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Highways | Traffic | Transportation | Water

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Project	Stoney Bank House, Stoney Bank Lane, Thongsbridge, HD9 7LZ	**Document No**	156273-001-04
Subject	Technical Note – Access Visibility		

Overview

Sanderson Associates Consulting Engineers has been appointed by Tom and Lisa Meigh of Stoney Bank House, to provide consultancy services in regards to determining the visibility requirements at a proposed access to a new property. The access would be located on Stoney Bank Lane approximately 30m to the south from the existing access to the property.

Stoney Bank Lane is subject to a 30mph speed limit due to the presence of street lighting on the road. However, due to the character of the road it is envisaged that vehicle speeds will be lower. The carriageway of Stoney Bank Lane extends between property boundaries and there are no footways or verges in the immediate vicinity of the site.

The carriageway is approximately 5.8m wide at the proposed site access, however, the area that is practically available for driving is reduced along Stoney Bank Lane by the presence of telegraph poles (with street lights) which intrude into the carriageway. Telegraph poles are present on both sides of the road and continue along the road as it travels south. **Figure 1** shows the location of three telegraph poles that may be seen from the site access.

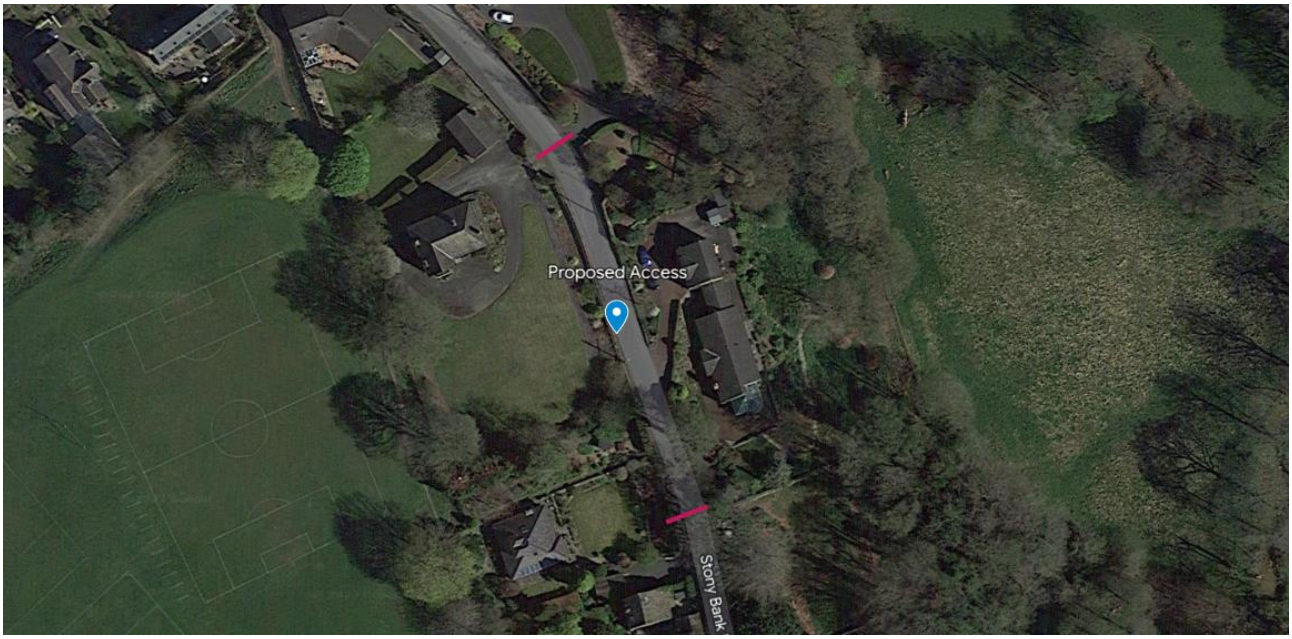
Figure 1 – View to south showing key locations ***[Google Streetview]***

To the north of the site the existing access opens onto Stoney Bank Lane opposite the access to Woodland House. This stretch of the lane has a 2m wide pavement on the north eastern side.

