The cable route runs through Bromley-By-Bow and Bow Road stations.

The *Contractor* notes that the new feeder's unit protection scheme design/modifications, the protection study, relay parameterisation and full protection scheme commissioning tests shall be done by the Package 5B Contractor.

WI105.1.3 Greenwich Substation site to Mansell Street substation site

(1) The *works* for this element are detailed in Conceptual Design Statement CDSs SSR-R0001-CDS-0004 and SSR-R0001-CDS-0005.

The *works* are new cable circuits by cutting and diverting within Mile End substation cable basement area the existing 2-off 22kV cable circuits currently connecting between Mansell Street substation site and Greenwich Station 22kV substation site; the *Contractor* ensures correct phasing and joints the cable.

The diverted feeders will be labelled F2223 GREENWICH, F2224 GREENWICH (Mile End substation site to Greenwich 22kV substation site) and F2227 MANSELL STREET, F22228 MANSELL STREET (Mile End substation site to Mansell Street substation site).

(2) Each diverted cable circuit is required to carry 511A in distribution system degraded mode. The deduced conductor size to achieve this rating is detailed in section 5 of the cable sizing reports LU-SSR-2039-D053-RPT-001 (F2223) and LU-SSR-2039-D053-RPT-002 (F2224).

The existing cable route runs from Mansell Street substation to Mile End substation via Stepney Green, Whitechapel and Aldgate East Stations.

The *Contractor* notes that the new feeder's unit protection scheme design/modifications, the protection study, relay parameterisation and full protection scheme commissioning tests shall be done by the Package 5B Contractor.

WI105.1.4 Griffith House BSP to Bond Street substation site

(1) The *works* for this element are detailed in Conceptual Design Statement CDSs LUL-SSR-R0001-CDS-006 (F219) and LUL-SSR-R0001-CDS-007 (F220).

The *works* are a new 6kM cable route consisting 2-off 11kV cable circuits connecting from Griffith House BSP substation site to Bond Street substation site; *Contractor* ensures correct phasing and joints the cable.

The *Contractor* notes that the delivery into service of the two cable routes shall be staged to avoid paralleling of the Griffith House and Cromwell Curve networks.

The two new feeders will run segregated and will be designated F219 GRIFFITH HOUSE and F220 GRIFFITH HOUSE.

The *works* are also a new 3.5km; 2-off 40-core Fibre optic cable to run between Bond Street substation site to Notting Hill Gate substation site; the *Contractor* joints the fibre optic pilot cable cores.

The FO cables will be designated P2067 and P2068.

The *works* are also a fibre optic distribution rack complete with its optical distribution frames at Bond Street substation site, the optical distribution rack shall conform to LU standard S1913;

The *works* also include decommissioning the existing HV feeder circuits F219 CROMWELL CURVE and F220 CROMWELL CURVE feeding from Cromwell Curve substation and recover the redundant HV cabling.

(2) Each cable circuit is required to carry 201A in distribution system degraded mode. The deduced conductor size to achieve this rating through varying containment sections of the cable route is detailed in section 5 of the cable sizing reports MLPSL-LUL-SSR-005 (F219) and MLPSL-LUL-SSR-006 rev2 (F220).

The proposed route runs through Edgware station, Bouverie Place substation, Paddington, Bayswater, Queensway, Lancaster Gate, Marble Arch and Bond street stations.

The *Contractor notes* that the new feeder's unit protection scheme design/modifications, the protection study, relay parameterisation and full protection scheme commissioning tests shall be done by the Package 5B *Contractor*.

WI105.1.5 Griffith House BSP to Notting Hill Gate substation site.

(1) The *works* for this element are detailed in Conceptual Design Statement CDS LUL-SSR-R0001-CDS-008 (F291) and LUL-SSR-R0001-CDS-009 (F292).

The w*orks* are a new a new 2.5kM cable route consisting 2-off 11kV cable circuit connection from Griffith House BSP 11kV switchboard to the existing 11kV switchboard at Bond Street substation. The *Contractor* ensures correct phasing and joints the cable.

The *Contractor* notes that the delivery into service of the two cable routes shall be staged to avoid paralleling of the Griffith House and Cromwell Curve networks.

The new feeders will run segregated and be designated F291 GRIFFITH HOUSE and F292 GRIFFITH HOUSE.

The *works* are also the decommissioning of the existing HV feeder circuits F291 CROMWELL CURVE and F292 CROMWELL CURVE feeding from Cromwell Curve substation and recovers the redundant HV cabling;

(2) Each cable circuit is required to carry 257A in distribution system degraded mode. The deduced conductor size to achieve this rating through varying

containment sections of the cable route is detailed in section 5 of the cable sizing reports LU-SSR-2039-MD169-RPT-001 (F292) and LU-SSR-2039-MD169-RPT-002 (F291).

The proposed cable route runs through Edgware, Paddington and Bayswater stations.

The *Contractor notes* that the new feeder's unit protection scheme design/modifications, the protection study, relay parameterisation and full protection scheme commissioning tests shall be done by the Package 5B *Contractor*.

WI105.1.6 Cromwell Curve switch-house to South Kensington substation site

(1) The *works* for this element are detailed in Conceptual Design Statement CDS LUL-SSR-R0001-CDS-0007.

The *works* are a new 1.36kM cable route for 1-off 11 kV cable circuit between Cromwell Curve 11kV switch-house to South Kensington substation site, *Contractor* ensures correct phasing and joints the cable.

The new feeder shall be designated F734 CROMWELL CURVE and will run segregated from the existing feeder F298.

(2) Transfer the existing feeder F293 Victoria from HV panel 9 on bus-section 2 to HV panel 16 (end panel) of bus-section 3; the feeder's unit protection scheme design/modifications, the protection study, relay parameterisation and full protection scheme commissioning tests shall be done by the Package 5B Contractor.

The cable circuit is required to carry 235A in distribution system degraded mode. The deduced conductor size to achieve this rating through varying containment sections of the cable route is detailed in section 5 of the cable sizing report MKPSL-LUL-SSR-0012 (F734).

The identified route runs through Gloucester Road station.

The *Contractor notes* that the new feeder's unit protection scheme design/modifications, the protection study, relay parameterisation and full protection scheme commissioning tests shall be done by the Package 5B *Contractor*.

WI105.1.7 West Ham substation site to Stratford Market Depot substation site

(1) The *works* for this element are detailed in Conceptual Design Statement CDS LUL-SSR-R0001-CDS-00012.

The *works* are a new 1.8kM cable route for 22 kV cable circuit between West Ham 22kV switchboard to Stratford Market Depot substation 22kV switchboard, the *Contractor* ensures correct phasing and joints the cable.

The new feeder will be designated F22300 STRATFORD MARKET DEPOT

The *works* are also two (2) new 1.8kM 40-core Fibre optic cable to run between West Ham substation and Stratford Market Depot; the *Contractor* joints the fibre optic pilot cable cores.

The FO cables will be labelled P2064 and P2066.

The *Contractor* notes that P2066 (Stratford Market Depot) will be jointed to P2066 (Mile End) at West Ham to form a localised loop/ring.

The *works* are also a fibre optic distribution rack complete with its optical distribution frames at Stratford Market Depot, the optical distribution rack shall conform to LU standard S1913;

(2) The cable circuit is required to carry 273A in distribution system degraded mode. The deduced conductor size to achieve this rating through varying containment sections of the cable route is detailed in section 5 of the cable sizing report MKPSL-LUL-SSR-004 (F22300).

The identified route will run directly from West Ham substation to Stratford Market Depot substation.

The *Contractor* notes that the new feeder's unit protection scheme design/modifications, the protection study, relay parameterisation and full protection scheme commissioning tests shall be done by the Package 5B Contractor.

WI110 Project objectives and philosophy

(1) The SSR Power Supply Upgrade project provides increased traction power capacity to the sub surface lines (District, Circle, Metropolitan and Hammersmith & City Lines). The Upgrade Works are delivered through seven (7) packages.

During the progress of power reinforcement works various changes have occurred with the consequent changes to the power demand and network topology. Package 5 provides mitigation to this by increasing network resilience.

(2) The objectives of the SSR Power Upgrade Package 5 are to achieve the following;

- Improve network capacity to meet Standard S1972 (formerly Specification SP1802 Rev.2) – Security Planning Criteria for the Powerlink System (formerly Powerlink Tech Spec. SP81802 Rev.2)
- Improve the overall network resilience and enhance robustness

- Align to Mayor of London's objective of the *Employer* having a network fit for the future

WI115 Site location and Working Areas

(1) Details of the location and associated issues of the *works* are included in the Site Information

WI120 *Contractor's* design responsibilities

(1) The *works* to be provided under Package 5A are described within the Works Information. The *Contractor* submits complete detailed design for; the cable route, cable containment, installation works including the installation methodology, inspection and test plans and a staged programme for *works* to the *Project Manager* for acceptance.

(2) In the case that the *Project Manager* requires amendments to the design; the *Project Manager* informs the *Contractor* of any required amendment. The *Contractor* amends the *Contractor's* design and submits the amended design to the *Project Manager* for acceptance. The *Contractor's* design makes provision for all the necessary temporary and enabling *works* to complete the *works* and must be suitable staged for operational service during the *works* undertaking.

WI125 General Statement of constraints on how the *Contractor* Provides the Works

(1) Detailed constraints of how the *Contractor* Provides the *Works* are more fully set out in section WI200; however the *Contractor* notes in particular the following constraints with respect to Providing the *Works*:

- Installation *works* including testing and commissioning will require invasive access by the *Contractor* to live and operational equipment including22kV switchgear, posing a consequent risk of trip (RoT).

(2) The *Contractor* complies and Provides the Works, inter alia, in accordance with the Standards. This Works Information sets out the specific Standards, with which the *Contractor* must comply, with each applicable Standard being stated in this Works Information. The *Contractor* familiarises himself with these Standards, and ensures that he has taken them into consideration when delivering the *works*.

