

# Stage 2 Road Safety Audit

## Exceptions Report

A36 Rossiter Road, Bath, Widcombe  
Parade One Way Eastbound

Bath and North East Somerset  
Council

Design and Projects

28 March 2014





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# Introduction

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This report provides responses to a Stage 2 Road Safety Audit carried out on the proposed A36 Rossiter Road scheme by CH2MHILL in January 2014. The scheme includes proposals to make Rossiter Road two-way and Widcombe Parade one-way eastbound.

These improvements include:

1. A new traffic signal junction at Rossiter Road/ Widcombe Parade;
2. A “crossover” new road alignment to enable two way traffic flows on Rossiter Road;
3. A new traffic signal junction at Rossiter Road/ Pulteney Road;
4. A new double mini-roundabout junction at Widcombe Parade/ Widcombe Hill/ Prior Park Road;
5. New/ revised toucan/ puffin crossings on Rossiter Road, opposite and to the east of the existing Widcombe footbridge that crosses the River Avon;
6. New puffin crossing at the east end of Widcombe Parade;
7. A “drop-off” on the east side of Rossiter Road for Bath Spa Railway station for up to four cars; and
8. Provision for eastbound vehicles up to 7.5 tonnes to make a u-turn from Rossiter Road to access Lyncombe Hill, with larger vehicles utilising an over-run area.

This would remove A36 strategic through traffic from Widcombe Parade thereby enhancing the environment.

The improvements to Widcombe Parade include the widening of the southern footway for the provision of an on-footway cycle lane for westbound cyclists. Eastbound cyclists will utilise the one way road carriageway.

This Exceptions Report reproduces each of the problems identified by the Audit Team and retains the unique reference numbers as shown on the plan contained within Appendix B of the Road Safety Audit. The responses are shown in bold.

## **Items raised at Stage 1**

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This scheme was subject to two Stage 1 Road Safety Audits: one in October 2010; and one in February 2011. Some of the issues raised in these Audits remain a problem and have been raised again within this Stage 2 Audit report. The issues raised again were referenced 3.1.1, 3.1.2, 3.2.2, 3.2.3, 3.4.1, 3.4.2 and 3.4.3 from the October 2010 audit and 3.4 in the February 2011 audit.

# **General**

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## **3.1 Loading/Maintenance**

### **3.1.1 Location: Rossiter Road**

**Summary:** Maintenance and drop off laybays

A layby has been provided on the north side of Rossiter Road east of the footbridge over the River Avon. The purpose of the layby is as a drop off point for the station. The Audit Team are concerned that this could be open to misuse resulting in drivers having to stop further along Rossiter Road, potentially obstructing the carriageway which is now two way.

This issue also applies at the Widcombe Parade junction with Rossiter Road where there are two areas of hard standing, one to enable large vehicles to U turn from Rossiter Road and access Lyncombe Hill and the other possibly for maintenance vehicles. No swept path analysis has been provided to demonstrate if U turning manoeuvres can be accommodated without a large vehicle mounting the pavement.

**Recommendation**

Extend the waiting restrictions through the drop off and maintenance laybys and sign clearly.

Provide swept path analysis of anticipated vehicles making U turn manoeuvres at the Widcombe Parade/Rossiter Road junction.

### **Response**

**Appropriate road markings and traffic signs will be provided to restrict vehicles waiting at the railway station drop off layby to 20 minutes. Double yellow lines will be provided further along Rossiter Road to prevent vehicles obstructing the carriageway.**

**Double yellow lines will be provided at the over-run area which is provided for U turns from Rossiter Road to Lyncombe Hill. A swept path analysis has demonstrated that vehicles up to 7.5 tonnes can make this manoeuvre without mounting the pavement.**

**Appropriate road markings and traffic signs will be provided to restrict the use of the area of hard standing at the new access road to Widcombe Parade. This area is intended for use as limited roadside parking and drop-off for the railway station (limited to 20 minutes), loading and unloading (limited daily period), use by the traffic signals maintenance vehicle and the swept path for long vehicles travelling from Rossiter Road into Widcombe Parade.**

## **3.2 Carriageway Width**

### **3.2.1 Location: Pulteney Road**

**Summary:** Restricted carriageway width

On the Pulteney Road approach to the double mini roundabout there is a pedestrian refuge, bus stop and section of on street parking. The width of the eastbound lane past the on street parking is approximately 2.8m which is likely to result in large vehicles encroaching into the opposite carriageway increasing the risk of head on collisions.

