

PARSONS BRINCKERHOFF LIMITED

SDS CONTRACT

DISCLOSURE STATEMENT

Date 31 March 2008

Table of Contents

1	Introduction	4
2	Current Scope of Services	4
2.1	Overview.....	4
2.2	Phase III Status	5
2.2.1	Overview.....	5
2.2.2	Detailed Design Deliverables to tie	5
2.2.3	Prior Approvals.....	5
2.2.4	Technical Approvals	5
2.3	Phase IV Status	6
2.3.1	Overview.....	6
2.4	Financial Account.....	6
3	Changes to Scope - Alignment with the Employer's Requirements	6
4	Changes to Scope - Alignment with the BBS Offer	6
5	Changes to Scope - Alignment with the BBS Programme	7
6	Additional Scope – Construction Support Services	7
7	Additional Scope – Management Services	8
8	Commercial.....	8
8.1	General.....	8
8.2	Completion of Phase III.....	8
8.3	Execution of Phase IV	8
8.4	Changes to Scope.....	8
8.5	Additional Scope – Construction Support Services.... Error! Bookmark not defined.	
8.6	Additional Scope - Management Services.....	9
APPENDIX 1.....	Third Party Agreements & Undertakings.....	10
APPENDIX 2.....	Works Outwith the Limits of Deviation	11
APPENDIX 3.....	Deliverables to tie	12
APPENDIX 4.....	Prior Approvals	13
APPENDIX 5.....		14

Technical Approvals	14
APPENDIX 6.....	15
Contract Pricing and Payment Certification.....	15
APPENDIX 7.....	16
Misalignment Assessment Report Employers Requirments version 3.6	16
APPENDIX 8.....	17
Misalignment Assessment Report BBS Civils Offer.....	17
APPENDIX 9.....	18
Misalignment Assessment Report BBS Systems Offer	18

1 Introduction

This document provides a detailed assessment of:-

- The current status of the SDS Agreement between **tie** and Parsons Brinckerhoff in terms of the Deliverables submitted to 31 March 2008 and the remaining Deliverables to be completed under the terms of the SDS Agreement for the currently defined scope of services
- The SDS scope of work which may be required depending on **tie**'s decision to instruct changes to bring about alignment of the SDS Design & Procurement Documentation and the Employer's Requirements **version 3.6b**
- The SDS scope of work which may be required depending on **tie**'s decision to instruct changes to bring about alignment of the SDS Design & Procurement Documentation and the BBS Offers for Systems, Civils and the Infracore ETN works.

Comment [S C1]: Version to be kept under review

The document contains as appendices detailed schedules to support the scope, programme, and pricing analysis presented in Sections 2 to 7.

2 Current Scope of Services

2.1 Overview

The scope of work covered by the SDS Agreement can be considered as four Phases of work, (the same categorisation as is used for the monthly applications for payment):-

1. Phase I Requirements Definition
2. Phase II Preliminary Design
3. Phase III Detailed Design
4. Phase IV Construction Support

Phases I and II are complete. This Statement considers the status of Phases III and IV.

The SDS Agreement provides for the scope of services to be undertaken in accordance with a number of Third Party Agreements. Appendix 1 provides a summary Schedule of Third Party Agreements.

The SDS Agreement envisaged that the works would be designed so as to ensure compliance with the Limits of Deviation, (LOD), insofar as this is possible. As required by the Novation Agreement a schedule of exceptions has been drawn up. This Schedule of Works Outwith the LOD is reproduced here as Appendix 2.

2.2 Phase III Status

2.2.1 Overview

The Deliverables to be produced by PB for the Edinburgh Tram Network under Phase III of the SDS Agreement can be categorised as Detailed Design packages delivered to **tie** and submissions presented for Prior and Technical Approvals.

The deliverables to be produced by PB for MUDFA are the IFC Drawing packages for each of the Network Sub-sections.

2.2.2 Detailed Design Deliverables to tie

Appendix 3 provides a schedule of Detailed Design Deliverables to **tie**. The schedule is arranged by delivery date to facilitate an assessment of work completed and work remaining. The position at 31 March 2008 can be summarised thus:-

Total Number of Deliverables	Total Delivered	Total Remaining to be Delivered
329	290	39

Comment [S C2]: Numbers to be validated

2.2.3 Prior Approvals

Appendix 4 provides a schedule of Prior Approvals Submissions. The schedule is arranged by delivery date to facilitate an assessment of work completed and work remaining. The position at 31 March 2008 can be summarised thus:-

Total Number of Prior Approvals	Total Submitted	Total Remaining to be Submitted
61	15	46

Comment [S C3]: Numbers to be validated

2.2.4 Technical Approvals

Appendix 4 provides a schedule of Technical Approvals Submissions. The schedule is arranged by delivery date to facilitate an assessment of work completed and work remaining. The position at 31 March 2008 can be summarised thus:-

Total Number of Technical Approvals	Total Submitted	Total Remaining to be Submitted
61	15	46

Comment [S C4]: Numbers to be validated

2.3 Phase IV Status

2.3.1 Overview

The Deliverables to be produced by PB for the Edinburgh Tram Network under Phase IV of the SDS Agreement are defined at Clause 3.1 of Schedule 1, "Scope of Services" to the SDS Contract:-

3.1 Procurement and Construction Support

3.1.1 *The SDS Provider shall produce all technical documentation required for the procurement of the Infraco Contract and thereafter technical documentation to facilitate the construction and the commissioning of the Edinburgh Tram Network. This documentation shall be structured to provide the most detailed information for each part of the Edinburgh Tram Network, either as applicable to the technical element, or as is available reflecting the then current status of the design detail of the Sector or Sub-Sector. This documentation shall include drawings, Technical Specifications, bills of quantities, schedules of materials, a maintenance plan (including lifecycle) and schedules, and other items of documentation as may be required for procurement, construction, and pricing purposes.*

PB proposes to provide Construction Support as described in response to requests received from BBS for documentation produced under Phase III of the SDS Agreement.

No work has yet been started under Phase IV.

2.4 Financial Account

A full analysis of the SDS Contract Account, correct to 31 March 2008, is provided as Appendix 6.

3 Changes to Scope - Alignment with the Employer's Requirements

Appendix 7 provides the results of the assessment carried out by PB to identify instances of misalignment between the Employer's Requirements, version 3.6b, and the SDS Design as it stands currently and as it is intended to complete it. The assessment highlights where advice is required from the Employer on the instruction of changes to be made to the SDS Design & Procurement Documentation.

4 Changes to Scope - Alignment with the BBS Offer

Appendix 8 provides the results of the assessment carried out by PB to identify instances of misalignment between the BBS Civils Offer and the SDS Design as it stands currently and as it is intended to complete it.

Comment [S C5]: Need to decide how much of this sub-clause to repeat here, if any at all

Comment [S C6]: Need a form of words to cover the production of as-built drawings to the extent that it is included, vs the production of new documentation required to incorporate BBS designs – this element not being included as part of the phase IV scope.

Comment [S C7]: PB intends to utilise one SDM (Ney), one Doc Controller, (Benn) plus two CAD technicians to fulfil its Ph IV obligations

Comment [S C8]: Date to be kept under review

Comment [S C9]: Version to be kept under review

Appendix 9 provides the results of the assessment carried out by PB to identify instances of misalignment between the BBS Systems Offer and the SDS Design as it stands currently and as it is intended to complete it.

Throughout the assessments PB has assumed that BBS is responsible for completing the design beyond the submission by PB of the deliverables to tie and for approval as specified in section 2 above.

The assessments highlight where advice is required from tie on the interpretation and acceptance of the Offers. These decisions will potentially result in changes being instructed to the SDS Design.

Where changes are instructed prior to novation it is assumed that price and programme variations will be agreed with tie in line with the existing change control procedures.

Where changes are instructed at some point after novation it is assumed that price and programme variations will be agreed with BBS in line with the existing change control procedures. A schedule of rates is proposed in Section 8 for the calculation of variation prices.

It is likely that changes which are instructed to the SDS Design to achieve alignment with the BBS Offer will disrupt the process for submission of deliverables for Prior and Technical Approval. Where this occurs it is proposed that an application for payment of the outstanding sum which would have been due on approval of the affected deliverable(s) is made when the change is agreed.

Catch-all:- Form of words required to address IFCs to be updated by SDS but paid for as additional to scope.

Comment [S C10]: This part is key given the experience of this week's meetings on novation. It is now clear that perhaps the most substantial misalignment arises due to Siemens expectations of PB carrying forward their designs through incorporation with our Infrastructure designs and thence through Approval. The initial supposition of PB assuming design integration and programme risk arising from the integration of the Siemens designs has been tempered somewhat but what is needed in the scope definition is a clear explanation of what has to be done and by whom to take the PB and BB /Siemens components to an integrated form and then through approval to IFC. This is potentially a significant amount of work for PB and in common with the other items included in the Scope Appendix to the Novation Agreement it will need to be fully priced and programmed.

Comment [S C11]: Rates to be reviewed

5 Changes to Scope - Alignment with the BBS Programme

Form of words needed depending on progress achieved at the Programme Review meetings, with one eye on the Novation provisions for incentivisation:-

- * Appendix 10 – schedule of conflicts and needs for acceleration?
- * Assumptions on approvals timescales – departures from the SDS Agreement

6 Additional Scope – Construction Support Services

A separate Agreement is preferred for this scope of work. Pricing required for team of twelve against current rates – these rates are not tied to the SDS Agreement rates which have to be maintained through 2009. The rates for CS work should be current market rates plus expenses.

Comment [S C12]: Form of words against this scope of work required to reduce risk – Alan Dolan has the thinking

7 Additional Scope – Management Services

The requirements for management services will depend principally upon the volume of work to be executed to respond to the changes instructed to bring about alignment between the SDS Design and the BBS Offer.

- ❖ Completion of Phase III as currently scoped is included in our current services (plus the prolongation claim)
- ❖ Execution of Phase IV is also included
- ❖ Management of the Construction Support Services team of twelve should ideally be under a separate agreement but if we decide we can take it on through the SDS Agreement then the management of that may be able to be combined with our other commitments.

The additional management work comes about from the need to manage the alignment exercise. It is proposed that a core management team will be maintained to manage these changes including approvals management and interface management. Depending on the agreement reached on incorporation of the BB /Siemens designs referred to in Section 4 above this team may be a large team. If the changes instructed are not substantial then the residual management team can reduce to a core of PM, Commercial Manager, Planner, and SDM.

8 Commercial

8.1 General

This section sets out PB's commercial proposals in respect of each of the elements of scope of work described above.

8.2 Completion of Phase III

The Phase III scope of work will be completed under the terms of the SDS Agreement and in accordance with the SDS Design Programme.

8.3 Execution of Phase IV

The Phase IV scope of work will be completed under the terms of the SDS Agreement.

Comment [S C13]: Statement required on programme duration and rates beyond end 2009.

8.4 Changes to Scope

Changes to scope arising from the need to change the SDS Design to align with the Employer's Requirements version 3.6b or the BBS Offer will be

Comment [S C14]: Version to be kept under review

completed under the terms of the SDS Agreement following receipt of instructions from the Client.

A table of rates is proposed for the pricing of variations agreed as a result of changes to scope:-

Reference	Role	Hourly Rate
GD	Graduate Designer	
SD	Senior Designer	
PD	Principal Designer	
CT	CAD Technician	
ST	Senior CAD Technician	
TS	Technical Support	

Rates to include.....

8.5 Additional Scope - Management Services

Core management team to manage the above scope

APPENDIX 1

Third Party Agreements & Undertakings

Schedule of Third Party Agreements

No.	Party	Tram Line	Received from tie	Comments
1	ADM Milling	ETL1	✓	To be revised with Forth Ports change
2	BAE Systems - Selex	ETL1	✓	
3	Crown Estate Commissioners	ETL1	✓	
4	Forth Ports	ETL1	✓	Revised agreement not yet finalised
5	Holyrood Elphinstone Group	ETL1	✓	
6	Ocean Terminal	ETL1	✓	May be revised with Forth Ports change
7	Royal Yacht Britannia	ETL1	✓	May be revised with Forth Ports change
8	Secondsite - Port Greenwich	ETL1	✓	
9	Stanley Casinos - not yet finalised	ETL1	Draft	
10	Caledonian Ale House	ETL1&2	✓	
11	CGM Edinburgh Ltd	ETL1&2	✓	
12	ICAS	ETL1&2	✓	
13	Kenmore Capital	ETL1&2	✓	
14	Land Securities Trillium	ETL1&2	✓	
15	NULAP	ETL1&2	✓	
16	Trustees of City Point	ETL1&2	✓	
17	Verity Trustees	ETL1&2	✓	
18	BAA	ETL2	✓	
19	BRB Residuary	ETL2	✓	Only valid for Phase 3 - not in current SDS scope
20	Clerical Medical Investment Group	ETL2	✓	
21	FSH (Frogmore)	ETL2	✓	
22	Grampian Country Foods/Marshall Food Group	ETL2	✓	Only valid for Phase 3 - not in current SDS scope
23	JB McLean Interiors	ETL2	✓	
24	Jenners (JPSE)	ETL2	✓	
25	McDonalds Restaurant	ETL2	✓	Only valid for Phase 3 - not in current SDS scope
26	Murrayfield Indoor Sports Centre	ETL2	✓	
27	NEL + EPML	ETL2	✓	
28	NIL	ETL2	✓	
29	RBSI + Hanover Properties	ETL2	✓	Only valid for Phase 3 - not in current SDS scope
30	RHASS	ETL2	✓	Only valid for Phase 3 - not in current SDS scope
31	Royal Mail	ETL2	✗	Repeats item 45
32	Safeway-Morrisons	ETL2	✓	
33	SRU - not yet finalised	ETL2	Draft	
34	Stakis Hotel (Edinburgh Airport)	ETL2	✓	
35	UGC Properties	ETL2	✓	
36	Universities Superannuation Scheme (USS)	ETL2	✓	
37	West Craigs Ltd (previously Meadowfield Developments Ltd)	ETL2	✓	
38	Adshel	Route Wide	✓	Relocation/ removal of bus shelters: required tie/CEC to negotiate as required per approvals granted - Advertising Consents issue.
39	British Transport Police	Route Wide	✓	
40	BT	Route Wide	✓	
41	Cable & Wireless	Route Wide	✓	
42	Easynet Telecomms Ltd	Route Wide	✓	

Date 27 March 2008

PBH00018014_0011

Schedule of Third Party Agreements

43	Historic Scotland	Route Wide	✓	
44	NTL	Route Wide	✓	
45	Royal Mail	Route Wide	✓	
46	Scotrail	Route Wide	✓	
47	Scottish Water	Route Wide	✓	
48	Thus	Route Wide	✓	
49	Transco	Route Wide	✓	

Date 27 March 2008

PBH00018014_0012

APPENDIX 2

Works Outwith the Limits of Deviation

Works Outwith the Limits of Deviation. Notes

- There is outstanding design in Section 1A (Forth Ports) to be finalised
- Some section-wide Street Lighting designs are yet to be finalised
- There is also additional work outside the LOD that PB understands will be instructed (wider area signing and other works). This is noted here but cannot be located and quantified until verification of scope is received from tie. The affected areas are highlighted these in yellow.

One specific item of potential works outwith the LOD has arisen recently from part of a change instruction now being implemented in Sub-section 3C at West Pilton Way. The details are as follows:-

- Discipline: Roads, Drainage
- Description: Regrading of approx. 20m of West Pilton Way beyond LOD in order to tie-in with tramway crossing point.

Schedule of Works Outwith the LOD

Section	Description	Reference	Source	Temporary or Permanent
1A	Footway along Lindsay Road adjoining Forth Ports area (to be confirmed)	CR253, ULE90130-01-HRL00001, 2	Roads	Permanent
1A	Lindsay Road - required for lowering of Roadway	CR253, ULE90130-01-HRL00001, 2	Roads	Permanent
1A	Lindsay Road Retaining Wall (revised as part of Forth Ports change - to be confirmed with detailed design)	CR253, ULE90130-01-HRL00001, 2	Structures	Permanent
1A	Realigned Ocean Drive and footpath / cycleway	CR253, ULE90130-01-HRL00002	Roads	Permanent
1A	Connection to Access Drive 1 (as part of Forth Ports change - to be confirmed with detailed design)	CR253, ULE90130-01-HRL00002	Roads	Permanent
1A	Connection to Access Drive 2 (as part of Forth Ports change - to be confirmed with detailed design)	CR253, ULE90130-01-HRL00002	Roads	Permanent
1A	Footpath along Scottish and Southern Substation	CR253, ULE90130-01-HRL00002	Roads	Permanent
1A	Realignment of Bus loop at Cruise Berth	CR253, ULE90130-01-HRL00002	Roads	Permanent
1A	Pavements along revised Ocean Drive (to be confirmed due to Forth Ports change)	CR252, 253 ULE90130-01-HRL00002, 3, 4	Roads	Permanent
1A	Ocean Drive 'bypass' road and associated elements, subject to instruction to proceed with layout agreement with Forth Ports / CEC	CR252, ULE90130-01-HRL00004	Roads	Permanent
1A	Rennies Isle Road markings, kerb line, paving	ULE90130-01-HRL00005	Roads	Permanent
1A	Tower Place Bridge - widen to include footpath (to be confirmed with detailed design)	CR 278, ULE90130-01-HRL00005	Structures	Permanent
1A	Tower Place Bridge - steps, ramp, ancillaries	ULE90130-01-HRL00005	Structures / Accommodation works	Permanent
1A	Stanley Casino Car Park - Road Markings, signage, kerbing, fencing, landscaping (to be finalised)	ULE90130-01-HRL00006, 7	Roads / Accommodation works	Permanent
1A	Pavements along Ocean Drive	ULE90130-01-TAL-00002 to 00006	Roads	Permanent
1A	Ocean Drive / Tower Place Paving	ULE90130-01-HRL00006	Roads	Permanent
1A	Casino Car Park	CR254, ULE90130-01-HRL00007	Roads	Permanent
1A	Constitution Street, Tower Street - Road surface / Markings, signal infrastructure, signage, kerbing	ULE90130-01-TAL-00006	Roads	Permanent
1A	Constitution Street, Baltic Street - Road Markings, signage	ULE90130-01-TAL-00007	Roads	Permanent
1A	Baltic Street - closure of the side street (remedial works, signing)	Comments from CEC walkthrough 31 July (A. Conway) / ULE90130-01-TAL-00007	Roads	Permanent
1A	Bernard Street - roadworks to tie into existing condition / CEC project.	CR259, ULE90130-01-HRL00007	Roads	Permanent / Temporary
1A	Constitution Street, Bernard Street- Road Markings, signage	ULE90130-01-HRL00007	Roads	Permanent
1A	Constitution Street, Mitchell Street - Road Markings, signage	ULE90130-01-HRL00007	Roads	Permanent
1A	Constitution Street, Maritime Lane - Road Markings, signage	ULE90130-01-HRL00007	Roads	Permanent
1A	Constitution Street, Queen Charlotte Street - Road Markings, signage	ULE90130-01-TAL-00008	Roads	Permanent
1A	Street Lighting Section 1A	ULE90130-01-TAL-00001, 00006 to 00009	Lighting	Permanent
1A	Constitution Street east side north of Queen Charlotte Street, opposite Bernard Street Tramstop - paving	ULE90130-01-HRL00008	Roads	Permanent
1A	Constitution Street, Coatfield Lane - paving	ULE90130-01-HRL00008	Roads	Permanent
1A	Constitution Street, Kirkgate - signage and paving	ULE90130-01-HRL00008	Roads	Permanent
1B	FOTW Junction - Road Markings, kerbing, signage	ULE90130-01-TAL-00010	Roads	Permanent
1B	Great Junction Street - Site clearnace, surfacing	ULE90130-01-HRL00010	Roads	Permanent
1B	Duke Street - Road surfacing	ULE90130-01-HRL00010	Roads	Permanent
1B	Leith Walk, Kirk Street - Road Surfacing	ULE90130-01-HRL00010	Roads	Permanent

Date 27 March 2008

PBH00018014_0015

Schedule of Works Outwith the LOD

Section	Description	Reference	Source	Temporary or Permanent
1B	Basestation at James Street (Leith Walk area) to provide coverage in and around this area.	HB#40411	SCC	Permanent
1B	Leith Walk, Crown Place - Road Markings, signage	ULE90130-01-TAL-00010	Roads	Permanent
1B	Leith Walk, Casselbank Street - Road Markings, signage	ULE90130-01-TAL-00010	Roads	Permanent
1B	Leith Walk, Crown Street - Road Markings, signage	ULE90130-01-TAL-00010	Roads	Permanent
1B	Leith Walk, Jane Street - Road Markings, signage	ULE90130-01-TAL-00010	Roads	Permanent
1B	Leith Walk, Manderston Street - Road Markings, signage	ULE90130-01-TAL-00010	Roads	Permanent
1B	Leith Walk, Springfield Street - Road Markings, signage	ULE90130-01-TAL-00011	Roads	Permanent
1B	Leith Walk Depot - within LLAU		Substation	Permanent
1B	Leith Walk, Steads Place - Road markings	ULE90130-01-HRL00011	Roads	Permanent
1B	Leith Walk, Smiths Place - Road Markings, signage	ULE90130-01-TAL-00011	Roads	Permanent
1B	Leith Walk, Lorne Street - Road Markings, signage	ULE90130-01-TAL-00011	Roads	Permanent
1B	Leith Walk, Jameson Place - Road Markings, signage	ULE90130-01-HRL00012	Roads	Permanent
1B	Leith Walk, Balfour Street - Road Markings, signage	ULE90130-01-HRL00011	Roads	Permanent
1B	Leith Walk, Arthur Street - Road Markings, signage	ULE90130-01-TAL-00012	Roads	Permanent
1B	Leith Walk, Dalmaney Street - Road Markings, signage	ULE90130-01-HRL00013	Roads	Permanent
1B	Leith Walk, Iona Street - Road Markings, signage	ULE90130-01-TAL-00012	Roads	Permanent
1B	Leith Walk, Pilrig Street - Road Markings, signage	ULE90130-01-HRL00013	Roads	Permanent
1B	Leith Walk, McDonald Street - Road Markings, signage	ULE90130-01-TAL-00013	Roads	Permanent
1B	Leith Walk, Brunswick Street - Road Markings, signage	ULE90130-01-TAL-00013	Roads	Permanent
1B	Leith Walk, Gayfield Square - Road Markings, signage	ULE90130-01-TAL-00015	Roads	Permanent
1B	Street Lighting Section 1B	ULE90130-01-TAL-00010 , 00011 and 00013	Lighting	Permanent
1C	Annadale Street - Road Markings	ULE90130-01-HRL00016	Roads	Permanent
1C	London Road - Road Markings, signage	ULE90130-01-TAL-00015	Roads	Permanent
1C	Ancillary works for closure of Blenheim Place on London Road (to be confirmed)	ULE90130-01-TAL-00015	Roads	Permanent
1C	Union Place - road surfacing	ULE90130-01-HRL00016	Roads	Permanent
1C	interfacing with Central Monitoring Facility (CFM) to extend CCTV coverage to/from that location. This connection will be made from Cathedral Sub-station where it will then be transported via 3rd Party Service Provision such as BT.	HB#40411	SCC	Permanent
1C	Picardy Place - road surfacing	ULE90130-01-HRL00015, 16	Roads	Permanent
1C	Broughton Street - road markings	ULE90130-01-HRL00016	Roads	Permanent
1C	Cathedral Substation and associated ducting on Elder Street and Cathedral Lane	ULE90130-01-TAL-00016	Substation / Roads	Permanent
1C	Street lighting along York Place	ULE90130-01-TAL-00016 and 00017	Lighting	Permanent
1C	Queen Street - road markings	ULE90130-01-HRL00017	Roads	Permanent
1C	North East Lane- Road markings, site clearance	ULE90130-01-HRL00017	Roads	Permanent
1C	N St Andrew Lane - Road markings, site clearance	ULE90130-01-HRL00017	Roads	Permanent
1C	Clyde Street - Road markings	ULE90130-01-HRL00017	Roads	Permanent
1C	St Andrew Square - Road markings, site clearance, surfacing	ULE90130-01-HRL00018	Roads	Permanent
1C	George Street - Road markings, site clearance	ULE90130-01-HRL00018	Roads	Permanent
1C	Rose Street - Road surfacing	ULE90130-01-HRL00018	Roads	Permanent
1C	Register Street - Road markings	ULE90130-01-HRL00018	Roads	Permanent
1C	Waverley Bridge - Road markings	ULE90130-01-HRL00018	Roads	Permanent
1C	Meuse Lane - Road markings and surfacing	ULE90130-01-HRL00019	Roads	Permanent
1C	Princes Street east of LOD - Road markings	ULE90130-01-HRL00019	Roads	Permanent
1C	Street Lighting Section 1C	ULE90130-01-TAL-00014, 00016, to 00020	Lighting	Permanent
1C	Princes Street, Hanover Street - Road Markings, signal infrastructure, signage, kerbing	ULE90130-01-TAL-00019	Roads	Permanent
1C	Princes Street, The Mound - Road markings, signage	ULE90130-01-TAL-00019	Roads	Permanent
1C	Frederick Street Road works, signage (to be finalised with detailed design)	ULE90130-01-TAL-00019, 20	Roads	Permanent

Date 27 March 2008

PBH00018014_0016

Schedule of Works Outwith the LOD

Section	Description	Reference	Source	Temporary or Permanent
1D	Charlotte Square - south side - Road Signage	HB#71652, ULE90130-01-TAL-00021	Roads	Temporary or Permanent
1D	Charlotte Square junction with South Charlotte Street - Road Signage	HB#71652, ULE90130-01-TAL-00021	Roads	Temporary or Permanent
1D	Princes Street, South Charlotte Street - Road Markings, signal infrastructure, signage, kerbing	ULE90130-01-TAL-00021	Roads	Permanent
1D	Princes Street, Lothian Road - Roadmarkings, signage and kerbing	ULE90130-01-TAL-00022	Roads	Permanent
1D	North side of Princes Street opposite junction with Lothian Road - Road signage	HB#71652	Roads	Permanent
1D	Northern end of Lothian Road - Road Signage	HB#71652	Roads	Temporary or Permanent
1D	Princes Street, Queensferry Street - Road markings, signage, kerbing	ULE90130-01-TAL-00022	Roads	Permanent
1D	Basestation at Edinburgh Castle (an existing radio site that gives coverage to a large portion of the Tram Network for radio coverage and towards any future requirements)	HB#40411	SCC	Permanent
1D	Street Lighting - Section 1D	ULE90130-01-TAL-00021 00023 and 00024	Lighting	Permanent
1D	Canning Street - Road markings, signage, taxi stance	ULE90130-01-TAL-00023	Roads / TRO	Permanent
1D	Atholl Crescent, Canning Street - Road markings, signage	ULE90130-01-HRL00023	Roads	Permanent
1D	Atholl Crescent, Canning Street Lane - Road markings, signage	ULE90130-01-HRL00023	Roads	Permanent
1D	Manor Street - Road markings, signage, signal infrastructure	ULE90130-01-HRL00023	Roads	Permanent
1D	Palmerston Place - Road markings, signage, signal infrastructure	ULE90130-01-HRL00023	Roads	Permanent
1D	Palmerston Place opposite junction with Palmerston Place Lane - Road signage	HB#71652	Roads	Permanent
1D	Palmerston Place at junction with West Maitland Street - Road signage	HB#71652	Roads	Permanent
1D	South end of Manor Place - Road Signage	HB#71653	Roads	Permanent
1D	Atholl Crescent Lane - Road markings	ULE90130-01-TAL-00023	Roads	Permanent
1D	West Maitland Street, Manor Place - Road markings, signage, lighting, signal infrastructure	ULE90130-01-TAL-00023	Roads / Lighting	Permanent
1D	Clifton Terrace, Morrison Street - Road markings, lighting, signage, signal infrastructure	ULE90130-01-TAL-00024	Roads / Lighting	Permanent
1D	Clifton Terrace, Grosvenor Street - Road markings, signage, kerbing	ULE90130-01-TAL-00024	Roads	Permanent
1D	Clifton Terrace, Dalry Road - Road markings, signage	ULE90130-01-TAL-00024	Roads	Permanent
1D	Torphican Place / Palmerston Place to two-way and street lighting	CR258	Roads	Permanent
1D	Torphichen Street - Road markings, signage, signal infrastructure	ULE90130-01-HRL00023	Roads	Permanent
1D	Torphichen Place - street lighting	ULE90130-01-HRL00023	Lighting	Permanent
1D	Morrison Street - Road markings, signage, signal infrastructure	ULE90130-01-HRL00024	Roads	Permanent
1D	Morrison Street close to junction with the Morrison Link - Road signage	HB#71652	Roads	Permanent
1D	Northeast end of Dalry Road - Road signage	HB#71652	Roads	Permanent
1D	Dalry Road (opposite Caledonian Place) - Road signage	HB#71652	Roads	Permanent
1D	Relocation of taxi stances (to be confirmed upon instruction to work outwith LOD)	To be confirmed upon instruction from tie	Roads	Permanent
1D	Approach signing (A8, Dalry Road, Palmerston Place, Lothian Road, South Charlotte Street)	To be confirmed upon instruction from tie	Roads	Permanent
Section Wide	TRO Requirements	To be confirmed upon detailed design	TRO	Permanent
Section Wide	Wider area works (to be finalised upon issuance of VO)	To be confirmed upon instruction from tie	Roads	Permanent
Section Wide	Traffic Calming - Haymarket Area (to be finalised upon issuance of VO)	To be confirmed upon instruction from tie, CR 315	Roads	Permanent

Date 27 March 2008

PBH00018014_0017

Schedule of Works Outwith the LOD

Section	Description	Reference	Source	Temporary or Permanent
2A	Street Lighting Section 2A	ULE90130-02-OLE-00001	Lighting	Permanent
2A	OLE Section 2A - feed	ULE90130-02-OLE-00002	OLE	Permanent
2A	Drainage connection point at Haymarket Yards (2A-2)	HB# 59917	Ralph Shackleton	Permanent
2A	New access to east of Haymarket Tramstop - road markings and kerb / road works outside LOD within LLAU	02-HRL-00100	Roads	Permanent
2A	Haymarket Terrace north of Citypoint road kerb / markings outside LOD	02-HRL-00100	Roads	Permanent
2A	Haymarket Terrace north of Citypoint road sign outside LOD	02-HRL-00100	Roads	Permanent
2A	Haymarket Terrace north of Citypoint ped signals on north side outside LOD	02-HRL-00501	Roads	Permanent
2A	Haymarket Terrace north of Citypoint Limit of Construction outside LOD	02-HRL-00001	Roads	Permanent
2A	Haymarket Terrace north east Haymarket Tramstop ped signals and pavement on north side outside LOD	02-HRL-00501	Roads	Permanent
2A	Haymarket car park - kerbs / markings outside LOD - within LLAU	02-HRL-00501	Roads	Permanent
2A	Haymarket car park - ducting outside LOD - within LLAU	02-HRL-00801	Roads	Permanent
2A	Road / access south of ICAS Building - road markings and surfacing outside LOD within LLAU	02-HRL-00501 and 00901	Roads	Permanent
2A	Road / access south of ICAS Building -Limit of Construction outside LOD within LLAU	02-HRL-00001	Roads	Permanent
2A	South east of ICAS Building - sign outside LOD	02-HRL-00501	Roads	Permanent
2A	South west end of Haymarket Yards - Limit of Construction outside LOD but within LLAU	02-HRL-00002	Roads	Permanent
2A	South west end of Haymarket Yards - Dropped kerb partly outside LOD but within LLAU	02-HRL-00902	Roads	permanent
2A	West arm of Roseburn Delta Junction - Limit of Construction outside LOD and LLAU	02-HRL-00501	Roads	Permanent
2A	road and retaining wall at the back of Verity House, on NWR land for new access road outwith LoD and LLAU due to NWR Platform zero retaining wall and fence line encroaching into the LLAU	02-HRL-00002	Roads	Permanent
3A	Street Lighting - Wester Coates Terrace & Easter Drylaw Drive (within LLAU)	ULE90130-03-LTG-00002 and 00009	Lighting	Permanent
3A	Roads - Proposed footpath to Telford Drive (within LLAU)	03-HRL-00909		Permanent
3A	Roads - Roseburn Terrace - Road/ped. crossing markings	03-HRL-00100		Permanent
3A	Roads - Roseburn Terrace - ped. crossing cabling (within LLAU)	03-HRL-00800		Permanent
3A	Landscaping - West of Roseburn Tramstop - proposed landscaping	HB# 51851	LHMP	Permanent
3A	Structures - Coltbridge Viaduct - Proposed cantilevered walkway extends over airspace of LLAU (<1m)			Permanent
3A	Roads - Queensferry Road - Tying in kerbs at south kerb (east side)	03-HRL-00006		Permanent
3A	Roads - Wester Coates Terrace - Road surfacing/sign (within LLAU)	03-HRL-00502 and 00902		Permanent
3A	Substation/Roads - South Groathill Ave Sub - drop kerb	03-HRL-00507		Permanent
3A	Roads - Maidencraig Crescent - New ped. access proposed signage	03-HRL00506		Permanent
3A	Roads - Maidencraig Crescent - New ped. access (within LLAU)	03-HRL00906		Permanent
3A	Landscaping Outwith LOD at Maidencraig Crescent	HB# 51851	LHMP	Permanent
3A	Tramstops - Craigleith Tramstop - tactile paving for stepped ped. access	03-STP-00027		Permanent
3B	Street Lighting - Ferry Rd & West Granton Rd - proposed lighting	ULE90130-03-LTG-00011 and 00014	Lighting	Permanent
3B	Drainage connection point (3B-1)	HB# 59917	Ralph Shackleton	Permanent

Date 27 March 2008

PBH00018014_0018

Schedule of Works Outwith the LOD

Section	Description	Reference	Source	Temporary or Permanent
3B	Roads - Ferry Road east and west of tramway - junction detector loops	03-HRL-00011		Permanent
3B	Roads - West Granton Road east and west of tramway - junction detector loops	03-HRL-00014 & 00831		Permanent
3B	Substations - Granton Mains East substation (within LLAU)			Permanent
3B	Roads - footpath from West Granton Access to West Pilton March (partially extends into LLAU from LoD)	03-HRL-00014		Permanent
3C	Street Lighting - Lighting column to south side of Waterfront Avenue, East of tram crossing	ULE90130-03-LTG-00016	Lighting	Permanent
3C	Drainage connection point (3C-1)	HB# 59917	Ralph Shackleton	Permanent
3C	Drainage connection point (3C-2)	HB# 59917	Ralph Shackleton	Permanent
3C	Junction 104 - Road markings & kerb re-alignment	03-HRL-00016		Permanent
3C	Roads - Junctions 105-108 - Road markings/HF surfacing, kerb re-alignment ped. crossing & traffic signal detector loops	03-HRL-00016 to 00018		Permanent
3C	Roads - Junctions 105 - Crown re-grading of Waterfront Avenue to both sides of the tramway crossing			Permanent
3C	Roads - Junction 108a (north of) - Road markings, kerb re alignment & traffic signal detector loops	03-HRL-00018 and 00867		Permanent
3C	Roads - Junction 108b (north of) - Road markings, kerb re alignment & traffic signal detector loops	03-HRL-00018 and 00865		Permanent
3C	Tramstops - Caroline Park - landscape tie-in	03-STP-00061		Permanent
3C	Tramstops - Saltire Square - paving tie-in	03-STP-00071		Permanent
3C	Roads - Junction 109 - Kerb line (partially) for stopped-up Ox CRAIG Street	03-HRL-00018		Permanent
3C	Roads - Ox CRAIG Street signage	03-HRL-00564		Permanent
3C	Roads - Junctions 110 - Road markings/HF surfacing, re-grading, kerb re-alignment ped. crossing & traffic signal detector loops	03-HRL-00019		Permanent
3C	Substation - Granton View Substation (within LLAU)			Permanent
3A	Landscaping design - west of Roseburn Tramstop (within LLAU)			
3A	Structures - cantilever walkway to west side of Coltbridge Viaduct (in mid-air)			
3A	Landscaping - between Craighleith Tramstop and Maidencraig Crescent/Maidencraig Court			
3A	Roads - Stepped access from Telford Drive to Roseburn Cycle/footway to north of existing substation			
3A	Lighting - erection of lighting column on footpath between Roseburn Corridor/Easter Drylaw Drive (within LLAU)			
3A	Landscaping - Drylaw Recreation ground			
3B	Roads - realignment (vertical/horizontal) of footpath from West Pilton March to West Granton Road (within substation LLAU) where LOD is too narrow.			
3B	Roads - Creation of public space. Extension of footpath design and width beyond LOD into substation LLAU, including design of low level wall at northeast corner of LLAU for Granton Mains East substation.			
3C	Roads - crown regrading of road for short distance beyond LoD at both crossings of Waterfront Avenue			
3C	Spine Road - Tram route crosses Spine Road where LOD is too narrow. New traffic islands, signal heads and road markings outwith LOD			
3C	Roads - installation of traffic signalisation, road markings for 3 no. minor access roads to north side of Waterfront Avenue (Spine Road) and associated pedestrian crossing points			

Date 27 March 2008

PBH00018014_0019

Schedule of Works Outwith the LOD

Section	Description	Reference	Source	Temporary or Permanent
3C	Roads - installation of pedestrian crossing signalisation at corner of junction of Waterfront Avenue/West Harbour Road and associated pedestrian crossing point tactile paving and kerbing			
3C	Roads - Chestnut Street, road markings			
3C	Roads - installation of traffic signalisation at junction of West Harbour Road/Pickfords entrance and associated pedestrian crossing point tactile paving. Relocation of existing gated access (boundary and accomodation)			
3C	Roads - regrading of southern 50m (approx.) of Middle Pier Road and footways			
3C	Granton Square - bus interchange			
5A	Street Lighting Section 5A	ULE90130-05-LTG-00001 to 00003	Lighting	Permanent
5A	OLE Section 5A - feed	ULE90130-05-OLE-00001	OLE	Permanent
5A	Russell Road and sorting office boundary - Limit of Construction outside of LOD but within LLAU	05-HRL-00002	Roads	Permanent
5A	To east of offices near Haymarket Central Junction - Limit of Construction outside LOD and LLAU	05-HRL-00002	Roads	Permanent
5A	Kerb / road works and Limit of Construction to the south of the Bowling Green outside LOD - most within LLAU	05-HRL-00002	Roads	Permanent
5A	Kerb / road works and Limit of Construction to the north of Murrayfield Tramstop including new footway and ped crossing outside LOD - some within LLAU	05-HRL-00002 800 and 902	Roads	Permanent
5A	Murrayfield: Temporary- replacement/maintenance of existing Scotrail fence on the outbound platform to be undertaken on the boundary of the LOD.	#70512	Ian Brown	Temporary
5A	Murrayfield Training pitch moves.		Ian Brown	Permanent
5A	Turnstiles at Murrayfield Stadium - Accomodation works	ULE90130-05-ACC-00034	Mungo Stacy	Permanent
5B	Street Lighting Section 5B	ULE90130-05-LTG-00009, 00011, 00012, 00014, 00018 and 00019	Lighting	Permanent
5B	Carrick Knowe Earthworks north of railway spill outwith LoD as advised by CEC - do not build retaining wall - this is CEC Leisure land.	ULE90130-05-	David Raeside	Permanent
5B	Saughton: Permanent - 2 proposed foothpaths are being introduced to provide access to tramstop. These are introduced either end of stop southwards to join existing foothpath on Broomhouse Drive. These are completely outside the LOD but there is the need to provide pedestrians access to the tram without having to constrain them to using the access within LOD on Saughton Road North.(see attached PDF). Limit of Construction - 2 Footpaths are being demolished - outside the LOD but within the LLAU.	#70512 05-HRL-00010, 11 and 12	Ian Brown	Permanent
5B	Saughton Tramstop - landscape tie in	05-STP-00027	John Ramsay	Permanent
5B	We are proposing to relocate two bus stops on Bankhead Avenue (opposite South Gyle Access). Current and proposed locations are outside of the LoD. ie Limit of Construction outside the LOD	ULE90130-05-HRL-00015	Roads	Permanent
5B	Immediately SE of South Gyle Tramstop - Limit of Construction and road markings outside LOD some in LLAU	ULE90130-05-HRL-00015 and 00134	Roads	Permanent
5B	South Gyle Tramstop - associated Pedestrian crossing	05-STP-00038	Roads	Permanent
5B	Bankhead Drive SE of South Gyle Access - Limit of Construction and road works outside LOD	ULE90130-05-HRL-00015 and 00135	Roads	Permanent
5B	Edinburgh Park Station - zone behind outbound platform-interface works with NR land	HB#70467	Ian Brown	Permanent
5B	Edinburgh Park Station Tramstop - paving tie in	05-STP-00048	Ian Brown	Permanent

Date 27 March 2008

PBH00018014_0020

Schedule of Works Outwith the LOD

Section	Description	Reference	Source	Temporary or Permanent
5B	Edinburgh Park Station:- Permanent Works - Remodelled access footpath link to Currys to be constructed outside the LOD but within the LLAU. Limit of Construction outside the LOD some within LLAU.	HB #72057 05-HRL-00018	Ian Brown	Permanent
5B	East of Junction 202A - Roadworks / marking / footway realignment outside LOD	05-HRL-00132 00943	Roads	Permanent
5B	West of Junction 202A - limit of Construction outside the LOD/LLAU	05-HRL-00017	Roads	Permanent
5B	Bollard outside LOD (only just)	05-HRL-00535	Roads	Permanent
5B	Bankhead Drive / Bankhead Avenue Traffic Signals and Associated Ducting outside the LOD some within LLAU.	05-HRL-00834	Roads	Permanent
5B	Bankhead Drive substation - limit of Construction outside the LOD some within LLAU.	05-HRL-00014	Roads	Permanent
5B	Bankhead Drive substation - road realignment outside the LOD some within LLAU.	05-HRL-00014	Roads	Permanent
5B	Bankhead Drive junction - limit of Construction outside the LOD some within LLAU.	05-HRL-00017	Roads	Permanent
5B	Stenhouse Drive - road markings outside the LOD and LLAU	05-HRL-00009	Roads	Permanent
5B	Stenhouse Drive - pavement works outside the LOD and LLAU	05-HRL-00934 and 00935	Roads	Permanent
5C	Street Lighting Section 5C	ULE90130-05-LTG-00022, 00023, 00025 and 00026	Lighting	Permanent
5C	Edinburgh Park- relocation works to the footpath link ramped structure	HB#70467	Ian Brown	Permanent
5C	Edinburgh Park- Limit of Construction re above relocation works to the footpath link ramped structure	05-HRL-00021	Ian Brown	Permanent
5C	Trees planting outwith LoD at NEL's request north of Lochside ave	HB#70468	Kate Shudall	Permanent
5C	South west of Gyle Tramstop - kerb realignment outside LOD - within LLAU	05-HRL-00563	Roads	Permanent
5C	Gyle Tramstop - landscape tie in	05-STP-00064	Roads	Permanent
5C	South of Gyle Tramstop - ducting outside LOD - some within LLAU	05-HRL-00861	Roads	Permanent
5C	South of junction of Lochside Crescent Lochside Avenue - footway works outside LOD	05-HRL-00962	Roads	Permanent
5C	East of junction 205 - Limit of Construction outside LOD	05-HRL-00023	Roads	Permanent
5C	Northwest of junction 205 - Limit of Construction outside LOD - within LLAU	05-HRL-00023	Roads	Permanent
5C	East end, north side of Lochside Avenue - sign outside LOD	05-HRL-000562	Roads	Permanent
5C	South east and north of Gogarburn Tramstop - Limit of Construction outside LOD some within LLAU	05-HRL-00026	Roads	Permanent
5C	Depot Earthworks - potentially soil nails will be required outwith the LOD - underneath the A8 Underpass - TBC	TBC	David Raeside	Permanent
6	Gogarburn Roundabout - Signage outside LOD some in LLAU	06-HRL-00007	Roads	Permanent
6	Junction 208 Signs outside LOD some in LLAU (in centre of roundabout, depot access and w of junction)	06-HRL-00501	Roads	Permanent
6	Junction 208 - ducting outside LOD but within LLAU	06-HRL-00800	Roads	Permanent
6	Gogarburn Roundabout Safety Barrier, footway works outside LOD but within LLAU	06-HRL-00901	Roads	Permanent
6	Gogarburn Roundabout - Limit of Construction outside LOD but within LLAU	06-HRL-00001	Roads	Permanent
6	Gogarburn Depot - Limit of Construction outside LOD some within LLAU some outside	06-HRL-00002	Roads	Permanent
5C	Construction work of Gyle tramstop retaining wall to be undertaken outside the LOD.	HB #70741	Andy Groves	Temporary
5C	Drainage connection point (5C-2) on South Gyle Broadway	HB# 59917	Ralph Shackleton	Permanent
5C	Temporary works to construct the A8 Underpass required due to Utility routes and diversions	HB#70402 HB#70403	Paul McQuade	Temporary

Date 27 March 2008

PBH00018014_0021

Schedule of Works Outwith the LOD

Section	Description	Reference	Source	Temporary or Permanent
5C	Earthworks/construction work to be undertaken outside the LOD (but within the LLAU). This is to remove earth bund on current Gogarburn tramstop location in order to achieve the level which the Pway design has been based on	HB #70741	Ian Brown	Temporary
5C	LOD issue at Gogarburn..Options are highlighted below (refer source for sketches): - ask tie to amend the LOD/LLAU as the present location of the footpath is the "natural desire line" for pedestrians.(Option 1) - ammend the footpath to follow the back of the LOD as shown in Option 2 (although it is not preferred). -get the road moved eastwards and narrow the footpath (Option 3)	HB #72056	Ian Brown	Permanent
7A	Earthworks may be required to go outwith the LOD at the Gogar Landfill site due to extent of contaminated land	TBC	David Raeside	Permanent
7A	Earthworks may be required to go outwith the LOD along NIL and FSH land	TBC	David Raeside	Permanent
7A	Street Lighting Section 7A	ULE90130-07-LTG-00007 and 00008	Lighting	Permanent
7A	Any works to outfalls eg headwalls and scour protection, may be outside the LOD since the LOD follows the water line on the West bank.	HB# 59917	Ralph Shackleton	Permanent
7A	Badger fencing along Gogar Farm Access Road	ULE90130-SW-ENV-00038	Kat Dennis (HB#69860)	Permanent
7A	Marking out of badger and otter exclusion areas during construction works	ULE90130-SW-ENV-00037, ULE90130-SW-ENV-00040, ULE90130-SW-ENV-00047	Kat Dennis (HB#69860)	Temporary
7A	Archaeological Investigation Works around Nether Gogar (Church, old mill and pill box sites) as specified in the "Edinburgh Tram: Specification for Archaeological Works Line 2" and drawings ULE90130-07-DRG-00072, ULE90130-07-DRG-00073, and ULE90130-07-DRG-00074. This report has not yet been formally issued to tie but is expected to be finalised by the end of next week following a review by CEC archaeologist John Lawson.	Edinburgh Tram: Specification for Archaeological Works Line 2 and drawings ULE90130-07-DRG-00072, ULE90130-07-DRG-00073, and ULE90130-07-DRG-00074	Kat Dennis (HB#69860)	Temporary
7A	Badger fencing (temporary) across the unfenced section of the A8 south of the Gogar Drain as specified in the parliamentary agreement with the Edinburgh and Lothians Badger Group (subject to agreement with the landowner) - see extract in KD email (HB# 69860).	ELBG Agreement	Kat Dennis (HB#69860)	Temporary
7A	Airport Tramstop - Kiosk and ticketing facility and pedestrian links	CNS109	Ian Brown	Permanent
Line 2	There may be some localised works along the Network rail corridor outwith the LoD between the Tram route and the Network rail lines, although this may be minimal.	HB#70402	Paul McQuade	Temp & Perm
7A	Gogar Farm Access Road - Limit of Construction outside LOD some within LLAU	07-HRL-00003	Roads	Permanent
7A	Gogarburn Tramstop - Limit of Construction outside LOD some within LLAU	07-HRL-00001	Roads	Permanent
7A	Ingliston Park and Ride - Limit of Construction outside LOD some within LLAU	07-HRL-00007	Roads	Permanent
7A	Hilton Hotel - works to car park (including kerb and marking alterations) outside LOD some within LLAU some outside	07-HRL-00800 / 00507	Roads	Permanent

Date 27 March 2008

PBH00018014_0022

APPENDIX 3

Deliverables to tie

Schedule of Detailed Design Deliverables to tie

Identity	Category	Name	Date
A7500	Structures - Halcrow	Issue Notification Of Completion Letter- Tower Place Bridge Substructure Detailed Design Package to tie	02-Oct-08
A7360	Structures - Halcrow	Issue Notification Of Completion Letter- Tower Place Bridge Superstructure Design Package to tie	02-Oct-08
A7170	Structures - Halcrow	Issue Notification Of Completion Letter- Victoria Dock Substructure Detailed Design Package to tie	19-Aug-08
A7030	Structures - Halcrow	Issue Notification Of Completion Letter- Victoria Dock Superstructure Design Package to tie	19-Aug-08
446	Structures - Halcrow	Issue Notification Of Completion Letter- Gogar Burn Retaining Wall Two Structure Design Package to tie	15-Aug-08
416	Structures - Halcrow	Issue Notification Of Completion Letter- Gogar Burn Retaining Wall One Structure Design Package to tie	14-Aug-08
SDS36610	Structures - PB	Issue Notification Of Completion Letter- A8 Underpass Superstructure Detailed Design Package to tie for Comments	28-Jul-08
A7690	Structures - Halcrow	Issue Notification Of Completion Letter- Lindsay Road Structure Design Package to tie	24-Jul-08
SDS74570	Systems Assurance	Final Detailed Design stage issue of DDCS to tie	04-Jul-08
SDS35800	Structures - PB	Issue Notification Of Completion Letter- Balgreen Road Bridge Package to tie for Comments	03-Jul-08
SDS83460	Structures - PB	Issue Balgreen Road Access Bridge	03-Jul-08
326	Structures - Halcrow	Issue Notification Of Completion Letter- Gogar Burn Culvert One Structure Design Package to tie	26-Jun-08
356	Structures - Halcrow	Issue Notification Of Completion Letter- Gogar Burn Culvert Two Structure Design Package to tie	26-Jun-08
386	Structures - Halcrow	Issue Notification Of Completion Letter- Gogar Burn Culvert Three Structure Design Package to tie	26-Jun-08
VO1820	Depot	Issue Notification Of Completion Letter- Depot Redesign (Excl. Depot Access Bridges)	16-Jun-08
SDS52730	OLE	Issue OLE Base Design to tie	16-Jun-08
SDS51200	Structures - PB	Issue Notification Of Completion Letter- Balgreen Road Retaining Wall Package to tie for Comments	06-Jun-08
SDS57490	Structures - PB	Issue Notification Of Completion Letter- Depot Access Road Bridge Superstructure Package to tie	22-May-08
SDS74900	Systems Assurance	Final DD stage issue of HL report to tie	25-Apr-08
A27780	Tram Stops	Issue Notification Of Completion Letter- Edinburgh Airport Tram Stop Design to tie	25-Apr-08
SDS74540	Systems Assurance	Issue Detailed Design Case For Safety to tie	23-Apr-08
SDS75000	Systems Assurance	Final Detailed Design Stage Issue of RAM Analysis to tie	22-Apr-08
SDS56730	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 7A	22-Apr-08
SDS35490	Structures - PB	Issue Notification Of Completion Letter- Baird Drive Retaining Wall Package to tie for Comments	15-Apr-08
SDS56690	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 6	08-Apr-08
SDS74850	Systems Assurance	Final DD Stage Issue of Safety Analysis to tie	07-Apr-08
SDS58270	Structures - PB	Issue Notification Of Completion Letter- Murrayfield Training Pitches RW Package to tie for Comments	07-Apr-08
SDS74810	Systems Assurance	Final DD Stage Issue of System Safety Management Plan to tie	04-Apr-08
SDS56570	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 5A	03-Apr-08
SDS75050	Systems Assurance	Final Detailed Design Stage Issue of RDP to tie	28-Mar-08
A25140	Tram Stops	Issue Notification Of Completion Letter- Ocean Terminal Tram Stop Design to tie	28-Mar-08
SDS56740	Street Lighting	Issue Notification Of Completion Letter- Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section	28-Mar-08
SDS80770	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 1A3	28-Mar-08
252	Structures - Halcrow	Issue Notification Of Completion Letter- Carrick Knowe Substructure Design Package to tie	27-Mar-08
230	Structures - Halcrow	Issue Notification Of Completion Letter- Carrick Knowe Superstructure Design Package to tie	27-Mar-08
SDS80790	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 1A4	21-Mar-08
A549970	Substations	Issue Notification Of Completion Letter- Tram Eastfield Road Substation Planning Submission to tie	20-Mar-08
SDS23670	Traffic Modelling	Issue Report of Simulation Results to tie	18-Mar-08

Date 27 March 2008

PBH00018014_0024

Schedule of Detailed Design Deliverables to tie

Identity	Category	Name	Date
SDS74950	Systems Assurance	Final Detailed Design Stage Issue of Reliability Availability Maintainability Plan to tie	28-Feb-08
A27380	Tram Stops	Issue Notification Of Completion Letter- Ingliston Tram Stop Design to tie	25-Feb-08
SDS56160	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 1A	22-Feb-08
A25160	Tram Stops	Issue Notification Of Completion Letter- Newhaven Road Tram Stop Design to tie	12-Feb-08
A25220	Tram Stops	Issue Notification Of Completion Letter- St Andrews Square Tram Stop Design to tie	01-Feb-08
SDS68550	Substations	Issue Notification Of Completion Letter- Tram Haymarket Terrace 1 Substation Detailed Engineering Drawings To tie	01-Feb-08
SDS51450	Structures - PB	Issue Notification Of Completion Letter- Murrayfield Stop Retaining Walls Package to tie for Comments	30-Jan-08
SDS74860	Systems Assurance	Issue Hazard Log Report to tie	28-Jan-08
SDS67060	Systems Assurance	Issue Safety Analysis to tie	28-Jan-08
SDS74960	Systems Assurance	Issue RAM Analysis to tie	28-Jan-08
SDS24490	Roads	Issue Notification Of Completion Letter- Roads Design to tie for Approval Section 1A	28-Jan-08
SDS50840	OLE	Issue Pole Schedule - Loading Chart	28-Jan-08
SDS74070	OLE	Issue Design Commentary Report	28-Jan-08
SDS75010	Systems Assurance	Issue RDP to tie	28-Jan-08
SDS70990	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 1A	28-Jan-08
A25250	Tram Stops	Issue Notification Of Completion Letter- Picardy Place Tram Stop Design to tie	28-Jan-08
A25120	Tram Stops	Issue Notification Of Completion Letter- Ocean Drive Tram Stop Design to tie	25-Jan-08
A25200	Tram Stops	Issue Notification Of Completion Letter- Foot Of The Walk Tram Stop Design to tie	25-Jan-08
SDS68170	Sys Eng	Requirements Database Baseline 3 Ready to Issue To tie	24-Jan-08
SDS68180	Sys Eng	Requirements Test Specification Ready to Issue To tie	24-Jan-08
SDS68160	Sys Eng	System Interface Register Baseline Ready to Issue To tie	24-Jan-08
SDS74630	Systems Assurance	Issue Reliability Availability Maintainability Plan to tie	23-Jan-08
SDS74620	Systems Assurance	Issue System Safety Management Plan to tie	23-Jan-08
SDS57210	Structures - PB	Issue Notification Of Completion Letter- Bankhead Drive Retaining Wall Package to tie for Comments	18-Jan-08
A11120	Sys Eng	Detailed Design Verification and Validation Report	17-Jan-08
SDS74240	Sys Eng	Issue Edinburgh Tram Network Integration Plan (2nd Submission) to tie	17-Jan-08
SDS50760	OLE	Issue Dynamic Simulation Report	17-Jan-08
SDS68150	Sys Eng	System Integration Plan Ready to Issue To tie	17-Jan-08
SDS65360	Structures - PB	Issue Notification Of Completion Letter- South Gyle Access Bridge Substructure Package to tie for Comments	17-Jan-08
A25450	Tram Stops	Issue Notification Of Completion Letter- Haymarket Tram Stop Design to tie	17-Jan-08
SDS82870	Sys Eng	Issue System Detailed Design Review	17-Jan-08
SDSA1300	Sys Eng	Issue Verification and Validation Plan	17-Jan-08
SDS82880	Sys Eng	Issue System Architecture Plan	17-Jan-08
SDS56760	Street Lighting	Issue Notification Of Completion Letter- Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section	11-Jan-08
SDS56250	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 1C	21-Dec-07
SDS79050	geotech	Issue cuttings and embankment register to tie	21-Dec-07
SDS25480	Roads	Issue Notification Of Completion Letter- Roads Design to tie for Approval Section 1C	21-Dec-07
SDS36070	Structures - PB	Issue Notification Of Completion Letter- South Gyle Access Bridge Superstructure Package to tie for Comments	20-Dec-07
A549810	Substations	Issue Notification Of Completion Letter- Tram Jenner's Depository Substation Planning Submission to tie for Approva	20-Dec-07
A26740	Tram Stops	Issue Notification Of Completion Letter- Balgreen Road Tram Stop Design to tie	19-Dec-07
SDS68720	Substations	Issue Notification Of Completion Letter- Tram Cathedral Lane Substation Detailed Engineering Drawings To tie	17-Dec-07
SDS36340	Structures - PB	Issue Notification Of Completion Letter- Gogar Burn Bridge Superstructure Package to tie for Comments	14-Dec-07
SDS66000	Structures - PB	Issue Notification Of Completion Letter- Gogar Burn Bridge Substructure Package to tie	14-Dec-07
SDS71230	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 1C	14-Dec-07

Date 27 March 2008

PBH00018014_0025

Schedule of Detailed Design Deliverables to tie

Identity	Category	Name	Date
SDS56290	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 1D	14-Dec-07
A549090	Substations	Issue Tram North Leith Sands Substation Planning Submission To tie For Approval	14-Dec-07
A14260	S&Comms	Issue SCC Technical Specification and Drawings to tie	07-Dec-07
SDS58020	Structures - PB	Issue Notification Of Completion Letter- Murrayfield Stadium RW Package to tie for Comments	07-Dec-07
A25550	Tram Stops	Issue Notification Of Completion Letter- Ravelston Dykes Tram Stop Design to tie	07-Dec-07
A26500	Tram Stops	Issue Notification Of Completion Letter- Granton Square Tram Stop Design to tie	07-Dec-07
A25350	Tram Stops	Issue Notification Of Completion Letter- Shandwick Place Tram Stop Design to tie	07-Dec-07
SDS50800	OLE	Issue Final Building Fixings Report	07-Dec-07
A25500	Tram Stops	Issue Notification Of Completion Letter- Roseburn Tram Stop Design to tie	07-Dec-07
A26420	Tram Stops	Issue Notification Of Completion Letter- Granton Tram Stop Design to tie	07-Dec-07
SDS79220	Phase 1A /1B	Issue seperation phase 1A and 1B impact report to tie	07-Dec-07
A25400	Tram Stops	Issue Notification Of Completion Letter- Princes Street West Tram Stop Design to tie	07-Dec-07
SDS64970	Structures - PB	Issue Notification Of Completion Letter- Water of Leith Bridge Detailed Design Package to tie for comments	05-Dec-07
SDS51380	OLE	Issue Notification Of Completion Letter-Final Detailed Layout Plans & Standard & Special Cross Sections to tie Sec	30-Nov-07
SDS57030	Track	Issue Notification Of Completion Letter- Track Alignment Design to tie Section 1C	30-Nov-07
SDS71430	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 2A	30-Nov-07
88	Structures - Halcrow	Issue Notification Of Completion Letter- Edinburgh Park Station Viaduct Substructure Design Package to tie	23-Nov-07
66	Structures - Halcrow	Issue Notification Of Completion Letter- Edinburgh Park Station Viaduct Superstructure Design Package to tie	23-Nov-07
A25110	Tram Stops	Issue Notification Of Completion Letter- Constitution Street Tram Stop Design to tie	23-Nov-07
SDS79080	Surveys	Issue summarising geotechnical report to tie	23-Nov-07
200	Structures - Halcrow	Issue Notification Of Completion Letter- Russell Road Retaining Wall Two Structure Design Package to tie	21-Nov-07
A26660	Tram Stops	Issue Notification Of Completion Letter- Murrayfield Tram Stop Design to tie	20-Nov-07
SDS25970	Roads	Issue Notification Of Completion Letter- Roads Design to tie for Approval Section 1D	16-Nov-07
SDS80990	Roads	Issue Notification Of Completion Letter- Roads Design to tie for Approval Section 1C (part submission)	14-Nov-07
A25180	Tram Stops	Issue Notification Of Completion Letter- Balfour Street Tram Stop Design to tie	13-Nov-07
A25300	Tram Stops	Issue Notification Of Completion Letter- McDonald Road Tram Stop Design to tie	13-Nov-07
SDS56210	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 1B	09-Nov-07
SDS24990	Roads	Issue Notification Of Completion Letter- Roads Design to tie for Approval Section 1B	09-Nov-07
SDS56750	Street Lighting	Issue Notification Of Completion Letter- Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section	09-Nov-07
SDS71130	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 1B	09-Nov-07
SDS71330	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 1D	08-Nov-07
A4370	EMC	Issue Forth Ports Interface Report to tie	02-Nov-07
A4300	EMC	Issue BAA Interface Report to tie	02-Nov-07
170	Structures - Halcrow	Issue Notification Of Completion Letter- Russell Road Retaining Wall One Structure Design Package to tie	31-Oct-07
SDS56770	Street Lighting	Issue Notification Of Completion Letter- Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section	31-Oct-07
46	Structures - Halcrow	Issue Notification Of Completion Letter- Haymarket Station Viaduct Substructure Design Package to tie	31-Oct-07
24	Structures - Halcrow	Issue Notification Of Completion Letter- Haymarket Station Viaduct Superstructure Design Package to tie	31-Oct-07
A549570	Substations	Issue Notification Of Completion Letter- Tram Granton Road Substation Planning Submission to tie for Approval	30-Oct-07

Date 27 March 2008

PBH00018014_0026

Schedule of Detailed Design Deliverables to tie

Identity	Category	Name	Date
SDS64100	Structures - PB	Issue Notification Of Completion Letter- Roseburn Street Substructure Viaduct Detailed Design Package to tie for co	19-Oct-07
SDS58830	Structures - PB	Issue Notification Of Completion Letter- Roseburn Street Viaduct Superstructure Detailed Design Package to tie for	19-Oct-07
SDS71530	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 3A	10-Oct-07
SDS71730	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 3C	10-Oct-07
SDS71630	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 3B	10-Oct-07
A487138	OLE	Issue OLE rework for section 3A	09-Oct-07
SDS59110	Structures - PB	Issue Notification Of Completion Letter- Water of Leith Bridge Detailed Design Package to tie for comments	08-Oct-07
A549170	Substations	Issue Notification Of Completion Letter- Tram Leith Walk 163 Substation Planning Submission to tie for Approval	01-Oct-07
SDS35220	Track	Issue Final Trackform Cross Sections & Details	28-Sep-07
SDS35230	Track	Issue Final Trackwork Specification to tie	28-Sep-07
SDS35090	Track	Issue Final Wheel / Rail Interface Report to tie	28-Sep-07
140	Structures - Halcrow	Issue Notification Of Completion Letter- Russell Road Bridge Substructure Design Package to tie	28-Sep-07
118	Structures - Halcrow	Issue Notification Of Completion Letter- Russell Road Bridge Superstructure Design Package to tie	28-Sep-07
SDS71830	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 5A	28-Sep-07
SDS72230	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 7A	27-Sep-07
SDS72030	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 5C	27-Sep-07
SDS71930	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 5B	27-Sep-07
SDS72130	Roads	Issue Drainage Design Completion Letter to tie for Approval Section 6	27-Sep-07
SDS58550	Structures - PB	Issue Notification Of Completion Letter- Murrayfield Underpass Superstructure Package to tie for Comments	26-Sep-07
SDS56370	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 3A	25-Sep-07
VO1400	Environment - Halcrow	Issue Gogarburn Partnership Report	24-Sep-07
SDS74150D1	Traffic Modelling	Issue Notification of Phase Completion Letter to tie (Activity D)	24-Sep-07
SDS74150D11	Traffic Modelling	Issue Notification of Phase Completion Letter to tie (Activity F)	24-Sep-07
A2230	EMC	Issue Forth Ports Strategy & Management Plan to tie	21-Sep-07
A29130	Substations	Issue Notification Of Completion Letter- Tram Gogar Depot Substation Design to tie	21-Sep-07
SDS56910	Track	Issue Notification Of Completion Letter - Track Alignment Design to tie Section 1A	21-Sep-07
A29110	Depot	Issue Notification Of Completion Letter- Depot Detailed Substructure Drawings & Specifications to tie	21-Sep-07
A5280	Depot	Issue Notification Of Completion Letter- Depot Detailed Superstructure Drawings and Specifications	21-Sep-07
A52740	Depot	Issue Notification Of Completion Letter- Detailed Depot Earthworks Design	21-Sep-07
A53040	Depot	Issue Notification Of Completion Letter- Yard Detailed Design Lighting Design	21-Sep-07
SDS56450	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 3C	21-Sep-07
A29120	Depot	Issue Notification Of Completion Letter- Depot Building Architectural Layout Package to tie	21-Sep-07
A29150	Depot	Issue Notification Of Completion Letter- Depot Ground Flr Slab to tie	21-Sep-07
A1760	EMC	Issue BAA Strategy & Management Plan to tie	21-Sep-07
A45790	Depot	Issue Notification Of Completion Letter- Depot Ductwork Design to tie	21-Sep-07
A27220	Tram Stops	Issue Notification Of Completion Letter- Depot Stop Tram Stop Design to tie	20-Sep-07
SDS41780	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 1A	14-Sep-07
SDS41840	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 1B	14-Sep-07
SDS41900	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 1C	14-Sep-07
SDS41960	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 1D	14-Sep-07
SDS57040	Track	Issue Notification Of Completion Letter- Track Alignment Design to tie Section 1D	14-Sep-07
SDS63650	Track	Track Aux Report and Drawings	14-Sep-07
A8460	Structures - Halcrow	Issue Notification Of Completion Letter- Coltbridge Viaduct Structure Design Package to tie	13-Sep-07
SDS35390	Track	Issue Final S&C Layout Plans to tie	13-Sep-07

Date 27 March 2008

PBH00018014_0027

Schedule of Detailed Design Deliverables to tie

Identity	Category	Name	Date
A26980	Tram Stops	Issue Notification Of Completion Letter- Edinburgh Park Station Tram Stop Design to tie	07-Sep-07
SDS42200	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 3C	31-Aug-07
SDS57020	Track	Issue Notification Of Completion Letter- Track Alignment Design to tie Section 1B	31-Aug-07
A1710	EMC	Issue Network Rail Strategy & Management Plan to tie	31-Aug-07
SDS56410	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 3B	30-Aug-07
SDS56650	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 5C	30-Aug-07
A25750	Tram Stops	Issue Notification Of Completion Letter- West Granton Access Tram Stop Design to tie	30-Aug-07
SDS42080	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 3A	24-Aug-07
SDS42380	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 5A	24-Aug-07
SDS73770	Power	Issue SC COP, SC, CCA, SC RMS and SC TCP	23-Aug-07
A550310	Substations	Issue Notification Of Completion Letter- Tram Granton Mains East 15 Substation Planning Submission to tie for Appro	23-Aug-07
SDS35310	Track	Issue Check Rail Schedule to tie	22-Aug-07
SDS35330	Track	Issue Guard Section Schedule to tie	22-Aug-07
SDS35370	Track	Issue Isolatable Rail Joint Schedule to tie	22-Aug-07
SDS35270	Track	Issue Rail Grade Schedule to tie	22-Aug-07
SDS35290	Track	Issue Rail Movement Joint Schedule to tie	22-Aug-07
SDS35250	Track	Issue Rail Section Schedule to tie	22-Aug-07
SDS61720	Track	Issue Switching & Crossing Schedule to tie	22-Aug-07
SDS35350	Track	Issue Vehicle Arrestment Schedule to tie	22-Aug-07
SDS66450	Structures - PB	Issue Notification Of Completion Letter- Gyle Stop Retaining Walls Package to tie for Comments	21-Aug-07
SDS42620	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 7A	20-Aug-07
SDS55890	OLE	Issue Notification Of Completion Letter- Final Detailed Layout Plans & Standard & Special Cross Sections to tie Sec	20-Aug-07
SDS50780	OLE	Issue Final Technical & Pantograph Specifications	17-Aug-07
SDS42020	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 2A	17-Aug-07
SDS56790	Street Lighting	Issue Notification Of Completion Letter- Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section	17-Aug-07
956	Structures - Halcrow	Issue Notification Of Completion Letter- Roseburn Corridor Retaining Structure Design Package For Section A to tie	17-Aug-07
981	Structures - Halcrow	Issue Notification Of Completion Letter- Roseburn Corridor Retaining Structure Design Package For Section B to tie	17-Aug-07
1006	Structures - Halcrow	Issue Notification Of Completion Letter- Roseburn Corridor Retaining Structure Design Package For Section C to tie	17-Aug-07
1031	Structures - Halcrow	Issue Notification Of Completion Letter- Roseburn Corridor Retaining Structure Design Package For Section D to tie	17-Aug-07
1131	Structures - Halcrow	Issue Notification Of Completion Letter- Roseburn Corridor Retaining Structure Design Package For Section H to tie	17-Aug-07
SDS66210	Structures - PB	Issue Notification Of Completion Letter- EARL Overbridge Substructure Package to tie	17-Aug-07
SDS57770	Structures - PB	Issue Notification Of Completion Letter- EARL Overbridge Superstructure Package to tie	17-Aug-07
A27060	Tram Stops	Issue Notification Of Completion Letter- Edinburgh Park Tram Stop Design to tie	17-Aug-07
A27300	Tram Stops	Issue Notification Of Completion Letter- Gogarburn Tram Stop Design to tie	17-Aug-07
A27140	Tram Stops	Issue Notification Of Completion Letter- Gyle Tram Stop Design to tie	17-Aug-07
A26820	Tram Stops	Issue Notification Of Completion Letter- Saughton Tram Stop Design to tie	17-Aug-07
A26900	Tram Stops	Issue Notification Of Completion Letter- South Gyle Tram Stop Design to tie	17-Aug-07
SDS56810	Street Lighting	Issue Notification Of Completion Letter- Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section	16-Aug-07
SDS26950	Roads	Issue Notification Of Completion Letter- Roads Design to tie for Approval Section 3A	14-Aug-07
SDS35070	Track	Issue Final Trackform/Surface Finish Plans & Schedules to tie	10-Aug-07

Date 27 March 2008

PBH00018014_0028

Schedule of Detailed Design Deliverables to tie

Identity	Category	Name	Date
SDS42560	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 6	03-Aug-07
SDS42140	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 3B	03-Aug-07
SDS55880	OLE	Issue Notification Of Completion Letter- Final Detailed Layout Plans & Standard & Special Cross Sections to tie Sec	03-Aug-07
SDS57120	Track	Issue Notification Of Completion Letter- Track Alignment Design to tie Section 6	02-Aug-07
SDS42440	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 5B	30-Jul-07
A26340	Tram Stops	Issue Notification Of Completion Letter- Caroline Park Tram Stop Design to tie	30-Jul-07
A25600	Tram Stops	Issue Notification Of Completion Letter- Craighleith Tram Stop Design to tie	30-Jul-07
A25700	Tram Stops	Issue Notification Of Completion Letter- Crewe Toll Tram Stop Design to tie	30-Jul-07
A25650	Tram Stops	Issue Notification Of Completion Letter- Western General Hospital Tram Stop Design to tie	30-Jul-07
A549490	Substations	Issue Notification Of Completion Letter- Tram South Groathill Avenue Substation Design to tie for Approval	30-Jul-07
A6400	EMC	Issue Cable Separation Specification To tie	19-Jul-07
SDS68190	Sys Eng	Issue Edinburgh Tram Network Integration Plan (1st Submission) to tie	17-Jul-07
SDS42500	A&B Works	Issue Notification Of Completion Letter- Detailed Design of Boundary & Accomodation Works Section 5C	16-Jul-07
A549250	Substations	Issue Notification Of Completion Letter- Tram Cathedral Lane Substation Planning Submission to tie for Approval	12-Jul-07
SDS27930	Roads	Issue Notification Of Completion Letter- Roads Design to tie for Approval Section 3C	02-Jul-07
A8270	Structures - Halcrow	Issue Notification Of Completion Letter- Roseburn Terrace Bridge Substructure Detailed Design Package to tie	29-Jun-07
A9210	Structures - Halcrow	Issue Notification Of Completion Letter- Craighleith Drive Bridge Structure Design Package to tie	27-Jun-07
A10300	Structures - Halcrow	Issue Notification Of Completion Letter- Crewe Road Gardens Bridge Substructure Detailed Design Package to tie	27-Jun-07
A10160	Structures - Halcrow	Issue Notification Of Completion Letter- Crewe Road Gardens Bridge Superstructure Design Package to tie	27-Jun-07
A9590	Structures - Halcrow	Issue Notification Of Completion Letter- Groathill Road South Bridge Structure Design Package to tie	27-Jun-07
A9870	Structures - Halcrow	Issue Notification Of Completion Letter- Holiday Inn Access Bridge Structure Design Package to tie	27-Jun-07
A9400	Structures - Halcrow	Issue Notification Of Completion Letter- Queensferry Road Bridge Structure Design Package to tie	27-Jun-07
A9020	Structures - Halcrow	Issue Notification Of Completion Letter- Ravelston Dykes Bridge Structure Design Package to tie	27-Jun-07
A8130	Structures - Halcrow	Issue Notification Of Completion Letter- Roseburn Terrace Bridge Superstructure Design Package to tie	27-Jun-07
A8650	Structures - Halcrow	Issue Notification Of Completion Letter- St Georges School Access Bridge Structure Design Package to tie	27-Jun-07
A8830	Structures - Halcrow	Issue Notification Of Completion Letter- St Georges School Footbridge Structure Design Package to tie	27-Jun-07
A9780	Structures - Halcrow	Issue Notification Of Completion Letter- Telford Road Bridge Structure Design Package to tie	27-Jun-07
SDS56610	Landscaping	Issue Notification Of Completion Letter- Hard & Soft Landscaping Design to tie Section 5B	25-Jun-07
TTRO610	TTRO	Issue INFRACO TTRO Order & Schedules To tie	22-Jun-07
SDS56850	Street Lighting	Issue Notification Of Completion Letter- Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section	19-Jun-07
SDS57080	Track	Issue Notification Of Completion Letter- Track Alignment Design to tie Section 3C	15-Jun-07
SDS29890	Roads	Issue Notification Of Completion Letter- Roads Design to tie for Approval Section 5B	01-Jun-07
TTRO500	TTRO	Issue Affected Roads Listing For INFRACO Works To Dundas & Wilson Section 1B	24-May-07
SDS55920	OLE	Issue Notification Of Completion Letter- Final Detailed Layout Plans & Standard & Special Cross Sections to tie Se	08-May-07
TTRO780	TTRO	Issue Affected Roads Listing For INFRACO Works To Dundas & Wilson	04-May-07
TTRO820	TTRO	Issue Affected Roads Listing For INFRACO Works To Dundas & Wilson	04-May-07

Date 27 March 2008

PBH00018014_0029

Schedule of Detailed Design Deliverables to tie

Identity	Category	Name	Date
TTRO840	TTRO	Issue Affected Roads Listing For INFRACO Works To Dundas & Wilson	04-May-07
TTRO860	TTRO	Issue Affected Roads Listing For INFRACO Works To Dundas & Wilson	04-May-07
TTRO660	TTRO	Issue Affected Roads Listing For INFRACO Works To Dundas & Wilson Section 1C	04-May-07
TTRO700	TTRO	Issue Affected Roads Listing For INFRACO Works To Dundas & Wilson Section 1D	04-May-07
TTRO740	TTRO	Issue Affected Roads Listing For INFRACO Works To Dundas & Wilson Section 2A	04-May-07
TTRO490	TTRO	Issue Affected Roads Listing To Dundas & Wilson For INFRACO Works Section 1A	04-May-07
SDS27440	Roads	Issue Roads Design to tie for Approval Section 3B	26-Apr-07
SDS56800	Street Lighting	Issue Notification Of Completion Letter- Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section	26-Apr-07
SDS67730	Traffic Modelling	Issue Runtime Model To Reflect Charette Changes	25-Apr-07
A549890	Substations	Issue Notification Of Completion Letter- Tram Bankhead Drive Substation Planning Submission to tie for Approval	19-Apr-07
280	Structures - Halcrow	Issue Notification Of Completion Letter- Existing Saughton Road Bridge Assessment Report to tie	18-Apr-07
SDS70290	Traffic Modelling	Issue Discussion Simulation Report	18-Apr-07
SDS55910	OLE	Issue Notification Of Completion Letter- Final Detailed Layout Plans & Standard & Special Cross Section to tie Section 5	18-Apr-07
SDS55930	OLE	Issue Notification Of Completion Letter- Final Detailed Layout Plans & Standard & Special Cross Section to tie Section 7	18-Apr-07
SDS56870	Street Lighting	Issue Notification Of Completion Letter- Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section	12-Apr-07
SDS32400	Roads	Issue Notification Of Completion Letter- Roads Design to tie for Approval Section 6	12-Apr-07
A7900	Structures - Halcrow	Issue Leith Walk Rail Bridge Assessment Report to tie (NOT REQ. DIRECT TO CEC)	11-Apr-07
A44240	Tram Stops	Issue Edinburgh Park Station Tram Stop Package for Prior Approval to tie	26-Mar-07
SDS57100	Track	Issue Track Alignment Design to tie Section 5B	23-Mar-07
SDS24310	Track	Issue Final Track Catagory Plans to tie	15-Mar-07
SDS35040	Track	Issue Final Typical Tramway Cross Sections to tie	15-Mar-07
SDS70010	Traffic Modelling	Runtime Results preparation and issue	15-Mar-07
SDS56880	Street Lighting	Issue Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section 7	14-Mar-07
SDS29400	Roads	Issue Roads Design to tie for Approval Section 5A	13-Mar-07
SDS30870	Roads	Issue Roads Design to tie for Approval Section 7	09-Mar-07
SDS57070	Track	Issue Track Alignment Design to tie Section 3B	09-Mar-07
A13960	Power	Issue Energisation Warning and Interlocking Scheme (TPS 29)	09-Mar-07
SDS56840	Street Lighting	Issue Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section 5A	06-Mar-07
A13850	Power	Issue DC Protection Settings For Complete TPS System (TPS 21)	28-Feb-07
SDS56330	Landscaping	Issue Hard & Soft Landscaping Design to tie Section 2A	27-Feb-07
SDS35180	Track	Issue Final Track Alignment Criteria to tie	21-Feb-07
SDS30380	Roads	Issue Roads Design to tie for Approval Section 5C	19-Feb-07
SDS56860	Street Lighting	Issue Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section 5C	19-Feb-07
VO1560	Management	Issue Employers Requirements Review Document to tie	19-Feb-07
A3320	Power	Issue Substation Sites and DNO Requirements Summary Report (TPS 16)	13-Feb-07
A13800	Power	Issue Site Specific Substation Single Line Diagrams	02-Feb-07
SDS57130	Track	Issue Track Alignment Design to tie	02-Feb-07
SDS57060	Track	Issue Track Alignment Design to tie Section 3A	02-Feb-07
A44360	Tram Stops	Issue Gyle Tram Stop Package for Prior Approval to tie	01-Feb-07
SDS26460	Roads	Issue Roads Design to tie for Approval Section 2A	30-Jan-07
SDS56780	Street Lighting	Issue Street Lighting Design (Inc. Any OLE Combined Pole Design) to tie Section 2A	30-Jan-07
SDS57090	Track	Issue Track Alignment Design to tie Section 5A	30-Jan-07
SDS73100	A&B Works	Issue Additional Report to tie & SRU	29-Jan-07
A3300	Power	Issue Schematic Diagram for DNO Derived LVAC Power Supplies (TPS 31)	25-Jan-07
SDS35150	Track	Issue Final Structure Gauge & Clearance Drawings to tie	23-Jan-07
SDS37140	Track	Issue Rail Section Report to tie	22-Jan-07
A14170	Power	Issue Electrical Nonenclature Report - Iteration 2 (TPS 25)	18-Jan-07

Date 27 March 2008

PBH00018014_0030

Schedule of Detailed Design Deliverables to tie

Identity	Category	Name	Date
A5600	Environment - Halcrow	Issue Updated Environmental Management Plan for Detailed Design to tie	17-Jan-07
A3450	Power	Issue Updated Earthing and Bonding Policy (TPS 8DD)	11-Jan-07
SDS57110	Track	Issue Track Alignment Design to tie Section 5C	10-Jan-07
A549730	Substations	Issue Russell Road TPH Substation Planning Submission to tie for Approval	09-Jan-07
SDS67630	Environment - Halcrow	Issue New Setts/ Holt Design Section 7A	08-Jan-07
SDS67320	Power	Issue of Substation Equipment Specification Update 1 (TPS 18)	22-Dec-06
SDS60440	Environment - Halcrow	Issue Badger Mitigation Plan to tie	22-Dec-06
A4490	Environment - Halcrow	Issue Final Protected Species Mitigation Strategy to tie & SNH	22-Dec-06
SDS60390	Environment - Halcrow	Issue Landscape & Habitat Management Plan to tie	22-Dec-06
SDS61400	Environment - Halcrow	Issue Protected Species Plan to tie	22-Dec-06
A3370	Power	Issue Traction Power Equipment and Substation Equipment Specification - Update 2 (TPS18) to tie	22-Dec-06
A13840	Power	Issue Generic TSS Protection Schematic (TPS 20)	18-Dec-06
A14910	S&Comms	Operational Radio System Propagation Modelling Report For Issue To tie	15-Dec-06
SDS57050	Track	Issue Track Alignment Design to tie Section 2A	14-Dec-06
SDS37170	Track	Issue Guard Rail Drawings to tie	14-Dec-06
TTRO570	TTRO	Issue MUDFA TTRO Order & Schedules To tie	11-Dec-06
SDS61150	A&B Works	Issue Murrayfield Stadium Boundary & Accommodation Works	04-Dec-06
SDS61200	A&B Works	Issue Murrayfield Training Pitches Boundary & Accommodation Works	04-Dec-06
A1870	Power	Issue Interim TPS Scheme Development Report (TPS 3DDB)	01-Dec-06
TTRO670	TTRO	Issue Affected Roads Listing For MUDFA Works To Dundas & Wilson	30-Nov-06
TTRO710	TTRO	Issue Affected Roads Listing For MUDFA Works To Dundas & Wilson	30-Nov-06
TTRO750	TTRO	Issue Affected Roads Listing For MUDFA Works To Dundas & Wilson	30-Nov-06
TTRO790	TTRO	Issue Affected Roads Listing For MUDFA Works To Dundas & Wilson	30-Nov-06
TTRO480	TTRO	Issue Affected Roads Listing For MUDFA Works To Dundas & Wilson Section 1B	30-Nov-06
TTRO550	TTRO	Issue Affected Roads Listing For MUDFA Works To Dundas & Wilson Section 1C	30-Nov-06
TTRO590	TTRO	Issue Affected Roads Listing For MUDFA Works To Dundas & Wilson Section 1D	30-Nov-06
TTRO630	TTRO	Issue Affected Roads Listing For MUDFA Works To Dundas & Wilson Section 2A	30-Nov-06
TTRO470	TTRO	Issue Affected Roads Listing To Dundas & Wilson For MUDFA Works Section 1A	30-Nov-06
A13910	Power	Issue Substation and Trackside Interface Demarcation Diagram (TPS 26)	30-Nov-06
A3430	Power	Issue Stray Current Code of Practice (TPS 7DD)	23-Nov-06
A44000	Tram Stops	Issue Murrayfield Tram Stop Package for Prior Approval to tie	21-Nov-06
A549410	Substations	Issue Tram Haymarket Terrace 1 Substation Planning Submission to tie For Approval	17-Nov-06
A43230	Tram Stops	Issue Haymarket Tram Stop Package for Prior Approval to tie	17-Nov-06
SDS67600	Environment - Halcrow	Issue New Setts/ Holt Design Section 3A	15-Nov-06
A3350	Power	Issue TPS AC / DC Feeding and Sectioning Diagram (TPS 17)	14-Nov-06
A5680	Environment - Halcrow	Issue to tie Mitigation Strategy for Treatment of Jap Knotweed & Giant Hogweed	03-Nov-06
SDS56950	Traffic Modelling	SDS Issue Modelling Report to tie	26-Oct-06
SDS67310	Power	Issue DC Feeding and Sectioning Diagrams (Iteration 1)	25-Oct-06
A1520	Power	Issue Outline Project Specification (OPS) 'Traction Power Distribution' (TPS14)	19-Oct-06
SDS56000	Traffic Modelling	Issue Patronage/Revenue Forecasts to tie (For Issue Of Business Case to Scottish Executive)	13-Oct-06
A1555	Power	Issue Updated Stray Current Management Strategy (TPS 34)	10-Oct-06

Date 27 March 2008

PBH00018014_0031

APPENDIX 4

Prior Approvals

Schedule of Prior Approvals

Identity	Name	Date
6/23	Depot Earthworks	30-Jul-08
6/22	Depot Access Bridge	29-Jul-08
6/21	Depot	01-Jul-08
6/24	Depot Shed	21-May-08
1/05	Tower Place Bridge	14-May-08
1/01	Newhaven	13-May-08
1/02	Ocean Terminal	13-May-08
3/16	West Pilton Tramstop	09-May-08
7/29	Edinburgh Airport	03-May-08
7/23	Gogar Church to Gogar Burn	01-May-08
7/27	Ingliston Park & Ride Tramstop	26-Apr-08
7/28	Ingliston to Airport	26-Apr-08
5/07	Roseburn Street and Murrayfield Stadium	25-Apr-08
7/25	Gogar Burn to Ingliston	19-Apr-08
5/06	Murrayfield Stadium Tramstop	18-Apr-08
3/12	Telford Road Bridge	16-Apr-08
1/12	Picardy Place Tramstop	15-Apr-08
3/05	Ravelston Tramstop	11-Apr-08
1/13	York Place	08-Apr-08
1/16	Princes Street Tramstop	08-Apr-08
1/06	Port of Leith Tramstop	04-Apr-08
1/07	Bernard Street Tramstop	04-Apr-08
1/08	Foot of the Walk Tramstop	04-Apr-08
1/17	Shandwick Place Tramstop	04-Apr-08
5/08	Murrayfield pitches and Water of Leith	04-Apr-08
5/10	Baird Drive and Balgreen Road	04-Apr-08
5/16	Edinburgh Park Station Tramstop	04-Apr-08
1/15	St Andrew Square Tramstop	02-Apr-08
3/21	Granton Tramstop	02-Apr-08
3/20	Saltire Square Tramstop	01-Apr-08
5/12	Carrick Knowe Bridge	01-Apr-08
3/14	Crewe Toll Tramstop	31-Mar-08
5/15	Bankhead Tramstop	31-Mar-08
5/11	Balgreen Road to Carrick Knowe	28-Mar-08
5/14	Saughton Tramstop and Broomhouse Drive	28-Mar-08
2/03	Russell Road Substation	26-Mar-08
5/05	Russell Road Retaining Walls	26-Mar-08
3/19	Caroline Park Tramstop	25-Mar-08
3/02	Roseburn Tramstop and Bridge	20-Mar-08
2/01	Haymarket Tramstop	14-Mar-08
3/03	Coltbridge Viaduct	14-Mar-08
5/18	Edinburgh Park Central tramstop	27-Feb-08
3/10	Craigeleith Tramstop	26-Feb-08
5/19	Gyle Centre Tramstop	19-Feb-08
1/09	Balfour Street Tramstop	15-Feb-08
1/11	McDonald Road Tramstop	15-Feb-08
3/13	Telford Road Tramstop	13-Feb-08
5/17	Edinburgh Park Station Bridge	24-Jan-08
3/15	Crewe Road Gardens Bridge	23-Jan-08
5/20	A8 Underpass	10-Jan-08
3/07	Craigeleith Drive Bridge	21-Dec-07
3/09	Queensferry Road Bridge	21-Dec-07
3/11	Groathill Road South Bridge	21-Dec-07
3/04	St Georges Access Bridges	05-Dec-07
1/10	Leith Walk substation	14-Nov-07

Date 27 March 2008

PBH00018014_0033

Schedule of Prior Approvals

Identity	Name	Date
2/02	Haymarket Yards to Russell Road	02-Nov-07
7/24	Gogarburn Bridge	02-Nov-07
3/22	Granton View Substation	31-Oct-07
3/17	Granton Mains East Substation	11-Oct-07
1/14	Cathedral Lane substation	31-Aug-07
3/18	West Granton Access Road	10-Aug-07
1/03	North Leith Sands Substation	31-May-07

Date 27 March 2008

PBH00018014_0034

APPENDIX 5

Technical Approvals

Schedule of Technical Approvals

Identity	Design Section	Design Feature	Approval Type	Programme Start Date
TA 6/1	6	Gogar Depot Building	BAA Approval	27/06/2008
TA 6/2	6	Depot Internal Retaining Walls	CEC Technical Approval	11/06/2008
TA 6/3	6	Gogar Depot Building	Building Warrant	20/03/2008
TA D 1A	1a	Drainage	CEC Technical Approval	28/04/2008
TA D 1A	1a	Drainage	SEPA	25/04/2008
TA D 1A	1a	Drainage	SW Drainage Outfall Consent	26/02/2008
TA D 2A	2a	Drainage	CEC Technical Approval	06/05/2008
TA D 2A	2a	Drainage	SW Drainage Outfall Consent	25/04/2008
TA D 3A	3a	Drainage	SW Drainage Outfall Consent	08/04/2008
TA D 3A	3a	Drainage	CEC Technical Approval	08/04/2008
TA D 3B	3b	Drainage	CEC Technical Approval	08/04/2008
TA D 3B	3b	Drainage	SW Drainage Outfall Consent	08/04/2008
TA D 3C	3c	Drainage	CEC Technical Approval	08/04/2008
TA D 3C	3c	Drainage	SW Drainage Outfall Consent	08/04/2008
TA D 5A	5a	Drainage	CEC Technical Approval	11/06/2008
TA D 5B	5b	Drainage	SW Drainage Outfall Consent	25/04/2008
TA D 5B	5b	Drainage	CEC Technical Approval	02/04/2008
TA D 5B	5b	Drainage	SEPA	tba
TA D 5C	5c	Drainage	CEC Technical Approval	15/05/2008
TA D 5C	5c	Drainage	SW Drainage Outfall Consent	25/04/2008
TA D 5C	5c	Drainage	SEPA	25/04/2008
TA D 6A	6	Drainage	CEC Technical Approval	26/08/2008
TA D 6A	6	Drainage	SW Drainage Outfall Consent	25/04/2008
TA D 6A	6	Drainage	SEPA	25/04/2008
TA D 7A	7a	Drainage	CEC Technical Approval	06/06/2008
TA D 7A	7a	Drainage	SW Drainage Outfall Consent	25/04/2008
TA D 7A	7a	Drainage	SEPA	25/04/2008
TA L 1A	1a	Street Lighting	CEC Technical Approval	28/04/2008
TA L 1B	1b	Street Lighting	CEC Technical Approval	20/02/2008
TA L 1C	1c	Street Lighting	CEC Technical Approval	18/04/2008
TA L 1D	1d	Street Lighting	CEC Technical Approval	26/03/2008
TA L 2A	2a	Street Lighting	CEC Technical Approval	06/05/2008
TA L 3A	3a	Street Lighting	CEC Technical Approval	08/04/2008
TA L 3B	3b	Street Lighting	CEC Technical Approval	08/04/2008
TA L 3C	3c	Street Lighting	CEC Technical Approval	08/04/2008
TA L 5A	5a	Street Lighting	CEC Technical Approval	11/06/2008
TA L 5B	5b	Street Lighting	CEC Technical Approval	02/04/2008
TA L 5C	5c	Street Lighting	CEC Technical Approval	15/05/2008
TA L 6A	6	Street Lighting	CEC Technical Approval	13/06/2008
TA L 7A	7a	Street Lighting	CEC Technical Approval	06/06/2008
TA R 1A	1a	Roads	CEC Technical Approval	28/04/2008
TA R 1B	1b	Roads	CEC Technical Approval	20/02/2008
TA R 1C	1c	Roads	CEC Technical Approval	18/04/2008
TA R 1D	1d	Roads	CEC Technical Approval	26/03/2008
TA R 2A	2a	Roads	CEC Technical Approval	06/05/2008
TA R 3A	3a	Roads	CEC Technical Approval	08/04/2008
TA R 3B	3b	Roads	CEC Technical Approval	08/04/2008
TA R 3C	3c	Roads	CEC Technical Approval	08/04/2008
TA R 5A	5a	Roads	CEC Technical Approval	11/06/2008
TA R 5B	5b	Roads	CEC Technical Approval	02/04/2008
TA R 5C	5c	Roads	CEC Technical Approval	15/05/2008
TA R 6A	6	Roads	CEC Technical Approval	13/06/2008
TA R 7A	7a	Roads	CEC Technical Approval	06/06/2008
TA S 1/01	1a	Lindsay Rd Retaining Wall	CEC Technical Approval	24/07/2008

Date 27 March 2008

PBH00018014_0036

Schedule of Technical Approvals

Identity	Design Section	Design Feature	Approval Type	Programme Start Date
TA S 1/04	1a	Victoria Dock Entrance Bridge	CEC Technical Approval	20/08/2008
TA S 1/05	1a	Tower Place Bridge	CEC Technical Approval	25/09/2008
TA S 2/01	2a	Haymarket Station Viaduct	CEC Technical Approval	07/03/2008
TA S 2/01	2a	Haymarket Station Viaduct	Network Rail Form A	18/02/2008
TA S 2/03	2a	Russell Rd Bridge	CEC Technical Approval	31/03/2008
TA S 3/02	3a	Roseburn Terrace Bridge	CEC Technical Approval	02/07/2007
TA S 3/03	3a	Coltbridge Viaduct	CEC Technical Approval	13/09/2007
TA S 3/04	3a	St Georges School Footbridge	CEC Technical Approval	29/05/2007
TA S 3/05	3a	Ravelston Dykes Bridge	CEC Technical Approval	29/05/2007
TA S 3/07	3a	Craighleith Drive Bridge	CEC Technical Approval	12/06/2007
TA S 3/09	3a	Holiday Inn Access Bridge	CEC Technical Approval	21/05/2007
TA S 3/11	3a	Groathill Road S Bridge	CEC Technical Approval	26/06/2007
TA S 3/12	3a	Telford Road Bridge	CEC Technical Approval	25/05/2007
TA S 3/15	3b	Crewe Road Gardens Bridge	CEC Technical Approval	15/06/2007
TA S 3/16	3a	Roseburn Corridor Retaining Structures	CEC Technical Approval	17/08/2007
TA S 3/17	3a	St Georges School Access Bridge	CEC Technical Approval	25/05/2007
TA S 3/18	3a	Queensferry Road Bridge	CEC Technical Approval	21/05/2007
TA S 5/05	5a	Murrayfield Stop Retaining Wall	CEC Technical Approval	27/03/2008
TA S 5/07	5a	Roseburn Street Viaduct	CEC Technical Approval	27/03/2008
TA S 5/08	5a	Water of Leith Bridge	CEC Technical Approval	18/02/2008
TA S 5/12	5b	Carrick Knowe Bridge	Network Rail Form A	16/04/2008
TA S 5/12	5b	Carrick Knowe Bridge	CEC Technical Approval	09/04/2008
TA S 5/14	5b	Existing Saughton Road Bridge	CEC Technical Approval	09/03/2007
TA S 5/15	5b	South Gyle Access Road Bridge	CEC Technical Approval	26/03/2008
TA S 5/17	5b	Edinburgh Park Viaduct	Network Rail Form A	25/02/2008
TA S 5/17	5b	Edinburgh Park Viaduct	CEC Technical Approval	26/11/2007
TA S 5/19	5c	Gyle Stop Retaining Walls	CEC Technical Approval	07/03/2008
TA S 5/20	5c	A8 Underpass	CEC Technical Approval	29/07/2008
TA S 5/21	1b	Leith Walk Railway Bridge	CEC Technical Approval	05/04/2007
TA S 5/22	5a	Russell Road Retaining Wall No 2	Network Rail Form A	28/01/2008
TA S 5/22	5a	Russell Road Retaining Wall No 2	First Scotrail	21/01/2008
TA S 5/22	5a	Russell Road Retaining Wall No 2	CEC Technical Approval	22/11/2007
TA S 5/23	5a	Murrayfield Stadium Retaining Wall	Network Rail Form A	10/06/2008
TA S 5/23	5a	Murrayfield Stadium Retaining Wall	CEC Technical Approval	20/03/2008
TA S 5/25	5a	Balgreen Road Bridge	CEC Technical Approval	04/07/2008
TA S 5/25	5a	Balgreen Road Bridge	Network Rail Form A	11/06/2008
TA S 5/28	5a	Murrayfield Underpass	Network Rail Form A	20/03/2008
TA S 5/28	5a	Murrayfield Underpass	CEC Technical Approval	14/03/2008
TA S 5/29	5b	Bankhead Drive Retaining Wall	CEC Technical Approval	07/03/2008
TA S 5/30	5a	Russell Road Retaining Wall No 1	Network Rail Form A	09/01/2008
TA S 5/30	5a	Russell Road Retaining Wall No 1	CEC Technical Approval	06/11/2007
TA S 5/31	5a	Balgreen Road Retaining Wall	CEC Technical Approval	09/06/2008
TA S 5/31	5a	Balgreen Road Retaining Wall	Network Rail Form A	06/06/2008
TA S 5/32	5a	Baird Drive Retaining Wall	Network Rail Form A	06/06/2008
TA S 5/32	5a	Baird Drive Retaining Wall	CEC Technical Approval	15/04/2008
TA S 5/33	5a	Murrayfield Training Pitches Retaining Wall	Network Rail Form A	21/05/2008
TA S 5/33	5a	Murrayfield Training Pitches Retaining Wall	CEC Technical Approval	08/04/2008
TA S 6/21	6	Depot Access Road Bridge	CEC Technical Approval	15/07/2008
TA S 7/24	7a	Gogar Burn Bridge	CEC Technical Approval	18/03/2008
TA S 7/25	7a	Gogar Burn Culvert 1	CEC Technical Approval	27/06/2008
TA S 7/25	7a	Gogar Burn Culvert 1	SEPA	27/06/2008
TA S 7/28	7a	Gogar Burn Culvert 3	CEC Technical Approval	27/06/2008
TA S 7/28	7a	Gogar Burn Culvert 3	SEPA	27/06/2008
TA S 7/29	7a	Gogar Burn Retaining Wall 1	CEC Technical Approval	15/08/2008

Date 27 March 2008

PBH00018014_0037

Schedule of Technical Approvals

Identity	Design Section	Design Feature	Approval Type	Programme Start Date
TA S 7/30	7a	Gogar Burn Culvert 2	CEC Technical Approval	22/05/2008
TA S 7/30	7a	Gogar Burn Culvert 2	SEPA	22/05/2008
TA S 7/31	7a	Gogar Burn Retaining Wall 2	CEC Technical Approval	15/08/2008

Date 27 March 2008

PBH00018014_0038

APPENDIX 6

Contract Pricing and Payment Certification

Edinburgh Tram Network. SDS Contract Revenue Breakdown

Edinburgh Tram Network SDS Contract			Requirements Definition		Prelim Design		Detailed Design		Commissioning Support		Totals	
			Value	Certified	Value	Certified	Value	Certified	Value	Certified	Value	Certified
Contract Value												
Original Contract Value												
	Lump Sum Mobilisation		£ 228,000	£ 228,000	£ -	£ -	£ -	£ -	£ -	£ -	£ 228,000	£ 228,000
	Management Fee - RD, PD and DD Phase		£ 509,843	£ 509,843	£ 2,328,354	£ 2,328,354	£ 1,646,667	£ 1,646,667	£ -	£ -	£ 4,484,864	£ 4,484,864
	Management Fee - CS		£ -	£ -	£ -	£ -	£ 1,054,023	£ 1,054,023	£ -	£ -	£ 1,054,023	£ -
	Modelling		£ -	£ -	£ 62,650	£ 62,650	£ 88,750	£ 88,750	£ -	£ -	£ 151,400	£ 151,400
	Mile and Sub-Milestones		£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	Requirements Definition		£ 1,074,157	£ 1,074,157	£ -	£ -	£ -	£ -	£ -	£ -	£ 1,074,157	£ 1,074,157
	Preliminary Design		£ -	£ -	£ 3,478,515	£ 3,478,515	£ -	£ -	£ -	£ -	£ 3,478,515	£ 3,478,515
	Detailed Design		£ -	£ -	£ -	£ -	£ 9,362,063	£ 6,793,204	£ -	£ -	£ 9,362,063	£ 6,793,204
	Surveys		£ -	£ -	£ 345,910	£ 345,910	£ 1,354,090	£ 1,354,090	£ 50,000	£ -	£ 1,750,000	£ 1,700,000
	Planning Approvals		£ -	£ -	£ -	£ -	£ 300,000	£ 129,630	£ -	£ -	£ 300,000	£ 129,630
	Adjustment		£ -	£ -	£ -	£ -	£ 493	£ 493	£ -	£ -	£ 493	£ 493
Sub Total	Original Contract Value		£ 1,812,000	£ 1,812,000	£ 6,215,429	£ 6,215,429	£ 12,751,077	£ 10,011,848	£ 1,104,023	£ -	£ 21,882,529	£ 18,039,277
Changes												
TEL/CEC												
	CRT012/CNB001	Interchange design and cost benefit					£ 108,576	£ 108,576			£ 108,576	£ 108,576
	CRT018/CNB007/COB007	Tramstop locations					£ 67,596	£ 67,596			£ 67,596	£ 67,596
	CRT022,024-028/CNB008 COB010 - 015	Charettes (CNB008,010A, 011, 012, 013, 014, 015)					£ 600,000	£ 600,000			£ 600,000	£ 600,000
Sub Total	All TEL /CEC Changes		£ -	£ -	£ -	£ -	£ 776,172	£ 776,172	£ -	£ -	£ 776,172	£ 776,172
tie with Change Orders												
	CRT001/COS001	ETN Phasing			-£ 225,000	-£ 225,000	-£ 575,000	-£ 575,000			-£ 800,000	-£ 800,000
	CRT002/COS008	Citypoint Rental Contribution			-£ 17,645	-£ 17,645	-£ 102,265	-£ 102,265			-£ 119,910	-£ 119,910
	CRT028/CNS010/COS010	Earl Tram Depot and Stabling					£ 108,376	£ 108,376			£ 108,376	£ 108,376
	CRT029/CNS011/COS029	Earl Bridge Structure S33					£ 116,996	£ 116,996			£ 116,996	£ 116,996
	CRT030/COS013	Earl GI					£ 5,992	£ 5,992			£ 5,992	£ 5,992
	CRT074/COS014	Updated Utilities Capex					£ 38,006	£ 38,006			£ 38,006	£ 38,006
	CRT009/COS016	tie procurement			£ 15,528	£ 15,528	£ 43,955	£ 43,955			£ 59,483	£ 59,483
	CRT045/COS017	Ocean Terminal Revised Layout					£ 9,660	£ 9,660			£ 9,660	£ 9,660
	CR072/ CNS018/ COS018	Eastfield Avenue Realignment					£ 18,924	£ 18,924			£ 18,924	£ 18,924
	CRT049/CNS019/COS019	Additional GI Scope Granton to Newhaven					£ 20,274	£ 20,274			£ 20,274	£ 20,274
	CRT076/CNS020/COS020	Gogar Depot BAA Runway Extension					£ 14,009	£ 14,009			£ 14,009	£ 14,009
	CRT102/CNS030/COS030	Employers Requirements					£ 17,000	£ 17,000			£ 17,000	£ 17,000
	CRT010/CRS004/005/ COS038	Modelling					£ 240,000	£ 240,000			£ 240,000	£ 240,000
	CRT190/CNS040/COS040	Crew Relief facilities - Haymarket Tramstop Structure					£ 11,669	£ 11,669			£ 11,669	£ 11,669
	CRT212/CNS042/COS042	Co-ordination and sequencing works - St Andrew Square					£ 29,000	£ 29,000			£ 29,000	£ 29,000
	CRT050/COS021	Gogarburn Partnership Report					£ 1,425	£ 1,425			£ 1,425	£ 1,425
	CRT140/COS057	St Andrews Square OLE					£ 5,556	£ 5,556			£ 5,556	£ 5,556
	CRT143/ COS099	St Andrews Square Island Platform					£ 78,101	£ 78,101			£ 78,101	£ 78,101
	CRT144/ COS100	Shandwick Place Charette					£ 24,508	£ 24,508			£ 24,508	£ 24,508
	CRT145/ COS101	Princess St Realignment					£ 48,331	£ 48,331			£ 48,331	£ 48,331
	CRT146/ COS102	Picardy Place Concept Revision					£ 69,919	£ 69,919			£ 69,919	£ 69,919
	CRT147/ COS060	Bottom of Leith Walk					£ 31,400	£ 31,400			£ 31,400	£ 31,400
	CRT148/ COS103	Bus Provision Foot of Leith Walk and Constitution Street					£ 22,593	£ 22,593			£ 22,593	£ 22,593
	CRT163/COS056	SRU Cross Sections					£ 6,989	£ 6,989			£ 6,989	£ 6,989
	CRT176/COS058	Catherdal Substation Revisions					£ 8,256	£ 8,256			£ 8,256	£ 8,256
	CRT177/ COS026	Additional Infraco Information					£ 24,083	£ 24,083			£ 24,083	£ 24,083
	CRT180/COS059	Lothian Road Junction					£ 5,480	£ 5,480			£ 5,480	£ 5,480
	CRT182/ COS025	Casino Sq Trial Area					£ 11,484	£ 11,484			£ 11,484	£ 11,484
	CRT193/ COS106	Carricknowe Bridge Widening					£ 38,294	£ 38,294			£ 38,294	£ 38,294
	CRT194/COS035	Ocean Terminal Stop Functional Design Forth Ports Concepts					£ 41,000	£ 41,000			£ 41,000	£ 41,000

Date 31 March 2008

PBH00018014_0040

Edinburgh Tram Network. SDS Contract Revenue Breakdown

Edinburgh Tram Network SDS Contract		% Complete	Requirements Definition		Prelim Design		Detailed Design		Commissioning Support		Totals		
			Value	Certified	Value	Certified	Value	Certified	Value	Certified	Value	Certified	
CRT208/COS068	South Gyle Tramstop						£ 8,290	£ 8,290			£ 8,290	£ 8,290	
CRT215/ COS090	Changing Tramstop Names						£ 16,160	£ 16,160			£ 16,160	£ 16,160	
CRT216/ COS094	Coltbridge Viaduct Additional Preliminary Design Work						£ 16,928	£ 16,928			£ 16,928	£ 16,928	
CRT219/COS043	Utilities MUDFA Reprogramming						£ 20,000	£ 20,000			£ 20,000	£ 20,000	
CRT222/ COS095	Edinburgh Park Bus Stop						£ 11,775	£ 11,775			£ 11,775	£ 11,775	
CRT228/COS045	Local to OS Grid						£ 3,500	£ 3,500			£ 3,500	£ 3,500	
CRT231/ COS104	Balgreen Road Option 3						£ 85,268	£ 46,897			£ 85,268	£ 46,897	
CRT232/ COS096	Ground Investigation Gogar Additional Costs Due to UXO						£ 11,965	£ 11,965			£ 11,965	£ 11,965	
CRT241/COS049	Segregation of Phase 1a and 1b						£ 47,000	£ 47,000			£ 47,000	£ 47,000	
CRT243/COS066	EARL - Tram Changes 3						£ 113,599	£ 71,567			£ 113,599	£ 71,567	
CRT244/COS065	Gogar Depot Adjustments due to EARL						£ 27,435	£ 27,435			£ 27,435	£ 27,435	
CRT245/ COS110	Wide Area Modelling						£ 360,050	£ 54,008			£ 360,050	£ 54,008	
CRT251/ COB007	RBS Gogarburn tramstop design and approvals						£ 24,117	£ 12,058			£ 24,117	£ 12,058	
CRT252/ COB006	Ocean Terminal Area Redesign						£ 83,533	£ 37,590			£ 83,533	£ 37,590	
CRT253/ COB004	Lindsay Road Detailed Design						£ 131,600	£ 92,120			£ 131,600	£ 92,120	
CRT254/ COS071 rev 1	Casino Sq						£ 15,645	£ 15,645			£ 15,645	£ 15,645	
CRT258/ COS085	Torphichen Street Two way Conversion 1D						£ 22,269	£ 11,134			£ 22,269	£ 11,134	
CRT259/ COS089	Bernard Street Baltic Street Road Works						£ 23,659	£ 23,659			£ 23,659	£ 23,659	
CRT262/COS082	Review of Actual Tram Vehicle Load against Assumed Vehicle Load						£ 17,975	£ 8,988			£ 17,975	£ 8,988	
CRT274/ COB005	Additional Work Lindsay Road Functional Design						£ 11,458	£ 11,458			£ 11,458	£ 11,458	
CRT276/ COB003	3A Realignment of Telford Road Bridge stepped access						£ 21,468	£ 2,147			£ 21,468	£ 2,147	
CRT284/ COS078	St Andrew Square Advance Tram TRO						£ 5,960	£ 5,960			£ 5,960	£ 5,960	
CRT287/COS034	Tram Alignment on BAA Services Drawing						£ 380	£ 380			£ 380	£ 380	
CRT288/COS033	Tram Length Report						£ 14,075	£ 14,075			£ 14,075	£ 14,075	
CRT289/ COS092	Utilities SGN IFC Drawings						£ 1,208	£ 1,208			£ 1,208	£ 1,208	
CRT290/ COS098	Scottish Gas Networks Plates 27 to 31						£ 5,642	£ 5,642			£ 5,642	£ 5,642	
CRT293/ COS084	Design of Car Parking at Haymarket Depot						£ 14,260	£ 14,260			£ 14,260	£ 14,260	
CRT294/ COB013	West Pilton Way West Granton Access Junction Re Design						£ 70,384	£ 7,038			£ 70,384	£ 7,038	
CRT295/ COS093	Re-submission of Roseburn Corridor - Maintenance and Access Strategy						£ 416	£ 416			£ 416	£ 416	
CRT300/ COS105	Utilities Diversion on Constitution Street						£ 11,242	£ 11,242			£ 11,242	£ 11,242	
CRT304/ COS097	MUDFA Plate 1 to 12 Section 1A						£ 9,772	£ 4,397			£ 9,772	£ 4,397	
CRT305/ COS080	Edinburgh Park Private Utilities Relocation						£ 5,770	£ 3,462			£ 5,770	£ 3,462	
CRT306/ COS091	Traffic Modelling Changes to Road Design - Frederick Street & Mound						£ 11,760	£ 11,760			£ 11,760	£ 11,760	
CRT326 /COS111	Forth Port Drawings						£ 2,400	£ -			£ 2,400	£ -	
CRT328 /CNS114 /COS114	Employer's Requirements v3.5a Review						£ 39,748	£ -			£ 39,748	£ -	
CRT331 /CNS115 /COS115	Review of Infraco Civils Proposals						£ 8,248	£ -			£ 8,248	£ -	
							£ -	£ -			£ -	£ -	
							£ -	£ -			£ -	£ -	
Sub Total SDS Submitted	All tie Changes		£ -	£ -	£ -	£ 227,117	£ 227,117	£ 1,688,974	£ 1,044,179	£ -	£ -	£ 1,461,857	£ 817,062
CRT257	Alignment from Tower Place to Casino Square 1a						£ 56,003	£ 42,002			£ 56,003	£ 42,002	
CRT261	Utilities Site Representative						£ 45,390	£ -			£ 45,390	£ -	
CRT277	Utilities Site Representative from 29th October 07 to 1st February 08						£ 45,390	£ -			£ 45,390	£ -	
CRT278	Section 1A Bridges						£ 204,239	£ -			£ 204,239	£ -	
CRT281	Meeting Room Re-charges						£ 22,433	£ 22,003			£ 22,433	£ 22,003	

Date 31 March 2008

PBH00018014_0041

Edinburgh Tram Network. SDS Contract Revenue Breakdown

Edinburgh Tram Network SDS Contract		% Complete	Requirements Definition		Prelim Design		Detailed Design		Commissioning Support		Totals	
			Value	Certified	Value	Certified	Value	Certified	Value	Certified	Value	Certified
CRT301	Full Planning Permission						£ 22,384	£ -			£ 22,384	£ -
CRT307	Frederick Street Opening						£ 53,027	£ -			£ 53,027	£ -
CRT308	Utilities A8 Underpass						£ 6,022	£ -			£ 6,022	£ -
CRT312	Ocean Terminal Optioneering and Additional Detailed Design						£ 43,873	£ -			£ 43,873	£ -
CRT313	Police Box Coffee Bar Relocation						£ 7,364	£ -			£ 7,364	£ -
CRT317	Tram Stop Changes						£ 24,996	£ -			£ 24,996	£ -
CRT318	Leith Walk Footpath Finishes						£ 8,000	£ -			£ 8,000	£ -
CRT319	Roseburn Street Bridge Redesign Feasibility Study						£ 32,249	£ -			£ 32,249	£ -
CRT320	Reprofile Tram Alignment							£ -			£ -	£ -
CRT321	SGN Constitution Street Iterations						£ 3,330	£ -			£ 3,330	£ -
CRT322	Edinburgh Airport Tramstop Kiosk							£ -			£ -	£ -
CRT324	Building Warrants for Cathedral Lane substation, Leith Walk substation, Murrayfield Accommodation and Haymarket Crew Facilities						£ 25,570	£ -			£ 25,570	£ -
CRT325	Section 3 Utilities Assessments						£ 9,004	£ -			£ 9,004	£ -
CRT327	Coltbridge Viaduct Security Barrier						£ 6,234	£ -			£ 6,234	£ -
CRT330 /CNS113	Railway Access Points						£ 392				£ 392	£ -
CRT332	tie Building Fixing Leaflet						£ 4,056				£ 4,056	£ -
CRT333	Stage D Drawings for Tramstops						£ 32,880				£ 32,880	£ -
CRT334	Additional visualisations at Dublin St						£ 1,500				£ 1,500	£ -
CRT335 /CNS118	Roseburn Viaduct Feasibility for autotrack option										£ -	£ -
								£ 493			£ 493	£ -
	Adjustment - Delta on Change Order COB001						£ 1,702	£ 1,702			£ 1,702	£ 1,702
											£ -	£ -
Sub Total SDS Claims Approved	All SDS Pending Changes		£ -	£ -	£ -	£ -	£ 656,038	£ 66,200	£ -	£ -	£ 656,038	£ 66,200
Jun-07	Additional Management & Supervision Services						£ 2,500,000	£ 825,000			£ 2,500,000	£ 825,000
Sub Total SDS Claims Pending	All SDS Approved Claims		£ -	£ -	£ -	£ -	£ 2,500,000	£ 825,000	£ -	£ -	£ 2,500,000	£ 825,000
Jan-08	Additional Management & Supervision Services						£ 598,681				£ 598,681	£ -
Sub Total	All SDS Pending Claims		£ -	£ -	£ -	£ -	£ 598,681	£ -	£ -	£ -	£ 598,681	£ -
Total	Total Contract Value		£ 1,812,000	£ 1,812,000	£ 5,988,312	£ 5,988,312	£ 18,970,942	£ 12,723,399	£ 1,104,023	£ -	£ 27,875,277	£ 20,523,711

Date 31 March 2008

PBH00018014_0042

APPENDIX 7

Misalignment Assessment Report

Employers Requirements version 3.6

APPENDIX 8

Misalignment Assessment Report

BBS Civils Offer

Infraco Civils Proposals - PB Commentary

Scope of Work	Information from BBS to SDS	Description of Design completion activities	1	A	1B	1C	1D	2A	5A	5B	5C	7A	6	PB Comments
Accommodation Works														
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design		Complete Design	x	x	x	x	x	x	x	x	x	x		PB seeks clarification of this statement which is used on many occasions. i.e Which IFC Design has BBS allowed for to construct? Is this the SDS design or some variant which BBS is considering when referring to 'finalising design'
Building (Depot)														
Liaison on steelwork design for Depot Building may be required to allow BBS to comply with BAA requirements for notice period to lower crane jibs if BAA require use of the auxiliary runway. Any re-design is unlikely or minimal		Liaise with structural steel subcontractor on design of steelwork, where required, to allow BBS to comply with BAA requirements for notice period to lower crane jibs if BAA require use of the auxiliary runway.											x	x BAA risks are assumed to remain with tie
Drainage														
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design		Complete Design	x	x	x	x	x	x	x	x	x	x		
Requirements for maximising use of and connection to existing drainage network to be confirmed.		Review and complete design	x	x	x	x	x	x	x	x	x	x		
Earthworks														
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design		Complete Earthworks Design	x	x	x	x	x	x	x	x	x	x		

Date 27 March 2008

PBH00018014_0045

Infraco Civils Proposals - PB Commentary

Scope of Work	Information from BBS to SDS	Description of Design completion activities	1A 1B 1C 1D 2A 5A 5B 5C 7A 6	PB Comments
Requirements for excavation and filling below Earthworks Outline to be designed and specified and assessment of anticipated formation conditions		Standard Details for treatment of low CBR or Stiffness or Soft Material; excavate and replace with class 6, Lime Modification, Geotextiles	x x x x x x x x x x	PB has carried out sufficient SI /GI to inform the design. With reference to the Scope Split meetings a rolling programme of SI /GI is to be carried out by BBS. PB will provide a suite of treatments which can be applied when the requirements are established by BBS. Note that this scope of work will be impacted by the lower void spanning capacity of BBS's Trackform offering in comparison with the PB reference design.
		Extent; length, width and depth of areas requiring earthworks below Earthworks Outline	x x x x x x x x x x	
Formation requirements to be confirmed.		CBR or Stiffness Requirements at Formation for Highways and Track	x x x x x x x x x x	
Requirements for excavation and disposal of contaminated material, and refilling of void, to be designed and specified.		Extent; length, width and depth of areas requiring earthworks below Earthworks Outline and materials to be used for refilling where required	x x x x x x x x x x	
Special Geotechnical measures, e.g. embankment slope steepening (by selection of fill type, re-inforced earth) cut slope steepening (by slope drains, buttresses, soil nails) soft ground treatment (by surcharging/consolidation, load transfer platforms) to be designed and specified.		embankment slope steepening (by selection of fill type, re-inforced earth) cut slope steepening (by slope drains, buttresses, soil nails) soft ground treatment (by surcharging/consolidation, load transfer platforms) to be designed and specified.	x x x x x x x x	

Date 27 March 2008

PBH00018014_0046

Infraco Civils Proposals - PB Commentary

Scope of Work	Information from BBS to SDS	Description of Design completion activities	1	A	1B	1C	1D	2A	5A	5B	5C	7A	6	PB Comments
Design special Geotechnical measures for Gogar Landfill Site. Solution to be dev		Design solution to be developed with BBS Engineers for surcharge embankment with appropriate consolidation period and excavation and replacement in the vicinity of Gogarburn Bridge East Abutment											x	
Geometry			x	x	x	x	x	x	x	x	x	x	x	
Horizontal Alignment			x	x	x	x	x	x	x	x	x	x	x	
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design		Complete Design	x	x	x	x	x	x	x	x	x	x	x	
Confirmation required that alignment is compatible with CAF Tram DKE and LOD.		Incorporate CAF Tram DKE in Design	x	x	x	x	x	x	x	x	x	x	x	Change required to wording. Confirmation required that the CAF Tram is compatible with the alignment.
Landscaping			x	x	x	x	x	x	x	x	x	x	x	
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design		Complete Design	x	x	x	x	x	x	x	x	x	x	x	
OLE Foundations			x	x	x	x	x	x	x	x	x	x	x	
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design	Information from BBS to be issued on OLE poles, including loadings.	Design OLE Foundations	x	x	x	x	x	x	x	x	x	x	x	PB is preparing a suite of standard OLE base designs which should cover the requirement
Roads			x	x	x	x	x	x	x	x	x	x	x	
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design		Complete Design	x	x	x	x	x	x	x	x	x	x	x	

Date 27 March 2008

PBH00018014_0047

Infraco Civils Proposals - PB Commentary

Scope of Work	Information from BBS to SDS	Description of Design completion activities	1A	1B	1C	1D	2A	5A	5B	5C	7A	6	PB Comments
Subject to survey, pavement design to be developed and finalised to minimise work scope		Pavement design is to be revised to a plane and re-surface (new regulating and surface course only) when survey information is available and where it confirms the feasibility of this design solution Note This activity is an alternative to the Vertical Alignment activity above)	x	x	x	x	x	x	x	x			PB cannot identify where this approach may apply. Clarification sought from tie. Any surveys to be carried out and paid for by BBS.
Further pavement surveys and assessments are required.		GPR and/or Pavement Condition surveys as required by xxxx (above)	x	x	x	x	x	x	x	x			Clarification sought from tie.
Site Clearance													
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design		Complete Design	x	x		x	x	x	x	x	x		
Design to be completed to IFC status and all design consents and approvals obtained.		Complete Design			x								

Date 27 March 2008

PBH00018014_0048

Infraco Civils Proposals - PB Commentary

Scope of Work	Information from BBS to SDS	Description of Design completion activities	1A	1B	1C	1D	2A	5A	5B	5C	7A	6	PB Comments
Sub-station Buildings													
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design	Information on Sub-station equipment to be supplied to SDS by BBS	Complete Design	x	x	x	x	x	x	x	x	x	x	<p>For the purposes of the Infraco Procurment SDS has provided comprehensive procurement information, including detailed and dimensioned drawings, schematics, wiring diagrams, protection diagrams etc all of which are based upon the many tie/tie technical advisors/Transdev and Scottish Power meetings.</p> <p>All substation equipment performance and functionality has been approved by SP as have the equipment layouts within the associated substations which themselves have progressed through planning. Completion of the Sub-station designs is to be a BBS responsibility</p>
Sytems and Power Cable Ducts													
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design	Information on cabling requirements to be supplied to SDS by BBS	Design duct group and spacing to accommodate cabling requirements and incorporate information on drawings	x	x	x	x	x	x	x	x	x	x	<p>Comprehensive SDS cable duct drawings and layouts have been produced based upon the tie approved SDS design and procurement documentation. The cabling requirements may change dependent upon the BBS proprietary solution. Identification of scope and incorporation on drawings to be BBS responsibility</p>

Date 27 March 2008

Infraco Civils Proposals - PB Commentary

Scope of Work	Information from BBS to SDS	Description of Design completion activities	1A	1B	1C	1D	2A	5A	5B	5C	7A	6	PB Comments
Trackform			x	x	x	x	x	x	x	x	x	x	
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design			x	x	x	x	x	x	x	x	x	x	All Trackform design and development issues are to be the responsibility of BBS. PB provides the horizontal and vertical alignment design together with Civils infrastructure design outwith the Trackform envelope. All design within the envelope is assumed to be the responsibility of BBS. PB (SDS) will not engage in agreement and approval in relation to the BBS Trackform design.
Cross sections required to reflect BBS's selected Track System, including minimum track construction depths (top of rail to formation) with corresponding formation condition requirements.	SDS believe that loadings are required to enable them to complete this Design activity	Incorporate BBS selected Trackform on drawings and confirm minimum track construction depth and corresponding formation condition requirement as Pricing Assumption or at some other depth condition measure to be agreed/approved by SDS, BBS, tie and CEC	x										
Tramstops			x	x	x	x	x	x	x	x	x	x	
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design		Complete Design	x	x	x	x	x	x	x	x	x	x	
Vertical Alignment			x	x	x	x	x	x	x	x	x	x	
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design		Complete Design	x	x	x	x	x	x	x	x	x	x	
Revise alignment, where possible and where Programme permits for on-street section to minimise Roads work-scope.		Revise, generally raise, vertical alignment of Track	x										It is assumed that PB will complete the SDS Alignment Design as currently agreed and that any changes which are deemed to be possible will be instructed and paid for when they are identified and agreed

Date 27 March 2008

PBH00018014_0050

Infraco Civils Proposals - PB Commentary

Scope of Work	Information from BBS to SDS	Description of Design completion activities	1A	1B	1C	1D	2A	5A	5B	5C	7A	6	PB Comments
Revise alignment, where possible and where Programme permits to minimise Roads work-scope.		Revise, generally raise, vertical alignment of Track		x	x	x	x						The SDS alignment is designed to accommodate the most economical vertical and horizontal passage of the tram throughout its journey. It should also be noted that any change in the track alignment may impact other aspects of the infrastructure e.g tramstops.
Revised alignment required to facilitate direct fixing of rails to structures and guideway.		Revise, lower, vertical alignment of Track	x						x				Trackform issue - BBS responsibility
Revised alignment required to facilitate direct fixing of rails to structures		Revise, lower, vertical alignment of Track					x	x		x	x		

Date 27 March 2008

PBH00018014_0051

Infraco Civils Proposals - PB Commentary

Scope of Work	Information from BBS to SDS	Description of Design completion activities	1A	1B	1C	1D	2A	5A	5B	5C	7A	6	PB Comments
Structures													
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design													
W1 Lindsay Road		Complete Design	x										
S16 Victoria Dock Entrance		Complete Design	x										
S17 Tower Place		Complete Design	x										
S18 Leith Walk Railway		Complete Design		x									
W3 Russell Road (Wall) No 1		Complete Design						x					
W4 Russell Road (Wall) No 2		Complete Design						x					
W18 Murrayfield Tramstop (Wall)		Further GI required to inform Design						x					
S21B Murrayfield Stadium (Wall)		Complete Design						x					
S21C Murrayfield Stadium Underpass		Complete Design						x					
S21D Murrayfield Training Pitches		Complete Design						x					
W8 Baird Drive		-						x					
S22 Balgreen Road (A and B)		-						x					
W9 Balgreen Road (Wall)		Complete Design							x				
S26 South Gyle Access Road		Complete Design							x				
W11 Bankhead Drive Tramstop (Wall)		Complete Design							x				
W19 Gyle Tramstop (Wall)		Complete Design								x			
S29 Gogar Burn		Complete Design									x		
S30, 31 and 34 Gogarburn Culverts 1,2 and 3		Complete Design										x	
W14 and 15 Gogarburn Walls 1 and 2		Complete Design										x	

Date 27 March 2008

PBH00018014_0052

Infraco Civils Proposals - PB Commentary

Scope of Work	Information from BBS to SDS	Description of Design completion activities	1A	1B	1C	1D	2A	5A	5B	5C	7A	6	PB Comments	
Possible Re-design														
S21A Roseburn Street Viaduct														
Possible re-design to reduce scope and cost.		Re-Design to 2 separate single span structures with re-inforced earth walled embankments replacing removed spans						x					Clarification sought from tie on what has been accepted in relation to this part of the BBS Civils Offer.	
Further GI required to confirm foundation design.		Further GI, in conjunction with GI for W18 (see above) to ascertain extent of soft layer												
Re-design required to allow cost efficient fabrication of structural steel.	Appoint steelwork sub-contractor	Liaise with BBS and steelwork sub-contractor and re-design/re-detail accordingly												
S21E Water of Leith														
Subject to Programme allowance, redesign pier foundations to improve buildability.		Re-design with 2 No larger dia bored piles (mono-piles), one per column. Design a direct connection to the columns, to be made within the pile casing. Pile casings will be cut off at river bed level						x					Clarification sought from tie on what has been accepted in relation to this part of the BBS Civils Offer.	
Re-design required to allow cost efficient fabrication of structural steel.	Appoint steelwork sub-contractor	Liaise with BBS and steelwork sub-contractor and re-design/re-detail accordingly												
S23 Carrick Knowe														
Completed design to have foundations outwith Track Support Zone ?		Review and Revise Design							x				Clarification sought from tie on what has been accepted in relation to this part of the BBS Civils Offer.	

Date 27 March 2008

PBH00018014_0053

Infraco Civils Proposals - PB Commentary

Scope of Work	Information from BBS to SDS	Description of Design completion activities	1A	1B	1C	1D	2A	5A	5B	5C	7A	6	PB Comments
S27 Edinburgh Park Station Viaduct													
Possible re-design to reduce scope and cost		Redesign piers with flared tops and/or crossheads so that pre-cast deck beams can be placed without the need for Temporary Works (temporary beam supports)										x	Clarification sought from tie on what has been accepted in relation to this part of the BBS Civils Offer.
Completed design to have foundations outwith Track Support Zone		Review and Revise Design											
S28 A8 Underpass													
Subject to Programme allowance, re-design to incorporate a more economical piling solution along with further GI to confirm ground water regime.		subject to programme allowance, re-design secant piles as contiguous piles										x	Clarification sought from tie on what has been accepted in relation to this part of the BBS Civils Offer.
Re-design for BT duct crossing (over structure)		re-design section of underpass to facilitate construction under BT duct											
S19 Haymarket Viaduct													
Requirements for a design condition survey of the existing wall.												x	Clarification sought from tie on what has been accepted in relation to this part of the BBS Civils Offer.
Requirements for special foundations at Pier 4 and Abutment E to be confirmed.													
S20 Russell Road													
Possible re-design (subject to programme allowance) of sub-structure to improve buildability												x	Clarification sought from tie on what has been accepted in relation to this part of the BBS Civils Offer.
S32 Depot Access Bridge (or Depot Access Bridges)													
													x

Date 27 March 2008

PBH00018014_0054

Infraco Civils Proposals - PB Commentary

Scope of Work	Information from BBS to SDS	Description of Design completion activities	1A 1B 1C 1D 2A 5A 5B 5C 7A 6	PB Comments
Design to be completed to IFC status, all design consents and approvals obtained and BBS will construct IFC Design		Design to be completed from basic information, discussed at meeting on xxxx between BBS and SDS. The DABs are to be 2 separate structures. BBS will work with SDS to develop a cost effective Design		Clarification sought from tie on what has been accepted in relation to this part of the BBS Civils Offer.

Date 27 March 2008

PBH00018014_0055

APPENDIX 9

Misalignment Assessment Report

BBS Systems Offer

SDS Review of Siemens offers to tie (Version 21.01.08 as amended by 5 Siemens documents dated 18.02.08 – all received from tie)		Version 13.10 Hrs 17.03.08											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BIMS	CAD	IFC	Planning Approvals	Comments	Interface		
<p><i>It should be noted that SDS cannot be held responsible for any errors or omissions that will or may impact on their responsibilities to tie or any possible future responsibilities to others in respect of their role, deliverables (already made or to be made), Designs, warranties and general responsibilities</i></p> <p><i>It should also be noted that SDS have provided tie with their recommendations in the form of procurement specifications and drawings all of which have successfully been through the tie review processes during their development and some of which have been used by tie as the basis for their Infraco Procurement Process. Whilst SDS have passed comment and observations on the BBS offer</i></p>													
General													
	It is noted that Siemens have referenced the documentation that they have based their bid on. SDS are concerned that not all their documents issued to tie for tender purposes may have been issued to the Infraco Bidders	Part 3 – Sect 3 – Railway Electrification – 18.02.08 issue – Page 4 refers	tie to note & address										
	SDS are not able to find any reference to the need for the provision of an energised Test Track for Tram testing and commissioning												
Section 1 – Part 1- Programme & Project Execution													
SYS1000	SDS have concerns over the implications of the proposed use of a Siemens Document Management Tool for control and coordination of contract documentation	Part 1 – Project Documentation Management Clause 8 – Page 16	SDS/BBS to have dialogue and prepare a action plan to facilitate coordination of contract documentation between the two parties	Siemens document management tool	BBS	NA	NA	BBS	NA				

Date 26 March 2008

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BMS	CAD	IFC	Planning Approvals	Comments	Interface
			See SDS Proposed Alignment Matrix SYS1000								
SYS1001	Project Management roles, responsibilities and deliverables to be clarified		See SDS Proposed Alignment Matrix SYS1001/1002/1003	PMP Plan	BBS	NA	NA	BBS	NA		
SYS1002				Risk Management Plan	BBS	NA	NA	BBS	NA		
SYS1003				Comms Strategy	BBS	NA	NA	BBS	NA		
SYS1004	SDS require sight of the BBS proposals (Consents and approvals)	Part 1 – Consents and Approvals - Clause 5 – Page 10	See SDS Proposed Alignment Matrix SYS1004	Consents and Approvals	BBS	NA	NA	BBS	BBS		
SYS1005	SDS require sight of the BBS proposals (Quality Management)	Part 1– Quality Management - Clause 5 – Page 10	See SDS Proposed Alignment Matrix SYS1005	Quality Management Plan	BBS	NA	NA	BBS	NA		
SYS1006	SDS require sight of the BBS proposals (Safety Management)	Part 1 – Safety Management - Clause 5 – Page 14	See SDS Proposed Alignment Matrix SYS1006	Safety Management Plan	BBS	NA	NA	BBS	NA		
SYS1007	SDS is of the opinion that Interface management is the responsibility of the Infraco which is not clear from the text offered to tie.	Part 1 – Clause 9 – Interface Management – Page 18	See SDS Proposed Alignment Matrix SYS1007	Interface Management Plan	BBS	NA	NA	BBS	NA		
Section 1 – Annex 1 – Management Manual											
	Standard Siemens Publicity Brochure		No input required								
	No input from SDS										
Section 1 – Annex 2 – ISO Certificate											
	Det Norske Veritas Certificate valid till 31.12.09										
	ISO 9001 - 2000, ISO 14001 - 2004 & AGSAS 18001 – 1999										

Date 26 March 2008

PBH00018014_0058

SDS Review of Siemens offers to file										Mark Up	BIMS	CAD	IFC	Planning Approvals	Comments	Interface
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description												
	No input from SDS															
Section 1 – Annex 3 – Interface Schematics																
Section 2 – Part 1 – System Engineering																
SYS1100	SDS are not able to accept the Siemens concept in respect of design responsibilities, optimisation of design, testing, demonstration of compliance with ER's etc as detailed by them	Part 1 – Clause 2 – Pages 3, 4 & 5	See SDS Proposed Alignment Matrix SYS1100	Contract Spit of System Design-See Scope Document for Novation Agreement - Not now all SDS						BBS	NA	NA	BBS	NA	Read the BBS response	
SYS1101	SDS are not able to accept the Siemens concept of SDS responsibilities in respect of Liaison with the Tramco Contract	Part 1 – Clause 3 - Page 6	See SDS Proposed Alignment Matrix SYS1101	Liaison to Tramco Contract						BBS	NA	NA	BBS	NA	BBS to be lead in Tramco liaising	
SYS1102	SDS are not able to accept the Siemens concept in respect of their anticipated SDS Role in System Concepts	Part 1 – Clause 4 - Page 7	See SDS Proposed Alignment Matrix SYS1102	System Concepts						BBS	BBS	BBS	BBS	BBS	All BBS input provision	

Date 26 March 2008

PBH0018014_0059

SDS Review of Siemens offers to tie						Mark Up	BIMS	CAD	IFC	Planning Approvals	Comments	Interface
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description								
SYS1103	SDS are not able to accept the concept of 'Approval of SDS Design by BBS'	Part 1 – Clause 5 - Page 8	See SDS Proposed Alignment Matrix SYS1103	BBS Approval of SDS Design-Design Change by BBS	BBS	BBS	SDS	SDS	SDS			
	SDS Designs have already passed through the tie Review Processes during Functional Requirements Phase, Outline Design Phase and Detailed Design Phase as have the SDS Procurement Documentation. All of which have been accepted by tie and used for the Infracore Procurement purposes											
	Any subsequent changes to these SDS designs or procurement documentation must be by means of the formal Change Control Procedure											
SYS1104	SDS assume the Installation documentation referred to is that of Siemens/BBS	Part 1 – Clause 6.1 - Page 9	See SDS Proposed Alignment Matrix SYS1104	Installation Plans/Method Statements and Constructability	BBS	BBS	BBS	BBS	NA	BBS provision		
SYS1105	SDS are not responsible for the development of Test Plan for approval by BBS, tie and the relevant authorities as expected in the Siemens Bid	Part 1 – Clause 7.2 - Page 11	See SDS Proposed Alignment Matrix SYS1105	Test Plan	BBS	BBS	BBS	BBS	NA	following know E&M Equipments by BBS		

Date 26 March 2008

PBH00018014_0060

SDS Review of Siemens offers to lie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
SYS1106	SDS are not responsible for the pass fail criteria as set out in the above mentioned test plan as is stated	Part 1 – Clause 8 - Page 15	See SDS Proposed Alignment Matrix SYS1106	Acceptance /Approval (pass/fail criteria)	BBS	NA	NA	BBS	NA	reference to comply with Pass/fail Criteria with BBS	
Section 2 – Part 1 – Annex 1 – RAMS											
SYS1200	SDS note the BBS requirement to provide RAMS information based upon their Design and Systems Procurement documentation for inclusion within their RAMS Management System to be operated and managed by BBS/Siemens	Clause 1.2 – Page 3 of 23	See SDS Proposed Alignment Matrix SYS1200	RAMS information based on BBS Design	BBS	BBS	BBS	BBS	SDS		
	This will be forwarded at the time the associated detail design is completed										
SYS1201	SDS have a degree of concern over the references to 'the contractor' rather than 'The Infracore' or 'BBS/Siemens' who SDS would understand to be the responsible party.	Clause 2.3.1 Page 13	See SDS Proposed Alignment Matrix SYS1201	Use of term "Contractor" Page 13 Clause 2.3.1	BBS	BBS	BBS	BBS	SDS		

Date 26 March 2008

PBH00018014_0061

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BMS	CAD	IFC	Planning Approvals	Comments	Interface	
SYS1202	SDS understood that it was tie intention to have a period of trial running/phantom service running prior to the ETN entering commercial service and this would follow the satisfactory completion of all the various site testing activities.	Paragraph 1 – Page 20 of 23	See SDS Proposed Alignment Matrix SYS1202	"Burn in" of System for up to 1 year - Page 20 Para 1	BBS	BBS	BBS	BBS	SDS			
	SDS do not therefore understand the caveat in respect of 'burn in' and spurious 'early' failures and of particular concern the concept that such failures can occur over a period of one year however this is acknowledged by SDS as a tie issue.											
SYS1203	SDS would offer an opinion that some of the Correction Time Limits' quoted by BBS/Siemens appear to be quite 'generous' e.g.	Fault category – Page 22 of 23	See SDS Proposed Alignment Matrix SYS1203	Fault categories Page 22	BBS	BBS	BBS	BBS	SDS			
	Tramstop lighting fault –2 days											
	Tramstop telephone fault - 3 days											
	CCTV Fault – 2 days											
	Duplication of a number of issues											
Section 2 – Part 1 – Annex 2 – Training												
SYS1300	SDS note with concern the use of the term 'may'	Clause 1 – Line 4 – Page 3 of 3	See SDS Proposed Alignment Matrix SYS1300	Training Support "may" cover. Tie to consider	BBS	BBS	BBS	BBS	SDS			
SYS1301	SDS note the term 'the suppliers necessary documentation like the operating and maintenance manuals of the specific subsystems will be part of the training documents'	Clause 1 – Page 3 of 3	See SDS Proposed Alignment Matrix SYS1301	Bespoke documentation Page 3 of 3	BBS	BBS	BBS	BBS	SDS			

Date 26 March 2008

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface	
	SDS had understood it was tie intention to be provided with a family of integrated 'bespoke' documents											
Section 2 – Part 1 –Annex 3 - Earthing & Bonding												
SYS1400	Two of the three SDS referenced documents have been revised as follows		See SDS Proposed Alignment Matrix SYS1400		BBS	BBS	BBS	BBS	SDS			
	ULE90130-SW-SW-SPN-00058V5 – EMC Management Plan – issued to tie 16.03.07 – OK no change			Earthing and Bonding Documents 2 of 3 have been updated and issued to tie								
	ULE90130-SW-REP-00071v2 – System Earthing Policy - now V3 issued to tie 30.03.07	Clause 1 – Page 3 of 3										
	ULE90130-SW-REP-00006v2 – Code of Practise for Stray Current Corrosion Control - now V3 issued to tie 23.08.07											
Section 2 – Part 1 –Annex 4 – EMC												
SYS1500	Two of the three SDS referenced documents have been revised as follows		See SDS Proposed Alignment Matrix SYS1500		BBS	BBS	BBS	BBS	SDS			
	ULE90130-SW-SW-SPN-00058V5 – EMC Management Plan – issued to tie 16.03.07 – OK no change			EMC Documents 2 of 3 have been updated and issued to tie								
	ULE90130-SW-REP-00071v2 – System Earthing Policy - now V3 issued to tie 30.03.07	Clause 1 – Page 3 of 3										

Date 26 March 2008

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface	
	ULE90130-SW-REP-00006v2 - Code of Practise for Stray Current Corrosion Control - now V3 issued to tie 23.08.07											

Date 26 March 2008

PBH00018014_0064

SDS Review of Siemens offers to file Version 13.10 Hrs 17.03.08					Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
REF	Example	Alignment Delivery	Description								
Section 2 – Part 2 – Outline Operational Concept											
SYS1600	Incorrect nomenclatures are being used	e.g Table 6 – ETN Traction Substations – See also elsewhere	See SDS Proposed Alignment Matrix SYS1600	Table 6 Incorrect nomenclature	BBS	BBS	BBS	BBS	BBS		
SYS1601	Incorrect SP Switchgear configuration is being quoted	Paragraph 1 – Page 29 of 43 – See also elsewhere	See SDS Proposed Alignment Matrix SYS1601	Incorrect SP switchgear configuration Page 29	BBS	BBS	BBS	BBS	BBS		
SYS1602	Proposed use of SCADA for local switchgear control	Paragraph 3 – Page 29 of 43 – See also elsewhere	See SDS Proposed Alignment Matrix SYS1602	Proposed use of SCADA for local switchgear control	BBS	BBS	BBS	BBS	BBS		
SYS1603	SDS had understood the Tram announcement would be automatic with the facility for three driver to use as circumstances dictate. This is not the impression gained from the Siemens wording 'The tram driver shall be responsible for passenger announcements via the onboard PA System' SDS would point out that this has legal implications for the drivers	Last paragraph – Page 31 of 43	See SDS Proposed Alignment Matrix SYS1603	Tram PA Announcements	BBS	BBS	BBS	BBS	BBS		
SYS1604	A number of references are made to the drivers obtaining permission for movements from the 'Engineering Controller'. SDS would question if this should be the 'Operations Controller' SDS seek clarification.		See SDS Proposed Alignment Matrix SYS1604	Engineering Controller to read Operations Controller	BBS	BBS	BBS	BBS	BBS		
SYS1605	Performance Monitoring. As has been mentioned elsewhere SDS have not included for this facility	Clause 12.2 – Page 35 of 43	See SDS Proposed Alignment Matrix SYS1605	Performance Monitoring	BBS	BBS	BBS	BBS	BBS		
Section 2 – Part 2 – Track Layout – Annex											

Date 26 March 2008

PBH0018014_0065

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BIMS	CAD	IFC	Planning Approvals	Comments	Interface	
	SDS are of the opinion this Track Layout Diagram does not fully match the ETN requirements nor those											
Section 3 – Part 1 – Trackwork Superstructure (18.02.08))												
SY07	SDS are not able to accept the principle of a reduced Track slab depth which, in their opinion, introduces an unacceptable risk to tie resulting from unforeseen settlement in the under base.	Part 1 – Sect 3 – Trackwork – 18.02.08 refers.	See SDS Proposed Alignment Matrix SY07	Reduced Trackslab System	BBS	BBS	BBS	BBS	SDS			
	SDS proposal is able to span up to 1m diameter voids under such circumstances which has become the industry norm and has the tacit approval of HMRI	Part 1 – Clause 3.1.1.3 – Page 17	tie to note									
	SDS believes the requirement to verify and confirm the CBR Values as 10% along the whole route length would not remove this potential settlement risk from tie. The dimension of 240 cm appears to be in conflict with previous dimension of 440 cm.		Clarification required									
SY08	SDS are not able to accept the proposed embedded rail section which has a wider rail groove that that proposed by SDS to minimise danger to road vehicles and in particular cyclists	Part 1 – Sect 3 – Trackwork – 18.02.08 refers	See SDS Proposed Alignment Matrix SY08	Embedded rail-Section/Flat bottom rail section	BBS	BBS	BBS	BBS	SDS			
SY09	SDS are concerned at the lack of detail at the critical joint between the finished road surface and the embedded track	Part 1 – Sect 3 – Trackwork – 18.02.08 refers	See SDS Proposed Alignment Matrix SY09	Detail of critical interface at finished road surface/track	BBS	BBS	BBS	BBS	SDS			

Date 26 March 2008

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY10	Drainage amendments due to BBS Trackform proposal		See SDS Proposed Alignment Matrix SY10	Amendment to drainage details due to BBS track proposals	BBS	SDS	SDS	SDS	SDS		
SY11	Siemens S & C proposals are subject to 'as far as applicable'	Part 1 – Sect 3 – Trackwork –Page 27 – Clause 3.3 Rail & Geometry - 18.02.08 refers	See SDS Proposed Alignment Matrix SY11	BBS SC&C proposals (as applicable awaiting proposals)	BBS	BBS	BBS	BBS	SDS		
SY12	SDS have concerns in respect of the possible use of Buffer Stops which they believe could result in damage to the trams	Part 1 – Sect 3 – Trackwork –Page 28 – Clause 3.6 - 18.02.08 refers	See SDS Proposed Alignment Matrix SY12	BBS Proposals for buffers	BBS	BBS	BBS	BBS	BBS		
Section 3 – Part 2 – Depot Workshop Equipment											
SY46	At the request of tie SDS have removed the provision of a distributed Compressed Air System incorporating Compressors and distribution pipework as BBS are now requesting of tie	Clause 3.4.1 - Page 21 of 26 refers.	See SDS Proposed Alignment Matrix SY46	Remove Compressed Air System	BBS	BBS	SDS	SDS	SDS		
SY47	See also comments below on 130 Radio sets now being sought for Tram Inspectors		See SDS Proposed Alignment Matrix SY47	130 Radio Sets for Tram Inspectors	BBS	BBS	BBS	BBS	SDS		
	SDS seek clarification of staffing and locker requirements										
SY40	SDS require information on ties decision and choice of Depot Plant & Equipment		See SDS Proposed Alignment Matrix SY40	Large Plant items BWIC/PLINTH/UPSTAND Drawings for Depot Equipment not yet detailed by supplier/manufacturer due to tie not yet deciding who's contract it is. Space provision by SDS at present in Detail Design Drawings. Wheel Lathe	BBS/CAF	BBS/CAF	SDS	SDS	SDS		

Date 26 March 2008

PBH0018014_0067

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY41			See SDS Proposed Alignment Matrix SY41	Large Plant items BWIC/PLINTH/UPSTAND Drawings for Depot Equipment not yet detailed by supplier/manufacturer due to tie not yet deciding who's contract it is. Space provision by SDS at present in Detail Design Drawings. Train Wash Plant	BBS/CAF	BBS/CAF	SDS	SDS	SDS		
SY42			See SDS Proposed Alignment Matrix SY42	Large Plant items BWIC/PLINTH/UPSTAND Drawings for Depot Equipment not yet detailed by supplier/manufacturer due to tie not yet deciding who's contract it is. Space provision by SDS at present in Detail Design Drawings. Sand Plant	BBS/CAF	BBS/CAF	SDS	SDS	SDS		
SY43			See SDS Proposed Alignment Matrix SY43	Large Plant items BWIC/PLINTH/UPSTAND Drawings for Depot Equipment not yet detailed by supplier/manufacturer due to tie not yet deciding who's contract it is. Space provision by SDS at present in Detail Design Drawings. Overhead/Roof Platforms	BBS/CAF	BBS/CAF	SDS	SDS	SDS		
SY44			See SDS Proposed Alignment Matrix SY44	Large Plant items BWIC/PLINTH/UPSTAND Drawings for Depot Equipment not yet detailed by supplier/manufacturer due to tie not yet deciding who's contract it is. Space provision by SDS at present in Detail Design Drawings. Overhead Crane	BBS/CAF	BBS/CAF	SDS	SDS	SDS		

Date 26 March 2008

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY45			See SDS Proposed Alignment Matrix SY45	Large Plant items BWIC/PLINTH/UPSTAND Drawings for Depot Equipment not yet detailed by supplier/manufacturer due to tie not yet deciding who's contract it is. Space provision by SDS at present in Detail Design Drawings. Wheel Lathe	BBS/CAF	BBS/CAF	SDS	SDS	SDS		
SY48	There is an inference that it is only Track Section 3b that has 'floor levelled track' within the Depot Building. SDS seeks clarification.	Clause 3.2.6 – penultimate paragraph – Page 9 of 26.	See SDS Proposed Alignment Matrix SY48	Track Section 3B. Level of Track to be clarified to tie	BBS	BBS	BBS	BBS	SDS		
Section 3 – Part 3 – Railway electrification (18.02.08) Part 3 - Sub section 1 - Railway electrification											
SY60	Siemens reference document ULE90130-SW-OLE-0007, 8 & 9 V3 now V6 and 00010 V2 now V4 all issued to tie on 30 th March 2007	Reference documents – Clause 1.2 – page 4 of 44	See SDS Proposed Alignment Matrix SY60	SDS Referenced documentation superceded by SDS Issue to tie 30th March 2007	BBS	BBS	BBS	BBS	SDS		
SY61	SDS believes a significant number of additional documents have been made available to tie for transmission to their Infracore Bidders.	Clause 1.2 – Page 4 of 44	See SDS Proposed Alignment Matrix SY61	OLE Technical Spec issued to tie 24.9.06 not referenced by BBS in referenced documentation	BBS	BBS	BBS	BBS	SDS		
	BBS appear to have referenced superseded SDS documents	ULE90130-SW-OLE-00007, 8, 9 now at V6 as at April 07 ULE90130-SW-OLE-00010 now V4 also since April 07									

Date 26 March 2008

PBH00018014_0069

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BMS	CAD	IFC	Planning Approvals	Comments	Interface
		No reference to SDS OLE Technical Specification issued to tie for Infracore bid on 29.9.06, Building Fixing report, Design Commentary report etc									
SY62	Do the environmental criteria quoted by BBS match tie ER's	Page 5 of 44 – See also SDS ULE90130-SW-SW-SPN-0045	See SDS Proposed Alignment Matrix SY62	Compatibility between 1.3.3 Environemtn Conditions and ER's to be confirmed by tie	BBS	BBS	BBS	BBS	SDS		
		It would be expected by SDS that Siemens would validated these criteria, inclusive wind speeds, during their design Process									
SY63	SDS OLE Technical Specification (ULE90130-SW-SPN-00016) contains some mandatory design considerations which SDS believe should be referenced by BBS	Page 6 of 44	See SDS Proposed Alignment Matrix SY63	SDS OLE Tech Spec not referenced by BBS	BBS	BBS	BBS	BBS	SDS		

Date 26 March 2008

PBH00018014_0070

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY64	Reference is made by BBS to both DIN EN 50119 and to DIN VDE 0216 (02.86)		See SDS Proposed Alignment Matrix SY64	SDS Standard to be BS EN50119	BBS	BBS	BBS	BBS	BBS		
	SDS believes the governing standard for all OLE design & material related issues should be BS EN50119 – also referenced by BBS - Normally at the material procurement stage, however, individual material procurement specifications have to be generated for individual components & fittings defining; material specification (including mechanical characteristics), manufacturing & fabrication requirements (cast or welded parts) , prototype tests, routine tests, inspection, delivery, etc. These procurement specifications (depending on the application of the product) may include a number of internationally recognized & approved standards. The requirements for factor of safeties are listed in ULE90130-SW-SPN-00016v3 clause 1.1.1.8.										
SY65/1	SDS do not fully understand the implications of the BBS Statement 'additional 50% increase of the number of trams per hour travelling on the ETN can be handled by the REL system in peak hours for 2 hours time'		See SDS Proposed Alignment Matrix SY65/1	Peak of 24TPH for 2Hrs duration. Tie to clarify	BBS	BBS	BBS	BBS	BBS		
	Is this with all Substations in operation or with a substation outage as was the tie objective?	Clause 1.3.1 – Page 5 of 44									

Date 26 March 2008

PBH00018014_0071

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
	SDS requirement was for 12 + 12 indefinitely with a single substation outage										
Part 3 - Sub section 2 - System Design											
	SDS have a concern in respect of the BBS assumption that the Tram is able to achieve full service timetable with the ole voltage for (8+8) TPH + 50% at 530volts.	Clause 1.3.2 – Page 5 of 44									
SY65/2	BBS make reference to a superseded SDS Drawing	Sub Clause 2 – Page 11 of 44	See SDS Proposed Alignment Matrix SY65/2	BBS refers to superceded drawing (Rev 3 when SDS issued Rev 6 on 30/3/07)	BBS	BBS	BBS	BBS	SDS		
	SDS ULE90130-SW-OLE-00007 Rev 3 was superseded and issued to tie on 30 th March 2007 by V6										
SY66	BBS refer to Catenary system which was excluded by tie from SDS Design on environmental grounds and compliance with CEC Tram Design Manual.	Page 12 of 44	See SDS Proposed Alignment Matrix SY66	BBS refer to catenary system which was rejected by tie on Environmental grounds and TD Manual	BBS	BBS	BBS	BBS	SDS		
SY67	BBS refer to copper contact wire but SDS are not able to find any indication of neither the Material Specification nor the grade.	Page 12 of 44	See SDS Proposed Alignment Matrix SY67	BBS refer to copper contact wire. BBS to confirm wire specification and/or compliance with SDS tech spec	BBS	BBS	BBS	BBS	SDS		
	See SDS Specification ULE90130-SW-SPN-00016V3 Clause 1.1.1.9										

Date 26 March 2008

PBH00018014_0072

SDS Review of Siemens offers to file											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY68	The Siemens approach is a modern approach that minimises the cable distribution required in the substations however SDS believes this use should be limited to the monitoring of normal functions and should not be used to provide local trip facilities such as 11kV trip, OLE Trips etc. All as is set out in the SDS Procurement documents.	Clause 2.1 – Page 13 of 44	See SDS Proposed Alignment Matrix SY68	Emergency Tripping not to be Hard wired which is SDS specified requirement. Tripping now via SCADA (PLC versus Hard Wire)	BBS	BBS	BBS	BBS	SDS		
SY69	SDS proposes that the operator or maintainer may wish to trip only one of the sections and leave the other as a Turnback facility. The BBS proposal appears to enable staff to trip the OLE in both directions simultaneously by means of a push button. Again by use of the S/S control unit – See earlier	Clause 2.1 – Page 14 of 44 – item 5	See SDS Proposed Alignment Matrix SY69	OLE Control Room Trip Facility (Both directions) SDS Specification is for individual lines trip facility.	BBS	BBS	BBS	BBS	SDS		
SY70	SDS enquires if the BBS manually operated Depot Isolators are 'indicated' as is called for in the SDS documentation.	Cause 1.2 – page 14 of 44 – Item 6	See SDS Proposed Alignment Matrix SY70	Depot hand operated isolators. No confirmation of fitting of indication as called for in SDS Spec.	BBS	BBS	BBS	BBS	SDS		
		Clause 3.2.7 – Page 20 of 44									
Part 3 - Sub section 3 – Overhead Line (OLE)											
SY71	Siemens bid still appears to be based upon vehicle data provided in the tender documents	Part 3 – Sect 3 – Railway electrification – Clause 1.3.2 – page 5 - 18.02.08 refers	See SDS Proposed Alignment Matrix SY71	The OLE Bid Document List is still out of date at 21st January 2008	BBS	BBS	BBS	BBS	SDS		
	'Fixed Termination' or 'Fixed Tension'?	Page 15 of 44 – Paragraph 3 - Line 6	Clarity of Definition	No alignment							

Date 26 March 2008

PBH0018014_0073

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY72	SDS seek rationale behind the BBS statement 'will probably, beyond other modifications, lead into an increased number of poles and modified pole locations in some areas	Page 15 of 44 – Paragraph 3 – Line - 12	"will probably" may require additional work for SDS	BBS to clarify	BBS	BBS	BBS	BBS	SDS		
SY73	It can be interpreted that BBS are offering AT system throughout whereas SDS design limited AT equipment to Sections 2A, 3A, 3b, 5 & 7	Page 15 of 44 – Paragraph 3	BBS to confirm their design proposal	BBS to advise SDS	BBS	BBS	BBS	BBS	SDS		
	SDS suggests clarification is sought by tie especially in view of the repeated BBS references to their BoQ and to the number of poles they have apparently allowed for cost purposes.										
	SDS are not in receipt nor have they had sight of Appendix 8.3.1 Drawings as referenced by BBS										
SY74	SDS draw attention to their reference to minimising stagger along Princess Street (SDS document ULE90130-SW-SPN-00016v£ Clause 1.1.1.4) for aesthetic and minimal visual impact	Paragraph 8 – Page 15 of 44	BBS to confirm their design proposal	BBS to advise SDS	BBS	BBS	BBS	BBS	SDS		
SY75	SDS considers the provision of pole mounted isolators to be contrary to the requirements of the Tram Guide and, based upon previous experience, are aware of the replacement of such units albeit in a city centre environment.	Clause 2.3 – Page 11 of 45	BBS/tie/CEC to agree this principle to their requirements	BBS to advise	BBS	BBS	BBS	BBS	SDS		

Date 26 March 2008

PBH0018014_0074

SDS Review of Siemens offers to tie										
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BIMS	CAD	IFC	Planning Approvals	Comments
SY17	SDS believes the Siemens proposals for Traction Power differ from the very detailed SDS Procurement documentation provided by them following their many discussions with SP such discussions having been attended by tie and or their Technical Representative and other stakeholders and having been through the tie approvals process before issue to Infraco Bidders.	Part 3 – Sect 3 – Railway electrification – Clause 2.1 – page 13 - 18.02.08 refers	See SDS Proposed Alignment Matrix SY17	Amend Traction Power and Auxilliary Power Drawings to align with the BBS proposal	BBS	BBS	BBS	BBS	BBS	Scottish Power Approvals by BBS
SY18	Any subsequent changes to these SDS designs or procurement documentation must be by means of the formal Change Control Procedure		See also BWIC SY18	Carrier and Sub-station building works requirements	BBS	BBS	SDS	SDS	SDS	Schematics by BBS
SY19	Siemens Cable Management and Cable ducting requirements to be identified		See also SY19	Cable management requirements to be identified by BBS and incorporated into already completed SDS Drawings	BBS	BBS	SDS	SDS	SDS	Schematics by BBS
SY20			See also SY20	Cable ductwork and drawpit requirements (size/depth/locations etc) to be identified by BBS and incorporated into already completed SDS Drawings	BBS	BBS	SDS	SDS	SDS	

Date 26 March 2008

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY20/1	It has to be realised that the BBS Page 16 of 44 – Clause 3.1.2 and proposal to offer catenary equipment 3.1.3 (Depot) rather than trolley wire will have an impact on pole loadings and pole foundation designs undertaken by SDS		Loadings to be advised								
					BBS	BBS	SDS	SDS	SDS	Civils redesign to suit BBS	
SY20/2	BBS are of the opinion, wrongly in the opinion of SDS, that tie or others will verify building fixings, that all necessary permissions will be in place before contract comes into force and these matters will be handled by tie, or others, not Siemens.	Clause 3.1.5 - Page 17 of 44	BBS to validated building fixings and its acceptability to the BBS componentry								
					BBS	BBS	SDS	SDS	SDS	Potential re-design	
	Bearing the comments made by BBS that the OLE design may change SDS are unable to understand how BBS consider all building fixings permissions and approvals will be in place before contract award	It would be expected by SDS that Siemens would validate any building fixing during their design Process									
	BBS make reference to Abnormal Load Routes.	Page 17 of 44 – Clause 3.1.6.	None known								
	SDS is not aware of any such requirement despite significant discussions with all relevant stakeholders. SDS are aware of the requirements for a High Load Routes and these have been identified in their various documents.			none known. BBS to clarify							

Date 26 March 2008

PBH0018014_0076

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BMS	CAD	IFC	Planning Approvals	Comments	Interface
SY21	SDS believes the Siemens proposals for OLE differ from the very detailed SDS Procurement documentation provided by them following their many discussions with the city and the Operator. Such discussions having been attended by tie and or their Technical Representative and other stakeholders and having been through the tie approvals process before issue to Infraco Bidders.	Part 3 – Sect 3 – OLE – Clause 3 – Page 15 - 18.02.08 refers	See SDS Proposed Alignment Matrix SY21	Siemens OLE Design to be incorporated into SDS submitted design (Auto Tension/differing pole designs etc)	BBS	BBS	BBS	BBS	SDS		
SY22	Any subsequent changes to these SDS designs or procurement documentation must be by means of the formal Change Control Procedure.		See SDS Proposed Alignment Matrix SY22	OLE Specifications to be amended to match BBS designs	BBS	BBS	BBS	BBS	SDS		
SY21/1	SDS are not able to see any Siemens proposed treatment to the base of poles which was of particular importance to the city planners when the subject of poles has been discussed. This issue was also highlighted in earlier versions of the ER's and SDS Documentation	Page 18 of 44 – Clause 3.1.9	See SDS Proposed Alignment Matrix SY21/1	Base detail requirements	BBS	BBS	BBS	BBS	SDS		
SY21/2	BBS propose galvanised malleable cast iron fittings to the OLE Equipments with aluminium tubes.	Pages 19 & 20 – Clause 3.2.6	See SDS Proposed Alignment Matrix SY21/2	Galvanised malleable cast iron fittings versus stainless steel	BBS	BBS	BBS	BBS	SDS		
	SDS have concerns in respect of the visual impact of such materials in the city centre and, although apparently now accepted by tie, from a corrosion point of view when used in at the coast.										
SY21/3	BBS are proposing a number of possibilities in respect of poles and possibly H sections for the Depot	Clause 3.2.11 – Page 21 of 44	See SDS Proposed Alignment Matrix SY21/3	Pole type not as SDS Design	BBS	BBS	BBS	BBS	SDS		

Date 26 March 2008

PBH0018014_0077

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface	
	SDS has concerns in respect of planning and stakeholders approvals and consultation.											
	SDS also has serious concerns over the possible use of poles larger than 280mm diameter and the implication to track alignment and DKE clearances.											
SY21/4	SDS notes that BBS have 'partially' revised their proposal to comply with RSP2 in respect of wire heights.	Clause 3.2.16 – Page 22 of 44	See SDS Proposed Alignment Matrix SY21/4	Partial proposed to RSP2	BBS	BBS	BBS	BBS	SDS			
SY21/5	SDS is concerned at the statement 'BBS has no technical solution in compliance with the 5.2m requirement'.	Clause 3.2.16.1 – 5.2m Requirement – Page 23 of 44	See SDS Proposed Alignment Matrix SY21/5	No tech solution to 5.2 wire height	BBS	BBS	BBS	BBS	SDS			
SY21/6	Bearing in mind that a number of the references to SDS drawings quoted by BBS in this document have been made to superseded documents SDS believes the drawings issued by tie as at Nov 2007	Clause 3.2.15 Combined Poles – Page 22 of 44	tie to confirm exact Drawings in BBS possession	tie to close out and advise precise contract content	?	?	?	?	?	to be determined		
	May also have been superseded. This could have an impact on the BBS proposal to limit their combined lighting to the information issued at Nov 2007.											
-	SDS are again of the opinion BBS are somewhat deficient in their proposals for Drawings		tie to determine their Ops/Maintenance requirements		?	?	?	?	?			
	SDS believe these should include but not be limited to											
	Individual cross sections											
	Detailed wiring layouts											

Date 26 March 2008

PBH0018014_0078

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface	
	G.A's assemblies, subassemblies, Handbooks, components and fittings											
	Installation instructions, assembly data	Clause 3.3 OLE Assembly Drawings in the annex Page 23 of 44										
	Technical sheets (conductor particulars, Structure spacing, along track movements, Mid span offsets, radial loadings, position of low points, balance weight anchor settings, erection tensions, Calculation sheets etc)											
Part 3 - Sub section 4 – Traction Power Supply												
SY76	SDS have concerns in respect of the Substation Nomenclature being used by BBS which does not reflect those identities agreed with and known by SP	Clause 4 – Page 26 of 44	tie to clarify	tie to advise/instruct BBS on nomenclature								
SY77	Bearing in mind the very detailed discussions between SDS and ties operator, ties technical consultants and tie themselves SDS are unable to understand the `acceptance of the possible omission of the TPH at Russell Road and the BBS statements in respect of <i>'no technical or operational need or advantage for building the TPH.</i>	Clause 2 .1 – Page 11 of 45	tie to clarify	tie to instruct their requirements	BBS	BBS	BBS	BBS	SDS			
	SDS is not able to agree with the BBS rationale if Phase 1a and 1b are to be built.											

Date 26 March 2008

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface	
	The use of Track Paralleling Hut is a standard protective measure for a delta junction. There would be three Traction Sub Stations injecting Volts & Amps into the delta.											
	Without Russell Road Circuit Breakers and Protective relays a fault, particularly a non-clearing fault will result in the whole delta and the legs into sections 2 and 3 being disconnected, whereas with a CB and protective relays for each leg only the affected leg is disconnected.											
	Hence a level of operational service can be maintained to a degree on the airport line or city loop dependent upon location of the fault											
	SDS strongly believes the design and configuration of Phase 1a in isolation should be such that this future facility could be provided at minimal cost and disruption. Accordingly the location of the proposed TPH should be safe guarded for the necessary duration.											
SY78	SDS note the BBS proposal to avoid the use of a hard wire interface between the Substation Control and SCADA as was sought by tie during the production of the Coms procurement documentation		tie to clarify	tie to instruct	BBS	BBS	BBS	BBS	BBS			

Date 26 March 2008

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DMS	CAD	IFC	Planning Approvals	Comments	Interface	
	SDS would question routing local trips through this control system as a failure of it could render it impossible to trip the consumer ac circuit breaker, OLE Sections and HWMT.											
	SDS has no problem with indications being via a control system.											
SY79	SDS note that the revised Siemens offer still does not include for the Consumers HV C/B as has been discussed with and agreed as necessary by SP.	Clause 4 – Page 27	tie to clarify									
	HOWEVER Clause 4.1 Page 28 does appear to acknowledge an instruction given by tie at a meeting on 13.11.07.			tie to instruct	BBS	BBS	BBS	BBS	SDS			
	SDS are confused as they do not have Appendix 8.3.12 which 'provides information regarding 11Kv Switchgear offered'	Clause 4.1 Page 28										
	See Scottish Power letter to tie dated 16 th October 2006											
	See various SDS letters and Emails to tie e.g. 29.06.07, 05.07.07 etc											
	See tie minutes of meetings e.g. 20.06.07											

Date 26 March 2008

PBH00018014_0081

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface	
	SDS is of the opinion there may still be some confusion as to who is to provide what. SDS totally agrees with the BBS statement that ' <i>DNO's usually having their preferred switchgear</i> ' and apart from the metering aspects also with the BBS statement ' <i>these units should remain in SP scope of supply</i> '. As has been emphasised by SP during the many meetings with them all of which have been documented and copied to tie .	Clause 4.1 – 1, 2 and 3 – page 27 of 44										
	SP have confirmed their standard unit RMU as Merlin-Gerin RN2 SDS report – High Voltage Interfaces with Scottish Power – Position Report (ULE90130 – SW – REP – 00397 V2) issued to tie 30.03.07.											
	SDS advise that it was the original tie intention for the Infraco to place the order on SP for their provision and installation of their own switchgear and protection etc within a dedicated SP Room. It was also the original intention of tie to procure the provision of power directly with a power supplier who would in turn provide and install the necessary metering. This would not necessarily be SP.											
	Again this is referenced in the above mentioned documentation.											

Date 26 March 2008

PBH00018014_0082

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BMS	CAD	IFC	Planning Approvals	Comments	Interface	
-	Siemens do not appear to have taken cognisance of the many tie documents which reflect the tie/SDS/SP discussions, reviews and SP meetings from which the SDS very detailed procurement documentation evolved.	Clause 4.1 – Page 27	tie to clarify									
				tie to advise	-	-	-	-				
SY80	SDS note that the Siemens offer differs from the SDS Traction Design which has the approval of SP in terms of the nature of the loads they have to cater for and the equipment functionality, performance, electrical protection, Power Quality i.e. harmonic content, harmonic distortion, voltage dip etc		tie to clarify. BBS to seek SP Approval		BBS	BBS	BBS	BBS	SDS			

Date 26 March 2008

PBH00018014_0083

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY81	SDS procurement proposals accepted by tie are based on a DC Rectifier circuit breaker and reverse current protection. SDS does not support the use of fused rectifiers as they offer a significant risk to the high reliability and availability of the system that SDS was striving to achieve in accordance with tie aspirations. It should be noted that the original function of diode fuses was to protect the rest of the rectifier unit from the effects of a failed diode (particularly in the early days when each arm of the rectifier had to have multiple small devices in parallel); they were <u>not</u> there to provide protection either to the transformer-rectifier unit itself, or to the dc busbar beyond it. From about 1980 onwards, as large very reliable single rectifier devices became available, UK practice quite correctly focused on eliminating diode fuses, whose reliability had quite simply been far overtaken by that of the diode devices themselves. SDS certainly does not accept that a fused diode design is any credible substitute for the provision of a rectifier dc circuit br		tie to clarify	tie to advise	BBS	BBS	BBS	BBS			

Date 26 March 2008

PBH00018014_0084

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface	
	Furthermore, the rectifier dc circuit breaker, being under SCADA control, enables the Control Room to switch out a complete transformer-rectifier unit remotely on both the HV and LV sides (for example, in preparation for maintenance), thus delivering tie's aspirations listed under 'motorised isolators'.											
SY82	SDS observations/Comments on Rectifier Transformer technical Spec: 1. Core Power rating meets SDS Specification.		tie to clarify	tie to advise	BBS	BBS	BBS	BBS	BBS			
	2. Duty Class is Class VI which exceeds SDS Specification. OK	Clause 4.2.1 Rectifier Transformer – Page 29 of 44										
	3. Tapping Range does not meet SDS Specifications.											
	4. Impedance Voltage is 6% in BBS Offering. SDS Specification is 4%.											
	5. Insulation levels, environmental and fire class exceed SDS Specifications.											
SY83	SDS does not understand the BBS Statement ' <i>The interface to the Scottish Power 11kV switchgear follows the same concept as described in chapter 4.1</i> '	Clause 4.1 – Page 36 of 45 (Depot Auxiliary Transformer supply)	tie to clarify	tie to advise	BBS	BBS	BBS	BBS	BBS			

Date 26 March 2008

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	GAD	IFC	Planning Approvals	Comments	Interface
SY84	SDS does not understand the significance of the BBS statement 'This transformer is considered to be procured from the free market?'	Clause 4.6 – Page 36 of 45	tie to clarify	tie to instruct BBS accordingly	BBS	BBS	BBS	BBS	SIS		
	SDS draws the attention of tie to the SP discussions on the subject of the SP provision of a Depot 400/230V ac power transformer from their stock of units. See Clause 3.4.2 of SDS report – High Voltage Interfaces with Scottish Power – Position Report (ULE90130 – SW – REP – 00397 V2) issued to tie 30.03.07										
	See also item 5 of Minutes of SP/ tie /SDS meeting 16.01.07.										
	A major advantage to the ETN project being the ready availability of a spare in the unlikely event of a transformer failure										

Date 26 March 2008

PBH00018014_0086

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY85	SDS would wish for clarification of the BBS intent in respect of cables i.e. the BBS Statement 'Similar cables with aluminium conductors and similar electrical parameters may be used instead of the described copper cables'	Clause 4.7.1 - Page 36 of 45 refers	tie to advise								
		Clause 4.7.2 – Page 37 of 45 refers.		tie to instruct	BBS	BBS	BBS	BBS	BBS		
SY86	SDS would question if any allowance been made by BBS to 'standardise' the internal layouts of the substations and the switchgear configuration relative to the adjacent running lines for operational safety and familiarity reasons?		tie/BBS to confirm standardisation								
				tie to instruct	BBS	BBS	BBS	BBS	BBS		
SY87	SDS is not able to understand the BBS references to 'designated Contractors' in respect of Documentation. SDS had understood tie would be seeking bespoke integrated ETN documentation. Whilst there is a detailed description of some of the format and content there is an inference that BBS would be supplying manufactures information and not bespoke.	Clause 6 – Page 37 of 45 refers.	tie to advise								
				tie to instruct	BBS	BBS	BBS	BBS	BBS		
SY88	SDS notes the limitations and caveats in respect of the extent of the documentation to be provided by BBS to tie for approval and the 'yet to be defined approval period'		tie to advise								
				tie to instruct	BBS	BBS	BBS	BBS	BBS		

Date 26 March 2008

PBH00018014_0087

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY89	SDS has concerns over the implication of the BBS Statement that <i>'... Software to be used for this project shall be identical for each and every party working on the project'</i>	Cause 6.2 – Page 38 of 44 Computer Software	tie/BBS to advise	tie to instruct	BBS	BBS	BBS	BBS	SDS		
SY90	Bearing in mind the significant interface between the existing SDS Infrastructure Designs and the emerging necessity for SDS to revisit these to accommodate Siemens proposals SDS are concerned at the Siemens statement that they do not intend to prepare AutoCAD files in AutoCAD format.	Clause 6.2 – Page 39 of 44 CAE/CAD Systems.	tie/BBS to advise	tie to instruct	BBS	BBS	BBS	BBS	SDS		
SY91	SDS can find no reference to the equipment, cabling, substation n categorisation, nomenclatures or identities produced by SDS after consultation with tie /TEL/the operator and ties technical advisors and identified in their Procurement Documentation provided to the tie for the Infraco bidders	Clause 6.2 page 40 of 44 – Equipment Identification.	tie/BBS to agree nomenclature	tie to instruct	BBS	BBS	BBS	BBS	SDS		
-	SDS are not able to understand the BBS Statement <i>'... the project schedule dates depend on the approval of the client being made in time'</i>	Clause 6.3 – Page 40 - 44	tie to clarify	tie to advise	-	-	-	-	-		
SY92	BBS proposals for 'documentation' appear to SDS to be deficient in proposed content.		tie to clarify	tie to instruct	BBS	BBS	BBS	BBS	SDS		

Date 26 March 2008

PBH0018014_0088

SDS Review of Siemens offers to tie						Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description								
	As an example SDS can find no reference to the BBS provision of the following basic drawings which they believe should be held by tie/TEL as a minimum											
	1. DC Feeding & Sectioning Diagrams											
	2. Proposed Isolation Diagrams & Instructions.	Clause 6.3 – Page 40 of 44										
	3. Bonding Plans											
	4. Cable Route Designs											
	5. AC/DC Protection Study											
	6. Power Quality Study (DNO Interface)											
	7. Interlocking Scheme plans (Sub-Station).											
	8. SCADA I/O Lists											
	9. Sub-station Layout Plans											
	10. Substation Civils drawings											
Section 3 – Part 3 – 8.3.1 – DC Traction Study												
	Nothing available for SDS to comment on											
Section 3 – Part 3 – 8.3.3 – Frame fault Protection												
	SDS have no substantial comments to offer here.											
Section 3 – Part 3 – 8.3.5 – Sub station Control												

Date 26 March 2008

REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BIMS	CAD	IFC	Planning Approvals	Comments	Interface
SDS Review of Siemens offers to file											

Date 26 March 2008

PBH0018014_0090

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY93	SDS comment as follows:		tie to advise	tie to instruct	BBS	BBS	BBS	BBS	SDS		
	SDS are of the opinion that the control function associated with local trips should not be routed via the Sub Station controller and data bus, for system security reasons. (SDS have no objection to trip indication via system controller). (Basis of SDS specifications/design is to hardwire local trips direct to equipment ie HWMT, OLE TRIP 1, OLE TRIP 2, 11Kv trip etc. etc. whilst providing remote control and indication functions via SCADA. SDS assumes hardwire to SCADA in sub not profibus system. (Minor detail)).										
	2) SP have stated to tie/SDS that they do not require a battery & charger for the RMU. All volts free. Hence SDS are of the opinion the Battery & Charger as shown is not required.										
	3) On BBS control scheme, the outgoing circuit breaker of the SP RMU is incorrectly labelled as the ACR. The ACR is an intermediate 11kv 3ph circuit breaker between RMU outgoing cb and Transformer Rectifier. Mandated by SP in writing to tie.										

Date 26 March 2008

PBH00018014_0091

SDS Review of Siemens offers to tie						Mark Up	BIMS	CAD	IFC	Planning Approvals	Comments	Interface
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description								
Section 3 – Part 3 – 8.3.6 – Room Layouts (Variants 1 & 2)												
SY94			tie to advise	tie to instruct	BBS	BBS	SDS	SDS	SDS			
	Maximum length proposal by SDS is 16000.											
	All SDS planning & Approvals have been forwarded on this basis. If BBS go with 16700 SDS suspect that they will have to re-visit planning applications.											
	This is also true of changes to exterior finishes and compounds etc.											
	Height would appear to be OK											
	The layout proposed by BBS is somewhat similar now to the SDS design. SDS comments regards agreements with SP and local rules for access to OLE Isolators during due diligence would appear to have been heeded.											
	SDS would expect to see a layout of this type for a UK Tram scheme.											
	What is not clear from this drawing is whether this is a brick building or modular steel enclosure. (SDS design is a modular steel enclosure).											
Section 3 – Part 3 – 8.3.8 – Short Circuiting device												

Date 26 March 2008

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY95			tie to advise	tie to instruct	BBS	BBS	BBS	BBS	SDS		
	The Sitras SCD is considered by SDS to be a highly competent device. It has previously been used on UK DC Traction infrastructure in the Southern Zone and on DLR. However it is not cheap. (Note all the control features).										
	In this case SDS proposed the BB HVL with a backup Soule as a compromise between function, technical performance and cost										
	One of the main SDS concerns regards the BB HVL is its robustness in the face of heavy faults or inrush. Hence reason for backup Soule.										

Date 26 March 2008

PBH00018014_0093

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DMS	CAD	IFC	Planning Approvals	Comments	Interface	
	SCD device will fit the bill there is no doubt about that for limiting touch potential issues. However it should not be an excuse for solid robust design that limits accessible voltages to levels mandated by RSPV2. (ie short sub spacing etc. etc). It should be borne in mind that every time this item closes it encourages stray current to flow into the mass of earth at the sub-station or in other locations it is used. Also it is not very compact. Not an issue in a substation. However if used in other locations say at tramstops, then this may be an issue											
Section 3 – Part 3 – 8.3.9 – Trackside Cabinets												
	Planning and Technical issue - SDS have no comment											
Section 3 – Part 3 – 8.3.10 – EDB isolator												
SY96			tie to advise	tie to instruct	BBS	BBS	BBS	BBS	SDS			

Date 26 March 2008

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface	
	As previously noted. BBS are offering manual feeder isolators. SDS in line with tie requirements for operational flexibility and to facilitate technical requirement for automated switching sequences have provided motorised feeder isolators with earth. At due diligence exercise SDS's understanding was that BBS were going to change their offering in this regard											
	BBS Make no mention of the depot isolators here. SDS proposed manual isolators in the yard. All being manual but indicated.											
	SDS also captured and detailed the requirements in the workshop. There are significant manual interlocking requirements for the workshop isolators associated with access to high level platforms. (All discussed and agreed with tie/Transdev). SDS suggests BBS should review SDS report ULE90130-SW-REP-00385 V3. This was previously suggested at due diligence exercise.											

Date 26 March 2008

PBH00018014_0095

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BMS	CAD	IFC	Planning Approvals	Comments	Interface	
	Also in SDS Depot proposals, (See TPS equipment spec and OLE spec), the sectioning isolator requirements at the east and west reception roads are two pole with manual interlocking to the sub-station (OLE positive and rails). two pole and interlocked because alternate feeding regimes allow main line TR to feed the depot if required.											
	BBS make no mention that sub-section isolators are two of back to back with earth positions. (See ULE90130-SW-OLE-00007 & 8) SDS proposed this in line with tie requirements for maintenance, ie no DEP's.											
Section 3 – Part 3 – 8.3.11 – SDS reference documents												
SY97	SDS note that a number of SDS referenced documents have been superseded		tie to confirm issue of drgs and bid base documents	tie to advise	BBS	BBS	BBS	BBS	SDS			
	ULE90130-SW-DRG-00552 R1 – See R2 issued to tie 02.11.07											
	ULE90130-SW-DRG-00553 R1 – See R2 issued to tie 02.11.07											
	ULE90130-0I-OLE-00006 R3 – See R4 issued to tie 30.11.07											

Date 26 March 2008

SDS Review of Siemens offers to tie										Mark Up	BMS	CAD	IFC	Planning Approvals	Comments	Interface
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description												
	ULE90130-01-OLE-00007 R3 – See R4 issued to tie 30.11.07															
	ULE90130-01-OLE-00008 R3 – See R4 issued to tie 30.11.07															
	ULE90130-01-OLE-00009 R3 – See R4 issued to tie 30.11.07															
	ULE90130-01-OLE-00010 R3 – See R4 issued to tie 30.11.07															
	ULE90130-01-OLE-00011 R3 – See R4 issued to tie 30.11.07															
	ULE90130-01-OLE-00012 R2 – See R3 issued to tie 30.11.07															
	ULE90130-03-OLE-00001 R4 – See R5 issued to tie 22.01.08															
	to															
	ULE90130-01-OLE-00009 R4 – See R5 issued to tie 22.01.08															
	ULE90130-06-OLE-00001 R4 – to tie 18.04.07 not referenced															
	ULE90130-06-OLE-00002 R2 – to tie 18.04.07 not referenced															
	ULE90130-06-OLE-00003 R2 – to tie 18.04.07 not referenced															
Section 3 – Part 3 – 8.3.12 – 11kV Circuit breakers Panels																
SY98			tie/BBS to confirm design requirements	tie to instruct			BBS	BBS	BBS	BBS	SDS					

Date 26 March 2008

SDS Review of Siemens offers to file												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface	
	SDS has assumed this is BBS offering for intermediate circuit breaker ACR. SDS notes that the 11kV circuit breaker features appear to show two disconnectors effectively in series and are not sure as to reason for this.											
	In negotiations with SP they agreed that intermediate ACR only needed to feature single disconnect on SP side with common contact facing CB to allow earthing of cable between TR and ACR under maintenance.											
	SDS also noted that Breaker is rated at 630A. SDS proposed 400A. On AC side of TR maximum three phase currents are no higher than 100 - 150A. (The SDS offering is over spec. as 400A is 'typically' lowest offering available in marketplace. Hence reason why SDS specified at this value. A few suppliers do have 200A in range but not typical suppliers hence ignored).											
Section 3 – Part 4 – Signalling, SCADA & Cms (18.02.08)												

Date 26 March 2008

PBH00018014_0098

SDS Review of Siemens offers to tie						Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description								
	SDS believes the Siemens proposals for Signalling, SCADA & Communications differ from the very detailed SDS Procurement Communication Engineer and the Operator and having been through the tie approval process before issue to Infracore Bidders.	Section 3 – Part 4 – Signalling, SCADA & Communications – Sheets 1 - 78										
SY23	Any subsequent changes to these SDS designs or procurement documentation must be by means of the formal Change Control Procedure.		See SDS Proposed Alignment Matrix SY23	Incorporate BBS Signal/SCADA/COMMS changes to SDS Design		BBS	BBS	SDS	SDS	SDS		
SY99	The Siemens proposal is clearly limited to Phase 1a only	Part 4 - Section 1.1 – Page 6 of 78	tie to advise design input for 1A/1B split	tie to instruct		BBS	BBS	SDS	SDS	SDS		
		SDS would enquire if passive provision has been made for Phase 1b										
		i.e. Cable cores in 1a trunk network, Power, Control room facilities, Equipment room facilities, System Capacity, Space, Cable ductwork etc										
-	Various references made to the bid being limited to the content of the BBS B o Q (Annex 1)	e.g. Part 4 – Section 1.1 – Page 6 of 78	tie to advise design input for 1A/1B split	tie to advise		?	?	?	?	?		
		BBS B o Q (Annex 1) not received nor seen by SDS										
SY24	Siemens Signal, SCADA and Coms Cable Management and Cable ducting requirements to be identified		See SDS Proposed Alignment Matrix SY24	Carrier and building works requirement including Depot and Equipment Rooms (BWIC Drawings)		BBS	BBS	SDS	SDS	SDS		
SY25			See SDS Proposed Alignment Matrix SY25	Cable management requirements to be identified by BBS and incorporated into already completed SDS Drawings		BBS	BBS	SDS	SDS	SDS		

Date 26 March 2008

PBH0018014_0099

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	BIMS	CAD	IFC	Planning Approvals	Comments	Interface
SY26			See SDS Proposed Alignment Matrix SY26	Cable ductwork and drawpit requirements (size/depth/locations etc) to be identified by BBS and incorporated into already completed SDS Drawings	BBS	BBS	SDS	SDS	SDS		
SY27	Siemens Signal, SCADA and Coms Equipment (PIDs, PA, Passenger alarms etc) and locations fixings and building work requirements etc to be identified inclusive Depot, Equipment rooms/cubicles, Tram stops, Trackside, Substations etc	Section 3 – Part 4 – Signalling, SCADA & Communications – Sheets 1 - 78	See SDS Proposed Alignment Matrix SY27	Equipment and locations fixings/builders work requirements to align with BBS Bid (Depot, Equipment Rooms/Cubicle/Tramstops/Trackside /Substation)	BBS	BBS	SDS	SDS	SDS		
SY28			See SDS Proposed Alignment Matrix SY28	PIDS/PA/Passenger Alarms Amendments and Requirements to realign with BBS bid	BBS	BBS	BBS	BBS	SDS		
SY29	SDS design and desk top survey, reviewed and accepted by tie identifies the need for 4 Radio Base Stations	Part 7 – Ops radio System – Page 43 of 78	See SDS Proposed Alignment Matrix SY29	RADIO System revisit and amend SDS Design Schematics	BBS	BBS	BBS	BBS	SDS		
		Only three Radio Base Stations allowed for by Siemens									
		PB design based upon 4 base stations and three traffic channels at each base station. By increasing the size of the cell, reducing the number of channels available, increasing the number of radios (see below) and reducing the number of control room staff who can answer a call, SDS have a concern in respect of the probability of queuing/stacking for a radio channel is now increased considerably.									

Date 26 March 2008

PBH0018014_0100

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	GAD	IFC	Planning Approvals	Comments	Interface
SY100	SDS note 130 hand portables have been included from which they deduce these will be issued to Tram Inspectors which has not been part of SDS Scope.	Section 7.1 – Page 43 of 78	tie to advise	tie to instruct	BBS	BBS	BBS	BBS	SDS		
		SDS refer to above re possibility of 'stacking' and radio traffic.									
		See also comment in respect of Depot accommodation.									
SY101	Additional Passenger Help/Emergency help Points will be provided at Park & Ride facilities	Part 8.1 – Page 46 of 78	tie to advise	tie to instruct	BBS	BBS	SDS	SDS	SDS		
		These facilities are not required by tie in the SDS/tie Scope									

Date 26 March 2008

PBH00018014_0101

SDS Review of Siemens offers to tie						Mark Up	BIMS	CAD	IFC	Planning Approvals	Comments	Interface
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description								
SY102	Access/Egress/Security CCTV at Substations deleted	Part 9.1 – Page 47 of 78	tie to clarify	tie to advise	BBS	BBS	BBS	BBS	SDS			
		Is identifies as a tie requirement in SDS/ tie Scope										
		Note - See also 10.9 – Page 54 of 78 which confirms CCTV at substations is included! SDS seek clarification!!										
SY31	Siemens Builders works, cable routes and power supplies to base stations to be provided		See SDS Proposed Alignment Matrix SY31	Cable management and ductwork requirements to be identified by BBS and incorporated into already completed SDS Drawings	BBS	BBS	SDS	SDS	SDS			
SY32	Siemens proposals for Performance Monitoring to be provided i.e equipment, locations, power supplies etc		See SDS Proposed Alignment Matrix SY32	Performance Monitoring Equipment to be provided in accordance with BBS bid documentation (BWIC)	BBS	BBS	SDS	SDS	SDS			
SY33	Precise Integrated Fare collection equipments information, location quantity, power supplies, builders work info, to be provided for inclusion in Trams Stop Drawings		See SDS Proposed Alignment Matrix SY33	tie to provide exact positional and quantity of AFC Equipments for incorporation of the IFC Drawings	BBS	BBS	SDS	SDS	SDS			
SY34			See SDS Proposed Alignment Matrix SY34	BWIC Drawings for AFC Equipment (bases and anchor bolts etc)	BBS	BBS	SDS	SDS	SDS			
SY35			See SDS Proposed Alignment Matrix SY35	Cable management requirements to be identified by BBS/tie and incorporated into already completed SDS Drawings	BBS	BBS	SDS	SDS	SDS			
SY36			See SDS Proposed Alignment Matrix SY36	Cable ductwork and drawpit requirements (size/depth/locations etc) to be identified by BBS and incorporated into already completed SDS Drawings	BBS	BBS	SDS	SDS	SDS			

Date 26 March 2008

PBH0018014_0102

SDS Review of Siemens offers to tie						Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description								
-	Are facilities to be made available to tie to update all pre-recorded messages, displays and other information at the Control room/equipment room without the use of additional equipments or special facilities?	Part 11.2.3.2 – Page 61 of 78.	tie to clarify									
				tie to advise								
SY103	The CCTV Control Interface will allow the Control Room operator to switch any camera image to be recorded to the central data recordercontradicts with:-	Part 11.2.3.6 – Page 63	tie to clarify			BBS	BBS	BBS	BBS	SES		
	11.4.6 Images from the Closed Circuit Television cameras will be transmitted back to the Equipment Room Closed Circuit Television Controller whereupon they will be recorded, time-stamped and identified on the central data recording system.	This statement implies that not all cameras are recorded simultaneously.										
SY104	The recording rate for Closed Circuit Television images will be: 87 cameras (55PTZ & 32 fixed) recorded at 16 fps, 2cif for 31 days with allowance for incident & event recording at 25fps 2 cif. Viewing on 18 monitors at 25fps, 2cif.	Part 11.4.14 – Page 75 of 78	tie to clarify			BBS	BBS	BBS	BBS	SES		
		Where are the fixed cameras located?										
		2 CIF pictures are 704 x 288 pixels i.e. approx full screen width but half height.										
		PB design called for 4 CIF 704 x 576 pixels i.e. almost full screen.										
SY105	CCTV Freeze frame facility deleted	Part 11.4.14 - Page 75 of 78	tie to clarify			BBS	BBS	BBS	BBS	SES		
				tie to advise								

Date 26 March 2008

PBH00018014_0103

SDS Review of Siemens offers to tie												
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	GAD	IFC	Planning Approvals	Comments	Interface	
	SDS believes this omission could have important impact on the analysis of incidents and any possible prosecution process.											
Section 3 – Part 4 – Annex 1 – B o Q												
	Appears to be title page only		no comment									
Section 3 – Part 4 – Annex 1 BoQ1												
SY106	SDS are of the opinion the platform configuration and therefore the associated systems do not reflect ties requirements		tie to clarify	tie to advise	BBS	BBS	SDS	SDS	SDS			
Section 3 – Part 4 – Annex 1 BoQ2												
	See above											

Date 26 March 2008

SDS Review of Siemens offers to tie											
REF	Version 13.10 Hrs 17.03.08	Example	Alignment Delivery	Description	Mark Up	DIMS	CAD	IFC	Planning Approvals	Comments	Interface
Section 3 – Part 5 – Traffic Signals											
SY107			tie to clarify	tie to advise	BBS	BBS	BBS	BBS	BBS		
	SDS note that Siemens are of the opinion they have not been provided with UTC System 'design information' and in the same document expound the experiences and skills of their company in this particular field.										
	From this and other wording within this Siemens document SDS are not sure as to the intended extent of the Siemens Infracore Works.										
	See SDS Document ULE90130 -										

Date 26 March 2008

PBH00018014_0105