Transport for London

SCHEDULE 7A

Form of Agreement - Long Form Call-Off Contract

Call-Off Contract Number: ENG Task 264 – 4LM Wayside Implementation

Framework Lot: E23 - Signalling, Installation, Testing and Maintenance

Outline Agreement: [redacted]

THIS AGREEMENT is made the day of 2023

BETWEEN:

(1) **Transport for London (TfL), ("the *Employer"*** which expression shall include its successors in title and assigns); and

(2) **SIGNALLING INSTALLATION & MAINTENANCE SERVICES LTD,** a company registered in England and Wales (Company Registration Number 02953526) whose registered office is at 5 Jardine House, Harrovian, Business Village, Bessborough, Road, Harrow, HA1 3EX ***("the Consultant")***

WHEREAS:

(A) This Agreement is made pursuant to a framework agreement between the Parties relating to the provision of **TfL PSF2 94203 - Engineering Consultancy Services dated 4th January 2021** ("the Framework Agreement").

(B) The *Employer* wishes to have provided **Engineering Consultancy services for contract ENG Task 264 – 4LM Wayside Implementation** (*"the Services"*). The services required for this Call-Off Contract have been detailed separately under four Specification's as follows:

- Specification 1 – Network Rail Control Locations and Wayside Works
- Specification 2 – Tripcock Testers
- Specification 3 – Non-Track Circuit Related PCB Isolation and Recovery
- Specification 4 – Other Potential Scope of Works

(C) The *Employer* has accepted a tender by the *Consultant* for the design of the *Services* and correction of Defects therein in accordance with the *conditions of contract* (in the form of the Long Form as set out in Schedule 2A of the Framework).

NOW IT IS AGREED THAT:

1. Terms and expressions defined in (or definitions referred to in) the *conditions of contract* have the same meanings herein.
2. The *Consultant* Provides the Services in accordance with the *conditions of contract*.
3. The *Employer* pays the *Consultant* the amount due in accordance with the *conditions of contract*.
4. The documents forming the contract are:

   4.1 this Form of Agreement duly executed by the Parties as a deed;

   4.2 the *conditions of contract;*

   4.3 the attached Call-Off Contract Data Part 1;

   4.4 the attached Call-Off Contract Data Part 2; and

   4.5 the following documents:

   - ***Employer's Specifications – Attachment 1-4;***
   - ***Schedules 1, 2A, 6A, 7A and inclusive of the Framework Agreement;***
   - ***Consultant's Proposal – Attachment 5;***
   - ***Consultant's Pricing Schedule – Attachment 6;***
   - ***QUENSH Menu – Attachment 7***

5. Where there is any discrepancy or conflict within or between the documents forming the contract the order of priority shall be as follows:

   5.1 First : This Form of Agreement;

   5.2 Second : The *conditions of contract;*

   5.3 Third : The Specification and any other documents included in this contract.

6. Notwithstanding the manner of execution of this Agreement it is agreed that:

   6.1 the limitation period within which any claim may be brought by the *Employer* for breach of this Agreement by the *Consultant* is 12 years from the date of breach; and

   6.2 the *Consultant* agrees not to raise in defence of any such claim a shorter limitation period whether pursuant to the Limitation Act 1980 (as the same may be amended or re-enacted from time to time) or otherwise.

IN WITNESS whereof this Agreement has been signed for and on behalf of the *Employer* and the *Consultant* the day and year written above.

Signed by for and
on behalf of ***the Consultant*** Signature

Print name:

Position:

Date:

Signed by for and
On behalf of ***the Employer*** Signature

Print name:

Position:

Date:

CALL OFF CONTRACT DATA - PART ONE

Data provided by the *Employer*
Statements given in all contracts

1 General

- The *conditions of contract* are the core clauses as may be amended or supplemented by the clauses [redacted]
- The *Employer* is
  Name: Transport for London (TfL)
  Address: 5 Endeavour Square, London, E20 1JN
- The *Employer's Agent* is
  [redacted]
  (2) Name/Title [redacted]
  [redacted]
- The authority of the *Employer's Agent* is as set out in Option X10.
- The *Services* are for the provision of Engineering Consultancy Services as described in the *Employer's* ***Specifications – Attachment 1-4.***
- The *language of this contract* is English.
- The *law of the contract* is the law of England and Wales.
- The *period for reply* is 2 weeks.
- The *period for retention* is 12 years following Completion or earlier termination.
- The *tribunal* is the courts of England and Wales
- The following matters will be included in the Risk Register:
  As detailed in the *Employer's* ***Specifications – Attachment 1-4.***

2 The Parties' main responsibilities

- The *Employer* provides access to the following persons, places and things:-

access to	*access date*
5 Endeavour Square	***at Contract Commencement***

3 Time

- The *starting date* of the *services* is 27th November 2023 (Contract Commencement date)
- The *Consultant* submits revised programmes at intervals no longer than those instructed by the *Employer's Agent*.

4 Quality

- The quality policy statement and quality plan are provided within 2 weeks of the Contract Date.
- The *defects date* is 52 weeks after Completion of the whole of the *services*.

5 Payment

[redacted]

8 Indemnity, insurance and liability

- The amounts of insurance and the periods for which the *Consultant* maintains insurance are:

Event	cover	Period following Completion of the whole of the *services* or earlier termination
[redacted]	[redacted]	[redacted]

- [redacted]

9 Optional statements

- **If the *Employer* has decided the *completion date* for the whole of the *services:***

  The *completion date* (contract duration) is **2 years ending 26th *November 2025***

  The Call-Off Contract may be extended for further 1 year; however any extensions will be at the *Employer's* own discretion and subject to appointed *Consultants'* satisfactory performance, ongoing requirement and funding availability. This will be confirmed and mutually agreed in writing.

- Notice period in accordance with Clause 90.3 of the Long Form Conditions of Contract: 30 days

CALL OFF CONTRACT DATA - PART TWO

Data provided by the *Consultant*
Statements given in all contracts

1 General

- The *Consultant* is: Signalling Installation & Maintenance Services Ltd (SIMS)

[redacted]

- *Consultant's* Proposal

Consultant's Proposal sets out the technical approach for achieving the objectives for this Project - ***See Attachment 5.***

- The key persons are: Refer to Consultant's proposal, Section 3 Resources – Attachment 5

- The following matters will be included in the Risk Register: Refer to Consultant's proposal – Attachment 5

2 Optional statements

- **If the *Consultant* requires additional access**

The *Employer* provides access to the following persons, places and things: Please arrange access to the RailSys Access Planning tool for [redacted]

- **Delivery Programme**

The programme identified by the *Consultant* is included in ***Attachment 5 - Consultant's Proposal.***

- **Charges**

For Specifications 1-3 - Pricing Option E: Time based contract

The contract charges for specifications 1-3 will be on a time-based contract for the actual work carried out by the *Consultant*. The *Consultant* will be required to provide a quote for the actual services/deliverables required at the time of event. The cost shall incorporate the Schedule of Rates obtained at tender stage for the roles/resources listed.

For Specification 4 - Pricing Option E: Time based contract

The scope of Services for this Specification is optional, should TfL require the services they will engage with the *Consultant* as and when required. The contract charges will be on a time-based contract for the actual work carried out by the *Consultant*. The *Consultant* will be required to provide a quote for the actual services/deliverables required at the time of event which will be on an-hoc basis. The cost shall incorporate the Schedule of Rates obtained at tender stage for the roles/resources listed.

The initial capped contract value will be £500,000.00.

The contract value may be subject to further uplift if required during the course of the contract, inclusive of any contract extensions, in accordance with ongoing requirements and funding availability, undertaken by way of variation.

See Attachment 6 - Consultant's Pricing Schedule for day rates to be used to price all specifications.

All Day Rates proposed including discounted rates shall remain fixed throughout the lifespan of this contract including any variations thereto.

All Day Rates is based on 8 hours per day and is inclusive of travel and subsistence charges, no other costs will be paid by TfL.

TfL will not reimburse any additional costs for time, input, resource or other without prior written consent from TfL's employing manager.

- **Issue of invoices:**

[redacted]

Tender Reference: ENG Task 264 – 4LM Wayside Implementation

Specification 1

Network Rail Control Locations and Wayside Works

TABLE OF CONTENTS

0. ORGANISATIONAL OVERVIEW

0.1 Transport for London (TfL)

TfL was created in 2000 as the integrated body responsible for London's transport system. TfL is a functional body of the Greater London Authority. Its primary role is to implement the Mayor of London's Transport Strategy and manage transport services to, from and within London.

TfL manages London's buses, the Tube network incl. the Elizabeth Line, Docklands Light Railway, Overground and Trams. TfL also runs Santander Cycles, London River Services, Victoria Coach Station, the Emirates Air Line and London Transport Museum. As well as controlling a 580km network of main roads and the city's 6,000 traffic lights, TfL also regulates London's taxis and private hire vehicles and the Congestion Charge scheme.

