

Edinburgh Tram Network

Design Assurance Statement – Section 7A

Doc. Ref: ULE90130-07-FOR-00009 V3

DRAFT



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Design Assurance Statement – Section 7A

AUTHORISATION PAGE

| Title: Design Assurance Statement – Section 7A | | | | |
|--|-------------|------------------------|--------|-----------|
| Approvals | Name | Position | Signed | Date |
| Compiled by | S. Ney | Design Manager | | 29 Jul 10 |
| Reviewed by | A. Dolan | Deputy Project Manager | | 29 Jul 10 |
| Approved by | J. Chandler | Project Manager | | 29 Jul 10 |

Revision History

| Ver No | Date | Description | Prepared By |
|--------|-----------|---|-------------|
| 1 | 08 Jul 08 | Draft Issue to CEC For Information | V Matthews |
| 2 | 22 Jun 09 | Draft Issue for Information | S Ney |
| 3 | 29 Jul 10 | Update to Include BSC design amendments (point in time) | A Dolan |

Distribution

| Ver No | Date | Name | Role | Company |
|--------|-----------|----------------|------------------|---------|
| 1 | 08 Jul 08 | Duncan Fraser | Tram Coordinator | CEC |
| 2 | 22 Jun 09 | Martin Foerder | Project Director | BSC |
| 3 | 29 Jul 10 | Martin Foerder | Project Director | BSC |

EDINBURGH TRAM NETWORK DESIGN ASSURANCE STATEMENT

a) SUBMISSION DETAILS / TITLE: Sub-Section 7A Design Assurance Statement

Section / Sub-Section to which this Certificate Relates: 7A

Date of Issue: 29 July 10

This Design Assurance Statement (DAS) has been produced as part of the SDS self assurance process. A Design Assurance checklist has been developed to accompany all completed subsection design submissions. The checklist is effectively a statement from SDS that the completed design, within SDS scope (as detailed in the drawings and specifications below), is "Fit for Purpose". This statement will provide confidence that SDS has a robust self assurance process in place, and provides a summary of the design submission, enables exceptions to be declared, and facilitates the design review and approvals process.

There are several changes that have been instructed since the last submittal of this document. These changes include DCRs: 0009, 0015, 0062, 0069, 0079, 0091, 0095, 0134, 0135, 0146, 0191, 0198, 0200, 0205, 0226, 0233, 0234, 0238, 0254, 0270

The information contained within this DAS is accurate for the SDS base design as of the date of submittal. Any subsequent revisions, including those due to changes in scope, will be addressed separately as required. Outstanding Requirements to close out the final design assurance for the SDS scope include:

- Need CEC to promote TRO – this has been put back from the original dates, and CEC plan to promote this area separately from the City Centre TRO at some point in the future to be advised.
- Non-Standard Signs Closeout – this submittal (for the entirety of the system with known requirements) has been provided to CEC, who have, in turn provided the package to the Scottish Government for their approval in line with the established protocols. There is no timeline available from CEC as to when this will be closed out.
- Drainage design update submittal / approval due to misalignment workshops – this work is underway with on-going submittals to approval bodies as required being undertaken on a rolling basis
- Finalisation of OLE Pole Location Plans – SDS is working with BSC to confirm and finalise the proposed OLE positions as required by the misalignment instruction.
- Closeout of Technical and Planning Informatives – progressed tracked on document reference ULE90130-SW-SCH-00106. Excerpts provided to BSC as updates occur.

b) Summary of Section / Sub-Section Submission:

Section 7A is 2.6km in length and contains the Tram alignment from Gogarburn Tram Stop (exclusive) to Airport Tram Stop (inclusive). The track is off-street segregated running for the entire length of the section with two at grade road crossings, one of which is signalised and one unsignalised.

From Gogarburn Tram Stop the tramway runs through fields, initially in a northerly direction, then a westerly direction and then finally a northerly direction again. The tram route passes over the top of two bridges, three culverts and two retaining wall structures along the way.

There are four sets of points within Section 7A, located at the airport cross-over facility.

There is one crossover located just east of the airport tram stop.

Section 7A has two tram stops: Ingliston Park and Ride Tram Stop located to the east of the existing Park and Ride site and Airport Tram Stop located adjacent to the terminal buildings. Gogarburn Tram Stops straddles the boundary of Section 5C and Section 7A; details of this tram stop are contained in the Design Assurance Statement for 5C. There is provision for a future planned tram stop as part of the NIL development.

There is one substation, Ingliston Park and Ride located adjacent to the Ingliston Park and Ride Tram Stop. One new access road is being provided as part of the tram works to services the tram stop and park and ride.

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There are six structures: Gogarburn Bridge (S29), Gogarburn Culvert No. 1 (S30), Gogarburn Culverts No.'s 2 & 3 (S31 & S34) and Gogarburn Retaining Walls 1 & 2 (W14 & W15) in this subsection.

Utilities design forms part of the works completed. Note that the scope of the utilities works in this subsection has been reduced by **tie** via change to only include Scottish Water Sewers as included within this document. All other utility diversions have been completed under RATS or by others.

TROs and TTROs are relevant to this section.

Soft landscaping is proposed along the tram lines as part of the tram within this subsection, ranging from trees and shrubs to grassed areas along the newly constructed embankments.

Where there are Overhead Line Equipment (OLE) poles near public streets or footpaths, they are located outwith the carriageway (side / headspan poles) and will be stepped in shape and painted in accordance with the requirements of CEC Planning Authority.

c) Submission Specific Design Documents:

Planning Documents

Gogar Church and Burn Area Batch 7 / 23 Design Statement - ULE90130-05-REP-00204 v1
 Gogar Burn Bridge (Structure S29) Batch 7 / 24 Design Statement - ULE90130-07-REP-00027 v2
 Culvert One and Alignment Batch 7 / 25 Design Statement - ULE90130-07-REP-00028 v1
 Ingliston Park and Ride Batch 7 / 27 Design Statement - ULE90130-07-REP-00039 v1
 Ingliston to Airport Design Statement Batch 7 / 28 Design Statement - ULE90130-07-REP-00031v1
 Airport Design Statement Batch 7 / 29 Design Statement - ULE90130-07-REP-00032 v2
 Reconfiguration of Hilton Car Park Batch 7 / 31 – ULE90130-07-00041 v1

Roads

Section 7A Roads Technical Design Statement Detailed Design - ULE90130-05-REP-00021 v3
 Stage 1 Roads Safety Audit Section 7A - ULE90130-07-REP-00022 v1
 Stage 2 Roads Safety Audit Section 7A - ULE90130-07-REP-00044 v1
 Stage 2 Roads Safety Audit Section 7A Designer's Response - ULE90130-07-REP-00043 v1
 Stage 2 Roads Safety Audit Section 7A, Ingliston Park and Ride Access - ULE90130-07-REP-00047 v1
 Stage 2 Roads Safety Audit Section 7A, Ingliston Park and Ride Access - Designer's Response - ULE90130-07-REP-00046 v1
 Roads Technical Approval Authority – Detailed Design Comment Closeout – Section 7A – ULE90130-07-REP-00045 v1

Drainage

Drainage Schedule – ULE90130-07-SCH-00006 v3 v8

Street Lighting

Calculations – ULE90130-07-CAL-00012 v2

Earthworks

ULE90130-SW-REP-00207 v5

Structures

Gogarburn Bridge (S29)

Approval in Principle

ULE90130-SW-REP-00007 v2

ULE90130-07-REP-00558 v1

Schedules

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ULE90130-07-BRG-00026 v3 v4

ULE90130-07-BRG-00027 v3 v4

ULE90130-07-BRG-00033 v3 v4

ULE90130-07-BRG-00034 v4 v5

ULE90130-07-BRG-00038 v3 v6

ULE90130-07-BRG-00041 v4 v6

ULE90130-07-BRG-00044 v2 v5

CAT Check

ULE90130-07-FOR-000015 v1

ULE90130-07-FOR-000016 v1

Gogarburn Culverts (S30)

Approval in Principle

ULE90130-SW-REP-00066 v5

ULE90130-07-REP-00042 v1 (Addendum No.1)

Schedules

ULE90130-07-BRG-00072 v3

ULE90130-07-BRG-00073 v3

ULE90130-07-BRG-00074 v3

ULE90130-07-BRG-00075 v3

ULE90130-07-BRG-00076 v3

ULE90130-07-BRG-00077 v3

ULE90130-07-BRG-00078 v3

ULE90130-07-BRG-00079 v3

ULE90130-07-BRG-00080 v3

CAT Check

ULE90130-07-FOR-00001 v1

Gogarburn Retaining Walls (W14)

Approval In Principle

ULE90130-SW-REP-00068 v5

Schedules

ULE90130-07-RTW-00043 v2

ULE90130-07-RTW-00046 v2

ULE90130-07-RTW-00047 v2

CAT Check

ULE90130-07-FOR-00006 v2

Residual Risk Register

ULE90130-07-RRR-00006 v1

Utilities

Diversion Schedules

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ULE90130-07-CAL-00003 v4

Earthworks

ULE90130-SW-REP-00207 v5

Have all Submission Specific Design Documents been reviewed, approved and under version control (in Hummingbird)?

Yes No **Comments**

Documents and versions to be confirmed with final version of document.

d) Submission Specific Drawings: (5)**Planning**

Gogar Church and Burn Area Batch 7 / 23

ULE90130-05-PLG-00010 v2

ULE90130-05-PLG-00012 v2

ULE90130-05-PLG-00030 v3

ULE90130-05-PLG-00050 v2

ULE90130-05-PLG-00099 v1

Gogar Burn Bridge (Structure S29) Batch 7 / 24

ULE90130-07-PLG-00091 v2

ULE90130-07-PLG-00092 v2

ULE90130-07-PLG-00093 v2

ULE90130-07-PLG-00094 v2

Culvert One and Alignment Batch 7 / 25

ULE90130-07-PLG-00001 v2

ULE90130-07-PLG-00011 v2

ULE90130-07-PLG-00012 v2

ULE90130-07-PLG-00013 v2

ULE90130-07-PLG-00014 v2

ULE90130-07-PLG-00031 v2

ULE90130-07-PLG-00032 v2

ULE90130-07-PLG-00033 v2

ULE90130-07-PLG-00034 v2

ULE90130-07-PLG-00113 v2

ULE90130-07-PLG-00115 v2

Ingliston Park and Ride Batch 7 / 27

ULE90130-07-PLG-00060 v2

ULE90130-07-PLG-00061 v2

ULE90130-07-PLG-00062 v3

ULE90130-07-PLG-00063 v3

ULE90130-07-PLG-00064 v3

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ULE90130-07-PLG-00065 v2

ULE90130-07-PLG-00066 v2

Ingliston to Airport Batch 7 / 28

ULE90130-07-PLG-000 03 v2

ULE90130-07-PLG-00016 v2

ULE90130-07-PLG-00017 v2

ULE90130-07-PLG-00036 v2

ULE90130-07-PLG-00037 v2

ULE90130-07-PLG-00114 v2

ULE90130-07-PLG-00116 v2

ULE90130-07-PLG-00122 v2

ULE90130-07-PLG-00123 v2

ULE90130-07-PLG-00124 v2

Airport Batch 7 / 29

ULE90130-07-PLG-00070 v2

ULE90130-07-PLG-00071 v2

ULE90130-07-PLG-00072 v2

ULE90130-07-PLG-00073 v2

ULE90130-07-PLG-00074 v2

ULE90130-07-PLG-00075 v2

ULE90130-07-PLG-00076 v2

ULE90130-07-PLG-00150 v2

Reconfiguration of Hilton Car Park Batch 7 / 31

ULE90130-07-PLG-00077 v2

ULE90130-07-PLG-00078 v2

ULE90130-07-PLG-00079 v2

ULE90130-07-PLG-00080 v1

Tram Stop

Ingliston Park and Ride Tram Stop

ULE90130-07-STP-00014 v3 v5

ULE90130-07-STP-00015 v2 v3

ULE90130-07-STP-00016 v2 v3

Airport Tram Stop

ULE90130-07-STP-00024 v2

ULE90130-07-STP-00025 v2 v3

ULE90130-07-STP-00026 v2 v3

Substation

Eastfield Avenue

ULE90130-07-SUB-00001 v6

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ULE90130-07-SUB-00002 v6

ULE90130-07-SUB-00003 v2

Track

Track Horizontal Alignment

ULE90130-07-TAL-00001 v5

ULE90130-07-TAL-00002 v5

ULE90130-07-TAL-00003 v5

ULE90130-07-TAL-00004 v5

ULE90130-07-TAL-00005 v5

ULE90130-07-TAL-00006 v5

ULE90130-07-TAL-00007 v5

ULE90130-07-TAL-00008 v5

ULE90130-07-TAL-00009 v5

Track Vertical Alignment

ULE90130-07-TVA-00001 v5

ULE90130-07-TVA-00002 v5

ULE90130-07-TVA-00003 v5 v6

ULE90130-07-TVA-00004 v5 v6

ULE90130-07-TVA-00005 v5 v6

ULE90130-07-TVA-00006 v5 v6

ULE90130-07-TVA-00007 v5

ULE90130-07-TVA-00008 v5

Roads

Road Scheme Layout

ULE90130-07-HRL-00001 v7

ULE90130-07-HRL-00002 v6

ULE90130-07-HRL-00003 v7 v9

ULE90130-07-HRL-00004 v6

ULE90130-07-HRL-00005 v6

ULE90130-07-HRL-00006 v7

ULE90130-07-HRL-00007 v7

ULE90130-07-HRL-00008 v8

ULE90130-07-HRL-00009 v6

Road Junction and Crossings

ULE90130-07-HRL-00100 v5

Typical Cross Sections

ULE90130-07-HRL-00201 v6 v8

Construction Details

ULE90130-07-HRL-00403 v5 v7

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ULE90130-07-HRL-00407 v5

ULE90130-07-HRL-00408 v5

Traffic Signs and Road Markings

ULE90130-07-HRL-00503 ~~v6~~ v8

ULE90130-07-HRL-00507 v6

ULE90130-07-HRL-00508 v6

ULE90130-07-HRL-00509 v2

Long Section

ULE90130-07-HRL-00601 v4

Traffic Signal Ducting

ULE90130-07-HRL-000800 v5

Kerbs, Footways and Paved Areas

ULE90130-07-HRL-00901 v1

ULE90130-07-HRL-00903 ~~v7~~ v9

ULE90130-07-HRL-00907 v6

ULE90130-07-HRL-00908 v5

Non Standard Signs and Markings

ULE90130-07-KRB-00003 ~~v4~~ v2

ULE90130-07-KRB-00008 ~~v4~~ v4

Site Clearance

ULE90130-07-SCL-00001 v2

ULE90130-07-SCL-00002 v2

ULE90130-07-SCL-00003 v2

ULE90130-07-SCL-00004 v2

ULE90130-07-SCL-00005 v2

ULE90130-07-SCL-00006 v2

ULE90130-07-SCL-00007 v2

ULE90130-07-SCL-00008 v2

ULE90130-07-SCL-00009 v2

StructuresGogarburn Bridge (S29)

ULE90130-07-BRG-00020 ~~v5~~ v6

ULE90130-07-BRG-00021 ~~v5~~ v7

ULE90130-07-BRG-00022 ~~v5~~ v7

ULE90130-07-BRG-00023 ~~v5~~ v7

ULE90130-07-BRG-00024 ~~v5~~ v7

ULE90130-07-BRG-00025 ~~v3~~ v4

ULE90130-07-BRG-00026 ~~v4~~ v5

ULE90130-07-BRG-00027 ~~v4~~ v5

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ULE90130-07-BRG-00028 v4 v5

ULE90130-07-BRG-00029 v4 v5

ULE90130-07-BRG-00030 v5 v7

ULE90130-07-BRG-00031 v5 v6

ULE90130-07-BRG-00032 v5 v6

ULE90130-07-BRG-00033 v4 v5

ULE90130-07-BRG-00034 v4 v5

ULE90130-07-BRG-00035 v4 v7

ULE90130-07-BRG-00037 v5 v7

ULE90130-07-BRG-00038 v4 v6

ULE90130-07-BRG-00039 v4 v5

ULE90130-07-BRG-00040 v4 v6

ULE90130-07-BRG-00041 v4 v6

ULE90130-07-BRG-00042 v4 v5

ULE90130-07-BRG-00043 v4 v5

ULE90130-07-BRG-00044 v3 v5

ULE90130-07-BRG-00045 v2 v3

Gogarburn Culverts (30, S31 and S34))

ULE90130-07-BRG-00064 v3

ULE90130-07-BRG-00065 v3

ULE90130-07-BRG-00066 v3

ULE90130-07-BRG-00067 v3

ULE90130-07-BRG-00068 v3

ULE90130-07-BRG-00069 v3

ULE90130-07-BRG-00070 v4

ULE90130-07-BRG-00071 v3

ULE90130-07-BRG-00072 v3 v4

ULE90130-07-BRG-00073 v3

ULE90130-07-BRG-00074 v3

ULE90130-07-BRG-00075 v3

ULE90130-07-BRG-00076 v3

ULE90130-07-BRG-00077 v3

ULE90130-07-BRG-00078 v3

ULE90130-07-BRG-00079 v3

ULE90130-07-BRG-00080 v3

ULE90130-07-BRG-00081 v3

ULE90130-07-BRG-00082 v4 v2

Gogarburn Retaining Walls (W14 and W15)

ULE90130-07-RTW-00030 v1

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ULE90130-07-RTW-00031 v2
ULE90130-07-RTW-00032 v2
ULE90130-07-RTW-00033 v2
ULE90130-07-RTW-00034 ~~v2~~ v5
ULE90130-07-RTW-00035 ~~v2~~ v4
ULE90130-07-RTW-00036 ~~v4~~ v6
ULE90130-07-RTW-00037 v3
ULE90130-07-RTW-00038 v3
ULE90130-07-RTW-00039 ~~v3~~ v6
ULE90130-07-RTW-00040 v2
ULE90130-07-RTW-00041 v4
ULE90130-07-RTW-00042 ~~v2~~ v3
ULE90130-07-RTW-00043 v2
ULE90130-07-RTW-00044 v2
ULE90130-07-RTW-00045 v2
ULE90130-07-RTW-00046 v2
ULE90130-07-RTW-00047 v2

Street Lighting

ULE90130-07-LTG-00005 v1
ULE90130-07-LTG-00006 v1
ULE90130-07-LTG-00007 ~~v4~~
ULE90130-07-LTG-00008 v4
ULE90130-07-LTG-00009 v4

OLE Pole Location Plans

ULE90130-07-OLE-00001 v8 Superseded (Siemens Pole Locations Plans)
ULE90130-07-OLE-00002 v8 Superseded (Siemens Pole Locations Plans)
ULE90130-07-OLE-00003 v8 Superseded (Siemens Pole Locations Plans)
ULE90130-07-OLE-00004 v8 Superseded (Siemens Pole Locations Plans)
ULE90130-07-OLE-00005 v8 Superseded (Siemens Pole Locations Plans)

Section 7A - OLE

ULE90130-07-DRG-00125_rev4 - Updated from IDR
ULE90130-07-DRG-00126_rev4 - Updated from IDR
ULE90130-07-DRG-00127_rev4 - Updated from IDR
ULE90130-07-DRG-00128_rev4 - Updated from IDR
ULE90130-07-DRG-00129_rev4 - Updated from IDR
ULE90130-07-DRG-00130_rev4 - Updated from IDR
ULE90130-07-DRG-00131_rev4 - Updated from IDR
ULE90130-07-DRG-00132_rev4 - Updated from IDR
ULE90130-07-DRG-00133_rev4 - Updated from IDR

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Drainage

ULE90130-07-DNE-00001 v7 v9
ULE90130-07-DNE-00002 v7 v10
ULE90130-07-DNE-00003 v7 v11
ULE90130-07-DNE-00004 v7 v10
ULE90130-07-DNE-00005 v7 v10
ULE90130-07-DNE-00006 v7 v10
ULE90130-07-DNE-00007 v7 v9
ULE90130-07-DNE-00008 v7 v9
ULE90130-07-DNE-00009 v6 v9

Cable and Ducting

ULE90130-07-DCT-00001 v4 v5
ULE90130-07-DCT-00002 v4 v5
ULE90130-07-DCT-00003 v4 v5
ULE90130-07-DCT-00004 v4 v5
ULE90130-07-DCT-00005 v4 v5
ULE90130-07-DCT-00006 v4 v5
ULE90130-07-DCT-00007 v4 v5
ULE90130-07-DCT-00008 v4 v5
ULE90130-07-DCT-00009 v4 v5

Geotechnical

ULE90130-07-GEO-00001 v5
ULE90130-07-GEO-00002 v4 v5
ULE90130-07-GEO-00003 v4 v5
ULE90130-07-GEO-00004 v4 v5
ULE90130-07-GEO-00005 v4 v5
ULE90130-07-GEO-00006 v4 v5
ULE90130-07-GEO-00007 v4 v5
ULE90130-07-GEO-00008 v4 v5
ULE90130-07-GEO-00009 v4 v5
ULE90130-07-GEO-00010 v5
ULE90130-07-GEO-00011 v4 v5
ULE90130-07-GEO-00012 v4 v5
ULE90130-07-GEO-00013 v5
ULE90130-07-GEO-00014 v4 v5
ULE90130-07-GEO-00015 v4 v5

Soft Landscaping

ULE90130-05-LDS-00026 v7
ULE90130-07-LDS-00001 v5

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ULE90130-07-LDS-00002 ~~v5~~ v7

ULE90130-07-LDS-00003 ~~v5~~ v7

ULE90130-07-LDS-00004 ~~v4~~ v6

ULE90130-07-LDS-00005 ~~v6~~ v8

ULE90130-07-LDS-00006 v5

ULE90130-07-LDS-00007 v5

ULE90130-07-LDS-00008 v3

ULE90130-07-LDS-00009 v3

Utilities

All Utilities

ULE90130-07-UTL-00001 v4

Scottish Water – Sewer

ULE90130-07-UTL-00410 v4

ULE90130-07-UTL-00411 v4

ULE90130-07-UTL-00412 v4

ULE90130-07-UTL-00415 v1

ULE90130-07-UTL-00416 v1

ULE90130-07-UTL-00417 v1

TRO

ULE130-07-TMG-00001 ~~v3~~ V4

ULE130-07-TMG-00002 ~~v3~~ V4

ULE130-07-TMG-00003 ~~v3~~ V4

ULE130-07-TMG-00004 ~~v3~~ V4

ULE130-07-TMG-00005 ~~v3~~ V4

ULE130-07-TMG-00006 ~~v3~~ V4

ULE130-07-TMG-00007 ~~v3~~ V4

ULE130-07-TMG-00008 ~~v3~~ V4

Supervisory, Control and Communications

ULE90130-SW-SCC-00056 v2 Now superseded by Siemens Drawings. See Siemens SCC Systemwide Design.

ULE90130-SW-SCC-00257 v2 Now superseded by Siemens Drawings. See Siemens SCC Systemwide Design.

ULE90130-SW-SCC-00291 v2 Now superseded by Siemens Drawings. See Siemens SCC Systemwide Design.

ULE90130-SW-SCC-00292 v2 Now superseded by Siemens Drawings. See Siemens SCC Systemwide Design.

ULE90130-SW-SCC-00293 v2 Now superseded by Siemens Drawings. See Siemens SCC Systemwide Design.

Traction Power Single Line Diagram

ULE90130-SW-TSU-00002 v2 Now superseded by Siemens Drawings. See Siemens SCC Systemwide Design.

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Have all Submission Specific Design Documents been reviewed, approved and under version control (in Hummingbird)?

Yes

No

Comments

tie have placed utilities for Gogarburn Landfill sewer on hold, and cannot be brought to IFC until tie confirm acceptance of the design. U(LE90130-07-UTL-00415 through 417)

Documents and versions to be confirmed with final version of document.

e) Applicable Systemwide Drawings and Documents:

- OLE Generic Foundation Drawings
 - ULE90130-SW-OLE-00015 v2 Now superseded by foundation drawings to suit Siemens OLE Design
 - ULE90130-SW-OLE-00016 v2 Now superseded by foundation drawings to suit Siemens OLE Design
 - ULE90130-SW-OLE-00017 v2 Now superseded by foundation drawings to suit Siemens OLE Design
 - ULE90130-SW-OLE-00018 v2 Now superseded by foundation drawings to suit Siemens OLE Design
 - ULE90130-SW-OLE-00019 v2 Now superseded by foundation drawings to suit Siemens OLE Design
 - ULE90130-SW-OLE-00020 v2 Now superseded by foundation drawings to suit Siemens OLE Design
 - ULE90130-SW-OLE-00021 v2 Now superseded by foundation drawings to suit Siemens OLE Design
 - ULE90130-SW-OLE-00022 v2 Now superseded by foundation drawings to suit Siemens OLE Design
- Department of Transport Manual of Contract Documents for Highways Works:
 - Appendix 1/5: Testing to be Carried Out by the Contractor – ULE90130-SW-SPN-00188 v5
 - Appendix 2: Site Clearance - ULE90130-SW-SPN-00090 v41
 - Appendix 4/1: Road Restraint Systems (Vehicular and Pedestrian) - ULE90130-SW-SPN-00086 v58
 - Appendix 4/2: Information Required to Demonstrate Compliance of Road Restraint Systems to BS EN 1317-1, BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4:2002 - ULE90130-SW-SPN-00183 v3
 - Series 500 Drainage Specification - ULE90130-SW-SPN-00113 v50
 - Series 600 Earthworks Specification – ULE90130-SW-SPN-00161 v11
 - Appendix 7/1: Permitted Pavement Options - ULE90130-SW-SPN-00190 v8
 - Appendix 7/2: Excavation, Trimming and Reinstatement of Existing Surfaces - ULE90130-SW-SPN-00139 v9
 - Appendix 7/4: Bond Coats, Tack Coats and other Bituminous Sprays - ULE90130-SW-SPN-00140 v9
 - Appendix 7/7: Slurry Surfacing Incorporating Microsurfacing - ULE90130-SW-SPN-00141 v9
 - Appendix 7/9: Cold Milling (Planing) of Bituminous Bound Flexible Pavement - ULE90130-SW-SPN-00142 v9
 - Appendix 11/1: Kerbs, Footways, Cycleways, Laybys, Busbays and Paved Areas – ULE90130-SW-SPN-00087 v35
 - Appendix 12/1: Traffic Signs: General - ULE90130-SW-SPN-00088 v61
 - Appendix 12/3: Traffic Signs: Road Markings and Studs - ULE90130-SW-SPN-00100 v56

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- Appendix 12/5: Traffic Signal Works - ULE90130-SW-SPN-00171 v16
- Appendix 13: Road Lighting Columns and Brackets, CCTV Masts, and Cantilever Masts - ULE90130-SW-SPN-00172 v12
- Appendix 14: Electrical Work for Road Lighting and Traffic Signs - ULE90130-SW-SPN-00173 v22
- Appendix 16/1-16/8: Piling and Embedded Retaining Walls – ULE90130-SW-SPN-00177 v10
- Appendix 17/1-17/6: Structural Concrete – ULE90130-SW-SPN-00111 v16
- Appendix 18/1: Structural Steelwork – ULE90130-SW-SPN-00179 v3
- Appendix 19/1 – 19/5: Protection of Steelwork Against Corrosion – ULE90130-SW-SPN-000175 v12
- Appendix 20/1: Structures Specification 2000 – Waterproofing of Concrete Structures – ULE90130-SW-SPN-00110 v13
- Appendix 21/1: Bridge Bearing Schedule – ULE90130-SW-SPN-00181 v3
- Appendix 23/1-23/2: Bridge Expansion Joints and Sealing of Gaps – ULE90130-SW-SPN-00176 v15
- Appendix 24: Brickwork, Blockwork and Stonework – ULE90130-SW-SPN-00168 v12
- Appendix 25/2: Requirements for Reinforced Soil and Anchored Earth Structures – ULE90130-SW-SPN-00178 v5
- Appendix 26: Miscellaneous – ULE90130-SW-SPN-00169 v11
- Landscaping Specification – ULE90130-SW-SPN-00198 v1
- Construction Drawings:
 - ULE90130-SW-CND-00002 v20
 - ULE90130-SW-CND-00010 v4
 - ULE90130-SW-CND-00013 v5
 - ULE90130-SW-CND-00014 v4
 - ULE90130-SW-CND-00015 v4
- Ground Improvement Layer Drawings
 - ULE90130-SW-DRG-00682 v4
 - ULE90130-SW-DRG-00683 v4
 - ULE90130-SW-DRG-00684 v3
 - ULE90130-SW-DRG-00685 v3
 - ULE90130-SW-DRG-00686 v4
 - ULE90130-SW-DRG-00687 v4
 - ULE90130-SW-DRG-00687 (schedule) v4
 - ULE90130-SW-DRG-00688 v3
 - ULE90130-SW-DRG-00689 v2
 - ULE90130-SW-DRG-00690 v3
 - ULE90130-SW-DRG-00691 v3
 - ULE90130-SW-DRG-00691 (schedule) v3

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- ULE90130-SW-DRG-00692 v2
- ULE90130-SW-DRG-00692 (schedule) v3
- ULE90130-SW-DRG-00783 v3
- OLE Generic Foundation Design Drawings and Certificates
 - ULE90130-SW-OLE-00025 v5
 - ULE90130-SW-OLE-00028 v5
 - ULE90130-SW-OLE-00033 v5
 - ULE90130-SW-OLE-00034 v5
 - ULE90130-SW-OLE-00035 v5
 - ULE90130-SW-OLE-00036 v5
 - ULE90130-SW-OLE-00037 v4
 - ULE90130-SW-OLE-00038 v5
 - ULE90130-SW-OLE-00042 v4
- Systemwide Fencing Drawings
 - ULE90130-SW-DRG-00642 v1
 - ULE90130-SW-DRG-00643 v1
 - ULE90130-SW-DRG-00644 v2
- Trackform Reference Design Rail Plinth on Structure
 - ULE90130-SW-DRG-00713 v1
 - ULE90130-SW-SCH-00156 v1
 - ULE90130-SW-FOR-00220 v1
 - ULE90130-SW-FOR-00246 v1
- Standard Turnout Geometry: ULE90130-SW-DRG-00077 v2
- Substation Exemplar:
 - ULE90130-SW-SUB-00008 v3
 - ULE90130-SW-SUB-00016 v1
 - ULE90130-SW-SUB-00017 v1
 - ULE90130-SW-SUB-00018 v1
 - ULE90130-SW-SUB-00201 v3
 - ULE90130-SW-SUB-00202 v3
- Drainage Assessment Report ULE90130-SW-REP-00369 v2
- Environmental Management Plan ULE90130-SW-SW-PPN-00011 v6
- Archaeological Specification For A Programme of Archaeological Works – Standing Structures ULE90130-SW-REP-00506 v1
- Contaminated Land Interpretative Report ULE90130-SW-REP-00383 v2
- Bat Roost Report ULE90130-SW-REP-00367 v1
- Invasive Weeds Report ULE90130-SW-REP-00251 v3
- Tram Stop Exemplar Drawings:

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- ULE90130-SW-STP-00008 v3
- ULE90130-SW-STP-00009 v15
- ULE90130-SW-STP-00011 v14
- ULE90130-SW-STP-00012 v7
- ULE90130-SW-STP-00013 v11
- ULE90130-SW-STP-00014 v8
- ULE90130-SW-STP-00015 v13
- ULE90130-SW-STP-00016 v9
- ULE90130-SW-STP-00017 v10
- ULE90130-SW-STP-00019 v9
- ULE90130-SW-STP-00020 v7
- ULE90130-SW-STP-00035 v2
- ULE90130-SW-STP-00037 v4
- ULE90130-SW-STP-00040 v1
- Earthworks Drawings
 - ULE90130-SW-GEO-00150 v2
 - ULE90130-SW-GEO-00151 v2
 - ULE90130-SW-GEO-00152 v2
 - ULE90130-SW-GEO-00153 v2
- Register for Cuttings and Embankments
 - ULE90130-SW-REP-00207 v5
- Geotechnical Desk Study Summary Plans:
 - ULE90130-SW-GEO-00001 v4
 - ULE90130-SW-GEO-00002 v4
 - ULE90130-SW-GEO-00003 v4
 - ULE90130-SW-GEO-00004 v4
 - ULE90130-SW-GEO-00005 v4
 - ULE90130-SW-GEO-00006 v4
 - ULE90130-SW-GEO-00007 v4
 - ULE90130-SW-GEO-00008 v4
 - ULE90130-SW-GEO-00009 v4
 - ULE90130-SW-GEO-00010 v4
 - ULE90130-SW-GEO-00011 v4
 - ULE90130-SW-GEO-00012 v4
 - ULE90130-SW-GEO-00013 v4
 - ULE90130-SW-GEO-00014 v4
 - ULE90130-SW-GEO-00015 v4

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- ULE90130-SW-GEO-00016 v4
- ULE90130-SW-GEO-00017 v4
- ULE90130-SW-GEO-00018 v4
- ULE90130-SW-GEO-00019 v4
- ULE90130-SW-GEO-00020 v4
- ULE90130-SW-GEO-00021 v4
- ULE90130-SW-GEO-00022 v4
- ULE90130-SW-GEO-00023 v4
- ULE90130-SW-GEO-00024 v4
- ULE90130-SW-GEO-00025 v5
- ULE90130-SW-GEO-00026 v5
- ULE90130-SW-GEO-00027 v5
- ULE90130-SW-GEO-00028 v5
- ULE90130-SW-GEO-00029 v5
- ULE90130-SW-GEO-00030 v5
- ULE90130-SW-GEO-00031 v5
- ULE90130-SW-GEO-00032 v5
- ULE90130-SW-GEO-00033 v5
- ULE90130-SW-GEO-00034 v5
- ULE90130-SW-GEO-00035 v5
- ULE90130-SW-GEO-00036 v5
- ULE90130-SW-GEO-00037 v5
- ULE90130-SW-GEO-00038 v5
- ULE90130-SW-GEO-00039 v5
- ULE90130-SW-GEO-00040 v5
- ULE90130-SW-GEO-00041 v5
- **TRO Schedules**
 - ULE90130-SW-SCH-00142 v4
 - ULE90130-SW-SCH-00143 v4
 - ULE90130-SW-SCH-00144 v4
 - ULE90130-SW-SCH-00145 v4
 - ULE90130-SW-SCH-00146 v4
 - ULE90130-SW-SCH-00147 v2
 - ULE90130-SW-SCH-00148 v2
 - ULE90130-SW-SCH-00149 v2
 - ULE90130-SW-SCH-00151 v3
 - ULE90130-SW-SCH-00152 v3

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- ULE90130-SW-SCH-00153 v3
- ULE90130-SW-SCH-00154 v3
- ULE90130-SW-SCH-00155 v2
- ULE90130-SW-SCH-00169 v1
- ULE90130-SW-SCH-00170 v2

Have all applicable Systemwide Drawings and Documents been reviewed, approved and under version control (in Hummingbird)?

Yes

No

Comments

Applicable Systemwide documents to be updated to IFC as appropriate upon final acceptance from reviewing parties on all sections. Updated versions, as required, to be provided post submittal of this document.

OLE Foundation generic design drawings which are deemed to be at risk to vehicular impact are with CEC awaiting final technical approval. This approval is delayed by CEC, as CEC are awaiting tie letter to CEC confirming acceptance of PSCC of risk and mitigation methodology provided with the design.

Non-Standard Signs and Markings subject to change pending final approval.

TRO schedules subject to change until CEC makes order and promotes orders outside of City Centre. CEC/tie have changed the protocol and decided to promote City Centre order separately from rest of project.

f) Principal Standards:

Detail Applicable Standards;

Planning

National Guidance

- Scottish Planning Policy 1: The Planning System (2004)
- Planning Advice Note 68: Design Statements (2003)
- Planning Advice Note 78: Inclusive Design (2006) (for Tram Stops)
- Designing Places: A Policy Statement for Scotland (2001)
- National Planning Policy Guidance 18: Planning and the Historic Environment (1999)
- Inclusive Mobility, Department for Transport
- Memorandum of Guidance for Listed Buildings and Conservation Areas (1998).

Local Authority Development Plan

- Edinburgh and Lothian Structure Plan 2015
- Finalised Edinburgh City Local Plan (2007)

Supplementary Planning Guidance

- Tram Design Manual (2006)
- Edinburgh Standards for Streets (2006)
- Edinburgh Standards for Urban Design (2003)
- CEC Development Quality Guidelines

Other

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- Disability Discrimination Act 1995
- CEC Local Transport Strategy 2007-2012
- Edinburgh Tram (Line Two) Act 2006
- Parliamentary Undertakings
- Environmental Statement for Edinburgh Tram (Line Two) Act
- Noise and Vibration Policy
- Office of Rail Regulation Railway Safety Publication 2: Guidance on Tramways

Track

- 'Railway Safety Publication 2, Guidance on tramways', HM Railway Inspectorate, Office of Rail Regulation;
- 'Railway Safety Principles and Guidance Part 2, Section A, Guidance on Infrastructure', HM Railway Inspectorate, HSE.
- Track Alignment Criteria – ULE90130-SW-SPN-00001 v3

Roads

- Design Manual for Roads and Bridges (DMRB)
- Traffic Signs Manual
- New Roads and Streetwork Act (1991)
- Edinburgh Standards for Streets
- Outline Project Specification – Roads and Utilities (Halcrow) (ULE90130-SW-SPN-00035 v2) for applicable standards.

Street Lighting

- BS 5489-1
- BS EN 13201-2: 2003
- Street Lighting Strategy for Edinburgh Tram
- CIBSE Lighting Guide 6

Tram Stops

- Outline Project Specification – Tram Stops (ULE90130-SW-SPN-00028 v2) for applicable standards.
- Tram Stops and Points Heating Electrical Design Performance Specification (ULE90130-SW-SPN-00162 v1)

Landscaping

- Outline Project Specification – Landscape Architecture (ULE90130-SW-SPN-00052 v2) for applicable standards.

Geotechnical

- Outline Project Specification – Geotechnical (ULE90130-SW-SPN-00036 v2) for applicable standards.

Structures

- Outline Project Specification – Structures (Halcrow) (ULE90130-SW-SPN-00034 v1) for applicable standards.

Have all referenced Principal Standards been adhered to,

Yes

No

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Have any deviations been approved and logged?

Yes

No

Detail and or reference relevant deviations' and non conformances

See ULE90130-07-REP-00021 v3 for Roads Departures.

See ULE90130-07-REP-00024 v1 for Stage 2 Road Safety Audit Section 7A Designers Response.

Note: Formal closure of Road Safety Audit issues from CEC as overseeing organisation outstanding.

g) Requirements Test Specification: Compliance of technical specification with Client needs/defined requirements

Compliance of technical specification with Client needs/defined requirements. Are the relevant Requirements Test Specification entries populated with the required compliance entries?

Yes

No

Comments

The SDS design is compliant with the SDS Requirements Specification as defined below:

- Depot Requirements Specification ULE90130-SW-SW-SPN-00057 v2
- Integrated Fare Collection Requirements Specification ULE90130-SW-SW-SPN-00053 v3
- Non Functional Requirements Specification ULE90130-SW-SW-SPN-00045 v5
- Operations and Performance Requirements Specification ULE90130-SW-SW-SPN-00047 v3
- Overhead Line Equipment and Pantograph Requirements Specification ULE90130-SW-SW-SPN-00054 v3
- Traction Power Distribution Requirements Specification ULE90130-SW-SW-SPN-00052 v4
- Roads and Utilities Requirements Specifications ULE90130-SW-SW-SPN-00051 v2
- Structures and Civil Engineering Requirements Specification ULE90130-SW-SW-SPN-00049 v3
- Supervisory, Control and Communications Requirements Specification ULE90130-SW-SW-SPN-00055 v3
- Requirements Specification for Point control, Operation, Detection, Indication & Heating: ULE90130-SW-SPN-00061 V5
- Track Requirements Specification ULE90130-SW-SW-SPN-00050 v3
- Tram Requirements Specification ULE90130-SW-SW-SPN-00059 v7
- Tramstop Requirements Specification ULE90130-SW-SW-SPN-00056 v3

SDS has carried out a comprehensive review of the Employer's Requirements v3.6b versus these Requirements Specifications and identified the elements of difference between the above Technical Requirement Specifications and the Employers Requirements. These differences have been documented/audit trailed by SDS and presented to **tie** for consideration. Using this information, **tie** have instructed changes of scope to SDS as part of the close out and procurement of the InfraCo Contract under the terms of the Novation Agreement and upon completion of the development workshops, whereas mandatory changes are issued by **tie**. Following the BSC Systemwide Detailed Design and Technical Specifications being prepared, there will be a requirement to amend the relevant Requirement Specifications and carry out the additional V&V work including amendment and finalisation of the Project Test Requirement Specification. It will be a BSC exercise to bring the design and Test Specification into alignment with the new Employers Requirements.

Are there any deviations or Non Conformances relevant to this submission?

Yes

No

Have all relevant Deviations and Non-Conformances been approved and logged?

Design Assurance Statement – Section 7A

| | |
|--|--|
| Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Detail and or reference relevant deviations' and non conformances | |
| SDS will issue the Closeout Report of the Requirement Test Specification upon completion of the SDS design scope. | |
| h) Applicable IDC Forms: | |
| IDC forms are provided as part of the BSC IDC process. See BSC IDC Certificates Register. | |
| Do all IDC Forms contain no issues and have been correctly signed off? | |
| Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| Detail any open issues | |
| Comments | |
| In line with the tie procurement strategy to relocate utilities in advance of the completed infrastructure design, utilising the utilities IFC drawings, SDS has carried out a review of utility conflicts arising during the design development and completion of the infrastructure works and provided this list to tie . The actual location of the service installations requires confirmation by as-built information which to date has not been made available to SDS. | |
| i) Tram Design Manual and Design Briefs: | |
| <ul style="list-style-type: none"> • Environmental Statement for Edinburgh Tram (Line Two) Act • Edinburgh Tram Noise and Vibration Policy • Tram Design Manual • Urban Design Brief • Letter from tie re Surface Finishes and Tram Stops dated 4 January 2008 (Ref SMH/FN/PLGPRJ/FM) | |
| Have the Tram Design Manual and the Design Briefs been checked and issues addressed? | |
| Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Detail any open issues | |
| Comments | |
| Design reflects agreed alignment of technical requirements with charette outcomes. | |
| j) Hazard Log: | |
| SDS is working under BSC direction for Hazard Log closeout for any outstanding elements relevant to the SDS scope of works. | |
| See copy of Hazard Log as @ 29th July 2010. | |
| Have all relevant entries in the Hazard Log been addressed and closed? | |
| Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| Detail any open issues | |
| Reference BSC Hazard Log. | |
| k) Risk Register: | |
| Have all relevant entries in the Risk Register been addressed and closed? | |
| Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| Detail any open issues | |

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Comments

Residual Risks are identified in each of the relevant residual risk registers.

SDS has identified remaining risks and provided them to BSC for inclusion in the BSC Risk Register. Refer to BSC Risk Register.

l) Design Issues Tracker:**Detail Applicable References:**

See Design Tracker Excerpt - ULE90130-SW-SCH-00029

Have all relevant entries in the Design Issues Tracker been addressed and closed?

Detail Applicable References:

Yes

No

Detail any open issues

Any issues to be carried forward clearly identified and noted within document. They are considered closed from a design perspective.

Comments

The Design Tracker includes comments from:

Line 2 Progress Meetings:

18 April 2006, 15 May 2006, 20 July 2006, 29 August 2006 and 10 November 2006.

IDC Meetings:

SDS IDR meetings, Environmental, HMRI / Competent Person, Emergency Services, Disabled Groups, Cycling Groups, Stakeholders, Frontagers and the Wider Community.

Photographs ULE90130-05-PHH-00026 v1

Have all relevant entries in the Boundary and Accommodation Works Schedule been addressed and closed?

Yes

No

Detail any open issues**Comments**

None

m) Approvals and Consents:**Detail Applicable References:**

Approvals and Consents Tracker – ULE90130-SW-SCH-00048

- (i) Gogar Church and Burn Area Batch 5 / 23
- (ii) Gogar Burn Bridge (Structure S29) Batch 7 / 24
- (iii) Gogar to Ingliston Batch 7 / 25
- (iv) Ingliston Park and Ride Batch 7 / 27
- (v) Ingliston to Airport Batch 7 / 28
- (vi) Airport Batch 7 / 29
- (vii) Reconfiguration of Hilton Car Park Batch 7 / 31

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- (viii) Roads Technical Approval
- (ix) Utilities: Scottish Gas Networks, Scottish Power, Scottish Water (Clean), Scottish Water (Foul), BT Openreach, Virgin Media, Cable and Wireless, Thus.
- (x) TROs

Notes

- RBS Tram Stop Batch 5 / 30 overlaps subsections 5C and 7A (See Design Assurance Statement for 5C ULE90130-05-FOR-00043).

Have all Approvals and Consents been granted for this submission?

Yes

No

Comments

- i. Approval Granted by CEC
- ii. Approval Granted by CEC
- iii. Approval Granted by CEC
- iv. Approval Granted by CEC
- v. Approval Granted by CEC
- vi. Submitted to CEC
- vii. Approval Granted by CEC
- viii. Approval Granted by CEC
- ix. Approval Granted by CEC
- x. Utilities – submitted to: Scottish Gas Networks, Scottish Power, Scottish Water (Clean), Scottish Water (Foul), BT Openreach, Virgin Media, Cable and Wireless, Thus. 7A undertaken after approved by CEC 7B approval to be undertaken by tie / MUDFA.
- xi. TROs – Statutory Consultation and Public Deposit outstanding

Have all relevant entries in the Approvals and Consents Tracker been addressed and closed?

Detail Applicable References;

Yes

No

Detail any open issues

TROs – Statutory Consultation and public deposit to be undertaken late 2009.

Addressing of Informatives / Conditions on Technical and Prior Approvals by Contractor to be completed as part of Infracore Contract.

Acceptance letter on Closeout Report (ULE90130-07-REP-00045 v1) for CEC Roads Authority TAA comments received.

Comments

Any SEPA approvals dealt with in the System-Wide Design Assurance Statement (ULE90130-SW-FOR-00032).

n) Relevant Agreements and Undertakings:

Detail Applicable References:

EAL – Agreement Signed

Stakis Hotel – Agreement Signed

FSH (Frogmore) – Agreement Signed

Design Assurance Statement – Section 7A

NIL (New Ingliston Ltd) - Agreement Signed

East Lothian Badger Group – Letter of Comfort / Assurance

Sevisair – Letter of Comfort / Assurance

Chris Holmes Cabinetmakers – Letter of Comfort / Assurance

BAA – Agreement Signed

The Royal Highland and Agricultural Society of Scotland – Agreement Signed

TNT Express – Letter of Closure

NULAP – Letter of Closure

NATS – Letter of Closure

National Car Parks - Letter of Closure

Mrs Kaur - Letter of Closure

D Brewster – Letter of Comfort / Assurance

L McTighe - Letter of Comfort / Assurance

A Hamilton - Letter of Comfort / Assurance

Mr and Mrs Seath - Letter of Comfort / Assurance

K Wilson - Letter of Comfort / Assurance

Have all Agreements and Undertakings relevant to this submission been addressed and closed?

Yes

No

Detail any open issues

Comments

None.

o) CDM

ULE90130-SW-RRR-00075 Design Risk Register

“So Far as Reasonably Practicable (SFARP) has the design considered the avoidance of foreseeable risks to those involved in its construction, use, maintenance and decommissioning through the elimination/mitigation of hazards?”

Yes

No

Comments

Are there any significant residual risks relevant to this submission?

Yes

No

Have significant residual risks been recorded and provided in a clear manner with this design submission?

Yes

No

Provide reference as to where information is contained (e.g. drawing no/ register reference)

Track - ULE90130-SW-RRR-00075

Roads and Drainage - ULE90130-05-RRR-00052

Structures - ULE90130-05-RRR-00026, ULE90130-05-RRR-00029, ULE9013-05-RRR-00038, ULE90130-05-RRR-00042

Comments

No lighting risks exist at present as they have been dealt with in the design process.

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No residual risks have been identified for landscaping or stops at present.

Other elements are not present within the subsection or are dealt with in the Systemwide components.

Construction activities such as excavation and utility installation, working area in public roads, site location located in urban roads, pipe placing and jointing, excavation below ground level, – risks to contractor

Designs not lining up with MUDFA installed works on adjacent section – tie and contractor.

p) Other Relevant Information:

This Design Assurance Statement is considered draft until Approvals and comments are closed. Systemwide elements will be dealt with separately.

q) Section 7A

Design Amendments due to the Incorporation of the Client Design

In accordance with the Infraco Contract Part C of Schedule 14 - Design Review and Design Management Plan and the BSC Design Management Plan, SDS has continued to amend the Civil Infrastructure Drawings to align with the Infraco Proposal and Client Design. The SDS Design Assurance Statement (DAS) has captured these amendments as part of the SDS self assurance process.

IFC Drawings produced by SDS (as detailed in the drawings list below) have been taken through the BSC IDR/IDC Process as described in the BSC Design Assurance Plan and in accordance with the BSC Design Management Plan. As part of the IDR/IDC Assurance Process the SDS Design Team has prepared Infrastructure cross-sections along the route to assure that the civil elements are co-ordinated. This is an SDS internal process and is demonstrated by preparation of the ULE90130-DRG cross-section series of drawings within the SDS Drawing Register. Some 118 cross-sections (to-date) are provided and when accompanied with individual structural (bridge and retaining wall cross-sections) compliment and assure the SDS IFC Design. These drawings will form part of the As-built Package to be handed over to the Client after installation and any small as-built amendment.

Siemens and CAF will separately prepare IFC Drawings in accordance with the BSC Design Assurance Plan and the BSC Design Management Plan. The Drawing/Documentation Lists will be provided by Siemens and CAF respectively, in accordance with the Infraco Contract Clause 2.1.5 of Part C of Schedule 14 - Design Review and Design Management Plan. This BSC Drawing/Documentation material will form part of the multi discipline IDC managed by BSC. In addition to the design covered by SDS, certain design elements will be designed by Infraco. This includes all necessary system integration activity, including integration of the tram vehicle into the system. Each SDS IDC civil item and/or discipline is listed below and is assured by inclusion within each multi discipline IDC managed by BSC. The Drawing List below identifies the SDS drawings used within the IDC and it is agreed by all parties (SDS/BB/Siemens/CAF) that the material be used as assurance documentation (see IDC Certificates within the BSC IDC Certificates Register) and that by such agreement the civil infrastructure drawings may be "issued for construction". By de-facto "Agreed for construction"

The information contained within this DAS is accurate for the SDS design at of the date of submittal. Any subsequent revisions, including those due to changes in scope,

IDC Items

- Section 7A - Drainage
- Section 7A - Ducting
- Section 7A - Highways
- Section 7A - Landscaping
- Section 7A - Environmental
- Section 7A - Geotechnical
- Section 7A - Gogar Landfill Earthworks
- Section 7A - OLE
- Section 7A - Track
- Section 7A - Gogarburn Bridge - S29
- Section 7A - Gogarburn Bridge - Trackform
- Section 7A - Gogarburn Bridge - E&B Design

Section 7A - Drainage

ULE90130-07-DNE-00001_rev9 - Updated from IDR
 ULE90130-07-DNE-00002_rev10 - Updated from IDR
 ULE90130-07-DNE-00003_rev10 - Updated from IDR
 ULE90130-07-DNE-00004_rev10 - Updated from IDR

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ULE90130-07-DNE-00005_rev10 - Updated from IDR
 ULE90130-07-DNE-00006_rev9 - Updated from IDR
 ULE90130-07-DNE-00007_rev9 - Updated from IDR
 ULE90130-07-DNE-00008_rev9 - Updated from IDR
 ULE90130-07-DNE-00009_rev9 - Updated from IDR

Section 7A - Ducting

ULE90130-07-DCT-00001_rev5 - Updated from IDR
 ULE90130-07-DCT-00002_rev5 - Updated from IDR
 ULE90130-07-DCT-00003_rev5 - Updated from IDR
 ULE90130-07-DCT-00004_rev5 - Updated from IDR
 ULE90130-07-DCT-00005_rev5 - Updated from IDR
 ULE90130-07-DCT-00006_rev5 - Updated from IDR
 ULE90130-07-DCT-00007_rev5 - Updated from IDR
 ULE90130-07-DCT-00008_rev5 - Updated from IDR
 ULE90130-07-DCT-00009_rev5 - Updated from IDR

Section 7A - Highways

ULE90130-07-HRL-00001_rev7
 ULE90130-07-HRL-00003_rev8 - Updated from IDR
 ULE90130-07-HRL-00007_rev7
 ULE90130-07-HRL-00008_rev8
 ULE90130-07-HRL-00100_rev5
 ULE90130-07-HRL-00408_rev5
 ULE90130-07-HRL-00507_rev6
 ULE90130-07-HRL-00800_rev5
 ULE90130-07-HRL-00908_rev5

Section 7A - Landscaping

ULE90130-07-LDS-00001_rev6
ULE90130-07-LDS-00002_rev7 - Updated Revision Number
ULE90130-07-LDS-00003_rev7 - Updated Revision Number
ULE90130-07-LDS-00004_rev6 - Updated Revision Number
ULE90130-07-LDS-00005_rev8 - Updated Revision Number
ULE90130-07-LDS-00006_rev6 - Updated Revision Number
ULE90130-07-LDS-00007_rev5 - Updated Revision Number
ULE90130-07-LDS-00008_rev4 - Updated Revision Number
ULE90130-07-LDS-00009_rev3 - Updated Revision Number

Section 7A - Environmental

ULE90130-07-ENV-00021_rev6 - Updated from IDR
 ULE90130-07-ENV-00023_rev4
 ULE90130-07-ENV-00030_rev6
ULE90130-07-ENV-00031_rev9 - Updated from IDR
 ULE90130-07-ENV-00032_rev7
ULE90130-07-ENV-00033_rev7 - Updated from IDR

Section 7A - Geotechnical

ULE90130-07-GEO-00002_rev5
 ULE90130-07-GEO-00003_rev6 - Updated from IDR
 ULE90130-07-GEO-00005_rev5
 ULE90130-07-GEO-00015_rev7

Section 7A - Gogar Landfill Earthworks

ULE90130-07-GEO-00010_iss3_rev6 - Updated Revision Number
ULE90130-07-GEO-00011_iss3_rev5 - Updated Revision Number
ULE90130-07-GEO-00012_iss3_rev5 - Updated Revision Number
ULE90130-07-GEO-00013_iss3_rev5 - Updated Revision Number
ULE90130-07-GEO-00014_iss3_rev5 - Updated Revision Number

Section 7A - OLE

ULE90130-07-DRG-00125_rev4 - Updated from IDR
 ULE90130-07-DRG-00126_rev4 - Updated from IDR
 ULE90130-07-DRG-00127_rev4 - Updated from IDR
 ULE90130-07-DRG-00128_rev4 - Updated from IDR
 ULE90130-07-DRG-00129_rev4 - Updated from IDR

Design Assurance Statement – Section 7A

ULE90130-07-DRG-00130_rev4 - Updated from IDR
ULE90130-07-DRG-00131_rev4 - Updated from IDR
ULE90130-07-DRG-00132_rev4 - Updated from IDR
ULE90130-07-DRG-00133_rev4 - Updated from IDR

Section 7A - Track

ETN(TRW=TD&ATB#055975 - A
ETN(TRW=TD&ATB#055976 - A
ETN(TRW=TD&ATB#055977 - A
ETN(TRW=TD&ATB#055978 - A
ETN(TRW=TD&ATB#055979 - A
ETN(TRW=TD&ATB#055980 - A
ETN(TRW=TD&ATB#055981 - A
ETN(TRW=TD&ATB#055982 - A
ETN(TRW=TD&ATB#055983 - A

Section 7A - Gogarburn Bridge - S29

ULE90130-07-BRG-00021_rev7 - Updated from IDR
ULE90130-07-BRG-00022_rev7 - Updated from IDR
ULE90130-07-BRG-00023_rev7 - Updated from IDR
ULE90130-07-BRG-00024_rev7 - Updated from IDR
ULE90130-07-BRG-00025_rev4 - Updated from IDR
ULE90130-07-BRG-00026_rev5 - Updated from IDR
ULE90130-07-BRG-00027_rev5 - Updated from IDR
ULE90130-07-BRG-00028_rev5 - Updated from IDR
ULE90130-07-BRG-00029_rev5 - Updated from IDR
ULE90130-07-BRG-00030_rev7 - Updated from IDR
ULE90130-07-BRG-00031_rev6 - Updated from IDR
ULE90130-07-BRG-00032_rev6 - Updated from IDR
ULE90130-07-BRG-00033_rev5 - Updated from IDR
ULE90130-07-BRG-00034_rev5 - Updated from IDR
ULE90130-07-BRG-00035_rev7 - Updated from IDR
ULE90130-07-BRG-00037_rev7 - Updated from IDR
ULE90130-07-BRG-00038_rev6 - Updated from IDR
ULE90130-07-BRG-00039_rev5 - Updated from IDR
ULE90130-07-BRG-00040_rev6 - Updated from IDR
ULE90130-07-BRG-00041_rev6 - Updated from IDR
ULE90130-07-BRG-00042_rev5 - Updated from IDR
ULE90130-07-BRG-00043_rev5 - Updated from IDR
ULE90130-07-BRG-00044_rev5 - Updated from IDR
ULE90130-07-BRG-00045_rev3 - Updated from IDR

Section 7A - Gogarburn Bridge - Trackform

ULE90130-07-BRG-00303_rev3 - Updated from IDR

Section 7A - Gogarburn Bridge - E&B Design

ULE90130-07-BRG-00047_rev2 - Updated from IDR