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43 PORTSMOUTH ROAD  
BEDHAMPTON

## TECHNICAL NOTE

on behalf of the  
James Laurence Group

ITR/4471/TN2

March 2014

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I T Roberts MCHT

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## **1.0 INTRODUCTION**

- 1.1 This Technical Note has been prepared by Bellamy Roberts, on behalf of the James Laurence Group, in order to assess the highway and transportation aspects of the proposal to utilise an existing crossover access to serve two additional dwellings.
- 1.2 The access currently serves property number 43a, Portsmouth Road but was previously utilised as a shared access also serving 43, Portsmouth Road. As such, the access had been serving two dwellings for many years with no road safety or operational concerns.
- 1.3 The proposal is to develop three dwellings on land served by the access and therefore there is likely to be a marginal increase in vehicular movements, generated by an additional two units.
- 1.4 It is understood that the Local Highways Development Control Officer accepts the principle of further development served off the access but has requested that a 2.4 metre by 100 metre visibility splay is provided. It must be noted that this requested splay accords with standards detailed within the Design Manual for Roads and Bridges for the trunk road speed of between 37.5 mph (90 metres) and 43.75 mph (120 metres).
- 1.5 Section 2.0 of this Technical Note, details the existing situation determined by a site visit that has been undertaken by Bellamy Roberts.
- 1.6 Section 3.0 identifies the Considerations of the Proposals and the reasons why the access provides adequate visibility and is acceptable to serve additional dwellings.
- 1.7 Section 4.0 sets out the Conclusions of the highways and transportation review that has been undertaken during the process of preparing this Technical Note.

## 2.0 EXISTING SITUATION

### *Location*

- 2.1 As illustrated on the location plan, attached at **Appendix 1**, the application site is situated off Portsmouth Road to the west of Bedhampton and the A3(M) and lines within a 30mph speed limit.

### *Vehicular speeds*

- 2.2 A site visit has shown that the existing access is situated some 83 metres to the east of a speed limit reduction from 40 to 30 mph and therefore the application site is clearly well within a 30 mph zone.



- 2.3 Notwithstanding this, a speed survey was undertaken down the road on 17<sup>th</sup> October 2012 that shows that the 85<sup>th</sup> percentile wet weather speed of vehicles equates to 33.5 mph and 29.5 mph in an eastbound and westbound direction respectively. The speeds surveyed would not differ greatly from those approaching the existing access and therefore the survey data sheet is attached at **Appendix 2** for ease of reference.
- 2.4 It is therefore clear that vehicles approaching the access from the west, reduce their speeds from circa. 40mph to in the region of 30mph in close proximity of the site.

### *Highway Access*

- 2.5 It is understood that whilst the existing access previously served both 43 and 43A Portsmouth Road, a new highway access has been formed to No. 43. As such, the existing access subject of this document currently serves just one property, number 43A, Portsmouth Road.
- 2.6 The existing access, that has served 2 large dwellings for many years, has been operating effectively without any road safety or operational concerns.



### *Achievable Visibility*

- 2.7 A 2.4 x 100 metre visibility splay is achievable to the east of the access to the Portsmouth Road channel line and to an offset of 1.9 metres from the channel line to the west, see drawing 4471-001 attached at **Appendix 3**.



- 2.8 As can be seen in the photograph to the west of the access, a 100 metre visibility splay from the existing access is restricted by a boundary hedge fronting property No. 47 Portsmouth Road.
- 2.9 However a splay from a 2.4 metre offset into the access, is achievable to a point along channel line some 52 metres to the west, as illustrated on drawing No. 4471-001, attached at **Appendix 3**.
- 2.10 Notwithstanding the above, a 100 metre visibility splay to a 1.0 metre offset onto the carriageway is achievable to the west from a 2.0 metre offset from the channel line at the access, as illustrated on drawing No. 4471-002 attached at **Appendix 4**.



### **3.0 CONSIDERATION OF THE PROPOSALS**

3.1 The existing access has been operating effectively without any road safety concerns for many years. The development of a further three dwellings on the site, resulting in the vehicular movements of a further two dwellings occurring at the existing access, is negligible and will not impact on the operation of road safety of the Portsmouth Road. This has been accepted by the County Highway Authority.

3.2 Nonetheless, the County Highway Authority are seeking visibility splays of 2.4 x 100 metres to be achievable in order to not raise objections. However, that requirement appears to be based upon the principles of the Design Manual for Roads and Bridges.

#### *Design Manual for Roads and Bridges*

3.3 This document is utilised as a standard guidance for trunk and other high speed roads and is based upon data and assumptions with a formulae more typical to snow-covered roads.

#### *Manual for Streets*

3.4 With regard to residential streets and non-trunk roads, the visibility guidelines have been updated through the provision of Manual for Streets 1 and Manual for Streets 2 respectively (2007 and 2010).

3.5 Both Manual for Streets guidance documents are based upon research undertaken by the Transport Research Laboratory and National evidence/data of road traffic accidents.

3.6 As stated at paragraph 7.5.1 of Manual for Streets 1, the guidance on stopping sight distances is:

*"for streets where 85<sup>th</sup> percentile speeds are up to 60 km/h."*

3.7 Furthermore, paragraph 1.3.1 and 1.3.5 of Manual for Streets 2 states:

*"it is clear from Table 1.1 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."*

*"Much of the research behind MfS1 for stopping sight distance (SSD) is limited to locations where speeds of less than 40mph and there is some concern that driver behaviour may change above this level as the character of the highway changes. However, 40mph speed limits in built-up areas cover a wide range of contexts, from simple urban streets with on-street parking to direct frontage access to 2/3 lane dual carriageways. Furthermore, local context varies not only from street to street but also along the length of a street."*

3.8 The research published by the Transport Research Laboratory that Manual for Streets is based upon includes:

- A reduced Hazard Perception time from 2 seconds to 1.5 seconds determined via simulator: and
- An increased deceleration rate from 2.45m/s<sup>2</sup> (0.25g) to 4.41m/s<sup>2</sup> (0.45g) based upon an increased skid resistance of carriageway surfacing/breaking force/tyre resistance.

3.9 This data is utilised to set more realistic Stopping Sight Distances.

3.10 As such, with the existing access located within a 30 mph zone, the new research by TRL and details of observed vehicular speeds, the application of standards based upon the Design Manual for Roads and Bridges in this instance is wholly inappropriate.

3.11 Moreover, paragraph 10.5.8 of Manual for Streets 2 states that:

*"A minimum X distance of 2m may be considered in some slow-speed situations when flows on the minor arm are low but using this value will mean that the front of some vehicles will protrude slightly into the running carriageway of the major arm, and many drivers will tend to*

*cautiously nose out into traffic. The ability of drivers and cyclists to see this overhang from a reasonable distance, and to manoeuvre around it without undue difficulty, should be considered. This also applies to lightly trafficked rural lane."*

*Achievable visibility*

- 3.12 It has been shown within this document, that visibility to the east of the access accords with the requirements of the County Highways Officer and therefore the following paragraphs specifically discuss visibility to the west.
- 3.13 As stated within paragraph 2.7, a 2.4 by 52 metre visibility splay is achievable from the existing access to the edge of carriageway, that splay could be increased by trimming the vegetation overhanging the footway. Nonetheless, based upon the calculations and more realistic figures for hazard perception and deceleration rates detailed within Manual for Street, this 52 metre splay caters for vehicles travelling along Portsmouth Road in the dry at a speed of 38mph. Paragraph 2.3 identifies that the 85<sup>th</sup> percentile speed of vehicles approaching the access from the west equates to just 33.5mph and as such, visibility to the west of the access is adequate to provide a safe environment for all road users.
- 3.14 As detailed within paragraph 2.9, a visibility of 100 metres to the west is available to an offset of 1.0 metres into the carriageway from the access, at an offset of 2.0 metres from the channel line. It can be understood from Manual for Streets 2, see paragraph 3.11, that an offset of 2.0 metre is acceptable particularly for an access serving four dwellings and will provide a safe environment for all road users provided drivers and cyclists can see the overhang from a reasonable distance and Portsmouth Road is straight in alignment in proximity and therefore any vehicles overhanging the carriageway are clearly visible from a reasonable distance.

## **4.0 CONCLUSIONS**

- 4.1 This document has been prepared to address a requirement of 100 metre visibility splays at an existing access that has served two dwellings for many years with no road safety or operation concerns. The access currently serves just one dwelling.
- 4.2 It is proposed to develop the application site to provide three dwellings and as such, the vehicular movements that will be observed at the access will be generated by a total of four dwellings.
- 4.3 It has been accepted by the Local Highways Development Control Officer that an additional three dwellings will not have a detrimental impact on the local highway network provided that a 100 metre visibility splays are achieved.
- 4.4 It is understood that the 100 metre visibility splays requested are based upon the Design Manual for Roads and Bridges that is generally utilised for trunk and other high speed roads.
- 4.5 The existing access, that is to be utilised, is within a 30mph zone and therefore the latest guidance on stopping sight distances and visibility has been utilised to show that the visibility available from the access is adequate and will not have an adverse impact on road safety, based upon Manual for Streets.
- 4.6 The latest guidance detailed within Manual for Streets and this document is based on research and evidence. The scheme fully accords with the splays as recommended within Manual for Streets.
- 4.7 Therefore it is the opinion of Bellamy Roberts LLP, that there are no reasonable reasons on highway grounds to refuse the proposal to make use of the existing access to serve a total of four dwellings. The planning application should therefore be granted without delay.

## **APPENDICES**

## **APPENDIX A**

| TITLE                |
|----------------------|
| <b>Site Location</b> |



|                             |               |          |         |
|-----------------------------|---------------|----------|---------|
| DATE                        | 14/03/14      | DRAWN BY | CJF     |
| SCALE                       | 1:50,000 @ A4 | CHK BY   | ITR     |
| CLIENT James Laurence Group |               |          |         |
| DRAWING NO.<br>4471 / 301   |               |          | REV NO. |

## **APPENDIX B**

**Location:** Bedhampton

**Date:** 17/10/2012

**Weather** Overcast, started damp, road surface quickly dried

**Start time:** 10.50am

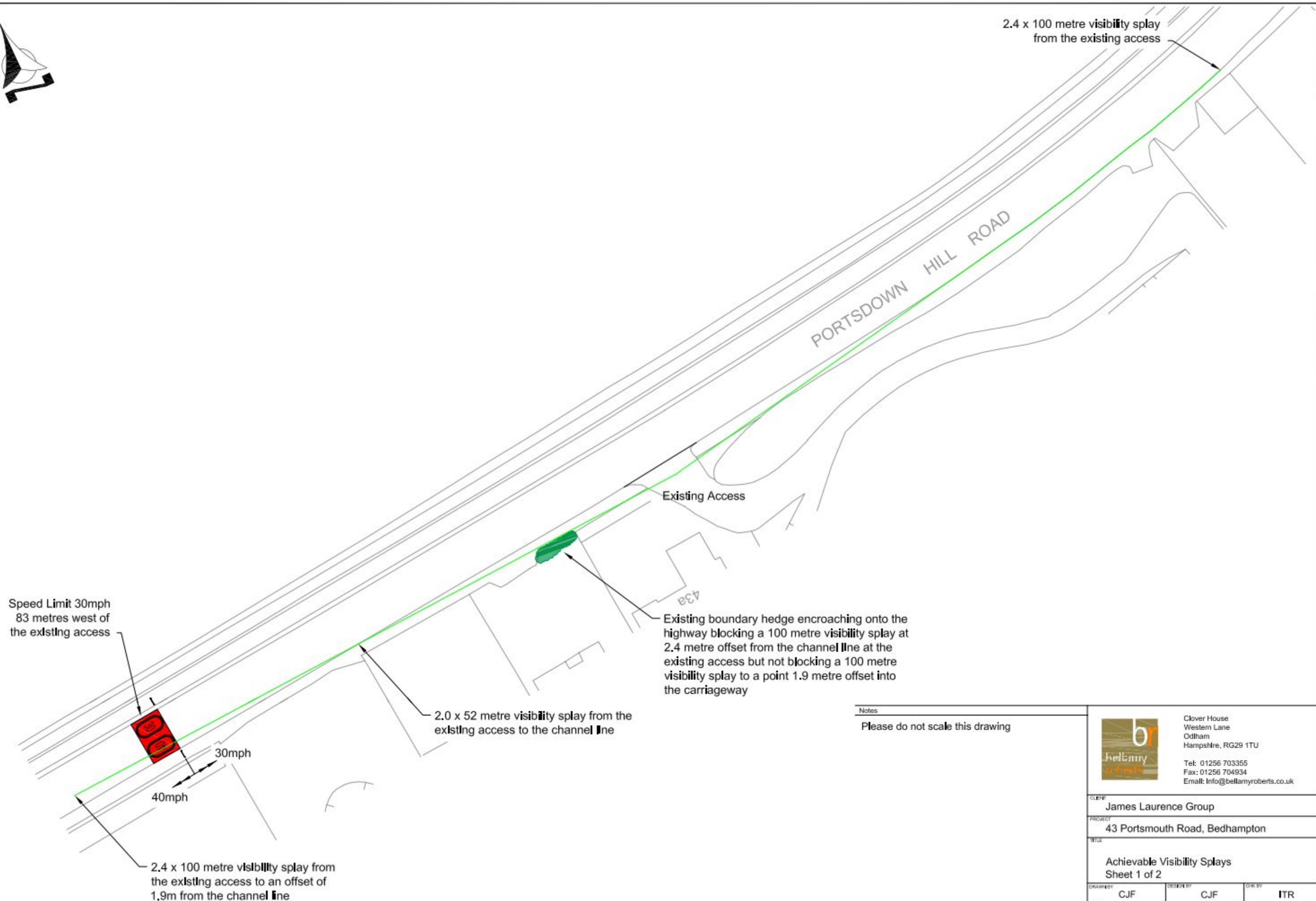
| Observed speed (mph)         |    |    |                              |    |    |
|------------------------------|----|----|------------------------------|----|----|
| Westbound (uphill)           |    |    | Eastbound (downhill)         |    |    |
| 17                           | 26 | 30 | 24                           | 31 | 34 |
| 18                           | 26 | 30 | 26                           | 31 | 34 |
| 18                           | 26 | 30 | 27                           | 31 | 34 |
| 20                           | 27 | 30 | 27                           | 31 | 34 |
| 20                           | 27 | 31 | 27                           | 31 | 34 |
| 21                           | 27 | 31 | 28                           | 31 | 35 |
| 22                           | 27 | 31 | 28                           | 31 | 35 |
| 23                           | 27 | 31 | 28                           | 31 | 35 |
| 23                           | 27 | 31 | 28                           | 31 | 35 |
| 24                           | 27 | 31 | 28                           | 31 | 35 |
| 24                           | 27 | 31 | 29                           | 31 | 35 |
| 24                           | 27 | 31 | 29                           | 31 | 35 |
| 24                           | 27 | 32 | 29                           | 32 | 36 |
| 24                           | 27 | 32 | 29                           | 32 | 36 |
| 24                           | 28 | 32 | 29                           | 32 | 36 |
| 24                           | 28 | 32 | 29                           | 32 | 36 |
| 25                           | 28 | 32 | 29                           | 32 | 36 |
| 25                           | 28 | 32 | 29                           | 32 | 36 |
| 25                           | 28 | 33 | 29                           | 32 | 36 |
| 25                           | 28 | 33 | 29                           | 32 | 37 |
| 25                           | 28 | 33 | 29                           | 33 | 37 |
| 25                           | 28 | 33 | 30                           | 33 | 37 |
| 25                           | 28 | 34 | 30                           | 33 | 38 |
| 25                           | 28 | 34 | 30                           | 33 | 39 |
| 25                           | 28 | 35 | 30                           | 33 | 39 |
| 25                           | 29 | 35 | 30                           | 33 | 40 |
| 25                           | 29 | 35 | 30                           | 33 | 41 |
| 25                           | 29 | 35 | 30                           | 33 | 43 |
| 25                           | 29 | 36 | 30                           | 33 | 43 |
| 25                           | 29 | 37 | 30                           | 33 | 44 |
| 26                           | 29 | 39 | 30                           | 33 | 45 |
| 26                           | 30 | 43 | 30                           | 33 | 46 |
| 26                           | 30 |    | 30                           | 34 |    |
| 26                           | 30 |    | 30                           | 34 |    |
| 85th %tile = 32.0 mph        |    |    | 85th %tile = 36.0 mph        |    |    |
| Wet weather speed = 29.5 mph |    |    | Wet weather speed = 33.5 mph |    |    |
| = 13.19 m/s                  |    |    | = 14.98 m/s                  |    |    |
| SSD= 39.5 m                  |    |    | SSD= 47.89 m                 |    |    |

The value for the SSD is calculated in accordance with the calculation described in Manual for Streets Section 7.5

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## **APPENDIX D**



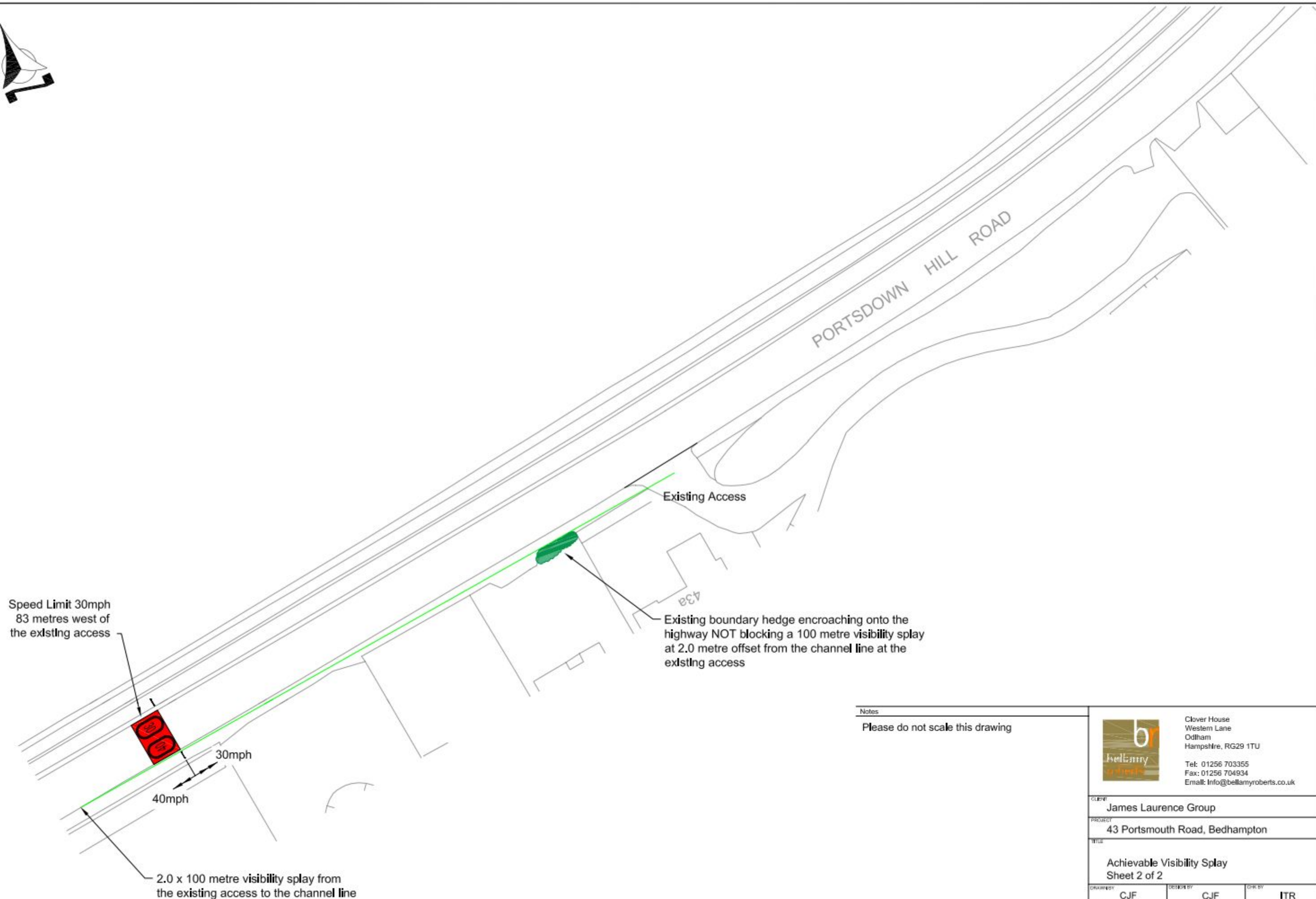
Notes  
Please do not scale this drawing



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|                                                       |                           |                   |
|-------------------------------------------------------|---------------------------|-------------------|
| CLIENT<br>James Laurence Group                        |                           |                   |
| PROJECT<br>43 Portsmouth Road, Bedhampton             |                           |                   |
| TITLE<br>Achievable Visibility Splays<br>Sheet 1 of 2 |                           |                   |
| DRAWN BY<br>CJF                                       | DESIGN BY<br>CJF          | CHECKED BY<br>ITR |
| DATE<br>14/03/14                                      | DRAWING NO.<br>4471 / 001 |                   |
| SCALE<br>1:250 @ A3                                   |                           |                   |

## **APPENDIX C**



Notes  
Please do not scale this drawing



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CLIENT  
James Laurence Group  
PROJECT  
43 Portsmouth Road, Bedhampton

TITLE  
Achievable Visibility Splay  
Sheet 2 of 2

|                     |                           |                   |
|---------------------|---------------------------|-------------------|
| DRAWN BY<br>CJF     | DESIGN BY<br>CJF          | CHECKED BY<br>ITR |
| DATE<br>14/03/14    | DRAWING NO.<br>4471 / 002 |                   |
| SCALE<br>1:250 @ A3 | REV NO.                   |                   |