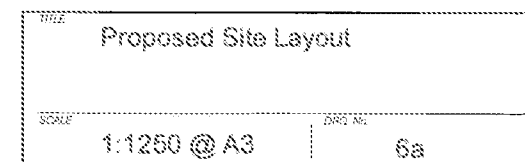
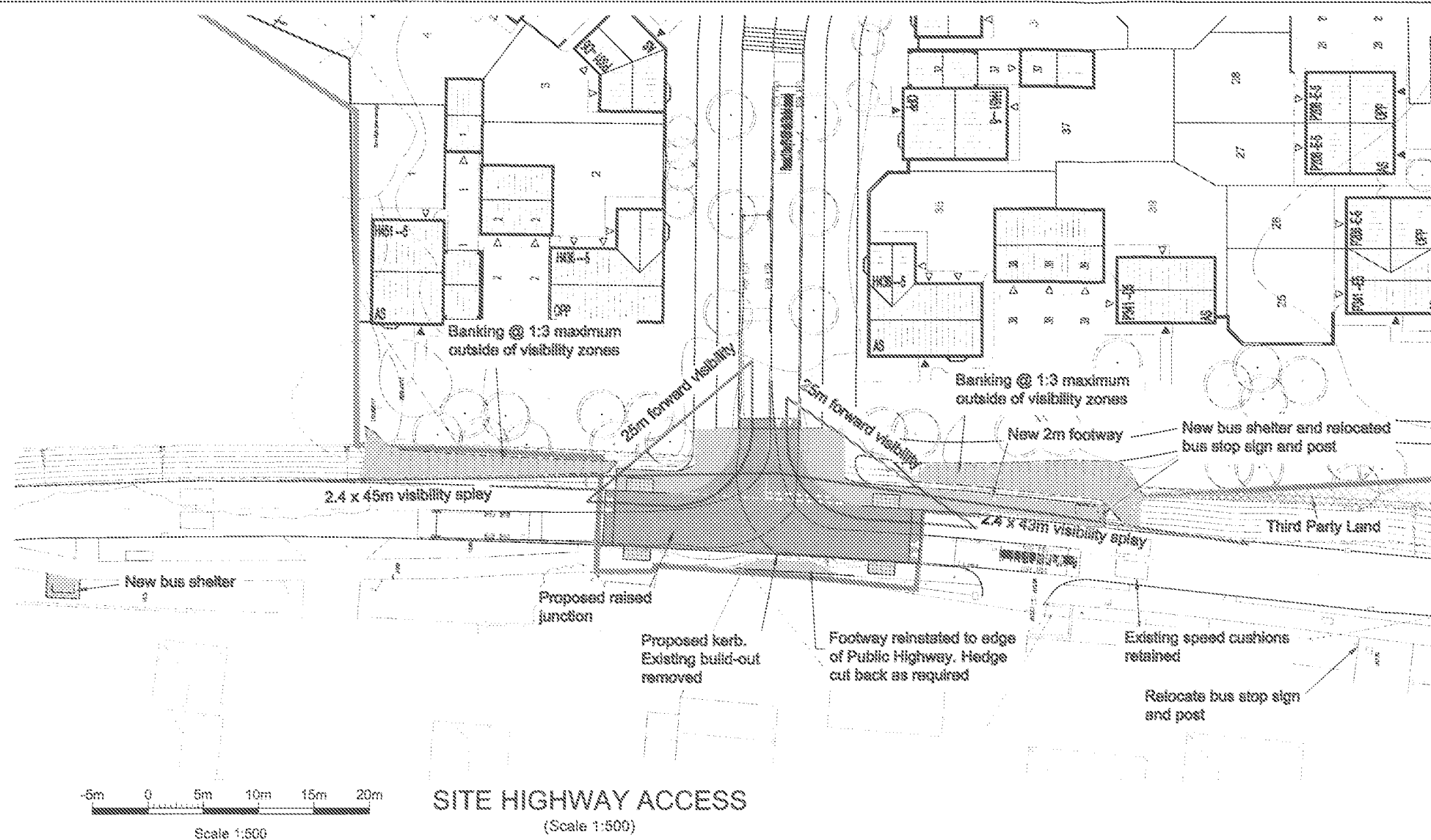
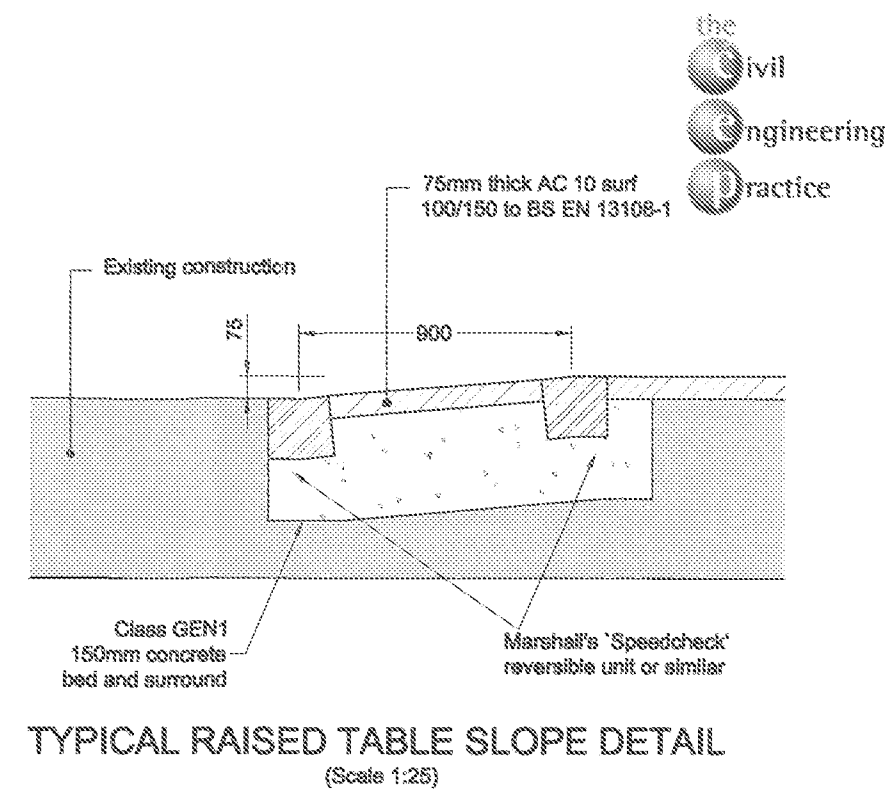
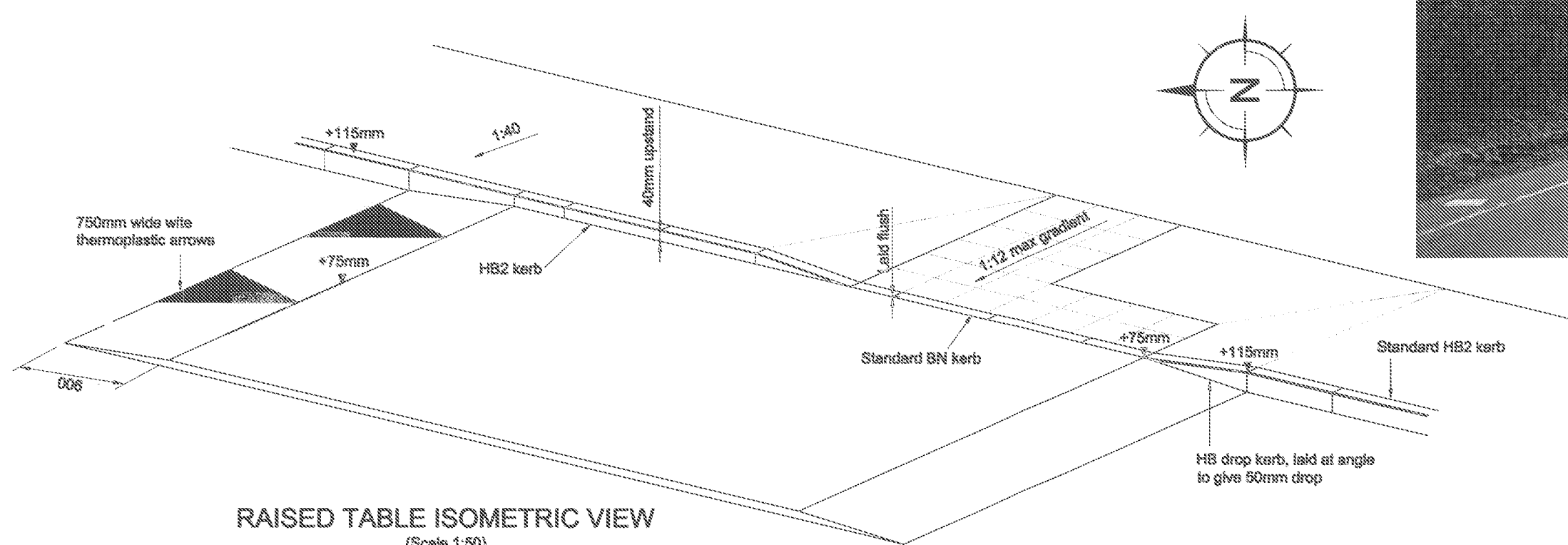


Appendix 6

Proposed Site Layout Plan and Highway Access Plan





TITLE Highway Access Plan		
SCALE As Shown @ A3	DATE 1st	6b

Appendix 7

Alteration of Existing Traffic Calming

Justification and Design Statement and

Response to Informal TRO Consultations into Traffic Calming on

Roundstone Lane



The Civil Engineering Practice
11 Tungsten Building
George Street
Fishersgate
Sussex
BN41 1RA

T. 01273 424 424
F. 01273 424 425
E. design@civil.co.uk
www.civil.co.uk

Alteration of Existing Traffic Calming Feature Justification and Design Statement Preliminary Design Stage

Associated with residential Development at

**Roundstone Lane
Angmering, West Sussex
Arun District Council Planning Application A/82/12**

On behalf of

Barratt David Wilson Southampton

November 2012

1 Introduction

- 1.1 This statement is produced to support the highway access proposal for the residential development on land to the east of Roundstone Lane on behalf of Barratt David Wilson Southampton and requested by West Sussex County Council as Highway Authority.
- 1.2 The review assesses traffic calming on Roundstone Lane between the junctions with High Street and Nursery Road and the proposal to remove the existing kerbed buildout priority feature in relation to this stretch of highway, the proposed development site and the surrounding area.
- 1.3 This statement should be read in conjunction with the following drawings a copy each of which are attached:
 - 22067/109 Roundstone Lane Traffic Calming Highway Access Overview.
 - 22067/104B Highway Access Plan Proposed Raised Junction.
- 1.4 This statement should also be read in conjunction with the Transport Assessment dated July 2012 submitted with the Planning Application (Arun District Council reference A/82/12).

2 Background and Local Traffic Calming Schemes

2.1 Bramley Green Housing Estate and Angmering Bypass

- 2.1.1 The Bramley Green Housing Estate completed in 2005 is located to the west of Roundstone Lane to the southwest of the proposed development and comprises approximately 600 homes.
- 2.1.2 The A280 Angmering Bypass was constructed between 2001 and 2003 and opened in February 2003 built with developer funding from the Bramley Green development.
- 2.1.3 The bypass was originally a West Sussex County Council scheme which had undergone a Public Inquiry in 1993/1994 intended to reduce traffic flows through Angmering Village and allow the closure of central reservation gaps in the A27. Subsequent improvements on the A27 provided the grade separated junction into which the Angmering Bypass now connects.

2.2 Angmering Village Traffic Calming

- 2.2.1 Further to monitoring of the effects of the bypass and as part of the measures to encourage the use of the A280 Angmering Bypass over routes through Angmering Village WSCC devised a traffic calming scheme in consultation with Angmering Parish Council and using developer funding from the capital works fund for the Bypass.

2.2.2 The following works were constructed between July and November 2004:

- Station Road – extension of the 30 mph speed restriction, a gateway feature at the southern end of the proposed 30 mph speed restriction, priority give way features.
- Arundel Road – waiting restrictions, gateway feature, priority give way features.
- Water Lane – extension of the 30 mph speed restriction, gateway feature, priority give way features.
- Dappers Lane – extension of the 30 mph speed restriction, gateway feature.
- Roundstone Lane – speed cushions, priority give way feature.
- The Square - 20 mph speed limit, parking restrictions, kerb realignments.

2.2.3 The right turn facility on the A27 at Hammerpot was closed by the Highways Agency in February 2004 and a one way system was introduced at the northern end of Dappers Lane under the A27 bridge in March 2004.

2.2.4 Studies were undertaken by WSCC in July 2004 and July 2005 which reported that the Angmering Bypass and Angmering Village traffic management were operating successfully in tandem encouraging through traffic away from Angmering Village.

2.3 Bramley Green Traffic Calming

2.3.1 The Bramley Green Estate was designed for a 20mph speed limit. Raised junctions and priority give way features were incorporated into the street layout.

2.3.2 Following problems with onstreet parking and vehicle speeds in excess of the 20mph limit additional traffic calming and waiting restrictions were proposed, consulted on and approved in 2011. The traffic calming includes three new 75mm raised speed tables; two on Nursery Road and one on Bramley Way to the south.

3 Existing Situation

3.1 Roundstone Lane Traffic Calming

- 3.1.1 In the vicinity of the proposed development site on Roundstone Lane between the junctions with High Street and Nursery Road there are three sets of 75mm high tarmac speed cushions either side of a priority give way feature which gives priority to southbound vehicles.
- 3.1.2 There is an 80m gap between the two sets of speed cushions in which a 10m long kerbed buildout (priority feature) 45m from the northern set of cushions and 25m from the southern set has been constructed.
- 3.1.3 The narrowing is on the western side thereby restricting the northbound flow only when conflicting with southbound vehicles.

3.2 Traffic Flows and Speeds

- 3.2.1 A 7 day automatic traffic volume and speed survey was undertaken adjacent to the kerbed buildout between 18 and 25 June 2012.
- 3.2.2 The survey recorded a 7 day average of 1,373 vehicles northbound and 1,652 vehicles southbound. The proportion of heavy vehicles in both directions was approximately 5%.
- 3.2.3 Vehicles speeds recorded a mean average speed of 24mph and an 85%ile speed of 29mph northbound and a mean average speed of 27mph and an 85%ile speed of 32mph southbound.
- 3.2.4 There is a difference in speed between the two directions. Southbound traffic has an uninterrupted passage and clear visibility to oncoming traffic which allows higher vehicle speeds whereas northbound traffic has to give way to southbound traffic and ensure no oncoming traffic before negotiating the narrowing producing lower speeds.
- 3.2.5 The speed survey demonstrates that the presence of the buildout does have a speed controlling effect in the northbound direction.
- 3.2.6 Accident records obtained and included in the Transport Assessment show there have been no recorded accidents on this stretch of road or in the surrounding streets in the vicinity of the development over a three year period to July 2011.

