

TECHNICAL NOTE

LAND AT BURDELL ROAD, YAPTON, WEST SUSSEX RESIDENTIAL DEVELOPMENT

Client: Driftstone Homes Ltd
Reference: 6145

Date: July 2021

				Issue	Status	Date
Author:	ALB	Date:	20/07/2021	1.	Final	21/07/2021
Checked by:	PMR	Date:	20/07/2021	2.		
Approved by:	PMR	Date:	21/07/2021	3.		
				4.		

1 INTRODUCTION

1.1 Overview

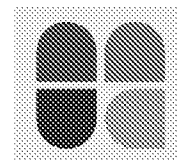
1.1.1 This Technical Note (TN) has been prepared by Bright Plan on behalf of Driftstone Homes Ltd address highway consultation comments raised by West Sussex County Council (WSCC) regarding the planning application F/5/21/PL for residential development on land at Burdell Road, Yapton, West Sussex.

1.2 WSCC Consultation Response

1.2.1 WSCC's consultation response requested additional information to enable further consideration of the proposal. WSCC's full highways consultation response is attached at **Appendix A**. A summary of the additional information requirements is provided below: -

- i. Provision of Stage 1 RSA and 'Designer's Response' report;
- ii. Provision of an ATC Speed Survey to ascertain 85th percentile speeds and demonstration of required vehicular visibility and pedestrian forward visibility splays in accordance with these;
- iii. Exploration of providing a pedestrian / cycle link from within site to adjacent northern site.

The remainder of this TN sequentially addresses the additional information points requested in WSCC's consultation response.



2 CONSULTATION RESPONSE REVIEW

2.1 LHA Comment 1

"A Stage 1 Road Safety Audit (RSA) with accompanying Designers Response (in the format as set out in table F4 and F5 of GG119) should be provided to cover all proposed highways/ access works and modifications."

- 2.1.1 A Stage 1 RSA has been commissioned and undertaken by 'Road Safety Answers' on the 19th July 2021. The Stage 1 RSA raised 2 issues which were agreed and are accordingly incorporated into the projects design. The Stage 1 RSA and full Designers Response report is attached at **Appendix B** of the this Technical Note.

2.2 LHA Comment 2

"ATC surveys taken during lockdown periods are acceptable for use in calculating 85th percentile speeds and concurrent visibility splay requirements but should not be used for traffic volume counts. The TS has taken a different approach where splays concurrent to the speed limit of 30mph and to a maximum design speed of 60kph (37.3mph) have been demonstrated. As speeds could be varying and above 37.3mph a 7-day speed survey is required to ascertain the up to date 85th percentile speeds in either direction, in vicinity of the access, along with amended vehicle visibility and pedestrian forward visibility splays in accordance with these recorded speeds."

- 2.2.1 An ATC speed Survey was undertaken between the 11th and 17th of July 2021 to establish design speeds on Burndell Road. The ATC data has been filtered in accordance DMRB CA 185 requirements. A summary of the speed data is provided in **Figure 2.1**.

Flow Direction	Mean Speeds	85 th Percentile Speeds
Northbound – Burndell Road	31.89	37.05
Southbound – Burndell Road	32.63	37.69

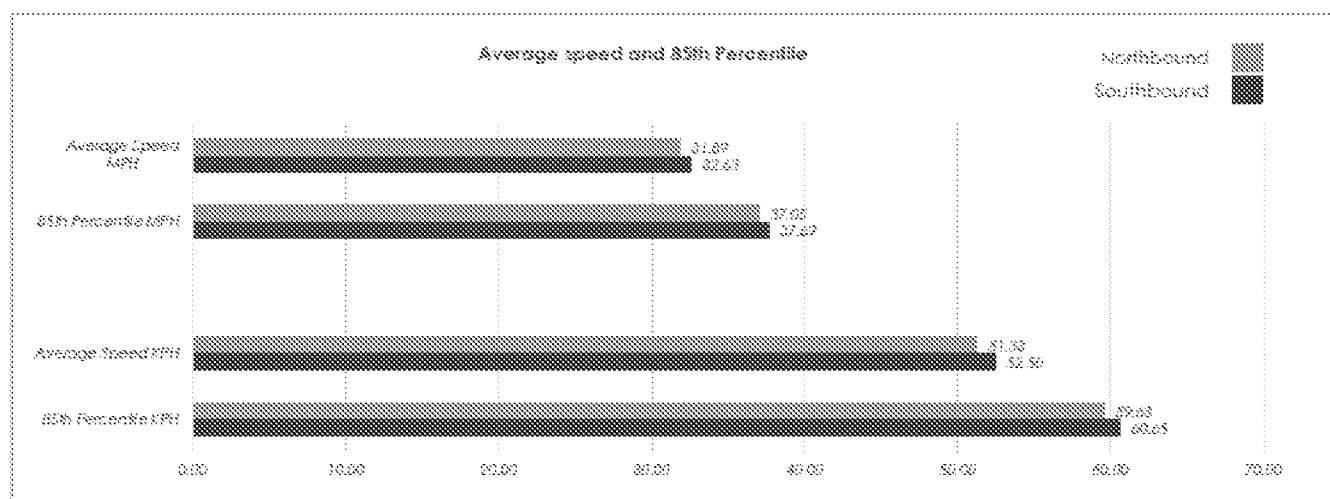
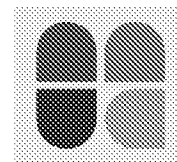


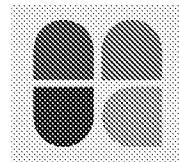
Figure 2.1: Summary Speed Survey Data

- 2.2.2 The southbound design speed narrowly exceeds 60kph, a threshold at which DMRB CD 109 visibility requirements need to be considered. DMRB CD 109 identifies relaxations to the 'desirable minimum' stopping sight distance are permitted on Band B 60kph urban trunk roads. The low proportion of HGV's (<1%) on Burndell Road further supports relaxation from the desirable minimum as detailed in MfS 2 Section 10.1.
- 2.2.3 The secondary direction visibility splay has therefore been shown in accordance with DMRB 'absolute minimum' requirements equating to a stopping sight distance of 72.0m. The primary direction visibility splay has also been provided in accordance with DMRB absolute minimum requirements for consistency (although speeds on this approach direction fall below the DMRB 60kph threshold) equating to a stopping sight distance of 70.0m. The revised primary and secondary visibility splays are demonstrated in **Drawing 2020-6145-001**.
- 2.2.4 Pedestrian visibility from crossings have also been demonstrated in accordance with the recorded 85th percentile design speeds with sight lines calculated using DMRB absolute minimum coefficients in **Drawing 2020-6145-005**.