Visibility from the east side of the pedestrian refuge will also be reduced by the parked vehicles increasing the risk of conflicts involving pedestrians.

Recommendation

Relocate the on street parking.

### **Response**

**The width of the eastbound lane past the on street parking is 3.0 metres and a swept path analysis has demonstrated that large vehicles will not encroach into the opposite carriageway.**

**A build out has been introduced to provide visibility from the east side of the pedestrian refuge.**

## **3.3 Parking**

### **3.3.1 Location: Widcombe Parade**

Summary: Disabled parking

A disabled parking bay has been provided at the eastern end of Widcombe Parade on the north side of the carriageway. Vehicles parked in the bays immediately adjacent to the disabled bay may make manoeuvring in and out of the disabled space difficult.

Recommendation

Ensure that the disabled bay can be accessed without excessive manoeuvring.

### **Response**

**The dimensions of the disabled parking bay exceed the minimum size recommended within Chapter 5 of the Traffic Signs Manual.**

## **3.4 Drainage**

### **3.4.1 Location: Pulteney Road**

**Summary:** Lack of drainage

No drainage is indicated along a significant length of the Pulteney Road westbound approach to the signalised junction, increasing the risk of standing water in the carriageway.

**Recommendation**

Ensure that adequate drainage is provided.

**Response**

**It is confirmed that adequate drainage has been provided.**

### **3.4.2 Location: Rossiter Road**

**Summary:** Lack of drainage

The carriageway falls significantly from Widcombe Parade to Rossiter Road. No drainage has been provided on the south side of the splitter island opposite Widcombe Parade. This may result in surface water collecting in the vicinity of the pedestrian crossing point, increasing the risk of slips and falls.



**Recommendation**

Ensure that adequate drainage is provided.

**Response**

**It is confirmed that adequate drainage has been provided.**

## **3.5 Surfacing**

### **3.5.1 Location: Scheme wide**

#### **Summary: Surfacing details**

No surfacing details have been provided, in particular the use of high friction surfacing on the approaches to signalised junctions or the use of contrasting surfacing at uncontrolled pedestrian crossings.

#### **Recommendation**

Provide surfacing details.

#### **Response**

**Contract documentation includes drawings and a specification for the proposed road surfacing.**

**High friction surfacing is provided on the Rossiter Road approach to the puffin crossing at the railway station footbridge.**

**Contrasting surfacing is provided at uncontrolled pedestrian crossings in Widcombe Parade, Prior Park Road, Widcombe Hill and Pulteney Road (south).**

## **3.6 Bus Stops**

### **3.6.1 Location: Rossiter Road**

#### **Summary: Lack of westbound stops**

No provision has been made for westbound bus services on Rossiter Road. This could result in buses stopping at inappropriate locations for passengers to alight.

#### **Recommendation**

Ensure that westbound bus stop facilities are provided on Rossiter Road.

#### **Response**

**Provision has been made for westbound bus stop facilities on Pulteney Road (south) and on Claverton Street.**

# Junctions

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## 4.1 Visibility

### 4.1.1 Location: Rossiter Road/Hotel Access

Summary: Uncontrolled exit

Access to the hotel on the north side of the Rossiter Road/Pulteney Road signalised junction is uncontrolled despite forming a fourth approach to the junction. Drivers exiting the hotel may find identifying when it is possible to enter the junction difficult particularly if they are looking to the right and not appreciating that vehicles could be turning out of Pulteney Road immediately in front of them. This could result in head on and failure to give way collisions.

**Recommendation**

Ensure that drivers exiting the hotel are aware that they are joining a signal controlled junction and that the all red period is of sufficient length for these drivers to identify suitable gaps in which to enter the junction.