(3) Whilst undertaking work for the *Employer* the *Contractor*, where applicable, identifies that there are elements of the *works* for which there is no stated Standard in this Works Information or if the *Project Manager* requires that certain parts of the *works* are to be undertaken to a Standard not stated herein this constitutes a compensation event under clause 60.1(1) of the *conditions of contract*.

(4) The Standards applicable to the *works* include QUENSH (S1552) which in itself refers to a significant number of other Standards for the control of health, safety, quality and environmental risks when working in, on and around the *Employer's* assets. WI100 Appendix 01 to this section sets out the main Standards that QUENSH refers to, however it is for the *Contractor* to fully familiarise himself with the requirements of QUENSH.

(5) WI100 Appendix 02 sets out the relevant Management System Procedures (MSPs) relevant to this Contract. Where reference is made to 'Powerlink' this shall be deemed to mean 'London Underground'. Any clarifications required (including but not limited to cross-references to other documents, conflicting requirements etc) should be formally raised by the *Contractor* to the *Project Manager*. It should be noted that the requirements of LU Standard 'S1552 - Contract QUENSH Conditions' take precedence unless otherwise directed by the *Project Manager*.

WI130 The *Contractor's* Site inspection

(1) The *Contractor* is deemed to have visited all the worksites within the Site and inspected and examined the Site and its surroundings in order to:

- understand the access to the Site,
- Assess the services, plant and accommodation available, and
- Assess the condition and layout of the Site.

If the *Contractor* considers that there are inadequacies in the information that pose potential risk to progressing the *works*, then the *Contractor* must notify the *Project Manager* as soon as he becomes aware.

WORKS INFORMATION

WI 200

CONSTRAINTS ON HOW THE *CONTRACTOR* PROVIDES THE *WORKS*

Document History: **Version:**	**Prepared by**		**Quality Checked by**		**Legal Review**		**Peer Review**	
	Name	Date	Name	Date	Tick	Date	Name	Date
1.0	Henry Bwire	07/05/14	Daren Stinton	07/05/14	☐			
1.1								
2.0	Henry Bwire		Daren Stinton		☐		Ailsa Waygood	
3.0					☐			
4.0					☐			
5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

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WI205 Overriding Constraints and Requirements

The *Contractor* is provided with the *Employer*'s Sites relating to this *works* as detailed in the Site Information. The management processes for access and egress to site are provided.

The *Contractor* utilises the Site for the construction and installation of the *works*, also for Equipment and Plant and Materials storage and pre-assembly as required by the *works*.

The *Contractor* notes and takes cognisance of the following constraints present during the *works*

- Use of the site; *Contractor* will be responsible for all site activities under CDM rules
- Timing of the *works*; the *Contractor* provides a programme for delivery of the *works*, including any staging *works* as may be required for the *Project Manager's* and/or *Employer's* approval.
- The *Contractor* completes the *works* in the order as noted within Contract Data Part 1. The *Contractor* allows a minimum period of two weeks between the Completion of each *section*.
- Access to the Site; The *Contractor* shall be responsible for access and egress from Site, including where the public are present
- Noise, vibration and night lighting; some of the Sites where the *works* will be ongoing are within close proximity to residential housing; the *Contractor* shall take mitigating action to minimise the effect of noise, vibration and/or night lighting.
- Working in Substations. Subject to the prevailing Substation Access Procedure and any LUL operational restrictions the *Contractor's* works can be undertaken both in Traffic Hours and engineering hours
- Working outside of Substations; working will be restricted to engineering hours from the commencement of engineering hours on a Sunday night to the end of engineering hours on a Thursday night unless otherwise agreed with the *Project Manager*.
- Engineering Trains are only available from Monday night to Thursday night.
- Parking; no site car parking is available, the *Contractor* makes his own arrangements for vehicles, and informs the *Project Manager* accordingly.
- Deliveries; the *Contractor* will be responsible for all deliveries in accordance with the requirements outlined in Standard S1552 QUENSH.
- Confined Space; the *Contractor* is responsible for the arrangements and safety of working within enclosed spaces such as a chamber, a pit or station invert. .
- Slips, trips and falls; *Contractor* ensures good housekeeping.
- Dust and dust control; *Contractor* to minimise dust.
- Track and Station equipment; *Contractor* mitigates against damage, risk of shock and nuisance tripping.

(1) The *Contractor* complies with WI100 Appendix 01 Standard S1552 QUENSH. The *Contractor* notes that within QUENSH there are multiple references to additional Standards and other requirements which apply to the *works*.

However, the *Contractor* should note that they may or may not be applicable dependent upon the requirements and inclusion within the Contract QUENSH Menu (P5A_WI1100 - Appendix 01 - QUENSH PUP5A).

Note: QUENSH is written in generic terminology to suit the *Employer's* business, therefore when the *Contractor* is determining his obligations under this contract he interprets the document accordingly, as the context requires, and in particular the following:

1. Client means *Employer* or *Project Manager*
2. Supplier means *Contractor* which includes his *Sub-contractor*s

(2) Additional LU Standards that apply to the *works* are listed in WI100 Appendix 01.

(3) Where reference is made to the *Contractor*'s staff and/or personnel throughout this Works Information, this includes and applies to all management, operatives, servants or agents carrying out the *works* in performance of the Contract on behalf of the *Contractor*, including whether directly employed by the *Contractor*, self-employed, agency, labour-only, or equivalent through any Subcontractor or SubConsultant.

(4) The *Contractor* shall ensure that the Site is kept free from all obstructions to facilitate without interruption normal engineering work during electrical operational hours in line with the Accepted Programme

WI210 General Constraints

WI 210.1 **Health and Safety**

(1) The *Contractor* is the Principal Contractor, as defined by the CDM Regulations 2007 for:

- all worksites defined by the *Contractor*; and
- all worksites established in public highways and footways, permitted pathways, Local Authority areas, Underground Network and Network Rail property, whether a part of the main worksite or established remotely;

(2) The *Contractor* will take over the worksites during the *works*, and will be Principal Contractor, as per the CDM Regulations 2007 for the Site.

(3) As specified in the Works Information, there will be requirements for shared access; however this Principal Contractor designation remains, unless otherwise specified by the *Project Manager*.

(4) The *Contractor* is also Principal *Contractor* for any lorry holding areas and additional working areas accepted by the *Project Manager* in accordance with the conditions of contract. The *Contractor* is a Designer as defined by the CDM Regulations.

WI 210.2 **Use of Site**

WI 210.2.1 **Bond Street Substation site.**

Bond Street Substation site is located off Weighhouse Street, London Borough of Westminster, London W1K 5LR.

The site code to Bond Street substation is C125

The substation is only used to house electrical plant and equipment supplying *Employer's* electrical equipment.

Pedestrian access is located at the south side of the substation through a single door 1160 mm wide; personnel have to sign on with the *Employer's* staff before gaining access to and off work areas.

Access for plant is via a set of double doors located next to the pedestrian door.

Road access to the substation entrance is via Weighhouse Street. The road is a double carriage road and there are no restrictions currently in place limiting the size and type of vehicle or times the road can be accessed. Pedestrian access is located at the south side of the substation through a single door

All areas are identified in the location plan within the Site Information.

The *Contractor* notes that;

1. The transfer of HV cable circuits from Cromwell Curve substation site to Griffith House substation site will be done in a phased manner, the Contractor recovers the redundant HV cable between Cromwell Curve substation and Bond Street substation; and re-designates as spare the vacated switchboard panel at Cromwell Curve substation site.
2. There are no proposed civil works to be carried out at Bond Street Substation.

WI 210.2.2 **Cobourg Street Substation site.**

Cobourg Street Substation site is located at 60 Cobourg Street, Euston in the London Borough of Camden NW1 2HH. It is located adjacent to residential properties and surrounded by a mixture of land uses, predominantly industrial and residential

The substation can be accessed using an ASSA key and the site code is X113.

All areas are identified in the location plan within the Site Information

The *Contractor* notes that;

1. There is no formal prior approval notification required from the Local Planning Authority
2. A penetration is required through the first floor slab to allow cable access to

the underside of the equipment.

3. Construction related noise shall be appropriately managed to minimise any potential impacts to nearby sensitive receptors. it would be prudent to ensure that any modifications to the equipment and building structure do not result in an increase in structure-borne and airborne noise.

WI 210.2.3 **Greenwich Substation.**

Greenwich Station is located off the Old Woolwich Road, London Borough of Greenwich SE10 9NY

The site code is X503. Greenwich substation is situated within the emergency generating station at Greenwich, which has special access procedures.

The substation entrance gate is 3.5 m wide, located in Old Woolwich Road, near the junction with Hoskins Street. The road is single carriageway, and cars parked along the southern side may hinder access by larger vehicles. The road has no current restrictions on the size and type of vehicle or the times that the road can be accessed.

Most of the substation is in a 45.8m x 10.0m extension to the old turbine hall, suspended over a service road leading from the gates to the rear of the site. The clear height under the switchroom is 4.2m. Before the gates are opened all personnel must be signed in with security. Access into the site is through large double metal doors leading to a large roller shutter door serving the former turbine hall. Access for plant into the switchroom is either from the gallery level of the old turbine hall.

All areas are identified in the location plan within the Site Information

The *Contractor* notes that;

1. All personnel visiting the site must go through the formal application process and complete a short induction. Site-specific health, safety and security procedures must be followed at all times

2. A safety briefing must also be undertaken by all staff intent to work on site and future access will not be provided without proof of completion of this course.

