



**THE HIGHWAYS ACT 1980, THE ACQUISITION OF LAND ACT 1981, THE HIGHWAYS (INQUIRIES  
PROCEDURE) RULES 1994 AND THE COMPULSORY PURCHASE (INQUIRIES PROCEDURE) RULES 2007**

**PUBLIC INQUIRY INTO**

**THE WEST SUSSEX COUNTY COUNCIL (A284 LYMINSTER BYPASS (NORTH))**

**COMPULSORY PURCHASE ORDER 2020**

**and**

**THE WEST SUSSEX COUNTY COUNCIL (A284 LYMINSTER BYPASS (NORTH) CLASSIFIED ROAD)**

**(SIDE ROADS) ORDER 2020**

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**PROOF OF EVIDENCE**

**OF**

**TONY SYMONDS**

**FOR**

**WEST SUSSEX COUNTY COUNCIL**

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**DFT REFERENCE: : NATTRAN/SE/HAO/229**

**July 2021**

## **CONTENTS**

1. INTRODUCTION .....	3
2. SCOPE OF EVIDENCE .....	4
3. DESCRIPTION OF PROPOSED WORK SOUTH OF BLACK DITCH .....	4
4. DECISIONS SHAPING THE SCHEME .....	5
5. RESPONSE TO OBJECTIONS .....	7
6. CONCLUSION .....	12
7. APPENDIX DOCUMENTS .....	12

## **1. INTRODUCTION**

- 1.1. My name is Tony Symonds and I am the Design Manager at Jackson Civil Engineering Group Limited. Jackson Civil Engineering Group Limited have been appointed by West Sussex County Council since 2017 to undertake the role of Scheme Designer and Principal Designer for the A284 Lyminster Bypass (North). Whilst we are yet to be formally appointed as the build Contractor it is anticipated that this will be the case if the CPO and SRO are confirmed. Jacksons have appointed Capita to undertake the design on our behalf.
- 1.2. I hold a BSc (Hons) in Civil Engineering, am a Certified Member of the Association of Project Safety, and hold several other industry acknowledged qualifications including Site Management Safety Training Scheme, New Roads and Streetworks Act Supervisor.
- 1.3. I have 40 years' experience in the civil engineering/construction industry.
- 1.4. For the past 12 years I have been Jackson's Design Manager responsible for overseeing and successfully delivering (either directly or via my team) the design phase of design and build schemes. Prior to this I was a site based Project Manager responsible for the delivery of the construction phase of civil engineering schemes including by-passes, infrastructure, bridges and other structures.
- 1.5. For the past 8 years I have also acted as a fully qualified Principal Designer (formally CDM Co-ordinator) Lead for Jacksons, a role we are occasionally appointed by clients to undertake under the Construction (Design and Management) Regulations 2015 (known within the industry as the CDM Regs).
- 1.6. I have been involved in the project since it was awarded to Jacksons in early 2017 in dual roles, Design Co-ordinator and Principal Designer Lead. As Design Co-ordinator it is my role to manage Capita and the design programme, liaise with all other design parties and the client, encourage optioneering, provide buildability advice, review design output and submit to the client. As Principal Designer Lead my role is to "plan, manage and monitor the pre-construction phase and coordinate matters relating to health and safety during the pre-construction phase to ensure that, so far as is reasonably practicable, the project is carried out without risks to health or safety" (CDM Regulation 11(1)). This includes ensuring that Designers fulfil their duties under the CDM Regs, including risk identification and mitigation and considering contractor compound locations and requirements.
- 1.7. I am familiar with the Compulsory Purchase Order Statement of Reasons<sup>1</sup> and the Side Roads Order Statement of Reasons<sup>2</sup>, and the Statement of Case submitted by the Council in connection with the promotion of the West Sussex County Council (A284 Lyminster Bypass (North)) Compulsory Purchase Order 2020<sup>3</sup> ("the CPO") and the West Sussex County Council

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<sup>1</sup> Statement of Case Supporting document [No.5](#)

<sup>2</sup> Statement of Case Supporting document [No.6](#)

<sup>3</sup> Statement of Case Supporting document [No.1](#)

(A284 Lyminster Bypass (North) Classified Road) (Side Roads) Order 2020<sup>4</sup> ("the SRO") (jointly referred to as "the Orders").

- 1.8. I produce this evidence to explain the applicable underlying engineering, logistical and health and safety decisions that have influenced the design of the Scheme to which the Orders relate.
- 1.9. I can confirm that the contents of my proof of evidence are my professional opinion and are true to the best of my knowledge and belief and are gained from either my own direct involvement or my colleagues' direct knowledge.

## **2. SCOPE OF EVIDENCE**

- 2.1. My evidence provides an explanation on the engineering, logistical and health and safety decisions that have been made relating to the proposed design and layout of the Scheme south of the Black Ditch. This specifically concerns the building of the viaduct and the associated southern contractor's temporary site compound and access road to the flood plain, and explains why the features have been located and sized as shown within the Scheme's Southern Access Compound Arrangements Drawing<sup>5</sup>. Drawings A284LY-CAP-HGN-00-DR-C-0190, 0191, 0192 & 0193<sup>6</sup> and Sketch S0014-JCE-CPO-SK-007<sup>7</sup> also provide context. I respond to the main issues raised by T&L Crawley No.2 LLP in respect of CPO objections in reference to Plots 10a and 10b. of CPO objections in reference to Plots 10a and 10b.
- 2.2. My evidence supports that of other witnesses on behalf of the Council, including Andrew Burrows' evidence which will provide further details of the design of the Scheme.

## **3. DESCRIPTION OF PROPOSED WORK SOUTH OF BLACK DITCH**

- 3.1. The viaduct, spanning Black Ditch and its associated flood plain, comprises of a 225 m long 11 span predominately reinforced concrete structure, with deep piled foundations. Approximately 70% of the structure is to the south of Black Ditch and will be built utilising access from that side for plant equipment and personnel.
- 3.2. Constructing a significant structure such as this requires good access from the public highway for deliveries (via Lyminster Bypass (South)), a site compound space for a high standard of welfare facilities and storage, wash down areas for all construction traffic, storage for construction materials and a sufficient hard paved and drained area to accept deliveries (some of which will be abnormal in size carrying 24 m long beams). There will be an essential need to properly manage the access and compound area and allow contractors to safely manoeuvre vehicles and materials to the works area via a robust well maintained suitable access route.

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<sup>4</sup> Statement of Case Supporting document [No.2](#)

<sup>5</sup> Statement of Case Supporting document [No.103](#)

<sup>6</sup> [Appendix U](#)

<sup>7</sup> [Appendix V](#)

- 3.3. It is anticipated that the viaduct and adjacent work with take approximately 14 months to build.

#### **4. DECISIONS SHAPING THE SCHEME**

- 4.1. During the early stages of the design we were already considering key aspects which affect or shape the form of the structure and how it could be safely and efficiently built. These included:-

- 4.2. Fixed geometry of viaduct

- 4.2.1. The road alignment design to tie-in to the Lyminster Bypass (South) requires the viaduct to cross Black Ditch at an angle (skewed) rather than perpendicular. This means that the access and plant-reach required to build the ditch span is more readily achieved from one side (CPO plot 10b). For instance, the largest of the river beams must be lifted in from the western side of the viaduct. This beam will weigh 56 tonnes and will be lifted at a crane radius of 30m (determined by the closest place we can safely set up a crane) necessitating a 800t rated crane to undertake it. If we were to consider setting up the crane on the eastern side of the viaduct, for this lift the minimum lift radius would be 41m which is at the upper limit of capacity for a 1200t crane. Although manufactured, 1200t cranes are highly unlikely to readily available in the UK. Also please refer to paragraph 4.3.1 below.

- 4.3. Buildability and methodology considerations

- 4.3.1. The viaduct design approach was chosen to suit industry common practice build methods for this type of structure, i.e. a mixture of in-situ and precast concrete components with sizes and lengths being those which best aid the works programme, handling and delivery. Given the size of the structure and anticipated weight of materials, a bespoke designed raised platform for crawler crane lifting and movements is required to assist the build, with a robust delivery road connecting this area to the site compound to supply many materials to the cranes. Some components weigh up to 56 tonnes each.

- 4.4. Drainage design strategy

- 4.4.1. The approach for the scheme drainage design was to target areas where pond features would work best. Existing ground levels in the flood plain in particular would be conducive to a SUDS design (as requested by the County Council), would be unaffected by the works, and would also minimise permanent land take. This has been discussed in Andrews Burrow's Proof of Evidence and resulted in all major drainage features being incorporated to the east of the new route.

- 4.5. Site access considerations

- 4.6. For construction purposes, access to the viaduct from both ends is required. From the north the access must be on the west side to avoid all deliveries and plant having to cross the areas of carriageway which would be still be under construction, therefore not trafficable. This is another reason to put the drainage on the eastern side to avoid it constraining access on the western side. It then followed that the southern access and cranes ought to be on the western side also to avoid similar access/drainage constraints and

allow the cranes to pass equipment and materials to each side of Black Ditch.

4.7. Jackson Civil Engineering experience working with Environment Agency

4.8. Jacksons have worked as a frameworks contractor directly for the Environment Agency for over 12 years now on a variety of major schemes across the UK. We are well aware of their policies concerning working in and around flood plains, and their "robust" challenging of any proposal to position welfare in and around flood plains or alter the levels of significant areas because of the potentially elevated environmental risks. So prior to the request from T&L Crawley during our negotiations as detailed in Nigel Godden's evidence at Section 7.12.3 we never contemplated positioning our compound in and around the flood plains. Therefore it is proposed to use Plot 10b which is located on higher ground immediately to the south of the flood plain area (see paragraph 5.3.2 below) for our compound.

4.9. Number of anticipated vehicle movements, and large deliveries

4.9.1. Given the size and complexity of the viaduct build we are unable to determine with certainty the number of vehicle movements required in and out of the southern compound and access to the works, but based upon the programme, materials, plant and labour resource schedules, we estimate it will be in the order of 2,900 vehicles. Of these the majority will be HGV's, 88no being abnormal load lorries carrying precast concrete beams. Most of these will need to turn around before reversing down the access road to the lower works area on the flood plain, so a large vehicle turning area will be required within Plot 10b for such manoeuvres to be carefully and safely managed Indicative vehicle movements and the turning area required is shown on the Scheme's Southern Access Compound Arrangements Drawing<sup>8</sup>.

4.10. Health and Safety

4.10.1. Health and safety considerations for construction works are governed by many Regulations, Codes, Standards and other documents, with one of the most applicable and important being the Construction (Design and Management) Regulations 2015. Regulation 27 Traffic Routes states –

*"(1) A construction site must be organised in such a way that, so far as is reasonably practicable, pedestrians and vehicles can move without risks to health and safety.*

*(2) Traffic routes must be suitable for the persons or vehicles using them, sufficient in number, in suitable positions and of sufficient size."*

4.10.2. Given that there will be a large number of vehicles using the site, as stated in section 4.9 above, using a single access area with such frequency with many vehicles having to manoeuvre to reverse then pass through a wheel-wash before leaving the site, this aspect must be fully and robustly managed.

4.10.3. Arrangements must include:

- sufficient space to access the site compound

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<sup>8</sup> Statement of Case Supporting document [No.103](#)

- segregation between vehicles and pedestrians
- areas for vehicles to safely manoeuvre without interfacing with the public
- vehicles under the control of a banksman whilst manoeuvring
- a sufficiently sized access road to reverse down to the works.

This can only be achieved with all vehicles under the full control of a single principal contractor in a large private compound area with the access to the works leading directly from it.

## **5. OBJECTION FROM T&L CRAWLEY NO. 2 LLP AND WEST SUSSEX COUNTY COUNCIL'S RESPONSE IN REFERENCE TO PLOTS 10A AND 10B**

5.1. The following evidence responds to the relevant objection from T&L Crawley, addressing the engineering considerations that have been applied and supporting the statements already made as part of Appendix 1 in the Statement of Case.

### **5.2. Objection detail:**

5.2.1. Whilst fully supportive of the Lyminster Bypass (North) , the objectors are concerned about it impeding the provision of affordable housing in the area. The objectors claim that the Council has not properly engaged in respect of alternative solutions put forward. They further state that the current planning permission allows for B1 business use (for which there is now no demand) on an area they want to sell to a housing developer for 154 affordable homes on which construction must start by end 2021. However, WSCC's proposal to use it temporarily would mean the collapse of both that sale and another on adjoining land. This would mean a substantial compensation claim being submitted to WSCC. There is a substantial shortfall in ADC's housing land availability. 154 affordable homes would be of significant social and public benefit. A pre-application submission has been submitted to the LPA and their reply is awaited. The solution put forward by the objectors requires that the compound is relocated, and they are willing to make additional land of a larger size available to the Council. However they claim that the Council is not engaging or attempting to find a pragmatic solution.

5.2.2. As detailed in Nigel Godden's Proof of Evidence 7.12.3 On the 9th December 2020 T&L Crawley on review of the engineering issues suggested the Council review moving the compound to the flood plain of Black Ditch<sup>9</sup>. The Statement of Case was published prior to a response being formalised.

### **5.3. West Sussex County Council's response:**

5.3.1. I consider that all alternative compound locations (including those suggested by T&L Crawley No. 2 LLP) to avoid using Plot 10b have been fully considered. However, engineering constraints dictate that these options are not feasible and not acceptable for health and safety reasons

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<sup>9</sup> [Appendix Document G-71](#)

and other valid operational reasons, many of which are directly as a result of the large number of vehicle movements in a confined area.

- 5.3.2. Given the project constraints, design requirements, and health and safety requirements, the best and only viable location for the site compound area was to utilise Plot 10b (and Plot 9b) and form a temporary access road from it, running northwards alongside the western side of the proposed viaduct footprint down to and along the flood plain. Figure 5.1 below denotes where the flood plain is in relation to the plots, i.e. immediately to the north of Plots 10b, 9b, 9a, 10a.

Health and safety is paramount so we must fully address all aspects associated with both the management of many vehicles arriving and departing and the people/vehicle interfaces, and put in place a well-considered safe system of working. Using Plot 10b and part of Plot 9b, we will be able to create a safe and sufficient area to manoeuvre and turn vehicles fully within the confines of our site so they can use our access road. It is vital that all these aspects are within the same controlled area.

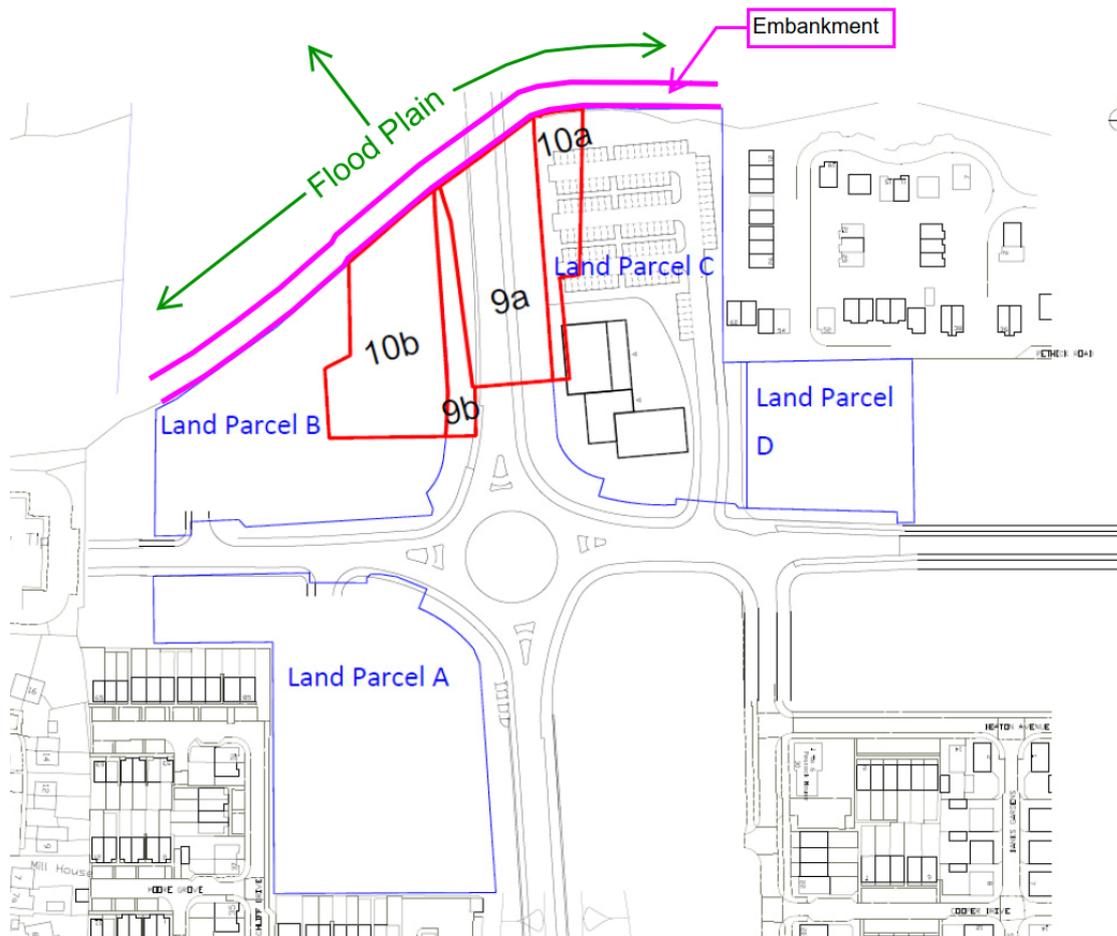
Not only will Plot 10b provide us with such an area to safely manage the many vehicles anticipated on site but use of Plot 10b will also provide sufficient safe working space alongside Plot 9b during the latter stages of the works when we will need to construct the new road's earthworks embankment.

See drawing S0014-JCE-CPO-00-SK-0001 - Southern Site Compound Arrangements<sup>10</sup> for further detail.

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<sup>10</sup> Statement of Case Supporting document [No.103](#)

**Figure 5.1 T&L No.2 - Land Parcels and Plots**



### **5.3.3. Alternative compound location on Land Parcel C**

Figure 5.1 above shows in red CPO plots 9a, 9b, 10a and 10b. The land parcels in blue are those referenced by T&L Crawley No.2 LLP. As detailed in Nigel Godden's proof of evidence at paragraph 7.12.2 T&L Crawley No. 2 LLP asked that the Council to consider positioning the compound in Land Parcel C as shown on Figure 5.1 rather than in Plot 10b (located within Land Parcel B above). As stated above, for health and safety reasons and to comply with the Construction (Design and Management) Regulations 2015, the access road to the flood plain and the piling/crane platform must be on the same side of the viaduct as the site compound in order to provide a safe system of working for managing vehicles and construction. All construction requirements as set out in this proof of evidence must be achievable to make this suggested alternative location workable.

As part of our negotiations for the CPO we did consider the option of using Land Parcel C as put forward by T&L Crawley No. 2 LLP, however it was our considered opinion there are a number of unavoidable constraints which make this alternative impracticable if not impossible and these include:-

- Having the compound, given its intended size, within Land parcel C would result in the compound being outside of the currently red line boundary of the planning permission;
- It would be very difficult for vehicles to manoeuvre in and out of a compound entrance on the eastern side, especially the abnormal load lorries required for the beams, given the road layout and current status of its build (ie the roundabout, splitter islands, pavements street lighting have been competed). We would have to remove some of the works already in place to provide a sufficiently wide and navigable access. Also given the number of vehicle movements, we would anticipate conflict and potential health and safety issues with other potential third party road users outside of our control at this development roundabout if we have to modify its layout, or ask our vehicles to perform unanticipated or unusual movements within, or to access or egress from, this area;
- It would not readily possible to relocate the flood plain access road and piling platform to the Land Parcel C area as this would prevent the viaduct drainage being installed in Plot 10a in this area to our requirements and programme;
- It would compromise our strategy of having access along the whole of the site and both the piling/crane platforms along the western side of the viaduct as explained in 4.6 above;
- If the piling/crane platform was relocated to the eastern side, the proposed large mobile crane would not have the lifting capacity to place the beams on the viaduct river span as it will be a longer reach. Further, as mentioned in 4.3.1 above, there is not a larger crane readily available in the UK which could successfully work from this side.

#### 5.3.4. **Locate site compound on flood plain to the north of Land Parcel B**

In response to the Council explaining the engineering issues and constraints with their initial request T&L Crawley No. 2 LLP asked that the Council consider the option of locating the compound on the flood plain to the north of Plot 10b and Land Parcel B (as shown on Figure 5.1 above). This is detailed in Nigel Godden's proof of evidence at paragraph 7.12.3 We approached the Environment Agency about this alternative and they advised that they "would not recommend" having a site compound on a flood plain.<sup>11</sup> The Environment Agency were also concerned about the impact it may have upon an existing secondary water course and not least the associated ecology and existing natural habitats. We have already sought specific permission to build the currently proposed access road and piling platform on the flood plain, an extension to this built up area for a compound would likely to require further flood modelling and be refused by the Environment Agency.

We have also sought ecological advice and the advice is again that this option is not advisable, as set out in the email of Verity Dickie, Principal Ecologist at WSP, dated 18 January 2021.<sup>12</sup>

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<sup>11</sup> [Appendix W](#)

<sup>12</sup> [Appendix X](#)

T&L Crawley required us to access the flood plain via Plot 9b only, which would not then be wide enough or allow us sufficient working space to construct the new road embankment in Plot 9b.

Given the above issues we dismissed this option.

#### **5.3.5. Access road location alongside Land Parcel B (utilising Plot 9b), but not having use of Land Parcel B**

T&L Crawley No. 2 LLP asked the County Council to consider placing the access road immediately to the east of Land Parcel B and thereby avoiding using Land Parcel B altogether, i.e. using plot 9B. It was also suggested by T&L Crawley No 2 LLP that vehicle could drive down this access road and turn around in a secure compound area formed by widening the area of the proposed access in the flood plain alongside the western side of the viaduct

As stated in paragraph 5.3.1 above, the compound, the flood plain access road and piling/crane platform must be connected and on the same side of the viaduct. Suggestions by T&L Crawley No. 2 LLP that our access road could be fitted in alongside their Land Parcel B whilst their works are in progress is therefore unsound. As set out in 4.9 above, we require our working area to be of sufficient size and width for the traffic movements anticipated (CDM Regs). We will need to be able to carry out 360 degree excavator works to maintain it and have suitable space available to allow construction of the adjacent permanent earthworks in a safe manner with appropriate demarcation and exclusion zones for our plant: see drawing S0014-JCE-CPO-00-SK-00041<sup>13</sup>

In order to build the permanent works embankment alongside Plot 10b the Council require a minimum of 25m width from the edge of the carriageway. This would extend beyond Plot 9b into Plot 10b. Without this area the Council cannot construct the embankment and as a result cannot build this section of the road. This space is required because the footprint of the embankment is approximately 15m at its widest point, and an area is required beyond its edge of 10m at the lower level for a track machine to access to grade and complete the slope.

The T&L Crawley No2 LLP suggestion that vehicles access through Plot 9b and turn around on an area on the flood plain to the north of Land parcel B is unviable. it is unlikely the Environment Agency would be agreeable to this as an additional significantly sized built up compound area would be required to allow large articulated and abnormal lorries to turn around (see paragraphs 4.8 and 5.3.4 above). For both health and safety and operational reasons it is best practice to reverse the larger vehicles down slopes (the change of level between Plot 10b/9b and the flood plain) then drive them back up forwards. Therefore the vehicle turning area must be at the higher level (Plot 10b).

These works will not be possible without possession of and use of Plot 10b.

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<sup>13</sup> Statement of Case Supporting Document [No. 104](#)

## **6. CONCLUSION**

- 6.1. For all the reasons set out above I consider that the Council have explored all practical options and I conclude that the only safe and viable proposal is to locate the site compound in Plot 10b and then to build an access road and piling/crane platform along the western side of the proposed viaduct.

## **7. APPENDIX DOCUMENTS**

- 7.1. The following documents are appended in the composite appendices for the Council, as referred to in this Proof of Evidence (in addition to those documents appended to the Statement of Case):

[G. T&L Crawley No.2 LLP - Email Communication Log](#)

[U. The combined planning information drawings A284LY-CAP-HGN-00-DR-C-0190 to 0193](#)

[V. Cross Section Southern End of Viaduct - Sketch S0014-JCE-CPO-SK-007](#)

[W. Environment Agency communications regarding a works compound on Black Ditch floodplain](#)

[X. WSP Ecologist communications regarding works compound on Black Ditch floodplain](#)