4 Onsite Development Proposals

4.1 Scheme Proposal and Travel Demand

- 4.1.1 The proposed housing development consists of 150 new homes built on land to the east of Roundstone Lane served from a new highway access onto Roundstone Lane.

- 4.1.2 The new development would produce approximately 130 vehicle trips during peak hours and approximately 30 pedestrians crossing from the site entrance to the footway on the western side of Roundstone Lane.

4.2 Proposed Highway Access

- 4.2.1 Land ownership restrictions and strong architectural requirements restrict the location of the new highway access which is necessary to be positioned adjacent to the existing kerbed buildout.
- 4.2.2 The levels onsite adjacent to Roundstone Lane are currently approximately 1.5m higher than the existing road levels and there will be a gradient into the site of between 1:20 and 1:12 to accommodate this change in level.
- 4.2.3 The findings of a Stage 1 Road Safety Audit commented that the creation of a new bellmouth adjacent to the existing kerbed buildout without alteration would be a safety concern due to allowing vehicles to avoid the width restriction by passing within the bellmouth increasing risk of collision with vehicles entering and exiting the site entrance. The recommendation was to remove the kerbed buildout.

5 Design Influence

5.1 Road Safety and Environmental Considerations

- 5.1.1 Roundstone Lane is a 30mph posted speed limit residential street and the traffic calming should be self enforcing and produce 85%ile speeds at or below 30mph whilst promoting non vehicular movements and increased awareness of the new junction and residential development.
- 5.1.2 The position of the new junction requires the removal of the kerbed buildout which would not be able to function safely within a bellmouth. The recommendation of the Safety Audit is to remove the buildout.
- 5.1.3 The proposed development will add pedestrian movements crossing Roundstone Lane at this junction.
- 5.1.4 There are existing residential dwellings on the western side of Roundstone Lane which may be affected by changes to traffic calming features in terms of noise, emissions and vibration.

5.2 Retaining Existing Traffic Calming Function

- 5.2.1 The speed reducing function of the priority give way feature would need to be replaced. Any alteration to the traffic calming arrangement on Roundstone Lane will need to work effectively with the existing traffic calming measures.

5.3 Bus Route and Emergency Services

- 5.3.1 The Stagecoach number 9 service travels along Roundstone Lane once an hour in both directions.
- 5.3.2 The traffic calming must not hamper the ability of the emergency services to access the proposed development site or pass along Roundstone Lane.

6 Options Considered for Alteration of Traffic Calming

- 6.1 The options for replacing the priority buildout with a traffic calming feature in the same location are limited due to the need to incorporate the minor arm of the new junction.
- 6.2 Option One – Remove buildout and reinstate carriageway and footway
 - 6.2.1 The removal of the buildout would leave a gap of 80m between the two sets of traffic calming speed cushions. This distance is not excessive in terms of current guidance on proximity of speed reducing features.
 - 6.2.2 Removing the priority give way feature and reinstating the carriageway to full width and realigning the footway on the western side could lead to an increase in vehicle speeds over the existing situation due to removal of the speed reducing effect of the buildout.
 - 6.2.3 The gap between the two sets of speed cushions could be reduced by adding a further set equally spaced 40m between the two existing sets which would place it just to the north of the entrance bellmouth adjacent to the pedestrian crossing. Alternatively additional measures such as signage or vehicle activated speed reminder signs could be added in lieu of a physical feature.
- 6.3 Option Two – Remove buildout and replace with a raised junction
 - 6.3.1 Replacing the buildout with a raised junction would retain a speed reducing feature in this location and provide for pedestrian crossings at the entrance.
 - 6.3.2 There are approved proposals to install raised junctions within the nearby Bramley Green Estate which have been agreed by the emergency services as part of the TRO process for those works. Similar approval will be required for Roundstone Lane.
 - 6.3.3 The presence of a raised junction in this location would act together with the existing speed cushions in Roundstone Lane and nearby traffic calming measures in the Bramley Green Estate.

6.3.4 The raised junction would provide an entrance feature to the housing development within which the onsite streets are designed for 20mph vehicle speeds with reduced priority for vehicle traffic in accordance with principles within Manual for Streets.

6.3.5 The gradient of the initial section of the entrance road down to Roundstone Lane would also be mitigated by the presence of a raised junction in terms of reducing approach speeds to the junction and risk of overshoot.

6.4 Option Taken Forward

6.4.1 Both options are achievable within land that is under the control of the developer or is Public Highway.

6.4.2 Option 1 is the minimum required to safely allow for a new entrance at this location on Roundstone Lane.

6.4.3 Option 2 retains the existing speed reducing function of the existing priority buildout whilst providing a high quality entrance and traffic calming feature at the junction with the proposed housing development.

7 Relevant Design Guidance and Standards

7.1 These proposals are not specifically addressed by the Highway Authority's Local Design Guide for residential estate roads nor the Department for Transport's Design Manual for Roads and Bridges.

7.2 Manual for Streets (2007) and Manual for Streets 2 (2010)

7.2.1 With regard to Traffic Calming, Manual for Streets (MfS) and Manual for Streets 2 (MfS2) give guidance but no technical design standards on Traffic Calming features.

7.2.2 Paragraph 6.5.5 of MfS states that *'Where it is necessary to introduce traffic-calming features, designers should consider their potential effects on buses and bus passengers'*.

7.2.3 Paragraph 7.4.2 of MfS states that *'For residential streets, a maximum design speed of 20 mph should normally be an objective. The severity of injuries and the likelihood of death resulting from a collision at 20 mph are considerably less than can be expected at 30 mph. In addition, vehicle noise and the intimidation of pedestrians and cyclists are likely to be significantly lower.'*

7.2.4 Paragraph 7.4.3 of MfS states that *'Evidence from traffic-calming schemes suggests that speed-controlling features are required at intervals of no more than 70 m in order to achieve speeds of 20 mph or less.'*

7.2.5 Paragraph 7.4.9 of MfS states that *'Difficulties may be encountered where a new development connects to an existing road. If the junction geometry cannot be made to conform to the requirements for prevailing traffic speeds, the installation of traffic-calming measures on the approach will allow the use of a lower design speed to be used for the new junction.'*

7.2.6 Paragraph 10.3.5 of MfS states that *'Lighting should illuminate both the carriageway and the footway, including any traffic-calming features, to enable road users to see potential obstacles and each other after dark.'*

7.2.7 MfS2 applies the principles of design set out within MfS to wider applications including village centres and rural situations.

7.3 DfT Local Transport Note 1/07: Traffic Calming

7.3.1 LTN 1/07 gives a comprehensive summary of the research base available from the Department for Transport studies together with research from external sources.

7.3.2 Table 1.1 summarised the traffic calming measures available and categorises raised junctions as largest reduction of traffic speeds, largest impact on traffic flows, largest reduction in injury accidents and most acceptable to the public.

7.3.3 Paragraph 2.5.3 states *'Road humps constructed to the maximum permitted height (100 mm) have elicited comments from bus operators about passenger and crew discomfort and increased maintenance costs for vehicles. Some of these objections can be overcome by using humps with lower heights (75 mm) and shallower on/off ramp gradients (1:15), as recommended by the Department'*

7.3.4 Paragraph 2.5.4 states that *'For flat-top humps (Fig. 2.1), the shallower the gradient of the on/off ramps, the lower the speed reduction. Trials by local authorities indicate that gradients of about 1:15 were noticeably more comfortable than gradients of 1:10, but little further gain was obtained with gradients of 1:15 and 1:20. This suggests that 1:15 would be a suitable compromise to obtain reasonable speed reduction without excessive discomfort (TAL 02/96).'*

7.3.5 Paragraph 2.7.14 states that *'...Kerb-to-kerb flat-top humps will assist wheelchair users when crossing roads'*.

7.3.6 Paragraph 2.7.28 states that *'...If upstands cannot be avoided, they must be less than 6 mm to comply with the Highways (Road Humps) Regulations 1999 (although even 6 mm upstands can be uncomfortable for cyclists). Ideally, where road humps are situated at or near junctions,*

the humps should be set back, so two-wheeled vehicles can complete any turning manoeuvre before negotiating the hump.'

7.3.7 Paragraph 2.8.5 states that *'Where flat-top road humps are used to form a pedestrian crossing place, then the lighting should be such as to ensure drivers can be aware of pedestrian movements or intentions. If colour is used to improve the conspicuity of any road hump, street lamps providing a good colour rendering should be considered.'*

7.3.8 Paragraph 3.3.2 states that *'The self-enforcing measures used to prevent the 85th percentile speed of cars and light vans exceeding 30 mph include 75 mm high flat-top humps with on/off ramp gradients of about 1:15 (but may need to be steeper), round-top humps 50 to 75 mm high, speed cushions, 'thumps', horizontal deflections and mini-roundabout (see Sections 4 to 8). The speed control characteristics of other measures (e.g. narrowings, traffic islands and pedestrian refuges) are not as great and may not be sufficient on their own to keep speeds below 30 mph.'*

7.4 DfT Traffic Advisory Leaflet 2/96: 75mm High Road Humps

7.4.1 This advisory leaflet specifically for this type of traffic calming states that *'75mm high road humps generally create less discomfort for bus occupants than 100mm, high humps, and using shallower gradients will also help to reduce this further. However, the shallower the gradient the less the speed reduction. Trials by local authorities indicate that 1:15 gradients were noticeably more comfortable than 1:10 ramps, but little further gain was obtained with gradients between 1:15 to 1:20. It would appear, therefore that 1:15 would be a suitable compromise to obtain reasonable speed reduction without excessive discomfort.'*

7.4.2 *'The overall average mean speeds found for vehicles crossing 75mm high humps were similar to the speeds for vehicles crossing 100mm high humps.'*

7.4.3 *'The mean crossing speeds for 75mm flat top humps with gradients of 1:10 to 1:15 were between 10mph to 15mph with an overall average of 12.8mph. Previous studies had shown that the average speed across a 100mm high flat top hump, equipped with similar ramps, was 13.6mph. The results did not show any relationship between mean traffic speed and ramp gradient within the range 1:10 to 1:15. However, higher speeds did occur with gradients of 1:20 or less. This suggests that ramp gradients of 1:15 or more are generally required at 75mm humps to obtain mean hump crossing speeds under 16mph.'*

8 Consideration of Non Vehicular Traffic and Mobility Impaired

8.1 Pedestrians

- 8.1.1 There is an existing footway on the western side of Roundstone Lane but not the eastern side in the vicinity of the development site.
- 8.1.2 There would also be pedestrian traffic from the development site entrance wishing to cross the Roundstone Lane carriageway both north and south of the entrance to access the existing footway on the western side of Roundstone Lane.
- 8.1.3 The proposed raised table would provide high quality crossings for pedestrians and reduced vehicle speeds thereby improving safety at the junction location.

8.2 Cyclists

- 8.2.1 The existing narrowing only acts as a genuine speed reducing where two vehicles meet. The replacement with a speed reducing feature which influences traffic behaviour in both directions and at all times will increase safety and attractiveness of this stretch of road for cyclists.
- 8.2.2 Upstands will be avoided to reduce undue discomfort for cyclists and the ramps placed such that turning manoeuvres occur within the flat section of the raised junction.
- 8.2.3 Ramps will be at a gradient of 1:15 being a gradient more comfortable than 1:10 but still cause a speed reducing effect.

8.3 Visually and Mobility Impaired

- 8.3.1 Tactile paving will be provided at the new crossings placed either side of the junction to assist blind and partially sighted people and the kerb-to-kerb flat-top hump will assist wheelchair users when crossing the carriageway.

9 Design Criteria

- 9.1 Research and advice within Traffic Advisory Leaflet 2/96 and Local Transport Note 1/07 indicates that a height of 75mm with ramp gradients of 1:15 would be the most suitable to allow for the comfort of bus passengers whilst providing a significant speed reducing effect, being of an agreeable form to the Emergency Services and not unduly increasing noise and vibration given the nearby residential dwellings.
- 9.2 The preliminary design for the raised junction is based on the following criteria.

9.3 Plan Layout

9.3.1 The raised junction will allow for turning manoeuvres on the flat area.

9.3.2 Pedestrian crossings of the Roundstone Lane carriageway will be located either side of the development access, not in front of driveways.

9.4 Height and Ramp Gradient

9.4.1 The hump will be 75mm high with ramps at a gradient of 1:15.

9.5 Materials

9.5.1 The ramp and raised surface will be Asphaltic Concrete (Bitumen Macadam) laid over the existing road surface.

9.5.2 The changes in gradient would be formed with precast concrete 'speed check' units set in place with insitu concrete in accordance with the WSCC standard ramp feature detail.

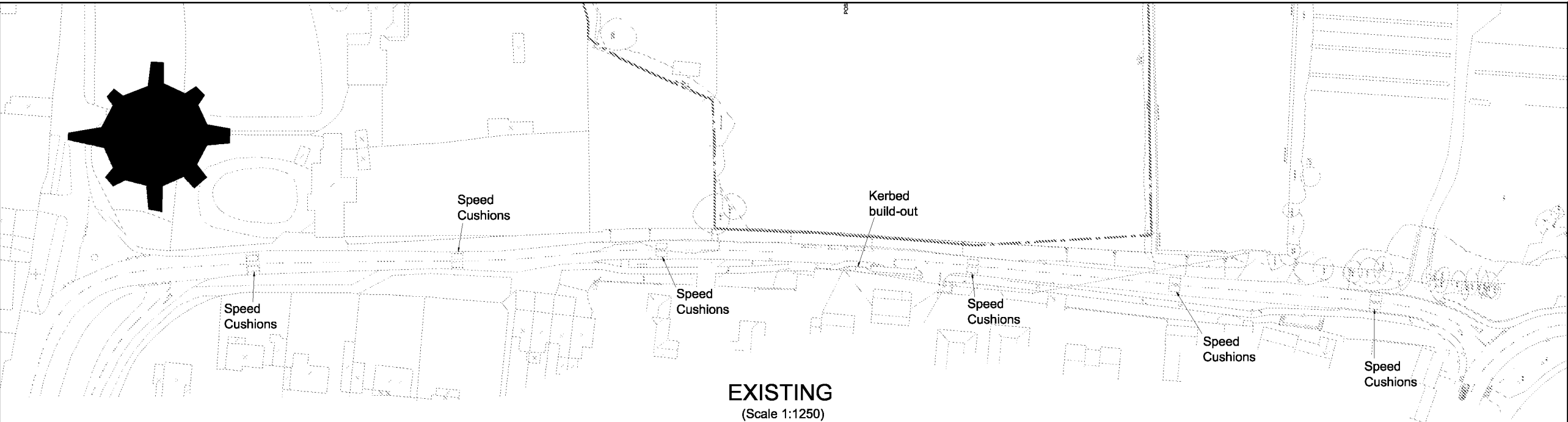
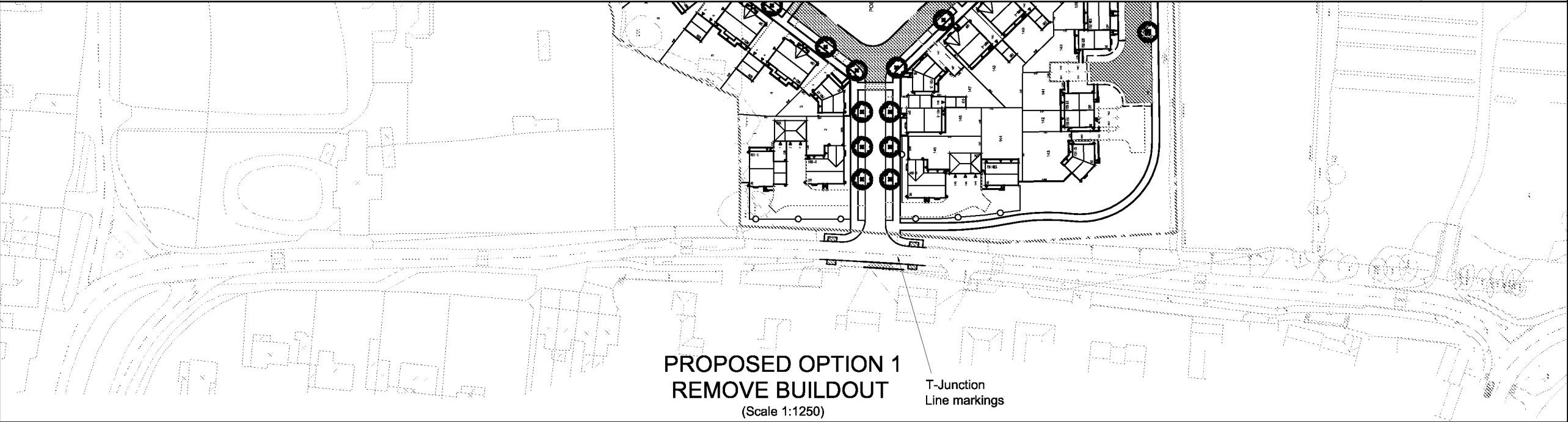
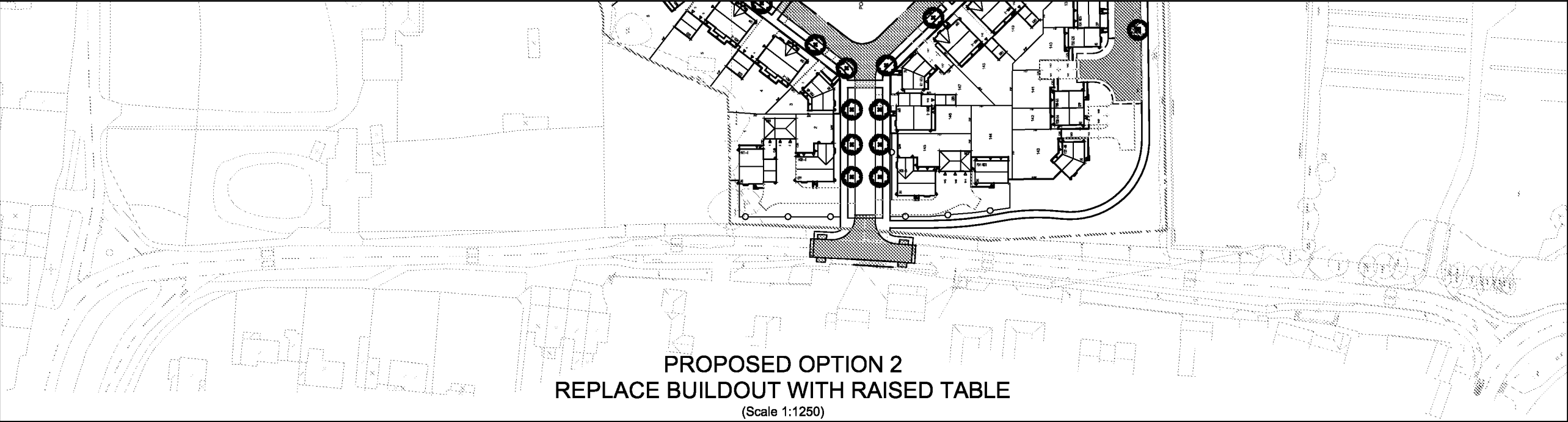
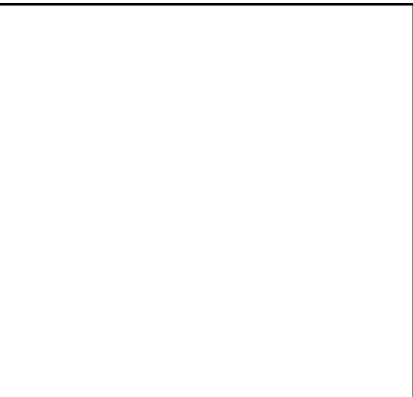
9.6 Lighting

9.6.1 Street lighting will be provided in accordance with the requirements of the Highways (Road Humps) Regulations 1999 and designed to the WSCC specification.

9.6.2 Street lighting columns can be located either on the existing footway on the western side of Roundstone Lane or the new sections of footway on the eastern side subject to detailed design and technical approval.

9.7 Departures from Standards

9.7.1 There are no departures from design standard present in the Preliminary Design of the raised junction which accords with relevant guidance together with the requirements of the Highways (Road Humps) Regulations 1999.

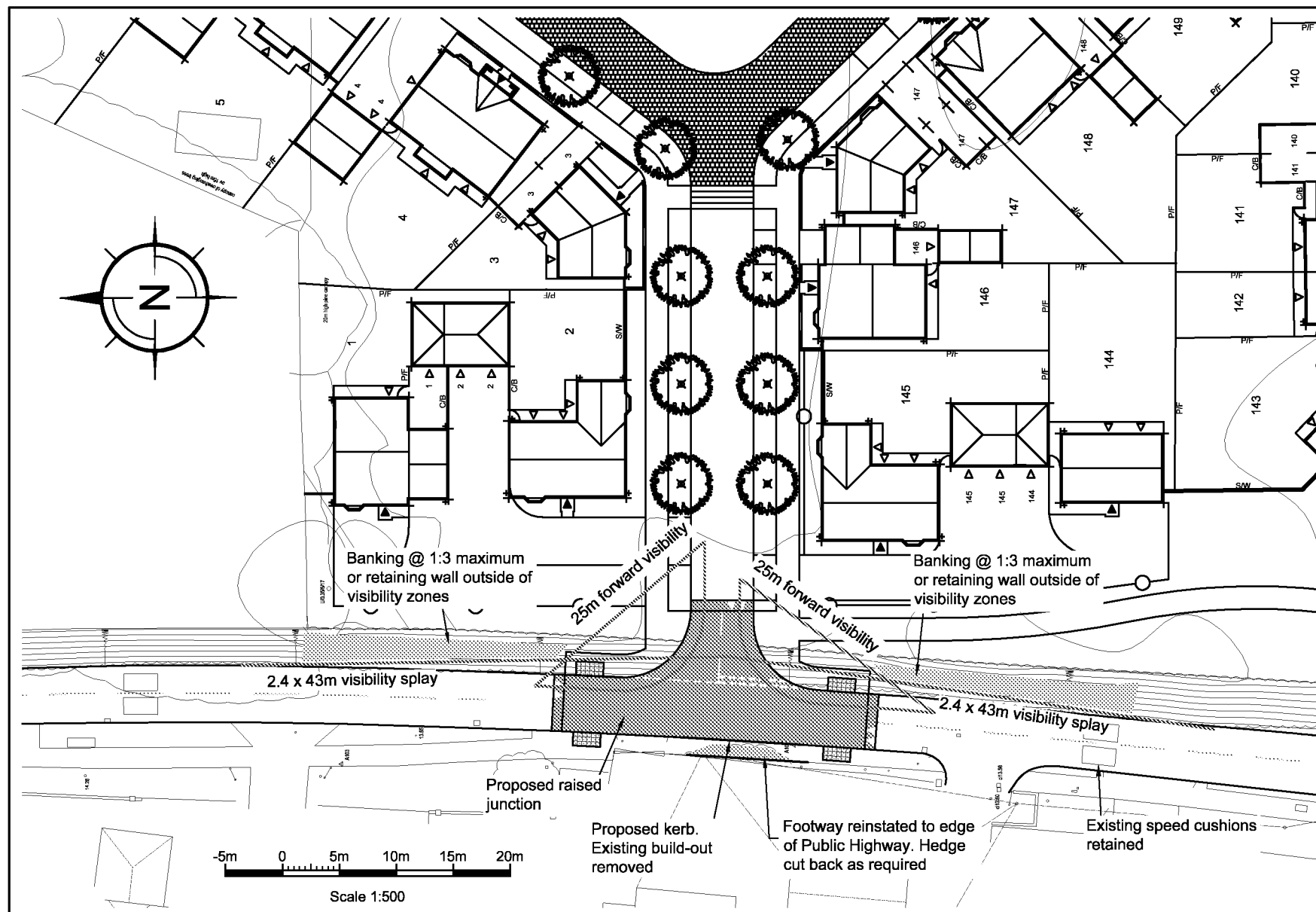


REV	DATE	INT	DESCRIPTION	CHK
Issue Status				
PRELIMINARY				

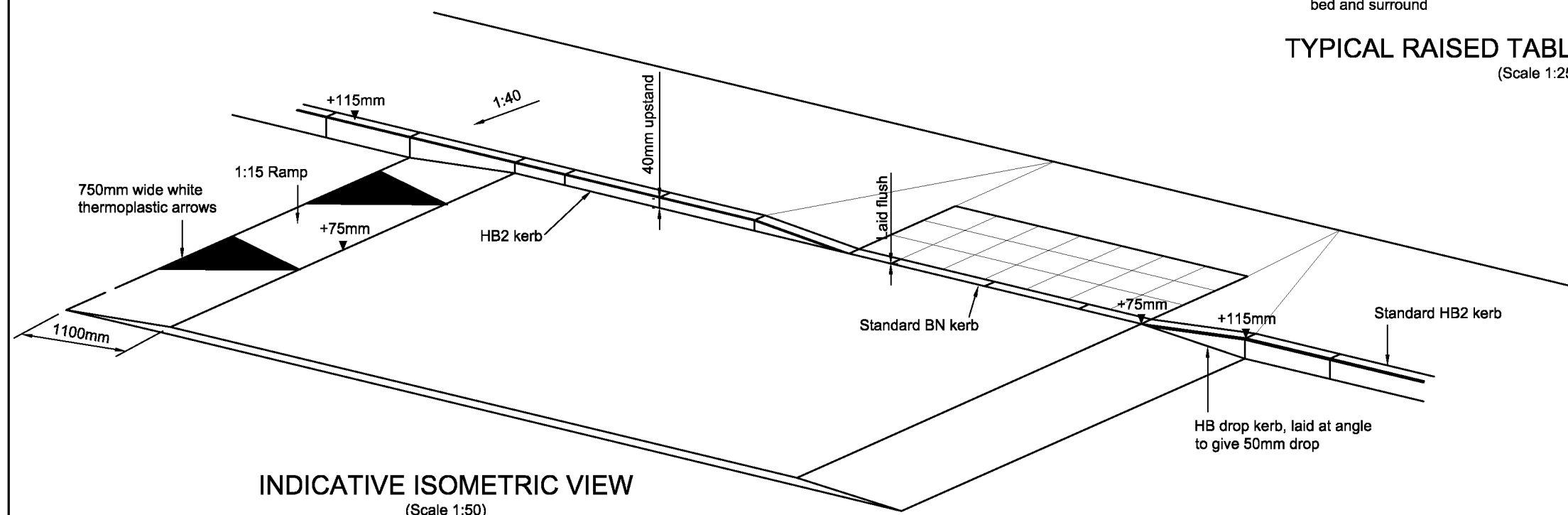
11 Tungsten Building
George Street
Fishergate
Sussex
BN41 1RA
Tel: 01273 424424
Fax: 01273 424425
email: design@civil.co.uk

the
civil
engineering
practice

CLIENT	Barratt David Wilson Southampton				
PROJECT	Roundstone Lane Angmering				
TITLE	Roundstone Land Traffic Calming and Highway Access Overview				
DRAWN	DATE		PROJECT NO.		22067
A Davies	June 2012				
ENGINEER	CHECKED				
A French			ORG. No.	REV.	
SCALE			109		
1:1250 @ A3					



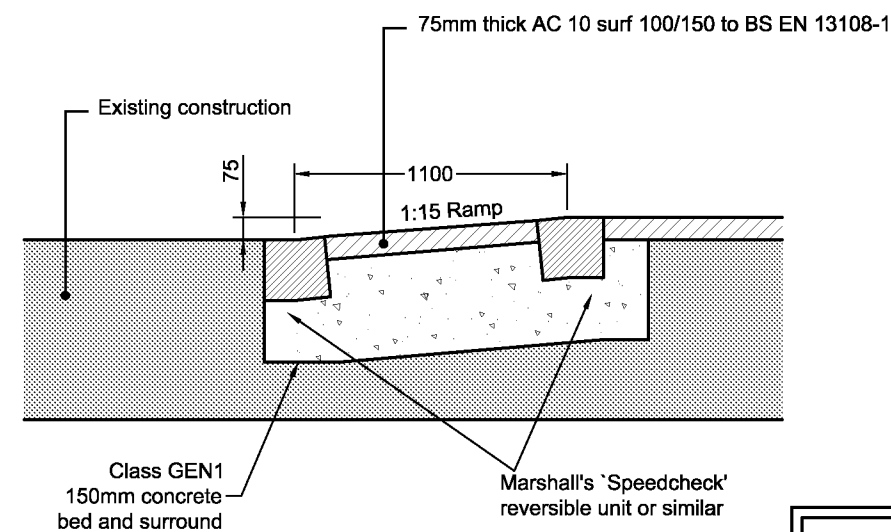
SITE HIGHWAY ACCESS
(Scale 1:500)



INDICATIVE ISOMETRIC VIEW
(Scale 1:50)



Looking southeast at access location



TYPICAL RAISED TABLE SLOPE DETAIL
(Scale 1:25)

NOTES

B	27.11.12	MJP	Forward visibility added, retaining walls amended	
A	04.05.12	AJD	Drawing updated to revised site layout.	
REV	DATE	INT	DESCRIPTION	CHK

Issue Status **PRELIMINARY**

11 Tungsten Building
George Street
Fishergate
Sussex
BN41 1RA
Tel: 01273 424424
Fax: 01273 424425
email: design@chyl.co.uk

the
civil
engineering
practice

CLIENT		Barratt David Wilson Southampton	
PROJECT		Roundstone Lane Angmering	
TITLE		Highway Access Plan Proposed Raised Junction	
DRAWN	DATE	PROJECT NO.	
M Pacifico	Mar 2012		22067
ENGINEER	CHECKED	DRG. No.	REV.
A French		104	B
SCALE	1:500 @ A3		

Response to Informal TRO Consultation Comments

Traffic Calming - Roundstone Lane, Angmering

September 2013



1 Introduction

- 1.1 This review is produced to respond to comments on the informal Traffic Regulation Order consultation which questioned whether the replacement of the existing buildout priority width restriction feature with a raised junction would lead to an increase in vehicle speeds on Roundstone Lane.