   A copy of the asbestos survey is contained within the Site Information

3. There is no formal prior approval notification required from the Local Planning Authority for the works at this site.

4. There are no proposed civil works to be carried out at Greenwich substation

5. The 22 kV Greenwich substation will remain in service at all times.

6. Greenwich power station and switchhouse, including the turbine hall is always operational. It is available at certain times during the day for commercial generation, and at all times for emergency system operation

requirements in the event of a blackout.

WI 210.2.4 **Griffith House BSP site**

Griffith House BSP site is located off Chapel street, London Borough of Westminster NW1 5DP

The BSP is newly built and only used to house electrical plant and equipment supplying LUL electrical infrastructure. All areas are identified in the location plan within the Site Information

There is no presence of Asbestos at Griffith House.

WI 210.2.5 **Mansell Street substation site**

Mansell Street Substation site is located off 14-16 Mansell Street, London Borough of Tower Hamlets E1 8AH London.

The substation code is XZ513 and is only used to house electrical plant and equipment supplying LUL electrical infrastructure. All areas are identified in the location plan within the Site Information.

Road and pedestrian access to the substation entrance is via Mansell Street.

The road is a double carriage road and there are no restrictions currently in place limiting the size and type of vehicle or times the road can be accessed.

Pedestrian access is located at the south side of the substation through a single door 1160 mm wide. Access for the plant is via a set of double doors located next to the pedestrian door.

The *Contractor* notes that;

1. There is no formal prior approval notification required from the Local Planning Authority
2. There are no proposed civil works to be carried out at Mansell Street substation site

WI 210.2.6 **Mile End Substation Site.**

Mile End Substation site is located along Maplin Street off Mile End Road, in the London Borough of Tower Hamlets. E3 4DH

The substation code is D053 and is only used to house electrical plant and equipment supplying LUL electrical infrastructure. All areas are identified in the location plan within the Site Information. Mile End substation is bounded by other power related buildings to the north and west and by residential buildings to the south. The substation is accessed directly off Maplin Street to the south of Mile End

Road.

The street is single carriageway but is wide enough for lorries to use. There are currently no restrictions in place limiting the size and type of vehicle or times at which the road may be accessed. Plant access into the substation compound is through a set of gates 3.7m wide which lead to a concreted area in front of the transformer compounds. Access into the substation building is via one of two sets of double doors. The original part of the building is accessed through a set of doors 1.5m wide and 2.0m high, the new part of the building through a set of doors 2.4m wide and 3.7m high. Entry into the substation is restricted, requiring the use of a London Underground swipe card.

The *Contractor* notes that;

1. There is no formal prior approval notification required from the Local Planning Authority

WI 210.2.7 **Neasden Depot substation site.**

Neasden Depot site is located off Neasden Lane, London Borough of Brent, London NW10 1PH.

The site code for this substation is BD092. All areas are identified in the location plan within the Site Information.

Access to substation is gained by signing on with the LUL Depot security with entry to the substation via a TDSi card.

Neasden Depot is used for the day to day stabling and maintenance of the *Employer's* trains and the delivery new rolling stock. The depot area provides site accommodation for the Sub Surface Rail Upgrade Programme (SUP) Signalling Upgrade teams and the depot re-development site construction. Some SSR Power Upgrade Packages also use the depot for power upgrade *works*.

The *Contractor* does not have exclusive use of the depot. The *Contractor* coordinates access with the Depot Manager and all other interested parties.

The *Contractor* notes that;

1. The *Contractor* does not have exclusive use of the depot.
2. The *Contractor* coordinates access with the Depot Manager.

WI 210.2.8 **Stratford Market Depot substation site.**

Stratford Market Depot site is located off Burford Road, London Borough of Tower Hamlets, London E15 2SP

The substation is only used to house electrical plant and equipment supplying LUL electrical infrastructure. All areas are identified in the location plan within the Site Information.

WI 210.2.9 **South Kensington substation site.**

South Kensington substation site is located at 49 Pelham Street, London Borough of Kensington and Chelsea. SW7 2NB

The substation is only used to house electrical plant and equipment supplying LUL electrical infrastructure.

All areas are identified in the location plan within the Site Information The *Contractor* will have exclusive use of the substation except from the rare occasional use by LUL members of the engineering team during operational hours.

WI 210.2.10 **Edgware Road Sidings**

The *Contractor* allows for all works within Edgware Road Sidings to be undertaken by ensuring the train within the Sidings is outstabled; in the event this is not possible the works may have to be undertaken in a Possession. The *Contractor* is to comply with the Employer's Access Code Requirements (WI200 - Appendix 01 LUL Access Requirements) when booking this Outstabling and/or Possession (note these must be booked a minimum 221 days in advance). This area is identified in the location plan in WI2000. The *Contractor* provides all necessary assistance to the *Project Manager* in arranging the outstabling of trains and/or possessions.

WI210.3 **Planning permission**

(1) All *works* will be within the *Employer's* permitted development rights

(2) Not used.

WI210.4 **Construction**

(1) The *Contractor* is responsible for constructing and making Available the *works* required in accordance with the *Employer*'s Design Requirements' and the Works Information, including but not limited to:

- Preparation of all working areas, to include erection of hoarding, provision of temporary power, general and task lighting and any other site facilities.
- Any enabling *works*, including cable diversions and temporary relocation of assets
- Any temporary *works* or false work, including design and supporting calculations
- All permanent *works*, including building, civil engineering, fire, M&E and communication *works*.
- Planning, managing and coordinating of the above and any other (site)

activity required to complete the *works* in a safe, timely manner, to the acceptance of the *Project Manager*, and, reasonably, any other stakeholder with vested interests, and with minimal disruption to the Underground Network and Others.

(2) Where *works* affect directly or indirectly any structures owned by Network Rail, the *Contractor* will comply with any relevant Network Rail or railway group standard that may apply. The West Ham – Mile End route will interface with Network Rail.

(3) The *Contractor* carries out all construction *works* in accordance with all relevant Standards in a way which minimises the impact on the Underground Network.

WI210.5 Enabling Works

(1) The *Contractor* plans and executes all enabling *works* required to complete the *works*.

(2) Any cables or other assets that require enabling or relocating to complete the *works* must be stored in the appropriate containment as proposed to and accepted by the *Project Manager*.

(3) Where services require enabling which belong to Others, as defined elsewhere in the Works Information, the *Contractor* notifies the *Project Manager* in sufficient time to enable the *Project Manager* to solicit the services of the relevant party, and to scope, agree a contractual variation, plan and execute the *works*, so as not to delay the *Contractor*.

WI210.6 S61 consent

(1) It is the responsibility of the *Contractor* to obtain a S61 agreement with the local authorities for his proposed *works* and comply with any consent granted.

(2) The *Contractor* complies with WI1100 - Appendix 01 QUENSH, Section 52.5.

WI210.7 Car Parking

(1) Car parking on the Site is not available. The *Contractor* makes his own arrangements, and informs the *Project Manager* accordingly.

WI210.8 Deliveries

(1) The *Contractor* identifies the appropriate access and delivery routes to any site area, working within the constraints of Section 61 notices, any applicable standard or legislation, and ensuring safe access is maintained to the station at all times for staff, customers and the emergency services.

(2) All deliveries and collections are to be arranged and managed by the *Contractor* (within all prevailing regulations)

(3) The *Contractor* is responsible for providing any personnel and equipment (temporary signs, cones and traffic management); to manage deliveries, collections and lorry movements as necessary to complete the *works*, including setting up of any temporary traffic management arrangements and its removal and making good on

completion. The *Contractor* makes good any damage to the road surface, or other road or pavement assets and buildings, damaged in the course of a delivery. Any damage thus caused is notified to the *Project Manager* and treated as a Defect in accordance with the *conditions of contract*.

(4). The *Project Manager* provides the *Contractor* with details of loading requirements for deliveries on request from *Contractor*

WI210.9 Hoardings and closures

(1) The *Contractor* is responsible for erecting hoardings necessary to ensure the safety of all staff and passengers during the execution of the *works*. The *Contractor* complies with LUL Standard 1-027 'Site Hoarding, Fencing and Barriers' and, as hoardings are classed as temporary *works*, LUL standard S1062 'Temporary *Works*'.

Additionally, hoardings internal to the station constitute a material change to the layout of the station, and must therefore be approved by the landlord and the London Fire and Emergency Planning Authority, in respect of maintaining fire safety. The *Employer's* process for managing this approval process includes:

- Submission and approval of a space application
- Submission and approval of a Bb224 notification (amendment to fire compliance plan)
- Submission and approval of a closure application

All submissions are submitted, in the first instance, to the *Project Manager* for acceptance at least 8 (eight) weeks prior to submission to the respective authority for approval.

The *Contractor* ensures that all necessary approvals are in place prior to erection of any hoarding. Any erection of hoarding should allow at least a 3.5 metre walkway for passenger flow.

(2) No advertising whatsoever on either temporary or permanent hoardings or on any other part of the *works* is allowed except as the *Employer* may require for his own purposes.

(3) The *Contractor* removes immediately all other notices, advertisements or similar, posted on Site by unauthorised persons. Additionally, the *Contractor* removes or obscures graffiti or any other form of defacement on any hoarding within 24hrs of reporting. Any graffiti containing offensive, abusive or racist words or images is removed within 1hr of being notified by the *Employer* or *Project Manager*..

WI210.10 Temporary *Works*

The *Contractor* complies with WI1100 - Appendix 01 QUENSH, Section 48 and the *Employer's* Standard S1062 Temporary *Works*.

WI210.11 Plant and Materials, Equipment and Storage

The *Contractor* complies with Standard WI1100 P5A_WI1100 - Appendix 01 - QUENSH PUP5A (QUENSH)

(1) Unless otherwise stated elsewhere in this *Works* Information, the *Employer* has made no explicit provision for storage of Plant and Materials, and Equipment on the Site.

(2) Should the *Contractor* identify and secure storage area/space, the *Contractor* is to comply with all due process and site protocol including storage licence approvals, movement of materials licence approvals and amendments of fire compliance plans where required. The *Contractor* maintains records of all Plant and Materials, and Equipment stored and are made available to the *Project Manager* upon request.

WI215 Access Arrangements

WI215.1 The Access Plan

(1) The Access Plan is the plan prepared by the *Contractor* detailing his proposals for his access to the working sites along the various cable route runs.

The *Contractor* prepares the Access Plan and submits it to the *Project Manager* for acceptance. Reasons for not accepting the plan are that:

- It does not comply with the Access Code Requirements
- It does not allow the *Contractor* to provide the Works
- It does not comply with the Works Information and this contract
- It does not allow sufficient time for the *Employer* or *Project Manager* to provide things he is to do so in accordance with this contract.

The *Contractor* revises the Access Plan whenever it is no longer applicable in all the circumstance or when instructed to by the *Project Manager*.

(2). Having cognisance of the working hours available and any restrictions set out in this Works Information the *Contractor* details in the Access Plan:

- The hours/shifts/days in the week he proposes to work in order to comply with the Accepted Programme
- How his proposals comply with the availability of access during Engineering Hours, blockades, possessions and closures.
- His proposals for additional access to improve the efficiency of the *works* with the objective of achieving best value
- where access is shared with Others how he plans to manage his access in accordance with the Access Code in WI200 Appendix 01 and minimise the disruption to Others of his work.
- The *Contractor's* arrangements for booking access in accordance with the SABRE process

(3) Should the *Contractor* need to work hours additional to those stated, he gives at least 20 working days notice and obtains the *Project Manager's* written acceptance. This in part is to allow the *Project Manager* to attempt to find additional resources to

provide attendance on site.

(4) Engineering Hours is the period between the stipulated station closing time and stipulated station opening time. Details of any limitation imposed by the *Employer* on the working hours allowed to the latest prevailing 'Guide to switching traction on and off' (see WI200 Appendix 02).

The Site must be ready for use, i.e. clear of workers, Plant and Materials, Equipment and tools and any working areas cleaned, at least 30 minutes before the first train. The *Project Manager's* or *Employer's* representative reserves the right to accompany the *Contractor's* Site Person in Charge in a joint inspection prior to handing back the Site to ensure worksite is left in an acceptable state.

WI215.2 Booking and arranging access

(1) Unless otherwise instructed by the *Project Manager* the *Contractor* books and co-ordinates access to the Site in accordance with the SABRE process.

(2) The *Contractor* is responsible for the booking and utilising of Engineering Trains, as set out in WI200 Appendix 01.

The *Contractor*'s attention is also drawn to the requirements of section WI225.4 Security, in connection with restricted access to the *works.*

(4) The *Contractor* complies with the requirements of the use of LUCAS (London Underground Combined Access System), particularly in the context of access control at the point of site entry.

WI215.3 Training, certificates, identity cards and entry permits

(1) The *Contractor* is responsible for ensuring that all staff and personnel are suitably trained, competent and carry the appropriate and requisite certification for performing the roles required of them in carrying out the *works*.

The Standards, and in particular QUENSH and the Rule Book(s) set out the training and certifications required to be met by the *Contractor*.

(2) Not used

(3) The *Contractor* is responsible for arranging, booking, and paying for all requisite medicals, training and certification of its staff and / or personnel. Details of the cost and process for booking LUL arranged training / certification courses are provided within the Works Information.

(4) The *Contractor* allows a minimum of 56 days notice period for all *Employer* provided training and certification courses. Any time period less than this cannot be guaranteed, and although efforts may be made to facilitate wherever possible, the *Contractor* does not rely on such reduced time periods being accommodated.

(5) At the *starting date* of the Contract, the *Contractor* must produce a competency matrix for all *Contractor's* staff or personnel involved in Providing the Works detailing the training, certification and other competency information held on record. The *Contractor* updates the matrix throughout the Contract duration maintaining current

records and make available on request of the *Project Manager.*

WI215.4 LUCAS (London Underground Combined Access System) Smartcard

(1) LUCAS is the membership and Smartcard scheme for Engineering and Construction workers on London Underground.

(2) All *Contractor* personnel require a valid LUCAS (London Underground Combined Access System) Smartcard in order to access the Site and carry out *works* on London Underground infrastructure. The *Contractor's* personnel obtain their Smartcards by booking onto the Access, Health, Safety and Environmental (AHS&E) and pass a computer-based assessment. The assessment takes 2 hours and personnel are expected to study the learning material in their own time.

(3) The *Project Manager* ensures that the LUCAS Team has been formally notified of the *Contractor's* award of contract. On receipt such notice, the LUCAS Team set up an on-line account for the *Contractor* to enable him to book and pay for all *Contractor* personnel assessment training and for the issuing of LUCAS Smartcards.

(4) For information on how to obtain a LUCAS Smartcard, the cost and medical requirements, contact the LUCAS team as follows;
LUCAS Team
4th Floor East Wing
Ashfield House
7 Beaumont Avenue
London
W14 9UY
Tel: 020 7918 5297 (auto 45297), or
Email: lucas@tube.tfl.gov.uk
Contact: 08:00 – 16:00 Monday to Friday

(5) The Smartcard is specific to an individual, not transferable and is valid for a 3 year period.

(6) The *Contractor's* personnel carry their LUCAS Smartcard at all times when in performance of the Contract and present them to any authorised representative of the *Employer* for inspection when requested to do so. Failure to produce a valid Smartcard, or requisite certification, for inspection may result in the individual being instructed to leave site.

(7) The Smartcard does not entitle the *Contractor*'s staff or personnel to any benefits other than permitting access to the Site for the purpose of carrying out *works* during the agreed hours of work. The Smartcard remains the property of the *Employer* and is required to be returned immediately upon request.

(8) With the exception of the LUCAS Smartcard course, details of required courses and medicals are detailed in QUENSH, with the exception of the LUCAS Smartcard course detailed above (3).

(9) Exceptions to the LUCAS Smartcard process;

For certain exceptional circumstances it may not always be practical or cost effective

to enrol the suppliers or Others on a LUCAS Smartcard training course.

Such scenarios whereby temporary LUA-LU paper certificates are issued instead of a LUCAS Smartcard would be;

- Specialised *Contractor*s requiring limited access
- Survey work requiring limited access

If the *Project Manager* decides to permit exceptional access to site or working areas, the *Contractor* must obtain the *Project Manager's* written acceptance regarding the personnel and work activities prior to commencement on site.

(10) Visitors

Any person attempting to gain access to the site or working areas who is not in possession of a valid LUCAS Smartcard is treated as a visitor. All visitors, except for authorised collection or delivery drivers, are escorted or supervised at all times by an authorised member of staff whilst on site.

The *Contractor* maintains a register of all visitors including:-

- Name;
- Employer;
- Nature of business / persons being visited;
- Time in;
- Time out;
- Supervisor/escort name including signature.

The *Contractor* provides a health and safety site briefing to the visitor who signs a form to confirm that they have received the briefing and understand the site rules and their respective responsibilities as a visitor.

The *Contractor* issues the visitor a temporary pass that is valid for a maximum 24 hours and the expiry date and time is clearly indicated.

The *Contractor* ensures the temporary pass is returned when the visitor leaves the site and that a list of lost any passes is maintained.

Lost electronic visitor passes are de-activated immediately on the *Contractor* being made aware of the loss.

WI215.5 LUCAS – Access Control

(1) The *Contractor*'s attention is drawn to the fact that access to the Site is limited.

(2) *Works* in the Site are to be carried out by the *Contractor* during engineering hours, unless otherwise expressly agreed with the *Project Manager.* Permission to work in traffic hours will only be granted if it can be demonstrated that the safety and operability of the station is not compromised.

(3) The *Contractor* should note that the *Employer* does not guarantee uninterrupted or exclusive access to or use of the Site. The *Contractor* is required to plan and manage booking and utilisation of all access to Working Areas. If access has not been correctly booked, the *Contractor* will have no claim whatsoever for frustrated access and it will not be considered a compensation event.

(4) When booking in and out of the Site, the *Contractor*'s staff and personnel report in,

record entry and exit, and present their Smartcards when and where required, in accordance with the local access control arrangements.

(5) Where a Smartcard reader is installed on Site as part of the local access control arrangements, then all *Contractor* staff and personnel as a mandatory requirement swipe their Smartcard on entry and egress from the Site. Any individuals found on site where such a card-reading system is in place who have not followed such a procedure may be instructed to leave site for the duration of the associated shift, regardless of whether they may hold the appropriate Smartcard. The *Employer* takes no responsibility for any abortive costs or impact to schedule of any such instruction to any member of the *Contractor*'s staff under such circumstances.

WI220 Security and identification of workpeople

Subject to the requirements given in WI 215.2 and WI 215.3 the *Contractor* manages and is responsible for access and egress to the construction site.

WI220.1 Security Pass

(1) The *Contractor* is also responsible for the issue of permanent security passes. The *Contractor* will comply with the requirements of P5A_WI1100 - Appendix 01 - QUENSH PUP5A in regard to this.

(2) Not used

(3) Vetting checks on applicants from the *Contractor's* and all Sub-contractor staff and employees and workforce is the responsibility of the *Contractor*.

(4) The *Contractor* retains application and vetting records on Site. Records are made available to the *Project Manager* within 24 hours of being instructed to by the *Project Manager*. If proper records are not made available, the applicant or pass holder is not permitted further access to the Site.

WI225 Security and protection of the Site

(1) The *Contractor* shall be responsible for all site security and on-site housekeeping in accordance to section 35 of the Standard 1 – 552 QUENSH.

WI225.1 General Matters

(1) The *Contractor* must not hinder or prevent authorised access to the Site or adjacent areas by authorised users.

(2) Gates provided for the passage of people, equipment, Plant and Materials and Equipment must be kept locked when not in use and all boundary fences must be kept secure to prevent unauthorised access.

WI225.2 Site Security – General

(1). The *Contractor* must not hinder or prevent authorised access to the Site or adjacent

areas by authorised users.

(2). The *Contractor* must ensure that gates provided for the passage of people, Plant and Materials, and Equipment are be kept locked at all times when not in use and all boundary fences kept secure to prevent unauthorised access.

(3). The *Contractor* shall make safe and secure at the end of each shift, and shall fit all access doors with suitable locks for this purpose. The *Contractor* develops effective professional relationships with the British Transport Police, the Metropolitan police, the LFEPA *Employer's* AP Power Team, the depot manager and/or station managers

(4). The *Contractor* advices the *Project Manager* of all incidents.

WI225.3 Serious Security Incident

In the event that a serious security incident occurs, the *Contractor* promptly advises the *Project Manager,* agrees and implements all actions requested by the Police, and Others or as instructed by the *Project Manager*.

The *Contractor* records and logs all steps taken and resources used as a consequence of or arising out of the serious security incident.

The *Contractor* identifies senior responsible personnel responsible for emergency call outs, the procedure and ensures that suitable senior responsible personnel are available at all times during *works*.

WI225.4 Reporting of Crimes or Security Related Incidents

The *Contractor* records and brings to the immediate attention of the *Project Manager* all allegations of crimes and other security related incidents.

These reports are used to assess and monitor the efficacy of security management and standards.

The *Contractor* immediately reports urgent and major issues of security breach to the *Employer* and the *Project Manager*.

WI225.5 Signage

(1). The *Contractor* supplies and installs suitable signage relating to access, security and safety requirements.

WI225.6 Security Surveillance

(1). Not used.

WI225.7 Facilities for Security Officers

Not Used

WI225.8 Contract Security Manual

Not used

WI225.9 Emergency Plan Procedures Manual

The *Contractor* prepares an emergency plan procedure manual which will be used in the event of any emergency situation. This plan contains the following as a minimum:

(i) Emergency services telephone numbers;

(ii) Site emergency roll-call procedures;

(iii) Emergency controller/first aiders/fire wardens with telephone numbers;

(iv) Emergency call-out procedure with *Contractor*'s senior responsible personnel identified;

(v) Emergency Equipment availability/specialist Equipment locations;

(vi) Emergency communication arrangements;

(vii) Emergency facilities plan (control centre, casualty stations, survivor stations, media centre);

(viii) Site plan - access, assembly points etc., for the various phases of the *works*;

(ix) Community and media relations arrangements;

(x) Other parties to be informed with contact numbers;

(xi) Interface arrangements with duty Station manager;

(xii) Interface arrangements with police and emergency services;

(xiii) Emergency procedures for removal of injured persons from surface/underground areas/ tunnels;

(xiv) Emergency Evacuation procedures

The emergency plan procedures manual is submitted to the *Project Manager* for acceptance prior to commencement of work on Site.

The *Contractor* carries out training for key emergency management personnel as required for the effective implementation of the procedures.

The *Contractor* arranges at least one simulated emergency exercise in each twelve week period following commencement of work on Site.

Immediately following an emergency, or following a simulated emergency exercise, the *Contractor* reviews the actions taken, against the requirements set out in the emergency plan procedures manual, and shall issue revisions to the emergency plan procedures manual when appropriate. The *Contractor* reviews in full the emergency plan manual procedures at maximum six monthly intervals. Any revisions in the emergency plan procedures manual are submitted to the *Project Manager* for acceptance.

WI225.10 Emergencies

(1) In the event of an emergency evacuation of the Site or part of the Site, the *Contractor*, within one hour, provides an accurate list of all persons who were on Site and forward this list to evacuation points to allow verification that all person(s) have been accounted for. The list is generated by an electronic access control print

out or by manual records (as applicable).

The *Contractor* establishes and agrees written emergency call out procedures with the emergency services and the *Project Manager*. The emergency services are advised of the Site security system, its layout and the emergency access routes.

WI225.11 Zoning

Not used.

WI225.12 Access to Zones

(1) Not used

WI225.13 Searches

(1) Not used

WI225.14 Security Patrols

(1) Not used

WI225.15 Parking

(1) There are no parking facilities on the Site

WI225.16 Delivery or Collection Vehicles

Written logs of all delivery and collection vehicles entering and leaving the Site are kept by the *Contractor* and made available to the *Project Manager* on request.

The delivery and collection logs include:

- Name of haulier;
- Vehicle registration number;
- Description of Plant/Equipment and Materials being collected or delivered;
- Driver's name and signature;
- *Contractor*'s or Subcontractor's order number;
- Instructions for collection or delivery;
- Collection / delivery note number;
- Date;
- Time of entry and departure (to be recorded by the security guard).

The *Contractor* ensures that only authorised vehicles are admitted to the Site.

Delivery vehicles must be accepted, unloaded and despatched to minimise congestion on adjacent roads. Off-site holding areas are to be managed to ensure that vehicles do not stand and obstruct the highways.

WI230 Protection of existing structures and services (82.1)

The *Contractor* to protect the existing structures and services, including, finding the exact location, repair if any damage and any obligation to maintain existing services. Detail any requirements for the *Project Manager* to be notified. Where appropriate

detail the processes to be followed where the *Project Manager* wishes to conduct service isolations themselves.

WI230.1 Utility supplies

(1) The *Contractor* is responsible for the protection of existing utilities on or adjacent to the site in connection with providing the *works*. Should the *Contractor* become aware of any damage to utilities during the *works*, the *Contractor* must notify the *Project Manager* as soon as practicable.

(2) Should the *Contractor* require existing utilities to be enabled, disabled or relocated then it is the *Contractor's* responsibility to make the arrangements directly with the utility company.

WI230.2 Damage to *works* and protection to adjoining structures

(1) The *Contractor* does not carry out any *works* liable to damage the stability of the *works* and adjoining buildings. No cutting through floors, roofs or walls will be permitted except as shown on the design drawings and accepted by the *Project Manager*

(2) The *Contractor* protects from damage the adjoining buildings and premises and is responsible for and making good as soon as practicable all damage done through the carrying out of the *works*.

(3) The *Contractor* is responsible for bearing the cost of any making good required following damage to the structures, services, or finishes of the *Employer's* or Other's premises.

WI230.3 Protection of existing trees (82.1)

Not Used

WI230.4 Protection of plant life (82.1)

(1) There are no records of noxious plants in the environs of the Site but, prior to starting any site clearance, the *Contractor* is to carry out a survey for noxious plants and reports his findings to the *Project Manager*.

The *Project Manager* instructs the *Contractor* accordingly.

WI230.5 Protection of wildlife on site

(1) There are no records of wildlife in the environs of the Site. If the *Contractor* finds such evidence he immediately notifies the *Project Manager*.

WI235 Protection of the *Works* (82.1)

(1) Protection of the *works*

Unless expressly stated otherwise in the Works Information, the *Contractor* is responsible for protecting his elements of the *works*.

(2) The *Contractor* protects the *works* from inclement weather, public or staff access, accidental damage by third parties or its own operatives, in whichever form is required to ensure the *works* are made Available in "as new" condition, regardless of when the elements of *works* were completed.

WI240 Traffic Management

WI240.1 Traffic Management - General

(1) The *Contractor* ensures that his vehicles, those of his Sub-Contractors and his staff and personnel do not obstruct the use by the public or Others of adjacent premises or roads.

(2) The *Contractor* ensures that the access to and from the Site is clear of all Plant and Materials and Equipment on Completion of the *works*.

(3) The *Contractor* ensures that trafficked areas are clean and fit for public use to the acceptance of the *Project Manager*.

(4) The *Contractor*'s undertakes the *works* without danger to or interference with the *Employer's* operations and Others using the highway and adjacent properties.

(5) The *Contractor* ensures that all construction traffic outside the Site boundary follow only those routes on highways, public and other roads and bridges which are prescribed by the Highway Authority or Authorities concerned. The *Contractor* makes arrangements and agrees these routes with the appropriate Highway Authority or Authorities.

(6) Where the *Contractor* undertakes work or makes deliveries to the Site which impacts on public or private highways, including access to the Site and to other premises/establishments, the *Contractor* supplies, erects, maintains and removes prior to Completion, such traffic signs and barriers as may be necessary by the Code of Practice for New Road and Street Works (1997) to guide and warn traffic and to protect pedestrians and to prevent danger thereto.

(7) The *Contractor* ensures the *works* are appropriately lit and guarded in the hours of darkness and that traffic signs and barriers are removed as soon as they cease to be required for the purposes of Providing the *Works*. The size and positioning of all such signs and the wording thereon is to be as approved before erection with the *Project Manager* and Highways Authority or Authorities. The signs are to be reflective or adequately illuminated at night by approved means.

WI240.2 Damage (to highways etc) (82.1)

(1) The *Contractor* is responsible for making good any damage to roads and footpaths and services underneath or adjoining, whether public or private, if caused by or attributable in any way to the cartage of Plant and Materials, Equipment or materials to be disposed of by either the *Contractor* or any Subcontractor under the Contract. This includes but not limited to claims from local authorities and/or Others for damage to highway road, other route or footway by reason of the *Contractor's* operations.

WI240.3 Cleanliness of highways (27.4)

(1) The *Contractor* is responsible for keeping public and private roads free from mud, dust or rubbish in connection with providing the *works.* The *Contractor* makes provision for ensuring that all vehicles whether his own or those of any Sub-contractor supplier or any other person coming to or leaving the Site are clean so as to ensure that such vehicles do not cause mud, dirt or other materials to be deposited upon any highway road or other route being used by such vehicles.

WI245 Condition survey

(1) The *Contractor* undertakes all the necessary surveys prior to commencement of any *works*.