**Response**

**The provision of a traffic signal phase for traffic entering the junction from the hotel or the provision of an all red period would have a detrimental effect on the performance of the junction in peak periods.**

**The provision of a suitable traffic sign at the exit from the hotel site will ensure that the low volume uncontrolled traffic is aware that other traffic entering the junction is controlled by traffic signals. The give way line will be replaced with a stop line so that the left turn only manoeuvres from the hotel site into the junction can be completed safely during the inter-green periods. Drivers will have good visibility to all other traffic so that they can identify suitable gaps in which to enter the junction.**

### 4.1.2 Location: Rossiter Road/Pulteney Road

Summary: Forward visibility to signal heads

Forward visibility to the signal heads on the Pulteney Road approach (left and ahead lanes) is restricted by the horizontal alignment of the carriageway and orientation of the signal heads increasing the risk of late braking and shunts at the signals.

**Recommendation**

Ensure that sufficient forward visibility to the signal heads is provided.

**Response**

**The primary signal head and the two secondary signal heads on the Pulteney Road (south) approach will be positioned and orientated to maximise forward visibility for approaching traffic.**

### 4.1.3 Location: Rossiter Road/Widcombe Parade signals

Summary: Forward visibility to westbound signal heads

Forward visibility to the westbound signals on Rossiter Road is likely to be restricted by the nearside retaining wall and existing tree immediately prior to the signals, increasing the risk of late braking and rear shunts.

There is a possible 'see through' effect to the adjacent puffin crossing to the west of the signals resulting in driver confusion.



#### Recommendation

Ensure that appropriate forward visibility to the nearside signal heads is achieved.

Position the signal heads to avoid see through and provide louvers as necessary.

#### Response

**The height of the nearside retaining wall is such that it will not restrict visibility to the signal head on the westbound Rossiter Road approach. Similarly, all trees within the visibility envelope will be trimmed.**

**The location of the signal heads for the puffin crossing on Claverton Street will be reviewed to limit the "see through" effect. Louvers will be provided.**

#### **4.1.4 Location: Rossiter Road/canal access**

##### **Summary: Visibility from the canal access**

Visibility from the canal access may be restricted by vehicles waiting in the proposed drop of layby located approximately 8m west of the access. This could increase the risk of failure to giveaway collisions and conflicts with cyclists joining the carriageway from the shared footway/cycleway.



##### **Recommendation**

Provide appropriate forward visibility to and from the access.

##### **Response**

**This vehicle access is limited to occasional use by the “Canal and River Trust” traffic. Vehicles exiting onto Rossiter Road will be limited to the left turn only.**

#### **4.1.5 Location: Prior Park Road approach to double mini roundabout**

**Summary:** Restricted visibility to the right

Visibility to the right from the Prior Park Road approach to the mini roundabout is likely to be restricted by an existing telephone box and other street furniture resulting in failure to give way collisions.



#### **Recommendation**

Ensure that appropriate visibility to the right is provided.

#### **Response**

**Visibility to the appropriate give way line is not restricted by street furniture.**

#### **4.1.6 Location: Rossiter Road/car park access**

**Summary:** Restricted visibility to the right

Visibility for vehicles exiting the car park off Rossiter Road is restricted to the right by the existing bridge parapet. Now that Rossiter Road is two way, exiting the car park will be more difficult increasing the risk of failure to giveaway collisions.



#### **Recommendation**

Ensure that sufficient visibility from the car park exit is provided.

#### **Response**

The layout of the service area and car park has been reviewed and it will be amended so that the existing entrance and exit onto Rossiter Road are reversed. There is sufficient visibility to the right for traffic exiting this area from the western junction with Rossiter Road. The restricted visibility to the left will be mitigated by imposing a left turn only restriction.

#### **4.1.7 Location: Double Mini Roundabout**

**Summary:** Swept path analysis

No swept path analysis has been provided for movements at the double mini roundabout. The Audit Team are concerned that large vehicles may encroach into the opposing traffic in order to negotiate the junction.

**Recommendation**

Ensure that all movements can be accommodated at the double mini roundabout.

