

Bilfinger Berger – Siemens – CAF Consortium

**EDINBURGH TRAM NETWORK
INFRACO CONTRACT**

**PERIOD REPORT No 2-4
TO 18 JULY 2009**

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1 EXECUTIVE SUMMARY

66,000 hours were worked in period 2-3, of which 36,000 were site hours with no reportable accident.

The basis for progress measurement in this report is the Programme Rev 1 showing the agreed mitigated impact of the initial design slippage as 38 days (7 weeks 3 days) on the end date. The incorporation of design information from the current design issue programme, actual progress on site and known access dates after MUDFA completion delayed the original programme completion date to 15 September 2012.

Production of civil and building drawings in accordance with the original design is approximate 80% complete. In general earthworks, roads, track and structures drawings are available but drawings for the depot, substation and tramstops are incomplete.

Civil drawings, revised to incorporate Siemens design (trackform including vibration isolation, OLE foundations, substations) are in progress. Drawings are being prioritised to support construction.

System engineering design is finalised for OLE and traction power and approaching finalisation for track, depot equipment, signalling and other disciplines.

Tram manufacturing is progressing well.

Programmes for EOT Entitlement and Revision 2 have been submitted to *tie* indicating a delay for the completion of the programme to 20 January 2013 and 02 October 2012 respectively.

A total of 420 Changes have been notified to *tie* with a submitted estimated value of £54,500,000. 76 of these estimates have been agreed by issue of a tie Change Order in a total value of £3,250,000.

Virtually all construction works are impacted by external issues which require resolution through the change process of the contract. During the week of 29 June to 3 July 2009, tie and BSC participated in an informal “Without Prejudice” mediation workshop with the objective to achieve agreement and resolution on all items addressed to allow progress of construction works.

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2 HSQE

2.1 Health & Safety

2.1.1 Safety Management including CDM

- The Network Rail Construction Phase Health & Safety Plan Rev 3 has been reviewed internally within BSC and was issued on the 25/06/09.
- The Safety Management Plan Rev1 was issued on the 15/06/09.
- The Construction Phase Environmental Plan Rev 3 will be issued to the client by the 17/07/09.

2.1.2 Accidents, Incidents and Near Misses/Unsafe Conditions:

Period 2-3 to 2-4 records up to the 3rd of July 2009

No reportable accidents recorded up to the date above.

4 Infraco Near Misses/Unsafe Conditions Recorded in the Period:

- 1 4/06/09 tracked excavator placing concrete without preparing the ground conditions first
- 2 15/06/09 a bus tracker pole was shorting due to heavy rain, this is after a repair previously by Scottish Power AIR 768
- 3 26/06/09 Fence vandalised by kids on guided bus way, repaired same evening.
- 4 5/06/09 MOP complained about unsafe practices on the footpath at Gogar roundabout

7 Accidents/Incidents Recorded:

- 1 Princes Street service damage when hand excavating to locate service 26 May 2009.
- 2 During re-excavation of soft spots in the formation, McKenzie discovered a previously damaged cable, investigation ongoing with SP – 02 June 2009.
- 3 MacKenzie steel fixer injured his ankle whilst walking on site at Princes Street 6/06/09
- 4 Whilst stripping some shuttering a joiner trapped his finger between the shuttering and the pinch bar 8/06/09
- 5 Damage to a buried water main valve on Princes Street 9/06/09
- 6 Scaffolder injured ankle at Edinburgh Park bridge 11/06/09
- 7 Uncharted BT cable damage on Princes Street to public telephones 25/06/09

The AFR for period 2-3 is **0.18**.

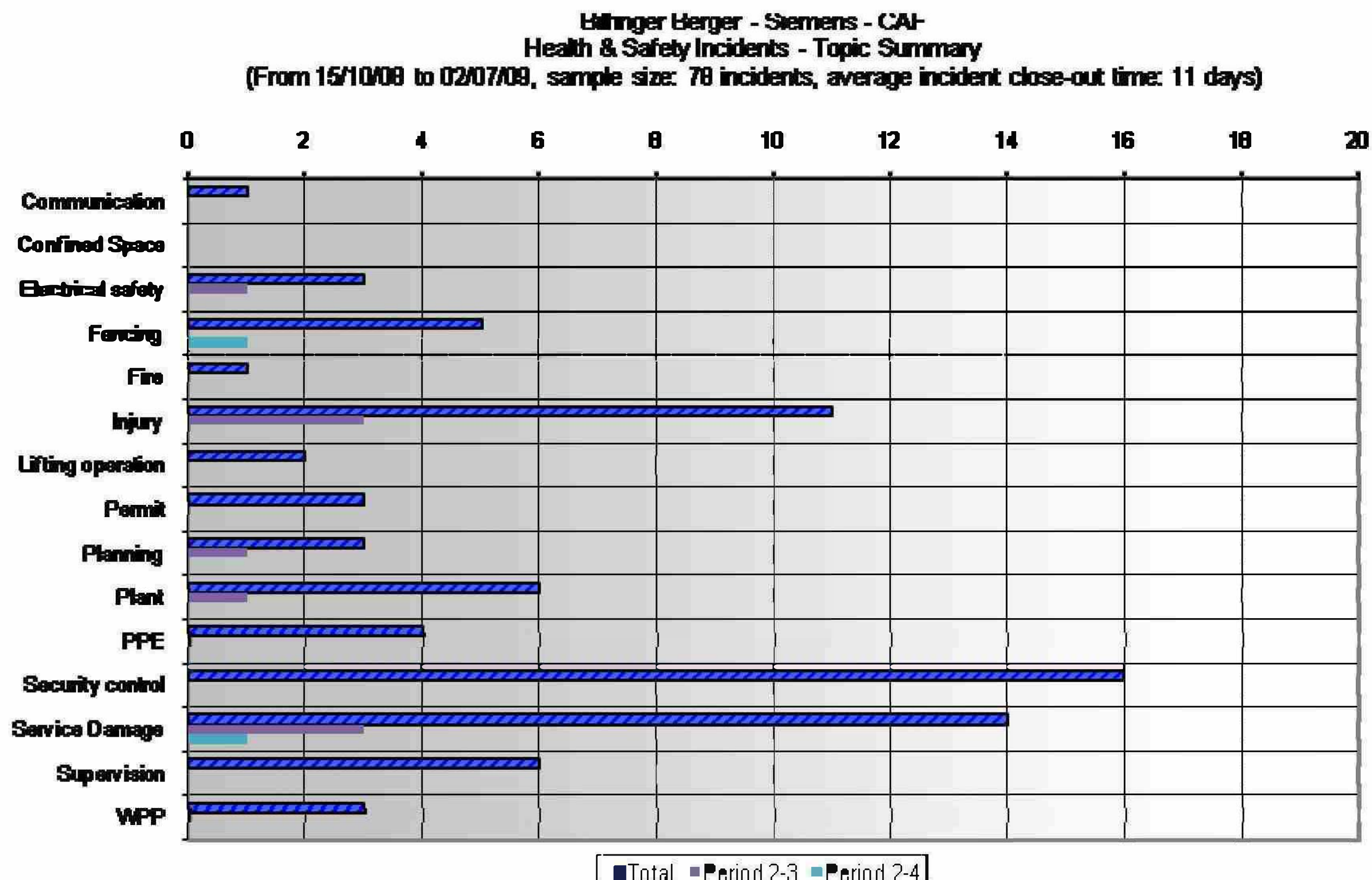
Total Hours worked in **Period 2-3:**

Total: 66,451

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Non site hours = 30,613
Site Hours = 35,838

2.1.3 Rolling Trend Analysis up to period 2-3 on safety related activities.



2.2 Environment

- 2.2.1 No environmental issues were raised in the period apart from some minor observations at Balgreen on dust raised from earthworks.
- 2.2.2 BSI audit did not raise any observations or NCR's on the environment on the 10th of June.

KPI spreadsheet for Period 2-3 is attached at Appendix 1.

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2.4 Quality

2.4.1 Quality Management System

BSC now has in place a '*Road Network Plan of Affected Areas – Rev A*', which has been issued to tie for acceptance.

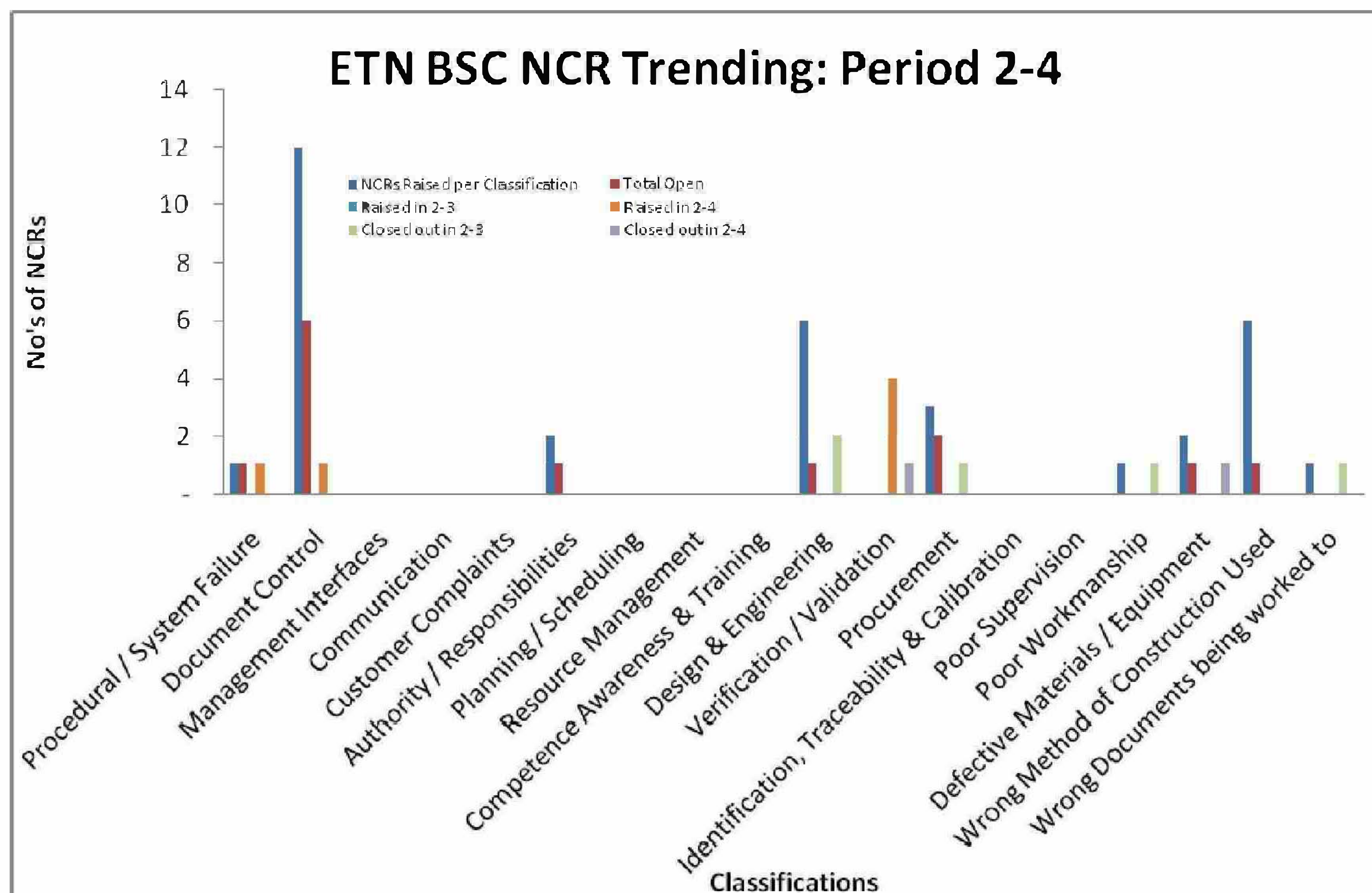
A Project Specific Procedure for 'Planning, Execution & Packaging ITPs' is being developed for use by all Contractors. An ITP workshop will be held in late July 2009 to discuss the draft procedure and agree a final version for issue. All Contractors, SDS and tie will be invited and the draft procedure will be sent out for comment in advance.

As an output of the aforementioned procedure, a Schedules of ITPs - per section/sub-contactor's scope of works is being developed, so that Inspection and Testing progress may be measured and reported.

2.4.2 NCRs

At the time of writing there are currently 14 'open' 'quality' NCRs from a total of 38 raised to date, 2 having been cancelled, and the remainder having been closed-out. All, except one of the currently 'open' 'Quality' NCRs are 'overdue'. 2 NCRs were raised during the last period.

The latest trending histogram for Quality NCRs is shown below.



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2.4.3 Audits

A 'BSC Assessment Audit' on potential Sub-Contractor 'McKean' was carried out on the 9th of June 2009. The audit report was submitted to tie on the 22nd June 2009.

The outstanding audit findings [11] from tie Audit Ref: TQA-08-07 carried out between the 13th & 15th January 2009 were addressed in our letter ref: 25.1.201/DR/2825 dated 12th June 2009.

The British Standard Institute (BSI) carried out a Certification Audit on Bilfinger Berger's scope of the works on the ETN Project on the 10th June 2009. No findings of any kind were found or reported, whether non-conformity or observation.

A constructive BSC audit on SDS regarding the management of the hazard log was carried out on the 24th of June 2009. Colin Kerr and Liz Parkes were attending as observers. The audit report was submitted to tie on the 1st July 2009

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3. PROGRAMME

3.1. Programme

The programme at Appendix 10.2 to this report has the V31 mitigation programme incorporated. This programme has been accepted by tie in accordance with Clause 60.4 as the “Programme” (Rev 1) and is used as a baseline for reporting progress.

Progress achieved up to 10 July 2009 has then been recorded against the above baseline including inputting the latest IFC dates received from SDS (V46).

No IFC date has been received for the redesign of South Gyle Access Bridge (programme defaulting to 10 July 2009).

The Programme identifies completion of MUDFA works in each Intermediate Section and uses these dates as a start milestone for the INFRACO work. BSC have progressed (“progress to date”) the Programme in accordance with the Contract and the MUDFA completion dates have been extracted from MUDFA revision 8.0 programme.

It should be recognised that the Programme has only been progressed were noted in this report and does not include for all changes that we are aware of or have been notified to date e.g. dealing with abandoned services, misalignment issues etc.

The result is the following changes to Section Completion Dates:

	10 July 2009	12 June 2009	Programme
A	22 April 2011	24 March 2011	01 June 2010
B	20 June 2011	31 May 2011	01 July 2010
C	19 March 2012	29 February 2012	10 March 2011
D	15 September 2012	27 August 2012	06 September 2011

The critical path remains as previously reported namely; South Gyle Access Bridge, 5B track laying, 1D track work, Picardy Place, 5C track work, 5C, 1B, 1C OHLE, 1C Electrical Cabling, Signalling and Wayside Equipment .

At a number of locations the construction sequence has been changed, from that originally considered, to suit current constraints. Presently the logic of the Programme remains unaltered from that envisaged at Contract Award. Therefore some inaccuracies occur when “progress to date” has been entered into the Programme.

Note – the links between the third party consents and the related activities present in the Programme have been deleted to enable a true analysis to be provided of the current situation.

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As a result of events which have negatively impacted on the Programme the works have had to be re – sequenced in an attempt to mitigate the delays which are being incurred. Effectively the following constraints have been disregarded by the BSC construction team:

- Completion of MUDFA works in Intermediate Section 1D and the start of the INFRACO works.
- Completion of other sections of track work prior to commencing in Princes Street.

If the corresponding constraints are broken in the “progressed” Revision 1 Programme the Sectional Completion D improves to the 20 August 2012.

However, due to the vast growth in the scope of the works and the delays which have been suffered, the Revision 1 Programme no longer truly represents either the works to be constructed or their current state of production.

The EOT Entitlement programme and Revision 2 Programme shows section completion dates of 20 January 2013 and 02 October 2012 respectively. These programmes are data dated at the end of March 2009 which give a more accurate prediction of the anticipated completion of the works. However, further slippage will have occurred between their production and the date of this report (July 2009) e.g. the issue of the Rev 8 MUDFA programme.

A series of meetings are being held between tie and Consortium Planners to agree this programme.

3.2 Look Ahead Programme

The Look-Ahead Programme for the period July to Oct 09 is an extract from the current Construction Programme updated with the latest IFC dates from the SDS V46 Programme. MUDFA activities are now scheduled in accordance with their programme Rev.08 received 05 May 08. Where MUDFA Works are ongoing, the Completion Milestones will continue to default to the report date unless planned completion dates are later. The programme has also been updated with progress of The Works recorded and assessed to 10 July 09.

Section 1A

This section is currently re-scheduled to suit design change, and timing of MUDFA diversion works. The proposed Traffic Management Scheme was accepted by CEC and Forth Ports Authority on Mon 30 June 09.

Section 1B - Leith Walk

A revised Traffic Management Scheme is currently under review by the TMRP. An initial programme appraisal indicates a reduction in the period of disruption on Leith Walk. Re-design of TM is ongoing (awaiting authorisation from TIE). These works are planned to commence September 2009.

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A detailed construction schedule is being developed for this section in a similar format to 1D.

TM Scheme design is progressing as planned.

Section 1C/D - Princes Street

The Princes Street Detailed Programme Revision D includes the further revised MUDFA Completion Date for the South St. Andrew Street (31May09), increased outputs, 7 day working on selected activities, removal of the August Embargo, inclusion of an anti-vibration design in the areas of St John's Church and the Art Gallery, and re-scheduled to achieve the desired completion to surface level by the Christmas Festival on 3 December 2009. INFRACO access on Princes St. eastwards to Waverley Bridge was achieved on 7 June 09 after MUDFA Completion on 5 June with TM changes the following day. At the time of writing, the ongoing occupation of The Mound by MUDFA has limited the Works on the East Section (from South St. Andrew Street to Chainage 1,750 - West of The Mound) to approx 65 % of the overall section length. This area of the site was planned to be available on 12 June 09 but has not yet been handed over to the INFRACO.

It is also understood that MUDFA works on the section from South Charlotte St westwards into Lothian Road will not handed over to the INFRACO until late July. A Revision "E" of the Princes St Programme is now considered necessary, and will be issued within the next few days.

Track laying commenced as planned on 8 June 2009, 10 weeks behind Contract Programme Rev.1.

The works are progressing to the new Revision D Detailed Construction Programme giving planned completion 18 weeks behind Contract Programme Rev.1.

Section 1D - Haymarket Junction to Shandwick Place

INFRACO Works on Haymarket Junction were originally planned to commence on 05 January 09. Ongoing Utility Works currently delay the commencement of INFRACO Works in this section. Handover to the INFRACO was previously notified by TIE as 2 August 2009, but is now expected to be 10 Oct 09, with the possibility of BT works to follow until late Nov 09, which may affect access. A Detailed Draft Programme for the construction of Haymarket Junction from the viaduct through Shandwick Place to Lothian Road tie-in has been updated to reflect a more efficient Traffic Management Scheme.

A further revised Traffic Management proposal to allow an early start to Works in Shandwick Place has not been accepted, therefore this section will not commence until after completion of Phases 1 & 2 in Lothian Road, which is currently expected to be in Jan 10 following completion of MUDFA operations.

These works, as planned using the above dates, are 34 weeks late to Contract Programme Rev.1.

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Section 5B – Guided Busway

A Detailed Draft Construction Programme has been developed for the Guided Busway taking into account OLE, Drainage, Trackform, and Design issues.

3.3 Tramco Programme Status

Updated tram design, procurement, manufacturing, delivery and commissioning programme is attached as Appendix 10.4.

4 PROGRESS

Programme update attached as Appendix 10.2.

4.1.1 Civil & Building Design

4.1.1.1 Production IFC Design

Meeting with **tie** regarding different form of reporting on design production took place on 18.June 2009. **tie** requested BSC to resume to reporting on packages as per SDS Schedule.

Programme

Version 45 and 46 of the SDS programme were issued to BSC and **tie**. The programme identifies significant slippage in certain areas. The statement to explain the slippage of V45 against V44 was issued by email on 30 June 2009. A statement on Version 46 is in progress and will be supplied shortly.

Approvals

SDS reporting the progress as follows:

From a total of 220 planning and technical approvals:

90% are approved (198).

7.5% are pending approval (16).

2.5% are to be submitted (5).

Current status (today) is:

93% Planning Approvals granted.

87.5% Technical Approvals granted.

The remaining outstanding approvals are either to be approved immanently, or have been subject to re-prioritisation and long standing changes.

4.1.1.3 Issues and Concerns

A weekly Design Change Issues Meeting between BSC, SDS and **tie** has been set up to work through and seek resolution to Design Change Issues and includes the following key issues which are still to be resolved:

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- CEC preference for Demarcation between Tramway and Roadway; Demarcation solution accepted by SDS. Commercial issue to be resolved between **tie** and BSC (SDS). SDS has provided additional information to support their argument. BSC are reviewing with SDS how to progress this further. A technical meeting with **tie** shall be arranged.
- CEC Transport request for relocation of OLE poles is deemed to be a genuine change. SDS has provided additional information to support this argument. Meeting held between **tie**, CEC, BSC and SDS to discuss and resolve this issue. BSC are awaiting **tie** (and CEC) response.
- Environmentally Friendly Bat Lighting – SDS has confirmed Bat Survey carried out in line with relevant standards and no bats are present within this area. **tie** to review with CEC. This has a potential impact on the lighting design for all of Line 2. BSC are awaiting **tie** response.
- Picardy Place (Section 1C2) – Clarification provided by **tie**. SDS are preparing change estimate at present.

The following other issues need to be resolved as a matter of urgency:

- TRO Programme – meeting required **urgently** at a Senior Level to resolve the commercial issue.
- Resolution and finalisation of Forth Ports Agreement. Further changes have been intimated by **tie** which could further delay finalisation of Section 1A3.
- Transdev comments received late and need **tie** instruction. This is being worked through the ODR meetings with Tony Glazebrook.
- RBS Gogarburn Tram Stop – Agreement between **tie** and RBS is required in order to complete the Gogarburn Tram Stop design. BSC are awaiting **tie** instruction. BSC are assisting tie in finalising future proofing requirements for the RBS Tram Stop.
- West End Tram Stop Review – **tie** to authorise change estimate.
- Pre Novation issues including Phase 1a / 1b interface and advertising consents to be resolved. BSC are reviewing with SDS at present and through Design Change Issues Meeting forum, will raise this with **tie**.

4.1.1.4 Extended Construction Support and Design Support

The proposed organisational chart for the upcoming month is attached in Appendix 10.8. CVs and programmed activities were provided for Extended Construction Support and Design Support for May and June. BSC have

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instructed the support teams as proposed in previous months in good faith as the progress meeting No 2.3, in which the org chart should have been discussed, did not take place.

4.1.1.6 Workshops

Development Workshops

A series of internal workshops were held to prepare Development Workshops with *tie*.

- | | |
|-----------------------------------|----------|
| • Trackform | 04/06/09 |
| • Tramstops | 09/06/09 |
| • Earthing & Bonding | 10/06/09 |
| • Substations | 11/06/09 |
| • Powersupply | 22/06/09 |
| • System & Powercable ducts | 24/06/09 |
| • Drainage | 25/06/09 |
| • Horizontal & Vertical Alignment | 25/06/09 |

The schedule of Development Workshops necessary to close out the misalignments as identified in Schedule 23 will be submitted separately.

Depot

Depot building – recent meetings between the contractor’s specialist suppliers and the SDS designers have proved productive in terms of resolving outstanding details and technical queries. The process is continuing, the current priority being the resolution of the secondary steel and approval of working drawings.

Siemens have produced detailed design documentation for The Wheel Lathe, the Tram Wash, and the Under Floor Lifting Plant. Following review of this information and dedicated workshops Siemens are now in a position to issue ‘For Construction’ reports that will include all information necessary for incorporation into the SDS design.

Bogie Turntable – SDS design cost has now been submitted for tie approval. Details of Siemen’s requirements have been submitted to Bilfinger via an Interface Control Form – for review & incorporation following tie response.

Compressed air - Siemen’s requirements have been published via an Interface Control Form – The compressor station shall supply the washing plant and the fixed sanding equipment.

Paint booth – a proposal has been submitted to tie for consideration & comment.

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Sand filling plant – a proposal has been submitted to tie for consideration & comment. The document should be reviewed by tie to enable BSC to initiate the interface, final design, production and supply of the equipment.

Tram Stops

RFI 00229 – Response from tie received confirmation that an 110v power outlet is required for cleaning or any other purposes on each platform by TEL. Tram Stop Shelter supplier selection proposal review completed. Awaiting contractual authorisation to contact to continue

A BSC workshop meeting held to identify misalignments, Informative issues, and changes, to the Tram Stop.

Clarification as to the design specification for the Tram Stop poles for CCTV, PA, etc, sought.

Response to RFI-0236 concerning number of TVM received. The TVM have been positioned for the most part on SDS IFC drawings, the outstanding information for these will become a critical issue once the tram stop design is finalized.

RFI-0235 – A follow up RFI asking for the power rating required to be supported by the 110v outlet at tram stop platform. Detail required as this will have a direct impact on the size of the transformer, cable sizing.

Substations

Tender responses from prospective suppliers for the provision of the substation building received. Two options proposed for the cabling sub-chamber under the substation equipment rooms. The implications of both options being reviewed as they would require different base and duct access designs.

4.1.1.7 Request for Information

BSC and **tie** met last on 29 April 2009 to discuss and close out open RFIs.

On status date 06 July 2009 – RFI summarise as follows:

RFI's open:	51 total
RFI's open and unanswered:	26
RFI's open and need further clarification:	25
RFI's issued in June 09:	6
RFI's responded in June 09:	3
RFI's closed in June 09:	3

BSC propose to continue RFI meetings between **tie** and BSC to close out open RFIs on a regular base.

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4.1.2 Procurement

4.1.2.1 Sub-Contractors

A Sub-Contract Procurement Schedule, showing status at 6 July 2009, is attached as Appendix 10.6.

Section 1A

Section 1A has now been split into three areas, Newhaven to Ocean Terminal (1A1), Ocean Terminal to Port of Leith (1A2) and Port of Leith to Foot of the Walk (1A3).

BSC intend to sublet Section 1A1 and 1A2 to McKean and Company (Glasgow) Ltd. Final negotiations continue however uncertainty over programme, service diversions and design is hindering progress. A request under Clause 28.2 to sublet to McKean has been submitted and awaits tie's response.

BSC intend to extend Crummock's involvement down from Foot of the Walk to Port of Leith (1A3).

Section 1B

BSC have concluded the procurement process for Section 1B.

Section 1C

Crummock have submitted their price for 1C1 (MacDonald Road - London Road) and BSC are currently reviewing this. BSC's ability to conclude discussions with Crummock are restricted by the uncertainty over programme and access.

BSC are concluding terms and conditions with Mackenzie Construction Ltd over section 1C3 (Castle Street - Waverley Bridge).

It is BSC's current intention to self deliver the remaining works in Section 1C2 (London Road – Waverley Bridge) and a final strategy for carrying out the works is still to be agreed. This work is now not expected to start until January 2010 and a procurement process will commence late spring 2009.

Section 1D

Final negotiations are proceeding with MacKenzie to conclude a Sub-Contractor order.

Section 2A and 5A (Part)

Final negotiations are proceeding to conclude a Sub-Contractor order.

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Section 5A (Part), 5B and 5C (Part)

BSC intend to sublet the remaining structures on Sections 5A, B and C to Expanded Ltd. Discussions continue over finalising programme and terms and conditions.

Package quotations for the balance of the civils works in Section 5 have been received and are currently under review; however BSC's ability to review these prices is affected by the uncertainty over programme and access.

Section 6

BSC are finalising the terms and conditions of the full Sub-Contractor order for Barr Ltd for the construction of the depot.

In the meantime Barr Ltd has been issued with a Limited Instruction to Proceed to progress any area of the depot where it is possible to do so.

Section 7A

Final negotiations with Farrans on the terms and conditions of a Sub-Contract order have been concluded.

A response from tie in respect of the Edinburgh Airport Limited Subcontractor Collateral Warranty prevent BSC from concluding Farrans Sub-Contract.

General

Procurement of relevant key Sub-Contractors (Major Civil Works Contractors, Piling Contractors, Ground Stabilisation Specialists) includes the requirement for provision of a Collateral Warranty, in accordance with Clause 28.7 of the Contract.

BSC may need to offer **tie**, in some instances, alternative wording for their Collateral Warranty agreement, as BSC have not as yet been able to conclude our negotiations with potential Sub-Contractors using the template in Schedule 8 Part F.

The length of time it has taken to either procure, negotiate and conclude any Sub-Contract has been affected by the complexity of the main contract negotiations and how BSC and **tie** require step down into the subcontract, the necessity to operate a complex milestone schedule which can be adversely affected by progress and change on site and the overall uncertainty on programme.

4.1.3 Materials

No comment.

4.1.4 Long Lead Procurement Management

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A Letter of Intent was issued to Fairfield Mabey to secure delivery of the beams for the Water of Leith Bridge.

BSC are currently sourcing prices for the beams and bearings for Tower Dock Bridge to maintain programme. These materials relate to section 1A2.

4.1.5 Construction

Progress on site to 10 July 2009
Reported against Revision 1 of the Programme
Duration % Complete (workdays)

Section	Planned Progress		Completion Date		Anticipated Completion
	Programme Revision 1	Actual Progress	Programme Revision 1	Programme Revision 1	Date (Progressed Programme Revision 1)
1A	38%	0%	07/03/2011		05/03/2012
1B	44%	3%	05/11/2010		16/11/2011
1C	34%	1%	11/03/2011		19/03/2012
1D	46%	15%	17/09/2010		21/09/2011
2A	66%	8%	03/03/2010		21/02/2011
5A	44%	0%	20/12/2010		19/12/2011
5B	52%	17%	31/08/2010		19/08/2011
5C	49%	1%	20/09/2010		29/09/2011
6	55%	2%	01/06/2010		22/04/2011
7	53%	10%	05/10/2010		23/09/2011
Construction	48%	6%	Section C		Section C
			10/03/2011		19/03/2012
			Section D		Section D
			06/09/2011		15/09/2012

4.1.5.2 Section 1A Newhaven Road to Foot of the Walk

Lyndsay Road Retaining Wall

No activities carried out during period.
 Currently 36 weeks behind Programme (Rev 1).

Trackwork - Lyndsey Road to Ocean Terminal

No activities carried out during period.
 Currently 30 weeks behind Programme (Rev 1).

Trackwork - Ocean Terminal to Port of Leith

No activities carried out during period.
 Currently 24 weeks behind Programme (Rev 1).

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Victoria Bridge

No activities carried out during period.
Currently 24 weeks behind Programme (Rev 1).

Tower Place Bridge

No activities carried out during period.
Currently 24 weeks behind Programme (Rev 1).

Trackwork – Port of Leith to Bernard Street

No activities carried out during period.
Currently on Programme (Rev 1). Scheduled commencement date
28 August 2009.

Trackwork – Bernard Street to Foot of the Walk

No activities carried out during period.
Currently on Programme (Rev 1). Scheduled commencement date
25 November 2009.

4.1.5.3 Section 1B Foot of Leith to McDonald Road

Trackwork – Foot of the Walk to Balfour Street

No activities carried out during period.
Currently 46 weeks behind Programme (Rev 1).

Trackwork Balfour Street to McDonald Road

No activities carried out during period.
Currently 30 weeks behind Programme (Rev 1).

4.1.5.4 Section 1C McDonald Road to Princes Street West

Trackwork McDonald Road to Picardy Place

No activities carried out during period.
Currently 37 weeks behind Programme (Rev 1).

Trackwork Picardy Place to St Andrew Square

No activities carried out during period.
Currently on Programme (Rev 1). Scheduled to commence
10 February 2010.

Trackwork St Andrew Square to Waverly Bridge

No activities carried out during period.
Currently 21 weeks behind Programme (Rev 1).

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Trackwork Waverly Bridge to Castle Street

Duct and drainage installation has continued. OLE foundation and carriageway construction has continued. Track improvement layer and track installation has commenced in the period.
Currently 22 weeks behind Programme (Rev 1).

4.1.5.5 Section 1D Princes Street to Haymarket

Trackwork Castle Street to Lothian Road

Duct & drainage activities have continued. OLE foundation and track improvement construction has commenced. Track improvement layer and track installation has commenced in the period
Currently 22 weeks behind Programme (Rev 1).

Trackwork Haymarket to Lothian Rd

No activities carried out during period.
Currently 22 weeks behind Programme (Rev 1).

4.1.5.6 Section 2A Haymarket to Roseburn Junction

Haymarket Station Viaduct

No activities carried out during period.
Currently 43 weeks behind Programme (Rev 1).

Trackwork Haymarket to Russell Road

No activities carried out during period.
Currently 47 weeks behind Programme (Rev 1).

4.1.5.7 Section 5A Roseburn Junction to Balgreen Road

Russell Road Bridge

No activities carried out during period.
Currently 55 weeks behind Programme (Rev 1).

Russell Road Retaining Walls W3 & W4

No activities carried out during period.
Currently 47 weeks behind Programme (Rev 1).

Murrayfield Tram Stop Retaining Wall

No activities carried out during period.
Currently 50 weeks behind Programme (Rev 1).

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Trackwork Russell Rd to Murrayfield Stadium

No activities carried out during period.
Currently 47 weeks behind Programme (Rev 1).

Roseburn Street Viaduct

No activities carried out during period.
Currently 29 weeks behind Programme (Rev 1).

Murrayfield Retaining Wall 21B

No activities carried out during period.
Currently 46 weeks behind Programme (Rev 1).

Murrayfield Stadium Underpass

No activities carried out during period.
Currently 46 weeks behind Programme (Rev 1).

Murrayfield Retaining Walls 21D

No activities carried out during period.
Currently 23 weeks behind Programme (Rev 1).

Water of Leith Bridge

No activities carried out during period.
Currently 1 week behind Programme (Rev 1).

Baird Drive Retaining Wall

No activities carried out during period.
Currently 45 weeks behind Programme (Rev 1).

Balgreen Bridges

No activities carried out during the period.
Currently 19 weeks behind programme (Rev 1).

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Trackwork Murrayfield Stadium to Balgreen Road

No activities carried out during the period.
Currently 29 weeks behind Programme (Rev 1).

4.1.5.8 Section 5B Balgreen Road to Edinburgh Park Central

Trackwork Balgreen Road – Carrick Knowe

Earthworks – Excavation of soft spots has been completed. Placing of acceptable material from Depot has continued during the period
Currently 42 weeks behind Programme (Rev 1).

Carrick Knowe Bridge

No activities carried out during period.
Currently 45 weeks behind Programme (Rev 1).

Trackwork Carrick Knowe – South Gyle Access Bridge (Guided Busway)

No activities carried out during the period
Currently 45 weeks behind Programme (Rev 1).

Bankhead Retaining Wall

No activities carried out during period.
Currently 54 weeks behind Programme (Rev 1).

South Gyle Access Bridge

No activities carried out during period.
Currently 54 weeks behind Programme (Rev 1).

Track work South Gyle Access Bridge to Edinburgh Park

Temporary fence erection has commenced.
Currently 45 weeks behind Programme (Rev 1).

Edinburgh Park Bridge

Fixing of deck & diaphragm reinforcement has continued during the period.
Currently 30 weeks behind Programme (Rev 1).

Track Work Edinburgh Park Station – Edinburgh Park Central

No activities carried out during period.
Currently 46 weeks behind Programme (Rev 1).

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4.1.5.9 Section 5C Edinburgh Park Central to Gogarburn

Track Work Edinburgh Park Central – Gyle Centre

No activities carried out during period.
Currently 45 weeks behind Programme (Rev 1).

Gyle Tram Stop Retaining Wall

No activities carried out during period.
Currently 56 weeks behind Programme (Rev 1).

Depot Access Bridge

No activities carried out during period.
Currently on Programme (Rev 1). Scheduled commencement Date
5 August 2009.

A8 Underpass

Construction of temporary diversion has commenced during the period.
Traffic is scheduled to be diverted on 12th July 2009
Currently 43 weeks behind Programme (Rev 1).

Trackwork Gyle Centre to Depot Stop

No activities carried out during period.
Currently 43 weeks behind Programme (Rev 1).

Track Work Depot Stop – Gogarburn

No activities carried out during period.
Currently 35 weeks behind Programme (Rev 1).

4.1.5.10 Section 6A Depot

Earthworks

Bulk excavation has continued in the period.
Currently 38 weeks behind Programme (Rev 1).

Trackwork

No activities carried out during period.
Currently 21 weeks behind Programme (Rev 1).

Depot Building

No activities carried out during period.
Currently 47 weeks behind Programme (Rev 1).

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Depot Substation

No activities carried out during period.
Currently 46 weeks behind Programme (Rev 1).

Access Roads

No activities carried out during period.
Currently 45 weeks behind Programme (Rev 1).

4.3.5.11 Section 7A Gogarburn to Edinburgh Airport

Gogarburn Culvert No 1

No activities carried out during period.
Currently 33 weeks behind Programme (Rev 1).

Gogarburn Bridge

Reinforced earth to both Abutments has been completed.
Removal of defective West abutment concrete has been completed and re construction has been completed
Currently 39 weeks behind Programme (Rev 1).

Trackwork Gogarburn to Ingliston Park & Ride

No activities carried out during period.
Currently 21 weeks behind Programme (Rev 1).

Gogarburn Culvert No 2

No activities carried out during period.
Currently 32 weeks behind Programme (Rev 1).

Gogarburn Culvert No 3

Precasting of Culvert units has been completed.
Currently 30 weeks behind Programme (Rev 1).

Gogarburn Retaining Wall

No activities carried out during period.
Currently 35 weeks behind Programme (Rev 1).

Trackwork Ingliston Park & Ride to Edinburgh Airport

No activities carried out during period.
Currently 35 weeks behind Programme (Rev 1).

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Issues and Concerns

4.1.5.2 Section 1A Newhaven Road to Foot of the Walk

Lyndsay Rd Retaining Walls

Change from BDDI to IFC has not been agreed.

MUDFA have not commenced diversion of existing Public Utilities.

Trackwork - Lyndsey Road to Ocean Terminal

Existing Public Utilities within re alignment of Lindsay Road have yet to be diverted.

IFC design incomplete for carriageway and trackwork construction

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by *tie* have not been agreed

MUDFA works incomplete

Trackwork - Ocean Terminal to Port of Leith

IFC design incomplete for carriageway and trackwork construction

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by *tie* have not been agreed

MUDFA Works incomplete

Victoria Bridge

Change from BDDI to IFC has not been agreed.

MUDFA have not commenced diversion of existing Public Utilities.

Tower Place Bridge

Change from BDDI to IFC has not been agreed.

MUDFA have not completed diversion of existing Public Utilities.

Trackwork – Port of Leith to Bernard Street

IFC design incomplete for carriageway and trackwork construction

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

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Change estimates on Utility transferred by **tie** have not been agreed

MUDFA works incomplete

Trackwork – Bernard Street to Foot of the Walk

IFC design incomplete for carriageway and trackwork construction.

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by **tie** have not been agreed.

MUDFA works incomplete.

Archaeological works are incomplete.

4.1.5.3 Section 1B Foot of Leith to McDonald Road

Trackwork – Foot of the Walk to Balfour Street

IFC design incomplete for carriageway construction

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by **tie** have not been agreed.

MUDFA works incomplete.

Trackwork Balfour Street to McDonald Road

IFC design incomplete for carriageway construction.

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by **tie** have not been agreed.

MUDFA works incomplete.

4.1.5.4 Section 1C McDonald Road to Princes Street West

Trackwork McDonald Road to Picardy Place

IFC design incomplete for carriageway and trackwork construction.

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on utility transferred by **tie** have not been agreed.

MUDFA works incomplete

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Trackwork Picardy Place to St Andrew Square

IFC design incomplete for carriageway and trackwork construction.

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by **tie** have not been agreed.

MUDFA works incomplete.

Trackwork St Andrew Square to Waverly Bridge

IFC design incomplete for carriageway and trackwork construction.

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by **tie** have not been agreed.

MUDFA works incomplete.

Trackwork Waverly Bridge to Castle Street

IFC design incomplete for carriageway and trackwork construction.

MUDFA works incomplete at the Mound

No allowance in Revision D construction programme for capping under carriageway, sub base improvement layer under track slab and construction methods around existing watermain.

4.1.5.5 Section 1D Princes Street to Haymarket

Trackwork Castle Street to Lothian Road

IFC design incomplete for carriageway and trackwork construction.

MUDFA works incomplete at Lothian Rd

No allowance in Revision D construction programme for capping under carriageway, sub base improvement layer under track slab and construction methods around existing watermain.

Trackwork Haymarket to Lothian Road

IFC design incomplete for carriageway and trackwork construction.

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by **tie** have not been agreed.

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MUDFA works incomplete.

4.1.5.6 Section 2A Haymarket to Roseburn Junction

Haymarket Station Viaduct

Changes from BDDI to IFC are yet to be agreed.

Trackwork Haymarket to Russell Road

IFC design incomplete for carriageway and trackwork construction.

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

4.1.5.7 Section 5A Roseburn Junction to Balgreen Road

Russell Road Bridge

Changes from BDDI to IFC are yet to be agreed.

Russell Road Retaining Walls W3 & W4

Changes from BDDI to IFC are yet to be agreed.

Murrayfield Tram Stop Retaining Wall

No IFC drawings for construction.

Changes from BDDI to IFC are yet to be agreed.

Trackwork Russell Road to Murrayfield Stadium

IFC design incomplete for trackwork construction.

Trackwork Changes from BDDI to IFC have yet to be agreed.

Roseburn Street Viaduct

IFC design incomplete

Murrayfield Retaining Wall 21B

Changes from BDDI to IFC have yet to be agreed.

Murrayfield Stadium Underpass

Changes from BDDI to IFC have yet to be agreed.

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Murrayfield Retaining Walls 21D

Changes from BDDI to IFC have yet to be agreed.

Water of Leith Bridge

Changes from BDDI to IFC have yet to be agreed.

Re design around existing sewer has yet to be issued IFC.

Baird Drive Retaining Wall

Changes from BDDI to IFC have yet to be agreed.

Balgreen Bridges

Rail Bridge

IFC drawings have yet to be issued.

Changes from BDDI to IFC have yet to be agreed.

Tram Bridge

Changes from BDDI to IFC have yet to be agreed.

Trackwork Murrayfield Stadium to Balgreen Road

IFC design incomplete for trackwork construction.

Trackwork Changes from BDDI to IFC have yet to be agreed.

4.1.5.8 Section 5B Balgreen Road to Edinburgh Park Central

Trackwork Balgreen Road – Carrick Knowe

Trackwork Changes from BDDI to IFC have yet to be agreed.

Earthworks Changes from BDDI to IFC have yet to be agreed.

Drainage Changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

Carrick Knowe Bridge

Changes from BDDI to IFC have yet to be agreed.

Trackwork Carrick Knowe – South Gyle Access Bridge (Guided Busway)

OLE design not yet issued IFC.

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Trackwork design not yet issued IFC.

Drainage Changes from BDDI to IFC have yet to be agreed.

OLE & Trackwork Changes from BDDI to IFC have yet to be agreed.

Bankhead Retaining Wall

Changes from BDDI to IFC have yet to be agreed.

South Gyle Access Bridge

Redesign has yet to be completed.

Changes from BDDI to IFC have yet to be agreed.

Track work South Gyle Access Bridge to Edinburgh Park

Trackwork Changes from BDDI to IFC have yet to be agreed.

Earthworks Changes from BDDI to IFC have yet to be agreed.

Drainage Changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

Edinburgh Park Bridge

IFC details on OLE plinths are yet to be issued IFC.

Earthworks changes under approach embankments from BDDI to IFC have yet to be agreed.

Structure changes from BDDI to IFC have yet to be agreed.

Soft spot changes have yet to be agreed.

4.1.5.9 Section 5C Edinburgh Park Central to Gogarburn

Track Work Edinburgh Park Central – Gyle Centre

Trackwork Changes from BDDI to IFC have yet to be agreed.

Earthworks Changes from BDDI to IFC have yet to be agreed.

Drainage Changes from BDDI to IFC have yet to be agreed.

Utility Changes Instructed by *tie* have yet to be agreed.

IFC design incomplete for trackwork construction.

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Gyle Tram Stop Retaining Wall

Changes from BDDI to IFC have yet to be agreed.

Depot Access Bridge

Changes from BDDI to IFC have yet to be agreed.

A8 Underpass

Changes from BDDI to IFC have yet to be agreed.

Utility diversions are incomplete

Trackwork Gyle Centre to Depot Stop

Trackwork Changes from BDDI to IFC have yet to be agreed.

Earthworks Changes from BDDI to IFC have yet to be agreed.

Drainage Changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

Track Work Depot Stop – Gogarburn

Trackwork Changes from BDDI to IFC have yet to be agreed.

Earthworks Changes from BDDI to IFC have yet to be agreed.

Drainage Changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

4.1.5.10 Section 6A Depot

Earthworks

Excavation may be disrupted pending resolution of change to earthworks in sections 5 & 7.

Trackwork

Trackwork Changes from BDDI to IFC have yet to be agreed.

Earthworks Changes from BDDI to IFC have yet to be agreed.

Drainage Changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

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Depot Building

Changes from BDDI to IFC have yet to be agreed.

Depot Substation

Changes from BDDI to IFC have yet to be agreed.

Access Roads

Changes from BDDI to IFC have yet to be agreed.

Stabling Yard

Changes from BDDI to IFC have yet to be agreed.

4.1.5.11 Section 7A Gogarburn to Edinburgh Airport

Gogarburn Culvert No 1

Changes from BDDI to IFC have yet to be agreed.

Gogarburn Bridge

Changes from BDDI to IFC have yet to be agreed.

Trackwork Gogarburn to Ingliston Park & Ride

Trackwork changes from BDDI to IFC have yet to be agreed.

Earthworks changes from BDDI to IFC have yet to be agreed.

Drainage changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

IFC design incomplete for earthworks construction.

Gogarburn Culvert No 2

Changes from BDDI to IFC have yet to be agreed.

Gogarburn Culvert No 3

Changes from BDDI to IFC have yet to be agreed.

Gogarburn Retaining Walls

Changes from BDDI to IFC have yet to be agreed.

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Trackwork Ingliston Park & Ride to Edinburgh Airport

Trackwork changes from BDDI to IFC have yet to be agreed.

Earthworks changes from BDDI to IFC have yet to be agreed.

Drainage changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

4.2 E&M SYSTEMS

4.2.1 OLE (Overhead Line Equipment)

Design

Number of packages submitted in total: 9

General review comments received from *tie*: 9 (“Level B – proceed subject to comments”)

BSC replied: 2

Resubmission for final close out: 2

Test planning is currently in preparation.

Approvals and Consents

No specific review comments have been received from *tie* with respect to location of poles within specified timescales.

List of potential changes regarding location of building fixings and pole foundations has been discussed between *tie*, and BSC. Formal submission requires completion of the alignment of the BSC design against the original SDS proposal by SDS via the alignment workshop, contractual mechanism. Failure to agree costs is preventing progress.

An update of the concept of combined OCL poles has been presented to *tie*,
An updated version for CEC has been re-issued to *tie*.

Presentation to outside bodies in support of planning consents set for 12 May 2009 (Edinburgh Park) and 13 May 2009 (CEC and third parties). No objections received.

Issues and Concerns

Clarification on approach to letting of long lead material and installation subcontracts in light of delays to preceding site works. Impasse on design alignment, with no pragmatic agreement on how to proceed. Costs disputed but no alternative preferred.

Production

Subcontractors for materials supply have been defined. Installation sub-contractors have been notified that tender process has been halted as a result of a requirement from the main client to re-plan the Project. Specific solutions/ workarounds have been prepared to provide costs mitigations in

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the absence of robust site access programme (e.g. partial installation of OCL equipment in Princess Street).
See issues and concerns.

4.2.2 TPS (Traction Power Supply)

Design

Number of packages submitted in total: 12 (4 basic + 8 detailed design)
Review comments received from **tie**: 11 (1 Level A “no objection” + 10 Level B “proceed subject to comments”)

Resubmission for final close out: N/A
Final closed out - successfully: 8
tie’s reply awaited: 3

As planned, Relay Co-ordination Study (Relay Settings) has been finalized, and is currently being reviewed internally.

FAT procedures submitted: 7
Review comments received from **tie**: 6 (4 Level A “no objection” + 2 Level B “proceed subject to comments”)
Final closed out - successfully: 5

Test planning is currently in preparation.

Approvals and Consents

No current issues.

Issues and Concerns

Clarification on approach to letting of long lead material and installation subcontracts in light of delays to preceding site works.

Production

Transformers, AC- & DC-switchgear have been ordered. Cable suppliers have been appointed. Commitment to specific dates deferred until programme delay risks can be mitigated. Installation subcontractors have been notified that tender process has been halted as a result of delays to the client works.

See issues and concerns regarding material and production

4.2.3 TRW (Trackwork)

Design

- Report about Vibration Field Investigation has been submitted
Meeting was held with tie to clarify RoR to the design documents:
Basis Design Switches & Crossings
- Meeting was held with tie and CEC track drainage detail of drainage box, Drainage box approved by CEC
- Basic Design Drawing Rheda City C Track at Tramstops has been submitted

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- Basic Design Drawing Wheel-Rail Interface Proposed CAF wheel profile – x.06.00323 has been submitted
- Basic Design Drawing Drainage Box details has been submitted
- Basic Design Drawing Transition Weld Alumino Thermic Welds has been submitted
- Detailed Design Drawing General Arrangement Expansion Joints Edinburgh Park Station Viaduct has been submitted
- Detailed Design Drawing At Grade Road Crossings Strail Crossings has been submitted
- Detailed Design Drawing Derailment Provision Ballasted Track Track has been submitted

Approvals and Consents

- Drainage Box is approved by CEC

Issues and Concerns

- Changes in Design and Change Orders may influence the programme.
- Vibration Issues may influence design and programme.
- Un-clarified programme situation

Following activities are planned within the reporting period

- Re-submittal of Basic design documents based on the above mentioned meeting.

Production

- Concreting of test track at South Gyle
- Further Trackwork construction Princes Street

Following activities are planned within the reporting period

- Track Installation at Princes Street.
- Preparation to start trackwork construction Guided Busway.

4.2.4 DWE (Depot Workshop Equipment)

Design

Design is further progressing.

tie's RORs are answered for the Washing Plant, Service Vehicles and Measuring Equipment and the Storage Loads. The answers to the remaining equipment are under preparation.

Current progress includes preparation of detailed design of:

- Machines
- Storage equipment

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all in support of procurement of long lead time items and to provide design input.

In order to finish these outstanding design submittals the topics mentioned under “Issues and Concerns” needs to be clarified.

Technical meetings with the tram maintenance for the performance requirements of the equipment are conducted and will be followed up.

Approvals and Consents

Under floor Wheel Lathe design submittals handed over in October 2008.

Crane Submittal handed over in January 2009.

Lifting Plant Submittal handed over in January 2009.

Washing Plant Submittal handed over in January 2009.

Service Vehicle Submittal handed over in April 2009.

Measuring Equipment Submittal handed over in May 2009.

Comments from **tie** to the submittals of:

- Underfloor Wheel Lathe Submittal
- Crane Submittal
- Storage Loads
- Lifting Plant Submittal
- Washing Plant Submittal
- Service Vehicles

have been received and will be answered and resubmitted as version B documents, with exception of the lifting plant submittal.

Resubmission of Washing Plant and Measuring Equipment are done in June 2009.

Resubmission of the remaining submittals is scheduled for July 2009 depending on the input required by manufacturers and interface partners and on the receipt of **tie** comments.

Issues and Concerns

In order to finish these outstanding design submittals decisions are required regarding:

- additional turn table
- change of fork lift to pallet stagger for the store
- cancelation of ultrasonic cleaning bath and arc welding kit from BSC offer
- provision of compressed air supply

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Production

Procurement of long lead items finalized.

Orders placed for underfloor wheel lathe, underfloor lifting plant, washing plant and crane.

4.2.5 Signalling, Communication, SCADA, PIS, PA

Design

Signalling

Responses and resubmissions provided to all **tie** design Records of Review (RORs) to detailed Design Rev. B; resubmissions in progress.

Loop development workshop held with tie, SDS, Transdev. No comments or objection received to the minutes as distributed. Report to be developed on this basis.

Alarms workshop held with tie/Transdev 25 June (covering all SIG, COM, SCA, PIS, PA functions). Prioritisation and alarms to be provided to operators agreed.

SCADA, PIS, PA (RailCom Manager), PABX, Radio

Responses provided to all **tie** design Records of Review (RORs), resubmissions in progress.

Approvals and Consents

Proposals for tramstop equipment are being discussed with potential shelter and sign suppliers to ensure integration, after which photographic submissions can be made to tie for consideration.

PID mounting where on lighting columns on Tramstops will require amendment to the “prior approval” submission.

Ofcom radio frequency license granted.

Design approval for Fibre Optic, Tramstop Cabinet UPS and Radio Base Station UPS detailed designs now given by Tie

Issues and Concerns

Delays to Gogar site availability.

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Production

TPDS detector equipment for Princes Street is now stored in Edinburgh.

Loop EMC compatibility tests conducted in Princes Street to verify integrated design with reinforcement layer and track – results demonstrated required performance.

Integration test of TPDS and Tram on-board systems took place in Madrid Pinto on 9-10 June. Tests were successful, corrective actions identified in process of rectification.

Manufacturing of PABX for depot commenced (completion time 18 weeks)

Manufacturing of tram-stop equipment cabinets commenced (completion time 8 weeks)

Manufacturing of frequency specific radio equipment now commenced (completion due end September 09)

PID display units ordered from Infotec

Optical Data Network (ODN) equipment ordered from OTN Systems

4.2.6 TLC (Traffic Light Control)

Design

No current issues.

Approvals and Consents

No current issues.

Issues and Concerns

No current issues.

Production

No current issues.

4.2.7 HV/LV - Supply

Design

Core have completed and submitted initial designs.

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Approvals and Consents

Third parties, outside LOD, wayleaves are in progress. Revised harmonics study (including 50th harmonic) supplied to Scottish Power.

Issues and Concerns

Clarification on approach in light of delays to preceding site works, specifically Gogar Depot.

Production

See issues and concerns.

4.3 TRAMS

4.3.1. Design

Detailed design is nearly finished and CAF works in order to fully close this process.

There is a TIE Change request (INTC 303 and TIE Notice of Change 0037) regarding the interior Lay-out of the trams, with no impact for other BSC partners. The Change has been agreed by TIE and CAF has got TIE's official letter INF CORR 1609/CB dated the 5th June 2009. CAF has signed the TIE Change Order sheet and has sent it back..

Free issue equipment to CAF:

This definition refers to:

- TPDS, Radio supplied by Siemens
- Bus Tracker supplied by Tie

There is new information regarding the Bus Tracker equipment.

4.3.2 Procurement

Procurement for the trams is going according to programme.

CAF intends to install and test all systems on the different phases of the testing process (CAF premises, Test Track and Edinburgh Tram Network), including Free Issue Equipment delivered by Siemens (TPDS and Radio) and Bus Tracker (TIE).

Tests on CAF premises for the first full tram are planned for October 2009

4.3.2.1 Delivery

In order to meet CAF's programme, CAF needs all the materials been delivered when necessary according to CAF programme. This need includes Free Issue Equipment. Each material has its detailed delivery dates to meet the different manufacturing stages of each module of the tram and the information is delivered to each supplier..

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Regarding Free Issue Equipment, if any material is not delivered as it is necessary to meet manufacturing purposes, CAF will evaluate the impact and will let the supplier know.

According to CAF manufacturing needs, all equipment for the first tram should be already available at CAF premises in Irún since mid April.

Bus tracker materials have not been delivered to CAF, except consoles for the driver's desk. CAF requests clarification from TIE to know how to proceed for the first units on manufacturing.

4.3.3 Manufacturing

CAF manufacturing process started at beginning of December 2008. The status is detailed on document "Estado fabricación Edimburgo 30_06_09".

4.4 SYSTEMS INTEGRATION

4.4.1 EMC

4.4.1.1 Earthing & Bonding

Clarification of individual civil structures is ongoing. Civil requirements of tram stops and Depot are transferred into design proposals.

EMC Filed Survey Report and EMC Matrices have been submitted.

Meeting with Scottish Power and Core took place discussing the E&B of the TSS.

4.4.1.2 Stray Current

Results of Re-calculation of Stray current corrosion study has been presented at SCWP.

Submission of revision of Stray current corrosion study is ongoing.

Site inspection at Princes Street carried out. Insulation of first rails has been surveyed. First indicative measurements carried out.

4.4.1.3 Network Rail Immunisation

Nottingham test report has been revised according to tie's comments.

Nottingham test report has been revised according to tie's comments and submitted.

A2B meeting with NR attended.

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4.4.2 System Assurance

4.4.2.1 Deliverables issued

- System Hazard Log - Comments and updates on the Hazards have been received from Transdev, Comms and Control, REL, RA, Tram Maintenance.
- Hazard Log has been updated accordingly. PSSC Sub-Committee reviewed these comments on 20 May 2009. This highlighted some concerns in respect to the SDS information which were documented and are being managed with **tie** and the PSSC. Comments and mitigations still being progressed from SDS and CAF.

4.4.2.2 Activities completed

- Audit of SDS Hazard Log completed. Purpose was to enable closure of SDS Hazards via PSSC. Audit report issued for comment. Follow up meeting planned 07th & 08th July to agree process for close out of hazards and hand over of Hazard Log.
- Hazard Log - Operational Risk Assessments (ORA's). Transdev ORA have been reviewed and cross referenced to hazards in the hazard log. Transdev have started to review this work.
- Case for Safety Template – Issued for internal comments. Preparation of guidance for Sub-systems in respect to content and structure of the Case for Safety Documentation.
- Immunisation – Discussions ongoing with potential sub-contractors to provide support (Independent Review) for Siemens Stray Current Simulation
- Immunisation – Discussions ongoing with potential sub-contractors to provide design and installation for modifications to Network Rail Track Circuits in the Edinburgh area.

4.4.2.3 Activities Ongoing and Planned:

- Immunisation – Design mitigation now being supplied with objective of being able to close hazards from a design perspective. Outstanding work is identify hazards associated with Tram Traction packs and telecoms in respect to Immunisation (Planned for September 09)
- Update and manage Hazard Log based on Hazard owner's responses (ongoing). Based on mitigation provided by the Hazard owner the **tie** PSSC will review the hazard, rank the hazards' residual risk and confirm the if the hazard has been controlled so Far As Is Reasonably Practicable (SFAIRP) (Target Date ongoing)

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- Conduct Hazard Analysis Work Shops as per Detailed Design Assurance Plan (DDAP). The objective is to ensure that a complete set of risks / hazards is has been identified and managed. Meetings being organised with Hazard Owners to review Hazards and confirm mitigation measures.
- NR / ETN Immunisation Work - See above. A presentation is planned to the Network Rail Infrastructure Systems Review Panel (ISRP) a 'Case For Safety' to demonstrate that the two work streams that we have undertaken above have minimised the risk to the Network Rail Infrastructure ALARP. This document is due in fourth quarter of 2009.
- Human Factors - Control Centre - The contract requires an ergonomic assessment of the control centre against Standard - ISO 11064 "Ergonomic Design of Control Centres." To date some work has been done by the LOTS (REL, RA, York and Transmitton) to involve the Operator and Maintainer but this standard also requires an assessment in respect to the SCC furniture, lighting, climate control, etc). SDS Human factors assessment being chased.

4.4.2.4 Regular activities and attendances:

- As well as the above a number of other activities are ongoing such as regular attendance at the following meetings; PSSC, PSSC Sub-Committee, Technical Coordination, Requirements Man, SCWP.
- Attended Safety Assurance In Railways 2009, Conference.

4.4.3.1 General

Following a review of the section design, it is proposed to reduce the number of development workshops to identify misalignments. These are as detailed below:

- Trackform (close out)
- Substations
- Cable ducts and Draw pits
- Power Supply
- Earthing and Bonding
- Depot
- Point and Switch Heating
- Tramstops
- Loop positions

4.5 TESTING, COMMISSIONING AND START-UP

CAF manufacturing process commenced at the beginning of December 2008.

5 NOT USED

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6 STAKEHOLDER AND THIRD PARTY ISSUES

Discussions have continued to agree how *tie's* existing Stakeholder Management and Communications team can be best used to mutual advantage. BSC are willing in principle to contribute in kind or cost transfer to supplement this team, rather than duplicating resources to comply with the specific requirements of the Employer's Requirements as drafted.

7 COMMERCIAL

7.1 Milestones

Preliminary Milestones Achieved in the Period:

Month 15 Preliminaries (BB)
Month 15 Preliminaries (S)

Construction Milestones Achieved in the Period

There were no construction milestones achieved in the period.

Milestones Programmed but not Achieved

Regular discussions take place now between *tie* and BSC on the subject of Milestones and the Milestones Programmed but not achieved are recorded elsewhere.

7.2 CHANGE MANAGEMENT

7.2.1 The BSC Change Register is presented in Appendix 10.7.

420 Changes have been notified to 7 July 2009 - 51 by *tie* and 369 by Infraco.

37 of these Changes have been superseded by further Changes or withdrawn.

60 of these Changes have a delay only impact and will not require an Estimate (the impact of these is reflected in the EOT Entitlement Programme submitted to *tie* on 15 May 2009).

Therefore there are 323 Changes requiring Estimates.

Infraco has submitted to *tie* Estimates for 205 Changes for design only or for design and construction works.

The total Consortium value of the submitted Estimates is £54,500,000 including £12,714,000 for non-scope work on Bernard Street and St Andrew Square.

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76 of the 205 submitted Estimates have been partly agreed by issue of a tie Change Order (application of preliminary percentages requires to be amended as a result of agreement on the percentage addition for preliminaries). A total of 33 submitted Estimates have not been accepted in principle by tie. The value of Change Orders issued by tie is £3,251,000

There are 112 remaining notified Changes for which Estimates are required. In addition, a further 32 construction Estimates need to be prepared for Changes for which a design only Estimate has been submitted to date.

Of the 112 outstanding Estimates, 24 have been accepted in principle by tie, 16 have been rejected and the remainder have neither been accepted nor rejected.

There are 19 Estimates proceeding through the internal Consortium Approvals Process.

A graphical pie chart is presented in Appendix 10.7.

A programme for preparation and/or submission of the outstanding Estimates has been prepared and submitted to tie. Prioritisation is based on the latest intended construction sequence and assessed value of the Changes.

It should be noted that it is not possible to prepare 71 of the Estimates until the SDS Provider completes the corresponding design to an extent that allows BSC to prepare an Estimate. Prior to the completion of any SDS Design Change, the SDS Provider issues a design estimate, which is then validated by BSC and approved by tie.

Included in **tie's** Change Order Pro-forma; "Relief required from compliance with Infraco obligations under the contract", "Programme impact and required Extension of Time", "Impact on Performance" remain unresolved for a number of the Changes.

Main reasons for not issuing Change Orders are: Change not agreed in principle, Estimates not yet submitted, figures in estimates not agreed, Base Date Design Information not agreed.

With regards to matters corresponding to the SDS provider notices, **tie** has not accepted all SDS Provider's notices of extension of time and related impact. **tie** does not accept that these issues constitute a change.

The complexity, nature and amount of changes have overloaded the change mechanism included in the Infraco contract, because the estimates cannot be submitted within the time frame requested in the contract and also due to the fact that the overall impact to the Programme from a given change cannot be assessed on an individual basis. It has been agreed that the estimates submitted by BSC will only deal with direct related effects (costs) of a given change. Time related effect will be assessed separately.

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A series of high level management meetings with the aim of solving major outstanding issues (among others: Base Date Design Information, etc) have been held.

During the week of 29 June to 3 July 2009, tie and BSC participated in an informal “Without Prejudice” mediation workshop where the following items were discussed:

- On street – Supplementary Agreement
- Precedence of Schedule 4
- Principle of evaluation of Change
- Earthworks Outline
- Accommodation Works - Hilton Car Park
- Value Engineering
- Financial aspects to EOT 1
- Agreement/Entitlement EOT 2
- Agreement on BDDI
- Misalignment

No agreements were reached between tie and BSC as at 6 July 2009.

8 RESOURCES

8.1 Organisation Charts

Consortium and Systems organisation charts are included in this report.

See Appendix 10.8.

9 OTHER ISSUES

No comments.

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10 Appendices

10.1 KPI Report

Contractor Period H.S. & E. Return



To be completed and returned to tie Ltd (Pauline Goldie Pauline.goldie@tie.ltd.uk) by the Thursday of week 1 for each period (a period is 4 weeks, for dates of start and finish please contact Pauline)

RETURN DATA

Contractor –	BSC	Date completed –	26 th -06-09
Year –	09/10	Period –	2-3

PEOPLE DATA

Average number of direct employees on ETP –	204	Hours worked of direct employees on ETP –	30,613
Average number of subcontract / others inc visitors on ETP –	193	Hours worked of subcontract / others inc visitors on ETP –	35,838
Number of work sites –	5		

INCIDENT DATA (leave blank if none)

	DIRECT	SUBCON	M.O.P.
Fatal			
Major			
Over 3 day			
Dangerous Occurrence			
Reportable Disease			
Injury – Non RIDDOR		3	
Near Miss/ Unsafe Condition		2	
Service Damage		4	
RTA (in and around ETP)			
Positive intervention (if measured)			
Environmental Incident			

ENFORCEMENT NOTICE / VISIT DATA

	NOTICE	VISIT
H.S.E Enforcement		1
SEPA		
Local Authority		
Other		

CONTRACTOR AUDIT / INSPECTION DATA

	PLANNED	ACTUAL
Inspections	25	24
Audits	0	0

Please supply supporting data for all RIDDORs, Service Damages and ENF visits if not previously submitted – Rev0

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10.2 Programme Update

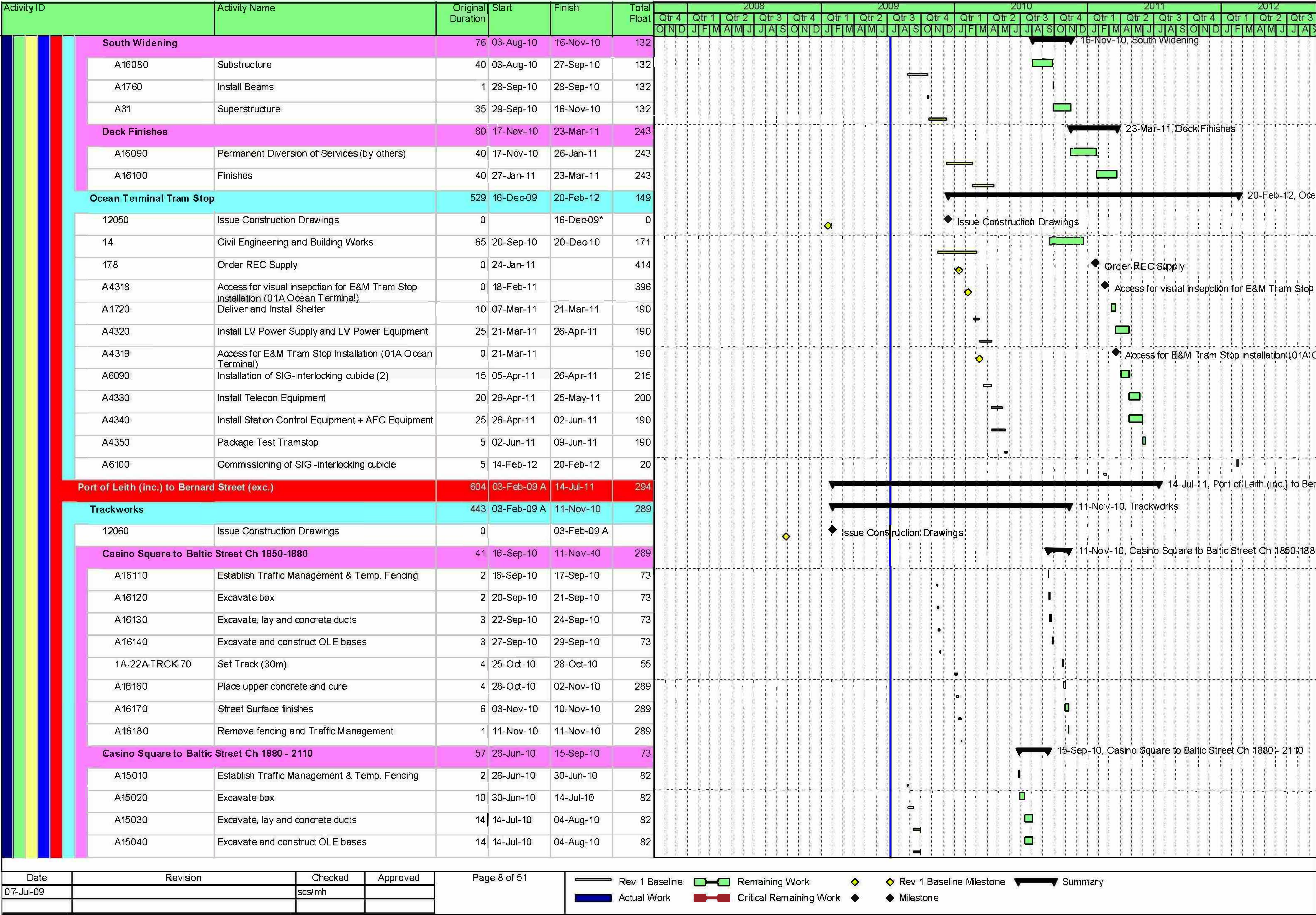
Date	Revision	Checked	Approved	Page 1 of 51					
07-Jul-09		scs/mh			Rev 1 Baseline	Remaining Work	Rev 1 Baseline Milestone	Summary	
					Actual Work	Critical Remaining Work	Milestone		



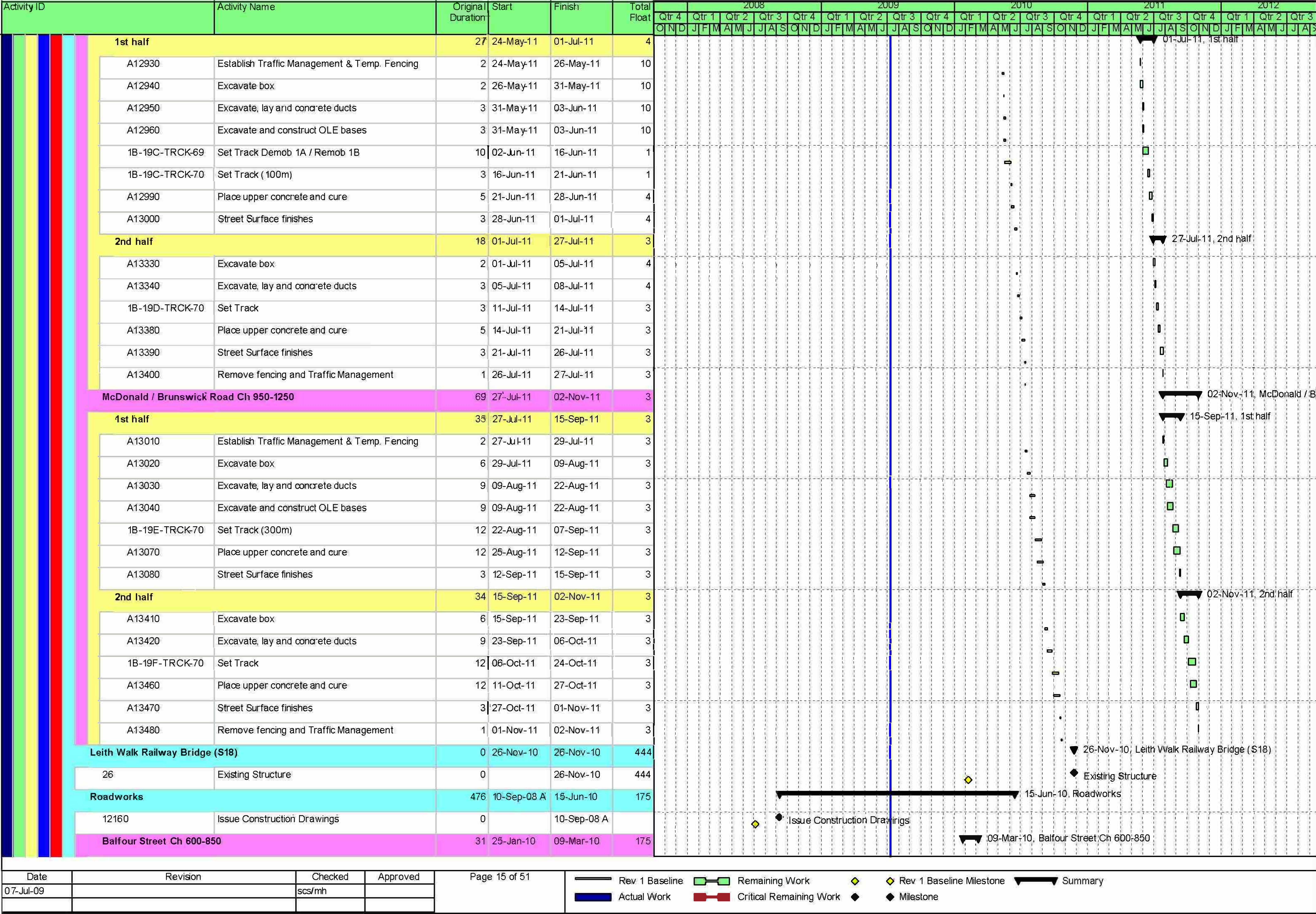
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