WI245.1 Intrusive Survey

(1) The *Contractor* carries out comprehensive and intrusive surveys to validate asset location, make up and condition information supplied with this contract. The *Contractor* reinstates and or makes good to original state any asset disturbance resulting from these surveys.

(2) Not used

(3) The *Project Manager* does not accept *Contractor* designs that are deficient due to lack of survey information.

(4) The *Contractor* prepares and submits to the *Project Manager* a detailed report of any existing services, asset location or obstructions identified by the survey but not identified in the Site Information. The *Contractor* submits an early warning notification if the survey reveals the presence of unexpected services, which if not protected or diverted could affect the progress of the *works* or the works of Others.

(5) Where surveys necessitate the disturbance of an asset, the *Contractor* leaves the asset in a safe and operable condition until such a time as it is affected by the permanent *works*. If the asset disturbed is not affected by the main *works*, the *Contractor* makes it good, leaving it safe, operable and with its appearance commensurate with its immediate surroundings.

WI245.2 Asbestos Survey

(1) The existing asset Asbestos reports are included in the Site Information

(2) The *Contractor* complies with the following procedure in relation to the identification and treatment of asbestos.

(3) The *Contractor* carries out early survey and detailed design work in order to identify any areas of the Site which may contain asbestos; and where asbestos is identified notifies the *Project Manager* as soon as possible the location and extent of the asbestos present; and whether the treatment of the asbestos is likely to delay

Completion of the *works*.

(4) Where asbestos requires removal, the *Project Manager* either instructs the *Contractor* to remove the asbestos or engages an asbestos removal Contractor as soon as reasonably practicable. The *Contractor* provides support at all times to the *Project Manager* to identify any loose materials that may have been left from previous construction or maintenance work and can be removed at the same time.

(5) Where asbestos covered cables are identified which could potentially be disturbed, the *Contractor* erects suitable barriers to provide adequate protection. To prevent the accidental disturbance of asbestos covered material, the *Contractor* considers using a proprietary spray at no additional cost to the *Employer*.

(6) The *Contractor* ensures that his programme has included a reasonable assessment of the time required to remove asbestos which has (or ought reasonably to have been) identified by the *Contractor*. The *Contractor* regularly monitors locations which become accessible during the carrying out of the *works*, which had not previously been assessed, in order to identify the presence of asbestos. The *Contractor* produces a contingency plan to re-schedule the *works* to address a potential delay to Completion of the *works* caused as a result of the presence of asbestos.

WI250 Access within the Railway Environment

WI250.1 Working on Network Rail infrastructure

(1) Where Network Rail is responsible for the operational running of certain assets within a Site, the access required by the *Contractor* in Providing the Works will be subject to additional Network Rail access rules at certain locations. This includes minimum access permits such as PTS and COSS for operatives and site safety supervisors. Any *works* requiring access to the track or the area near the track requiring possessions of the Railways or isolations, the *Contractor* must make arrangements via the appropriate Network Rail process.

WI250.2 Interference with traffic and station operations

(1) The *Employer* will afford the *Contractor* reasonable facilities to enable him to Provide the *Works* but the *Contractor* must strictly observe any rules, regulations or instructions which he may from time to time receive from the *Employer* for the working and protection of such traffic or for the protection of persons employed on or adjacent to the Site.

(2) Any Losses incurred by the *Employer* by reason of any obstruction interruption or hindrance to any traffic or to the use of the *Employer's* premises, facilities or assets occasioned by either the neglect or default of the *Contractor* or of any Subcontractor or by any failure on their part to observe any such rules regulations or instructions may be deducted from monies due or to become due to the *Contractor* in accordance with the *conditions of contract*.

WI250.3 Interference with railway plant and track

(1) The *Contractor*'s staff and personnel must not operate or interfere with any railway plant or track in any manner whatsoever except as required by the *works*.

(2) The *Contractor*'s staff and personnel must at no times trespass upon the railway or the underground network.

(3) During the execution of the *works* the Underground Network will remain fully operational and all rules and regulations which may be issued from time to time by the *Employer* with regard to this must be strictly observed by the *Contractor*. Such rules and regulations may cover the protection of traffic, cables, signals, the permanent way or other equipment ; or be for the protection of persons employed on or adjacent to the Site

(4) The *Contractor* Provides the *Works* in such manner as not to interrupt endanger or interfere in any way operational Underground Network, or the traffic thereon or equipment thereon existing. The *Employer* will afford the *Contractor* reasonable facilities to enable him to carry out the *works.*

(5) If the *Contractor* obstructs, interrupts or hinders the Underground Network or the use of the *Employer's* premises without the prior agreement of the *Employer* the *Contractor* is responsible for any Losses due to such obstruction, interruption or hindrance to the Underground Network or the use of the *Employer's* premises.

WI250.4 Interrupted or delayed access

(1) The *Contractor* is reminded of the *Employer's* frequent operational need to run Test, Engineering and Sleet Trains, both planned and unplanned.

(2) The *Contractor* is familiar with and cognisant of such issues, and allows for any planned engineering train movements within the planning and programming of the *works*. Notwithstanding that unplanned train movements causing the *Contractor* interrupted or delayed access is an *Employer's* risk event, the *Contractor* is expected to react, redeploy operatives and re-sequence the *works* so as to mitigate the effects in such circumstances where interrupted or delayed access may occur. The *Contractor*'s Programme, where possible, allows for and highlights such contingency work operations that can be carried to in the event that interrupted or delayed access occurs.

WI250.5 Equipment Rooms

(1) Not Used

WI255 Consideration of Others

Not Used

WI260 Site Cleanliness

The *Contractor* is responsible for keeping the site tidy during the *works*.

WI260.1 **Site Clearance and Cleaning**

(1) The *Contractor* ensures the work area/site is kept clean and well maintained at all times. The *Contractor* ensures that all non-fixed Plant and Materials, Equipment, building appliances, apparatus or tools, surplus materials together with all rubbish and debris of every description is removed as quickly as possible and conveyed away from Site.

(2) The *Contractor* ensures that high standards of cleanliness and hygiene are maintained in all areas of the work perimeter/Site, in line with good industry practice. If the *Project Manager* notifies the *Contractor* that it has failed to comply with the required levels of cleanliness and hygiene, the *Contractor* resolves the problem within the agreed timescales to the acceptance of the *Project Manager*. Failure to rectify and maintain, may result in the *Project Manager* arranging additional cleaning to be carried out for which the *Contractor* will be liable for the cost thereof.

(3) On completion of the *works* the *Contractor* clears the working areas made available to him of all surplus Plant and Materials, Equipment, stores, spoil, and rubbish and reinstates the areas to their condition existing prior to the *Contractor*'s occupation of those areas.

(4) Delivery and removal of Plant and Materials, and Equipment to and from the Site by road are subject to the restrictions as detailed elsewhere within the *Works* information. Should the *Contractor* require delivery or removal of Plant and Materials, and Equipment at times other than those detailed in the Access Plan he submits proposals to, and obtains acceptance of, the *Project Manager* prior to carrying out *works*.

WI265 Waste Materials

WI265.1 **Control of waste on site**

(1) The *Contractor* is responsible for the removal of waste materials (including Plant and Materials and Equipment) from the Site.

(2) The *Contractor's* attention is drawn to section WI1135 of the Works Information that details the *Contractor's* main requirements in relation to waste management, waste reporting and re-cycling.

WORKS INFORMATION

WI 300

THE *CONTRACTOR'S* DESIGN

Document History: **Version:**	**Prepared by**		**Quality Checked by**		**Legal Review**		**Peer Review**	
	Name	Date	Name	Date	Tick	Date	Name	Date
1.0	Henry Bwire	07/05/14	Daren Stinton	07/05/14	☐			
2.0	Henry Bwire		Daren Stinton		☐		Ailsa Waygood	
3.0					☐			
4.0					☐			
5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

Table of Contents

WI305 Design Responsibility

(1) This Works Information herewith contains the *Employer's* Conceptual Design Statements for and referenced documents that the *Contractor* develops into detailed design for the *works* in line with *Employer*'s requirements.

WI305.1 General

(1) The *Contractor* is the principal and sole designer for this project in accordance with clause X21 (Single Point Design Responsibility) and the information contained within Contract Data Part 1. The *Contractor* accepts the design supplied by the *Employer* as his own, develops and rectifies as required to achieve a construction issue design that is compliant with all applicable Standards including but not limited to relevant LUL and British Standards.

(2) The *Contractor* adopts the *Employer's* Design Information listed in WI2000 outlining the *Employer's* general Design criteria, Drawings, Materials and Workmanship Specifications and other Design Information.

(3) The overall *Employer's* design requirements for the contract are outlined in the Design Requirements Statement contained in WI2000. The *Contractor* develops the design in order to Provide the Works and complies with the *Employer's* design requirements as stated in WI320.

(4) The *Contractor* provides Assurance to the *Employer* that the *works* have been designed in accordance with the *Employer's* requirements.

(5) The *Contractor* provides support documentation to the *Project Manager* to enable the Project Manager to obtain QICC certification of the works as detailed in LU Standard S1900.

(6) The *Contractor* ensures that construction does not start on any element of the *works* unless the design for that element of the *works* has been submitted as an assured design and accepted by the *Project Manager*. The *Contractor* refers to LU standards S1538 and S1900 and WI600 for information on Assurance.

(7) In preparing the design the *Contractor* uses existing information and data made available by the *Employer*. The *Contractor* notes within the *Employer's* Design Information the parameters for degraded system conditions and uses CYME software modelling when undertaking his detailed design. Unless otherwise agreed by the *Project Manager*, the *Contractor's* design is consistent with any outline mitigation proposals included in the environmental impact and ground movement assessment reports contained in the *Employer's* Design Information.

(8) The *Contractor* ensures and provides evidence to the *Project Manager* that his designers are suitably qualified and competent to carry out the work.

(9) The *Contractor* appoints a lead designer as required under the CDM Regulations 2007 who is responsible for the coordination of the designs and all systems engineering.

(10) The *Contractor* appoints a design manager (the '*Contractor's* Design Manager') who is responsible for the management, coordination, quality control and Assurance of the

design work. The *Contractor's* Design Manager is the primary interface with the *Project Manager* on design matters.

(11) The *Contractor* appoints checkers and approvers for all designs in accordance with Assurance requirements, LUL and other relevant Standards.

The *Project Manager* appoints a design liaison manager (the 'Design Liaison Manager') who will be responsible for liaising with the *Contractor* at all stages during the preparation of the *Contractor's* design.

WI305.2 Design Generally

(1) The *Employer's* Design Information is contained within this Works Information and has been developed to a feasible single preferred option. The *Contractor* develops the given option to a design status practical for construction.

(2) The *Contractor* is wholly responsible for the design including provision of assurance and compliance submission(s) for the whole of the *works*. The *Contractor* is responsible for the design of all cable routes, the cable containment and all other necessary elements including its installation, installation methodology and commissioning.

(3) The *Contractor* provides expertise at all times during the *works* to ensure delivery in accordance with the design, and to all relevant Standards.

(4) The *Contractor* provides all these requirements within the design organisation.

WI305.3 Design Checks and Approvals

(1) For all design undertaken by the *Contractor*, the *Contractor* submits details of designs carried out in respect of the works, Plant and Materials and Equipment including relevant design and check certificates, to the *Project Manager* for acceptance.

(2) The *Contractor* prepares all Assurance deliverables to achieve QICC certification as described in LU Standard 1900.

(3) The *Contractor* prepares a complete submission of all design deliverables necessary to obtain QICC certification in accordance with LU Standard S1900.

(4) Design checks comply with one of four categories in accordance with the concepts set out in LU Standard 1-538 – Assurance Clause 3.16.

WI305.4 Consents and Third Party Technical Approvals

(1) The *Contractor* obtains all approvals of the designs and assessments from consenting bodies (e.g. local planning authorities, Environment Agency) and other third parties (e.g. highway authorities, Statutory Undertakers) that may be required.

(2) The Design Liaison Manager assists the *Contractor* to obtain approvals and consents for designs carried out by the *Contractor* for the *works*.

(3) Formal submissions to consenting bodies are made in accordance with their particular requirements which are to be determined by the *Contractor*.

WI305.5 Design for the Works

(1) Not used.

(2) Not used.

WI305.6 Design of Equipment

(1) Not used

(2) Not used

(3) The *Contractor* submits, to the *Project Manager* for acceptance, the schedule of design interfaces between Equipment and the *works* and settlement control, identifying which party within the design organisation is responsible for the design and checking of each aspect of design.

Unless the *Project Manager* allows it to be left in the *works*, the *Contractor* removes all Equipment when it is no longer needed, in such manner as to prevent damage to the *works*. The *Contractor's* design of Equipment takes account of this requirement.

WI310 Design submission procedures (21.2)

WI310.1 Design process

(1) The *Contractor* provides complete supporting information and obtains the *Project Manager's* written acceptance for any concessions from the ERS and Standards required for the *Contractor's* design of the *works*.

(2) The *Contractor* confirms compliance with, and, as necessary, makes cross references to, the ERS and any other relevant Works Information.

(3) The *Contractor* provides Assurance packages and a compliance submission in timely fashion to obtain acceptance from the *Project Manager* in respect of the design. The *Contractor* fulfils the designer's duties under the Construction (Design & Management) Regulations 2007 and provides all design information for the preparation of the Health & Safety File as required by the CDM Coordinator.

(4) The *Contractor* prepares working drawings, design calculations, specifications, or amendments to the *Employer's* specifications, method statements and any other relevant information necessary to Provide the Works.

(5) The *Contractor* obtains all required design checks and third party technical approvals and carries out any reworking of the design necessary in order to obtain these approvals.

(6) The *Contractor* provides design certificates and check certificates.

(7) The *Contractor* is responsible for co-ordination, systems integration and quality control of his design and its integration with other parts of the *works* whether designed by the him or not.

(8) The *Contractor* obtains the acceptance of the *Project Manager* to any changes which arise on Site and varies the *Contractor's* design, which has been already been accepted by the *Project Manager*, or vary designs prepared by Others and contained in the *Employer's* Design Information.

(9) The *Contractor* prepares as-built drawings, data sheets, and operation and maintenance manuals to suit the progressive completion of the *works*.

(10) The *Contractor* complies with the quality plans and procedures and ensures that the

Design Liaison Manager is kept informed of the *Contractor's* progress at all stages during the preparation of his design.

(11) The *Contractor* makes presentations and reviews of the developing design to the *Project Manager* and Others, as appropriate.

WI310.2 Submission of the *Contractor's* Design Data

(1) The *Contractor* submits two copies of the design data to the *Project Manager* for acceptance. The *Contractor* makes a presentation for each package of data submitted for review and gives no less than four weeks' notice of the intended submission date.

(2) Unless otherwise agreed between the *Project Manager* and *Contractor*, the *period for reply* for a *Contractor's* design submission is four weeks.

(3) The *Contractor's* design data, submitted for acceptance, comprises the following, but not limited to :

Drawings, design calculations, datasheets, manufacturer's specifications, installation methodology and technical reports.

(4) Not used

WI310.2.1 Third Party approvals

(1) The design data to be submitted to consents and third party technical approval bodies is agreed between the *Contractor* and the *Project Manager* through the Design Liaison Manager and is appropriate to the application made.

WI310.2.2 Construction information

(1) Unless the *Project Manager* has notified the *Contractor* otherwise, the *Contractor's* design is suitable for construction status before submission of the design data to the *Project Manager* for acceptance.

(2) Submissions may be staged in accordance with the Accepted Programme subject to the *Project Manager approval.*. The *Contractor* includes all relevant information in the design particulars, including but not limited to:

- Drawings
- Bending schedules
- Specifications
- Method statements
- Assessment reports
- Design certificates
- Check certificates
- Designer's risk assessments
- Design calculations
- Confirmation that the *Contractor* has obtained the third party approvals for which he is responsible.

WI310.3 ***Project Manager's*** **Acceptance**

The *Contractor* constructs the *works* in accordance with the design which has been accepted by the *Project Manager*. The *Project Manager* reviews the submitted design data for compliance with the ERS.

Any required re-working of the design, in order to obtain the *Project Manager's* acceptance is undertaken by the *Contractor* before commencing construction of that element or elements of the *works* affected.

In accordance with the provisions of clause 21 of the *conditions of contract*, the categories of acceptance are as follows:

a) Accepted without comment

The *Contractor* adheres to the design which the *Project Manager* has accepted and construction proceeds.

b) Accepted with comments

The *Contractor* reviews and incorporates the *Project Manager's* comments in his design and construction proceeds.

If the *Contractor* does not incorporate the *Project Manager's* comments, the *Contractor* justifies the reasons for not agreeing, in detail, to the *Project Manager*. The *Contractor* then resubmits the design to the *Project Manager* for acceptance.

Construction does not proceed unless the submission has been accepted by the *Project Manager* in accordance with clause 21 of the *conditions of contract*.

c) Rejected

The *Project Manager* gives reasons for rejecting the design submitted.

Construction does not proceed.

The design is revised by the *Contractor* and resubmitted.

d) No review required to be undertaken

The *Contractor* adheres to the design which the *Project Manager* has not reviewed and construction proceeds.

WI315 Design approvals from 'Others' (27.1)

(1) Not Used.

WI320 *Employer's* requirements

WI320.1 ***Employer's*** **design requirements**

(1) The *Contractor* develops the design in order to Provide the *Works* to comply with the *Employer's* requirements. The *Employer's* requirements comprise the Works Information, all applicable associated constraints arising from the particular environment both explicit and implicit, regulations and the *Employer's* and Others'relevant Standards.

WI320.2 Change to Employer's design requirements

WI320.2.1 *Contractor's* design change proposals

For the purpose of this clause a *Contractor's* design change proposal means a proposal made by the *Contractor*, before proceeding with the relevant work, to change the design which is contained in the *Employer's* Design Information, or which has previously been accepted by *the Project Manager*.

Any alternative design proposal complies with the *Employer's* requirements.

WI320.2.2 Process

(1) If the *Contractor* wishes to propose such a change he submits the relevant design data to the *Project Manager* for acceptance, with an explanation of the reasons for the proposed change together with an assessment of the cost and programme effects.

(2) Except as may be agreed between the *Project Manager* and *Contractor*, the *period for reply* for the assessment of the *Contractor's* submission to change the design shall be four weeks.

(3) The *Contractor* submits the following information with any alternative design proposal:

- Outline drawings of his proposed scheme;
- Outline construction method statement with safety risk assessment;
- Summary of changes from the *Employer's* Design Information;
- Proposed design check category of the structure;
- List of third party approvals required for the alternative design proposal;

  Outline programme for design, liaison, checking, consents, *ProjectManager*'s review and construction; and
- Proposed design and *checking bodies*.

(4) The *Contractor* is responsible for co-ordination of the design and its integration with other parts of the *works* not designed by the *Contractor*. This may involve regular liaison and formal reviews on all aspects of the design with the *Employer's* other designers.

(5) Design particulars (including drawings and specifications) are subject to formal review by the *Project Manager*.

(6) The *Contractor* takes account of the *Project Manager's* and the *Employer's* costs incurred in review and acceptance of the proposed change. The *Contractor* is also responsible for management of the programme to ensure that the process of revisions to the design does not impact the planned date for Completion, the Completion Date or on any other Key Date.