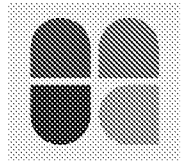
2.3 LHA Comment 3

"There may be benefit to providing a pedestrian / cycle link to the adjacent site to north and the applicant should explore whether this is feasible."

- 2.3.1 The potential benefits of linking to the site north of the site are recognised however the required cooperation from the third-party would complicate any such link and be unlikely to be forthcoming. The adjacent site's build has progressed to such a stage that amendment to the third parties planning application would be required. For these reasons, the link is viewed as unfeasible.

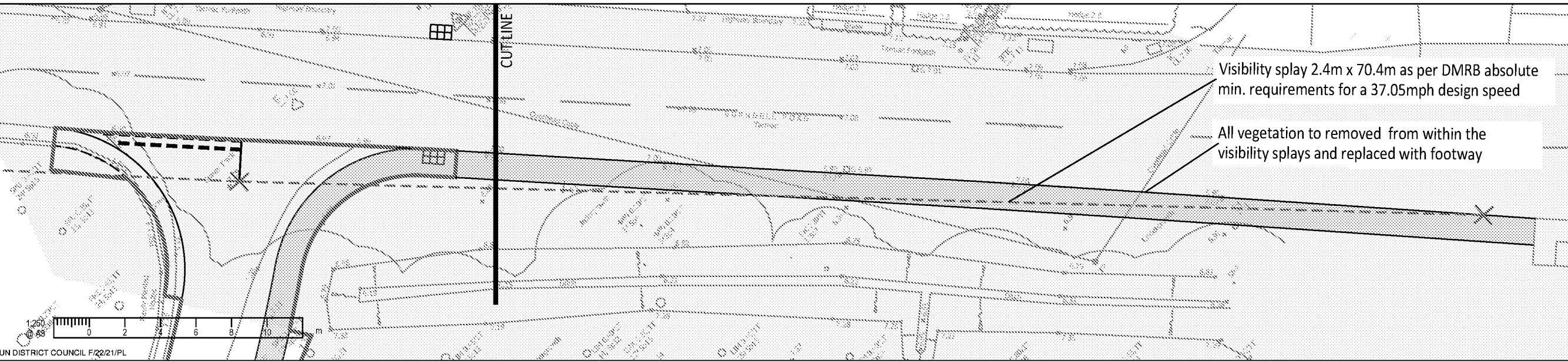
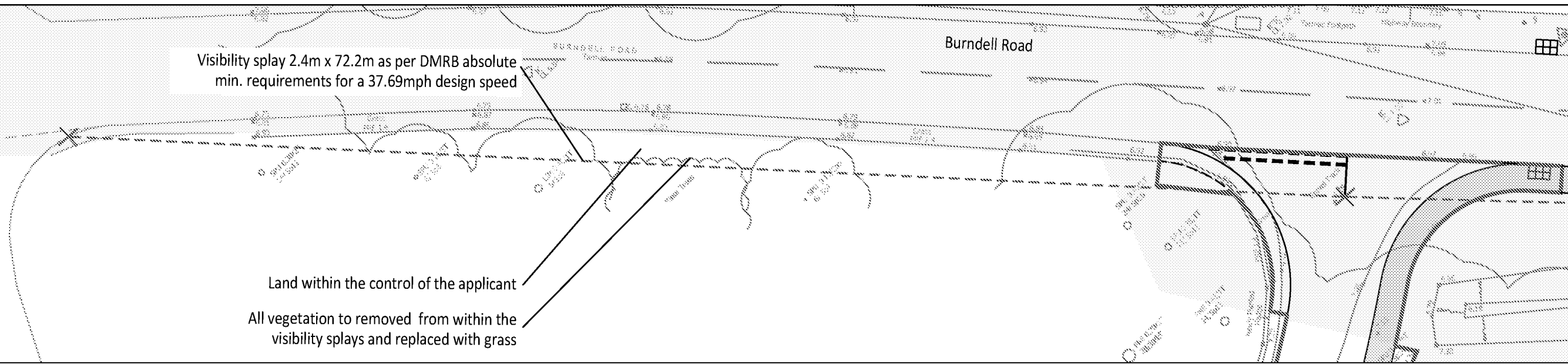
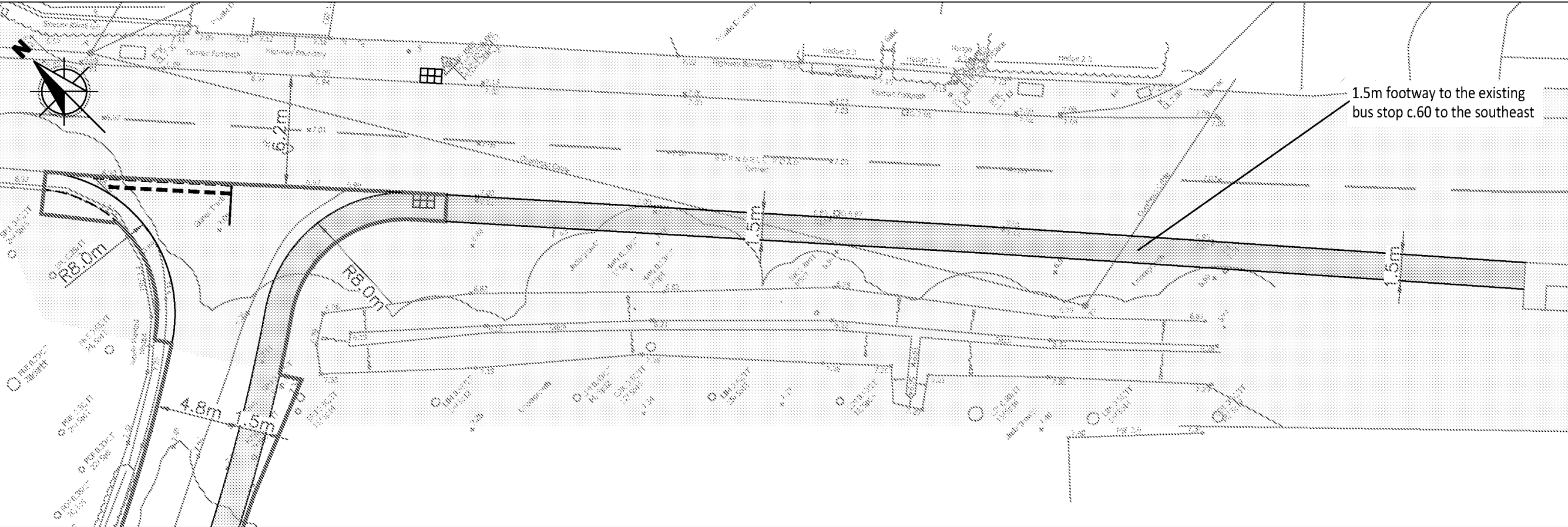


- 2.3.2 An alternative betterment to the local footway network would however be offered in the form of a new footway to tie in with the 'Rollaston Park' bus stop to the southeast of the site. This additional infrastructure has been provided in accordance with the Stage 1 RSA recommendations.