**Response**

Existing carriageway widths and kerb alignments at the junctions with Widcombe Hill and Prior Park Road result in long vehicles encroaching into the opposing traffic lane. A swept path analysis has indicated that this will be no worse with the double mini roundabout. It is noted that parked vehicles along the Widcombe Hill and Prior Park Road approaches to the new roundabouts also result in long vehicles encroaching into the opposing traffic.

# Non-motorised Users

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## 5.1 Pedestrians

### 5.1.1 Location: Widcombe Parade and Rossiter Road

Summary: Tactile paving layout

The stems of the tactile paving at the two puffin crossings are shown on the left. Visually impaired pedestrians normally anticipate the stem to be on the right which may lead to some confusion.

Recommendation

Provide the stem of the tactile paving on the right.

#### Response

**The stems of the tactile paving at the two puffin crossings have now been located on the right.**

### 5.1.2 Location: Widcombe Hill

Summary: Visibility to uncontrolled crossing

An uncontrolled pedestrian crossing is provided on the Widcombe Hill approach to the double mini roundabout. Forward visibility to the crossing from Pulteney Road is restricted by building frontages increasing the risk of a conflict between pedestrians and vehicles.

Recommendation

Ensure that sufficient visibility to and from the crossing is provided.

#### Response

**There is better visibility to the proposed uncontrolled pedestrian crossing facility on Widcombe Hill compared to the existing dropped kerb facility a little further away from the junction.**

**The location and orientation of the proposed crossing has been revised to provide more visibility from Pulteney Road (south).**

**Contrasting surfacing will reduce the risk of a conflict between pedestrians and vehicles.**

## **5.2 Cyclists**

### **5.2.1 Location: Rossiter Road/canal access**

**Summary:** Cyclists merging into carriageway

The cycleway on the north side of Rossiter Road ends at the access to the canal although it is not clear where cyclists go from this point onwards. This could result in cyclists unexpectedly merging into the carriageway and coming into conflict with vehicles. This is also an issue where the shared westbound footway/cycleway ends at the junction with Lyncombe Hill.

**Recommendation**

Indicate how and where cyclists continue their onward journeys.

**Response**

**The proposed shared use cycleway/footway on the north side of Rossiter Road terminates at the vehicle access road to the canal. There are no designated cycle routes promoted by the Council beyond this point. Cyclists may wish to join Rossiter Road at this junction but no formal provision can be made for this manoeuvre due to the road and footway geometry so it cannot be signed. Alternatively, cyclists may choose to make use of the access road to the canal towpath and the riverside route to the city centre but there are some legal issues to be resolved before it can be promoted by the Council.**

**The proposed shared westbound footway/cycleway terminates at the junction with Lyncombe Hill and there are no designated cycle routes promoted by the Council beyond this point. Cyclists may wish to join the carriageway at this junction and travel up Lyncombe Hill but no formal provision can be made for this manoeuvre due to the road and footway geometry. At busy times, the puffin crossing on Claverton Street will provide gaps in the traffic turning into Lyncombe Hill so that cyclists can safely perform this manoeuvre. Alternatively, cyclists may choose to make use of the enlarged island at this junction and join traffic entering the junction to making the left turn into Claverton Street. Again no formal provision can be made for this manoeuvre but, at busy times, the puffin crossing on Claverton Street will provide gaps in the A36 westbound traffic and gaps in traffic turning into Lyncombe Hill so that cyclists can safely perform this manoeuvre.**

### **5.2.2 Location: Widcombe Parade**

**Summary:** Cycle access to the shared footway/cycle

Cyclists intending to travel westbound on Widcombe Parade access the shared footway/cycleway from the corner of Widcombe Parade and Prior Park Road on the mini roundabout. Within the first 4m the cycle route ends prior to the puffin crossing where pedestrians are likely to be standing. The cycleway then continues past two further uncontrolled crossing points where pedestrians are again likely to be standing in the cycleway, potentially looking in the opposite direction towards on coming traffic, and therefore less aware of approaching cyclists.

**Recommendation**

Incorporate the cycleway into the carriageway as a contraflow on the basis that vehicle speeds and traffic flows are within the criteria used when introducing a contraflow cycle lane.

## **Response**

The Widcombe Parade proposals have been developed by balancing road safety and amenity against the needs of pedestrians, cyclists and road users. A segregated off-road contraflow cycleway adjacent to the footway offers a good balance without compromising road safety. At the uncontrolled pedestrian crossings, corduroy paving will reduce the risks of conflicts between cyclists and pedestrians. Where roadside parking is provided, a 2 metres wide cycleway is provided so that cyclists will not be at risk from conflicts with car doors opening.

## **6. Road Signs, Carriageway Markings and Lighting**

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### **6.1 Road Signs**

#### **6.1.1 Location: Scheme wide**

##### **Summary: Mounting heights**

No details of sign face mounting heights have been provided. Sign SN2 is located within the footway on the north side of Rossiter Road with SN1 mounted below. If mounted too low pedestrians are at risk of striking the sign. This applies for SN23 located on the east side of Rossiter Road and also sign SN30.

##### **Recommendation**

Ensure that all signs are mounted at appropriate heights.

##### **Response**

**Traffic signs located in footways will be mounted at the appropriate height.**

#### **6.1.2 Location: Pulteney Road approach to Rossiter Road**

##### **Summary: Position of no entry sign SN27**

A no entry sign (SN27) has been provided for northbound vehicles approaching the signalised junction with Rossiter Road. The sign is located in the splitter island and without a second sign in the footway on the opposite side of the carriageway it is may be unclear which carriageway is no entry, increasing the risk of head on collisions.

##### **Recommendation**

Provide a second sign to be located on the east side of the carriageway.

##### **Response**

**A second no entry sign will be provided opposite sign SN27.**

### **6.1.3 Location: Pulteney Road approach to Rossiter Road**

**Summary:** SN36A & B

Sign reference SN36A & B are located in the footway on the corner of Widcombe Parade and Prior Park Road. The footway at this location is narrow, on a blind corner due to building frontages and where cyclists will be accessing the cycleway off the mini roundabout. No mounting heights are provided and the sign is likely to reduce the effective width of the footway just where there is potential for pedestrian/cycle conflicts.

Vehicles approaching the mini roundabout from Prior Park Road are unlikely to be able to see the no entry signs on Widcombe Parade as the sign faces are not oriented in this direction.

The radii on the Widcombe Parade approach to the mini roundabout does not discourage drivers from turning into the no entry which is compounded by the orientation of the no entry signs.

**Recommendation**

Ensure that the mounting height of the signs is appropriate for a shared footway/cycleway and that it is clear to drivers approaching the mini roundabout from Prior Park Road that Widcombe Parade is no entry.

Amend the radii on the Widcombe Parade approach to support the no entry.

**Response**

**The location, mounting height and orientation of the no entry signs will be reviewed and the kerb radius will be revised.**

### **6.1.4 Location: Lyncombe Hill approach to Rossiter Road**

**Summary:** No turn left sign

Vehicles approaching Rossiter Road from Lyncombe Hill may not be aware that they are joining a one way carriageway.

**Recommendation**

Provide appropriate signing and turn left carriageway markings to emphasise that they are joining a one way carriageway.

**Response**

**The Lyncombe Hill approach to Claverton Street is currently a left turn only onto a one way road and this will not change. However, additional traffic signs and road markings will be provided to make it clear that vehicles are joining a one way carriageway.**

### **6.1.5 Location: Rossiter Road eastbound**

**Summary:** Forward visibility to SN3

ADS sign reference SN1 may reduce forward visibility to sign reference SN3 the advance signals warning sign, reducing its effectiveness.

**Recommendation**

Provide appropriate clear visibility to sign reference SN3.

**Response**

**Visibility to sign reference SN3 will be reviewed.**

## **6.2 Carriageway Markings**

### **6.2.2 Location: Double mini roundabouts**

**Summary:** Missing centre line

The centre line between the two mini roundabouts is missing. This could result in drivers encroaching into the opposing traffic flow, increasing the risk of head on collisions.