Speed survey

Sanderson Associates conducted a manual radar speed survey of vehicles travelling in both directions on Stoney Bank Lane on Tuesday the 1 August 2023 between 10:27 and 12:27. This was done in order to determine vehicle speeds on the approach to the proposed access. During the survey period, the weather was overcast with brief periods of light drizzle. This was insufficient to change the road conditions which remained dry throughout. **Figure 2** shows the approximate location where speeds were taken in red and the location of the proposed access. The recorded speeds are attached in **Appendix A**.

Figure 2 – Proposed access and speed survey location



Over the survey period flows were very low in both directions. 15 cars were recorded travelling northbound, and 10 southbound. The resultant speeds for vehicles travelling in both directions are summarised in the tables below, with the subsequent recommended visibility based on guidance from Manual for Streets.

Manual for Streets 2 states at paragraph 1.3.2 that 'most MfS advice can be applied to a highway regardless of speed limit. It is therefore recommended that as a starting point for any scheme affecting non-trunk roads, designers should start with MfS.'

Paragraph 1.3.5 goes on to explain that 'Much of the research behind MfS1 for stopping sight distance (SSD) is limited to locations with traffic speeds of less than 40mph'

Stoney Bank Lane is not a Trunk Road and the 85th percentile speeds recorded on it are well below 40mph. Therefore, stopping sight distances (SSD) for the purpose of the access junction visibility assessment have been considered based on guidance contained within Manual for Streets (MfS) and Manual for Streets 2 (MfS2).

As such the values for reaction time (1.5 seconds) and deceleration rate (0.45g) from MfS has been applied to the speed stopping distance formula set out in Paragraph 10.1.5.

Table 1 – Speed and visibility data for Northbound vehicles

Northbound Traffic	Value
Vehicle Count	15
Average Speed (mph)	21.5
85th Percentile Speed (mph)	23.8
85th Percentile Wet Weather Speed (mph)	**21.3**
Recommended Visibility Sight line using Manual for Streets (m)	**27**

Table 2 – Speed and visibility for Southbound vehicles

Southbound Traffic	Value
Vehicle Count	10
Average Speed (mph)	20.9
85th Percentile Speed (mph)	23.8
85th Percentile Wet Weather Speed (mph)	**21.3**
Recommended Visibility Sight line using Manual for Streets (m)	**27**

Based on the above the proposed access would require visibility sight lines of 27m in both directions.

To provide an indication of the above visibility the attached drawing 156273-001 in **Appendix B** illustrates the above visibility sight lines at a setback (X distance) of 2.4m at the location of the proposed access.

To the north, the visibility sight lines remain within the red line boundary. The retaining boundary wall will be lowered to 0.6m with the land behind, within the visibility envelope, also being reduced to 0.6m. The land behind the visibility envelope will be graded back to meet exisiting levels. A privacy fence may also be installed along the visibility sight lines.

MfS2 states at paragraph 10.5.3 '*The Y distance represents the distance that a driver who is about to exit from the minor arm can see to the left and right along the main alignment. For simplicity it has previously been measured along the nearside kerb line of the main arm, although vehicles will normally be travelling at a distance from the kerb line. Therefore a more accurate assessment of visibility splay is made by measuring to the nearside edge of the vehicle track*.'

To the south, the visibility line has been drawn to intersect with the edge of the site boundary. From there it enters the carriageway and meets the 27m visibility requirements 1.13m away from the edge of the carriageway. This may be seen in **Appendix B**. As indicated in the drawing, the visibility sight line meets a point at which a car is likely to be driving.

The location of the car has been determined by the location of the centre line of the lane and by creating a buffer which represents the area that the multiple telegraph poles on Stoney Bank Lane occupy, thereby making it desirable for drivers to avoid this space. A further buffer has been included to account for drivers giving clearance from the hazard that the telegraph pole represents.

It should be further acknowledged that given the road is unmarked, and with very low volumes of traffic, vehicles are more comfortable with driving more to the centre of the road. As such drawing 156273-001 may be considered a realistic representation of driver behaviour on the carriageway.