DRAWINGS

- 001** Access Overview & Visibility Splays
- 002** Cycle Route Overview



NOTES

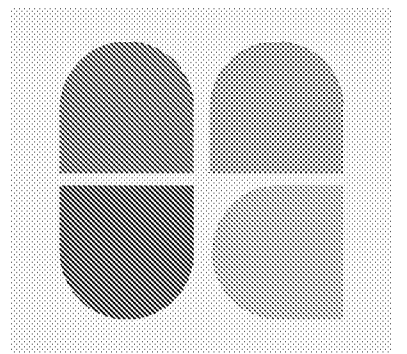
A3

1. This drawing is to be read in conjunction with all other Bright Plan drawings, and with all relevant Architect's and Engineer's drawings and specification. Any discrepancies found are to be reported immediately to the Engineer.
2. Bright Plan accepts no responsibility for inaccuracies in data provided by third parties such as topographic surveys or Ordnance Survey mapping.
3. Do not scale, work to figured dimensions only. All dimensions are in millimeters unless noted otherwise and all levels are in metres from the topographic survey datum.
4. Any information given regarding existing underground services is given in good faith after consultation with the relevant authority, however accuracy is not certain.

-LEGEND-

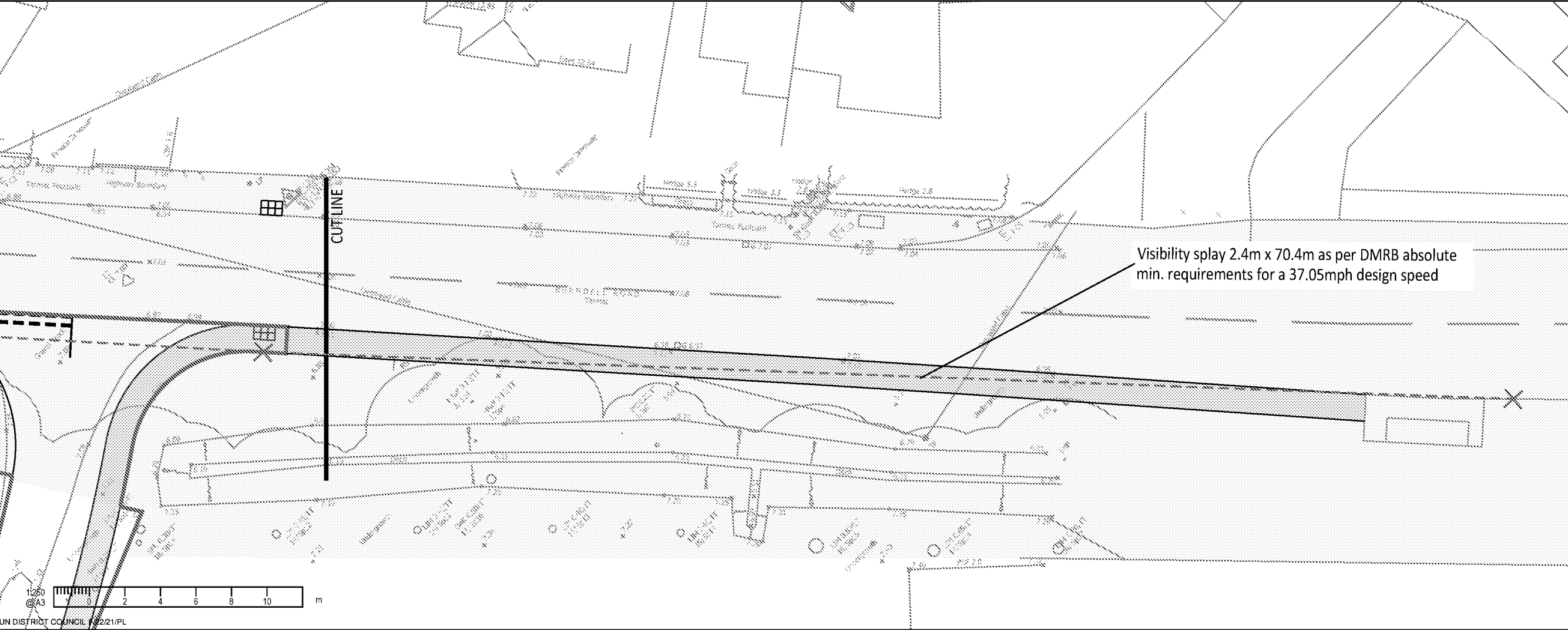
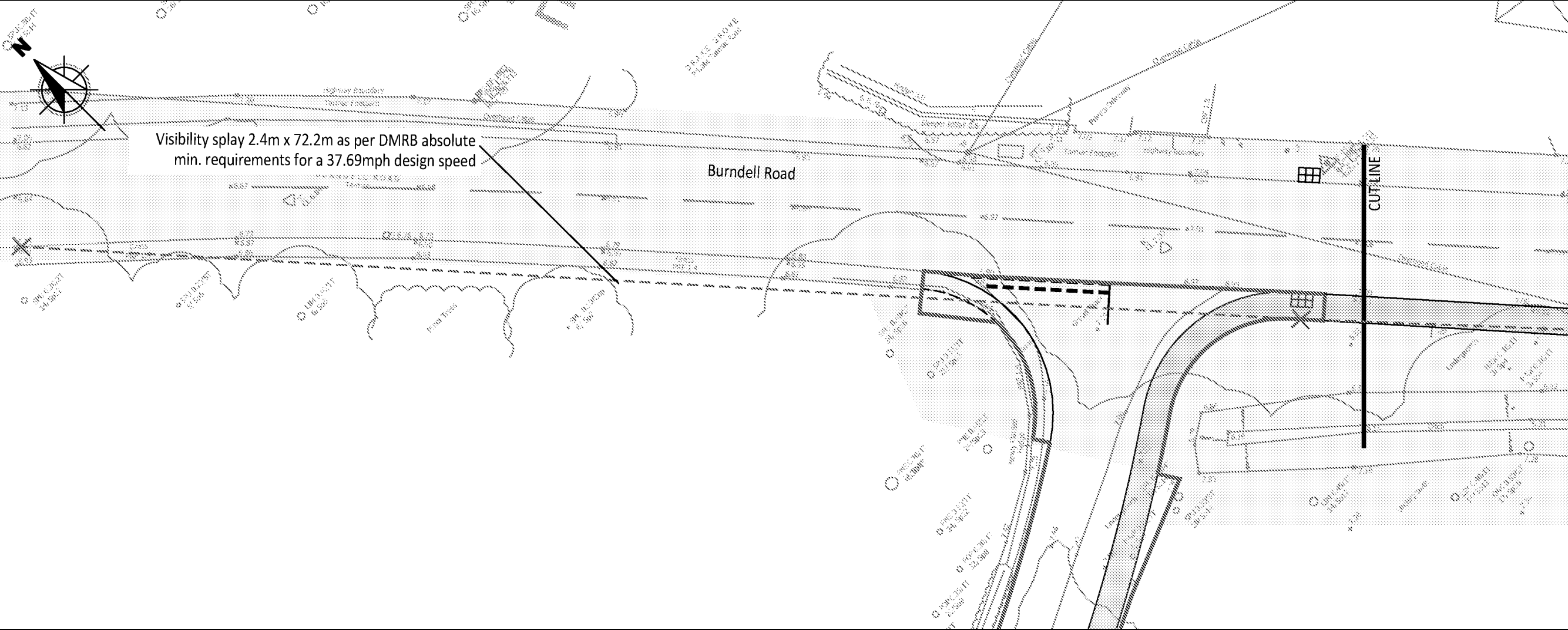
- Site Boundary
- Existing Road Markings
- Visibility Splays 2.4m x 43.0m
- Visibility Splays 2.4m x 59.0m
- Highway Boundary
- Service Margin
- Footway

I	RSA Comments	21/07/2021
H	ATC	19/07/2021
G	Final Issue	25/09/2020
F	Draft Issue	13/07/2020
E	Draft Issue	12/07/2020
D	Revised Access	19/05/2020
C	Revised Access	18/05/2020
B	Site and Highway Boundary	13/05/2020
A	Revised Access	02/04/2020
-	Original Issue	27/03/2020
Rev.	Amendments	Date



BRIGHT PLAN
Transport Planning and Civil Engineering Consultants
2 West Barn, Norton Lane, Chichester, West Sussex PO20 3AF
Tel: 01243 210418 Email: enquiries@bpcivils.co.uk
www.bpcivils.co.uk

Drawing Status	FINAL		
Client	Driftstone Homes		
Project	Burdell Road, Yapton		
Drawing Title	Access Overview and Visibility Splays		
Scale	1:250	Date	July 21
Drawn By	SMO	Checked By	ALB
Drawing No.	2020-6145-001		Rev.
		I	



NOTES

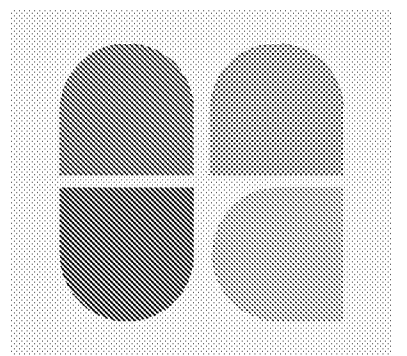
A3

1. This drawing is to be read in conjunction with all other Bright Plan drawings, and with all relevant Architect's and Engineer's drawings and specification. Any discrepancies found are to be reported immediately to the Engineer.
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-LEGEND-

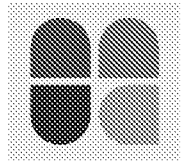
- Site Boundary
- Existing Road Markings
- Pedestrian Visibility Splays 1.5m x 43.0m
- Pedestrian Visibility Splays 1.5m x 59.0m
- Highway Boundary
- Footway

C	RSA Comments	21/07/2021
B	ATC	19/07/2021
A	Revised Layout	25/09/2020
-	Draft Issue	13/07/2020
Rev.	Amendments	Date

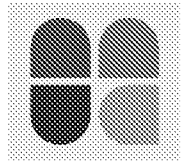


BRIGHT PLAN
Transport Planning and Civil Engineering Consultants
2 West Barn, Norton Lane, Chichester, West Sussex PO20 3AF
Tel: 01243 210418 Email: enquiries@bpcivils.co.uk
www.bpcivils.co.uk

Drawing Status	FINAL		
Client	Driftstone Homes		
Project	Burndell Road, Yapton		
Drawing Title	Pedestrian Visibility Splays		
Scale	1:250	Date	July 21
Drawn By	SMO	Checked By	ALB
Drawing No.	2020-6145-005		Rev. C



APPENDICES



Appendix A WSCC Highways Response

WEST SUSSEX COUNTY COUNCIL CONSULTATION

TO:	Arun District Council - FAO: Anita Gardner
FROM:	WSCC - Highways Authority
DATE:	24 May 2021
LOCATION:	Land rear of Paynters Croft, Burndell Road, Yapton, BN18 0HR
SUBJECT:	F/5/21/PL Erection of 23 No. dwellings. This application is a Departure from the Development Plan & is in CIL Zone 3 & is CIL Liable as new dwellings.
RECOMMENDATION:	More Information

West Sussex County Council, in its capacity as Local Highway Authority (LHA), have been consulted on proposals for 23 x dwellings on land rear of Paynters Croft.

The site is accessed via Yapton Road/ Burndell Road (B2333), a 'B' classified district distributor road subject to a 30mph speed restriction in this location. To the north of the site is approved development F/7/15 (45 x dwellings) and to the west of this is approved site Y/19/16 (108 x dwellings).

The application is supported by several technical plans and documents including a Transport Statement (TS). The LHA require further information as set out in the following report.

Access Arrangements

The LHA has reviewed data supplied to WSCC by Sussex Police over a period of the last five years. There have been some recorded injury accidents along B2333 in the vicinity, including at the nearby junction with Rollaston Park which involved right hand turns. However, from an inspection of accident data it is clear that this was not due to any defect with the junction or nearby road layout.

The existing private driveway will be widened to min. 4.8m with min 1.5m footway and where the access joins with public highway will take the form of a t-junction bellmouth with 8m corner radii. The footway would adjoin southern side of access road and extend to site access with an uncontrolled pedestrian crossing proposed to reach the existing footway network on opposite side of B2333.

Swept path tracking plans show cars passing in the access and refuse collection vehicle manoeuvring the access point. To reduce vehicle speeds along the 190m long access road, 2 x build-outs are proposed to calm traffic speeds. Tracking plans also show vehicle movement negotiating these priority working arrangements along the access road.

A Stage 1 Road Safety Audit (RSA) with accompanying Designers Response (in the format as set out in table F4 and F5 of GG119) should be provided to cover all proposed highways/ access works and modifications.

