

DISPUTE RESOLUTION PROCEDURE

Russell Road Retaining Wall

TIE LIMITED

**POSITION PAPER PURSUANT TO PARAGRAPH 9.2
OF SCHEDULE PART 9 (DISPUTE RESOLUTION PROCEDURE)**

relating to

the agreement between **tie** Limited

and

Bilfinger Berger (UK) Limited / Siemens plc / Construcciones y Auxiliar de Ferrocarriles consortium

in connection with the works authorised by the

Edinburgh Tram (Line One) Act 2006 and the Edinburgh Tram (Line Two) Act 2006

28 August 2009

1. INTRODUCTION

- 1.1 There is a dispute, difference and/or unresolved claim ("**Dispute**") between **tie** Limited (hereinafter referred to as "**tie**") and the Bilfinger Berger (UK) Limited / Siemens plc / Construcciones y Auxiliar de Ferrocarriles delivery consortium (hereinafter collectively referred to as "**Infraco**") in connection with or arising from the agreement between **tie** and the Infraco in connection with the works authorised by the *Edinburgh Tram (Line One) Act 2006* and the *Edinburgh Tram (Line Two) Act 2006* (hereinafter referred to as the "**Infraco Contract**").
- 1.2 **tie** requires the Dispute (as further particularised below) to be referred to the Internal Dispute Resolution Procedure in accordance with *paragraph 9 of Schedule Part 9 (Dispute Resolution Procedure)* of the Infraco Contract.

2. THE DISPUTE

- 2.1 The Dispute concerns the contents of the Infraco's estimate dated 14 May 2009 in relation to Russell Road retaining wall (the "**Estimate**") (a copy of which is produced as **tie**'s Production Number 16).
- 2.2 **tie** and Infraco have been unable to agree on the contents of the Estimate.
- 2.3 By way of summary, the Estimate contains a number of items of work which are briefly described by Infraco. A quantity and rate is noted against each item of work. The rate is applied to the quantity to give a value of change of each item of work. The value of change in respect of each item of work is then collated, resulting in a total value of change of FOUR MILLION FIVE HUNDRED AND NINETY SEVEN THOUSAND EIGHT HUNDRED AND FORTY SEVEN POUNDS AND SEVEN PENCE STERLING (£4,597,847.07) EXCLUDING VAT.
- 2.4 **tie** do not agree with the contents of the Estimate. In particular, **tie** do not agree that all the items and quantities of work and rates included by Infraco in the Estimate should be contained in the Estimate. **tie** are of the opinion that there are only certain items and quantities of work and rates which should be contained in the Estimate
 - 2.4.1 which items of work, quantities and rates in respect of the change to the foundation design of retaining units section 3 to 11 and 15 to 18 from an "L" shaped footing foundation to cast in-situ concrete piles with pile cap (the "**Foundations**") amount to SEVEN HUNDRED AND ONE THOUSAND FOUR HUNDRED AND SIXTY SEVEN POUNDS AND NINETY FIVE PENCE (£701,467.95) STERLING EXCLUDING VAT; and
 - 2.4.2 dealing with contaminated material (the "**Contamination**") which is to be valued on the basis of Actual Cost.
- 2.5 In this Position Paper, **tie** is seeking certain orders and declarations.
- 2.6 Accordingly, any additional declarations, orders or claims for damages or loss which are additional to the redress sought in this Position Paper and any referral to follow hereon fall outwith the scope of the present Dispute, being reserved for future agreement or Adjudication, legal or other proceedings and **tie** does not seek any orders for payment or otherwise in the present Position Paper. **tie** reserves the right to do so.

- 2.7 For the avoidance of doubt the matters set out in this Position Paper, including, but not limited to, the redress sought, are without prejudice to and under reservation of tie's whole rights and remedies in connection with any delay to the completion of the Infraco Works as a consequence of or in any way connected with the date of issue by Infraco of Infraco notification of tie Change number 146 dated 14 October 2008 issued under cover of letter dated 14 October 2008 (the "Infraco Notification of tie Change") (a copy of which is produced as tie's Production Number 1) and/or the date of delivery to tie by Infraco of the Estimate in respect of Infraco Notification of tie Change and/or the absence of a tie Change Order in response to the Estimate.
- 2.8 There follows tie's position on the Dispute, together with its comments (where appropriate) on tie's understanding of the Infraco's position on the Dispute.

3. TIE'S POSITION ON THE DISPUTE

- 3.1 Applying the whole terms of the Infraco Contract it is tie's position that:
- 3.1.1 the only items of work which could be said to flow from the Infraco Notification of tie Change and which could be said to constitute a Notified Departure are those which relate to:
- 3.1.1.1 the Foundations; and
- 3.1.1.2 the Contamination.
- 3.1.2 the only items of work which could be said to flow from the Infraco Notification of tie Change which could be said to give rise to a deemed tie Notice of Change are those which relate to the Foundations and the Contamination;
- 3.1.3 the only items of work which could be said to flow from the Infraco Notification of tie Change and are further particularised in the Estimate, which are to be the subject of a tie Change Order are those which relate to the Foundations and the Contamination;
- 3.1.4 the only items of work which constitute a Notified Departure and should be contained in the Estimate are those which relate to the Foundations and the Contamination;
- 3.1.5 those items of work which are said by Infraco to flow from the Infraco Notification of tie Change and Estimate but are not related to the Foundations or the Contamination arise from the Infraco's obligation to complete the design of the Edinburgh Tram Network including, but not limited to, the achievement of full compliance with the Employer's Requirements for the deliverables to enable the Edinburgh Tram Network to be procured, constructed and commissioned;
- 3.1.6 those items of work which flow from the Infraco Notification of tie Change and Estimate but are not related to the Foundations or the Contamination come about through:
- 3.1.6.1 the evolution of the design through normal development and completion of the design; and/or

3.1.6.2 an unauthorised change to the Limits of Deviation ("LOD"), which LOD has not changed from that depicted on the Base Date Design Information;

3.1.7 the Estimate delivered by Infraco is deficient, lacking in detail and does not comply with the whole requirements of the Infraco Contract;

3.1.8 the Infraco have failed to demonstrate and/or substantiate that those items of work which they say flow from the Infraco Notification of tie Change and Estimate but are not related to the Foundations or the Contamination constitute a Notified Departure; and

3.1.9 notwithstanding the deficiencies noted at paragraphs 3.1.8 and 3.1.9 above, tie does have sufficient information to know that the only items of work which could be said to flow from the Infraco Notification of tie Change and further particularised in the Estimate which constitute a Notified Departure are those which relate to the Foundations and the Contamination

(each of which matters are considered in more detail below)

3.2 Furthermore, it is tie's position that in order for it to be said that a Notified Departure has occurred under the Infraco Contract, it is for the Infraco to:

3.2.1 demonstrate and prove that the evolution and completion of the design to Issued For Construction stage exceeds normal development and completion of the design;

3.2.2 demonstrate and prove that a Notified Departure has occurred; and

3.2.3 provide a sufficient, adequate and competent estimate of value

(each of which matters are considered in more detail below)

3.3 It is tie's position that the foregoing is the logical sequence of steps which occur in the event of a Notified Departure. However, it is the case that the Infraco have failed to fully comply with each of these steps.

3.4 By way of explanation of the facts and circumstances which have led to the Dispute, a summary of the chronology of events concerning the Dispute, comprising extracts from relevant documents and correspondence, is included at Annex 1 to this Position Paper.

Sufficiency and/or Adequacy of Estimate

3.5 In regard to the content of an estimate, the Infraco Contract requires that the Estimate shall include, *inter alia*:

- the Infraco's opinion as to whether relief from compliance with any of its obligations under the Infraco Contract is required during or as a result of the implementation of the proposed tie Change;
- the Infraco's opinion as to any impact on the performance of the Infraco Works and the performance of the Edinburgh Tram Network;

- the Infraco's opinion as to any impact on the Programme and any requirement for an extension of time;
- the Infraco's opinion as to any Consents, Land Consents and/or Traffic Regulation Orders (and/ or any amendment or revision required to existing Consents, Land Consents and/ or Traffic Regulation Orders) which are required in order to implement or as a result of the implementation of the proposed **tie** Change and any update of the Consents Programme which will be required as a result;
- the Infraco's opinion as to any new agreements with third parties which may be required to implement the **tie** Change;
- the Infraco's opinion as to any amendment required to Infraco Contract or the Key Subcontracts as a result of the implementation of the proposed **tie** Change;
- the Infraco's opinion as to the proposed method of delivery of the proposed **tie** Change;
- the Infraco's opinion as to proposals to mitigate the impact of the proposed **tie** Change;
- the Infraco's opinion as to confirmation of the changes to the terms of the Infraco Contract and/or the SDS Contract proposed by **tie** and any further changes the terms of the Infraco Contract and/or the SDS Contract necessary to give effect to the proposed **tie** Change;
- the Infraco's opinion as to any increase or decrease in any sums due to be paid to the Infraco under the Infraco Contract (including the value of any Milestone Payments and the scheduling of such Milestone Payments) in order to implement, and as a direct consequence of implementation of, the **tie** Change, such increase or, decrease to be calculated in accordance with *Clause 80*;
- evidence demonstrating that the Infraco has used all reasonable endeavours to minimise (including by the use of competitive quotes where appropriate in the case of construction works) any increase in costs and to maximise any reduction of costs;
- evidence demonstrating that the Infraco has, where required by **tie** and where appropriate and practicable, sought competitive quotes from persons other than the Infraco Parties in pursuance of its obligation under *Clause 80.7.1*;
- evidence demonstrating that the Infraco has investigated how to mitigate the impact of the **tie** Change; and
- evidence demonstrating that the proposed **tie** Change will, where relevant, be implemented in the most cost effective manner (taking into account the reasonable requirements of Infraco in relation to quality) including showing where reasonably practicable that when any expenditure is incurred, relevant Changes in Law that are reasonably foreseeable at the time of consideration of the specific **tie** Change and which relate to that **tie** Change have been taken into account by the Infraco; and

- if the Infraco does not intend to use its own resources Infraco is to demonstrate that it is appropriate to subcontract the implementation of such **tie** Change.

3.6 **tie** make the following observations in regard to the Estimate, which observations support **tie's** position that the Estimate is incomplete and does not comply with the whole requirements of the Infraco Contract:

- 3.6.1 the Estimate is incomplete as the Infraco say that it makes no allowance for any delay or disruption to the Programme;
- 3.6.2 the Estimate is incomplete as the Infraco say that it makes no allowance for design work in connection with the retaining structure to the Network Rail embankment;
- 3.6.3 the Estimate is incomplete as the Infraco say that it makes not allowance for ducts, duct containment or track formation
- 3.6.4 the Estimate is incomplete as the Infraco say that it includes provisional sums;
- 3.6.5 the Infraco do not offer evidence demonstrating that the proposed **tie** Change will, where relevant, be implemented in the most cost effective manner; and
- 3.6.6 the Infraco do not offer evidence demonstrating that the Infraco has investigated how to mitigate the impact of the **tie** Change

the whole of which matters prevents and precludes the issue by **tie** of a **tie** Change Order in response to the Estimate.

Contents of the Estimate

3.7 The items of work contained in the Estimate delivered by the Infraco are included by the Infraco on the basis of the Infraco's opinion that the Issued For Construction drawings for the Russell Road retaining walls differed to a greater extent and complexity than design development and therefore a Notified Departure had occurred.

3.8 In fact the Estimate contains several disparate items such as:

- 3.8.1 LOD access (temporary works) in the sum of £1,156,016.74 - this matter is not connected in any way with design development, but is instead a principle access issue, which is discussed further below at *paragraph 6.3* below;
- 3.8.2 alleged works to a greater extent than design development (permanent works) in the sum of £1,565,107.35 - this matter includes Foundation design changes and changes to piling; and
- 3.8.3 dealing with contamination (provisional) in the sum of £1,876,722.98

all of which is claimed by Infraco as a re-measurement by comparison to alleged allowances in the Base Date Design Information.

3.9 With the exception of the Foundations (*paragraph 3.8.2* above) and the Contamination (*paragraph 3.8.3* above), which **tie** acknowledges constitute a

Notified Departure (for the reasons set out below), applying the test set out at *Pricing Assumption 3.4.1*:

- 3.9.1 in terms of the design principle between the Base Date Design Information and the Issued For Construction drawings for the construction of Russell Road retaining wall there is no change;
 - 3.9.2 in terms of the shape and/or form of Russell Road retaining wall between Base Date Design Information and Issued For Construction drawings there is no change; and
 - 3.9.3 in terms of outline specification of Russell Road retaining wall between Base Date Design Information and Issued For Construction drawings there is no change.
- 3.10 Accordingly, the changes to the permanent works (with the exception of the Foundations and the Contamination) alleged by the Infraco to have occurred are simply the evolution of the design by normal development and completion of the design through the stages of preliminary to construction stages and therefore do not constitute a Notified Departure.
- 3.11 It follows therefore that in order for it to be legitimate and valid to include a particular item of work, quantity or rate in the Estimate (on the basis that a Notified Departure has occurred), that particular item of work, quantity and rate must be required because "*the facts or circumstances differ in any way from the [Base Date Design Information, the Base Tram Information, the Pricing Assumptions and the Specified Exclusions] save to the extent caused by a breach of contract by the Infraco, an Infraco Change or a Change in Law*" (paragraph 2.8 of Schedule Part 4 (*Pricing*)).
- 3.12 However, the foregoing is an objective test in terms of which the facts and circumstances encapsulated in the Base Case Assumptions are compared with the facts and circumstances which are subsequently found to exist - the contents of the Estimate (subject to various exceptions considered below) only comprise the difference(s) revealed by that comparison.
- 3.13 It is the case that the occurrence of a Notified Departure is not self evident and an assertion (with nothing more) by Infraco that a Notified Departure has occurred is not sufficient to allow **tie** to be able to assess whether there has been a Notified Departure and, if so, the consequences of that Notified Departure.
- 3.14 In light of the foregoing it is for the Infraco to justify its opinion that there has been a Notified Departure. The evidence necessary to justify Infraco's entitlement as minimum required substantiation would be directed towards
- 3.14.1 putting **tie** in possession of all the information which would have been necessary for **tie** to come to the view that the **tie** Change Order is required, necessary and valid, which would include such matters as:
 - 3.14.1.1 the specific Base Date Design Information relevant to the **tie** Notice of Change under *Clause 80*;
 - 3.14.1.2 who made the design change and what was the technical reason for the change;



- 3.14.1.3 how the design change process adopted by the Infraco satisfied *Clause 10* and in particular *Clause 10.2* of the *Infraco Contract*: "*The Infraco shall submit any Deliverables associated with any Permitted Variations to tie's representative for review pursuant to Schedule Part 14 (Review Procedure and Design Management Plan)*";
- 3.14.1.4 the factual and technical grounds justifying why the evolved changes exceed normal development and completion of the design from Base Date Design Information to Issued For Construction stage;
- 3.14.1.5 how Infraco has complied with its duty to mitigate the effect of the Notified Departure and the tie Change (if there has been one); and
- 3.14.1.6 that there has been no Infraco Breach or SDS Provider breach, Infraco Change or Change in Law, which has caused or contributed to the occurrence of a Notified Departure.
- 3.15 In the circumstances under consideration here the explanations offered by the Infraco to support its assertion that the alleged changes constitute a Notified Departure are:
- 3.15.1 In the Infraco Notification of tie Change at note 2 "*the IFC drawings for Russell Road Retaining Walls differ to a greater extent and complexity than design development*" (emphasis added)
- 3.15.1.1 tie comment that the Infraco Notification of tie Change did not specify why the design had changed or was different to a greater extent and complexity than the Base Case Assumptions, or any connection between "*extent and complexity*" of the Issued For Construction drawings - which is simply their number and detail - with Pricing Assumption 1.
- 3.15.2 In the Estimate Infraco say that "*The BDDI for Russell RTW W4 shows a reduced land space in the area of the Caledonian Ceramics building only [affected wall sections: section (unit) 23 to section 27 (partly). Based on this information BSC planned the temporary works for piling within this area, which basically included: Erection of temporary retaining wall (I-beams with shotcrete) and associated works; Excavation of the existing NRS embankment in order to gain space for enabling undertaking of piling works; Building a trafficable piling platform; Re-filling of embankment to original condition following piling operations in this area. This is reflected in drawings BSC-SK-05-070 and Item 1.0 [original (tender) assumption] of attached estimate.*"
- 3.15.2.1 tie comment that the position of the LOD at Base Date Design Information stage has not, as a matter of fact, changed and therefore the Infraco's requirements and extent of the temporary works for piling remains as that included in the Construction Works Price.
- 3.15.3 In the Estimate Infraco say that "*Results of preliminary soil tests in this area indicate that the soil is contaminated. Dealing with any contaminated materials is not included within the Infraco Scope of Works. This site condition has an impact on the value of the works. Drawing BSC-SK-050-070 and item 1.1 [tender assumption considering now contaminated material] deals with this situation.*"



3.15.3.1tie comment that dealing with contaminated material is a Specified Exclusion under *Clause 3.3 (c) of Schedule Part 4 (Pricing)* and accordingly dealing with contaminated material constitutes a Notified Departure.

3.15.4 In the Estimate Infracore say that *"The corresponding IFC Information now shows a different LOD along sections 26 (partly), 27, 28 and 29 excluding plots of land that were available at BDDI. This precludes BSC from executing the piling operations from the opposite side of the NRS embankment, which implies that the piling works now have to be performed in the same manner as planned for sections 26 to 29. This means that the extent of the required temporary works now has to be extended beyond section 29. The pile operations have to be undertaken within a limited area resulting in a decrease in the production rates. This is further impacted by the presence of contaminated material within this area. Drawing BSC-SK-05-071 and item 1.2 of estimate (attached) deals with this additional scope [Additional temporary works due to change in LOD considering contaminated material]."*

3.15.4.1tie comment that the position of the LOD at Base Date Design Information stage has not, as a matter of fact, changed in the evolution to the Issued For Construction designs and therefore the Infracore's requirements and extent of the temporary works for piling remains as that included in the Construction Works Price.

3.15.5 In the Estimate the Infracore say that *"The IFC drawings introduce the following major changes to the Russell Road RTW W4: Section 3 Change from L-shaped sections with spread footing to bored piled sections (pile diameter 1050mm, average depths 9.5m, 10 no. piles per section). Section 4 to 8 Change from L-shaped sections with spread footing to bored pile sections (pile diameter 1050mm, average depths 11.5m, 10 no. piles per section). Section 9 Change from L-shaped sections with spread footing to bored pile sections (pile diameter 1050mm, average depths 11.5m, 8 no. piled per section). Section 10 Change from L-shaped sections with spread footing to bored pile sections (pile diameter 1050mm, average depths 13.0m, 8 no. piles per section). Section 11 Change from L-shaped sections with spread footing to bored pile sections (pile diameter 1050mm, average depths 13.0m, 7 no. piles per section). Section 12-14 Change from piles with a diameter of 1000mm, average depth 6.6m, 8 no. piles per section to piles with a diameter of 1050mm, average depth 13.0m, 9 no. piles per section. Section 15 to 18 Change from L-shaped sections with spread footing to bored pile sections (pile diameter 1050mm, average depths 13.0m, 9 no. piles per section). Section 19-29 Change from piles with a diameter of 1000mm, average depth 6.6m, 8 no. piles per section to piles with a diameter of 1050mm, average depth 13.0m, 9 no. piles per section."*

3.15.5.1tie comment that the above issue comprises three distinct matters where

- (a) applying the tests of *Pricing Assumption 3.4.1* to the design changes between the Base Date Design Information and Issued For Construction design drawings to the Russell Road retaining wall there is no change to the design principle, shape and/or form and/or to the outline specification.



Accordingly, the Russell Road retaining wall structure design evolution is normal design development and completion of the design;

- (b) Applying the tests of *Pricing Assumption 3.4.1* to the design changes between the Base Date Design Information and Issued For Construction design drawings to the Russell Road retaining wall foundation from an "L" shape footing to a pile cap and pile to retaining wall units 3 to 11 and 15 to 18 there is a Notified Departure; and
 - (c) applying the tests of *Pricing Assumption 3.4.1* to the changes to the pile diameters and pile lengths to unit sections 12 to 14 and 19 to 29 between the Base Date Design Information and Issued For Construction design drawings there is no change to the design principle, shape and/or form and/or to the outline specification. Accordingly, the Russell Road retaining wall structure design evolution in respect of the pile diameters and pile lengths is normal design development and completion of the design.
- 3.16 It is tie's position that the explanations offered by Infraco fall far short of what would reasonably be required to be produced to justify the inclusion by Infraco of all the items of work contained in the Estimate. The failures by Infraco in this regard thereby
- 3.16.1 means that a tie Notice of Change would not be deemed to have been issued until such information had been provided; and
 - 3.16.2 the period during which Infraco fails to provide the necessary information falls to be regarded as being due to a breach by Infraco and not reckonable in calculating any period of delay between the notification of a Notified Departure and the actual date (not the deemed date) that tie issues a tie Notice of Change (*paragraph 3.5 of Schedule Part 4 (Pricing)*) - in other words the Infraco is not entitled to claim additional loss and expense by alleging that the delay was such that it constituted a Compensation Event.

The Application of the Test of Normal Development and Completion of Designs

- 3.17 *Pricing Assumption 1* in *Schedule Part 4 (Pricing)* provides

"The Design prepared by the SDS Provider will not (other than amendments arising from the normal development and completion of designs):

- 1.1 *in terms of design principle, shape, form and/or specification be amended from the drawings forming the Base Date Design Information (except in respect of Value Engineering identified in Appendices C or D to this Schedule Part 4);*
- 1.2 *be amended from the scope shown on the Base Date Design Information and Infraco Proposals as a consequence of any Third Party Agreement (except in connection with changes in respect of Provisional Sums identified in Appendix B); and*

1.3 *be amended from the drawings forming the Base Date Design Information and Infraco Proposals as a consequence of the requirements of any Approval Body.*

For the avoidance of doubt normal development and completion of designs means the evolution of design through the stages of preliminary to construction stage and excludes changes of design principle, shape and form and outline specification" (emphasis added)

3.18 It is **tie's** position, applying the foregoing, that the Infraco is therefore assumed to have taken into account, when pricing, all the amendments to the design as at 25 November 2007 which would result from the normal development and completion of the designs.

3.19 Any and every change from Base Date Design Information does not therefore constitute a Notified Departure and thereby justify inclusion in the Estimate. It is only those items of work which arise as a consequence of changes which are alterations in "*design principle, shape, form and/or specification*" which do not arise from the normal development and completion of design which could validly and legitimately be included in the Estimate.

3.20 It is **tie's** position that it is **only** the items of work which relate to the Foundations and Contamination which are to be contained in the Estimate as it is only those items of work which arise as a consequence of changes which **tie** acknowledges constitute a Notified Departure resulting from amendments to the drawings forming the Base Date Design Information.

3.21 It is observed by **tie** that in terms of the Infraco Notification of **tie** Change and the Estimate, the Infraco has sought to ignore the foregoing important qualification, and instead has simply compared the Issued For Construction information to a re-measure of the relevant Base Date Design Information and claimed the difference. This does not evidence or support the occurrence of a Notified Departure.

3.22 **tie's** position in regard to the content of the Estimate is further set out below.

4. REQUIRED OBJECTIVES OF REFERRAL OF THE DISPUTE TO THE INTERNAL RESOLUTION PROCEDURE

4.1 **tie** requires the Infraco to:

4.1.1 agree that the only items of work to be contained in the Estimate are those items of work which relate to the Foundations and the Contamination.

5. REQUIRED REDRESS

5.1 A declaration that:

5.1.1 the only facts or circumstances notified in the Infraco Notification of **tie** Change which constitute a Notified Departure are those which relate to the Foundations and the Contamination;

5.1.2 the Estimate is to contain only those items of work which relate to the Foundations and the Contamination;

- 5.1.3 the Estimate is to be in the amount of £701,467.95 excluding VAT in connection with the works associated with the Foundations; and
- 5.1.4 the valuation of the items of work associated with Contamination shall be on the basis of Actual Cost.

6. TIE'S FURTHER COMMENTS ON AND UNDERSTANDING OF INFRACO'S POSITION ON THE DISPUTE

- 6.1 Without prejudice to and under reservation of **tie's** position set out above in this Position Paper, **tie** sets out below its further comments in respect of the various elements which go to make up the Estimate.
- 6.2 Copies of the Base Date Design Information drawings (**tie's** Production Numbers 20 to 50 inclusive) and the Issued For Construction drawings (**tie's** Production Numbers 51 to 83 inclusive) are appended to this Position Paper.

Alleged amendment to the LOD

- 6.3 The Infraco includes in the Estimate the amount of £1,156,016.74 excluding VAT for what it says are additional temporary works which are required as a consequence of an amendment to the LOD. For the reasons explained below, **tie** do not consider that this matter constitutes a Notified Departure and therefore the items of work associated with this matter should not form part of the Estimate.
- 6.4 By way of explanation, the LOD demarcates the area / width of land available to the Infraco within which the trams permanent carriageway are to be contained. The LOD was determined by the *Edinburgh Tram (Line One) Act 2006* and the *Edinburgh Tram (Line Two) Act 2006* and can only be altered by an amendment to those Acts of the Scottish Parliament or a new Act of Scottish Parliament. The LOD cannot be altered by **tie** or by the SDS provider.
- 6.5 The LOD is depicted on the Base Date Design Information drawing number ULE90130-05-RTW-00050 revision 1 (**tie's** Production Number 40) in the area around RW 4C units 9, 10 and 11. In particular, the LOD is depicted as an emboldened dotted line, which falls behind the Roseburn Street Units, Roseburn garage and the electrical sub-station. That drawing correctly depicts the LOD.
- 6.6 In turning to consider the Issued For Construction drawings, the LOD is depicted on drawing number ULE90130-05-RTW-00050 revision 3 (**tie's** Production Number 72) in the area around re-named units 27, 28 and 29. The LOD is depicted as an emboldened dotted line, but is shown in the wrong position as it falls to the front of the Roseburn Street Units, Roseburn garage and the electrical sub-station.
- 6.7 In regard to this issue, **tie** also rely upon the drawing entitled "*Trams for Edinburgh: Available to Infraco – Haymarket Yards to Murrayfield*" Sheet 10 version 3 (**tie's** Production Number 84), which drawing comprises part of *Schedule Part 31 (Drawings)* to the Infraco Contract. That drawing depicts the Permanent Land and the Temporary Land Sites which **tie** warrants it will grant the Infraco access to (only in so far as the same is required for the purposes of carrying out the Infraco Works) in terms of *Clause 18* of the Infraco Contract. Plots 96 and 101 are the relevant plots of land in regard to both the construction of Russell Road retaining wall and the location of the LOD. In terms of that drawing, **tie** does not warrant that it will grant the Infraco access to plots 96 or 101 as either Permanent Land or Temporary Land Sites.

- 6.8 In addition, the LOD as depicted on the drawing entitled “*Trams for Edinburgh: Available to Infraco – Haymarket Yards to Murrayfield*” Sheet 10 version 3 (**tie's** Production Number 84) corresponds to the depiction of the LOD on the Base Date Design Information drawing number ULE90130-05-RTW-00050 revision 1. The LOD on the drawing entitled “*Trams for Edinburgh: Available to Infraco – Haymarket Yards to Murrayfield*” Sheet 10 version 3 falls behind the Roseburn Street Units, Roseburn garage and the electrical sub-station.
- 6.9 By a letter dated the 22 May 2009 (**tie's** Production Number 17) **tie** confirmed to the Infraco that the LOD had not changed from the position shown in the Infraco Contract. Therefore, this matter does not constitute a Notified Departure and the items of work associated with this matter should not form part of the Estimate.

Alleged change to the foundation design of retaining units section 3 to 11 and 15 to 18 from an "L" shaped footing foundation to cast in-situ concrete piles with pile cap

- 6.10 The Infraco includes in the Estimate a number of items of work which it alleges are all additional works associated with design changes to the retaining wall structure.
- 6.11 Due to the manner in which the Infraco has prepared its Estimate **tie** are unable to identify the specific value of change assessed by the Infraco for the additional works associated with this matter. However, for the reasons explained below **tie** value the additional works associated with the Foundations only in the amount of £701,467.95 excluding VAT.
- 6.12 **tie** understand that the Infraco has valued the change to the retaining wall structure as one specific item, whereas **tie** are of the opinion that there are two distinct matters which fall to be considered. These being:

- 6.12.1 additional works associated with the retaining wall; and
- 6.12.2 the Foundations.

Alleged additional works associated with the retaining wall

- 6.13 In regard to this issue **tie** refer to:
- 6.13.1 Base Date Design Information drawings numbered ULE90130-05-RTW-00030 revision 1 (**tie's** Production Number 21); ULE90130-05-RTW-00040 revision 1 (**tie's** Production Number 31); and ULE90130-05-RTW-00045 revision 1 (**tie's** Production Number 35), which drawings depict the general requirements of a retaining wall structure; and
- 6.13.2 Issued For Construction drawings numbered ULE90130-05-RTW-00030 revision 3 (**tie's** Production Number 52); ULE90130-05-RTW-00040 revision 3 (**tie's** Production Number 62); and ULE90130-05-RTW-00045 revision 3 (**tie's** Production Number 67), which drawings also depict the general requirements of a retaining wall structure.
- 6.14 Applying the tests set out at *Pricing Assumption 3.4.1* to the design changes between the above noted Base Date Design Information drawings and the Issued For Construction in regard to the Russell Road retaining wall:

- 6.14.1 in terms of the design principle between the Base Date Design Information and Issued For Construction drawings in respect of the requirement for a retaining wall at Russell Road there is no change;
 - 6.14.2 in terms of the shape and/or form of Russell Road retaining wall between Base Date Design Information and Issued For Construction drawings there is no change; and
 - 6.14.3 in terms of outline specification of Russell Road retaining wall between Base Date Design Information and Issued For Construction drawings there is no change.
- 6.15 Accordingly, the alleged additional works, in addition to the Foundations (which are considered in more detail below) do not constitute a Notified Departure and therefore the items of work associated with those alleged additional works should not form part of the Estimate.

The Foundations

- 6.16 **tie** acknowledges that Section B-B of Base Date Design Information drawing numbers ULE90130-05-RTW-00030 revision 1 (**tie's** Production Number 21) and ULE90130-05-RTW-00045 revision 1 (**tie's** Production Number 35) depicts a typical "L" shaped footing foundation whereas the Issued For Construction drawing numbers ULE90130-05-RTW-00030 revision 3 (**tie's** Production Number 52) and ULE90130-05-RTW-00045 revision 3 (**tie's** Production Number 67) depicts that the retaining wall foundations have been re-designed to a typical pile and pile cap base concept. The revised foundation details are typical of the changes made to retaining units section 3 to 11 and 15 to 18.
- 6.17 **tie** further acknowledges that the design changes to the retaining wall foundations came about as a consequence of the requirements of an Approval Body. That design change therefore constitutes a Notified Departure in terms of *Clause 3.4.1.3* of the Pricing Assumptions contained in *Schedule Part 4 (Pricing)*.
- 6.18 Accordingly, **tie** are of the opinion that the Estimate ought to include items of work associated with the Foundations only and that the value of those items of work is £721,734.02 excluding VAT. **tie's** detailed valuation of the items of work associated with the Foundations is included at Annex 2 to this Position Paper.

Alleged changes to the pile diameter and pile depths to units Sections 12 to 14 and 19 to 29

- 6.19 In regard to this issue **tie** refer to:
- 6.19.1 Base Date Design Information drawings - **tie's** Production Numbers 31 to 34 inclusive, which drawings depict the design drawings for units W4B1 to W4B3; and
 - 6.19.2 Base Date Design Information drawings - **tie's** Production Numbers 40 to 45 inclusive, which drawings depict the design for units W4B4 to 11 and identifies 88 number 1000 mm diameter in-situ concrete piles each 6 metres long;
 - 6.19.3 Issued For Construction drawings - **tie's** Production Numbers 62 to 65 inclusive, which drawings depict the design drawings for units 12 to 143; and

- 6.19.4 Issued For Construction drawings - **tie's** Production Numbers 72 to 77 inclusive, depicting the design for units 19 to 29 which identifies 156 number 1050 mm diameter in-situ concrete piles each 12 metres long, 58 number 1050 mm diameter in-situ concrete piles each 10.5 metres long number 1050 mm diameter in-situ concrete piles each 8.51 metres long.
- 6.20 Applying the tests set out at *Pricing Assumption 3.4.1* to the design changes between the above noted Base Date Design Information drawings and the Issued For Construction in regard to the Russell Road retaining wall:
- 6.20.1 there is no change in the Base Date Design Information to the Issued For Construction design drawings in respect of the design principle applied to the use of the piles;
- 6.20.2 there is no change in the Base Date Design Information to the Issued For Construction design drawings in regard to the shape and form (i.e. using circular in-situ concrete piles);
- 6.20.3 there is no change in the Base Date Design Information to the Issued For Construction design drawings in regard to the outline specification (i.e. using circular reinforced in-situ concrete piles).
- 6.21 The design change is then simply the evolution of the design by normal development and completion of the design through the stages of preliminary to construction stages.
- 6.22 *[If design change is considered to be outside normal development and completion of design then its cause requires to be considered. A Notified Departure only occurs if the facts or circumstances differ from the Base Case Assumptions save to the extent caused by a breach of contract by the Infraco, an Infraco Change or a Change in Law.*
- 6.23 *The detailed reasons for any design change are not explained by Infraco in the Infraco Notice of **tie** Change. **tie** has requested an Audit to understand the facts and/or circumstances that may give rise to a design change. It is expected that the Audit will allow **tie** to determine how a design change has evolved, the reasons behind that and the design development and evolution to deal with the changed facts and circumstances. In particular, **tie** require to understand the following:*
- 6.23.1 *that any design changes are necessitated by the correction of an erroneous or defective design at Base Date Design Information stage;*
- 6.23.2 *that any design changes are due to the completion of previous incomplete design through a normal design evolution and completion process;*
- 6.23.3 *that any design changes are due to changed ground conditions which were either assumed or wrongly interpreted from Ground Investigation Reports available at Base Date Design Information stage;*
- 6.23.4 *that any design change are as a result of insufficient Ground Investigation requiring design assumptions to be amended following better Ground Investigation surveys;*
- 6.23.5 *that any design changes are as a result of practical buildability issues discussed with Infraco or not in attempts to better programme or efficiency of construction;*

6.23.6 *that any design changes are as a result of compliance with the Construction (Design and Management) Regulations 2007; and*

6.23.7 *that any design changes are as a result of compliance with approval procedures and/or processes*

The above matters may well be breaches of contract by Infraco, Infraco Change or Change in Law, which means that the design change does not constitute a Notified Departure.]

PARAGRAPHS 6.22 AND 6.23 IN ITALICS TO BE DISCUSSED AT THE CHALLENGE SESSION

6.24 Accordingly, this matter does not constitute a Notified Departure and therefore the items of work associated with this matter should not form part of the Estimate.

Dealing with Contamination

6.25 *Paragraph 3.3 of Schedule Part 4 (Pricing) to the Infraco Contract provides, amongst other things*

"3.3 *Specified Exclusions* [items for which Infraco has made no allowance within the Construction Works Price] *from the Construction Works Price are:*

c) *Ground conditions that require works that could not be reasonably foreseen by an experienced civil engineering contractor based on the ground conditions reports provided to BBS on 20th and 27th of November and 6th December 2007. Additionally the Construction Works Price does not include for dealing with replacement of any materials below the earthworks outline or below ground obstructions/voids, soft material or any contaminated materials.*

3.3.1 *In the event that the Infraco is required to carry out any of the Specified Exclusions, this shall be a Notified Departure.*" (emphasis added)

6.26 **tie** understand that the earthworks to Russell Road retaining wall contains contaminated materials. The Estimate includes certain items of work which amount to £1,876,722.98 excluding VAT based upon provisional allowances and unsubstantiated rates and allowances.

6.27 **tie** acknowledges that Contamination constitutes a Notified Departure and those works are to be valued in accordance with *Clause 80.6* of the Infraco Contract.

6.28 As the works associated with Contamination cannot be measured at the rates or prices contained in *Appendix F to Schedule Part 4 (Pricing)* or rates deduced therefrom, those works, in terms of *Clause 80.6.4* of the Infraco Contract, fall to be valued in accordance with *Appendix G of Schedule Part 4 (Pricing)*.

6.29 Accordingly, the works associated with Contamination are to be valued on the basis of Actual Cost, in terms of *Clause(s) 1.2 and 1.5 of Appendix G of Schedule Part 4 (Pricing)*.

ANNEX 1 TO THE POSITION PAPER

IN THE MATTER OF A DISPUTE

BETWEEN

tie LIMITED

and

BILFINGER BERGER UK LIMITED; SIEMENS PLC; and

CONSTRUCCIONES Y AUXILIAR DE FERROCARRILES S.A.

By way of explanation as to the facts and circumstances which have given rise to the Dispute, there follows a summary of the chronology of events concerning the Dispute.

1. Infraco by way of letter to tie with enclosures dated 14 October 2008 (reference 25.1.201/IO/682) (a copy of which is produced as tie's Production Number 1) stated, amongst other things

"Please find enclosed Infraco Notice of tie Change No 146 regarding the IFC Drawings for Retaining Walls 1, 2, 3 and 4.

The Infraco Notification noted above is due to the drawing changes being outwith the normal development and completion of design process and therefore promoting a consequential effect on the Infraco Contract Programme. Unfortunately we are unable to provide an accurate programme assessment and estimate due to the complexity of the changes.

In accordance with Clause 80.3 of the Infraco Contract we hereby request a reasonable extension of time to the contract requirement of 18 business days to provide an Estimate." (emphasis added)

The abovementioned Infraco Notification of tie Change No. 146 dated 14 October 2008 provided, amongst other things

"Details of tie Change upon which the Estimate is based (Clause 80.2.1)

Schedule Part 4, Pricing Assumption, paragraph 3.4.1.1, assumes that the Issued for Construction Drawings do not differ from Infraco Proposals Civil Appendix A 12/05/2008 other than design development as the IFC drawings for Russell Road Retaining Walls differ to a greater extent and complexity than design development the foregoing results in a Notified Departure." (emphasis added)

2. tie by way of letter to the Infraco dated 31 October 2008 (reference INF CORR 318) (a copy of which is produced as tie's Production Number 2) stated, amongst other things

"We refer to your letter reference 25.1.201/MRH778 and we would confirm the following points.

It is the obligation of Infraco under the terms of the Contract to complete the design to achieve the Employers Requirements.

If the completion of the design is different to the Base Date Design Information then, subject to the provisions of Pricing Assumption 3.4.1, it may result in a Notified Departure.

In your letter you have referred to differences from 'base Infraco proposals' but do not explain what relevance this has in relation to Pricing Assumption 3.4.1 which relates to Base Date Design Information. Therefore, your position is entirely unclear but in any event does not demonstrate a Notified Departure.

Furthermore and despite your statement to the contrary you have not addressed the issue regarding a reasonable extended period of time for return of Estimates. We would reiterate that for tie to act reasonably in any agreement to extend the period then we would require to be furnished with a reason for extension and expected extended duration." (emphasis added)

3. Infraco by way of letter to tie dated 4 November 2008 (reference 25.1.201/MRH/836) (a copy of which is produced as tie's Production Number 3) stated, amongst other things

"We refer to your letter dated 31 October 2008, reference INF CORR 318 and acknowledge our obligation under Clause 7 to complete the design to achieve, inter alia, the Employer's Requirements.

Our position in respect of changes reflected on IFC Drawings is that, in accordance with Clause 3.4 of Schedule Part 4 to the Infraco Contract, a Pricing Assumption is that the Design provided by the SDS Provider will not (other than amendments arising from the normal development and completion of designs) in terms of design principle, shape, form and/or specification be amended from the drawings forming the Base Date Design Information.

Intial review of the IFC Drawings being issued by the SDS Provider shows that the Design is substantially different to the design available within the Base Date Design Information in terms of design principle, shape, form and specification.

Therefore, as required by Clause 80 of the Infraco Contract we are, upon receipt of IFC drawings from the SDS Provider, submitting notifications of tie Changes.

As explained in our letters dated 14 October 2008, references 25.1.201/IO/670, 671, 672, 682, 16 October 2008, references 25.1.201/MRH/697 and 25.1.201/IO/699, 700, 701, 702, 703 and 704, due to the complexity of the changes and their impact on the Programme we have been unable to comply with the requirement of Clause 80.4 of the Infraco Contract and have requested a reasonable extended period of time to return the Estimates.

We will advise you of our assessed return dates for the Estimates as soon as we can." (emphasis added)

4. Infraco by way of letter to **tie** dated 21 November 2008 (reference 25.1.201/MRH/993) (a copy of which is produced as **tie's** Production Number 4) stated, amongst other things

"We refer to your letter dated 14 November 2008, reference CORR 388.

*In respect of the balance of INTC included in your list, contrary to your statement that we ignoring the obligation placed upon us to provide Estimates within 18 Business Days or receipt of a **tie** Notice of Change we refer you to Clause 80.3 of the Infraco Contract under which...*

*...we trust that we have complied with your request to provide "justifiable reasons" for each of our requests for reasonable extended period for the return of each Estimate where an Estimate has not yet been submitted."
(emphasis added)*

5. **tie** by way of letter to the Infraco dated 9 December 2008 (reference INF CORR 439) (a copy of which is produced as **tie's** Production Number 5) stated, amongst other things

"We refer to your letter dated 4th November 2008 reference 25.1.201/MRH/836 and further note:-

On receipt of a fully compliant Estimate under Clause 80.4 of the Infraco Contract we will review and respond to the above. We do however reiterate our position that to allow a fair Extension to the agreed 18 Business Day period to produce an Estimate BSC must identify the reason why an Extension if required and the expected date when an Estimate will be submitted, BSC have so far failed to demonstrate any entitlement to an Extension.

We again confirm our position that should the delay in submitting fully compliant Estimates from BSC result in the late issue of Change Orders any resultant delay will be held to be the responsibility of BSC.

*Please confirm in all instances when we can expect your Estimates."
(emphasis added)*

6. Infraco by way of letter to **tie** dated 12 December 2008 (reference 25.1.201/MRH/1162) (a copy of which is produced as **tie's** Production Number 6) stated, amongst other things

"We refer to your letter dated 09 December 2008, reference INF CORR 459 and refer you to our letter dated 11 December 2008, reference 25.1.201/MRH/1174, in which we provide a detailed chronology of the processes and timescales required to provide Estimates for Issued for Construction drawing Changes.

We disagree with your interpretation of the requirements to be met in order to arrive at an extended period for return of an Estimate. As far as we can establish, there is no obligation placed upon us to identify why an extension of time may be required nor are we required to provide an expected date for submission of an Estimate. Our contractual basis for this is Clause 80.3;



'If, on receipt of the tie Notice of Change, the Infraco considers (acting reasonably) that the Estimate required is too complex to be completed and returned to tie within 18 Business Days, then the Infraco shall, within 5 Business Days (during the period prior to issue of the Reliability Certificate) and within 10 Business Days (at any time after issue of the Reliability Certificate) of receipt of such tie Notice of Change, deliver to tie a request for a reasonable extended period of time for return of the Estimate, such extended period to be agreed by the Parties, both acting reasonably.'

We believe that we have demonstrated beyond reasonable doubt that, except in respect of very simple changes, Estimates cannot be provided within 18 Business Days of receipt of tie Notices of Change." (emphasis added)

7. Infraco by way of letter to tie dated 16 December 2008 (reference 25.1.201/MRH/1173) (a copy of which is produced as tie's Production Number 7) stated, amongst other things

"We refer to our letter dated 12 December 2008, reference 25.1.201/MRH/1162 and confirm that the Infraco letter to which we refer in line 2 of the letter is incorrect. The letter reference should be 25.1.201/MRH1134"

8. tie by way of letter to the Infraco dated 20 January 2009 (reference INF CORR 575) (a copy of which is produced as tie's Production Number 8) stated, amongst other things

"We refer to your letter reference 25.1.201/MRH/1162 dated 12th December 2008.

There is not any benefit in continuing correspondence on this matter other than to say that we request that you provide us with a valid reason for extending the period for return in order that tie may act reasonably in considering and agreeing to such an extension.

We do not accept a blanket statement that Estimates cannot be provided within 18 business days; however we are willing to discuss any specific extension you may reasonably request." (emphasis added)

9. Infraco by way of letter to tie dated 27 January 2009 (reference 25.1.201/IL/1356) (a copy of which is produced as tie's Production Number 9) stated, amongst other things

"We refer to your letter reference INF CORR 575 dated 20 January 2009.

The Estimate for structure W4 has been prepared but the resolution of the conflict with the sewer reference 5A/COM/01 affecting structure W3 has only recently been resolved by the SDS Provider. Once we have received the IFC drawings for structure W3 we believe that an Estimate for structures W3 and W4 could be finalised within three weeks.

We trust this explains the current position and justifies our reasonable request for an extension of time in preparation of the Estimate." (emphasis added)

FOISA Exempt

10. Infraco by way of letter to **tie** dated 26 February 2009 (reference 25.1.201/RS/1752) (a copy of which is produced as **tie's** Production Number 10) stated, amongst other things

"We refer to our Infraco Notice of tie Change No 146 through which we have identified a Notified Departure as a result of amended Design prepared by the SDS Provider.

We understand that at the meeting we attended at your offices on 17 February 2009 you accepted in principle that a Notified Departure had occurred.

*We therefore request that you issue a **tie** Notice of Change as required by the Infraco Contract.* (emphasis added)

11. **tie** by way of letter to the Infraco dated 10 March 2009 (reference INF CORR 821) (a copy of which is produced as **tie's** Production Number 11) stated, amongst other things

"We refer to your letter dated 26 February 2009 regarding the above subject and your previous advice that you identified a Notified Departure.

We confirm that we anticipate that a Notified Departure has occurred although further details have been requested from BSC.

The information required should include:

(a) Which parts of the design and construction has been changed and why it has changed.

(b) Who instigated the changed requirements.

The full extent of the impact of such Notified Departures should be detailed in your Estimate.

Please advise when the above information will to be provided and the Estimate submitted." (emphasis added)

12. **tie** by way of letter to the Infraco dated 12 March 2009 (reference INF CORR 988) (a copy of which is produced as **tie's** Production Number 12) stated, amongst other things

*"With reference to your letter reference 25.1.201/IL/1356 dated 27 January 2009, we wish to record that as of 11 March 2009 your fully compliant Estimate for the above alleged Change has not been submitted to **tie**.*

Should the continued delay in submitting a fully compliant Estimate by BSC result in the late issue of Change Orders any resultant delay will be held to be the responsibility of BSC.

*Please confirm by return when the above estimate will be submitted to **tie**." (emphasis added)*

13. **tie** by way of letter to the Infraco dated 16 March 2009 (reference INF CORR 1032) (a copy of which is produced as **tie's** Production Number 13) stated, amongst other things

"I refer to my letter of 10 March 2009 (Ref: INF CORR 821) regarding the above notification.

I wish to make swift constructive progress in confirming this notification as a change, which can be evaluated and agreed. I suggest that we meet, with any necessary members of our teams and validate the information referred to in previous correspondence.

This would then allow speedy conclusion of the change process.

I would propose to hold a meeting at 14.00 on Thursday 19 March 2009, provided you are available.

I look forward to your response and our meeting on Thursday." (emphasis added)

14. Infraco by way of letter to **tie** dated 20 March 2009 (reference 25.1.201/MRH/2022) (a copy of which is produced as **tie's** Production Number 14) stated, amongst other things

"We refer to your letter reference INF CORR 988 dated 12 March 2009.

As we explained in our letter dated 27 January 2009, reference 25.1.201/IL/1356, the Estimate for structure W4 has been prepared but the resolution of the conflict with the sewer reference 5A/COM/01 affecting structure W3 is still being developed by the SDS Provider. Once we have received the IFC drawings for structure W3 we believe that an Estimate for structures W3 and W4 could be finalised within three weeks.

We note that, to date, no extension to the 18 Business Day period for submission of an Estimate has been accepted or agreed by tie and confirm that we consider this situation to be contrary to the obligation placed upon you by Clause 80.3 of the Infraco Contract for an extended period of time for return of the Estimate to be agreed by the Parties, both acting reasonably (Emphasis added).

In response to the statement contained in the penultimate paragraph of your letter, the "continued delay" in submitting the Estimate results from a delay in provision of IFC drawings by the SDS Provider.

We trust this explains the current position and justifies our reasonable request for an extension of time in preparation of the Estimate." (emphasis added)

15. **tie** by way of letter to the Infraco dated 9 April 2009 (reference INF CORR 1217/TC) (a copy of which is produced as **tie's** Production Number 15) stated, amongst other things

"Your letter reference 25.1.201/MRH/2022 dated 20 March 2009 and tie letter reference INF CORR 988 dated 12 March 2009 refer.



Please confirm by return the planned date for issue of the IFC drawings for retaining wall W3 and the subsequent issue of the fully compliant Estimate for retaining wall W3. tie will then review your request for an extension to the period for submission of the Estimate for retaining wall W3.

With regard to retaining wall W4, tie does not accept there are any valid reasons to extend the period for submission of the fully compliant Estimate. For the record as of 8 April 2009 tie has not received your fully compliant Estimate for the alleged Changes to retaining wall W4.

Please confirm by return when the above Estimates will be submitted to tie.

Should the continued delay in submitting fully compliant Estimates by BSC result in the late issue of Change Orders any resultant delay will be held to be the responsibility of BSC." (emphasis added)

16. Infraco by way of letter with enclosures to tie dated 14 May 2009 (reference 25.1.201/IO/2625) (a copy of which is produced as tie's Production Number 16) stated, amongst other things

"We submit our Estimate for INTC 146 IFC drawing changes and addition works and costs due to contaminated soils in the sum of £4,597,847.07 excluding VAT.

No allowance has been made for any delay or disruption to the Programme that may occur due to the change as estimated.

No allowance has been made for design work in connection with the retaining structure to the Network Rail embankment.

No allowance for ducts, duct containment or track formation.

We look forward to receipt of your Change Order to allow the additional works to be implemented." (emphasis added)

17. tie by way of letter to the Infraco dated 22 May 2009 (reference INF CORR 1510/GMcG) (a copy of which is produced as tie's Production Number 17) stated, amongst other things

"We refer to your letter dated 14th May 2009 reference 25.1.201/IO/2625 which identifies three main areas of proposed change to the works being additional temporary works, changes in the wall details and contaminated soil. We are currently reviewing the detail of the Estimate but provide our initial comments below.

1. *Change due to the presence of contaminated material affecting the temporary works and permanent works. We note that you have estimated the effect of dealing with contaminated material and we agree that dealing with contaminated material is a Specified Exclusion from the Construction Works Price and as such would constitute a Notified Departure. However we cannot validate your Estimate allowances for this until the full extent and classification of the contaminated material has been ascertained. We acknowledge that BSC are currently arranging for further Site Investigation works and that a separate Estimate for Site Investigation works to*



determine this issue has been submitted. We shall deal with this SI Estimate under separate cover.

2. *Change in temporary works due change in the LOD alignment. The alignment of the LOD has not changed from the position defined in the Contract therefore we do not understand why this would be a change. tie Limited has provided the access to the Permanent Land as it is obliged to do under Clause 18 of the Contract.*
3. *Amendment of the design of the retaining wall sections from L-Shaped to piled foundations (sections 3-11 and 15 to 18). We are unclear as to the technical reason that has driven this amendment to the design however it would appear that this proposed design is a matter which is beyond normal development and completion of design as outlined in the Schedule Part 4.*
4. *Amendment of the design of the retaining wall piled foundations from 1000mm diameter to 1050mm diameter including increased number of piles and increased depth of piles (sections 12-14 and 19-29). We do not agree this is a change of the design principle, shape or form or outline specification and it is therefore our opinion that this is an amendment arising from the normal development and completion of designs. If you disagree with this assessment please provide further details of the events and timing that lead to the amendment in the foundation details.*

Appendix G of Schedule 4 provides details of the application of Preliminaries to Estimates. We do not agree with the preliminaries allowances currently included in the Estimate provided.

We would be pleased to discuss the above matters further at our PMP meeting on 27th May 2009 or before." (emphasis added)

18. Infraco by way of letter to tie dated 27 May 2009 (reference 25.1.201/MRH/2738) (a copy of which is produced as tie's Production Number 18) stated, amongst other things

"We refer to your letter reference INF CORR 1217/TC dated 9 April 2009.

Wall W3

The drawings for the amended design of wall 3 remain with CEC at present at IFA status. The SDS Provider is actively pursuing the CEC's Approval to allow the drawings to be issued to us at IFC status. Upon receipt of the IFC drawings we will be in a position to advise you of a forecast date for submission of an Estimate.

Wall W4

The Estimate for Wall 4 was issued under cover of our letter dated 14 May 2009, reference 25.1.201/IO/2625." (emphasis added)

19. Graeme McGinty of tie by way of e-mail to Ian Orr of Infraco dated 17 June 2009 timed at 13:31 (a copy of which is produced as tie's Production Number 19) stated, amongst other things



FOISA Exempt

"Hopefully the take-off I handed in this morning makes sense. I am being pressured for a response on this, do you have any comments? Either give me a call or come up and see me if you want to discuss or send on an email if you want to keep a record. I think Frank McFadden and Kevin Russell are looking to discuss this point today."

By the date of this Position Paper no response from Infracore to the aforementioned e-mail has been received by **tie**.

ANNEX 2 TO THE POSITION PAPER

IN THE MATTER OF A DISPUTE

BETWEEN

tie LIMITED

and

BILFINGER BERGER UK LIMITED; SIEMENS PLC; and

CONSTRUCCIONES Y AUXILIAR DE FERROCARRILES S.A

There follows tie's valuation of the items of work associated with the Foundations.

ITEM	DESCRIPTION OF WORK	UNIT	QUANT	RATE	AMOUNT
	Russell Road Retaining Wall				
	Valuation of Retaining Wall Foundations from BDDDI to IFC				
	Drawing Refer RWT 0030 and 45 Rev 1 to Rev 3				
	Rates pro-rata to Schedule Part 4, page 244				
B6(4)					
001	Establish Piling Rig - included in Contract sum				0.00
002	Moving piles for 1050mm dia bore piles				
	Drwg 30		81		
	Drwg 45		36.00		
	Rate as BQ no change in plant	Nr	117	34.69	4,058.73
003a	Cast in place reinforced 1050 pile				
	117 nr x 12m	M	1404	406.21	570,318.84
	(Rate £232.12 / 0.6 x 1.05)				
4	Reinforcement - included in rate	t			0.00
5	Proof loading - no further loading requirements	nr			0.00
6	Earthworks - not significantly changed but BDDDI to Infracore betterment				0.00
10	Drainage - would have been required whether the foundation design changed or not				0.00
12	Structural Concrete				
	BDDDI		226.08		
	IFC		233.41		
		cm	7.33	141.77	1,039.11
13	Blinding				
	BDDDI		27.82		
	IFC		0		
		cm	-27.82	142.95	-3,977.39
14	Formwork - fl				
	BDDDI		115.59		
	IFC		145.88		
		sm	30.29	55.51	1,681.67

FOISA Exempt

15	Water proofing				
		BDDI		2609	
		IFC		2667	
			sm	58	6.89
					399.62
18	Reinforcement in slabs & pile caps				
		BDDI		75.65	
		IFC		64.27	
			t	-11.38	1,045.19
					-11,896.92
					561,623.66
	Consortium Preliminaries			7.40%	41,560.15
	Other Preliminaries			17.50%	98,284.14
	Total				£701,467.95

Re-measurement of concrete, blinding and formwork

L' Shaped Footing - BDDI						
BDDI				Concrete	50mm Blinding	Formwork
Units	length	Width	Depth	Cm	CM	sm
3	11.88	2.35	0.35	9.77	1.40	8.31
4	11.88	2.35	0.35	9.77	1.40	8.31
5	11.88	2.75	0.35	11.43	1.63	8.31
6	11.88	3.05	0.35	12.68	1.81	8.31
7	11.88	3.35	0.35	13.93	1.99	8.31
8	11.88	3.35	0.35	13.93	1.99	8.31
9	10.40	4.10	0.35	14.93	2.13	7.28
10	10.40	5.40	0.35	19.66	2.81	7.28
11	8.92	5.00	0.35	15.60	2.23	6.24
15	11.23	4.80	0.50	26.94	2.69	11.23
16	11.23	4.60	0.50	25.82	2.58	11.23
17	11.23	4.40	0.50	24.70	2.47	11.23
18	11.23	4.80	0.50	26.94	2.69	11.23
	145.88			226.08	27.82	115.59
Pile Cap / Beam - IFC						
IFC				Concrete	50mm Blinding	Formwork
Units	length	Width	Depth	Cm	CM	sm
3	11.88	1.60	1.00	19.00		11.88
4	11.88	1.60	1.00	19.00		11.88
5	11.88	1.60	1.00	19.00		11.88
6	11.88	1.60	1.00	19.00		11.88
7	11.88	1.60	1.00	19.00		11.88
8	11.88	1.60	1.00	19.00		11.88
9	10.40	1.60	1.00	16.64		10.40
10	10.40	1.60	1.00	16.64		10.40
11	8.92	1.60	1.00	14.26		8.92
15	11.23	1.60	1.00	17.96		11.23
16	11.23	1.60	1.00	17.96		11.23
17	11.23	1.60	1.00	17.96		11.23
18	11.23	1.60	1.00	17.96		11.23
	145.88			233.41	0.00	145.88



Re-measurement of BDDI Reinforcement

Summary		T
Unit Base	3	2.30
	4	2.39
	5	2.82
	6	2.74
	7	2.98
	8	2.98
	11	8.70
	9	5.42
	10	11.16
	15	8.81
	16	8.65
	17	8.23
	18	8.45
	Tonnes	75.65

Unit by Unit

Base 3					
Nr	Dia	Bar Mark	length	kg /m	KG
2	16	316	1650	1.579	5.21
18	16	303	3125	1.579	88.82
2	16	333	3025	1.579	9.55
18	16	304	5325	1.579	151.35
18	16	304	5325	1.579	151.35
2	16	305	5000	1.579	15.79
47	16	332	2275	1.579	168.83
47	16	331	1450	1.579	107.61
47	16	332	2275	1.579	168.83
2	16	305	5000	1.579	15.79
18	16	304	5325	1.579	151.35
18	16	304	5325	1.579	151.35
18	16	303	5325	1.579	151.35
2	16	333	3025	1.579	9.55
2	16	316	1650	1.579	5.21
94	16	330	3025	1.579	448.99
94	16	330	3025	1.579	448.99
2	16	333	3650	1.579	11.53
2	16	305	5060	1.579	15.98
2	16	305	5000	1.579	15.79
2	16	333	3025	1.579	9.55
				Tonnes	2.30

FOISA Exempt

Base 4					
Nr	Dia	Bar Mark	length	kg/m	KG
11	16	363	2075	1.579	36.04
11	16	364	4075	1.579	70.78
3	16	314	2875	1.579	13.62
24	16	335a	1525	1.579	57.79
24	16	355a	1525	1.579	57.79
24	16	375a	1525	1.579	57.79
22	16	304	5325	1.579	184.98
3	16	315	5175	1.579	24.51
22	16	304	5325	1.579	184.98
24	20	359a	2550	2.467	150.98
94	16	311	1625	1.579	241.19
94	16	361	2000	1.579	296.85
23	16	358	1950	1.579	70.82
3	16	315	5175	1.579	24.51
23	20	360a	2750	2.467	156.04
23	16	304	5325	1.579	193.39
23	16	304	5325	1.579	193.39
23	20	356a	1725	2.467	97.88
1	20	362	3025	2.467	7.46
1	20	362	3025	2.467	7.46
3	16	314	2875	1.579	13.62
12	16	364	4075	1.579	77.21
12	16	363	2035	1.579	38.56
2	20	368	2400	2.467	11.84
23	16	354a	2750	1.579	99.87
1	20	365	1850	2.467	4.56
2	20	367	2200	2.467	10.85
1	20	365	1850	2.467	4.56
				Tonnes	2.39

Base 5					
Nr	Dia	Bar Mark	length	kg/m	KG
21	16	304	5325	1.579	176.57
2	16	305	5000	1.579	15.79
2	16	305	5000	1.579	15.79
21	16	304	5325	1.579	176.57
21	16	366	3125	1.579	103.62
94	16	349	1975	1.579	293.14
2	16	372	3850	1.579	12.16
94	20	371	2600	2.467	602.93
47	20	351	2600	2.467	301.47
47	20	352	1575	2.467	182.62
94	16	349	1975	1.579	293.14
2	20	365	1850	2.467	9.13
2	16	372	3850	1.579	12.16
2	16	305	5000	1.579	15.79
2	16	305	5000	1.579	15.79
21	16	304	5325	1.579	176.57



FOISA Exempt

2	16	372	3850	1.579	12.16
2	20	365	1850	2.467	9.13
47	16	332	2275	1.579	168.83
47	16	331	1450	1.579	107.61
21	16	366	3125	1.579	103.62
2	16	125	5175	1.579	16.34
				Tonnes	2.82

Base 6					
Nr	Dia	Bar Mark	length	kg/m	KG
23	16	8	2000	1.579	72.63
19	16	7	5800	1.579	174.01
23	16	7	5800	1.579	210.64
23	16	7	5800	1.579	210.64
19	16	7	5800	1.579	174.01
23	16	8	2000	1.579	72.63
95	20	2	3825	2.467	896.45
95	20	2	3825	2.467	896.45
2	16	7	5800	1.579	18.32
2	16	7	5800	1.579	18.32
				Tonnes	2.74

Base 7					
Nr	Dia	Bar Mark	length	kg/m	KG
26	16	8	2000	1.579	82.11
21	16	7	5800	1.579	192.32
26	16	7	5800	1.579	238.11
26	16	7	5800	1.579	238.11
21	16	7	5800	1.579	192.32
26	16	8	2000	1.579	82.11
95	20	12	4100	2.467	960.90
95	20	12	4100	2.467	960.90
2	16	7	5800	1.579	18.32
2	16	7	5800	1.579	18.32
				Tonnes	2.98

Base 8					
Nr	Dia	Bar Mark	length	kg/m	KG
26	16	8	2000	1.579	82.11
21	16	7	5800	1.579	192.32
26	16	7	5800	1.579	238.11
26	16	7	5800	1.579	238.11
21	16	7	5800	1.579	192.32
26	16	8	2000	1.579	82.11
95	20	12	4100	2.467	960.90
95	20	12	4100	2.467	960.90
2	16	7	5800	1.579	18.32
2	16	7	5800	1.579	18.32
				Tonnes	2.98

FOISA Exempt

Base 9					
Nr	Dia	Bar Mark	length	kg/m	KG
31	20	17	2200	2.467	168.25
3	20	47	1875	2.467	13.88
3	20	55	10175	2.467	75.31
26	20	55	10175	2.467	652.64
31	20	55	10175	2.467	778.15
3	20	47	1875	2.467	13.88
31	20	17	2200	2.467	168.25
82	25	52	4975	2.467	1,006.41
3	20	56	3900	2.467	28.86
82	20	52	4975	2.467	1,006.41
3	20	47	1875	2.467	13.88
41	20	53	3875	2.467	391.94
41	20	54	3050	2.467	308.50
3	20	55	10175	2.467	75.31
41	20	59	3325	2.467	336.31
41	20	60	2625	2.467	265.51
3	20	55	10175	2.467	75.31
3	20	47	1875	2.467	13.88
3	20	56	3900	2.467	28.86
				Tonnes	5.42

Base 10					
Nr	Dia	Bar Mark	length	kg/m	KG
3	20	18	3400	2.467	25.16
41	20	17	2200	2.467	222.52
21	20	9	3800	2.467	196.87
20	20	10	2450	2.467	120.88
21	20	11	2325	2.467	120.45
20	20	12	3050	2.467	150.49
3	20	19	2050	2.467	15.17
3	20	20	5400	2.467	39.97
21	20	14	8050	2.467	417.05
20	20	13	8700	2.467	429.26
19	20	13	8700	2.467	407.80
19	20	14	8050	2.467	377.33
3	20	20	5400	2.467	39.97
41	20	17	2200	2.467	222.52
3	20	21	2050	2.467	15.17
61	32	1	6425	6.316	2,475.40
3	20	26	5150	2.467	38.12
61	32	1	6425	6.316	2,475.40
3	20	21	2050	2.467	15.17
3	20	22	8750	2.467	64.76
1	20	14	8050	2.467	19.86
42	20	4	3900	2.467	404.09
42	20	5	3200	2.467	331.56
3	20	24	2450	2.467	18.13
3	20	23	2350	2.467	17.39
19	32	15	6525	6.316	783.03
3	20	25	5150	2.467	38.12

FOISA Exempt

36	32	16	3950	6.316	898.14
19	32	15	6525	6.316	783.03
				Tonnes	11.16

Base 11					
Nr	Dia	Bar Mark	length	kg/m	KG
37	20	17	2200	2.467	200.81
3	20	47	1875	2.467	13.88
3	20	47	1875	2.467	13.88
33	20	48	8700	2.467	708.28
3	20	48	8700	2.467	64.39
3	20	17	2200	2.467	16.28
70	32	46	6000	6.316	2,652.72
3	20	49	4800	2.467	35.52
70	32	46	6000	6.316	2,652.72
3	20	47	1875	2.467	13.88
35	32	42	3925	6.316	867.66
35	32	3	3100	6.316	685.29
2	20	48	8700	2.467	42.93
35	20	43	4000	2.467	345.38
35	20	5	3200	2.467	276.30
3	20	48	8700	2.467	64.39
3	20	47	1870	2.467	13.84
3	20	49	4800	2.467	35.52
				Tonnes	8.70

Unit 1 (15)					
Nr	Dia	Bar Mark	length	kg /m	KG
3	16	18	1850	1.579	8.76
2	20	17	4300	2.467	21.22
36	20	5	4925	2.467	437.40
36	20	5	4925	2.467	437.40
2	20	17	4300	2.467	21.22
36	20	5	4925	2.467	437.40
36	20	5	4925	2.467	437.40
2	20	17	4300	2.467	21.22
36	20	4	2800	2.467	248.67
3	16	18	1850	1.579	8.76
45	16	8	1600	1.579	113.69
44	16	9	2425	1.579	168.48
45	32	6	2775	6.316	788.71
44	32	7	1750	6.316	486.33
2	20	16	4050	2.467	19.98
45	20	3	4525	2.467	502.34
44	20	2	3450	2.467	374.49
2	20	16	4050	2.467	19.98
89	32	1	5225	6.316	2,937.10
45	20	2	3450	2.467	383.00
44	20	3	4525	2.467	491.18
2	20	17	4300	2.467	21.22
2	20	17	4300	2.467	21.22

FOISA Exempt

2	20	17	4300	2.467	21.22
36	20	4	3800	2.467	337.49
2	20	16	4050	2.467	19.98
2	20	16	4050	2.467	19.98
				Tonnes	8.81

Unit 2 (16)					
Nr	Dia	Bar Mark	length	kg /m	KG
3	16	18	1850	1.579	8.76
35	20	39	4150	2.467	358.33
2	20	17	4300	2.467	21.22
35	20	40	4625	2.467	399.35
35	20	40	4625	2.467	399.35
2	20	17	4300	2.467	21.22
45	32	6	2775	6.316	788.71
44	32	7	1750	6.316	486.33
35	20	40	4625	2.467	399.35
35	20	40	4625	2.467	399.35
2	20	17	4300	2.467	21.22
45	16	8	1600	1.579	113.69
44	16	9	2425	1.579	168.48
35	20	39	4150	2.467	358.33
3	16	18	1850	1.579	8.76
3	20	30	3950	2.467	29.23
45	20	29	4400	2.467	488.47
44	20	28	3350	2.467	363.64
89	32	27	5025	6.316	2,824.67
2	20	30	3950	2.467	19.49
2	20	31	4075	2.467	20.11
2	20	17	4300	2.467	21.22
2	20	31	4075	2.467	20.11
44	20	29	4400	2.467	477.61
45	20	28	3550	2.467	394.10
2	20	30	3950	2.467	19.49
2	20	30	3950	2.467	19.49
				Tonnes	8.65

FOISA Exempt

Unit 3 (17)					
Nr	Dia	Bar Mark	length	kg /m	KG
3	16	18	1850	1.579	8.76
33	20	39	4150	2.467	337.86
2	20	17	4300	2.467	21.22
45	20	38	4300	2.467	477.36
44	20	37	3250	2.467	352.78
33	20	40	4625	2.467	376.53
33	20	40	4625	2.467	376.53
2	20	17	4300	2.467	21.22
45	32	6	2775	6.316	788.71
44	32	7	1750	6.316	486.33
33	20	40	4625	2.467	376.53
33	20	40	4625	2.467	376.53
2	20	17	4300	2.467	21.22
45	16	9	2425	1.579	172.31
33	20	39	4150	2.467	337.86
3	16	18	1850	1.579	8.76
2	20	41	3850	2.467	19.00
89	32	36	4825	6.316	2,712.25
2	20	41	3850	2.467	19.00
45	20	37	3250	2.467	360.80
44	20	38	4300	2.467	466.76
2	20	31	4075	2.467	20.11
2	20	17	4300	2.467	21.22
2	20	31	6075	2.467	29.97
2	20	41	3850	2.467	19.00
2	20	41	3850	2.467	19.00
				Tonnes	8.23

Unit 4 (18)					
Nr	Dia	Bar Mark	length	kg /m	KG
3	16	18	1850	1.579	8.76
36	20	39	4150	2.467	368.57
2	20	17	4300	2.467	21.22
45	20	3	4525	2.467	502.34
44	20	2	3450	2.467	374.49
36	20	40	4625	2.467	410.76
36	20	40	4625	2.467	410.76
2	20	17	4300	2.467	21.22
45	32	6	2775	6.316	788.71
44	32	7	1750	6.316	486.33
36	20	40	4625	2.467	410.76
36	20	40	4625	2.467	410.76
2	20	17	4300	2.467	21.22
45	16	8	1600	1.579	113.69
44	16	9	2425	1.579	168.48
36	20	39	4150	2.467	368.57
3	16	18	1850	1.579	8.76
2	20	16	4050	2.467	19.98
89	32	1	5225	6.316	2,937.10

FOISA Exempt

2	20	16	4050	2.467	19.98
44	20	3	4525	2.467	491.18
2	20	31	4075	2.467	20.11
2	20	17	1750	2.467	8.63
2	20	31	4075	2.467	20.11
2	20	16	4050	2.467	19.98
2	20	16	4050	2.467	19.98
				Tonnes	8.45

Re-measurement of IFC Reinforcement

Summary		Tonnes
Unit Base	3	4.60
	4	4.86
	5	5.10
	6	3.86
	7	3.86
	8	3.86
	9	5.16
	11	4.25
	10	6.14
	15	5.67
	16	5.71
	17	5.60
	18	5.59
		64.27

Base 3					
Nr	Dia	Bar Mark	length	kg /m	KG
2	16	338	1500	1.579	4.74
11	20	347	4500	2.467	122.12
11	20	348	5150	2.467	139.76
11	20	348	5150	2.467	139.76
47	16	332	2875	1.579	213.36
47	16	331	2050	1.579	152.14
47	16	331	2050	1.579	152.14
47	16	332	2875	1.579	213.36
11	20	348	5150	2.467	139.76
11	20	348	5150	2.467	139.76
11	20	347	4500	2.467	122.12
2	16	339	2425	1.579	7.66
94	32	333	5150	6.316	3,057.58
				Tonnes	4.60

FOISA Exempt

Base 4					
Nr	Dia	Bar Mark	length	kg /m	KG
2	20	365	2450	2.467	12.09
11	20	347	4500	2.467	122.12
11	20	347	4500	2.467	122.12
11	20	348	5150	2.467	139.76
47	16	331	2050	1.579	152.14
47	16	332	2875	1.579	213.36
11	20	348	5150	2.467	139.76
11	20	348	5150	2.467	139.76
11	20	347	4500	2.467	122.12
2	20	345	2450	2.467	12.09
47	20	351	3200	2.467	371.04
47	20	352	2175	2.467	252.19
94	32	333	5150	6.316	3,057.58
				Tonnes	4.86

Base 5					
Nr	Dia	Bar Mark	length	kg /m	KG
11	20	32	4500	2.467	122.12
11	20	33	5150	2.467	139.76
11	20	33	5150	2.467	139.76
11	20	33	5150	2.467	139.76
11	20	33	5150	2.467	139.76
11	20	32	4500	2.467	122.12
47	20	36	3200	2.467	371.04
47	20	37	2175	2.467	252.19
2	20	41	2450	2.467	12.09
2	20	41	2450	2.467	12.09
47	16	30	2875	1.579	213.36
47	16	31	5150	1.579	382.20
94	32	31	5150	6.316	3,057.58
				Tonnes	5.10

Base 6					
Nr	Dia	Bar Mark	length	kg /m	KG
11	20	32	4500	2.467	122.12
11	20	33	5150	2.467	139.76
11	20	33	5150	2.467	139.76
11	20	33	5150	2.467	139.76
11	20	33	5150	2.467	139.76
11	20	32	4500	2.467	122.12
94	32	31	5150	6.316	3,057.58
				Tonnes	3.86

FOISA Exempt

Base 7					
Nr	Dia	Bar Mark	length	kg /m	KG
11	20	32	4500	2.467	122.12
11	20	33	5150	2.467	139.76
11	20	33	5150	2.467	139.76
11	20	33	5150	2.467	139.76
11	20	33	5150	2.467	139.76
11	20	32	4500	2.467	122.12
94	32	31	5150	6.316	3,057.58
				Tonnes	3.86

Base 8					
Nr	Dia	Bar Mark	length	kg /m	KG
11	20	32	4500	2.467	122.12
11	20	33	5150	2.467	139.76
11	20	33	5150	2.467	139.76
11	20	33	5150	2.467	139.76
11	20	33	5150	2.467	139.76
11	20	32	4500	2.467	122.12
94	32	31	5150	6.316	3,057.58
				Tonnes	3.86

Base 9					
Nr	Dia	Bar Mark	length	kg /m	KG
11	20	66	4750	2.467	128.90
11	20	66	4525	2.467	122.79
11	20	66	4525	2.467	122.79
11	20	66	4525	2.467	122.79
11	20	66	4525	2.467	122.79
11	20	66	4275	2.467	116.01
92	32	64	5150	6.316	2,992.52
41	20	71	4000	2.467	404.59
41	20	72	3175	2.467	321.14
41	20	69	3850	2.467	389.42
41	20	70	3150	2.467	318.61
				Tonnes	5.16

Base 11					
Nr	Dia	Bar Mark	length	kg /m	KG
11	20	65	4275	2.467	116.01
11	20	67	6750	2.467	183.17
11	20	67	6750	2.467	183.17
11	20	66	4275	2.467	116.01
70	32	64	5150	6.316	2,276.92
35	20	75	3950	2.467	341.06
35	20	74	3700	2.467	319.48
35	20	73	4525	2.467	390.71
35	20	74	3700	2.467	319.48
				Tonnes	4.25

FOISA Exempt

Base 10					
Nr	Dia	Bar Mark	length	kg /m	KG
6	20	20	2600	2.467	38.49
1	30	11	3725	2.467	9.19
6	20	21	3400	2.467	50.33
1	30	11	3725	6.316	23.53
1	30	12	3425	6.316	21.63
11	20	15	3175	2.467	86.16
11	20	15	3175	2.467	86.16
6	20	17	6000	2.467	88.81
11	20	14	6500	2.467	176.39
11	20	14	6500	2.467	176.39
6	20	15	3175	2.467	47.00
11	20	13	5175	2.467	140.43
71	32	22	5150	6.316	2,309.45
71	32	22	5150	6.316	2,309.45
4	20	16	3600	2.467	35.52
6	20	11	3725	2.467	55.14
1	32	9	4625	6.316	29.21
6	20	11	3725	2.467	55.14
6	20	11	3725	2.467	55.14
11	32	5	3700	6.316	257.06
11	20	1	3175	2.467	86.16
				Tonnes	6.14

Base 15					
Nr	Dia	Bar Mark	length	kg /m	KG
3	16	10	3650	1.579	17.29
11	20	5	4925	2.467	133.65
11	20	5	4925	2.467	133.65
11	20	5	4925	2.467	133.65
11	20	5	4925	2.467	133.65
11	20	4	4275	2.467	116.01
3	16	18	2350	1.579	11.13
89	32	1	5150	6.316	2,894.94
45	16	8	2025	1.579	143.89
44	16	9	2850	1.579	198.01
45	32	6	3150	6.316	895.29
45	32	7	2125	6.316	603.97
11	20	4	4275	5.467	257.09
				Tonnes	5.67

Base 16					
Nr	Dia	Bar Mark	length	kg /m	KG
3	16	18	2350	1.579	11.13
11	20	39	4625	2.467	125.51
11	20	40	4625	2.467	125.51
11	20	41	4625	2.467	125.51
45	32	6	3150	6.316	895.29

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45	32	7	2125	6.316	603.97
11	20	40	4625	2.467	125.51
11	20	40	4625	6.316	321.33
45	16	8	2025	1.579	143.89
45	16	9	2850	1.579	202.51
11	20	39	4625	2.467	125.51
3	16	18	2350	1.579	11.13
89	32	1	5150	6.316	2,894.94
				Tonnes	5.71

Base 17					
Nr	Dia	Bar Mark	length	kg /m	KG
3	16	18	2350	1.579	11.13
11	20	39	4625	2.467	125.51
11	20	40	4625	2.467	125.51
11	20	40	4625	2.467	125.51
45	32	6	3275	6.316	930.82
45	32	7	2250	6.316	639.50
11	20	40	4625	2.467	125.51
11	20	40	4625	2.467	125.51
45	16	8	2100	1.579	149.22
45	16	9	2925	1.579	207.84
11	20	39	4625	2.467	125.51
3	16	11	3250	1.579	15.40
89	32	1	5150	6.316	2,894.94
				Tonnes	5.60

Base 18					
Nr	Dia	Bar Mark	length	kg /m	KG
3	16	11	2380	1.579	11.27
11	20	39	4625	2.467	125.51
11	20	40	4625	2.467	125.51
11	20	40	4625	2.467	125.51
45	32	6	3275	6.316	930.82
44	32	7	2250	6.316	625.28
11	20	40	4625	2.467	125.51
11	20	40	4625	2.467	125.51
45	16	8	2100	1.579	149.22
45	16	9	2925	1.579	207.84
11	20	39	4625	2.467	125.51
3	16	11	3275	1.579	15.51
89	32	1	5150	6.316	2,894.94
				Tonnes	5.59



**APPENDIX TO THE POSITION PAPER
INVENTORY OF PRODUCTIONS FOR TIE
REFERRED TO IN THE POSITION PAPER**

IN THE MATTER OF A DISPUTE

BETWEEN

tie LIMITED

and

BILFINGER BERGER UK LIMITED; SIEMENS PLC; and

CONSTRUCCIONES Y AUXILIAR DE FERROCARRILES S.A.

1. Copy of letter with enclosures from Bilfinger Berger-Siemens-CAF Consortium to tie Limited dated 14 October 2008 (reference 25.1.201/IO/682);
2. Copy of letter from tie Limited to Bilfinger Berger-Siemens-CAF Consortium dated 31 October 2008 (reference INF CORR 318);
3. Copy of letter from Bilfinger Berger-Siemens-CAF Consortium to tie Limited dated 4 November 2008 (reference 25.1.201/MRH/836);
4. Copy of letter from Bilfinger Berger-Siemens-CAF Consortium to tie Limited dated 21 November 2008 (reference 25.1.201/MRH/993);
5. Copy of letter from tie Limited to Bilfinger Berger-Siemens-CAF Consortium dated 9 December 2008 (reference INF CORR 439);
6. Copy of letter from Bilfinger Berger-Siemens-CAF Consortium to tie Limited dated 12 December 2008 (reference 25.1.201/MRH/1162);
7. Copy of letter from Bilfinger Berger-Siemens-CAF Consortium to tie Limited dated 16 December 2008 (reference 25.1.201/MRH/1173);
8. Copy of letter from tie Limited to Bilfinger Berger-Siemens-CAF Consortium dated 20 January 2009 (reference INF CORR 575);
9. Copy of letter from Bilfinger Berger-Siemens-CAF Consortium to tie Limited dated 27 January 2009 (reference 25.1.201/IL/1356);
10. Copy of letter from Bilfinger Berger-Siemens-CAF Consortium to tie Limited dated 26 February 2009 (reference 25.1.201/RS/1752);
11. Copy of letter from tie Limited to Bilfinger Berger-Siemens-CAF Consortium dated 10 March 2009 (reference INF CORR 821);
12. Copy of letter from tie Limited to Bilfinger Berger-Siemens-CAF Consortium dated 12 March 2009 (reference INF CORR 988);



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13. Copy of letter from **tie** Limited to Bilfinger Berger-Siemens-CAF Consortium dated 16 March 2009 (reference INF CORR 1032);
14. Copy of letter from Bilfinger Berger-Siemens-CAF Consortium to **tie** Limited dated 20 March 2009 (reference 25.1.201/MRH/2022);
15. Copy of letter from **tie** Limited to Bilfinger Berger-Siemens-CAF Consortium dated 9 April 2009 (reference INF CORR 1217/TC);
16. Copy of letter with enclosures from Bilfinger Berger-Siemens-CAF Consortium to **tie** Limited dated 14 May 2009 (reference 25.1.201/IO/2625);
17. Copy of letter from **tie** Limited to Bilfinger Berger-Siemens-CAF Consortium dated 22 May 2009 (reference INF CORR 1510/GMcG);
18. Copy of letter from Bilfinger Berger-Siemens-CAF Consortium to **tie** Limited dated 27 May 2009 (reference 25.1.201/MRH/2738);
19. Copy of e-mail from Graeme McGinty of **tie** Limited to Ian Orr of Bilfinger Berger-Siemens-CAF Consortium dated 17 June 2009 timed at 13:31;
20. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00029 Revision 1 dated 2 November 2007 - (Base Date Design Information);
21. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00030 Revision 1 dated 8 November 2007 - (Base Date Design Information);
22. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00031 Revision 1 dated 8 November 2007 - (Base Date Design Information);
23. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00032 Revision 1 dated 8 November 2007 - (Base Date Design Information);
24. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00033 Revision 1 dated 8 November 2007 - (Base Date Design Information);
25. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00034 Revision 1 dated 8 November 2007 - (Base Date Design Information);
26. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00035 Revision 1 dated 8 November 2007 - (Base Date Design Information);
27. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00036 Revision 1 dated 16 November 2007 - (Base Date Design Information);
28. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00037 Revision 1 dated 16 November 2007 - (Base Date Design Information);
29. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00038 Revision 1 dated 14 November 2007 - (Base Date Design Information);
30. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00039 Revision 1 dated 14 November 2007 - (Base Date Design Information);



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31. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00040 Revision 1 dated 2 November 2007 - (Base Date Design Information);
32. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00041 Revision 1 dated 2 November 2007 - (Base Date Design Information);
33. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00042 Revision 1 dated 2 November 2007 - (Base Date Design Information);
34. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00043 Revision 1 dated 13 November 2007 - (Base Date Design Information);
35. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00045 Revision 1 dated 2 November 2007 - (Base Date Design Information);
36. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00046 Revision 1 dated 2 November 2007 - (Base Date Design Information);
37. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00047 Revision 1 dated 2 November 2007 - (Base Date Design Information);
38. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00048 Revision 1 dated 13 November 2007 - (Base Date Design Information);
39. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00049 Revision 1 dated 13 November 2007 - (Base Date Design Information);
40. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00050 Revision 1 dated 2 November 2007 - (Base Date Design Information);
41. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00051 Revision 1 dated 2 November 2007 - (Base Date Design Information);
42. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00052 Revision 1 dated 2 November 2007 - (Base Date Design Information);
43. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00053 Revision 1 dated 2 November 2007 - (Base Date Design Information);
44. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00054 Revision 1 dated 14 November 2007 - (Base Date Design Information);
45. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00055 Revision 1 dated 13 November 2007 - (Base Date Design Information);
46. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00056 Revision 1 dated 2 November 2007 - (Base Date Design Information);
47. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00057 Revision 1 dated 2 November 2007 - (Base Date Design Information);
48. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00058 Revision 1 dated 2 November 2007 - (Base Date Design Information);



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49. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00059 Revision 1 dated 2 November 2007 - (Base Date Design Information);
50. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00060 Revision 1 dated 2 November 2007 - (Base Date Design Information);
51. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00029 Revision 3 dated 11 July 2008 - (Issued For Construction);
52. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00030 Revision 3 dated 11 July 2008 - (Issued For Construction);
53. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00031 Revision 3 dated 11 July 2008 - (Issued For Construction);
54. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00032 Revision 3 dated 11 July 2008 - (Issued For Construction);
55. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00033 Revision 3 dated 11 July 2008 - (Issued For Construction);
56. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00034 Revision 3 dated 11 July 2008 - (Issued For Construction);
57. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00035 Revision 3 dated 11 July 2008 - (Issued For Construction);
58. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00036 Revision 3 dated 11 July 2008 - (Issued For Construction);
59. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00037 Revision 3 dated 11 July 2008 - (Issued For Construction);
60. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00038 Revision 3 dated 11 July 2008 - (Issued For Construction);
61. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00039 Revision 3 dated 11 July 2008 - (Issued For Construction);
62. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00040 Revision 3 dated 11 July 2008 - (Issued For Construction);
63. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00041 Revision 3 dated 11 July 2008 - (Issued For Construction);
64. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00042 Revision 3 dated 11 July 2008 - (Issued For Construction);
65. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00043 Revision 3 dated 11 July 2008 - (Issued For Construction);
66. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00044 Revision 2 dated 11 July 2008 - (Issued For Construction);

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67. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00045 Revision 3 dated 11 July 2008 - (Issued For Construction);
68. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00046 Revision 3 dated 11 July 2008 - (Issued For Construction);
69. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00047 Revision 3 dated 11 July 2008 - (Issued For Construction);
70. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00048 Revision 3 dated 11 July 2008 - (Issued For Construction);
71. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00049 Revision 3 dated 11 July 2008 - (Issued For Construction);
72. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00050 Revision 3 dated 11 July 2008 - (Issued For Construction);
73. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00051 Revision 3 dated 11 July 2008 - (Issued For Construction);
74. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00052 Revision 3 dated 11 July 2008 - (Issued For Construction);
75. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00053 Revision 3 dated 11 July 2008 - (Issued For Construction);
76. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00054 Revision 3 dated 11 July 2008 - (Issued For Construction);
77. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00055 Revision 3 dated 11 July 2008 - (Issued For Construction);
78. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00056 Revision 3 dated 11 July 2008 - (Issued For Construction);
79. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00057 Revision 3 dated 11 July 2008 - (Issued For Construction);
80. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00058 Revision 3 dated 11 July 2008 - (Issued For Construction);
81. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00059 Revision 3 dated 11 July 2008 - (Issued For Construction);
82. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00060 Revision 3 dated 11 July 2008 - (Issued For Construction);
83. Copy of Parsons Brinckerhoff drawing number ULE90130-05-RTW-00061 Revision 3 dated 11 July 2008 - (Issued For Construction); and
84. Copy of drawing entitled "*Trams for Edinburgh: Available to Infracore – Haymarket Yards to Murrayfield*" dated April 2008 Sheet 10 version 3.