



SEMMMS A6 to Manchester Airport Relief Road

West Coast Mainline Options
Comparison – Environmental Appraisal
1007/6.19/106

October 2012

Document Control Sheet

Project Title	SEMMMS A6 to Manchester Airport Relief Road
Report Title	West Coast Mainline Options Comparison Environmental Appraisal
Revision	0.2
Status	Final
Control Date	14 th March 2012

Record of Issue

Issue	Status	Author	Date	Check	Date	Authorised	Date
0.1	Draft	D Parsons	09/03/12	F Symes	14/03/12	F Symes	14/03/12
0.2	Draft	J Booth	12/10/12	F Symes	13/10/12	F Symes	24/10/12

Distribution

Organisation	Contact	Copies
SMBC	Naz Huda, Joe Roberts, Sue Stevenson	1 (e)

This West Coast Mainline Options Comparison Report Environmental Appraisal is presented to Stockport Metropolitan Borough Council (SMBC) in support of the SEMMMS A6 to Manchester International Airport Relief Road project and may not be used or relied on by any other person or by the client in relation to any other matters not covered specifically by the scope of this Report.

Notwithstanding anything to the contrary contained in the Report, Mouchel Ltd is obliged to exercise reasonable skill, care and diligence in our performance. Mouchel Ltd shall not be liable except to the extent that it has failed to exercise reasonable skill, care and diligence, and this report shall be read and construed accordingly.

This Report has been prepared by Mouchel Ltd. No individual is personally liable in connection with the preparation of this Report. By receiving this Report and acting on it, the client or any other person accepts that no individual is personally liable whether in contract, tort, for breach of statutory duty or otherwise.

We have used our reasonable endeavours to provide information that is correct and accurate and have discussed the reasonable conclusions that can be reached on the basis of the information available. Having issued a range of conclusions as part of this report it is for the client to decide on the implementation and next steps.

Contents

Contents	ii
List of Tables	iii
1 Introduction	1
1.1 Background	1
1.2 Methodology	1
2 Existing Environment	3
3 Proposed Options	4
4 Option Comparison	5
5 Summary	8
Appendices	9
Appendix A: Figures	9

List of Tables

Table 1: Option Comparison Matrix	7
---	---

DRAFT

1 Introduction

1.1 Background

- 1.1.1 Mouchel has been commissioned by the SEMMMS Project Team on behalf of Stockport Metropolitan Borough, Manchester City and Cheshire East councils to provide environmental planning, design and assessment advice as part of the project team for the proposed SEMMMS – A6 to Manchester Airport Relief Road.
- 1.1.2 This report details the findings of a comparison of the likely environmental impacts associated with two options that are currently being considered as potential design solutions for the proposed West Coast Mainline Crossing.

1.2 Methodology

- 1.2.1 The comparison of the two options has involved a review of the existing environment, by way of identification of the principal sensitive environmental resources and receptors associated with the corridor in the vicinity of the proposed crossing location and of potentially significant impacts specific to each option.
- 1.2.2 The review of the existing resources and receptors has involved reference to baseline and assessments undertaken during the development of the Environmental Statement for the Proposed Scheme.
- 1.2.3 The comparison is presented in the form of a matrix, of the principal environmental aspects adopted in Volume 11 of the Highways Agency's Design Manual for Roads and Bridges (DMRB). The matrix is followed by a summary discussion describing the principal differences in potentially significant impacts between the options.
- 1.2.4 The environmental aspects considered comprise:
- Air Quality;
 - Cultural Heritage;
 - Landscape;
 - Ecology;
 - Geology and Soils (including contaminated land);
 - Materials;

- Noise and Vibration;
- Effects on All Travellers;
- Community and Private Assets; and
- Road Drainage and the Water Environment.

DRAFT

2 Existing Environment

2.1.1 The proposed West Coast Mainline Crossing is located south east of Bramhall and north west of Poynton just north of the existing Woodford Road crossing of the West Coast Mainline (please refer to Figure 1, Appendix A).

2.1.2 The area is a mix of agricultural, amenity, industrial, and residential land uses, characteristic of the urban fringe in the south east Manchester area. The closest human receptors are as follows:

- Distaff Farm (approximately 150m to the south).
- Residential properties along Woodford Road (approximately 200m to the south east).
- Travellers along Woodford Road (approximately 200m to the south east).
- Employees and clientele at the Bramhall Golf Club (approximately 100m to the north west).