Visibility

ATC surveys taken during lockdown periods are acceptable for use in calculating 85th percentile speeds and concurrent visibility splay requirements but should not be used for traffic volume counts. The TS has taken a different approach where splays concurrent to the speed limit of 30mph and to a maximum design speed of 60kph (37.3mph) have been demonstrated. As speeds could be varying and above 37.3mph a 7 day speed survey is required to ascertain the up to date 85th percentile speeds in either direction, in vicinity of the access, along with amended vehicle visibility and pedestrian forward visibility splays in accordance with these recorded speeds.

Internal Layout

The internal access road will feature a segregated footway on southern side (extending from public highway) which will switch to northern side along the access road and in to the site (facilitated by uncontrolled pedestrian crossing). Build outs and give way markings/signing will control vehicle speeds. The Block Plan appears to show footway merging with carriageway prior to entering the site. However, the detailed access plans show this continuing past plot 1 and 2 and merging to shared surface within the cul-de-sac and more lightly trafficked areas. The applicant should confirm and ensure all plans are matching.

Uncontrolled pedestrian crossings are also proposed within the site to facilitate pedestrian movement across the estate road in key areas. As per Manual for Streets (MfS) paragraph 7.2.14, the shared surface areas are considered appropriate in light of the short lengths (or where they form cul-de-sacs), where the volume of motor traffic is below 100 vehicles per hour and where parking is controlled or it takes place in designated areas.

Whilst plots 10 and 9 are not linked by a vehicular access, there is a pedestrian link and this is considered appropriate for the scale of the scheme and extent of estate roads. Furthermore, tracking plans have demonstrated that fire tender, refuse vehicle and cars can turn within the site in order to exit in a forward gear.

There may be benefit to providing a pedestrian/cycle link to the adjacent site to north and the applicant should explore whether this is feasible.

Road Network Traffic Capacity Impact

TRICs has been used to estimate the likely vehicular trip generation from the development. This found that 11 x two-way trips in the AM and 10 x two-way trips in the PM peak hours could result with 102 x vehicular movements over the day. Considering the existing anticipated traffic levels on the immediate road network the LHA does not consider that a 'severe' impact in capacity terms would result.

Car and Bicycle Parking

Parking has been assessed on the basis of 1 x 2-bed, 14 x 3-bed and 8 x 4-bed units being provided. Arun Supplementary Planning Document (SPD) outlines the car parking requirements as 2 x allocated spaces per 2 and 3-bed units and 3 x allocated spaces per 4+ bed unit. Where garages of 3m by 6m are provided this shall count as 0.5 space and visitor parking at 20% of total units.

Plots 4, 5, 6, 7 (3-bed) appear to have 1 space allocated each so each is short by 1 space (4 total). Plots 14, 16, 23 (4-bed) appear to have 2.5 space allocated each so each is short by 0.5 space (1.5 total). A total of 52 x allocated spaces are provided. Under the SPD the requirement is 54 and thus parking provision is short by 2 x spaces. The SPD requires 5 x visitor spaces (8 x visitor spaces are shown). The shortfall in allocated spaces is considered negligible and a highway safety concern is not raised in this respect.

Electric charging points have been indicated in some areas. Where garages are provided they should be supplied and provision should meet with Arun SPD, details of which could be secured via condition.

The SPD requires that the 2-bed units are provided with 1 x cycle spaces and the 3+ bed units are provided with 2 x cycle spaces. These could be in garages and/or sheds per plot, details of which can be secured via condition.

Accessibility

The provision of a crossing of B2333 will provide an onward route for pedestrians to local facilities in Yapton such as grocery store (approx. 0.5 mile walk). The footway is street lit and there is a signalised pedestrian crossing in vicinity of co-op.

The B2333 is part of local cycle route. Whilst there are no segregated facility, it does link with NCNR2 to the south which links Littlehampton and Bognor Regis.

Bus stops are reached within walking distance of the site and provide regular services to Chichester and Littlehampton. Ford and Barnham Train Stations are 2.4 and 2.2 mile cycle ride distant respectively and could be reached by confident cyclists.

Considering this development will result in additional trips along with that from nearby development, the applicant is advised to provide a Travel Plan Statement (TPS). This should aim to reduce single occupancy vehicle trips and increase sustainable transport use through a number of measures such as residents travel information packs, vouchers and target setting. The TPS can be agreed and secured via condition. The LPA should look to secure a fee of £1500 for auditing of the TPS via s106 Agreement/Unilateral Undertaking.

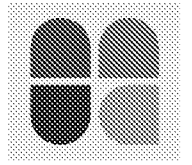
Conclusion

The following is required:

- Stage 1 RSA and Designers Response.
- Seven day ATC Speed Survey to ascertain 85th percentile speeds and demonstration of required vehicular visibility and pedestrian forward visibility splays in accordance with these.
- Exploration of providing a pedestrian/ cycle link from within site to adjacent northern site and ensure extent of internal footway on Block Plan matches with access plans.

Please ask the applicant for this additional information and re-consult.

Katie Kurek
West Sussex County Council – Planning Services

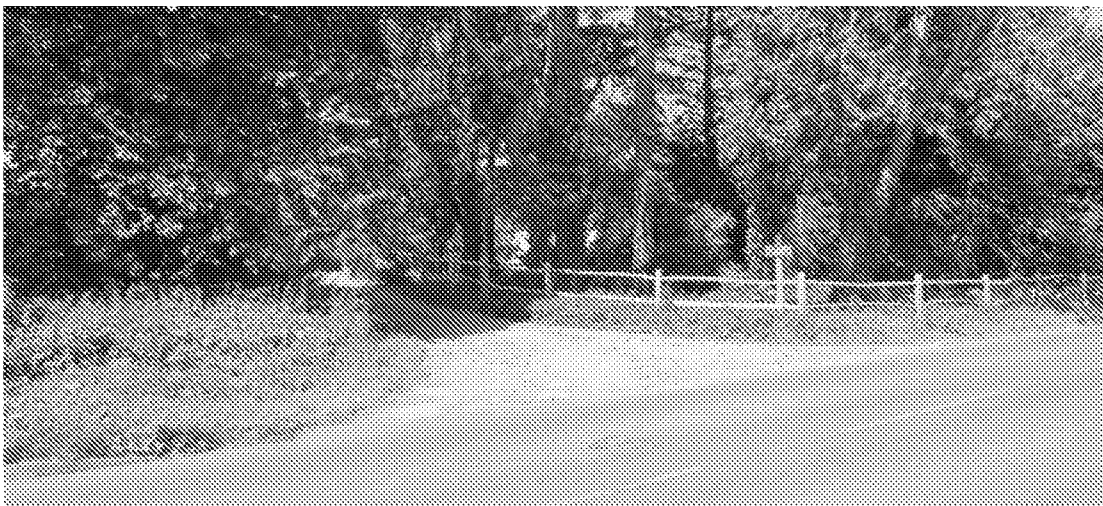


Appendix B Stage 1 RSA and Designers Response

Road Safety Answers

Road Safety Audit Stage 1

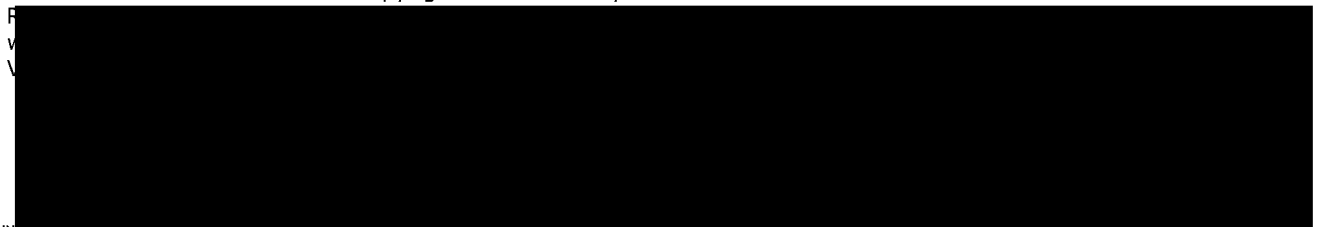
Access to Burndell Road, Yapton



Client: Bright Plan

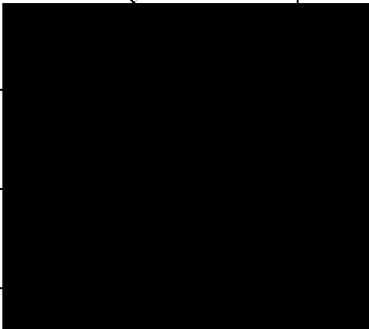
Road Safety Answers reference no: RSA438

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Control Sheet

	Name	Date	Signature
Author	Paul Martin	19/07/2021	
Checker	David Dodd	19/07/2021	
Authoriser	Paul Martin	19/07/2021	

Report Version

RSA Report Ref.	Version	Date of Issue
RSA438	Final	19/07/2021

1. Introduction

1.1 This report describes a Stage 1 Road Safety Audit carried out on the preliminary design for an access to a residential development off Burndell Road, Yapton, for Bright Plan at the request of West Sussex County Council. The audit was carried out in the office of Road Safety Answers Ltd during July 2021.

1.2 The audit team members were as follows:

Team Leader

Paul Martin - BSc (Hons), CEng, FCIHT, FSoRSA, IEng, MICE
HE Approved RSA Certificate of Competency (2013)
Director, Road Safety Answers Ltd

Team Member

David Dodd – BSc(Hons), DipNEBOSH, FIHE, IEng. MCIHT, MSoRSA
Independent Highway and Road Safety Consultant

1.3 The audit comprised an examination of the documents listed in **Appendix A**, and included the drawings supplied by Sam O'Halloran of Bright Plan. The site was visited by the Audit Team, together, on 19th July 2021 between 10.30 and 11.00 hours. The weather was fine and the road surface was dry. Traffic flows were light to moderate. Pedestrian and cycle flows were light.

1.4 The terms of reference of the audit are as described in the UK's national standard for road safety audit, GG 119. The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design to any other criteria.

1.5 All the problems described in this report are considered by the audit team to require action to improve the safety of the scheme and minimise accident occurrence. A plan showing the locations of the problems is shown in **Appendix B**.

1.6 The purpose of the scheme is to provide access onto Burndell Road to serve a residential development of 23 units.

1.7 The scheme consists the following elements:

- A simple priority junction onto Burndell Road, just south-east of its south-eastern junction with Drake Grove, with 8m radii, connecting to a 4.8m wide access road with a 1.5m wide footway on its south-eastern side;

- Visibility splays at the priority junction of 61.8m northwest x 2.4m x 60.3m onto Burndell Road, the 'y' distance calculated in accordance with the Manual for Streets Stopping Sight Distance (SSD) calculation¹ for the measured 85th percentile speeds on Burndell Road;
 - An uncontrolled pedestrian crossing of Burndell Road, to the south-east of the priority junction, at the tangent point of the south-eastern shoulder of the junction on Burndell Road, with dropped kerbs and tactile paving.
- 1.8 No details of street lighting, surface water drainage or advanced signing have been provided. These issues are not, therefore, considered further in this report, unless these existing facilities are likely to engender a safety problem with the new proposals.
- 1.9 The auditors are not aware of any previous road safety audits on these, or similar, proposals.

¹ $SSD = vt + v^2 / 2(d + 0.1a)$ where v is the speed (m/s), t is the driver perception-reaction time (s), d is the deceleration (m/s²), and a is the longitudinal gradient (+ for upgrades and – for downgrades)

2. Items resulting from this Stage 1 Audit

2.1 PROBLEM

Locations: A – The access junction onto Burndell Road (Dwg. 2020-6145-001 Rev. H)

Summary: Risk of side impact collisions due to the visibility from the access road being obstructed by vegetation.

Although the post and rail fence will require removal, and the existing vegetation will be cut back, to obtain the visibility splay in both directions from the access road, the amount of overgrown vegetation present (brambles, nettles, low tree branches etc – see photos 1 and 2) will need constant maintenance to ensure that the visibility splays are not obstructed, especially to the south-eastern side of the access junction where approaching traffic will be closest to the give way lines as vehicles exit the development. Any obstruction to visibility is likely to increase the risk of side impact collisions at the access junction.



Photo 1: Looking south-east from the access junction



Photo 2: Looking north-west from the access junction

RECOMMENDATION

All vegetation, including low branches from adjacent trees, should be removed completely from within the proposed visibility splays, and replaced with either grass or a footway (to the south-east – see recommendation to problem 2.2).

Design Team Response:

Client Officer Response:

2.2 PROBLEM

Location: B – Burndell Road south-east of the access junction (Dwg. 2020-6145-005 Rev. B)

Summary: Risk of pedestrian trips, falls and collisions with passing traffic.

The pedestrian visibility splays drawing shows that, 60m away from the proposed uncontrolled pedestrian crossing point on Burndell Road, there is a bus stop and shelter for north-westbound buses (photo 3).

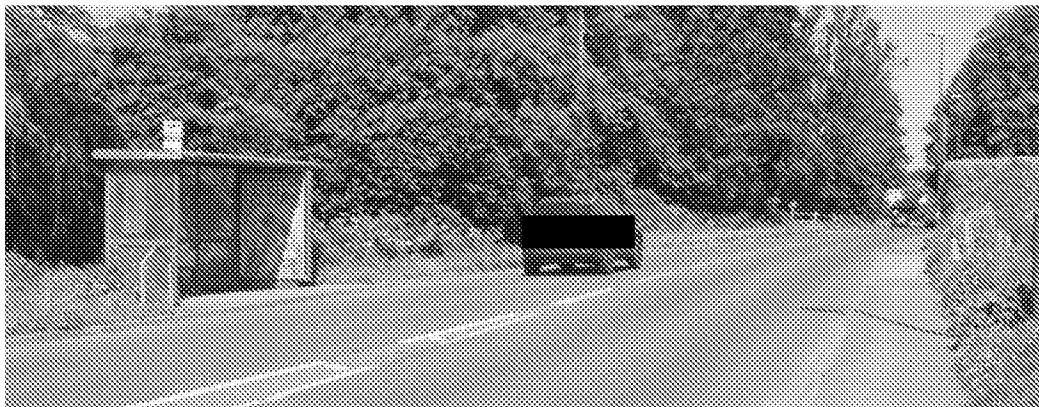


Photo 3: Looking north-west at the bus stop and existing access to the development site (at the post and rail fence)

Residents of, or visitors to, the new development, wishing to use the north-westbound bus route, will have to cross Burndell Road twice to do so, once using the new uncontrolled crossing at the new access junction, and again at the existing bus stop, where there are no dropped kerbs or tactile paving (photo 4).



Photo 4: North-westbound bus stop, 60m south-east of the development

It is more likely, however, that pedestrians will walk along the verge between the bus stop and the new development, risking trips and falls on the verge, or will walk in the carriageway when the verge is muddy, risking collisions with passing traffic.

RECOMMENDATION

The footway on the south-east shoulder of the development should be extended 60m to the existing north-westbound bus stop. This will also help safeguard the visibility splay south-eastwards from the development access junction (see problem 2.1 above).

Design Team Response:

Client Officer Response:

3. Audit Team Statement

We certify that this road safety audit has been carried out in accordance with GG 119, with the exception that Designer and Highway Authority response sections have been added to each problem, and a signing off chapter added for the convenience of both parties.

Audit Team Leader

Paul Martin - BSc (Hons), CEng, FCIHT, FSoRSA, IEng, MICE
HE Approved RSA Certificate of Competency
Director, Road Safety Answers Ltd

Signed

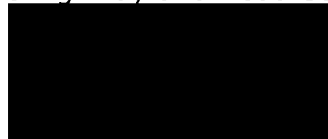


Date 19/07/2021

Audit Team Member

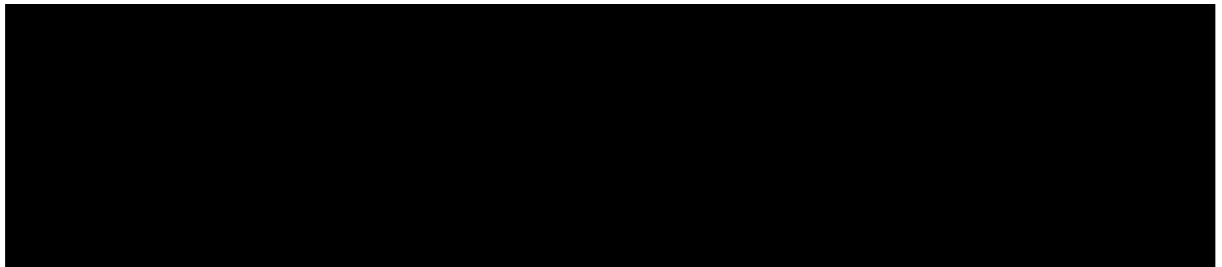
David Dodd – BSc(Hons), DipNEBOSH, FIHE, IEng. MCIHT, MSoRSA
Independent Highway and Road Safety Consultant

Signed



Date 19/07/2021

Road Safety Answers Ltd
17, McDermott Road
Borough Green
Sevenoaks
Kent, TN15 8SA



4. Design Team and Client Organisation Statements

Design Team Leader

I certify that I have reviewed the items raised in this Stage 1 Safety Audit report. I have given due consideration to each issue raised and have stated my proposed course of action for each in this report. I seek the Client Organisation's endorsement of my proposals.

Name:

Organisation:

Signed:

Date:

Client Organisation Project Manager

I certify that I have reviewed the comments and actions proposed by the Design Team Leader and, in this report, I have stated my agreement, or alternative proposal, or acceptance of the risk associated with the problem.

Name:

Organisation:

Signed:

Date:

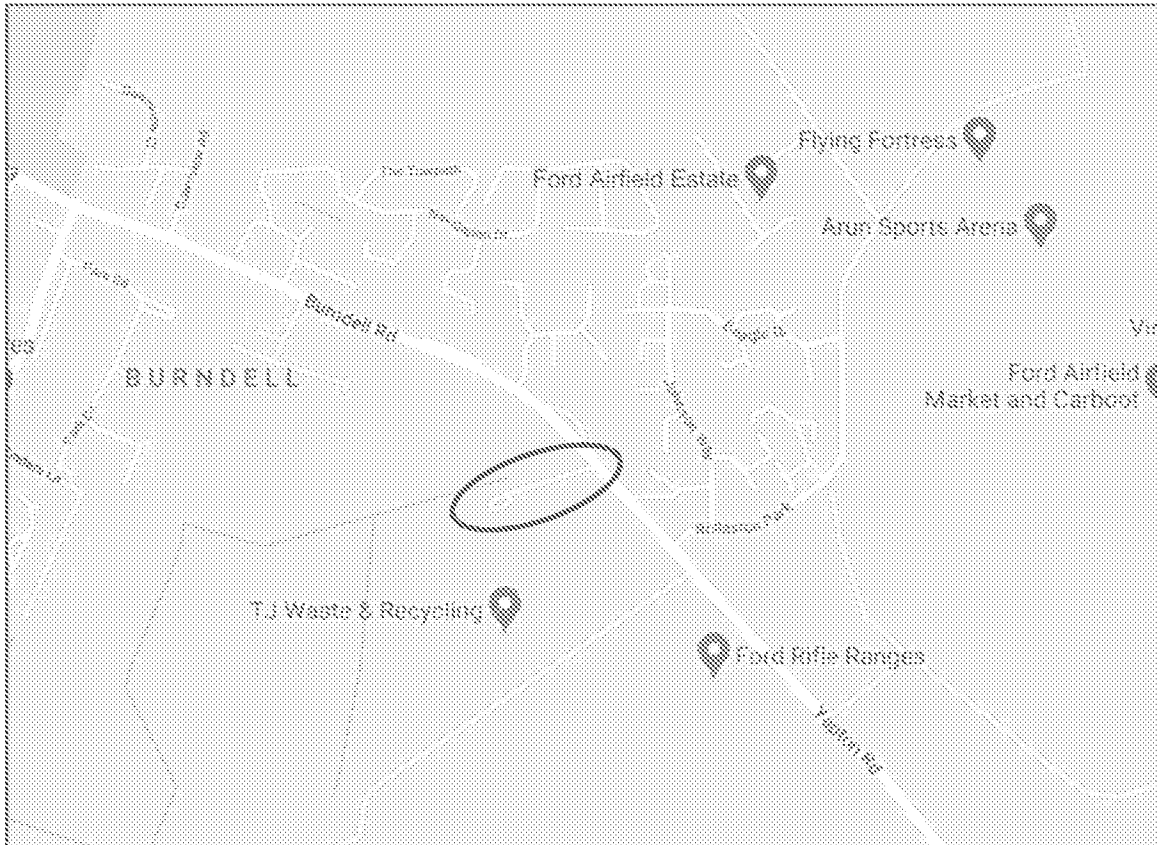
Appendix A

Drawings and Documents Examined:

- 2020-6145-001 Rev. H Access overview and visibility splays
- 2020-6145-005 Rev. B Pedestrian visibility splays

Appendix B

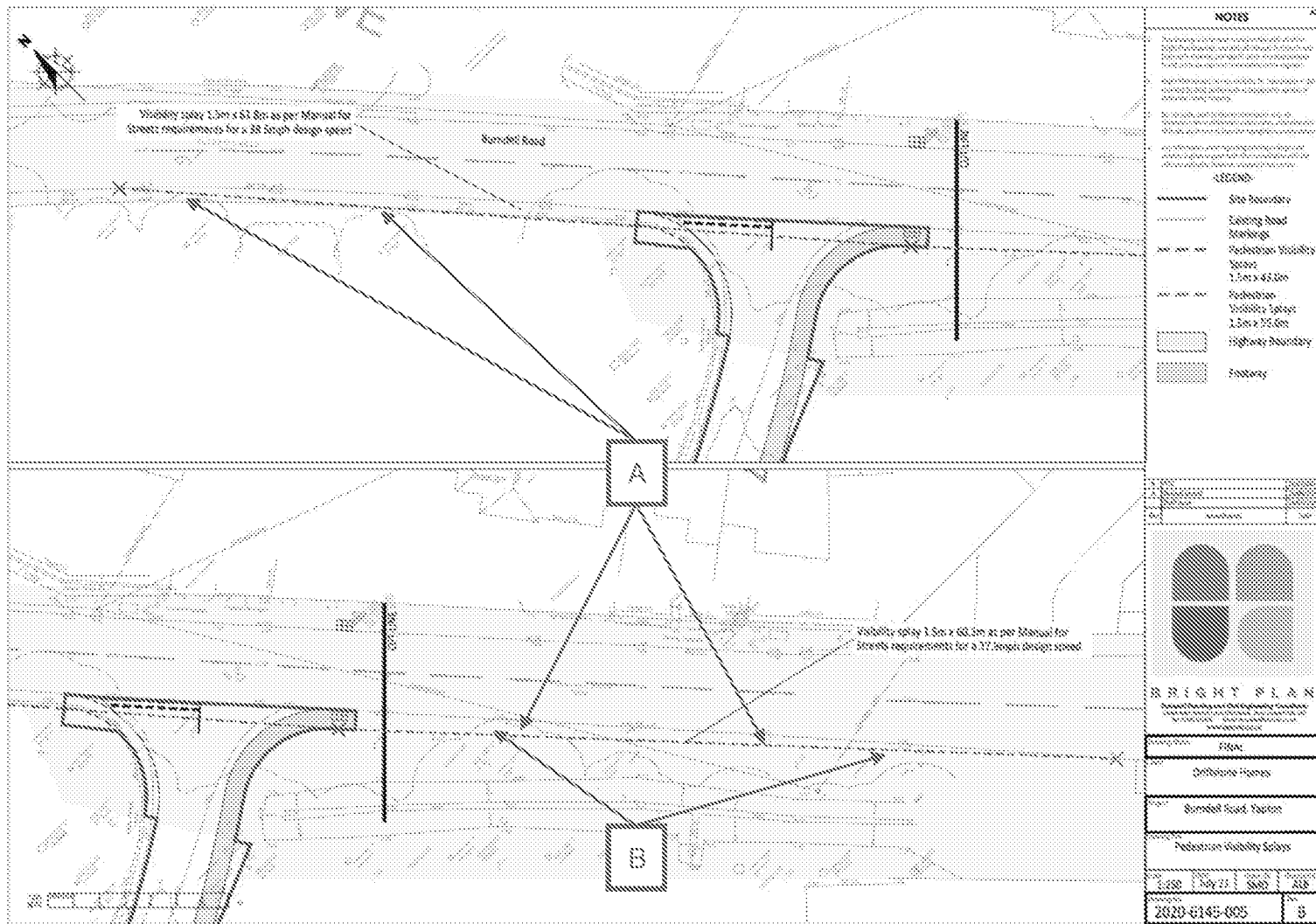
The following plan shows the location of the scheme

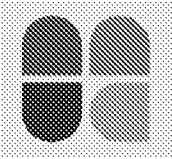


Scheme: Access to Burnell Road, Yapton

Client: Bright Plan (Highway Authority: West Sussex County Council)

Problems Location Plan





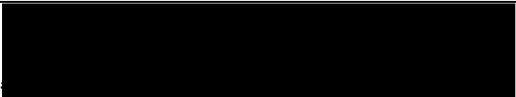
STAGE 1 ROAD SAFETY AUDIT DESIGNER'S RESPONSE

Auditor: Paul Martin – Road Safety Answers
Audit Reference: RSA438
Date Response Completed: 19/07/2021
Scheme: Burndell Road, Yapton

This response is to a Stage 1 Road Safety Audit prepared in accordance with General Principles and Scheme Governance General Information, GG 119, Road Safety Audit.

Problem no.	Problem Accepted (yes/no)	Recommended Measure Accepted (yes/no)	Design Organisation Response	Over Seeing Organisation Response	Agreed RSA Action
2.1	Yes	Yes	All vegetation will be removed from within the visibility envelope. Vegetation to be replaced with grass to the north west and a 1.5m wide footway to the south east.		
2.2	Yes	Yes	The footway has been extended c.60m to the southeast to provide access to the existing bus stop.		

Principal Engineer's / Audit Project Sponsor's Statement:

On behalf of the Design Organisation, I certify that the RSA actions identified in response to the RSA problems have been discussed and agreed with the Overseeing Organisation	On behalf of the Overseeing Organisation I certify that: 1. The RSA actions identified in response to the RSA problems have been discussed and agreed with the Design Organisation. 2. The agreed RSA actions will be progressed
Name: Alex Budd	Name:
Signed: 	Signed:
Position: Director	Position:
Organisation: Bright Plan Ltd	Organisation: West Sussex County Council
Date: 21/07/2021	Date: