



A6 to Manchester Airport Relief Road

TR1-12 – Spath Brook Twin Culvert Extension

Preliminary Design Report
Report No. 1007/704/156



August 2013



PRELIMINARY DESIGN REPORT

Structure Name: Spath Brook Twin Culvert Extension
Structure Number: TR1-12

Report No. 1007/704/156

Report Control Sheet

Version	Date	Status	Prepared By	Checked By	Approved By
P1	03/09/2013	Draft	J Watton	M Ellis	N Sheena
P2	13/09/2013	Final	J Watton	M Ellis	N Sheena

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1. Description of Site

The Spath Brook twin culvert extension is part of the A6 to Manchester Airport Relief Road (A6MARR) and is proposed to accommodate a path to give pedestrian, cyclist and equestrian access across Spath Brook, adjacent to the A555. The location of the proposed works is approximately 50m east of Spath Lane Accommodation Bridge over the A555.

There are a number residential properties about 200m north-east of the proposed extension and the surrounding area is woodland. An aerial location plan at 1:1250 scale is included in Appendix A.

2. Proposed Structure

The proposed structure will be a new in-situ reinforced concrete headwall, with scour protection at the base, and extensions to two existing 600mm diameter pipes, currently transferring Spath Brook beneath the A555. Granular material will then be used to backfill behind the proposed headwall in order to accommodate the proposed footpath. The Environment Agency will need to be contacted to ensure that they accept the proposal to extend the two existing culverts by approximately 2 metres. Refer to Drawing 1007/3D/DF7/A6-MA/TR1-12/701 and in Appendix B for further details.

3. Pedestrian Safety Fence

It is proposed to use timber parapets that shall be 1.1m above the adjacent footpath level and mounted to the top of the headwall and have a green PVC mesh infill. Steel parapets should not be required here as the footpath is set back from the edge of the headwall.

4. Geotechnical Information

The ground conditions in the vicinity of TR1-12 have been assessed using relevant geological maps (Stockport Sheet 98, Solid and Drift Scale 1:50,000) only as no ground investigation has been carried out at or within the vicinity of the proposed structure. Local ground investigation will be required for the final design stage.

The ground conditions indicated on the geological maps are drift deposits of Boulder Clay of Recent and Pleistocene age overlying Upper Mottled Sandstone of Permian and Triassic age which is part of the Sherwood Sandstone Group.

It is considered unlikely, based on the available information, that coal working will be encountered during the works.

The potential for chemical attack on buried concrete within the ground has not been assessed due to lack of available information. However, based on the past experience in similar material e.g., pyrites in coal measures and sulphates in superficial material derived from Mercia mudstone, aggressive ground conditions towards concrete/steel cannot be ruled out. It is recommended to undertaken sulphate testing in accordance with BRE Special Digest 1: 2005 (Concrete in aggressive ground condition).

There is no available information relating to the groundwater in the area available.

5. Appearance

The proposed structure will not be visible on elevation. Timber parapets (post with 3 rails- open structure) to match the surrounding fences will be mounted on the top of the headwall and exposed faces of headwall is to be plain concrete.

Appendix A: Location Plans



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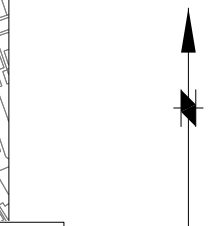
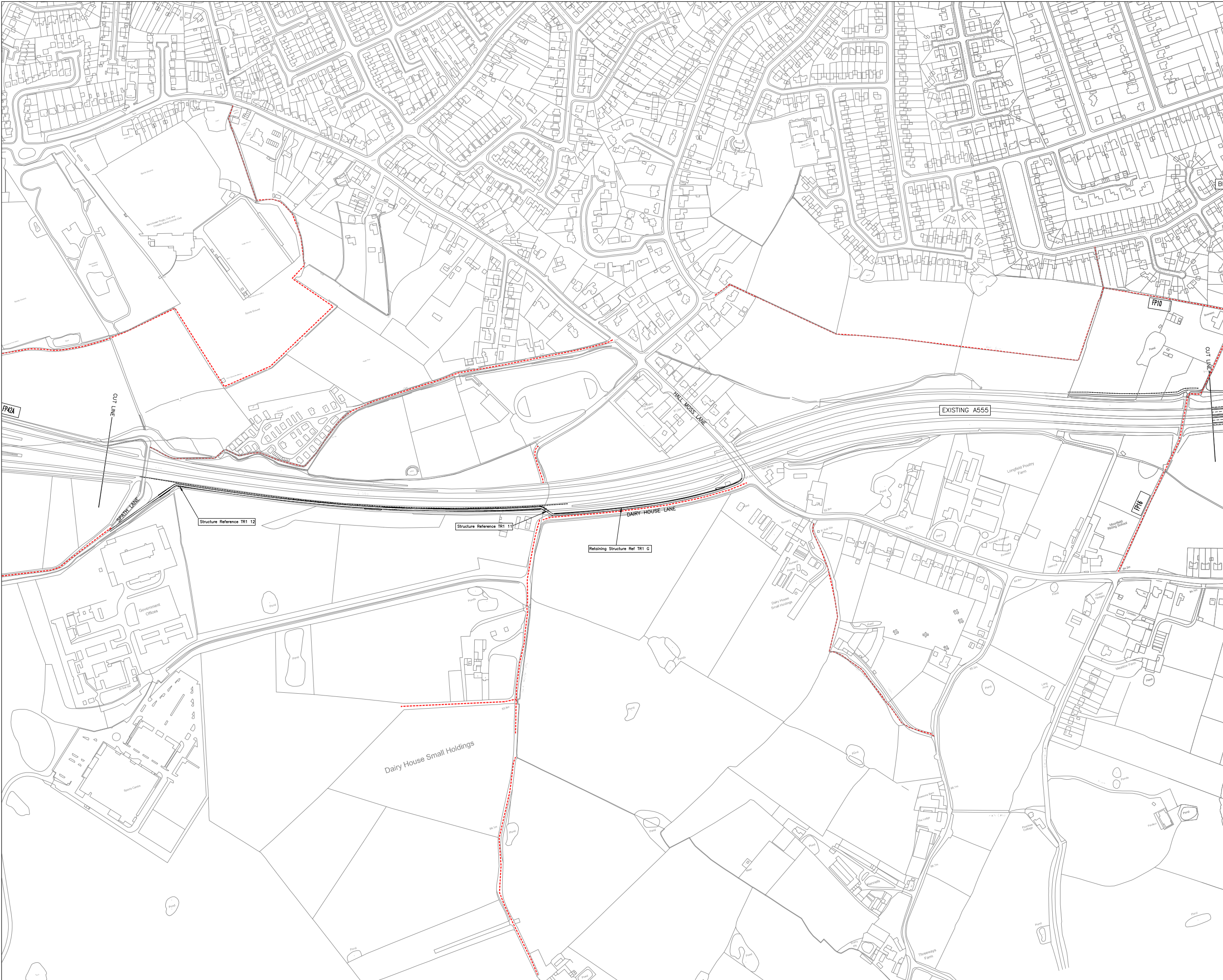


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Drawn	CL	Checked	SC	Approved	NH	 NORTH
Date	12/08/2013	Date	12/08/2013	Date	12/08/2013	
Size	A4	Scale	1 : 1,250			
GIS Task	4268	Filename				
Drawing No.	1007-3D-DF7-A6-MA-TR1 12-ALP			Revision		

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- KEY**
- EXISTING DEFINITIVE PROW
 - EXISTING BRIDLEWAY
 - PROPOSED FENCELINE

Rev.	Drawn	Checked	Date	Revision Details

Jim McMahon BSc. C.Eng. MICE
 SERVICE DIRECTOR, MAJOR PROJECTS
 Job Title
 STOPFORD HOUSE
 STOCKPORT S91 3JG
 TEL : 0161 474 4333
 FAX : 0161 474 4833

A6 to MANCHESTER AIRPORT RELIEF ROAD

**DESIGN FREEZE 7
GENERAL ARRANGEMENT
SHEET 6 of 9**

Drawn	Engineer	Checked	Approved
SP	SP	NH	
Date	Date	Date	Date
18.07.13	18.07.13	18.07.13	
Size	Scale		
A1	Hz 1:2500, Vt 1:250		
SCG No.	Filename		

Drawing No. 1007/3D/DF7/A6-MA/GA/206 Revision

Appendix B: Proposed General Arrangement Drawing

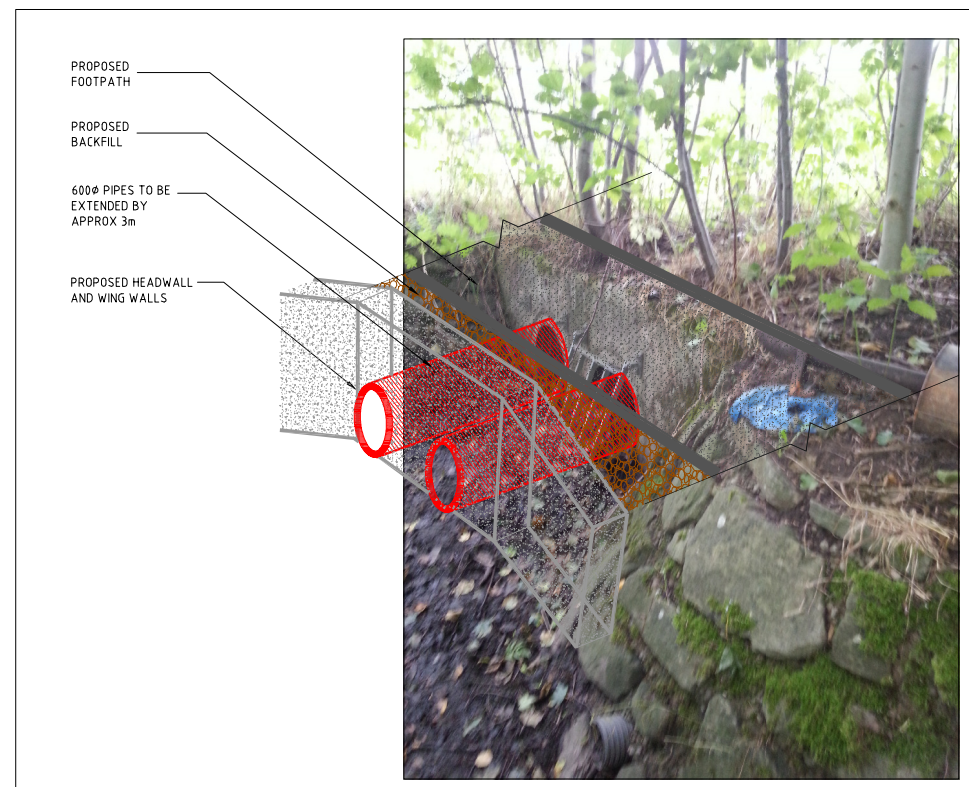
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NOTES

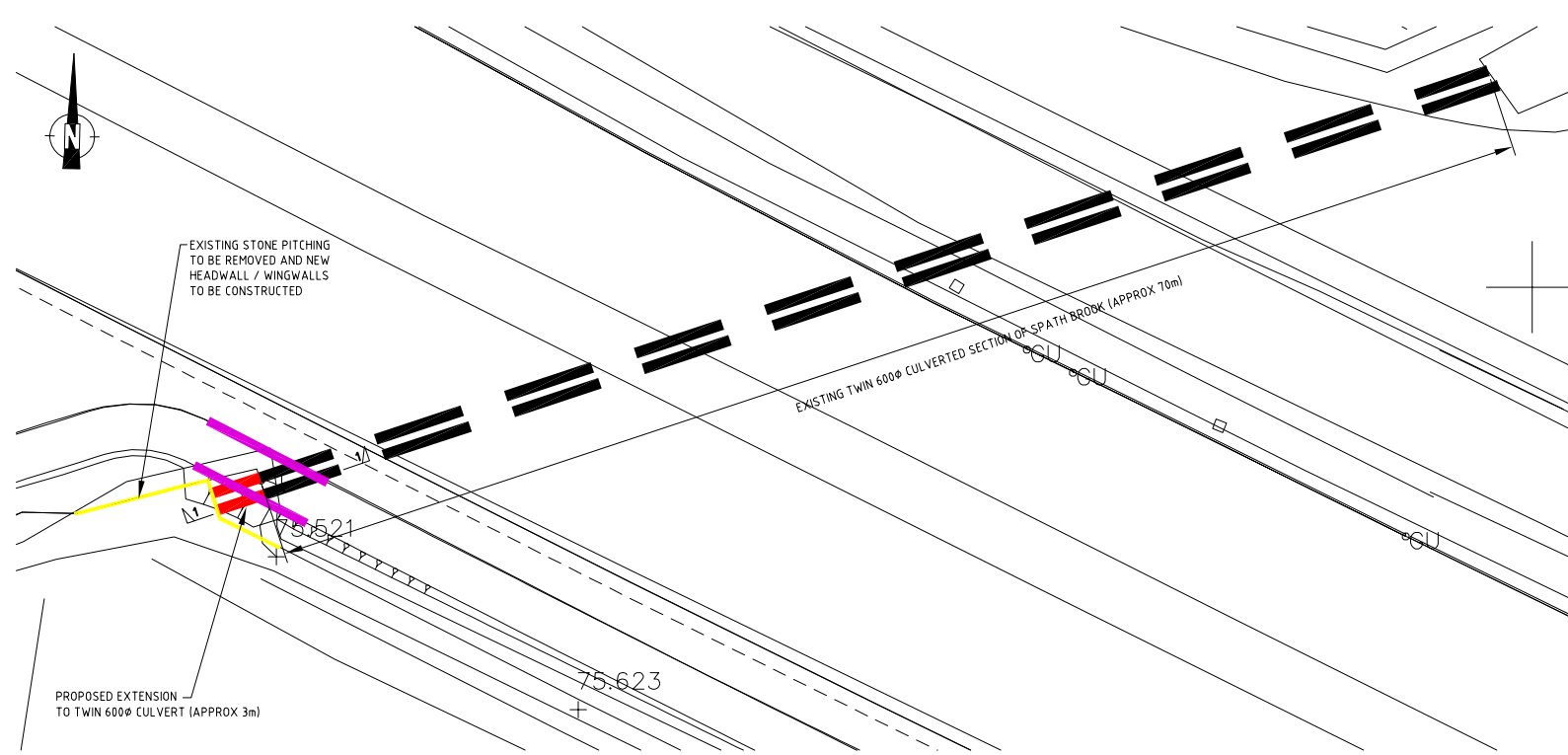
1. THIS DRAWING HAS BEEN PRODUCED MAINLY FOR THE PURPOSE OF PRELIMINARY DESIGN.
2. LEVELS ARE IN METRES AND ABOVE ORDNANCE DATUM.
3. ALL DIMENSIONS ARE IN MILLIMETRES.
4. THE OPTION SHOWN IN THIS DRAWING IS NOT FOR CONSTRUCTION
5. BASIC PRELIMINARY DESIGN HAS BEEN UNDERTAKEN TO DETERMINE THE GEOMETRY OF THE SECTION SIZES AS PER CLIENT'S INSTRUCTION.
6. THIS DRAWING HAS BEEN PRODUCED BASED ON THE LATEST MX HIGHWAY MODEL - DRAFT DESIGN FREEZE 7, AS PROVIDED BY THE CLIENT.

KEY

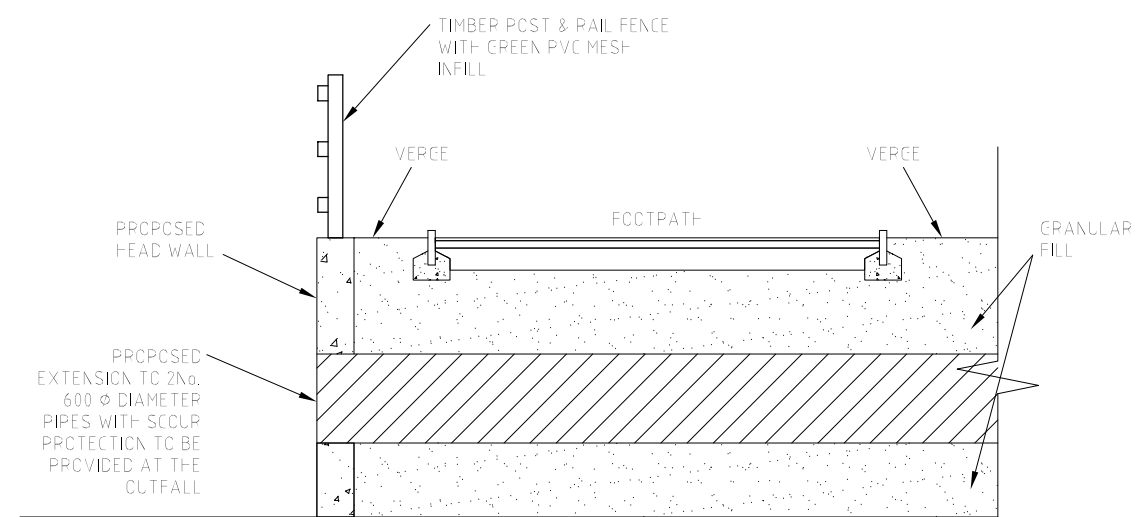
--- MAIN RIVER



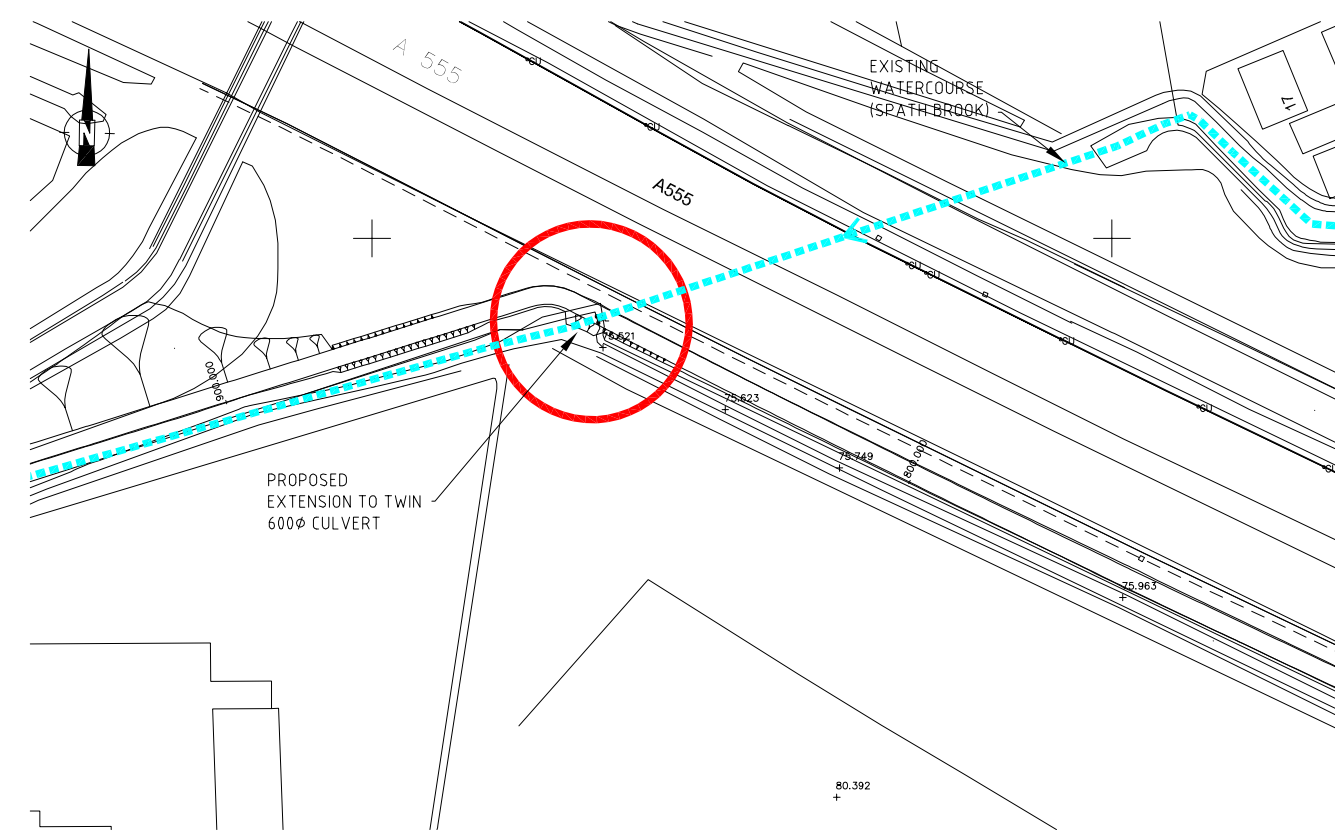
3D VISUALISATION
 SCALE: (NOT TO SCALE)



PLAN
 SCALE: 1:200



SECTION 1-1
 SCALE: 1:25



LOCATION PLAN
 SCALE: 1:500

Rev.	Drawn	Checked	Date	Revision Details
A	HB	JW	13.09.13	ISSUED FOR PLANNING
-	HB	JW	28.08.13	FIRST ISSUE (FOR CLIENT COMMENTS)



FRED PERRY HOUSE, C/O STAFFORD HOUSE
 PICCADILLY, STOCKPORT SK1 3JZ
 TEL : 0161 275 3100
 FAX : 0161 275 3101

A6 TO MANCHESTER AIRPORT RELIEF ROAD

Drawing Title

TR1-12 SPATH BROOK TWIN CULVERT EXTENSION

Drawn	Engineer	Checked	Approved
DB	JW	ME	NS
Date	Date	Date	Date
03.09.13	03.09.13		
Size	Scale		
A1	AS SHOWN		

SCG No.	Filename
Drawing No.	Revision
1007/3D/DF7/A6-MA/TR1-12/701	A