2.1.3 The proposed crossing is located in a narrow band of agricultural land which is between the communities of Bramhall approximately 800m to the north west and Poynton approximately 200m to the south east. Less than 100m to the north west of the proposed crossing is Bramhall Golf Club. Approximately 300m to the west is the Woodford Oil Depot. The existing Woodford Road Crossing is approximately 180m south east along the West Coast Mainline.

3 Proposed Options

- 3.1.1 There are two options being considered for the West Coast Mainline crossing, a road under rail option (please refer to Figure 1, Appendix A) and a road over rail option (please refer to Figure 2, Appendix A).

Option 1 – Road Under Rail Option

- 3.1.2 This proposed alignment involves excavating underneath both the West Coast Mainline and Woodford Road. To construct these structures the level of the proposed carriageway will be lowered to obtain a clearance of 5.3 metres under the existing West Coast Mainline. The proposed carriageway will also go under Woodford Road. The vertical alignment will necessitate the existing Woodford Road to be raised. This alignment will create a number of large cutting slopes.

Option 2 – Road Over Rail Option

- 3.1.3 Option 2 would follow the same horizontal alignment as option 1 and would also go under Woodford Road. After Woodford Road the alignment would then rise upwards on embankments to pass over the West Coast Mainline. The alignment would then descend to existing ground (at grade) level.

4 Option Comparison

The findings of the assessment are detailed in the matrix in Table 1.

DRAFT

DMRB Topic	Option 1 – Road Under Rail	Option 2 – Road Over Rail
Air Quality	<p>Option 1 would require the handling including excavation of 322,787m³ of material which is a smaller volume than option 2 and would therefore result in less fugitive dust emissions.</p> <p>Option 1 will create a number of large cutting slopes. This will result in pollution from traffic related emissions dispersing less freely, and may result in higher pollutant concentrations at local receptors than option 2.</p>	<p>Option 2 would require the handling including excavation of 402,174m³ of materials which would result in greater fugitive dust emissions than option 1, due to the increased quantities.</p> <p>For option 2, pollution resulting from traffic related emissions will disperse more freely and likely above receptor level as the road is on embankment. Option 2 would increase dispersion of pollutants compared to option 1 which would likely result in lower pollutant concentrations at local receptors.</p>
Cultural Heritage	Neither option would impact on known archaeological or cultural heritage resources.	
	Option 1 would involve deep excavation which could potentially disturb unknown buried archaeological remains.	Option 2 would be on embankment which would further cover potential unknown archaeological remains. If buried archaeological remains are present, there would be less chance of disturbance than for option 1.
Landscape	<p>The alignment would be in deep cutting for the length of the option under consideration and would therefore have slight visual effects to approx 8 no. residential properties along Woodford Road.</p> <p>Option 1 would require less landscape mitigation, which may include restoring hedgerows and planting along the top of the cutting.</p>	<p>As the road rises up on embankment, this would represent a significant new feature in the landscape and be more visually intrusive to approx 15 no. residential properties along Woodford Road.</p> <p>Mitigation proposals developed for the Proposed Scheme in the ES to date would help integration of the embankment into the landscape and reduce visual impacts to receptors.</p>
Nature Conservation	Both options would result in the loss of short lengths of species poor hedgerows, 3 trees that could potentially have bat roosts, and one tree with potential for multiple bat roosts.	
	Option 1 has a slightly reduced footprint and would avoid a nearby pond (Figure 1, pond 5.4) with a small population of great crested newts (less than 10 individuals).	Option 2 would result in the loss of pond 5.4 with a small population of great crested newts. These would have to be translocated to new ponds prior to the loss of the pond.
Geology & Soils	<p>Neither option would disturb known potentially contaminated sites. Both options would involve construction on railway land with the potential for associated contamination.</p> <p>Neither of the options would compromise existing mineral resources or geological sites.</p>	