Design Proposals

To accomdate visibility to the south and north the retaining boundary wall will be lowered to 0.6m with the land behind that, which is within the visibility envelope, also being reduced to 0.6m and then graded back to meet existing levels. This will enable those leaving the site to look over the top of the wall and land and view any oncoming vehicles. A privacy fence may also be installed along the visibility sight lines. If the existing cable stay to the telegraph pole extends in front of the proposed access the pole and stay may need to be relocated.

Acknowledgements

Google My Maps has been used to generate figures included in this report for illustrative purposes only.

Google Street View imagery has been used within this report for illustration purposes only. © 2023 Google.

The site location plan is from Valley Properties.

References are made to Manual for Streets (Department for Transport 2007) and Manual for Streets 2 – Wider Application of the Principles (The Chartered Institution of Highways & Transportation 2010).

Issue Record

Issue Status	Prepared by	Checked by	Approved by	Date
01 Draft	J Burstow	D Colley	D Colley	04 August 2023
02 Final	J Burstow	D Colley	D Colley	10 August 2023
03 Final	E Theakston	K Smith	K Smith	08 September 2023
04 Final	E Theakston	K Smith	K Smith	11 October 2023

Appendix A

Speed Survey Data

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SPEED SURVEY

Location Stoney Bank House
Direction of Travel north to south
Direction of Visibility north

Project Number 156273
Date of Survey 01/08/23
Start Time 10:27
Finish Time 12:27

Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings
1		26	1	51		76	
2		27		52		77	
3		28		53		78	
4		29		54		79	
5		30		55		80	
6		31		56		81	
7		32		57		82	
8		33		58		83	
9		34		59		84	
10		35		60		85	
11		36		61		86	
12		37		62		87	
13		38		63		88	
14		39		64		89	
15		40		65		90	
16		41		66		91	
17	1	42		67		92	
18		43		68		93	
19	3	44		69		94	
20	1	45		70		95	
21	2	46		71		96	
22	1	47		72		97	
23		48		73		98	
24		49		74		99	
25	1	50		75		100	

Number of Readings = 10
Mean Speed = 20.9
Standard Deviation = 2.8067379
85th %ile Speed = 23.810587
85th %ile Wet Weather Speed = 21.325587 **<<<<**

Dual C'way Y/N? N
Single C'way Y/N? Y
Wet Road Surface Y/N? N

Note: Insert Y or N in boxes against carriageway type and road surface condition and then use 85 percentile speed as marked with **<<<<**.

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SPEED SURVEY

Location Stoney Bank House
Direction of Travel south to north
Direction of Visibility south

Project Number 156273
Date of Survey 01/08/23
Start Time 10:27
Finish Time 12:27

Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings
1		26		51		76	
2		27		52		77	
3		28		53		78	
4		29		54		79	
5		30		55		80	
6		31		56		81	
7		32		57		82	
8		33		58		83	
9		34		59		84	
10		35		60		85	
11		36		61		86	
12		37		62		87	
13		38		63		88	
14		39		64		89	
15		40		65		90	
16		41		66		91	
17	1	42		67		92	
18	1	43		68		93	
19		44		69		94	
20	2	45		70		95	
21	3	46		71		96	
22	2	47		72		97	
23	4	48		73		98	
24	1	49		74		99	
25	1	50		75		100	

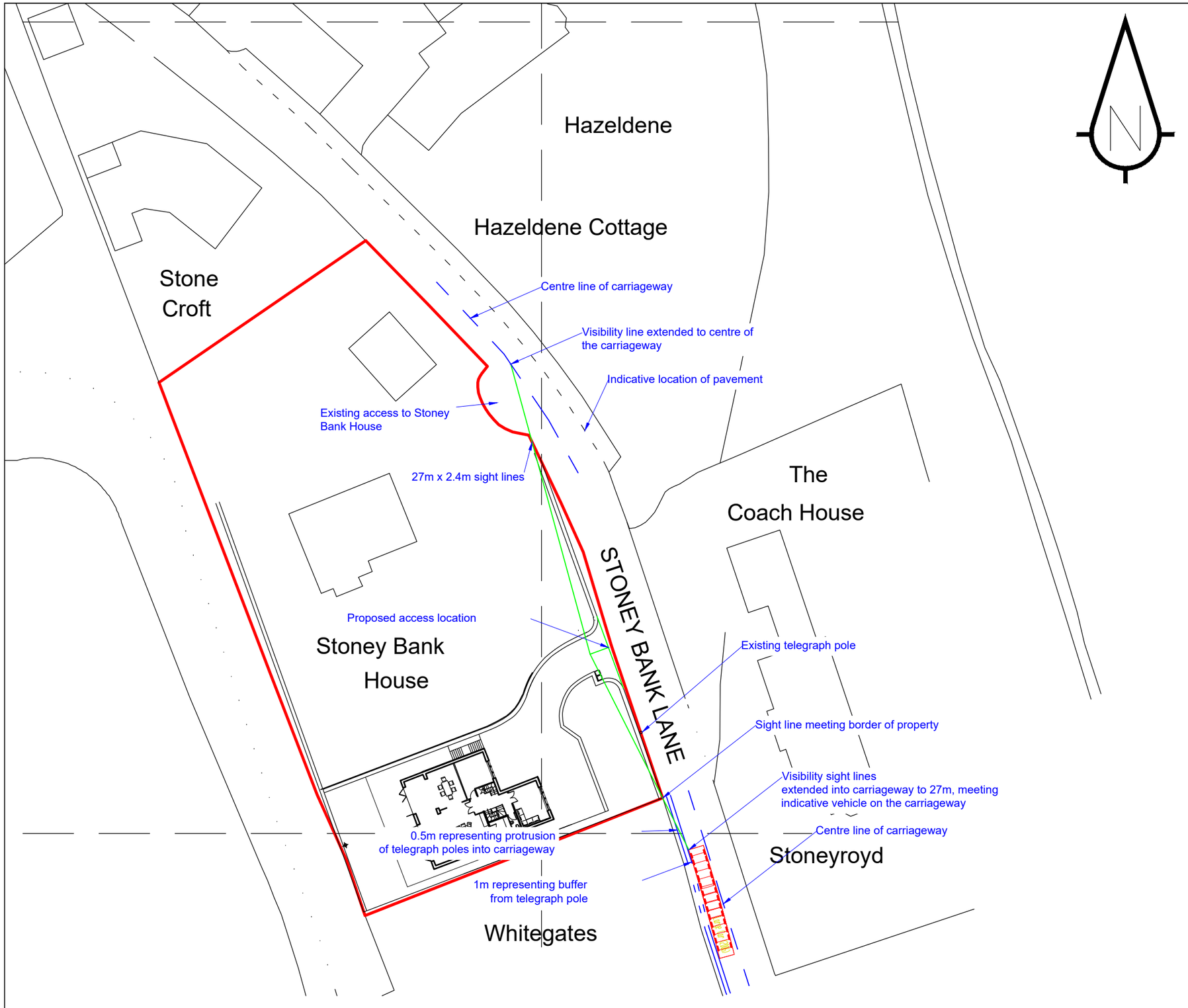
Number of Readings = 15
Mean Speed = 21.533333
Standard Deviation = 2.1668498
85th %ile Speed = 23.780357
85th %ile Wet Weather Speed = 21.295357 **<<<<**

Dual C'way Y/N? N
Single C'way Y/N? Y
Wet Road Surface Y/N? N

Note: Insert Y or N in boxes against carriageway type and road surface condition and then use 85 percentile speed as marked with **<<<<**.

Appendix B

Drawing 156273-001:- Visibility Sight Lines



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- The consultant shall not be liable for the use by any person of any document for any purpose other than that for which the same were provided by the consultant.
- No liability whatsoever is accepted by the consultant for any error or omissions.
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- Service connections are not shown but their presence should be anticipated.
- Reference to any third party equipment shown on this drawing was only relevant at the time the drawing was prepared.
- It is the client's responsibility to ensure that any equipment ordered meets the design.

Rev	Amendment	Drawn	Date	Checked

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Project Name

Stoney Bank House,
Stoney Bank Lane, Thongsbridge

Drawing Title

Proposed Access Visibility

Scale 1:500	Drawn By JB
Drawing Size A3	Checked By DC
Date August 2023	Approved By DC

Drawing Number 156273-001

Rev

FILE REF: