP12 (ORDNANCE DATUM + 100M).
- THIS DRAWING IS BASED ON TOPOGRAPHICAL AND LIDAR SURVEY UNDERTAKEN BY SEVERN PARTNERSHIP LTD. IN 2015.
- THE TOPOGRAPHICAL MODEL IS BASED ON INTERPRETATION OF LIDAR DATA COLLECTED PRIOR TO VEGETATION CLEARANCE. THE EMBANKMENT SHOULD BE CLEARED OF ALL VEGETATION AND RE-SURVEYED PRIOR TO DETAILED DESIGN.
- THIS DESIGN IS BASED ON GROUND CONDITIONS PRESENTED IN BH3B AND DP1-5 UNDERTAKEN AS PART OF THE 2015 GROUND INVESTIGATION.
- THE ALTERNATIVE ACCESS TO PILL STATION AND ALL M&E DETAILS ARE COVERED WITHIN A SEPARATE SUBMISSION. ALL DETAILS SHOWN WITHIN THIS PACKAGE ARE INDICATIVE.
- THIS SUBMISSION CONSIDERS ONLY 10m OF EMBANKMENT WORKS EITHER SIDE OF THE BRIDGE. EARTHWORKS BEYOND THIS EXTENT ARE CONSIDERED IN A SEPARATE SUBMISSION.



ASSUMED CONSTRUCTION SEQUENCE

STAGE 1: PRE-POSSESSION

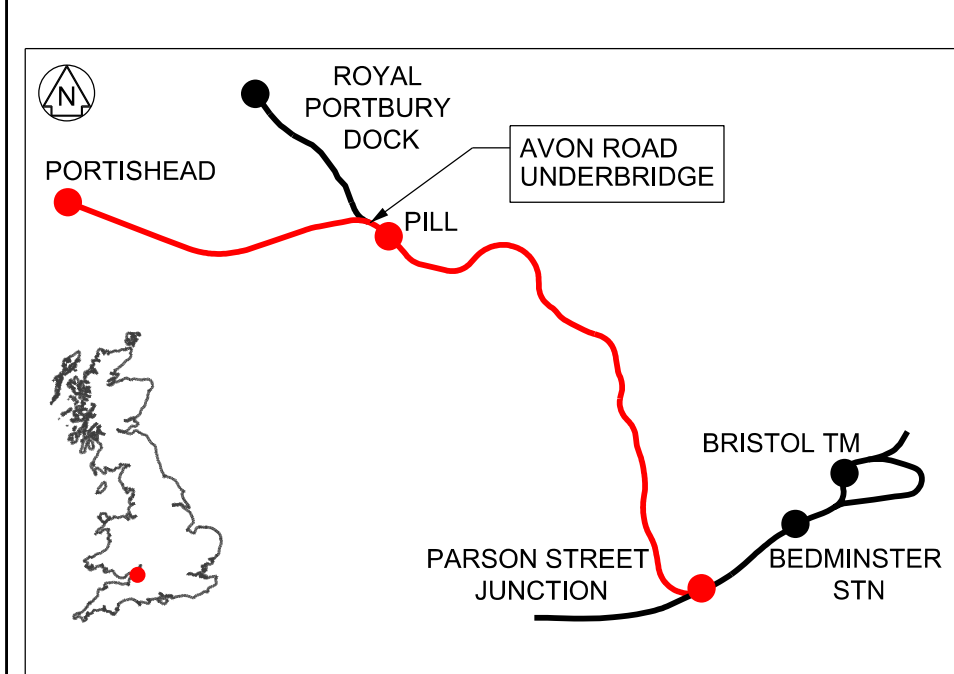
- UNDERTAKE SERVICE SEARCH AND PROTECT OR DIVERT IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATUTORY UNDERTAKER. THIS INCLUDES DIVERTING THE ELECTRICAL CABINET.
- INSTALL RETAINING WALLS PARALLEL TO TRACK.
- INSTALL DRAINAGE AND BACKFILL.
- PREPARE GROUND AND NORTHERN BASE SLAB FOR WINGWALLS EITHER SIDE OF EXISTING BRIDGE.

STAGE 2: DURING POSSESSION (2 WEEKS ANTICIPATED):

- REMOVE TRACK AND EXCAVATE EMBANKMENT BEHIND THE EXISTING UNDERBRIDGE.
- DEMOLISH THE EXISTING UNDERBRIDGE AND SUITABLY REMOVE.
- INSTALL PRECAST CONCRETE UNITS AND STITCH TOGETHER.
- INSTALL WINGWALLS AND TIE INTO RETAINING WALLS.
- INSTALL WATERPROOFING SYSTEM AND BACK OF WALL DRAINAGE.
- BACKFILL STRUCTURE AND LAY PWAY.
- INSTALL TRACK MONITORING (REQUIREMENTS TO BE DETERMINED AT NEXT GRIP STAGE).

STAGE 3: POST-POSSESSION

- INSTALL FINISHES AND LIGHTING.



FIT FOR INFORMATION

Rev	Date	Description of Revisions	Drawn	Chkd	Appr	Suitability
A01	18/07/19	FOR DCO APPLICATION	JB	RS	RS	

Status: S2

NetworkRail

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PORTISHEAD BRANCH LINE (METROWEST PHASE 1)


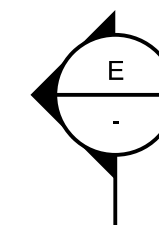
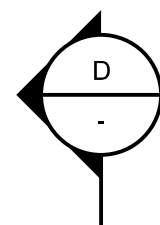
S007 AVON ROAD UNDERBRIDGE GENERAL ARRANGEMENT PROPOSED SHEET 1

Designed	Signed	Date
J. AYLWIN		18/07/19
Drawn	Signed	Date
J. BACINSKI		18/07/19
Checked	Signed	Date
R. SNELL		18/07/19
Approved	Signed	Date
R. SNELL		18/07/19

Scale(s): As Shown ELR & Mileage: POD 126mi 29ch

Alternative Reference: Sheet 1 of 2

Drawing Number: W1097B-ARP-DRG-EST-300008 A01





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A pie chart showing the distribution of the number of children per family. The chart is divided into three sectors: 300 (bottom), 200 (top), and 100 (left).

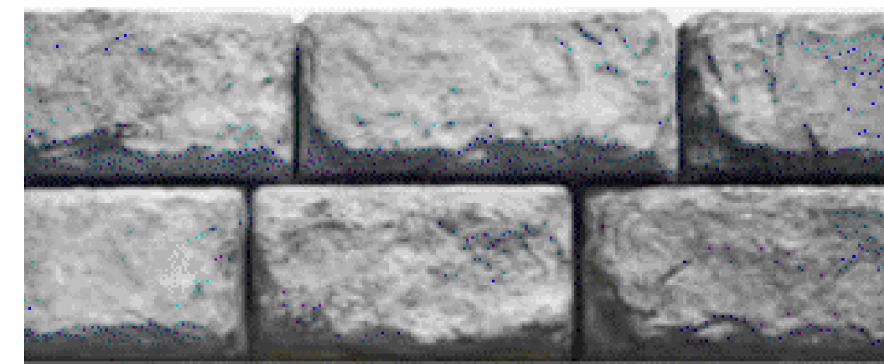


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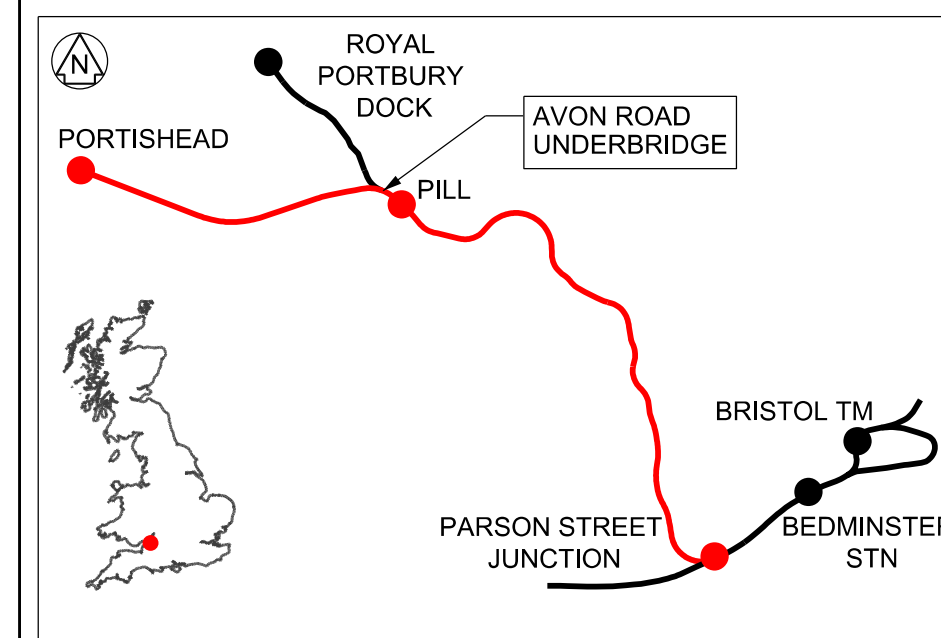
 **SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION** 

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THIS TYPE OF WORK, SPECIAL ATTENTION SHOULD BE GIVEN TO:

- i) AS DRAWN, THE NOMINAL WEIGHTS OF THE ABUTMENT, INTERNAL DECK AND EXTERNAL DECK UNITS = 11 TONNES. TO BE CONFIRMED FOLLOWING DETAILED DESIGN.
- ii) BURIED SERVICES ARE PRESENT ACROSS THE SITE. THE PRECISE POSITIONS OF THESE ARE TO BE VERIFIED BY THE CONTRACTOR PRIOR TO DETAILED DESIGN. CONSULTATION WITH ASSET OWNERS TO BE UNDERTAKEN AT DETAILED DESIGN FOR PROTECTION OR DIVERSION REQUIREMENTS. THERE IS RESIDUAL RISK THAT ONEROUS REQUIREMENTS MAY SIGNIFICANTLY AFFECT THE PROPOSED WORKS.
- iii) THERE IS LIMITED TOPOGRAPHIC SURVEY AVAILABLE AT THIS SITE AND THE FORM F001 DESIGN IS BASED ON INTERPRETATION OF LIDAR DATA. FULL TOPOGRAPHIC SURVEY REQUIRED PRIOR TO DETAILED DESIGN.
- iv) TEMPORARY WORKS NOT TO EXTEND INTO EXISTING TRACK ZONE OF INFLUENCE
- v) PROPOSED TRACK SHALL NOT BE FOUNDED ON TWO DIFFERENT TYPES OF FILL



1. FOR GENERAL NOTES REFER TO DRAWING W10197B-ARP-DRG-EST-300008.
2. THIS SUBMISSION CONSIDERS ONLY 10m OF EMBANKMENT WORKS EITHER SIDE OF THE BRIDGE. EARTHWORKS BEYOND THIS EXTENT ARE CONSIDERED IN A SEPARATE SUBMISSION.

[illegible]

Contractor(s)

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Project

PORTISHEAD BRANCH LINE
(METROWEST PHASE 1)

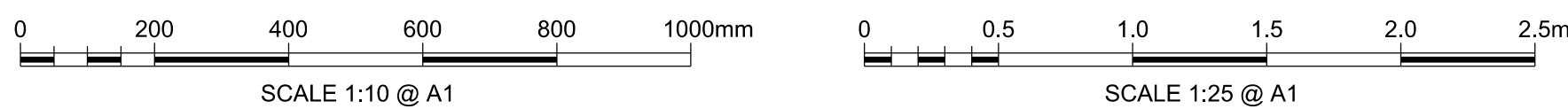
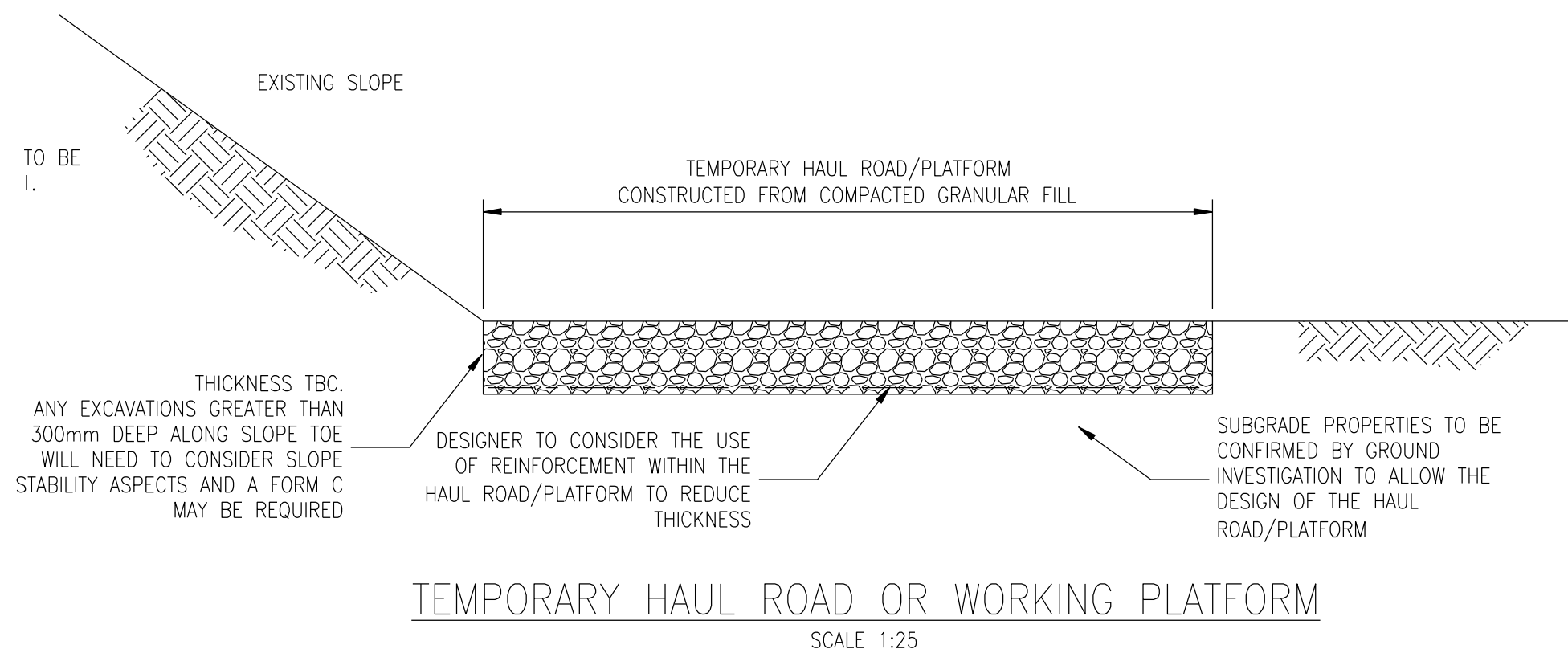
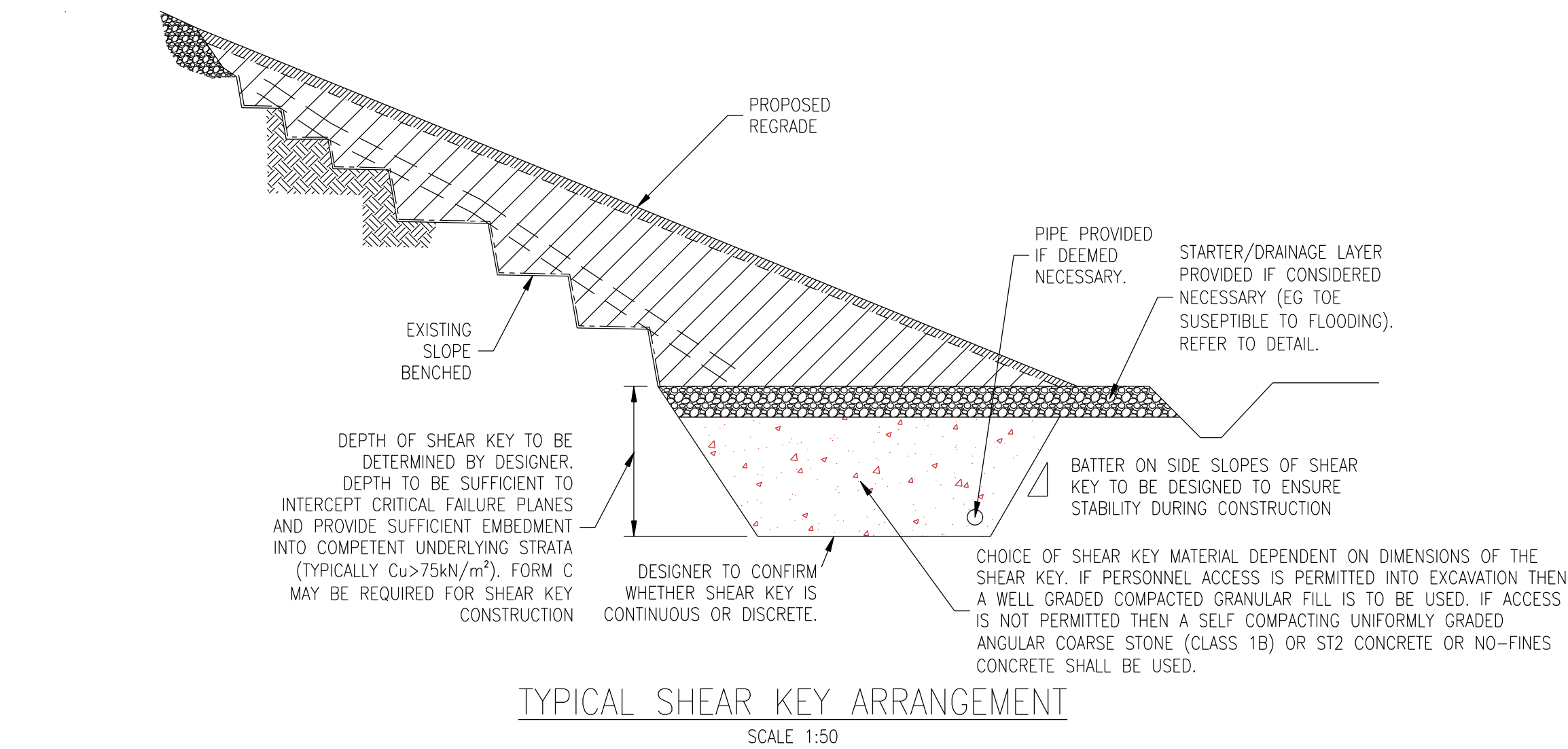
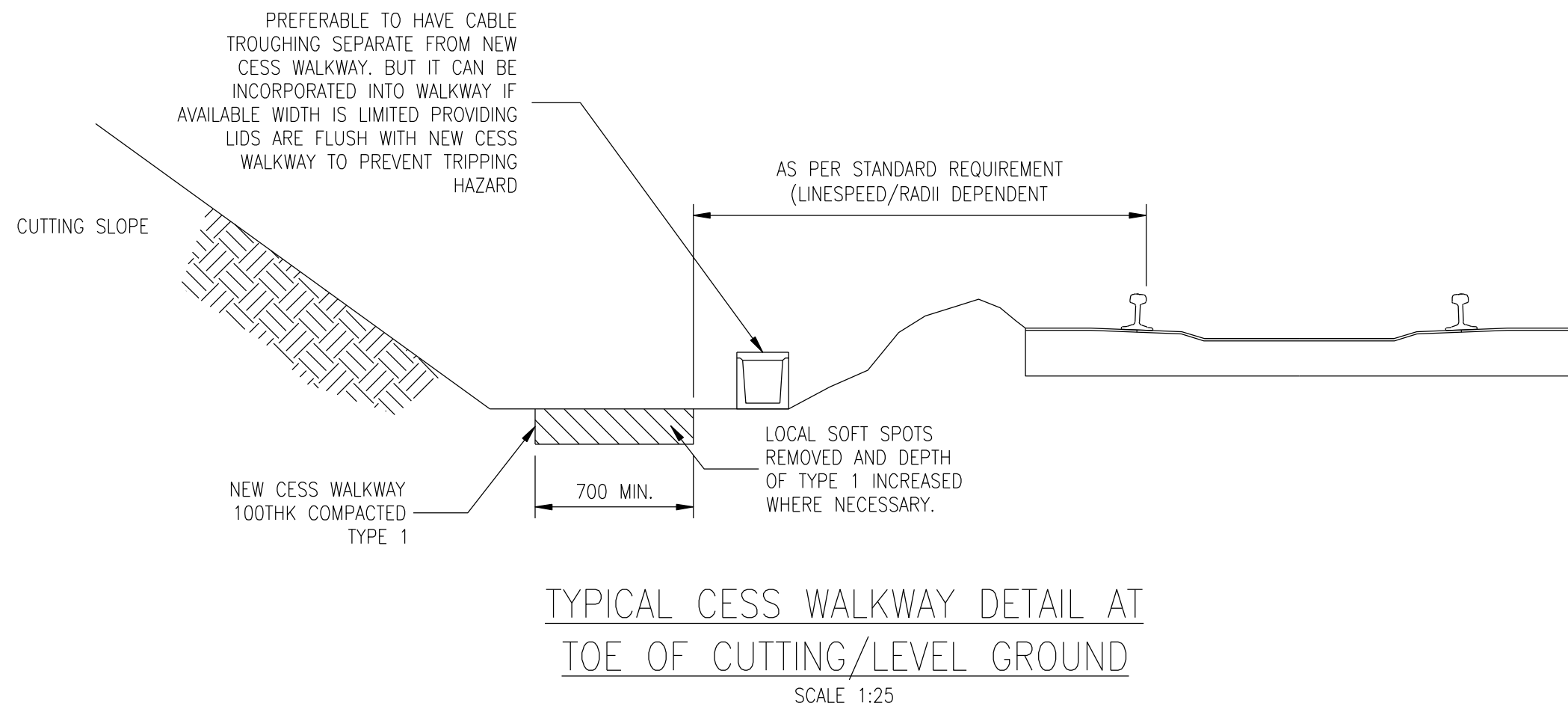
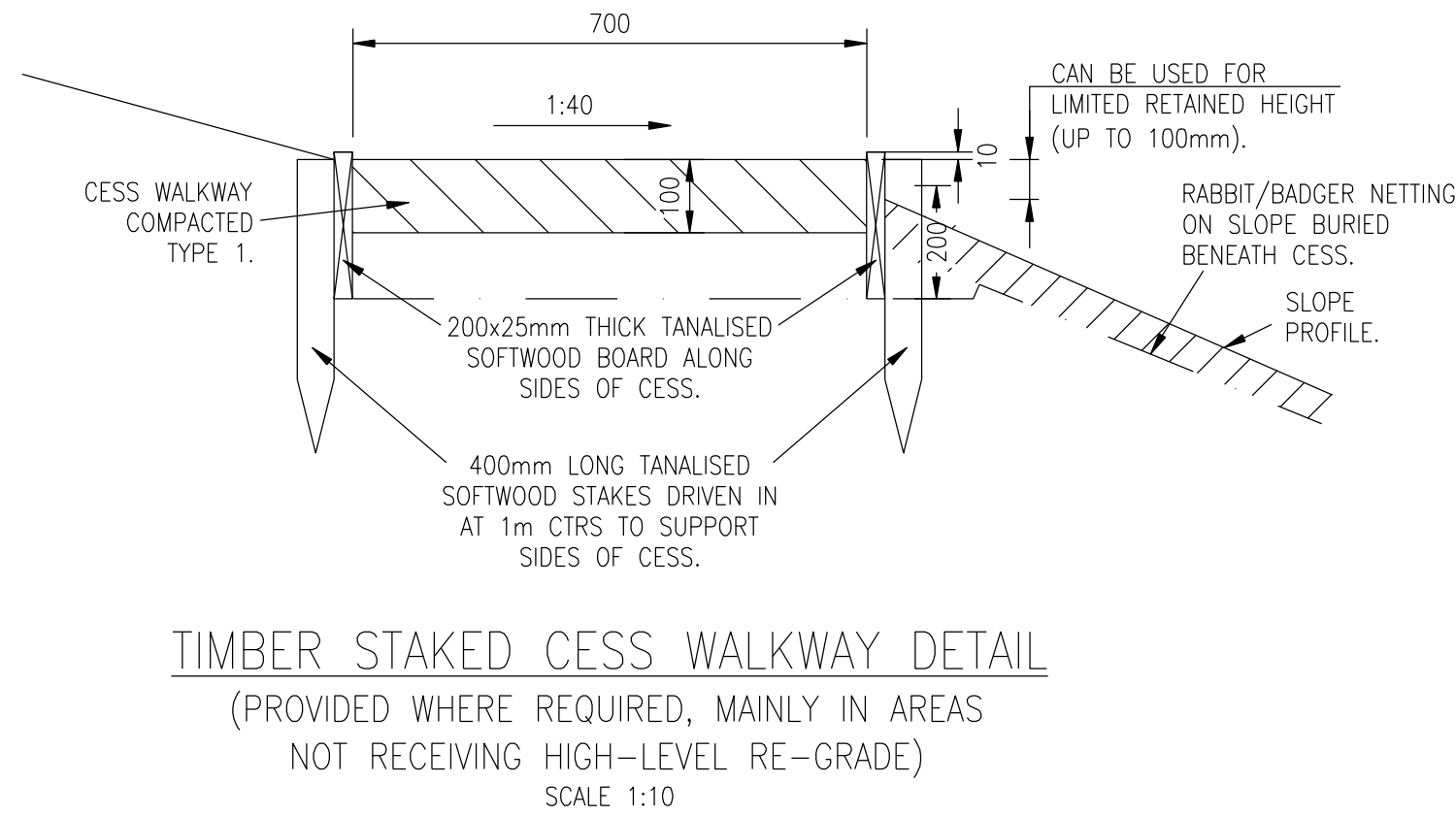
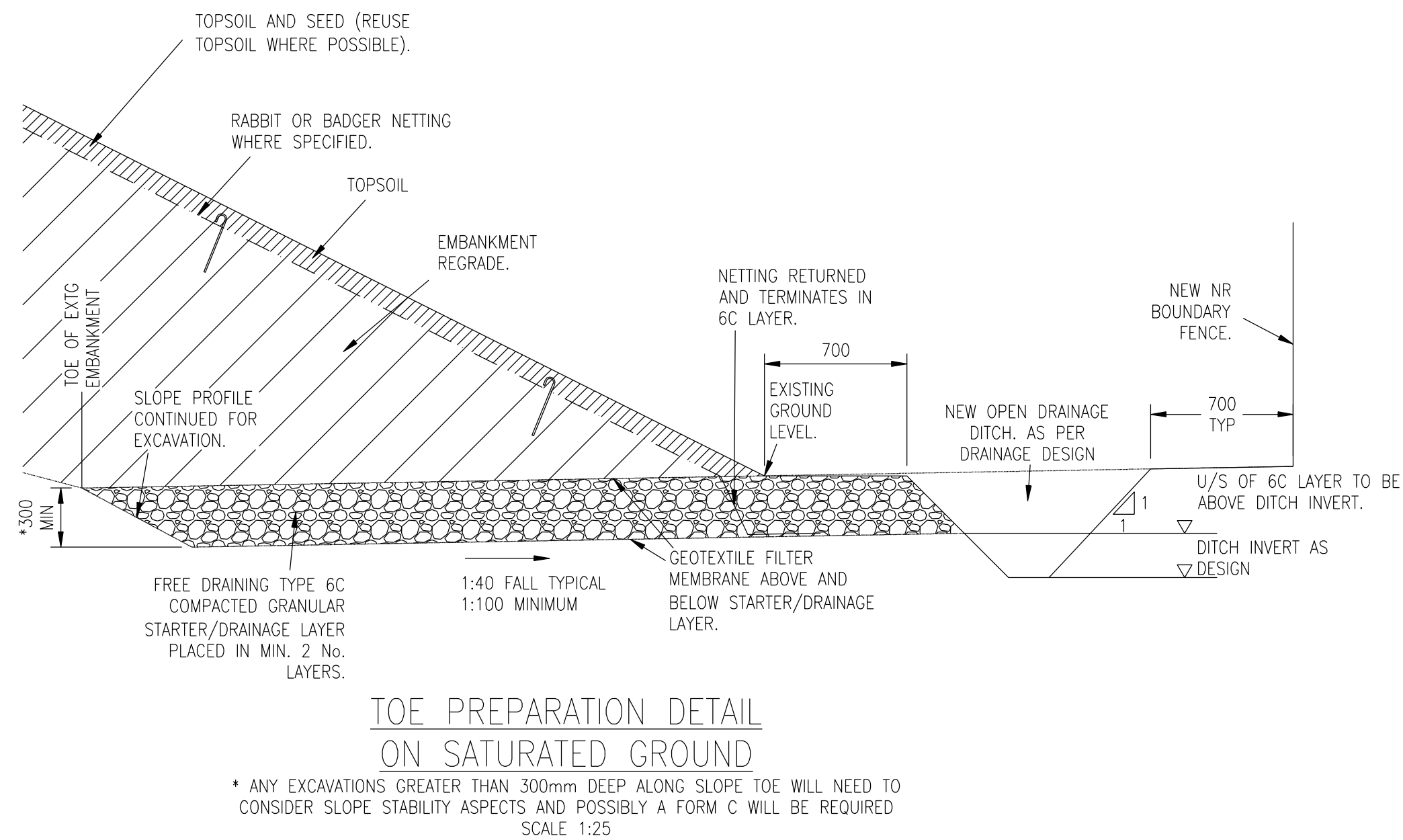
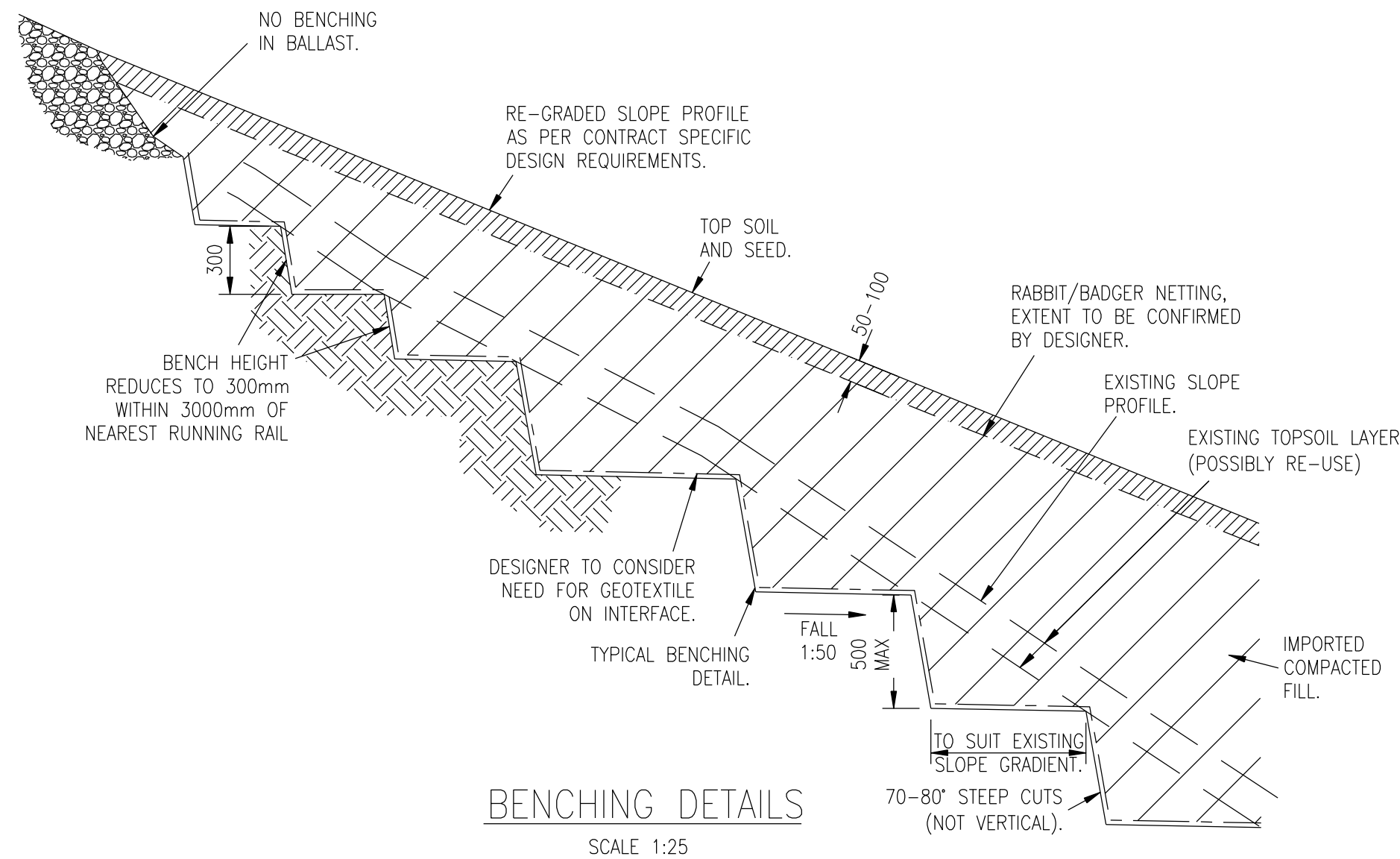
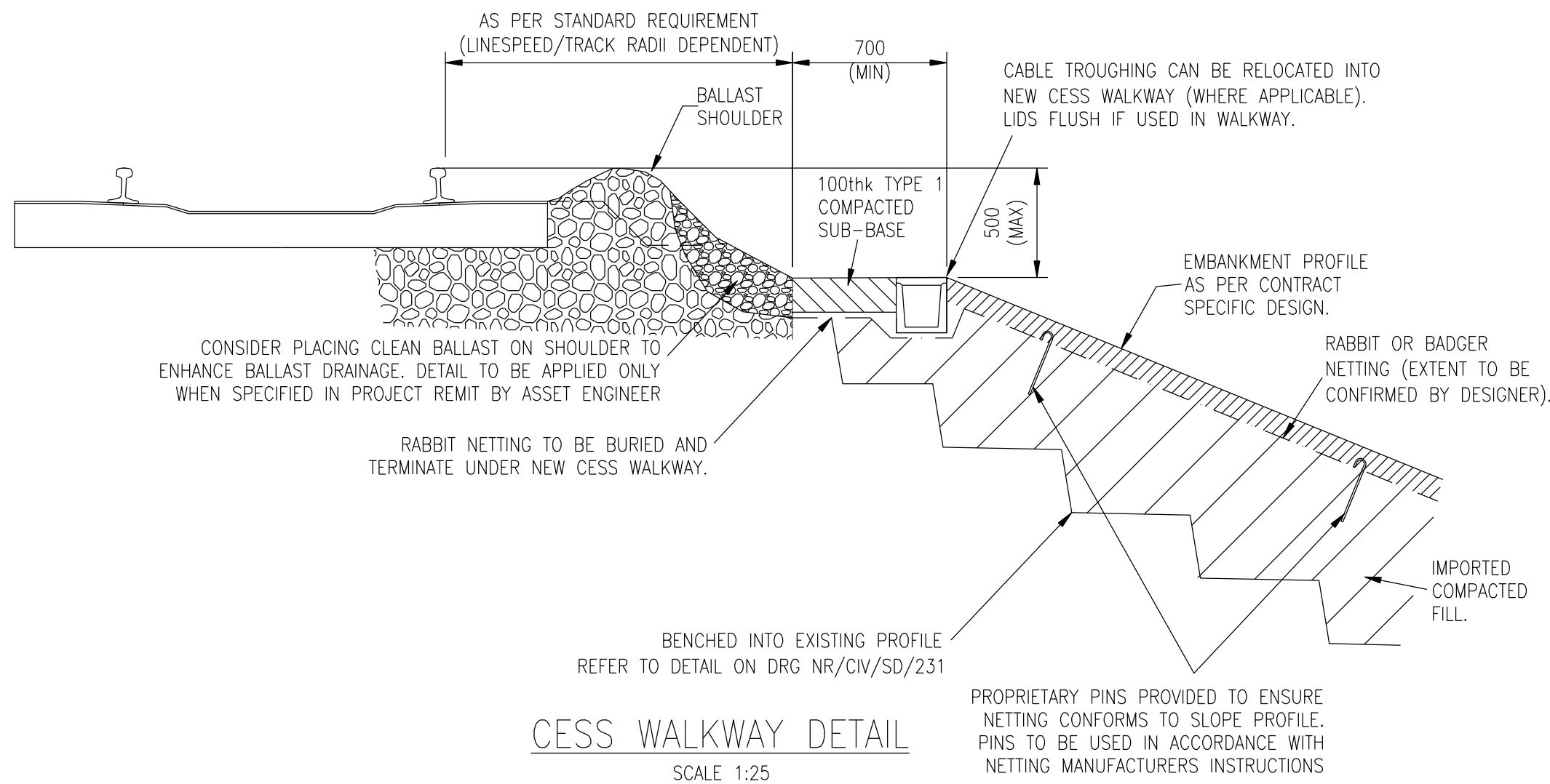
Drawing Title

S007 AVON ROAD UNDERBRIDGE
GENERAL ARRANGEMENT
PROPOSED
SHEET 2

Designed	J.AYLWIN	Signed	Date 18/07/
Drawn	J. BACINSKI	Signed	Date 18/07/
Checked	R. SNELL	Signed	Date 18/07/
Approved	R. SNELL	Signed	Date 18/07/

Scale(s)	ELR & Mileage
As Shown	POD 126mi 29ch

Alternative Reference	Sheet 2 of 2
Drawing Number	Revision



Legend/Notes

1. THIS DRAWING IS BASED ON NETWORK RAIL STANDARD DRAWING NR/CIV/SD/230.

B SPECIFICATION

- B2 ALL WORKS TO BE IN ACCORDANCE WITH NETWORK RAIL COMPANY STANDARD NR/L3/CIV/140 MODEL CLAUSES FOR SPECIFYING CIVIL ENGINEERING WORKS. IN PARTICULAR SECTION 50 : GENERAL REQUIREMENTS FOR EARTHWORKS AND EXCAVATIONS.
- B3 GRANULAR FILL SHALL HAVE A MINIMUM CHARACTERISTIC PHI VALUE OF 35° TO PROVIDE SUFFICIENT RESISTANCE AGAINST NEAR-SURFACE SHALLOW FAILURES, FOR SLOPE GRADIENTS UP TO 1V IN 2H. TYPICALLY GRANULAR FILL SHALL BE CLASS 1A IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAYS WORKS.
- B4 WHEN USING COHESIVE FILL THE CHARACTERISTIC UNDRAINED AND DRAINED PARAMETERS SHALL BE CONFIRMED PRIOR TO DEFINING THE DESIGN SLOPE GRADIENTS, TO ENSURE SHALLOW AND DEEP-SEATED STABILITY. IT IS ENVISAGED SITE-WON COHESIVE FILL OF POOR ENGINEERING VALUE SHALL BE ONLY BE USED AT THE TOE OF EXISTING SLOPES WHERE THEY WILL ONLY ENHANCE THE GLOBAL STABILITY OF THE SLOPE, SUBJECT TO THE NECESSARY DESIGN TO ENSURE ITS OWN STABILITY. DESIGNER TO CONSIDER SOIL-MIXING AND/OR BLENDING TO IMPROVE THE ENGINEERING PROPERTIES OF ANY SITE-WON MATERIAL.
- B5 TYPICALLY COHESIVE FILL SHALL BE CLASS 2C IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAYS WORKS.
- B6 THE CHARACTERISTIC PROPERTIES OF ALL IMPORTED FILL, SITE-WON MATERIAL, AND/OR SOIL-MIXED MATERIAL SHALL BE CONFIRMED BY APPROPRIATE SAMPLING AND LABORATORY TESTING IN ACCORDANCE WITH EN-1997. PRIOR TO ACCEPTANCE THE CLASSIFICATION, STRENGTH AND COMPACTION PROPERTIES SHALL BE CONFIRMED. LIVE AND SURCHARGE LOADS ARE TO BE APPLIED IN ACCORDANCE WITH SECTION 15 OF NETWORK RAIL COMPANY STANDARD NR/L3/CIV/071: GEOTECHNICAL DESIGN.
- B7 ALL GEOTEXTILES TO COMPLY WITH NETWORK RAIL SPECIFICATION NR/SP/TRK/010. NEEDLE PUNCHED TYPE.
- B8 SEED MIX TO BE CONFIRMED BY CONTRACTOR. TYPICALLY A DENSE GRASS MIX OF LOW MAINTENANCE IS DESIRED FOR NETWORK RAIL EMBANKMENTS. TIME OF YEAR AND THE SITUATION OF THE SITE TO BE CONSIDERED WHEN SPECIFYING SEED MIX.
- B9 DESIGNER TO CONSIDER REQUIREMENT FOR GEOTEXTILE IN BENCHING. IT IS IMPORTANT GOOD CONTACT IS MADE BETWEEN THE EXISTING SLOPE AND PLACED FILL WHICH MAY BE REDUCED BY THE INCLUSION OF A GEOTEXTILE. GEOTEXTILES ARE PROVIDED TO PRESERVE DRAINAGE LAYERS OR REINFORCING A GRANULAR LAYER.

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
A01	23/07/19	FOR DCO APPLICATION	JB	RS	RS

Status S2

FIT FOR INFORMATION



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Project
**PORTISHEAD BRANCH LINE
(METROWEST PHASE 1)**

Drawing Title
**AVON ROAD UNDERBRIDGE
EMBANKMENT REGRADES**

Designed	NETWORK RAIL	Signed	Date
Drawn	J. BACINSKI	Signed	Date
Checked	R. SNELL	Signed	Date
Approved	R. SNELL	Signed	Date

Scale(s) As Shown ELR & Mileage POD 126M 30CH

Alternative Reference Sheet 1 of 1

Drawing Number W1097B-ARP-DRG-ECV-300005 A01