DMRB Topic	Option 1 – Road Under Rail	Option 2 – Road Over Rail
Materials	Option 1 would generate 277,895m ³ of surplus material along this section of the scheme. Overall, the scheme has a deficit of material and it is therefore likely that the material generated from option 1 would be used elsewhere in the scheme. This would reduce the requirement to import fill material.	Option 2 would require 306,075m ³ of fill material to construct the embankment. As the scheme is in overall deficit this fill material would likely be imported from outside the site boundary.
Noise & Vibration	Option 1 is likely to have reduced noise impacts to properties along the Woodford Road as the length of the option under consideration would be in cutting.	Option 2 is likely to have greater noise impacts to properties along Woodford Road as traffic moves out of cutting and onto embankment to cross the West Coast Mainline.
Effects on All Travellers	Both options would sever footpaths 19 and 21. Mitigation (such as crossing points and/or a footpath diversion) would be required to avoid or minimise the impacts. All options would require similar measures to minimise disruption to the rail lines during construction.	
Community and Private Assets	Option 1 has marginally less land take than option 2, though the difference is too small to be significant. The land is agricultural land currently used for grazing livestock.	
Road Drainage and the Water Environment	Option 1 would result in approximately 23% of road drainage Networks D & E draining eastwards into the Lady Brook, which would require no treatment of routine runoff. However the deep cutting under the West Coast Mainline would necessitate a pumped drainage system into the Lady Brook. The remaining 77% of Networks D & E will drain to the Spath Brook and will require wetland treatment. There may also be issues with groundwater ingress to the deep cutting and subsequent drawdown of the water table in the surrounding area.	Option 2 would result in the whole of Networks D & E draining to the Spath Brook and would require wetland treatment. Option 2 is unlikely to have any significant impact on the local groundwater levels.