Further background on what TfL does can be found on the TfL website here:

https://tfl.gov.uk/corporate/about-tfl/what-we-do

0.2 Business Unit

Capital Directorate is part of TfL's corporate professional services operating business supplying Project Management and Engineering support to the other business areas. There is a capital programme of works well over £1bn delivered as client managed programmes to the operating directorates such as London Underground (LU). The Four Lines Modernisation (4LM) Programme has been running several years and is not planned for completion until late 2025.

This commission is to support the ongoing activities that interface with Communications Based Train Control (CBTC) supplier but are not direct deliverables under that contract. Both internal and external signalling teams are needed to deliver supporting works and this scope requires competencies that are not readily available internally to TfL.

Signalling Migration Area (SMA) 12 is the area on the District line on the Wimbledon Branch extending from Fulham Broadway to the Network Rail (NR) boundary at East Putney.

1. INTRODUCTION

1.1 Background

TfL's Four Lines Modernisation (4LM) Programme is an upgrade of London Underground's Sub-Surface-Rail Network (Circle, District, H&C and Metropolitan tube lines). This upgrade involves the design, installation and commissioning of a new Communications Based Train Control (CBTC) signalling system, provided by the main signalling contractor – Thales - alongside numerous other supporting infrastructure works delivered by 4LM.

The purpose of this specification is to define the scope that the 4LM programme require to be enabled to meet TfL's obligations and support the commissioning of CBTC in Signal Migration Area 12 (SMA12).

This scope is predominantly alterations required to the line Overview Panels, Maintenance Panels and Control desks and associated circuitry within Network Rail's Wimbledon Area Service Control centre and Clapham Junction Relay Room.

SMA12 - Installation & Testing support will also be required for the recoveries of wayside signalling assets, lineside cabling, location case equipment and wiring, internal equipment and wiring in Clapham Junction Relay Room and Wimbledon Relay/Control Room made redundant as part of the CBTC commissioning in SMA12. Approved for Construction (AFC) Signalling Designs detailing the required isolations and recoveries will be provided by the employer. The Supplier will be required to supply assurance, construction and safety documentation in accordance with the infrastructure mangers standards, practices and processes.

Network Rail (NR) access is to be considered as part of the planning activities. The wayside/trackside assets to be recovered will be LU owned, but Network Rail Signalling Controlled, therefore staff undertaking this work will be required to be Network Rail Competent in terms of processes and working practises.

1.2 Objectives

The objective of this specification is to define the alterations required to Network Rail operational diagrams and control panels in support of the Thales CBTC commissioning on the Wimbledon Branch of the District Line.

In order to support the alterations, the following will be required:

- Compliance/Assurance deliverables in accordance with TfL and Network Rail standards e.g. S1538 and NR/L2/RSE/02009, NR/L2/SIG/30003 (accepted by the employer).

- Compliance/Assurance deliverables to support the employer deliver its obligations in accordance with the joint engineering assurance arrangements (SUP-R280-LUL-RPT-00031). This document defines the relationships and arrangements between TfL and Network Rail to enable project delivery on Network Rail infrastructure and/or assets. Provision of construction and safety documentation in accordance with the infrastructure managers standards, practices and processes.
- Competencies/resources to be accredited in accordance with the relevant standard/processes.
- Construction of assets in accordance with the AFC detailed designs.
- Procurement of Materials
- SMA12 CBTC Commissioning support
- Provision of deliverables ensuring suitable handover to the end user.
- Provision of deliverables to support H&S file/AIR population.

2. SCOPE

2.1 General Requirement

- Support the implementation of panel alterations within Wimbledon Area Service Control centre (WASC) and Clapham Junction Relay as part of the Network Rail alterations in support of SMA12 commissioning.

    - A design to support the alterations at Clapham Junction Relay Room has been produced by Thales and includes the following alterations:

        - Removal of decommissioned non-illuminated signals
        - Removal of decommissioned illuminated signals
        - Removal of redundant buttons associated with decommissioned signals.
        - Alteration to East Putney Platform 1 starter signal indication to reflect the new CBTC migration entry signal (Visual representation, non-illuminating)
        - Removal of Earls Court 'WG' legend
        - Remove Route indications from westbound track circuit indications that no longer form part of a NR route.
        - Remove Route Indications from Eastbound track circuit indications that no longer form part of a NR route.
        - Modify the filament failure indications for the decommissioned signals.

    - It is assumed the designs to support the WASC alterations will also be produced by Thales and will include the following alterations:
        - Removal of decommissioned non-illuminated signals
        - Removal of decommissioned illuminated signals
        - Change of Emergency Alarm location from Earls Court 'WG' to HSCC
        - Alteration to East Putney Platform 1 starter signal indication to reflect the new CBTC migration entry signal (Visual representation, non-illuminating)
        - Removal of decommissioned eastbound track circuit indications and replace with an external non-illuminated section of track.
        - Remove Route indications from westbound track circuit indications that no longer form part of a NR route.
        - Remove Route Indications from Eastbound track circuit indications that no longer form part of a NR route.
        - Removal of TD berth windows from decommissioned signals.
        - Change tiles "train approaching from Earl's Court" and "last train sent to Earl's Court" location from Earl's Court to HSCC.

    - It is assumed the designs to support the ASC Panel 3 alterations within WASC will also be produced by Thales and will include the following alterations:

        - Removal of redundant buttons associated with decommissioned signals.
        - Renaming “Exit” button to align with the new CBTC entry signal.
        - Change of Emergency Alarm location from Earls Court ‘WG’ to HSCC.
        - Update the Train Describer alarms, TFA (Transmission Failure Alarm) from Earl’s Court to.

    - Wayside/Trackside
        - As part of the signalling scheme plan proposals, track circuit boundary alterations are required.

    - If Thales produced designs do not cover all the required alterations, the Supplier shall produce approved designs to cover any further requirements. These shall be produced in accordance with the infrastructure managers standards and assurance processes.

    - Procurement of Materials, to include but not limited to:
        - Panel Tiles
        - Cabling

    - Undertake all installation/construction activities in accordance with the relevant documentation.

    - Commissioning support, to include but not limited to:
        - Undertaking pre-testing alongside any SMA12 system testing that Thales undertakes.
        - Commissioning the associated changes alongside the SMA12 CBTC commissioning.
        - Post Commissioning Wire Counts

    - Recovery of redundant equipment / cabling.

    - Undertaking Asset Register Updates where required.

2.2 Safety, Health and Environment Requirements

The supplier is expected to act as Principal Contractor or sole Contractor if no subcontractors are employed to align with CDM. The CDM associated documentation to support this arrangement will need to be produced by the supplier and submitted for review and acceptance by the Employer ("TfL").

The supplier to submit a Construction Phase and Environmental Management Plan to support compliance with the CDM Regulations.

The Employer will be responsible for Principal Designer (PD) duties.

The supplier to be Principal Contractor except on Commissioning weekend where CBTC Contractor will be Principal Contractor.

QUENSH (Quality, Environmental, Safety and Health) compliance will be expected from the Supplier to align the delivery arrangements with TfL/LU processes. QUENSH Contract Conditions and Menu have been provided as supporting documents to this tender. This is to enable suppliers working with TfL London Underground (LU) to have the appropriate requirements to ensure that risks are understood and controls embedded in plans and working arrangements.

It should also be noted that there will be a Network Rail interface and works on NR infrastructure therefore application and compliance to NR standards, processes and accreditation/appointment will be required. The employer will be responsible for Contractor Engineering Manager (CEM) duties.

All signalling test and commissioning qualified resource will require TfL endorsement by the TfL Testing & Commissioning (T&C) Asset Engineer to work on this project. Suitable CVs will need to be submitted for endorsement through the standard TfL process.

The below health and safety related representatives are required for this Specification/contract. Note these roles are generic and they will be supporting on an ad-hoc basis in the overall delivery of the Contract and not just against an individual Specification.

- 1x Quality and Assurance Representative – This role is required to support in delivering quality process associated with safety critical signalling activities.
- 1x Health and Safety Representative – The H&S role is defined in the QUENSH menu, they will be providing support in safety meetings and review the CDM documentation.
- 1x Environmental Management Representative – This role is defined in the QUENSH menu, they will be providing support in Environment requirements, reviewing safe systems of work from an Environmental aspect.

3. KEY DELIVERABLES (but not limited to)

- Programme for the delivery of the works (which aligns to the overarching 4LM programme).
- Relevant Infrastructure Manager Project Documentation
- Project documentation in accordance with the TfL project management processes.
- Design Documentation for acceptance by the employer.
- Assurance documentation to support the NR interface in compliance with TfL and NR standards and processes.
- CQP's/MTP for acceptance by the T&C Asset Engineer.
- Updated Master Records.
- Asset Register Updates.
- H&S / AIR documentation.

4. SERVICE LEVEL AGREEMENTS (SLAS)/KEY PERFORMANCE INDICATORS (KPIS)

The supplier will issue an updated tracker weekly to the employer confirming progress achieved against the programme. The format to be agreed between both parties.

5. PROJECT PLAN/TIMESCALES

The employer will review and accept the suppliers programme of work agreeing adjustment or changes on a periodic basis. The programme should include a suitable mobilisation period to allow for documentation approvals and employer endorsement.

All project activities to be completed by the planned system testing dates namely:

- Installation Complete – Early 2024.
- SMA12 System Testing 1 – June 2024.
- SMA12 Commissioning Date – November 2024 weekends where possible, circa July 2024.
- Any testing, commissioning and recovery activities can be assumed as on “go-live” circa Nov 24 and following the reversion period.
- It should be noted the above is based on the Principal Contractors current programme. As described the employer will be seeking a programme of works for acceptance by the employer that shall align to the current programme dates. In the event of programme movement the impact shall be assessed accordingly.

6. APPENDICES As provided at tender stage

In support of this Specification 1 the following appendices have been provided separately with the tender pack:

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

[redacted]

Tender Reference: ENG Task 264 – 4LM Wayside Implementation

Specification 2

Tripcock Testers

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The purpose of this specification is to define the scope that 4LM require to be completed to support the commissioning of CBTC in SMA10 (Turnham Green) & SMA12 (East Putney), which is not included as part of Thales' 4LM scope.

This scope is limited to the Signalling elements of the Design, Install, Test & Commissioning of the Tripcock Testers (TT) in the following areas. Note: that the requirements and level of effort differ in both areas as specified below.

1. New Tripcock Testers are to be provided at **Turnham Green Platforms 1 and 4** and alarmed within Turnham Green Station Control Room. The TT will be designed, installed, and commissioned into use with a legacy signalling interface and therefore will be in use prior to the ATC upgrade. All signalling circuits and wiring shall be installed in Turnham Green Interlocking Machine Room (IMR). Treadles shall be installed at a location such that a train on the braking curve to the stopping location will operate the Tripcock Tester correctly without being subjected to nuisance tripping. A nominal speed of 20km/h (12mph) +/- 2km/h is to be used as guidance. Further requirements for the control and operation of the Tripcock Tester can be found within London Underground Standard S1195.

   Wayside indicators shall be installed in proximity with the platform starter signals as agreed with the signal sighting committee. The wayside indicator will be installed with a supporting civils/mechanical design, Cutting Drilling and Fixing Form, Clearance Approval and Space Application in accordance with London Underground Standards and procedures. Agreements with respect of visibility and sighting acceptance of the wayside indicator will be managed by the 4LM signal sighting committee and will be brought into service prior to the ATC commissioning. Document Ref: 4LM-PSEC0056-SSL-DES-00247 V2, refers to this.

2. New Tripcock Testers are to be provided at **East Putney Platforms 1 and 2** and alarmed within Fulham Broadway Station Control Room. All signalling circuits & wiring shall be installed in the East Putney CBTC Boundary Location Kiosk (undertaken by others). Supporting Signalling Works for East Putney TT will be limited to the following:

    - Installation of the Tripcock Testers Treadle's in Platforms 1 & 2 exact location will be advised by the TfL project manager and any supporting track works will be undertaken by TfL.

    - Thales CBTC Volume 2 wiring designs (CBTC Boundary Location Kiosk) will be provided to enable and advise the cable pull/running of a 3 pair concentric cable from East Putney Kiosk to Fulham Broadway Station Control Room to a local control panel installed by others.

    - East Putney NR access is to be considered as part of the planning activities. The wayside/trackside assets to be in this area will be LU owned, but Network Rail Signalling Controlled, therefore staff undertaking this work will be required to be Network Rail Competent in terms of processes and working practises.

Check rail and con rail modification shall be installed to minimise train movement when the test is being undertaken. The TfL project manager (Employer's) will undertake track modifications as required following the identification of the location by signalling design.

All wayside signalling cabling shall be installed onto 4LM CBTC primary routes in accordance with the local 4LM Cable Route Reports and as per the 4LM CRMS Generic Rules. The installation of any secondary CRMS to wayside assets will be the responsibility of the Supplier.

1.2 Objectives

The objective of this specification is to define the requirements to introduce new Tripcock Testers in both Turnham Green & East Putney.

- Compliance/Assurance deliverables in accordance with TfL and Network Rail standards e.g. S1538 and NR/L2/RSE/02009, NR/L2/SIG/30003 (accepted by the Employer where Network Rail interface exists).

- Compliance/Assurance deliverables to support the employer deliver its obligations in accordance with the joint engineering assurance arrangements (SUP-R280-LUL-RPT-00031). This document defines the relationships and arrangements between TfL and Network Rail to enable project delivery on

Network Rail infrastructure and/or assets. Provision of construction and safety – where Network Rail interface exists.

Activities required to support this scope shall include (but not limited to):

- Pre-design correlation and site surveys
- Register of Interest / Parallel Working Agreements
- Design Brief or Conceptual Design Statement (accepted by the employer's project manager prior to detailed design)
- Production of Signalling Detailed Designs CAT "S" Approved (accepted by the employer's project manager)
- Bill of Materials Procurement of materials (except for the Station Control Room alarm panel, which will be supplied)
- Mechanical/Civils Design, CDFL, CAF and Space Applications
- Supporting the Project Managers Signal Sighting Committee
- Production of Risk Assessments
- Method Statements/Work Package Plans (accepted by the employer's project manager prior to commencement of installation)
- Consent to Install/Installation Readiness Reviews
- Access Planning (Supported by the Project Manager)
- Installation of all hardware
- Signalling Design Compliance Reports (accepted by the employer's project manager prior to commencement of installation)
- Traffic Circular Entries (supported by the Project Manager) (Turnham Green only)
- Commissioning Quality Plans (accepted by the employer's project manager prior to commencement of installation)
- Testing and commissioning activities
- Signalling Design Commissioning Activities (production of Commissioning Wire Counts, Maintenance Prints)
- Handover of Project Deliverables

- Signalling Design Master records updates and Return of Signalling records
- Asset Register updates
- Provision of deliverables ensuring suitable handover to the end user.
- Provision of deliverables to support H&S file/AIR population.

2. SCOPE

2.1 General Requirement

It is recommended that the scope for Turnham Green and East Putney are delivered in sperate work packages given the nature of the differing deliverables the Supplier is being requested to support.

As detailed below in both locations (Turnham Green & East Putney) there is a requirement to provide an alarm panel interface, potential to recover and re-use the now redundant alarm panel at Ladbrook Grove should be explored. Notably at Turnham Green potential to migrate the alarm interface to the Piccadilly Line Control System (PICU) is also to be investigated in order to negate the requirement to provide a physical alarm panel, this is to be considered at the conceptual design stage and technical support from TfL's Project Manager will be provided.

To aid the technical understanding of this requirement the following supporting documents have been provided for guidance:

- AE35_ MI_122257 Tripcock Tester Indicator _Alarm Box Manufacturing and Test Requirements
- AE35_A2_122266 issue A sheet 1 of 3
- AE35_A2_122266 issue A sheet 2 of 3
- AE35_A2_122266 Ladbroke Grove - Tripcock tester indicator alarm box - issue A sheet 3 of 3
- ES3416D
- SUP-PSEC0052-SSL-SPC-00015 - Edgware Road - Requirements for Ladbroke Grove TCT Indicator-Alarm Box - EES - Issue 1

Turnham Green Tripcock Testers (TT) on Platforms 1 & 4

The requirement is to install LU traditional Tripcock Testers which include track mounted treadles and wayside sighted Indicators in 2 sperate locations at Turnham Green Station. The TT will be operated via the legacy signalling control and the requirement is to design, install, test and commission the equipment prior to the planned ATC commissioning in (circa 2024). Requirements listed below:

Turnham Green Design:

- Production of a Conceptual Design Statement or Design Brief detailing the design intent and design plan that is to be issued for acceptance by the employer prior to commencement of design.

- Browsing of records to identify existing signalling records required. Following this browsing session, the Supplier shall submit a Signalling Register of Interest to the TfL Project Manager.

- Produce a Pre-Design Wire Count/Correlation package to ascertain the as built configuration. Issue the Correlation Package for completion by the Suppliers Installation/Test Teams.

- Complete a Correlation Review and Issue findings to the Project Manager. Update signalling records to any anomalies accordingly.

- Produce approved designs (LU's Signalling design Procedures and Standards) to include but not limited to:

    - Production of the Turnham Green IMR Book wiring "RED INK" Design detailing wiring and design alterations

    - Production of "RED INK" of the associated Scale Plan Alterations

    - Production of a "RED INK" Installation Location Plan (or similar) detailing the proposed installation position of trackside hardware

  The designs are to be produced & checked by IRSE Licenced Competent Designers and approved by an LU registered "CAT S" approver.

- Track mounted Tripcock Testers Treadles will be required to be supported by track/p-way alterations. Signalling Design will specify the installation position and the project manager will manage the track works required to support the installation.

- Tripcock Testers Indicators will be required to be supported by a Civils/Mechanical Design and the position of the indicator lamp will require to be accepted by the 4LM signal Sighting Committee. Stage 1 & 2 signa sighting forms will be required to be produced by the Supplier. This process will be supported by TfL's project manager, however design support and documents will be the responsibility of the Supplier.

- There is a requirement that the Tripcock Tester is to be alarmed at Turnham Green Signal Control Room – therefore the design must cater for an alarm interface to a localised control panel. It is envisaged that a 3pair concentric cable will be required to run from Turnham Green IMR to a newly installed localised panel at Turnham Green Control Room. This is subject to the

production of the detailed design (procurement, asset placement and design interface will be supported by the Employer/Project Manager).

The detailed design package will be issued to the project manager for acceptance, following acceptance of the design package, this is essentially approved for construction. (As a minimum the design package shall include (Detailed “RED INK” Design, Design Log, Design Check Certificate, Issue Cert or Transmittal, Designers Risk Assessment).

Turnham Green Installation:

Production of an installation Method Statement (MS) detailing the Supplier’s safe system of work and proposed installation plan that is to be issued and accepted by the employer prior to commencement of installation. (See London Undergrounds Standard S1198 Signalling and Signalling Control - Installation, Testing, Commissioning and Handover for guidance)

Following acceptance of the Method Statement (MS) the installer is to review the design and declare the installation readiness to the Project Manager and access & egress will be undertaken as specified in the approved MS.

The Supplier will be responsible for the procurement and storage of materials. Materials are to be detailed on the Bill of Materials identified by the designer.

Signalling assets are to be installed by IRSE Licensed competent installers, works are to be managed by the designated installation manager. All mechanical and civils installations will be supported by approved CDFL, CAFs, Space Apps.

Installation of wayside cabling is to be installed within the pre supplied primary cable routes as per the local cable route reports – cables will be run in hanger allocations specified within the 4LM CRMS generic rules. Secondary CRMS will remain the responsibility of the Supplier.

All installation activities shall be undertaken in accordance with LU standards and practises.

Turnham Green Testing & Commissioning:

Production of a Testing Commissioning Quality Plan (CQP) is to be produced by the contractor and issued to the project manager for acceptance prior to the commencement of testing and commissioning works (See London Undergrounds Standard S1198 Signalling and Signalling Control - Installation, Testing, Commissioning and Handover for guidance)

Prior to the submission of the CQP the Supplier shall agree a commissioning date with the project manager. The contactors pre commissioning design activities shall

be in place to support – this includes the acceptance of signalling design compliance, traffic circular entries and readiness of maintenance prints for handover.

All testing and commissioning activities shall be undertaken in accordance with LU standards and practises.

East Putney Tripcock Testers (TT) Platforms 1 and 2

The requirement at East Putney is to install track mounted treadles in 2 sperate locations at East Putney Station and the installation of the cabling to support the alarm function between CBTC location case at East Putney and Fulham Broadway station control room – this cable is envisaged to be a 3Pair Concentric cable, however this is subject to design. Equipment and asset location is to be specified by the design which is to be supplied by others. Therefore, the requirement at East Putney is limited to installation of the above-mentioned assets only.

Production of an installation Method Statement (MS) or Works Package Plan (WPP) detailing the Supplier's safe system of work and proposed installation plan that is to be issued and accepted by the employer prior to commencement of installation. (See London Undergrounds Standard S1198 Signalling and Signalling Control - Installation, Testing, Commissioning and Handover for guidance)

The project manager will manage the interface with Track/P-way.

The Supplier will be responsible for the procurement and storage of materials, materials are to be detailed on the Bill of Materials identified by the designer.

All remaining installation, all design and commissioning activities will be undertaken by others. All equipment is to be installed for future use/interface with the ATC upgrade.

Installation of wayside cabling is to be installed within the pre supplied primary cable routes as per the local cable route reports – cables will be run in hanger allocations specified within the 4LM CRMS generic rules. Secondary CRMS will remain the responsibility of the Supplier.

All equipment and cabling once installed will be handed over to the project manager. Installation activities shall be undertaken in accordance with LU standards and practises.

Testing and commissioning of any track circuits affected by the installation of the treadles will need to be completed to LU and NR Standards.

East Putney NR recoveries works

The 4LM CBTC contractor will produce a signalling recoveries design. The supplier will utilise this design to recover any legacy NR signalling that becomes redundant.

The recoveries design is not yet available, the supplier will be asked to price this scope when it becomes available.

2.2 Safety, Health, and Environment Requirements

The supplier is expected to act as Principal Contractor or sole Contractor if no subcontractors are employed to align with CDM. The CDM associated documentation to support this arrangement will need to be produced by the Supplier and submitted for review and acceptance by the Employer ("TfL").

The Employer will be responsible for Principal Designer (PD) duties.

QUENSH (Quality, Environmental, Safety and Health) compliance will be expected from the Supplier to align the delivery arrangements with TfL/LU processes. QUENSH Contract Conditions and Menu, have been provided as supporting documents to this tender. This is to enable suppliers working with TfL London Underground (LU) to have the appropriate requirements to ensure that risks are understood and controls embedded in plans and working arrangements.

It should also be noted that there will be a Network Rail interface and works on NR infrastructure therefore application and compliance to NR standards, processes and accreditation/appointment will be required. The Employer will be responsible for Contractor Engineering Manager (CEM) duties.

All signalling test and commissioning qualified resource will require TfL endorsement by the TfL Testing & Commissioning (T&C) Asset Engineer to work on this project. Suitable CVs will need to be submitted for endorsement through the standard TfL process.

The below health and safety related representatives are required for this Specification/contract. Note these roles are generic and they will be supporting on an ad-hoc basis in the overall delivery of the Contract and not just against an individual Specification.

- 1x Quality and Assurance Representative – This role is required to support in delivering quality process associated with safety critical signalling activities.
- 1x Health and Safety Representative – The H&S role is defined in the QUENSH menu, they will be providing support in safety meetings and review the CDM documentation.

- 1x Environmental Management Representative – This role is defined in the QUENSH menu, they will be providing support in Environment requirements, reviewing safe systems of work from an Environmental aspect.

3. DELIVERABLES / MILESTONES

- Programme for the delivery of the works. (does not have to be P6 format)
- Conceptual Design Statement to be accepted by the employer.
- Pre-Design Correlation.
- Approved Designs Packages for acceptance by the employer.
- Project documentation in accordance with the TfL project management processes.
- All Documentation to support the Network Rail GRIP process.
- CQP's for acceptance by the T&C Asset Engineer.
- Updated Master Records.
- Asset Register Updates.

4. SERVICE LEVEL AGREEMENTS (SLAS) / KEY PERFORMANCE INDICATORS (KPIS)

The supplier will issue an updated tracker weekly to the TfL Project Manager confirming progress achieved against the programme. The format to be agreed between both parties.

5. PROJECT PLAN / TIMESCALES

The TfL Project Manager will review and accept the suppliers programme of work agreeing adjustment or changes on a periodic basis. The programme should include a suitable mobilisation period to allow for documentation approvals and staff endorsement by the Asset Engineer.

(1) Turnham Green Tripcock Testers deliverables are non CBTC interfacing and will be commissioned into use with a direct interface with Legacy Signalling System. Project deliverables for Turnham Green are therefore not dependency to the 4LM CBTC requirements. Please allow a 10 weeks' notice period prior to the planned installation date to allow for booking with Sighted Assets team. A minimum 3-month period to be incorporated in the programme in alignment with the Sighted team process and requirements.

(2) East Putney: Project Manager will confirm the CBTC Contractors need by dates as they are firmed up, however, for the initial programme assume the East Putney installation work is required to be completed 16 weeks prior to the planned system testing key dates detailed below:

- Installation Complete – Early 2024
- SMA12 System Testing 1 – June 2024
- SMA12 Commissioning Date – November 2024 weekends where possible, circa July 2024.
- Any testing, commissioning and recovery activities can be assumed as on "go-live" circa Nov 24 and following the reversion period.
- It should be noted the above is based on the Principal Contractors current programme. As described the employer will be seeking a programme of works for acceptance by the employer that shall align to the current programme dates. In the event of programme movement, the impact shall be assessed accordingly.

Any recoveries can be assumed as post "go-live" circa Nov 24.

6. APPENDICES As provided at tender stage

In support of this Specification 2 the following appendices have been provided separately with the tender pack:

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

[redacted]

Attachment 3

Tender Reference: ENG Task 264 – 4LM Wayside Implementation

Specification 3

Non-Track Circuit Related PCB Isolation and Recovery

TABLE OF CONTENTS

0. ORGANISATIONAL OVERVIEW

0.1 Transport for London (TfL)

TfL was created in 2000 as the integrated body responsible for London's transport system. TfL is a functional body of the Greater London Authority. Its primary role is to implement the Mayor of London's Transport Strategy and manage transport services to, from and within London.

TfL manages London's buses, the Tube network incl. the Elizabeth Line, Docklands Light Railway, Overground and Trams. TfL also runs Santander Cycles, London River Services, Victoria Coach Station, the Emirates Air Line and London Transport Museum. As well as controlling a 580km network of main roads and the city's 6,000 traffic lights, TfL also regulates London's taxis and private hire vehicles and the Congestion Charge scheme.

Further background on what TfL does can be found on the TfL website here:

https://tfl.gov.uk/corporate/about-tfl/what-we-do

0.2 Business Unit

Capital Directorate is part of TfL's corporate professional services operating business supplying Project Management and Engineering support to the other business areas. There is a capital programme of works well over £1bn delivered as client managed programmes to the operating directorates such as London Underground (LU). The Four Lines Modernisation (4LM) Programme has been running several years and is not planned for completion until late 2025.

This commission is to support the ongoing activities that interface with Communications Based Train Control (CBTC) supplier but are not direct deliverables under that contract. Both internal and external signalling teams are needed to deliver supporting works and this scope requires competencies that are not readily available internally to TfL.

Signalling Migration Area (SMA) 12 is the area on the District line on the Wimbledon Branch extending from Fulham Broadway to the Network Rail (NR) boundary at East Putney.

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1. INTRODUCTION

1.1 Background

The 4LM ATC Redundant Assets project was set up to decommission or remove assets made redundant as a result introduction of the CBTC signalling to the SSR network. The project was split into phase 1 (safety & performance critical assets to be decommissioned) and phase 2 (assets to be decommissioned in the longer term).

The ATC Redundant Assets project 'phase 1' scope has been agreed by all relevant stakeholders, as detailed in 4LM-PSEC0056-SSL-SOW-00045 [redacted]

There are 9 discrete sub-work packages within 'phase 1'. One of these work packages involves removal, containment and safe disposal of capacitors, condensers and transformers that are strongly suspected of containing harmful Polychlorinated Biphenyls (PCB's). TfL are the recipients of an Environmental enforcement Notice we have been working towards fulfilling which in brief instructs TfL to remove all know PCB's from its infrastructure.

This specification has come about to further enforce and bolster parallel work streams already involved in the isolation and recovery of PCB's.

2.2 Objectives

The assets containing PCB identified in the materials engineer survey and subsequent 4LM PCB Tracker will formulate the full scope of equipment room PCB recoveries. The recoveries design / fuse schedule / design instruction will not always sit solely in the un-commissioned area as rooms are shared across migration boundaries and elements of the recoveries will be governed by the ATC commissioning and phased isolations. However the end objective of the project is compliance with Environment Agency enforcement notice, which is to remove all PCB containing assets from TfL infrastructure by the end of 2023, or as soon as possible thereafter to an agreed strategy. It should be noted that SMA04 redundant rooms detailed in the tracker are redundant signalling rooms after recent CBTC commissioning's.

In order to support the recoveries, the following will be required:

- Compliance / Assurance deliverables in accordance with TfL standards e.g. S1538.
- Provision of construction and safety documentation in accordance with the relevant standard / process.
- Isolation and recovery of assets in accordance with the isolation / recovery design.
- Provision of deliverables ensuring suitable handover to the end user.
- Provision of deliverables to support H&S file / AIR population

2. SCOPE

2.1 General Requirement

The over-arching requirement is to isolate and recover all known PCB's. This specification does not cover the isolation and recovery of Track Circuit PCB's, these works are currently covered by internal work streams.

Initially this specification will detail SMA4 which has 18 equipment rooms in total, 14 of which contain known PCB's. These rooms are detailed in the Redundant Assets PCB tracker.

The supplier shall make explicit reference to Recoveries design/ design instruction/ PCB recoveries tracker for avoidance of doubt in work scope. Following on from each equipment room isolation a 1-week reversion period shall be observed in order to allow TfL opportunity to monitor the legacy signalling system prior to any recovery work. This list is not an instruction to proceed with works and shall be used to identify progress within any given room. An agreed programme of works will be necessary with the project team to allow stakeholders and assets owners suitable warning of isolation in case a reversion is necessary. The supplier will support any reversions required.

2.2 Safety, Health and Environment Requirements

The supplier is expected to act as Principal Contractor or sole Contractor if no subcontractors are employed to align with CDM. The CDM associated documentation to support this arrangement will need to be drafted by the supplier and submitted for review and acknowledgment by the Employer ("TfL").

The Employer will be responsible for Principal Designer (PD) duties.

QUENSH (Quality, Environmental, Safety and Health) compliance will be expected from the Supplier to align the delivery arrangements with TfL/LU processes. QUENSH Contract Conditions and Menu have been provided as supporting documents to this tender. This is to enable suppliers working with TfL London Underground (LU) to have the appropriate requirements to ensure that risks are understood and controls embedded in plans and working arrangements.

PCBs are considered hazardous material and therefore suitable precautions to protect TfL assets, all staff / workers, and third parties is expected to be detailed in the safety documentation.

The transport and disposal of the capacitors is required to comply with all relevant TfL standards and legislation. This is required whether TfL waste

disposal sites are utilised or not. The employer will require evidence that transport vehicles are correctly fitted out for the purpose and the drivers are suitably certified to transport the materials.

The supplier is expected to record the numbers, type PCBs recovered, source and destination etc, for each shift undertaken. This should include both photographic and written records of the materials removed and transported.

All signalling Test & Commissioning qualified resource will require TfL endorsement by the TfL T&C Asset Engineer to work on this project. Suitable CVs will need to be submitted for endorsement through the standard TfL process.

All Commissioning Quality Plans (CQPs) will also be submitted for acceptance to the T&C Asset Engineer.

The below health and safety related representatives are required for this Specification/contract. Note these roles are generic and they will be supporting on an ad-hoc basis in the overall delivery of the Contract and not just against an individual Specification.

- 1x Quality and Assurance Representative – This role is required to support in delivering quality process associated with safety critical signalling activities.
- 1x Health and Safety Representative – The H&S role is defined in the QUENSH menu, they will be providing support in safety meetings and review the CDM documentation.
- 1x Environmental Management Representative – This role is defined in the QUENSH menu, they will be providing support in Environment requirements, reviewing safe systems of work from an Environmental aspect.

3. DELIVERABLES / MILESTONES

- A site survey of each of the (1 shift per room) 18 equipment rooms to familiarise the engineers with the complexity of isolations, the master copy designs, verify PCB quantities and complexity of recovery.
- A TIC assessment of the surveys, considerations made of the fuse isolation designs and a subsequent CQP for acceptance by the TfL T&C Asset Engineer detailing the isolation strategy for each of the equipment rooms.
- All CDM documentation and safety submissions such as: SOW / H&S strategy detailing the methodology and how many PCB's will be recovered will be required for acceptance prior to work commencing.
- A programme detailing isolation and recovery activities / time frames. This shall be issued with all necessary access requests to gain entry to TfL infrastructure.
- Equipment room isolations made and master copy designs held at the equipment room annotated with the specific isolations actioned.
- One-week reversion period observed allowing TfL opportunity to monitor the legacy signalling system. The supplier will be required to support any reversion deemed necessary by the employer if a fault occurs with legacy systems.
- Following on from a successful 1-week reversion period free from faults, recovery of isolated PCB's, disposal at an approved hazardous materials site or recover to the hazardous materials skips located at Stratford depot and Acton depot.
- In the event the supplier chooses to dispose of the PCB's themselves through an approved competent third party TfL will require copies of the transfer and disposal certificates.
- Fully annotated master copy recovery designs should be left at the equipment room each time isolations and recoveries are carried out.
- A 4LM Construction Manager will attend site accompanied by the supplier to snag the equipment room and check the designs have been satisfactorily annotated.
- A snag list produced and agreed between parties.
- Any agreed snags will be addressed / confirmed with photographic evidence or a further joint TfL site visit will be undertaken.

- The TfL Project Manager will advise the supplier once all the above steps have been satisfactorily completed.

4. SERVICE LEVEL AGREEMENTS (SLAS) / KEY PERFORMANCE INDICATORS (KPIS)

The supplier will issue an updated tracker weekly to the Employer confirming progress achieved against the programme. The format to be agreed between both parties.

5. PROJECT PLAN / TIMESCALES

The Employer will review and accept the suppliers programme of work agreeing adjustment or changes on a periodic basis. The programme should include a suitable mobilisation period to allow for documentation approvals and staff endorsement by the Asset Engineer.

The absolute completion date for these recoveries is 31 December 2023, therefore, the suppliers schedule should detail a suitable contingency period prior to this date to allow for any unexpected delays. (A minimum of one month should be allowed prior to 31/12/2023).

6. APPENDICES As provided at tender stage

In support of this Specification 3 the following appendices have been provided separately with the tender pack:

- [redacted]
- [redacted]

[redacted]

Attachment 4

Tender Reference: ENG Task 264 – 4LM Wayside Implementation

Specification 4

Other potential Scope of Works

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0. ORGANISATIONAL OVERVIEW

0.1 Transport for London (TfL)

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0.2 Business Unit

Capital Directorate is part of TfL's corporate professional services operating business supplying Project Management and Engineering support to the other business areas. There is a capital programme of works well over £1bn delivered as client managed programmes to the operating directorates such as London Underground (LU). The Four Lines Modernisation (4LM) Programme has been running several years and is not planned for completion until late 2025.

This commission is to support the ongoing activities that interface with Communications Based Train Control (CBTC) supplier but are not direct deliverables under that contract. Both internal and external signalling teams are needed to deliver supporting works and this scope requires competencies that are not readily available internally to TfL.

Signalling Migration Area (SMA) 12 is the area on the District line on the Wimbledon Branch extending from Fulham Broadway to the Network Rail (NR) boundary at East Putney.

1. INTRODUCTION

1.1 Background

TfL's Four Lines Modernisation (4LM) Programme is an upgrade of London Underground's Sub-Surface-Rail Network (Circle, District, H&C and Metropolitan tube lines). This upgrade involves the design, installation and commissioning of a new Communications Based Train Control (CBTC) signalling system, provided by the main signalling contractor – Thales - alongside numerous other supporting infrastructure works delivered by 4LM.

The purpose of this Specification is to define the scope that the 4LM programme require to be enabled to meet TfL's obligations and support the commissioning of CBTC in Signal Migration Area 10 & 12 (SMA 10 & 12).

The 4LM programme is coming near the end of installation and moving into the phase of commission and recovery works to enable handover of the assets to the maintainer. There are several relatively minor scopes that come up at short notice and require specialist signalling resources to complete.

This Specification details potential scope of works that the supplier could assist the 4LM team to deliver promptly when identified. The information contained is not to be considered as exhaustive set of deliverables and the supplier should note that the scope of works may change/update as required by TfL. The services of this Specification are optional and should TfL require the services they will engage with the Supplier as and when required.

1.2 Objectives

This specification details additional works that **may be** agreed with the Supplier as additional scope items to the core objectives detailed in the other Specifications.

- Compliance/Assurance deliverables in accordance with TfL and Network Rail standards e.g. S1538 and NR/L2/RSE/02009, NR/L2/SIG/30003 (accepted by the employer where Network Rail interface exists).
- Compliance/Assurance deliverables to support the employer deliver its obligations in accordance with the joint engineering assurance arrangements (SUP-R280-LUL-RPT-00031). This document defines the relationships and arrangements between TfL and Network Rail to enable project delivery on Network Rail (NR) infrastructure and/or assets. Provision of construction and safety – where Network Rail interface exists.

2. SCOPE

2.1 General Requirement

The requirements described in this specification will generally be site-based activities with supporting documentation to allow the signalling activity to be completed under the safety critical process defined under TfL standards. The scope will require a range of signalling competencies covering installation, test and authority to work competencies that are often scarce resource with various availability commitments. Therefore, the option for the Employer explores supplier's availability to support these items on both a task specific and time-based request is of benefit to expediate delivery and support 4LM's wider commitment to delivery milestones. The supplier is expected to price these items after contract award when more detailed information associated with the specific sites involved can be provided but the descriptions below give a flavour of the work involved.

The scope items being considered are:-

1) Trainstop installation support in conjunction with TfL's internal track delivery team. This is the physical fitting of the trainstop and associated wooden ramps to allow the track to be re-opened for traffic. It does not include testing and commissioning.

2) The installation of the trainstop air valve and pipe work to enable the mechanical operation of a trainstop. It does not include full testing and commissioning.

3) The transfer of the signalling control cable from a legacy mercury Current On Line Relay (COLR) unit to a new solid-state Current On Line Relay (COLR) that is in proximity. This would include the test and commissioning of the new COLR within the legacy signalling system.

4) The recovery of redundant track circuits that did form part of the legacy signalling system but are not part of the new CBTC system.

5) There is a potential that the traction boundary at Putney Bridge will be moved to East Putney to align with the proposed CBTC signalling boundary with Network Rail (NR). This will result in the installation of Insulated Block Joint (IBJs), alterations to track circuits, new Rail Gap Indicators (RGIs), and new COLRs. This could include design, install and commissioning. This a further move of the boundary described in other specifications which is already in hand.

6) The removal of redundant wires from Interlocking Machine Rooms (IMRs) installed but then subsequently descoped.

7) The recovery of legacy signalling assets made redundant from the commissioning of the CBTC System installed by Thales.

2.2 Safety, Health and Environment Requirements

The supplier is expected to act as Principal Contractor or sole Contractor if no subcontractors are employed to align with CDM. The CDM associated documentation to support this arrangement will need to be prepared by the supplier and submitted for review and acknowledgment by the Employer ("TfL").

QUENSH (Quality, Environmental, Safety and Health) compliance will be expected from the Supplier to align the delivery arrangements with TfL/LU processes. QUENSH Contract Conditions and Menu have been provided as supporting documents to this tender. This is to enable suppliers working with TfL London Underground (LU) to have the appropriate requirements to ensure that risks are understood and controls embedded in plans and working arrangements.

It should also be noted that there may be a Network Rail interface and works on NR infrastructure therefore application and compliance to NR standards, processes and accreditation/appointment will be required. The employer will be responsible for Contractor Engineering Manager (CEM) duties.

All signalling qualified staff will require TfL endorsement by the TfL T&C Asset Engineer to work on this project. Suitable CVs will need to be submitted for endorsement through the standard TfL process.

All Commissioning Quality Plans (CQPs) will also be submitted for acceptance to the T&C Asset Engineer.

The LU signalling system still utilises pressurised air to control such equipment as legacy shunt signals point machines and trainstop. These air main assets are safety critical in nature and require specialist staff to undertake alterations. The supplier should ensure they can demonstrate relevant training and clearly define the relevant control measures being used to work on these assets.

The supplier will be required to supply assurance, construction and safety documentation in accordance with the infrastructure managers standards, practices and processes.

Network Rail ,access is to be considered as part of the planning activities. Staff undertaking this work will be required to be Network Rail Competent in terms of processes and working practises.

The below health and safety related representatives are required for this Specification/contract. Note these roles are generic and they will be supporting on an ad-hoc basis in the overall delivery of the Contract and not just against an individual Specification.

- 1x Quality and Assurance Representative – This role is required to support in delivering quality process associated with safety critical signalling activities.
- 1x Health and Safety Representative – The H&S role is defined in the QUENSH menu, they will be providing support in safety meetings and review the CDM documentation.
- 1x Environmental Management Representative – This role is defined in the QUENSH menu, they will be providing support in Environment requirements, reviewing safe systems of work from an Environmental aspect.

2.3 Competencies Required

The below resource roles have been identified as required for the scope of works. However the Supplier can provide additional resources as may be required to deliver the works.

Network Rail (NR) Test in Charge
NR Principal Tester
NR Functional Tester
NR Mod 3: Signalling Verification Tester
NR Installer
NR Contractor's Engineering Manager
NR Senior Designer
LU Tester in Charge
LU Principal Tester
LU Functional Tester
LU Installer
(Category) CAT S Checker
LU Signal Designer
LU Senior Signal Designer
LU Principal Designer

All these roles are Signalling competencies as defined within the IRSE competency assessment. Further information on these roles can be found on the IRSE website under licensing “Licence Categories Summaries” document, https://www.irse.org/Licensing/Licensing-Documentation. This has also been provided is an appendix.

3. KEY DELIVERABLES (but not limited to)

3.1 Programme for the delivery of the works as and when required which aligns to the overarching 4LM programme.

- Relevant Infrastructure Manager Project Documentation
- Project documentation in accordance with the TfL project management processes.
- Design Documentation for acceptance by the Employer.
- Assurance documentation to support the NR interface in compliance with TfL and NR standards and processes.
- CQP's/MTP for acceptance by the T&C Asset Engineer.
- Updated Master Records.
- Asset Register Updates.
- H&S / AIR documentation.

3.2 Trainstop installation support

- A SoW will be required to cover the working arrangements on installing the trainstop on the sleeper and the associated wooden ramps.
- Installation of the bolts and trainstop ensuring alignment and installation to LU Standards.
- Installation of the two wooden ramps either side of the trainstop ensuring alignment and installation to LU Standards.
- The trainstop will be left pegged down after installation and agreed handover documents completed.

3.3 Trainstop air valve installation

- A SoW will be required to cover the working arrangements on installing the air main tee piece and the valve on the associated bracketry. This will include the isolation and re-commissioning of the air main to facilitate the installation. It will not include the installation of the bracketry.
- The air hoses between the air main and valve, and the valve and trainstop will be installed.

- The trainstop and air assembly will be mechanically tested to ensure compliance with LU standards then left pegged down and agreed handover documents completed.

3.4 COLR commissioning activities

- The LU Power and electrical team may install new COLR to support the replacement of legacy mercury relays. This will include all conductor rail connections but no associated signalling works.
- The signalling supplier will produce a CQP to allow the transfer of the signalling control cable from the legacy relay to the new COL Relay.
- The new COLR will be commissioned utilising the approved CQP.
- The redundant legacy COLR will recovered by others.

3.5 Redundant track circuit recovery

- The 4LM CBTC contractor's recovery design will be reviewed and a recovery SoW/CQP will be produced to recover any redundant track circuits and confirm the CBTC system is not impacted from the change prior to handing the track back.

3.6 Wimbledon branch traction boundary move

- There is a potential for 4LM to relocate the traction boundary closer to the junction just south of East Putney station.
- This will require a small legacy signalling design completed to both LU and Network Rail (NR) standards. The scope will likely cover a new COLR with RGI and Co-acting RGI installed on NR maintained infrastructure. This will include adjustment to IBJs and modification to Track circuits for the purpose of creating an isolation. Therefore, parallel design working will be required with the CBTC Signalling supplier to ensure compatibility of designs.
- installation and commissioning activities will be required to support the relocation of this traction boundary.

3.7 Redundant red wire installed in IMRs

- After the descope of District West SMAs there was some red wire installation not recovered by the CBTC supplier but installed to a design.

- These designs should be surveyed against what has been installed to allow full recovery at the four applicable IMRs. These wires have not been commissioned but just partially installed.
- The marked-up designs will be returned to confirm removal of the installed assets with suitable photographic evidence.

3.8 Recovery of redundant legacy signalling assets

- The commission of the 4LM new CBTC signalling system has made redundant several legacy signalling assets that need to be recovered for operational or safety reasons.
- The signalling supplier will produce all appropriate documentation to allow the recovery of and identify redundant signalling asset that needs removal, this includes: design, recovery, and associated test & commissioning activities necessary.
- The signalling supplier will recover the redundant equipment undertaking the required isolations ensuring all relevant testing and commission necessary is completed to safe work activities and such that the operational railway is not impacted.
- A suitable level of handover documentation will be provided to demonstrate the state of the railway after the assets have been recovered.

5 MILESTONES

The employer will review and accept the suppliers programme of work agreeing adjustment or changes on a periodic basis. The programme should include a suitable mobilisation period to allow for documentation approvals and employer endorsement.

Project activities to be completed by the planned system testing dates namely:

- Installation Complete – Early 2024.
- SMA12 System Testing 1 – June 2024.
- SMA12 Commissioning Date – November 2024 weekends where possible, circa July 2024.
- Any testing, commissioning and recovery activities can be assumed as on “go-live” circa Nov 24 and following the reversion period.
- It should be noted the above is based on the Principal Contractors current programme. As described the employer will be seeking a programme of works for acceptance by the employer that shall align to the current programme dates. In the event of programme movement the impact shall be assessed accordingly.

6. SERVICE LEVEL AGREEMENTS (SLAS) / KEY PERFORMANCE INDICATORS (KPIS)

It is not envisaged that any service level agreement or KPIs will be assigned to these activities if instructed, however, any such request would be agreed between the parties before the works are priced and awarded.

7. PROJECT PLAN / TIMESCALES

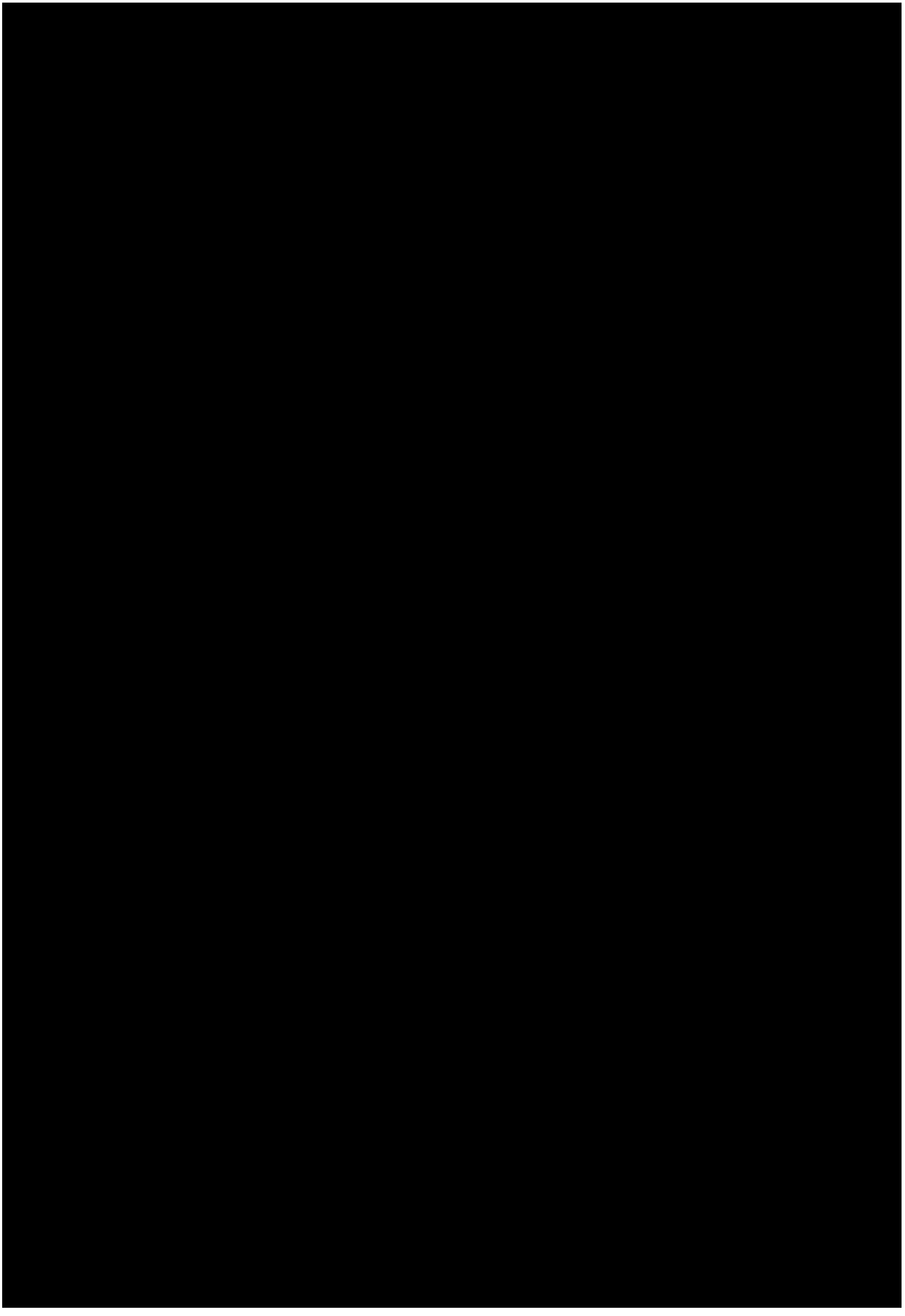
The supplier will agree suitable timescales for delivering these work activities during discussions prior to instruction and pricing. However, if contracted will all be within the timescales of the contract period.

8. APPENDICES As provided at tender stage

In support of this Specification 4 the following appendices have been provided separately with the tender pack:

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

[redacted]



[redacted]

Attachment 7

F0780 A18 Contract Menu

This Contract Menu must be used in conjunction with Category 1 Standard S1552 "Contract QUENSH Conditions''

Contract Menu

Contract No:	**ENG Task 264**
Contract Name	**4LM Wayside Implementation**
Client:	**Transport for London**
Supplier:	**SIMS Ltd**

Principal Contractor: Yes ☑ No ☐

Guidance

The menu is a tool which is used by the Client to identify conditions that apply to specific contracts and communicate these conditions to the Supplier.

How to complete the menu

1) The Client evaluates the scope of work and enters 'Y' or 'N' in the 'Identified by the Client' column of the menu against each condition selected as applicable or not applicable to the Contract. In the 'Other documents / comments' column the Client can make references to other documents which are supplementary information which is available although not contained within the QUENSH manual but should be considered by the Supplier when they review the conditions. Copies of any additional documents identified in the menu shall be made available to the Supplier. All documents referenced in the Menu shall be current issue, unless otherwise advised. This column can also be used to communicate information (comments) to the Supplier which may be of use to the Supplier when reviewing the conditions.

2) The Client fills in 'Client menu (Invitation to Tender)' section on the last page of the menu and issues the menu as part of the ITT.

    a) The Supplier receives the ITT, evaluates the scope of work and, as a requirement of the tendering process, inserts 'Y' or 'N' in the 'Identified by the Supplier' column of the menu against each condition selected as being applicable. These selections may be different from those identified by the Client. Where the Supplier's selection differs from the Client's selection, a clear explanation of the reason for these differences shall be given by the Supplier. A reference to these explanations shall be put in the 'Reference to explanation' column on the menu.

    b) The Supplier representative signs and dates the 'Supplier menu (Tender)' on the last page of the menu and submits it with the tender, for consideration by the Client.

    c) Differences in the Client and Supplier menu selections will be discussed and resolved with the Client at subsequent tender review meetings. The agreed final version of the menu selections shall form a mandatory part of the Contract and shall be complied with by all Suppliers and their sub-contractors.

    d) The menu shall be subject to project version and document control.

Queries on the menu

Any queries in relation to the Contract QUENSH Conditions selected on the menu are to be referred to the Client representative, see contact details/address on last page of the menu.

Contract menu

Requirements in QUENSH

Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	**Topic**	**Other documents / Comments**	**Y / N**	**Y / N**	**Reference to explanation - see Section 2a in attached Guidance Notes**
4	Agreement of the applicable QUENSH contract conditions				
5	Supplier's selection of sub-contractors		**Y**	Y	
6	Identification of Safety Critical Activities		**Y**	Y	
7	Works Environmental Management		**Y**	Y	
8	Emergency Plan		**Y**	Y	
9	Method Statements		**Y**	Y	
10	Health, Safety and Environment File		**Y**	Y	
11	Pre-start LU health, safety and environment meeting		**Y**	Y	
12	Supplier's site induction		**Y**	Y	
13	Site Person in Charge		**Y**	Y	
14	**Staff requirements**				
14.1	**Behaviours**				
14.1.1	Alcohol and drugs		**Y**	Y	
14.2	**Control of hours worked**				
14.2.1	Working Time Regulations		**Y**	Y	
14.2.2	Fatigue		**Y**	Y	
14.3	**Knowledge**				
14.3.1	English language		**Y**	Y	
14.3.2	Access Card and Worksite Briefing		**Y**	Y	
14.3.3	Visitors to sites		**Y**	Y	
14.4	**General competence**				

Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	**Topic**	**Other documents / Comments**	**Y / N**	**Y / N**	**Reference to explanation - see Section 2a in attached Guidance Notes**
14.4.1	Evidencing competence of safety critical staff		**Y**	Y	
14.4.2	Identification of safety critical staff		**Y**	Y	
14.4.3	Competent external safety critical personnel		**Y**	Y	
14.4.4	Training	All signalling qualified staff will require TfL endorsement by the TfL T&C Asset Engineer to work on this project. Suitable CVs will need to be submitted for endorsement through the standard TfL process.	**Y**	Y	
14.4.5	Asset specific competence		**Y**	Y	
14.5	**Medical requirements**		**Y**	Y	
14.6	**Identification of Suppliers staff**		**Y**	Y	
14.7	**Clothing**		**Y**	Y	
15	**Permits and licences**				
15.1	LU specific permits and licences		**Y**	Y	
15.2	Permits, licences and certificates for Supplier's staff		**Y**	Y	
16	**The Principles of Access**				
16.1	Introduction		**Y**	Y	
16.2	Access to Stations		**Y**	Y	
16.3	Access to Track		**Y**	Y	
16.4	Access to depots		**Y**	Y	
17	**Applying for Planned Access**				
17.1	Introduction		**Y**	Y	
18	Applying for General Access		**Y**	Y	

Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	**Topic**	**Other documents / Comments**	**Y / N**	**Y / N**	**Reference to explanation - see Section 2a in attached Guidance Notes**
18.1	Constraints that apply to Generic Access		**Y**	Y	
19	Access for fault repair		**N**	Y	
20	Operational Assurance		**Y**	Y	
21	**Closures and possessions**				
21.1	Requirements for closures		**Y**	Y	
21.2	Requirements for possessions		**Y**	Y	
22	**Controls at point of access**				
22.1	Publication of works		**Y**	Y	
22.2	Checks at point of access		**Y**	Y	
22.3	Signing-on with the Station Supervisor		**Y**	Y	
22.4	**Track specific requirements**				
22.4.1	Person providing protection		**Y**	Y	
22.4.2	Possessions		**Y**	Y	
23	Removal of supplier's personnel from LU Premises		**Y**	Y	
24	Incidents		**Y**	Y	
25	Notification of regulatory concern or action		**Y**	Y	
26	Confidential Incident Reporting and Analysis System (CIRAS)		**Y**	Y	
27	**Monitoring**				
27.1	LU inspections		**Y**	Y	
27.2	Monitoring the supply chain		**Y**	Y	
27.3	Health, safety and environmental surveillance by the supplier's personnel		**Y**	Y	
27.4	Work location inspection and audit		**Y**	Y	
27.5	Timescales for rectifying non-compliances		**Y**	Y	
28	Radio transmitters and transceivers		**Y**	Y	

Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	**Topic**	**Other documents / Comments**	**Y / N**	**Y / N**	**Reference to explanation - see Section 2a in attached Guidance Notes**
29	Mobile phones		**Y**	Y	
30	Knives		**Y**	Y	
31	Site health, safety and environment committee		**Y**	Y	
32	Site housekeeping and security		**Y**	Y	
33	Accidental damage, obstruction or interference with assets		**Y**	Y	
34	Delivery of materials		**Y**	Y	
35	**Conveyance of loads**				
35.1	Conveyance of loads on lifts and escalators		**Y**	Y	
35.2	Conveyance of hazardous materials and substances		**Y**	Y	
36	Asbestos (non asbestos removal projects)		**N**	Y	
37	Working in or near lifts and escalators		**Y**	Y	
38	Work on or adjacent to utilities and High Voltage cables (buried services)		**Y**	Y	
39	Working on or about the track		**Y**	Y	
40	Access to electrical sub-stations, working equipment, relay and other secure rooms		**Y**	Y	
41	Entering areas with gaseous fire suppression systems		**Y**	Y	
42	**Fire prevention**				
42.1	General requirements		**Y**	Y	
42.2	Temporary fire points		**Y**	Y	
42.3	Timber		**Y**	Y	
42.4	Composites		**Y**	Y	
42.5	Sheeting materials		**Y**	Y	
42.6	**Gas cylinders**				

Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	**Topic**	**Other documents / Comments**	**Y / N**	**Y / N**	**Reference to explanation - see Section 2a in attached Guidance Notes**
42.6.1	Use of gas cylinders in below ground locations		**N**	N	
42.6.2	Storage of gas cylinders (above ground)		**N**	N	
42.7	**Flammable and highly flammable materials**				
42.7.1	Use of flammable and highly flammable materials below ground		**Y**	Y	
42.7.2	Storage of flammable and highly flammable materials below ground		**Y**	N	No requirment to store below ground
43	**Hot work and fire hazards**				
43.1	Hot work		**Y**	Y	
43.2	Reasonable notice of works		**Y**	Y	
43.3	**Precautions**				
43.3.1	Buildings and assets		**Y**	Y	
43.3.2	Gas cylinders		**Y**	Y	
43.3.3	Gas detection		**Y**	Y	
44	**Storage**				
44.1	General requirements for storage		**Y**	Y	
44.2	Trackside storage		**Y**	Y	
44.3	Hazardous materials and substances		**Y**	Y	
44.4	Allocation of space on operational property		**Y**	Y	
45	Plant and equipment		**Y**	Y	
46	Clearance approvals		**Y**	Y	
47	Access equipment		**Y**	Y	
48	Temporary works		**N**	Y	
49	Temporary fences and hoardings		**N**	Y	
50	**Temporary lighting and power supplies**				
50.1	General requirements		**Y**	Y	

Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	**Topic**	**Other documents / Comments**	**Y / N**	**Y / N**	**Reference to explanation - see Section 2a in attached Guidance Notes**
50.2	Lighting in tunnels and shafts		**Y**	Y	
51	Screening of lights and positioning		**Y**	Y	
52	**Environmental requirements**				
52.1	General environmental requirements		**Y**	Y	
52.2	Environmental nuisance		**Y**	Y	
52.3	Water		**Y**	Y	
52.4	Waste management		**Y**	Y	
52.5	Noise and vibration		**Y**	Y	
52.6	Archaeology, historical interest and listed buildings		**N**	N	
52.7	Wildlife and Habitats		**Y**	Y	
52.8	Resource Use		**Y**	Y	
52.9	Pest control		**N**	N	
52.10	Land and water pollution prevention		**Y**	Y	
53	**Quality requirements**				
53.1	Records		**Y**	Y	
53.2	Retention period		**Y**	Y	
53.3	Availability of records for inspection		**Y**	Y	
53.4	Statistical process control, audit and inspection procedures		**Y**	Y	
53.5	General quality requirements		**Y**	Y	
53.6	Quality Plan		**Y**	Y	
53.7	Testing and inspection		**Y**	Y	
53.8	Certification of conformity		**Y**	Y	
53.9	Quarantine		**N**	Y	
53.10	Traceability		**Y**	Y	
53.11	Maintenance and servicing		**Y**	Y	

Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	**Topic**	**Other documents / Comments**	**Y / N**	**Y / N**	**Reference to explanation - see Section 2a in attached Guidance Notes**
53.12	Design		**Y**	Y	
53.13	Computer aided design		**Y**	Y	
53.14	Asset commissioning and handover		**Y**	Y	

Other requirements / comments

Not all the above activities are applicable to all the specification but this menu covers the breadth of the contract.

Client/Supplier approval

Client Menu (Invitation to Tender)

Supplier Menu (Tender)

Contract Menu (Final Approval of Menu)

Evidence shall be recorded of any amendments to the Client's menu which were agreed in establishing the Contract Menu.

Client's representative approval:	_____	Signature :	_____
Supplier's representative acceptance:	_____	Signature :	_____