**Recommendation**

Provide a centre line marking.

**Response**

**The centre line road marking will be provided.**

### **6.2.3 Location: Rossiter Road westbound approach to signals**

**Summary:** Lack of hatching

Where the left turn lane from Rossiter Road diverges into Pulteney Road the carriageway narrows on the approach to the signals. No hatching in this area has been provided which could be used for parking, obstructing forward visibility to the signals.

**Recommendation**

Provide hatching.

**Response**

**This hatching will be provided.**

# Appendix A

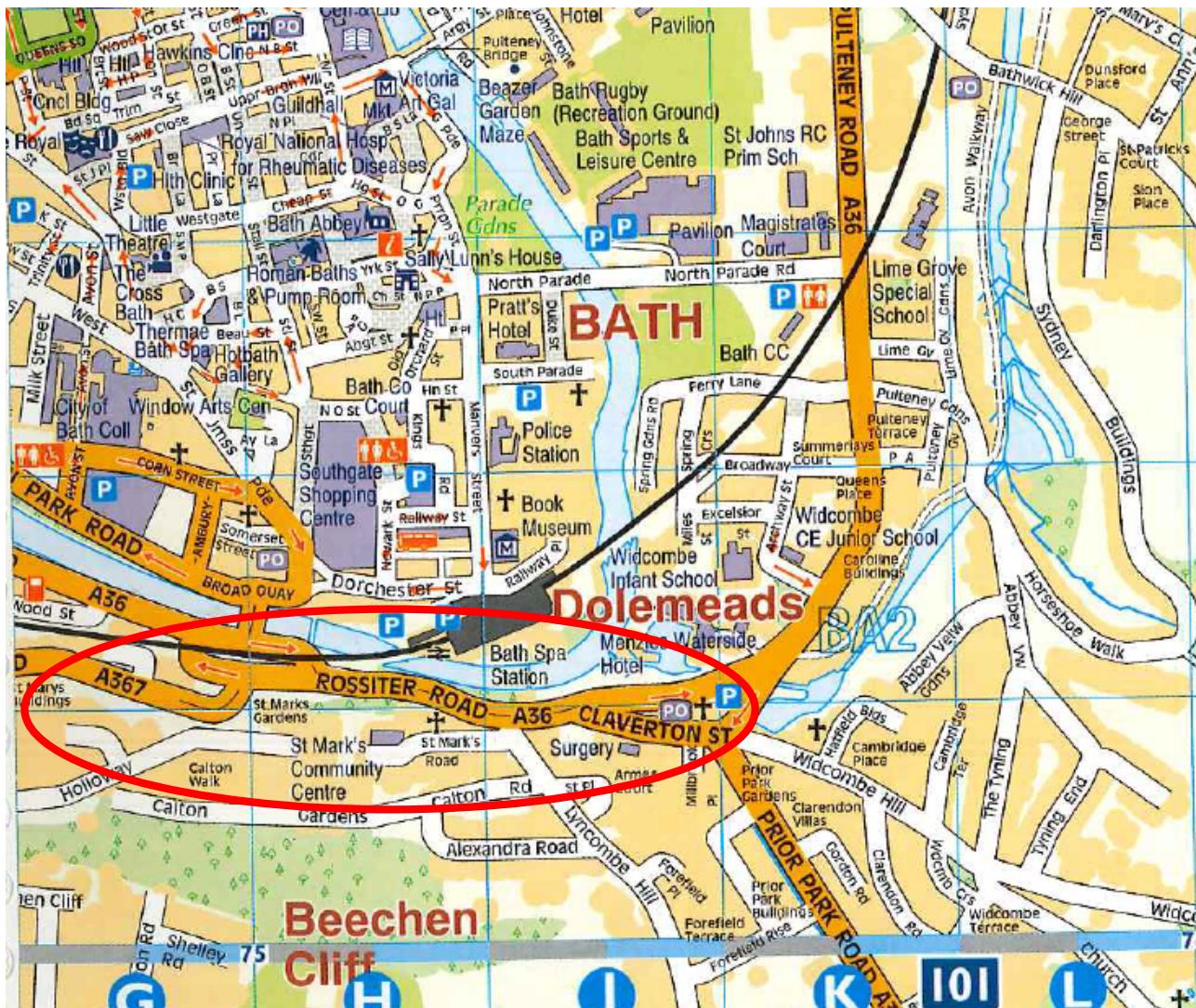
## List of Drawings and Documents Supplied

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Document	Rev.	Description
2014-01-20	-	Drainage Design – Gully Plan Sheet 1
2014-01-20	-	Drainage Design – Gully Plan Sheet 2
2014-01-20	-	Drainage Design – Gully Plan Sheet 3
2014-01-20	-	Drainage Design – Gully Plan Sheet 4
TC8821/H100	D	A36 Rossiter Road Widcombe Parade One-Way Eastbound – General Arrangement
TC8821/H111	-	A36 Rossiter Road Widcombe Parade One-Way Eastbound – Design Strings Sheet 2
TC8821/H112	-	A36 Rossiter Road Widcombe Parade One-Way Eastbound – Design Strings Sheet 3
TC8821/H113	-	A36 Rossiter Road Widcombe Parade One-Way Eastbound – Design Strings Sheet 2
TC8821/H122	-	A36 Rossiter Road Widcombe Parade One-Way Eastbound – Cross Sections Sheet 2 Rossiter Road
TC8821/H123	-	A36 Rossiter Road Widcombe Parade One-Way Eastbound – Cross Sections Sheet 3 Widcombe Parade
TC8821/H1204	-	A36 Rossiter Road Widcombe Parade One-Way Eastbound – Traffic Signs Sheet 1
TC8821/H1205	-	A36 Rossiter Road Widcombe Parade One-Way Eastbound – Traffic Signs Sheet 2
TC8821/H1206	-	A36 Rossiter Road Widcombe Parade One-Way Eastbound – Traffic Signs Sheet 3
TC8821/H1207	-	A36 Rossiter Road Widcombe Parade One-Way Eastbound – Traffic Signs Sheet 4
TC8821/H1210	-	Rossiter Road Improvements – A36 Widcombe Parade Junction and Adjacent Crossing Traffic Signal Design Sheet 1 of 2
TC8821/H1211	-	Rossiter Road Improvements – A36 Widcombe Parade Junction and Adjacent Crossing Traffic Signal Design Sheet 2 of 2
TC8821/H1212	-	Rossiter Road Improvements – A36 Rossiter Road and Pulteney Road Junction Traffic Signal Design Sheet 1 of 2
TC8821/H1213	-	Rossiter Road Improvements – A36 Rossiter Road and Pulteney Road Junction Traffic Signal Design Sheet 2 of 2
TC8821/H1214	-	Rossiter Road Improvements – A36 Widcombe Parade Roundabout Junction with Adjacent Crossing Sheet 1 of 1
-	-	A36 Rossiter Road Notes on Lighting Class Selections
TC8821/H1300	-	A36 Rossiter Road Lighting
TC8821/H1301	-	A36 Rossiter Road Lighting Luminaire Table
TC8821/H1400	-	A36 Rossiter Road Lighting DNO Discon CONS
TC8821/H1401	-	A36 Rossiter Road Lighting PCN Discon Cons
TC8821/H1402	-	A36 Rossiter Road Lighting Elec Terminations
TC8821/H1403	-	A36 Rossiter Road Lighting Ducting Layout
TC8821/H1700	-	Retaining Wall No.1 GA
TC8821/H1702	-	Retaining Wall No.2 GA
TC8821/H1703	-	Pedestrian Ramp GA

-	-	5 Year Accident Plot Widcombe Parade 01/11/08 – 31/10/13
-	-	5 Year Accident Plot Claverton Street 01/11/08 – 31/10/13
-	-	5 Year Accident Plot Rossiter Road 01/11/08 – 31/10/13
-	-	5 Year Accident Plot Widcombe Hill 01/11/08 – 31/10/13

## Appendix B Location Plan



# **Appendix C Key Plans**