2 Existing Situation

2.1 Roundstone Lane Traffic Calming

- 2.1.1 In the vicinity of the proposed development site on Roundstone Lane between the junctions with High Street and Nursery Road there are three sets of 75mm high tarmac speed cushions either side of a priority give way feature which gives priority to southbound vehicles.
- 2.1.2 There is an 80m gap between the two sets of speed cushions in which a 10m long kerbed buildout (priority feature) 45m from the northern set of cushions and 25m from the southern set has been constructed.
- 2.1.3 Accident records obtained and included in the submitted Transport Assessment supporting the proposed residential development of land to the east of Roundstone Lane show there have been no recorded accidents on this stretch of road or in the surrounding streets in the vicinity of the development over a three year period to July 2011.
- 2.1.4 There are approved proposals to install raised junctions within the nearby Bramley Green Estate which have been agreed by the emergency services as part of the TRO process for those works. Similar approval will be required for Roundstone Lane.

2.2 Traffic Flows and Speeds

- 2.2.1 A 7 day automatic traffic volume and speed survey was undertaken adjacent to the kerbed buildout between 18 and 25 June 2012.
- 2.2.2 The survey recorded a 7 day average of 1,373 vehicles northbound and 1,652 vehicles southbound. The proportion of heavy vehicles in both directions was approximately 5%.
- 2.2.3 Vehicles speeds recorded a mean average speed of 24mph and an 85%ile speed of 29mph northbound and a mean average speed of 27mph and an 85%ile speed of 32mph southbound.

- 2.2.4 There is a marked difference in speed between the two directions. Southbound traffic has an uninterrupted passage and clear visibility to oncoming traffic which allows higher vehicle speeds whereas northbound traffic has to give way to southbound traffic and ensure no oncoming traffic before negotiating the narrowing producing lower speeds.
- 2.2.5 The speed survey demonstrates that the presence of the buildout has a speed controlling effect in the northbound direction but the southbound flow 85%ile speed exceeds the posted speed limit.

3 Proposal for Alteration of Traffic Calming

3.1 Remove the priority buildout and replace with a 75mm raised junction

- 3.1.1 Further pedestrian improvement can be achieved with the consequential realignment of the footway to the previous alignment prior to the installation of the buildout which is achievable within the boundary of the Public Highway.
- 3.1.2 Research and advice within Traffic Advisory Leaflet 2/96 and Local Transport Note 1/07 indicates that a height of 75mm with ramp gradients of 1:15 would be the most suitable to allow for the comfort of bus passengers whilst providing a significant speed reducing effect, being of an agreeable form to the Emergency Services and not unduly increasing noise and vibration given the nearby residential dwellings.
- 3.1.3 The presence of a raised junction in this location will work with the existing speed cushions in Roundstone Lane and nearby traffic calming measures in the Bramley Green Estate as well as the onsite streets within the proposed housing site.
- 3.1.4 The presence of a raised junction in this location also provides an entrance feature to the housing development within which the onsite streets are designed for 20mph vehicle speeds with reduced priority for vehicle traffic in accordance with principles within Manual for Streets. The gradient of the initial section of the entrance road down to Roundstone Lane would also be mitigated by the presence of a raised junction in terms of reducing approach speeds to the junction and risk of overshoot.

4 Relevant Design Guidance and Standards

4.1 DfT Traffic Advisory Leaflet 9/94: Horizontal Deflections

- 4.1.1 This advisory leaflet specifically for this type of traffic calming states that *'Horizontal deflections have mainly been installed to influence vehicle speeds, though not always successfully. In the case of build outs and pinch points the narrowed carriageway, even if reduced to a single lane, still allows most vehicles to be driven relatively quickly through the available gap, unless there is opposing*

traffic to prevent this. Unfortunately, in many residential streets traffic is either tidal, or of such low flow that it is unlikely that vehicles from opposite directions will meet at the narrowing.'

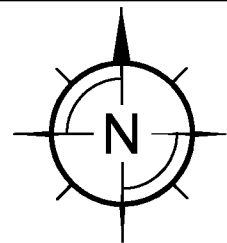
4.2 DfT Traffic Advisory Leaflet 2/96: 75mm High Road Humps

4.2.1 This advisory leaflet specifically for this type of traffic calming states that *'75mm high road humps generally create less discomfort for bus occupants than 100mm, high humps, and using shallower gradients will also help to reduce this further. However, the shallower the gradient the less the speed reduction. Trials by local authorities indicate that 1:15 gradients were noticeably more comfortable than 1:10 ramps, but little further gain was obtained with gradients between 1:15 to 1:20. It would appear, therefore that 1:15 would be a suitable compromise to obtain reasonable speed reduction without excessive discomfort.'*

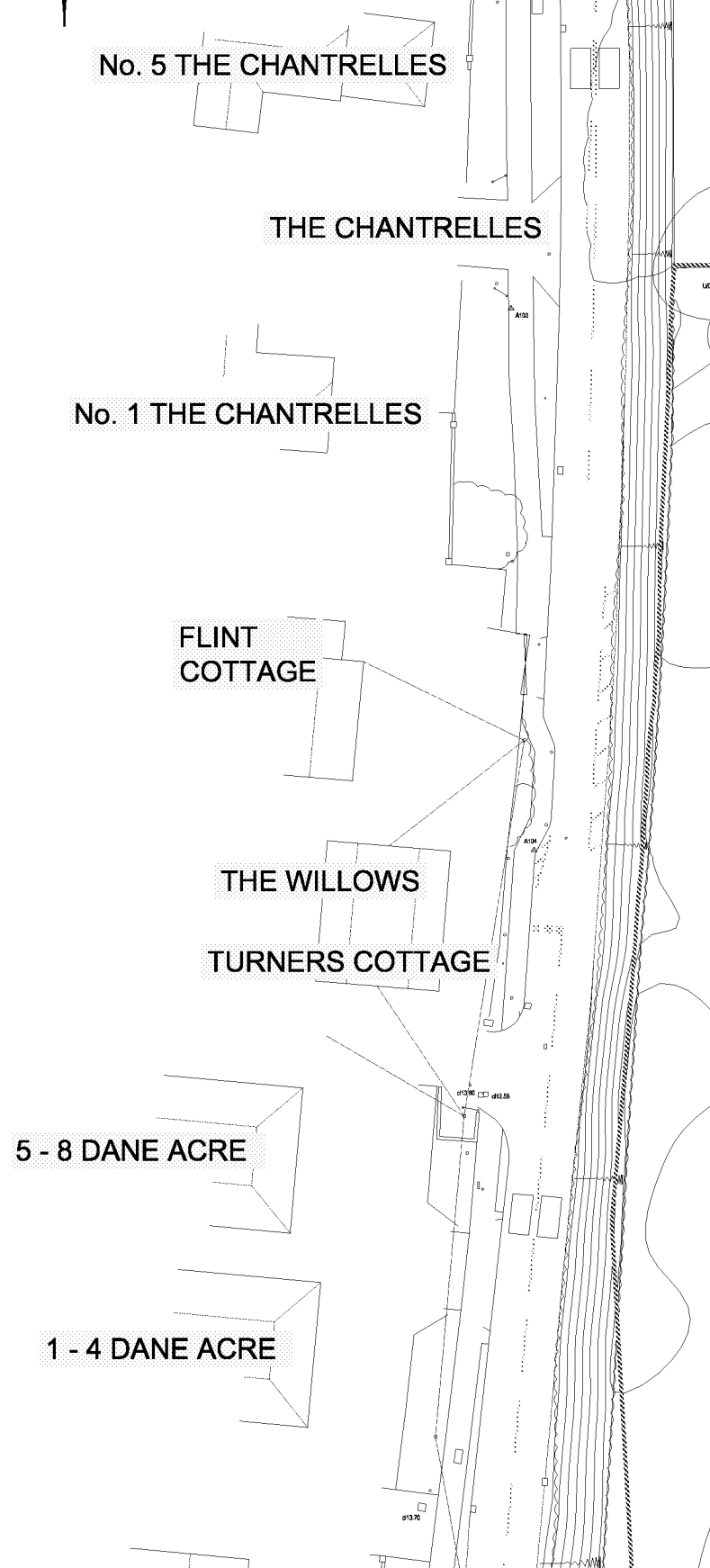
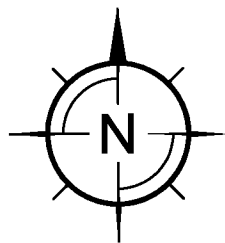
4.2.2 *'The mean crossing speeds for 75mm flat top humps with gradients of 1:10 to 1:15 were between 10mph to 15mph with an overall average of 12.8mph. Previous studies had shown that the average speed across a 100mm high flat top hump, equipped with similar ramps, was 13.6mph. The results did not show any relationship between mean traffic speed and ramp gradient within the range 1:10 to 1:15. However, higher speeds did occur with gradients of 1:20 or less. This suggests that ramp gradients of 1:15 or more are generally required at 75mm humps to obtain mean hump crossing speeds under 16mph.'*

5 Conclusions

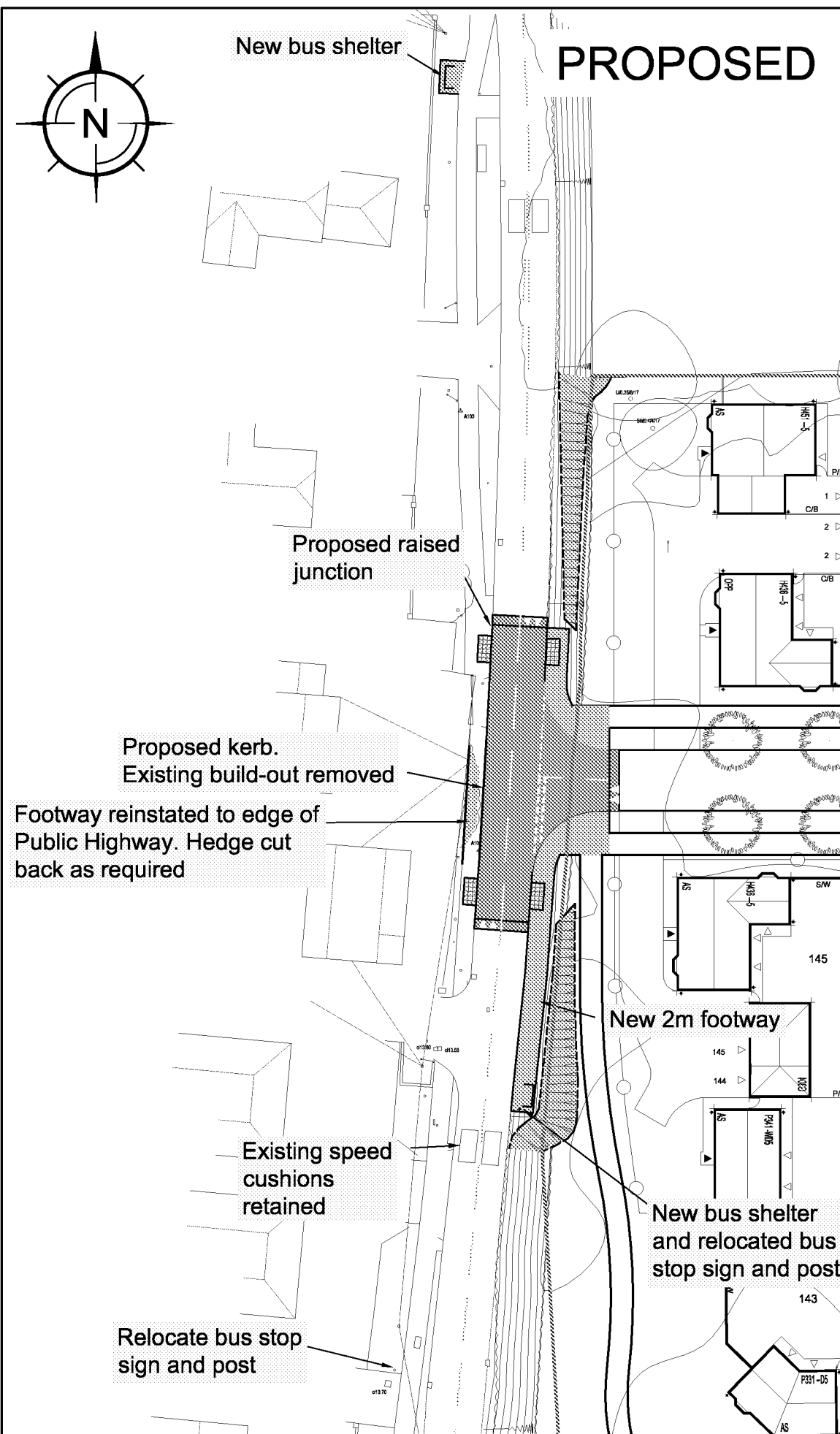
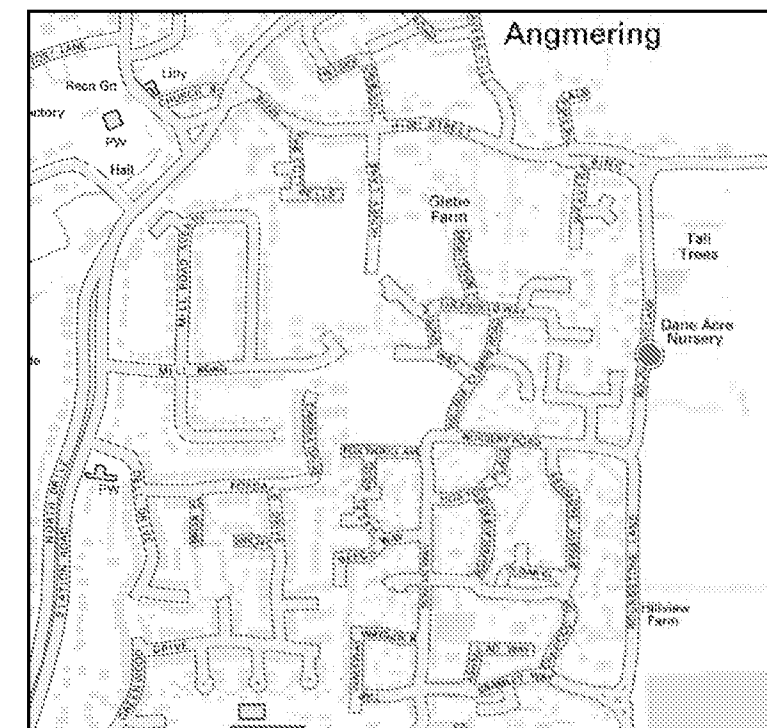
- 5.1 The existing priority buildout does little to slow speed in the southerly direction and only reduces speed in the northerly direction where an oncoming vehicle is met.
- 5.2 The proposed raised junction will reduce speed evenly in both directions. It will be uncomfortable for most drivers for vehicles to drive over the raised junction at more than 15 – 20mph. This compares with the 85th %ile speeds through the existing installation of around 30mph.
- 5.3 The visual presence of the raised junction and the proposed new residential development entrance and frontage together with the proposed new length of footway on the eastern side of Roundstone Lane will assist in increasing the place function of the street and reducing speed psychologically by reducing the rural lane appearance of the existing eastern frontage.
- 5.4 Replacing the buildout with a raised junction retains a traffic calming feature in this position along the street and reduces vehicle speeds equally in both directions providing a safer environment for the increased pedestrian movements at the new junction to serve the proposed residential development.



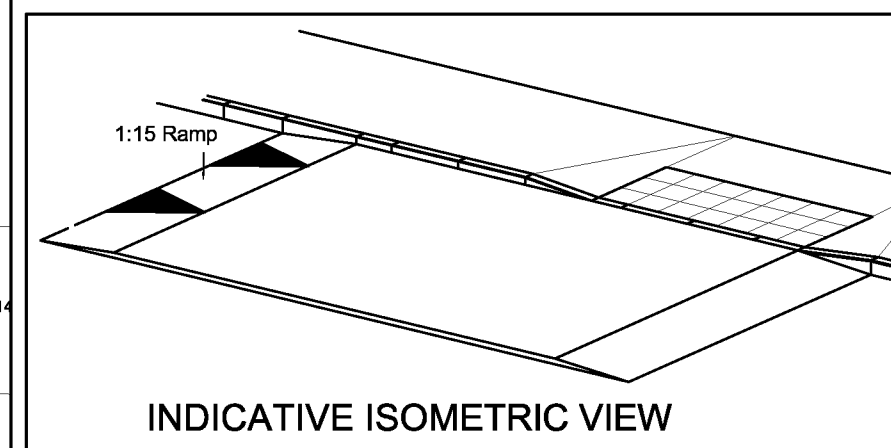
EXISTING



PROPOSED



LOCATION PLAN



INDICATIVE ISOMETRIC VIEW

-5m 0 5 10 15 20m
Scale 1:500

TITLE		
TRO Consultation		
SCALE	1:500 @ A3	DRG. No. 1

Appendix 8

Stage 1 Road Safety Audit and Designer's Response

Stage 1 Road Safety Audit

Document: CEP/RSA1/002 Version: 1

S278 Access Works 150 Dwelling Site

Roundstone Lane, Angmering

The Civil Engineering Practice

28 November 2012



Stage 1 Road Safety Audit

S278 Access Works 150 Dwelling Site

Roundstone Lane, Angmering

The Civil Engineering Practice

28 November 2012

RSA Road Safety Consultants Ltd

The Annexe
Tort House Shepherds Lane
Winchester
Hants
SO21 2AD
Tel +44 (0) 782 6746878
enquiries@rsasolutions.co.uk

RSA Road Safety Consultants Ltd has prepared this report in accordance with the instructions of The Civil Engineering Practice for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

Document history

Stage 1 Road Safety Audit

S278 Access Works 150 Dwelling Site

Roundstone Lane Angmering

The Civil Engineering Practice

This document has been issued and amended as follows:

Version	Date	Description	Created by	Verified by	Approved by
1.0	28/11/12	Draft	M Chamberlain	A Foale	M Chamberlain
1.0	28/11/12	Final	M Chamberlain	A Foale	M Chamberlain

Contents

1	Introduction	1
2	General	2
2.1	Drainage	2
3	Junctions	3
3.1	Visibility	3
4	Non-motorised Road User Provision	4
4.1	Pedestrians	4
5	Audit Team Statement	5

Appendices

1 Introduction

This report results from a Stage 1 Road Safety Audit carried out on the proposed S278 access works associated with a development of 150 dwellings on Roundstone Lane, Angmering. The works consist of the removal of the existing build-out/priority working system and the provision of a raised table at the new junction with associated uncontrolled pedestrian crossing points.

This Audit has been carried out on the instruction of The Civil Engineering Practice on behalf of their client Barratt David Wilson Southampton.

The Audit Team membership was as follows: -

Matt Chamberlain BSc (Hons) MICE MCIHT MSoRSA

Alison Foale – BEng (Hons) MSc CMILT

This report is presented based upon the checklist contained in Annex A of HD19/03. The team has examined and reported only on the road safety implications of the design and has not examined or verified the compliance of the layout to any other criteria, in accordance with HD 19/03.

A visit to the site was made on Monday 26th November 2012 between 11.00 and 12.00 hours when it was raining heavily and the road surface was wet.

Traffic flow, speed and accident data has been made available to the Audit Team.

Existing traffic flows in Roundstone Lane (June 2012) in vicinity of the existing build-out, are approx 200 vehicles N/B and 150 vehicles S/B during the AM peak and approximately 90 vehicles N/B and 200 vehicles S/B during the pm peak.

A speed survey (June 2012) at the same location gave an 85thile speed of 29mph northbound and an 85thile speed of 32mph southbound. The higher southbound speeds are to be expected as vehicles travelling in this direction have right of way within the priority working.

Accident data for Aug 2008 to Jun 2011 shows there have been no recorded injury accidents on Roundstone Lane during this period.

A list of the information supplied to the audit team in advance of the audit is contained within Appendix A.

Each of the problems identified by the Audit Team has been allocated a unique reference number and is as shown on the plan extracts contained within Appendix C.

2 General

2.1 Drainage

2.1.1 Location: North of proposed raise table on mainline carriageway

Summary: Lack of positive drainage system and longitudinal fall could lead to standing water on Roundstone Lane on the approach to raised table

Roundstone Lane currently has a balanced cross section with no positive drainage on the East side. There is also little longitudinal fall and standing water was noted within the eastern side of the carriageway during the site visit. The presence of the raised table could exacerbate this problem leading to persistent standing water on the ramp approaches. This water could freeze during winter months and lead to vehicles losing control on the approach to the junction.

Recommendation

Ensure a positive drainage system is provided on the East side of Roundstone Lane to prevent standing water on the approach to the raised table.

3 Junctions

3.1 Visibility

3.1.1 Location: Accesses within external development

Summary: Proposed landscaping may be within sightlines and could increase the risk of failure to give way collisions

The Highway Access Plan provided (104_B) shows 25m forward visibility splays between drivers entering the development and the first accesses associated with dwellings. The Architects Layout however, shows proposed vegetation within these splays and this could increase the risk of drivers exiting accesses failing to give way to those entering the development.

Recommendation

Ensure the visibility splays are kept clear of any proposed vegetation/landscaping.

4 Non-motorised Road User Provision

4.1 Pedestrians

4.1.1 Location: Bus Stop South of proposed access

Summary: Increase in usage of bus stop could lead to pedestrians alighting and walking in the carriageway increasing the risk of pedestrian/vehicle collisions

Just to the South of the proposed access there is a Bus Stop which serves the southbound bus service. Due to the lack of footway on the East side of Roundstone Lane bus passengers currently wait on the West side and then cross the road to board the bus on the East side. The development is likely to generate increased demand at this bus stop and the current situation may lead to more passengers crossing the road to board the bus or alighting in the carriageway and potentially walking in the road to the new access. This could increase the risk of pedestrian/vehicle conflicts on Roundstone Lane.

Recommendation

Extend the footway south of the development as far as the existing bus stop and move the bus stop flag to the East side of Roundstone Lane on to the new footway. Bus access kerbing should be provided if appropriate.

5 Audit Team Statement

I certify that this audit has been carried out in accordance with HD 19/03.

Audit Team Leader

Name: Matt Chamberlain

Signed:



Position: Audit Team Leader

Dated: 28/11/2012

Audit Team Member

Name: Alison Foale

Position: Audit Team Member



Appendix A

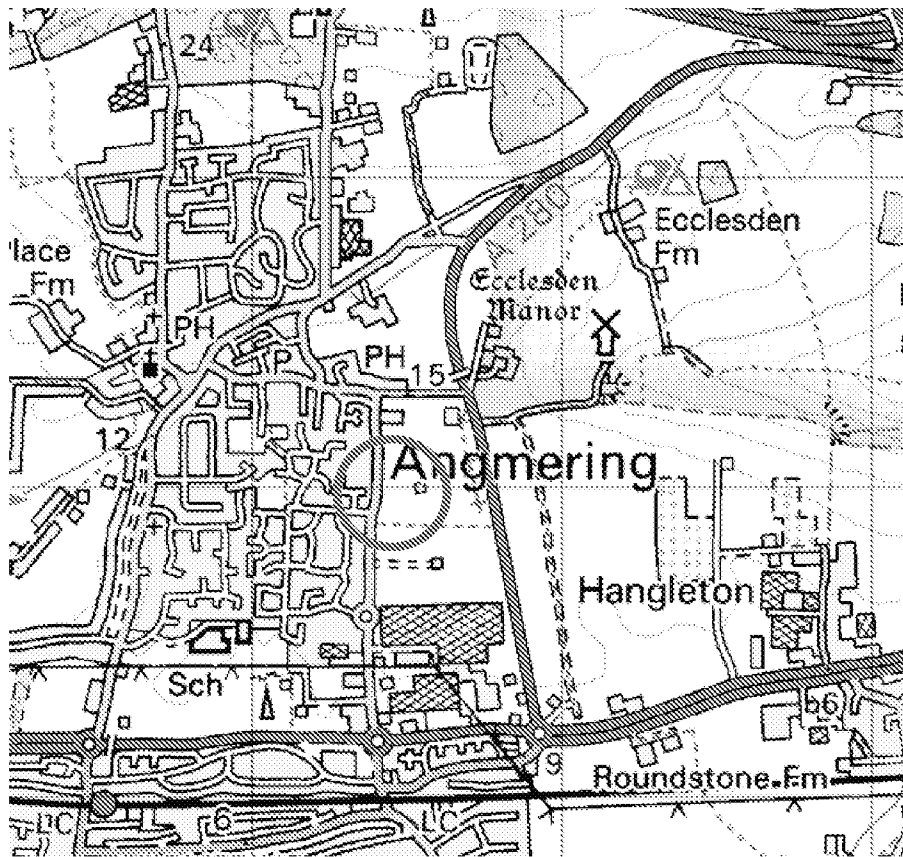
List of Drawings and Documents Supplied

<u>Document</u>	<u>Rev.</u>	<u>Description</u>
104	B	Highway Access Plan
105	-	Vehicle Tracking
ST-02-12	B	Architects Application Layout
ST-02-14C	C	Architects Colour Layout
-	-	Design Statement
-	-	Accident Data Aug 2008 to June 2011
-	-	Traffic Flow and Speed Data June 2012



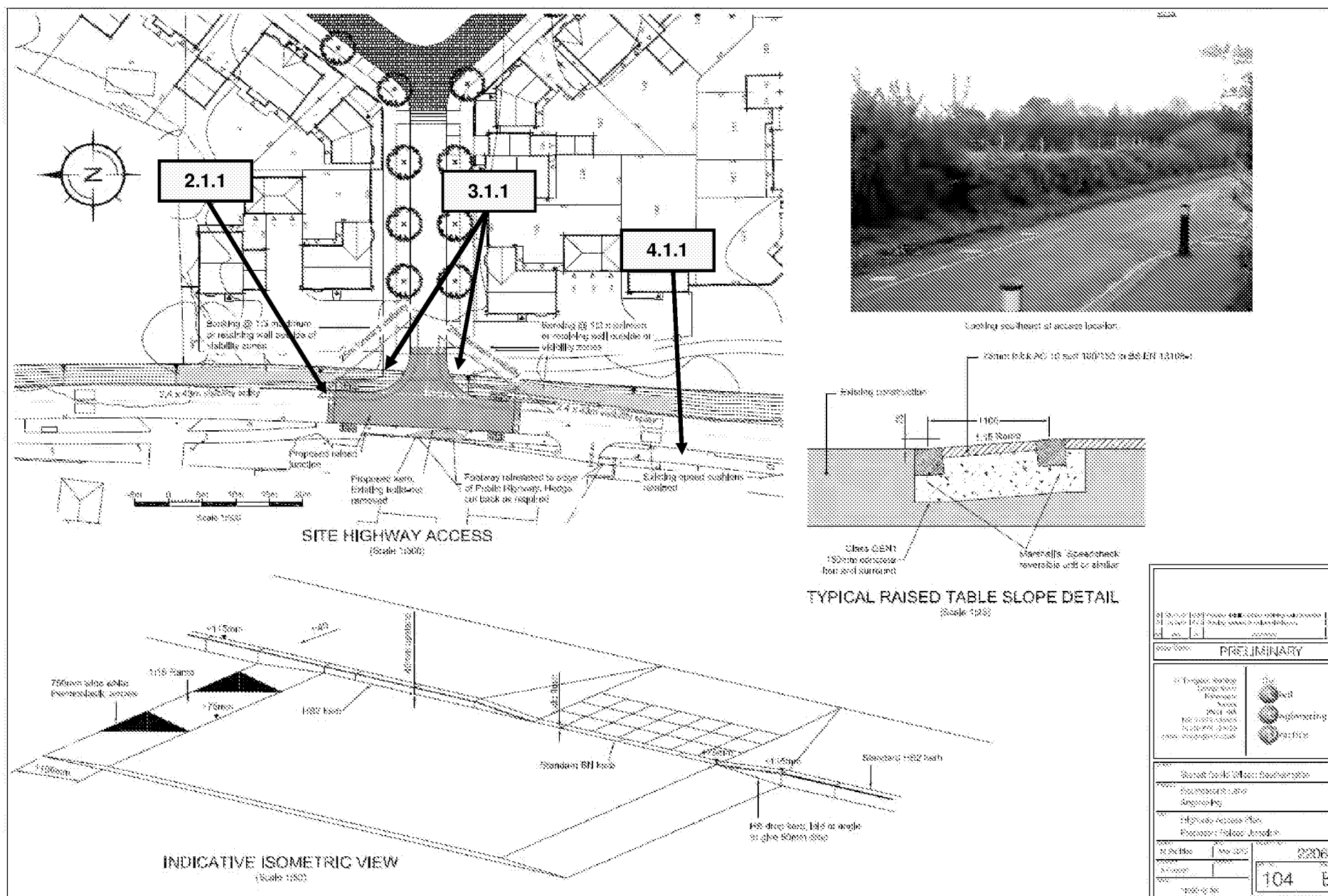
Appendix B

Location Plan

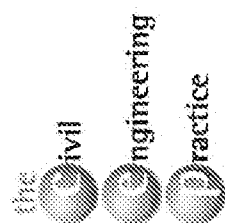


Appendix C

Key Plan



Proposed Alteration of Existing Traffic Calming Feature Roundstone Lane, Angmering Designer's Response to Stage 1 Road Safety Audit



Safety Audit Comment	Recommendation	Designer's Response
2 General		
2.1 Drainage		
2.1.1 Location: North of proposed raise table on mainline carriageway		
Summary Lack of positive drainage system and longitudinal fall could lead to standing water on Roundstone Lane on the approach to raised table		
Roundstone Lane currently has a balanced cross section with no positive drainage on the East side.		
There is also little longitudinal fall and standing water was noted within the eastern side of the carriageway during the site visit.		
The presence of the raised table could exacerbate this problem leading to persistent standing water on the ramp approaches.		
This water could freeze during winter months and lead to vehicles losing control on the approach to the junction.		
	Ensure a positive drainage system is provided on the East side of Roundstone Lane to prevent standing water on the approach to the raised table.	Agreed. Positive highway drainage will be provided on the East side of Roundstone Lane adjacent to the raised table ramp and connected to the existing highway drain.

Safety Audit Comment	Recommendation	Designer's Response
3 Junctions		
3.1 Visibility		
3.1.1 Location: Accesses within external development		
Summary: Proposed landscaping may be within sightlines and could increase the risk of failure to give way collisions.		
The Highway Access Plan provided (104_B) shows 25m forward visibility splays between drivers entering the development and the first accesses associated with dwellings. The Architects Layout however, shows proposed vegetation within these splays and this could increase the risk of drivers exiting accesses failing to give way to those entering the development.	Ensure the visibility splays are kept clear of any proposed vegetation/landscaping.	Agreed. All landscaping and vegetation will be removed from within the visibility splays.

Designer's Response

Recommendation

Safety Audit Comment

- 4 Non-motorised Road User Provision
- 4.1 Pedestrians
- 4.1.1 Location: Bus Stop South of proposed access

Summary: Increase in usage of bus stop could lead to pedestrians alighting and walking in the carriageway increasing the risk of pedestrian/vehicle collisions.

Just to the South of the proposed access there is a Bus Stop which serves the southbound bus service. Due to the lack of footway on the East side of Roundstone Lane bus passengers currently wait on the West side and then cross the road to board the bus on the East side. The development is likely to generate increased demand at this bus stop and the current situation may lead to more passengers crossing the road to board the bus or alighting in the carriageway and potentially walking in the road to the new access. This could increase the risk of pedestrian/vehicle conflicts on Roundstone Lane.

Extend the footway south of the development as far as the existing bus stop and move the bus stop flag to the East side of Roundstone Lane on to the new footway. Bus access kerbing should be provided if appropriate.

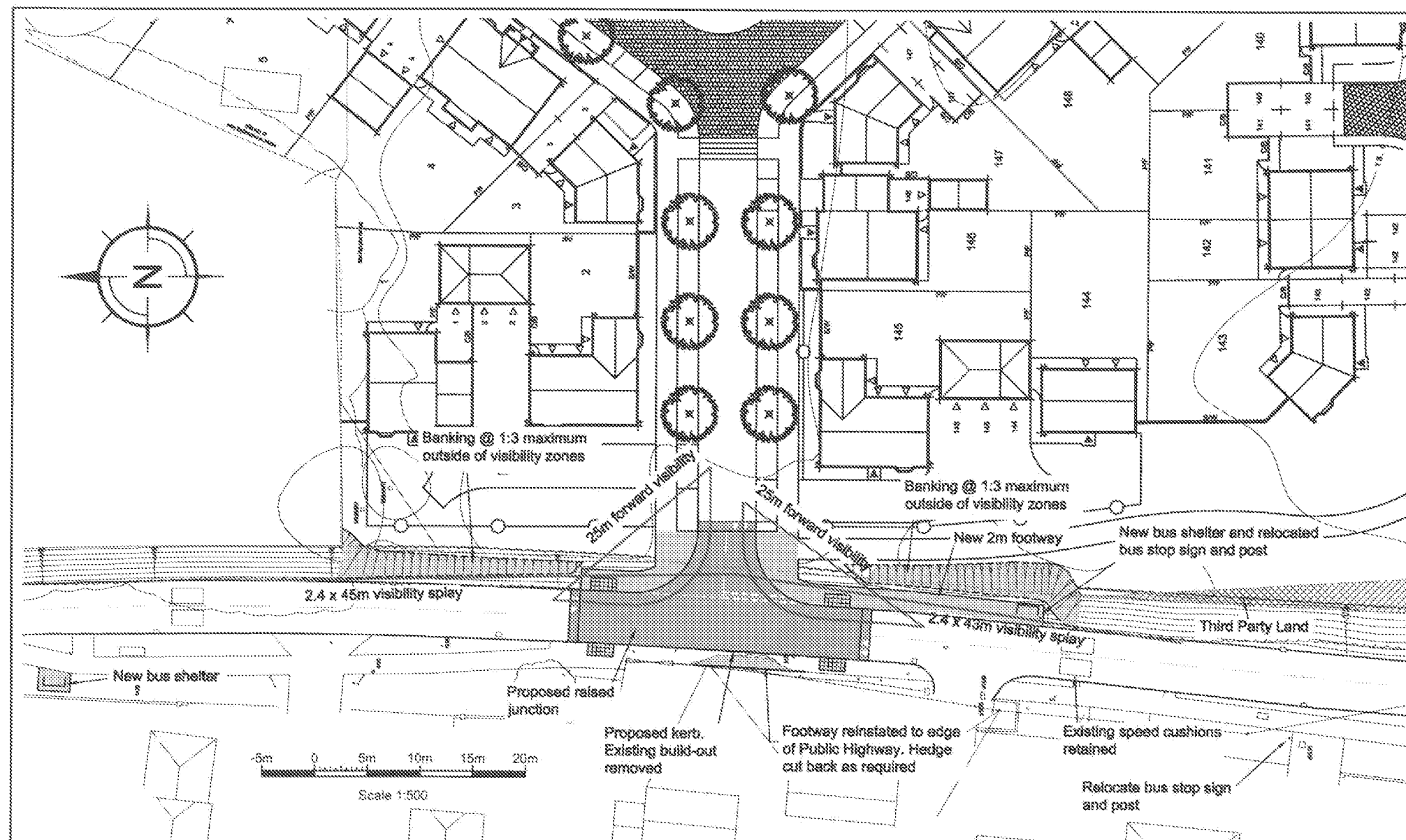
There is third party land to the south which prevents extending the footway to the bus stop location.

Drawing 22067/104C shows the footway extended as far as possible and the bus stop relocated onto the new eastern footway and will be provided with a shelter and bus access kerbing.

Signed

Dated: 4 December 2012

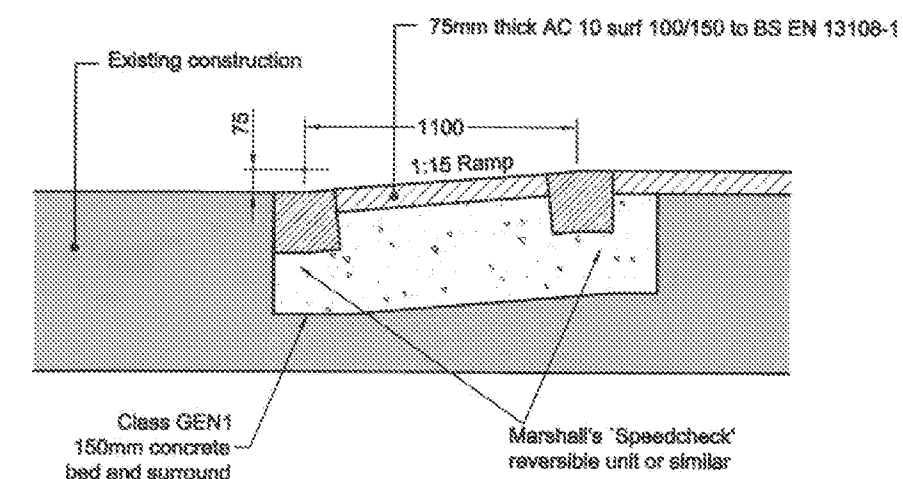
Andy French



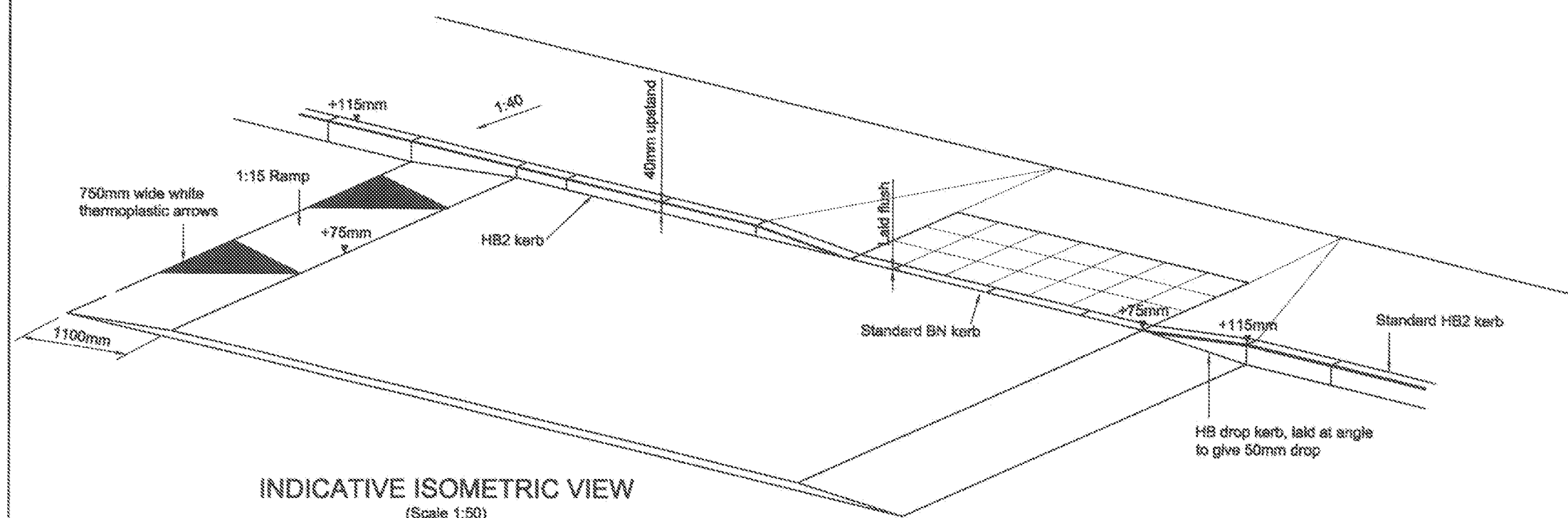
SITE HIGHWAY ACCESS
(Scale 1:500)



Looking southeast at access location



TYPICAL RAISED TABLE SLOPE DETAIL
(Scale 1:25)



INDICATIVE ISOMETRIC VIEW
(Scale 1:50)

<p>01 08 12 12 [AUG] Forward and bearing extended, bus stop relocated and bus shelter added 01 27 11 12 [AUG] Forward visibility added, retaining walls approved A1 04 05 12 [AUG] Drawing updated to reflect site layout</p>		<p>Issue Status</p>	
<p>11 Tongate Building George Street Richersgate Salisbury BN41 1BA Tel: 01273 424424 Fax: 01273 424425 Email: dr@dr.co.uk</p>		<p>PRELIMINARY</p>	
<p>Barratt David Wilson Southampton Roundstone Lane Angmering</p>		<p>Highway Access Plan Proposed Raised Junction</p>	
<p>Drawn: M Pashley</p>	<p>Check: A French</p>	<p>Date: Mar 2012</p>	<p>22067 104 C</p>

Appendix 9

West Sussex County Council

Residential Car Parking Demand Calculator

WEST SLOPE COUNTY, TEXAS, AN ORANGE-SHIPP FARMING COMPANY

This parking demand tool has been compiled by West Sussex County Council. If you have queries relating to the information provided or require additional information please contact darryl.hemmings@westsussex.gov.uk.

Please input the ward name for your development location below by double clicking in the box or click box and use the drop down menu to the right of the box. The spreadsheet will automatically show the District and Ward of this location. If the ward is not known please input postcode into the Ward Finder. The tool will allow input up to 3 wards in the boxes below. Please refer to notes for more details.

Ward 1	Angmering
District	Arun
Ward 2	Rustington East
District	Arun
Ward 3	Rustington West
District	Arun
Ward Temporo Factor 2009-2026	1.095580
District Temporo Factor 2009-2026	1.067644



Ward Finder

Postcode	BN164GN	Ward	Angmering Ward
----------	---------	------	----------------

Note:

No special provision need be made for visitors where at least half of the total parking provision associated with a development is unallocated. In other circumstances, it may be appropriate to allow for additional demand for visitor parking of up to 0.2 spaces per dwelling.

In areas of parking constraint, levels of provision below predicted demand may be applicable.

The tool is expressed as number of Rooms (Per Unit). If data is not available in this format and number of Bedrooms is used this will need to be converted. A general guide for conversion is as follows but may differ in some cases.

Houses	Flats
1 bed = 3 rooms	Studio = 1 room
2 bed = 4 rooms	1 bed = 2 rooms
3 bed = 5 rooms	2 bed = 3 rooms
4 bed = 6 rooms	3 bed = 4 rooms
5 bed = 7 rooms	4 bed = 5 rooms

Garages will count as 1 space when allocating spaces.

Ward data used can be checked by the user by referring to the District-Ward Data Tables. The Ward Data Tables highlight if the Census data does not include data for certain dwelling sizes. In such cases car ownership values have been obtained using the nearest sized dwelling with same tenure and ward. For example, if no data is available for a private house with 1 room then data for a private house with 2 rooms has been used. The Car Ownership Data is highlighted in purple where such an approach has been used. Where Census data contains small samples for certain sized dwellings this is highlighted in red if <20, and green if <50 in the Total Demand column. In such cases, other wards should be selected to achieve a higher sample size.

Report Summary Table

DEVELOPMENT MIX				
Ref.	Unit Type	Unit Tenure	Habitable Rooms (Per Unit)	No. of Units (Total)
A	Houses	Council/Housing Association (not including shared ownership)	4	9
B	Houses	Council/Housing Association (not including shared ownership)	5	30
C	Houses	Private	4	7
D	Houses	Private	5	33
E	Houses	Private	6	51
F	Houses	Private	7	9
G				
H				
I				
J				
K				
L				
M				
N				
O				
P				
Q				
R				
S				
Total				139

**ALLOCATED
PARKING**

[illegible]

PARKING DEMAND

Allocated No.	Unallocated for Residents		Unallocated for Visitors		Total Demand
	per unit	Total	per unit	Total	
18	0	0	0	2	20
60	0	3	0	6	69
14	0	0	0	1	16
66	0	3	0	7	76
153	0	2	0	10	165
27	0	0	0	2	29
338		8.66		27.80	374

PROJECT
CENTRE
PEOPLE | PASSION | PLACES

Appendix 10

TRICS Survey Data and Trip Generation Calculations

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED

MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	EX ESSEX	1 days
04	EAST ANGLIA	
	SF SUFFOLK	1 days
05	EAST MIDLANDS	
	LE LEICESTERSHIRE	1 days
	LN LINCOLNSHIRE	1 days
	NT NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	WM WEST MIDLANDS	1 days
	WO WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 days
09	NORTH	
	CB CUMBRIA	3 days

This section displays the number of survey days per TRICS@ sub-region in the selected set

Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
 Range: 10 to 237 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 20/12/11

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	4 days
Tuesday	5 days
Wednesday	1 days
Thursday	1 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	13 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town	13
--------------	----

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	8
Out of Town	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Filtering Stage 3 selection:

Use Class:

C3

13 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS@.

Population within 1 mile:

5,001 to 10,000	4 days
10,001 to 15,000	4 days
15,001 to 20,000	4 days
20,001 to 25,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	3 days
50,001 to 75,000	2 days
75,001 to 100,000	2 days
100,001 to 125,000	3 days
125,001 to 250,000	2 days
250,001 to 500,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.8 to 1.0	6 days
1.1 to 1.5	7 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No

13 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

LIST OF SITES relevant to selection parameters

- | | | | |
|---|----------------------------|------------------------------------|-----------------------|
| 1 | CB-03-A-02 | SEMI DETACHED, WORKINGTON | CUMBRIA |
| | HAWKSHEAD AVENUE | | |
| | WORKINGTON | | |
| | Edge of Town | | |
| | Residential Zone | | |
| | Total Number of dwellings: | 40 | |
| | Survey date: MONDAY | 20/06/05 | Survey Type: MANUAL |
| 2 | CB-03-A-03 | SEMI DETACHED, WORKINGTON | CUMBRIA |
| | HAWKSHEAD AVENUE | | |
| | WORKINGTON | | |
| | Edge of Town | | |
| | Residential Zone | | |
| | Total Number of dwellings: | 40 | |
| | Survey date: THURSDAY | 20/11/08 | Survey Type: MANUAL |
| 3 | CB-03-A-04 | SEMI DETACHED, WORKINGTON | CUMBRIA |
| | MOORCLOSE ROAD | | |
| | SALTERBACK | | |
| | WORKINGTON | | |
| | Edge of Town | | |
| | No Sub Category | | |
| | Total Number of dwellings: | 82 | |
| | Survey date: FRIDAY | 24/04/09 | Survey Type: MANUAL |
| 4 | CH-03-A-05 | DETACHED, CREWE | CHESHIRE |
| | SYDNEY ROAD | | |
| | SYDNEY | | |
| | CREWE | | |
| | Edge of Town | | |
| | Residential Zone | | |
| | Total Number of dwellings: | 17 | |
| | Survey date: TUESDAY | 14/10/08 | Survey Type: MANUAL |
| 5 | EX-03-A-01 | SEMI-DET., STANFORD-LE-HOPE | ESSEX |
| | MILTON ROAD | | |
| | CORRINGHAM | | |
| | STANFORD-LE-HOPE | | |
| | Edge of Town | | |
| | Residential Zone | | |
| | Total Number of dwellings: | 237 | |
| | Survey date: TUESDAY | 13/05/08 | Survey Type: MANUAL |
| 6 | LE-03-A-01 | DETACHED, MELTON MOWBRAY | LEICESTERSHIRE |
| | REDWOOD AVENUE | | |
| | MELTON MOWBRAY | | |
| | Edge of Town | | |
| | Residential Zone | | |
| | Total Number of dwellings: | 11 | |
| | Survey date: TUESDAY | 03/05/05 | Survey Type: MANUAL |
| 7 | LN-03-A-01 | MIXED HOUSES, LINCOLN | LINCOLNSHIRE |
| | BRANT ROAD | | |
| | BRACEBRIDGE | | |
| | LINCOLN | | |
| | Edge of Town | | |
| | Residential Zone | | |
| | Total Number of dwellings: | 150 | |
| | Survey date: TUESDAY | 15/05/07 | Survey Type: MANUAL |

LIST OF SITES relevant to selection parameters (Cont.)

8	NT-03-A-03	SEMI DETACHED, KIRKBY-IN-ASHFD	NOTTINGHAMSHIRE
		B6018 SUTTON ROAD	
		KIRKBY-IN-ASHFIELD	
		Edge of Town	
		Residential Zone	
		Total Number of dwellings:	166
		Survey date: WEDNESDAY	28/06/06
			Survey Type: MANUAL
9	NY-03-A-05	HOUSES AND FLATS, RIPON	NORTH YORKSHIRE
		BOROUGHBRIDGE ROAD	
		RIPON	
		Edge of Town	
		No Sub Category	
		Total Number of dwellings:	71
		Survey date: MONDAY	22/09/08
			Survey Type: MANUAL
10	SF-03-A-03	MIXED HOUSES, BURY ST EDMDS	SUFFOLK
		BARTON HILL	
		FORNHAM ST MARTIN	
		BURY ST EDMUNDS	
		Edge of Town	
		Out of Town	
		Total Number of dwellings:	101
		Survey date: MONDAY	15/05/06
			Survey Type: MANUAL
11	SH-03-A-03	DETACHED, SHREWSBURY	SHROPSHIRE
		SOMERBY DRIVE	
		BICTON HEATH	
		SHREWSBURY	
		Edge of Town	
		No Sub Category	
		Total Number of dwellings:	10
		Survey date: FRIDAY	26/06/09
			Survey Type: MANUAL
12	WM-03-A-03	MIXED HOUSING, COVENTRY	WEST MIDLANDS
		BASELEY WAY	
		ROWLEYS GREEN	
		COVENTRY	
		Edge of Town	
		Residential Zone	
		Total Number of dwellings:	84
		Survey date: MONDAY	24/09/07
			Survey Type: MANUAL
13	WO-03-A-02	SEMI DETACHED, REDDITCH	WORCESTERSHIRE
		MEADOWHILL ROAD	
		REDDITCH	
		Edge of Town	
		No Sub Category	
		Total Number of dwellings:	48
		Survey date: TUESDAY	02/05/06
			Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	13	81	0.088	13	81	0.310	13	81	0.398
08:00 - 09:00	13	81	0.164	13	81	0.440	13	81	0.604
09:00 - 10:00	13	81	0.177	13	81	0.244	13	81	0.421
10:00 - 11:00	13	81	0.147	13	81	0.208	13	81	0.355
11:00 - 12:00	13	81	0.217	13	81	0.179	13	81	0.396
12:00 - 13:00	13	81	0.213	13	81	0.178	13	81	0.391
13:00 - 14:00	13	81	0.191	13	81	0.183	13	81	0.374
14:00 - 15:00	13	81	0.209	13	81	0.184	13	81	0.393
15:00 - 16:00	13	81	0.357	13	81	0.263	13	81	0.620
16:00 - 17:00	13	81	0.368	13	81	0.230	13	81	0.598
17:00 - 18:00	13	81	0.432	13	81	0.268	13	81	0.700
18:00 - 19:00	13	81	0.276	13	81	0.216	13	81	0.492
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			2.839			2.903			5.742

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected: 10 - 237 (units:)
 Survey date range: 01/01/00 - 20/12/11
 Number of weekdays (Monday-Friday): 13
 Number of Saturdays: 0
 Number of Sundays: 4
 Surveys manually removed from selection: 99

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL OGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	13	81	0.004	13	81	0.003	13	81	0.007
08:00 - 09:00	13	81	0.004	13	81	0.004	13	81	0.008
09:00 - 10:00	13	81	0.001	13	81	0.001	13	81	0.002
10:00 - 11:00	13	81	0.006	13	81	0.007	13	81	0.013
11:00 - 12:00	13	81	0.000	13	81	0.000	13	81	0.000
12:00 - 13:00	13	81	0.004	13	81	0.006	13	81	0.010
13:00 - 14:00	13	81	0.002	13	81	0.004	13	81	0.006
14:00 - 15:00	13	81	0.001	13	81	0.001	13	81	0.002
15:00 - 16:00	13	81	0.002	13	81	0.002	13	81	0.004
16:00 - 17:00	13	81	0.003	13	81	0.000	13	81	0.003
17:00 - 18:00	13	81	0.001	13	81	0.002	13	81	0.003
18:00 - 19:00	13	81	0.000	13	81	0.000	13	81	0.000
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.028			0.030			0.058

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected: 10 - 237 (units:)
 Survey date range: 01/01/00 - 20/12/11
 Number of weekdays (Monday-Friday): 13
 Number of Saturdays: 0
 Number of Sundays: 4
 Surveys manually removed from selection: 99

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PSVS

Calculation factor: **1 DWELLS**

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	13	81	0.000	13	81	0.000	13	81	0.000
08:00 - 09:00	13	81	0.002	13	81	0.002	13	81	0.004
09:00 - 10:00	13	81	0.001	13	81	0.001	13	81	0.002
10:00 - 11:00	13	81	0.001	13	81	0.001	13	81	0.002
11:00 - 12:00	13	81	0.000	13	81	0.000	13	81	0.000
12:00 - 13:00	13	81	0.000	13	81	0.000	13	81	0.000
13:00 - 14:00	13	81	0.000	13	81	0.000	13	81	0.000
14:00 - 15:00	13	81	0.000	13	81	0.000	13	81	0.000
15:00 - 16:00	13	81	0.002	13	81	0.001	13	81	0.003
16:00 - 17:00	13	81	0.001	13	81	0.001	13	81	0.002
17:00 - 18:00	13	81	0.000	13	81	0.000	13	81	0.000
18:00 - 19:00	13	81	0.000	13	81	0.000	13	81	0.000
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.007			0.006			0.013

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected: 10 - 237 (units:)
 Survey date range: 01/01/00 - 20/12/11
 Number of weekdays (Monday-Friday): 13
 Number of Saturdays: 0
 Number of Sundays: 4
 Surveys manually removed from selection: 99

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	13	81	0.009	13	81	0.015	13	81	0.024
08:00 - 09:00	13	81	0.005	13	81	0.010	13	81	0.015
09:00 - 10:00	13	81	0.004	13	81	0.004	13	81	0.008
10:00 - 11:00	13	81	0.002	13	81	0.006	13	81	0.008
11:00 - 12:00	13	81	0.004	13	81	0.001	13	81	0.005
12:00 - 13:00	13	81	0.007	13	81	0.005	13	81	0.012
13:00 - 14:00	13	81	0.004	13	81	0.004	13	81	0.008
14:00 - 15:00	13	81	0.001	13	81	0.006	13	81	0.007
15:00 - 16:00	13	81	0.011	13	81	0.008	13	81	0.019
16:00 - 17:00	13	81	0.012	13	81	0.012	13	81	0.024
17:00 - 18:00	13	81	0.020	13	81	0.015	13	81	0.035
18:00 - 19:00	13	81	0.019	13	81	0.009	13	81	0.028
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.098			0.095			0.193

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected: 10 - 237 (units:)
 Survey date range: 01/01/00 - 20/12/11
 Number of weekdays (Monday-Friday): 13
 Number of Saturdays: 0
 Number of Sundays: 4
 Surveys manually removed from selection: 99

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	13	81	0.097	13	81	0.393	13	81	0.490
08:00 - 09:00	13	81	0.213	13	81	0.690	13	81	0.903
09:00 - 10:00	13	81	0.210	13	81	0.322	13	81	0.532
10:00 - 11:00	13	81	0.188	13	81	0.263	13	81	0.451
11:00 - 12:00	13	81	0.270	13	81	0.228	13	81	0.498
12:00 - 13:00	13	81	0.278	13	81	0.232	13	81	0.510
13:00 - 14:00	13	81	0.254	13	81	0.236	13	81	0.490
14:00 - 15:00	13	81	0.276	13	81	0.231	13	81	0.507
15:00 - 16:00	13	81	0.588	13	81	0.388	13	81	0.976
16:00 - 17:00	13	81	0.513	13	81	0.318	13	81	0.831
17:00 - 18:00	13	81	0.569	13	81	0.345	13	81	0.914
18:00 - 19:00	13	81	0.375	13	81	0.295	13	81	0.670
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			3.831			3.941			7.772

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected: 10 - 237 (units:)
 Survey date range: 01/01/00 - 20/12/11
 Number of weekdays (Monday-Friday): 13
 Number of Saturdays: 0
 Number of Sundays: 4
 Surveys manually removed from selection: 99

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	13	81	0.028	13	81	0.063	13	81	0.091
08:00 - 09:00	13	81	0.056	13	81	0.239	13	81	0.295
09:00 - 10:00	13	81	0.049	13	81	0.051	13	81	0.100
10:00 - 11:00	13	81	0.023	13	81	0.044	13	81	0.067
11:00 - 12:00	13	81	0.044	13	81	0.044	13	81	0.088
12:00 - 13:00	13	81	0.030	13	81	0.027	13	81	0.057
13:00 - 14:00	13	81	0.035	13	81	0.028	13	81	0.063
14:00 - 15:00	13	81	0.039	13	81	0.044	13	81	0.083
15:00 - 16:00	13	81	0.211	13	81	0.064	13	81	0.275
16:00 - 17:00	13	81	0.080	13	81	0.046	13	81	0.126
17:00 - 18:00	13	81	0.078	13	81	0.060	13	81	0.138
18:00 - 19:00	13	81	0.076	13	81	0.059	13	81	0.135
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.749			0.769			1.518

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected: 10 - 237 (units:)
 Survey date range: 01/01/00 - 20/12/11
 Number of weekdays (Monday-Friday): 13
 Number of Saturdays: 0
 Number of Sundays: 4
 Surveys manually removed from selection: 99

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	13	81	0.000	13	81	0.008	13	81	0.008
08:00 - 09:00	13	81	0.003	13	81	0.009	13	81	0.012
09:00 - 10:00	13	81	0.001	13	81	0.003	13	81	0.004
10:00 - 11:00	13	81	0.003	13	81	0.002	13	81	0.005
11:00 - 12:00	13	81	0.008	13	81	0.002	13	81	0.010
12:00 - 13:00	13	81	0.006	13	81	0.002	13	81	0.008
13:00 - 14:00	13	81	0.005	13	81	0.001	13	81	0.006
14:00 - 15:00	13	81	0.002	13	81	0.001	13	81	0.003
15:00 - 16:00	13	81	0.004	13	81	0.001	13	81	0.005
16:00 - 17:00	13	81	0.008	13	81	0.003	13	81	0.011
17:00 - 18:00	13	81	0.006	13	81	0.001	13	81	0.007
18:00 - 19:00	13	81	0.001	13	81	0.001	13	81	0.002
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.047			0.034			0.081

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected: 10 - 237 (units:)
 Survey date range: 01/01/00 - 20/12/11
 Number of weekdays (Monday-Friday): 13
 Number of Saturdays: 0
 Number of Sundays: 4
 Surveys manually removed from selection: 99

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	13	81	0.134	13	81	0.479	13	81	0.613
08:00 - 09:00	13	81	0.276	13	81	0.949	13	81	1.225
09:00 - 10:00	13	81	0.264	13	81	0.379	13	81	0.643
10:00 - 11:00	13	81	0.216	13	81	0.315	13	81	0.531
11:00 - 12:00	13	81	0.325	13	81	0.274	13	81	0.599
12:00 - 13:00	13	81	0.321	13	81	0.266	13	81	0.587
13:00 - 14:00	13	81	0.297	13	81	0.269	13	81	0.566
14:00 - 15:00	13	81	0.318	13	81	0.282	13	81	0.600
15:00 - 16:00	13	81	0.815	13	81	0.461	13	81	1.276
16:00 - 17:00	13	81	0.613	13	81	0.379	13	81	0.992
17:00 - 18:00	13	81	0.672	13	81	0.421	13	81	1.093
18:00 - 19:00	13	81	0.470	13	81	0.363	13	81	0.833
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			4.721			4.837			9.558

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

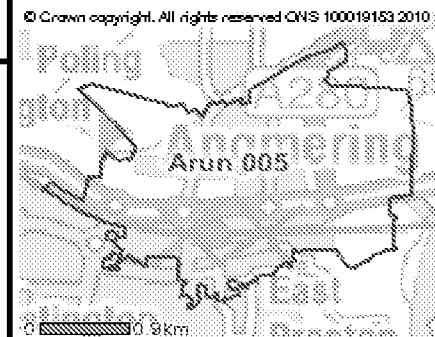
Parameter summary

Trip rate parameter range selected: 10 - 237 (units:)
 Survey date range: 01/01/00 - 20/12/11
 Number of weekdays (Monday-Friday): 13
 Number of Saturdays: 0
 Number of Sundays: 4
 Surveys manually removed from selection: 99

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRICS Data		Weekday		Trips for	
Housing		Trip Rates		139 dwellings	
		Per Dwelling			
All Trips	Inbound	Outbound	Inbound	Outbound	
08:00-09:00	0.276	0.949	38	132	
17:00-18:00	0.672	0.421	93	59	
Total Daily Trips	4.721	4.837	656	672	
Pedestrians					
08:00-09:00	0.056	0.239	8	33	
17:00-18:00	0.078	0.060	11	8	
Total Daily Trips	0.749	0.769	104	107	
Cyclists					
08:00-09:00	0.005	0.010	1	1	
17:00-18:00	0.020	0.015	3	2	
Total Daily Trips	0.098	0.095	14	13	
Public Transport					
08:00-09:00	0.003	0.009	0	1	
17:00-18:00	0.006	0.001	1	0	
Total Daily Trips	0.047	0.034	7	5	
Vehicles					
08:00-09:00	0.164	0.440	23	61	
17:00-18:00	0.432	0.268	60	37	
Total Daily Trips	2.839	2.903	395	404	
Vehicle Passengers					
08:00-09:00	0.049	0.250	7	35	
17:00-18:00	0.137	0.077	19	11	
Total Daily Trips	0.992	1.038	138	144	
Ordinary Goods Vehicles					
08:00-09:00	0.004	0.004	1	1	
17:00-18:00	0.001	0.002	0	0	
Total Daily Trips	0.028	0.030	4	4	
Public Service Vehicles					
08:00-09:00	0.002	0.002	0	0	
17:00-18:00	0.000	0.000	0	0	
Total Daily Trips	0.007	0.006	1	1	

Method of Travel to Work		
Resident Population		
Pedestrians	228	8.3%
Cyclists	158	5.7%
Train	144	5.2%
Bus	50	1.8%
Vehicle Driver	1,935	70.1%
Vehicle Passenger	173	6.3%
Taxi	15	0.5%
Motorcycle	46	1.7%
Other	12	0.4%



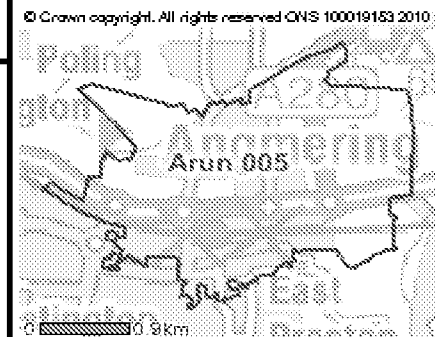
Census Adjusted		AM Peak 08:00-09:00		PM Peak 17:00-18:00		Total Weekday
TRICS Data	PCU value	Inbound	Outbound	Inbound	Outbound	
Pedestrians	0	3	11	8	5	110
Cyclists	0	2	8	5	3	76
Public Transport Passengers	0	3	9	7	4	93
Vehicles	1	27	93	66	41	938
Vehicle Passengers	0	2	8	6	4	83
Motorcycle	0.4	1	2	2	1	22
Ordinary Goods Vehicles	1.5	1	1	0	0	4

0% Reduction in Private Car Trips due to Travel Plan
70.1% of Travel by Private Car

Pre Travel Plan PCU	Inbound	Outbound	Total
AM Peak 08:00-09:00	28	95	123
PM Peak 17:00-18:00	67	42	109
Total Daily			938

TRICS Data	Weekday		Trips for	
Housing	Trip Rates		139 dwellings	
	Per Dwelling			
All Trips	Inbound	Outbound	Inbound	Outbound
08:00-09:00	0.276	0.949	38	132
17:00-18:00	0.672	0.421	93	59
Total Daily Trips	4.721	4.837	656	672
Pedestrians				
08:00-09:00	0.056	0.239	8	33
17:00-18:00	0.078	0.060	11	8
Total Daily Trips	0.749	0.769	104	107
Cyclists				
08:00-09:00	0.005	0.010	1	1
17:00-18:00	0.020	0.015	3	2
Total Daily Trips	0.098	0.095	14	13
Public Transport				
08:00-09:00	0.003	0.009	0	1
17:00-18:00	0.006	0.001	1	0
Total Daily Trips	0.047	0.034	7	5
Vehicles				
08:00-09:00	0.164	0.440	23	61
17:00-18:00	0.432	0.268	60	37
Total Daily Trips	2.839	2.903	395	404
Vehicle Passengers				
08:00-09:00	0.049	0.250	7	35
17:00-18:00	0.137	0.077	19	11
Total Daily Trips	0.992	1.038	138	144
Ordinary Goods Vehicles				
08:00-09:00	0.004	0.004	1	1
17:00-18:00	0.001	0.002	0	0
Total Daily Trips	0.028	0.030	4	4
Public Service Vehicles				
08:00-09:00	0.002	0.002	0	0
17:00-18:00	0.000	0.000	0	0
Total Daily Trips	0.007	0.006	1	1

Method of Travel to Work		
Resident Population		
Pedestrians	228	8.3%
Cyclists	158	5.7%
Train	144	5.2%
Bus	50	1.8%
Vehicle Driver	1,935	70.1%
Vehicle Passenger	173	6.3%
Taxi	15	0.5%
Motorcycle	46	1.7%
Other	12	0.4%



Census Adjusted		AM Peak 08:00-09:00		PM Peak 17:00-18:00		Total Weekday
TRICS Data	PCU value	Inbound	Outbound	Inbound	Outbound	
Pedestrians	0	3	11	8	5	110
Cyclists	0	2	8	5	3	76
Public Transport Passengers	0	3	9	7	4	93
Vehicles	1	27	93	66	41	938
Vehicle Passengers	0	2	8	6	4	83
Motorcycle	0.4	1	2	2	1	22
Ordinary Goods Vehicles	1.5	1	1	0	0	4

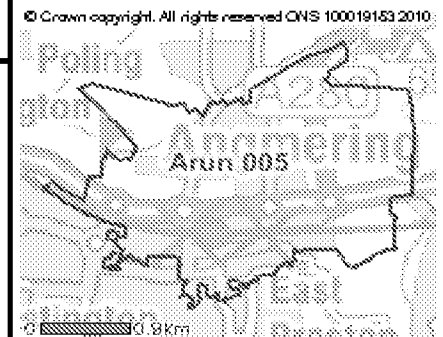
2% Reduction in Private Car Trips due to Travel Plan
68.7% of Travel by Private Car

Opening Year
2015

Post Travel Plan PCU	Inbound	Outbound	Total
AM Peak 08:00-09:00	28	93	121
PM Peak 17:00-18:00	65	41	107
Total Daily			920

TRICS Data	Weekday		Trips for	
Housing	Trip Rates		139 dwellings	
	Per Dwelling			
All Trips	Inbound	Outbound	Inbound	Outbound
08:00-09:00	0.276	0.949	38	132
17:00-18:00	0.672	0.421	93	59
Total Daily Trips	4.721	4.837	656	672
Pedestrians				
08:00-09:00	0.056	0.239	8	33
17:00-18:00	0.078	0.060	11	8
Total Daily Trips	0.749	0.769	104	107
Cyclists				
08:00-09:00	0.005	0.010	1	1
17:00-18:00	0.020	0.015	3	2
Total Daily Trips	0.098	0.095	14	13
Public Transport				
08:00-09:00	0.003	0.009	0	1
17:00-18:00	0.006	0.001	1	0
Total Daily Trips	0.047	0.034	7	5
Vehicles				
08:00-09:00	0.164	0.440	23	61
17:00-18:00	0.432	0.268	60	37
Total Daily Trips	2.839	2.903	395	404
Vehicle Passengers				
08:00-09:00	0.049	0.250	7	35
17:00-18:00	0.137	0.077	19	11
Total Daily Trips	0.992	1.038	138	144
Ordinary Goods Vehicles				
08:00-09:00	0.004	0.004	1	1
17:00-18:00	0.001	0.002	0	0
Total Daily Trips	0.028	0.030	4	4
Public Service Vehicles				
08:00-09:00	0.002	0.002	0	0
17:00-18:00	0.000	0.000	0	0
Total Daily Trips	0.007	0.006	1	1

Method of Travel to Work		
Resident Population		
Pedestrians	228	8.3%
Cyclists	158	5.7%
Train	144	5.2%
Bus	50	1.8%
Vehicle Driver	1,935	70.1%
Vehicle Passenger	173	6.3%
Taxi	15	0.5%
Motorcycle	46	1.7%
Other	12	0.4%



Census Adjusted		AM Peak 08:00-09:00		PM Peak 17:00-18:00		Total
TRICS Data	PCU value	Inbound	Outbound	Inbound	Outbound	Weekday
Pedestrians	0	3	11	8	5	110
Cyclists	0	2	8	5	3	76
Public Transport Passengers	0	3	9	7	4	93
Vehicles	1	27	93	66	41	938
Vehicle Passengers	0	2	8	6	4	83
Motorcycle	0.4	1	2	2	1	22
Ordinary Goods Vehicles	1.5	1	1	0	0	4

8% Reduction in Private Car Trips due to Travel Plan
64.5% of Travel by Private Car

Future Year
2019

Post Travel Plan PCU	Inbound	Outbound	Total
AM Peak 08:00-09:00	26	87	113
PM Peak 17:00-18:00	62	39	100
Total Daily			863