Table 1: Option Comparison Matrix

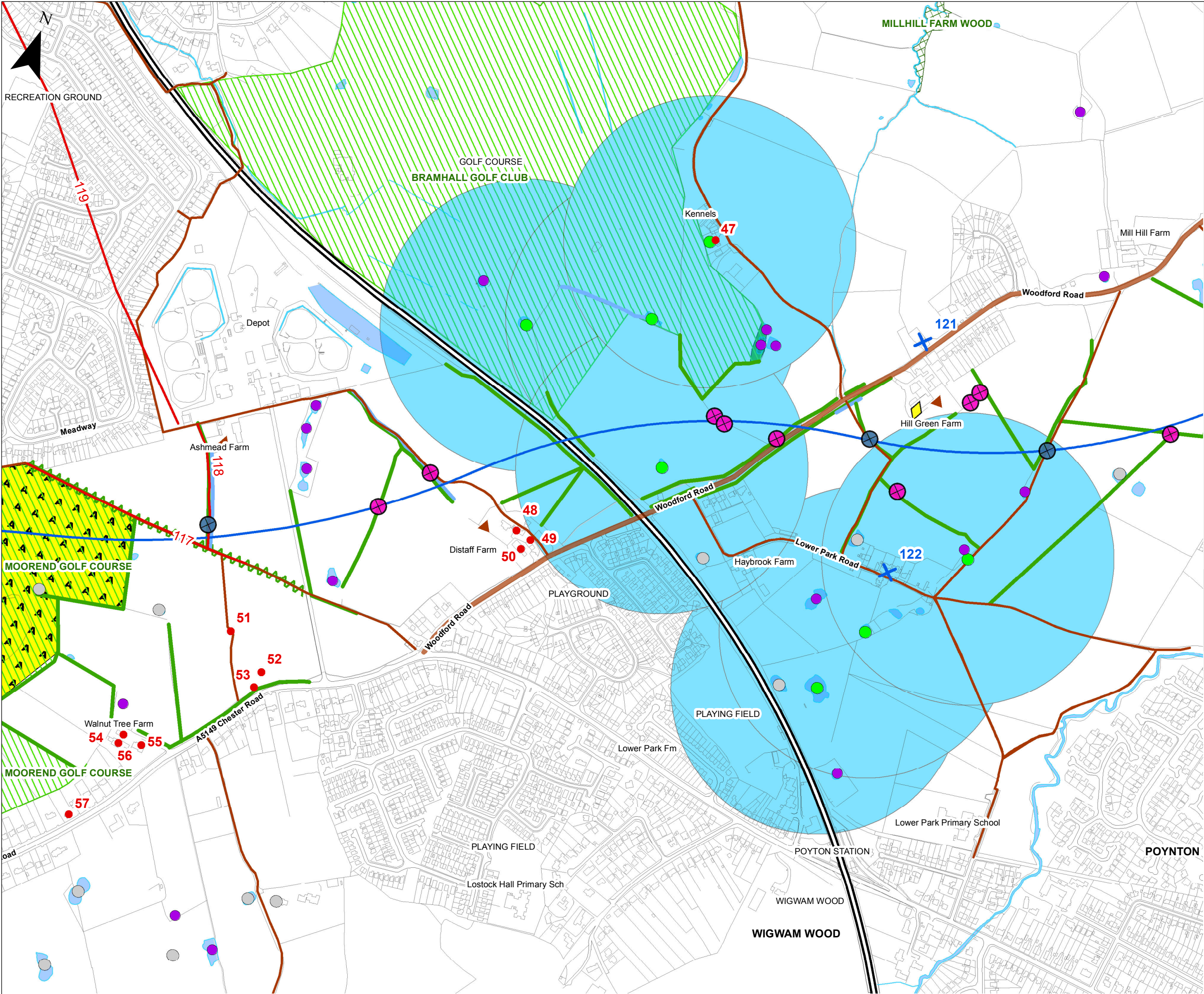
5 Summary

- 5.1.1 The principal differences between the proposed West Coast Mainline options with regards to environmental effects, relate to air quality, cultural heritage, landscape, ecology, materials, noise and vibration, and road drainage.
- 5.1.2 For air quality during construction, landscape, ecology, materials and noise and vibration, option 1 would result in fewer or reduced impacts compared to option 2. Option 1 would likely generate less fugitive dust emissions due to a reduction in the volume of materials that would be excavated, handled and stored. The route would be in cutting which would result in reduced visual impacts to residential properties on Woodford Road, and require less mitigation to integrate into the landscape. Pond 5.4 which has a small population of great crested newts would be retained with option 1 but lost with option 2. As there is an overall cut and fill deficit across the scheme, the cut material generated from option 1 could be used elsewhere across the scheme. For option 2, additional fill material would likely be imported. Option 1 would also result in reduced noise impacts to the residential properties along Woodford Road.
- 5.1.3 For air quality during operation, cultural heritage and road drainage, option 2 would result in fewer or reduced impacts compared to option 1. As the alignment over the West Coast Mainline would be elevated, traffic emissions would disperse more freely, likely resulting in reduced concentrations of pollutants to the sensitive receptors. As option 2 requires less excavation there would be a reduced potential to disturb unknown buried archaeological remains. Option 2 would also result in a simplified drainage design for this section of the alignment that would not require pumping. There would be less impact on the local water table which may draw down for option 1 due to the deep excavation.

Appendices

Appendix A: Figures

DRAFT



LEGEND

HABITATS

Ancient Woodland

Semi-natural broad-leaved woodland

Intact species-rich hedge

Intact species-poor hedge

Amenity Grassland

Running Water

Open Water

GREAT CRESTED NEWTS

Small (1-9 observations)

None

250m Pond Buffer

No GCN Survey:-

Below average or Poor HSI Score

BATS

Multiple Features

Single Feature

Roost 2

HERITAGE CONSTRAINTS

Heritage Sites

Listed Building

OTHER

Golf Course

Farm

Existing Footpath

Roads

West Coast Mainline

Proposed Alignment

075150300 m

Scale @ A31:6,000

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. (LA100019571) (2009).

This drawing may be used only for the purpose intended and only written dimensions shall be used

south east manchester multi-modal strategy

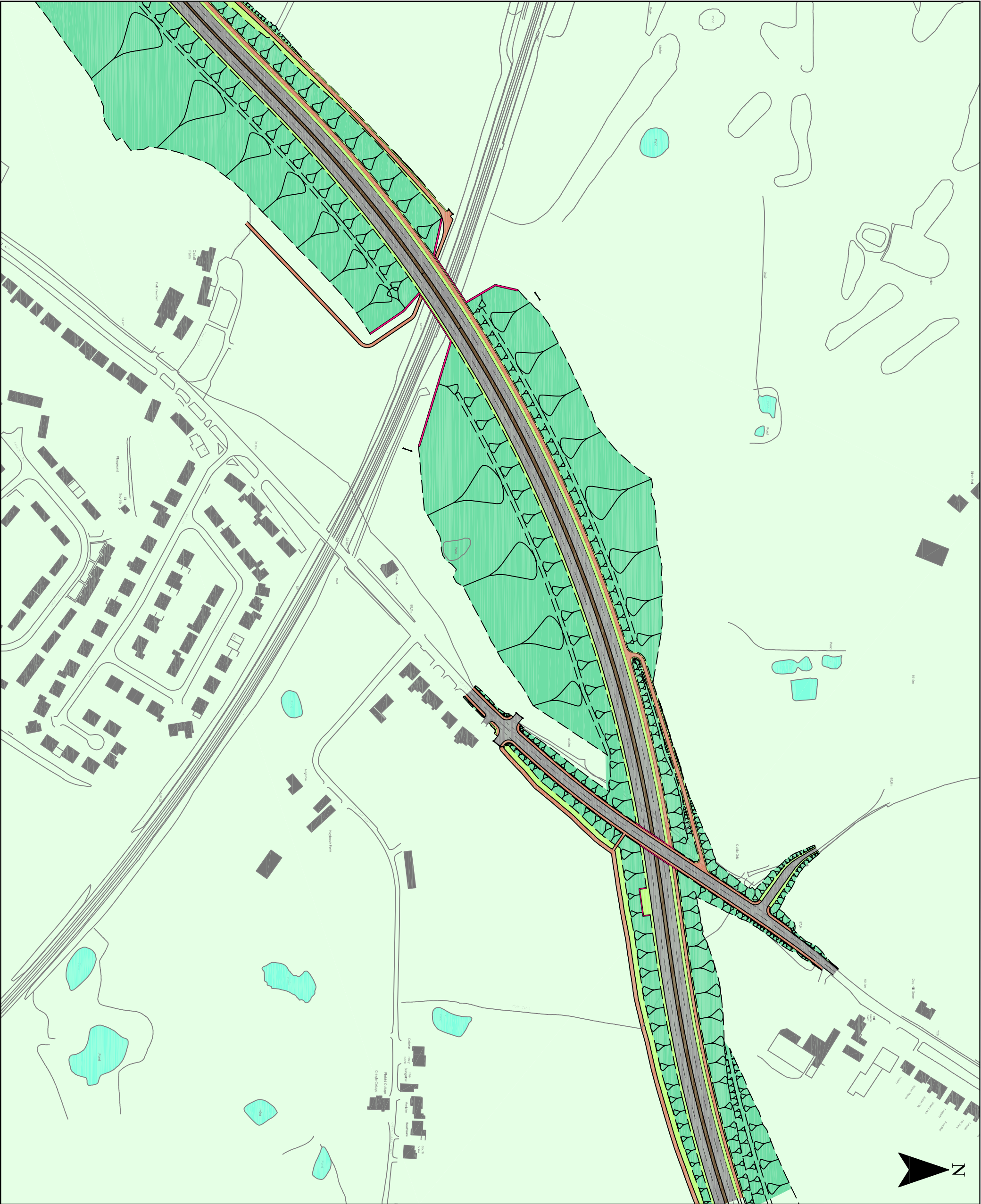
ClientStockport M.B.C

ProjectSEMMS A6 to Manchester Airport Relief Road

TitleWEST COAST MAINLINE CROSSING ENVIRONMENTAL CONSTRAINTS

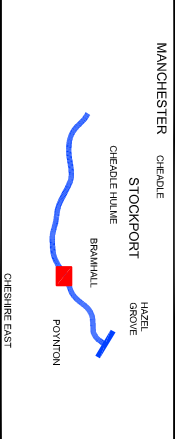
Figure No.FIGURE 1

© Mouchel



LEGEND

- CARRIAGEWAY
- CENTRAL RESERVE
- SHARED FOOTWAY/CYCLEWAY OR BRIDLEWAY
- VERGE
- LANDSCAPE
- STRUCTURE
- PEDESTRIAN CROSSING
- CYCLE LANE
- WATER



Scale @ A3
N.T.S.
Date 16-10-12

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.
(LA 100019571) (2009).

This drawing may be used only for the purpose intended and only written dimensions shall be used.

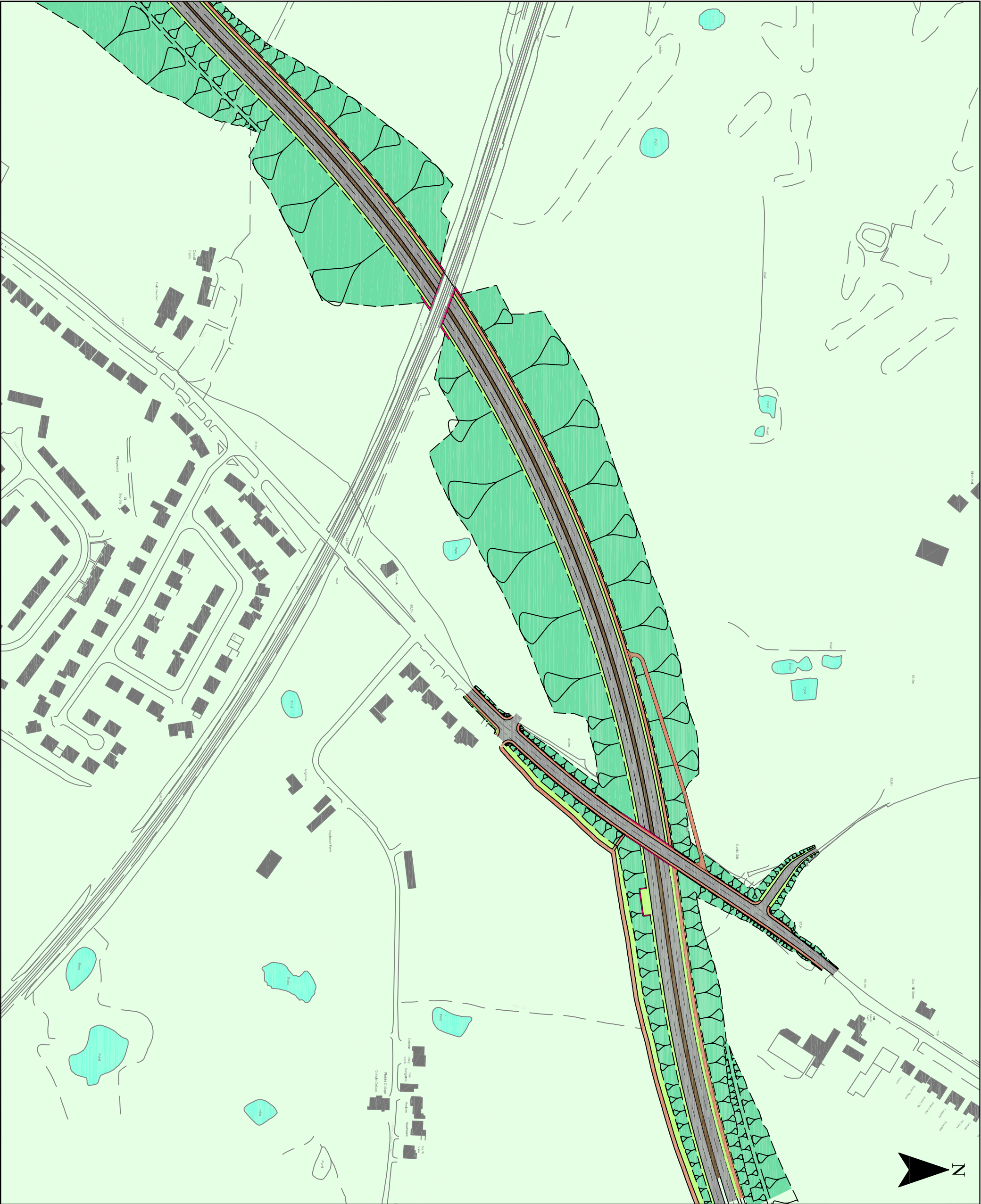


Client
Stockport M.B.C.

Project
SEMMS A6 to Manchester
Airport Relief Road

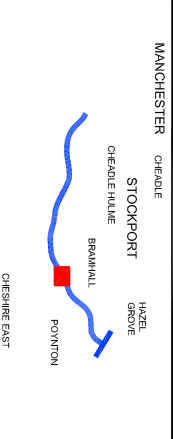
Title
OPTION 1
ROAD UNDER RAIL OPTION

Drawing Ref No. 1007/3D/DF5/A6-MA/GA/657
Figure No. FIGURE 2



LEGEND

- CARRIAGEWAY
- CENTRAL RESERVE
- SHARED FOOTWAY/CYCLEWAY OR BRIDLEWAY
- VERGE
- LANDSCAPE
- STRUCTURE
- PEDESTRIAN CROSSING
- CYCLE LANE
- WATER



Scale @ A3
N.T.S.
Date 16-10-12

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.
(LA 100019571) (2009).

This drawing may be used only for the purpose intended and only written dimensions shall be used.



Client
Stockport M.B.C.

Project
SEMMMS A6 to Manchester
Airport Relief Road

Title
OPTION 2
ROAD OVER RAIL OPTION

Drawing Ref No. 1007/3D/DF5/A6-MA/GA/6/15

Figure No. FIGURE 3