(7) The *Project Manager* may agree a phased submission programme to facilitate development of the assured design and to mitigate delays in the construction programme.

WI320.2.3 Records

(1) The *Contractor* maintains a log of all proposed design changes sufficient to track the relevant correspondence, design particulars, and cost and programme impacts of each design change.

WI320.2.3 Cost saving proposals (Z2.10)

(1) The *Contractor* identifies opportunities for cost saving proposals, notifies the *Project Manager* in a timely manner and undertakes to chair and manage a cost saving meeting within two weeks of notification. The meeting is attended by key personnel to review the proposals and the beneficial outputs to this contract. The *Project Manager* reserves the right to refuse any output of the cost saving process. The *Project Manager* reserves the right to instruct the output of a cost saving exercise as a change to the Works Information, if it constitutes a change in scope.

WI325 Design co-ordination

WI325.1 Design Liaison Manager

(1) The Design Liaison Manager is appointed by the *Project Manager* but is not delegated any of the *Project Manager's* powers under the contract unless expressly advised to the *Contractor* in writing. Consequently the *Contractor* addresses all written communications to the *Project Manager* with a copy to the Design Liaison Manager.

(2) For the avoidance of doubt, any act or omission by the Design Liaison Manager (including but not limited to the acceptance, where applicable, of any communication from the *Contractor*) does not change the *Contractor's* responsibility to Provide the Works or his liability for his design.

(3) For the avoidance of doubt any assistance provided by the Design Liaison Manager does not remove from the *Contractor* the responsibility to obtain relevant design checks, consents and approvals in respect of his design.

(4) The Design Liaison Manager's duties include:

- Acting as the *Project Manager's* focal point for any design-related queries during preparation of the *Contractor's* design;
- Liaising with the *Contractor* during the preparation of the *Contractor's* design;
- Assisting the *Contractor* to prepare Assurance packages and the compliance submission, including advice on format and content of submissions.
- Assisting the *Contractor* to obtain any consents and third party technical approvals required, including advice on format and content of submissions. Assisting with the liaison and reviews that are necessary to integrate *Contractor's* design with other parts of the *works* commissioned directly by the *Employer* from Others;
- Routine monitoring of the *Contractor's* developing design particulars for compliance with the Works Instruction;
- Routine monitoring of the *Contractor's* progress against the periods allowed for design in the Accepted Programme; and
- Monitoring the preparation and update of the records, including as-built drawings, and the *Contractor's* preparation of data for the Health & Safety File.

WI325.2 *Contractor's* Design Manager

(1) The *Contractor* appoints a design manager (the *Contractor's* Design Manager) who is responsible for the management, coordination, quality control and Assurance of the design work.

The requirements of the *Contractor's* Design Manager is to;

- be the primary interface with the Design Liaison Manager on design matters.
- have the appropriate knowledge, skills and experience to carry out the role.
- act as the single point of contact for design queries for *Contractor*, designers, Design Liaison Manager, *Project Manager* and *Employer*.
- be responsible for managing the exchange of information between the various discipline designers in order to achieve a coordinated design.
- chair design team meetings.
- conduct regular informal interdisciplinary reviews and at least one formal documented interdisciplinary review prior to the design being submitted to the *Employer*.
- collate all design information and maintains the official copy of the design.
- be the first point of contact for any design changes, whether requested by the *Employer*, the *Contractor*, or necessitated on site.

(2) For the duration of the design phase of the *works* until the submitted design has been accepted by the *Employer*, the *Contractor* must convene a weekly design team meeting. The meeting is to be chaired and recorded by the *Contractor's* Design Manager and will be attended by a competent representative from each design party. A representative of the *Project Manager* and/or the *Employer* may elect to attend. A copy of the recorded minutes is to be submitted to the *Project Manager*, regardless of his attendance or that of one of his agents.

WI330 Requirements of Others

(1) The *Contractor* acknowledges that technical interfaces may exist between Plant and Materials and Equipment provided under these *works* and Others.

(2) The *Contractor's* design is compatible with the design, installation and operation of the Other's plant, materials and equipment.

WORKS INFORMATION

WI 400

COMPLETION

Document History: **Version:**	**Prepared by**		**Quality Checked by**		**Legal Review**		**Peer Review**	
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4.0					☐			
5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

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WI405 **Completion definition 11.2(2)**

Completion is when the *Contractor* has done all the work necessary for the *works* to be Available in accordance with Part 8 of the QICC Process.

WI405.1 **Works to be Done by the Completion Date**

(1) Without limitation to the provisions in the *conditions of contract*, the *Project Manager* will not certify that a *section* of the *works* or the whole of the *works* have achieved Completion unless the items below have taken place and therefore the *Contractor* should allow for this in his programme the following:

- The *Contractor* completes all *works* necessary to facilitate a safe Handover to the *Employer*;
- All the *Employer's* assurance processes have been achieved in respect of the *works* including compliance with *Employer's* Standards S1900 and S1-538.
- The *Contractor* has completed requirements of the *works* and as required within the Works Information WI100.
- All records, documents and drawings have been issued to the *Project Manager* and Others as appropriate,
- That all operations and maintenance data and health and safety information has been provided by the *Contractor* and accepted by the *Project Manager*; and,
- The training of staff who will operate and maintain the *works* has been completed where applicable.

(2) In accordance with clause 11.2 (2) of the *conditions of contract*, and the requirements of this Works Information, the completion of all the *works*, and provision of all deliverables and requirements of the Works Information is a condition precedent for Completion, notwithstanding that the *works* may be Available in part or in full for use.

Completion is not achieved until *Contractor* ensures that:-

- the Site is clear of all unused Plant and Materials, and Equipment and other items to ensure free and unobstructed access by the *Employer* and *Others*
- all temporary hoardings and/or barriers have been removed;
- all strategic maintenance spares and tools are provided to the *Employer* for those assets that have a long lead time or are vulnerable and/or susceptible to failure or damage; and
- all necessary training to the *Employer* and Others for those assets and systems installed as part of the *works* has been provided.

(3) The *Contractor* gives no less than four weeks notice to the *Project Manager* and *Employer* of the date that a *section* of the *works* will achieve Completion. The *Contractor* completes the *works* as per the sequencing per *section* as stated within Contract Data Part 1.

WI405.2 **Completion documentation**

(1) In addition to all other requirements of this Contract the *Contractor* complies with the

requirements of LU Standard S1900

(2) The *Contractor* complies with the requirements of LU10_WI400 Appendix 01.

(3) In addition to the above requirements, the *Contractor* supplies to the *Project Manager* the following, no less than 8 weeks prior to seeking to hand assets over into maintenance:

- Red lined drawings
- Operations and Maintenance manuals
- Operations and Maintenance diagram
- Completed asset registers

(4) This information will be used by the *Employe*r to vary existing maintenance contracts, in readiness for handover. The *Contractor* shall be liable for any delay in the acceptance of assets into maintenance due to non compliance with this clause.

(5) The *Contractor* provides to the *Project Manager*, five hard copies and five electronic copies on CD of all operating and maintenance manuals necessary to enable the *Employer* to operate and maintain the works.

(6) Each hard copy of documentation provided by the *Contractor* is securely bound in folders with each folder clearly labelled and containing a contents list.

(7) The manuals include copy evidence for:-

- All new and affected asset certification,
- The training plan and requirements for further operators/users,
- Training logs/certificates (or cross references to the appropriate document on an asset by asset basis)
- Planned maintenance regime
- Formal concessions on an asset by asset basis (or cross references to an appropriate separately supplied document/concessions log)
- Warranties where appropriate
- One copy of the as-built drawings

WI405.3 **Delivery into service**

(1) The *Contractor* produces a fully populated asset information Data Pack in accordance with the requirements of the Works Information.

WI405.3.1 **Conditions of Delivery into Service:**

Completion does not take place unless and until the works have been Delivered into Service by the *Contractor* as follows:-

- Issuance of a Take Over Certificate by the *Project Manage*r in accordance with the QICC procedure (See LU Standard S1900 and WI400 Appendix 01)
- All documentation (manuals/records etc.) reasonably necessary to enable the

Employer and/or Others to operate and/or maintain the works have been delivered,

- All Standards have been complied with,
- All statutory and regulatory approvals have been obtained, provided that the *Employer* exercises its statutory and regulatory powers to assist the *Contractor* to obtain such approvals but only:

  (a) to the extent the *Employer* is able; and
  (b) where the *Contractor* provides all information and satisfies all obligations and otherwise establishes to the satisfaction of the *Employer* that any such application for statutory and/or regulatory approval can properly be made.

- All data outputs (e.g. performance data/customer information) reasonably necessary to enable the *Employer* to operate the works are available at required levels,
- All relevant *Employers'* or Others staff have been trained as required by the Works Information.

WI405.3.2 Conditions Procedure for Delivery into Service

Not used

WI410 Sectional Completion Option X5 (Only if Option X5 used)

For the avoidance of doubt WI410 (1) and WI410 (2) are not used.

(1) The *Contractor* gives no less than four weeks notice to the *Employer* of the date that a *section* of the *works* will achieve Completion

(2) The *Contractor* completes the *works* in the *sections* as stated within Contract Data Part 1.

WI415 Training

WI415.1 Training of *Employer's* and /or Others maintenance staff/end users

Prior to Completion of each *section* of the *works*, the *Employer* appoints maintenance staff or a maintenance contractor to undertake the operation and maintenance of the *works* following Handover. The *Contractor* provides any necessary assistance to the *Employer's* staff during the course of the installation to explain the purpose and function of the works.

The *Contractor* provides a minimum period of fourteen (14) days prior to Completion, to instruct *Employer*'s operational staff and maintenance staff in the day to day running of the Plant and Materials, and systems. The *Contractor* submits O&M Manuals to the *Project Manager* for acceptance.

The *Contractor* produces a training plan outlining all training activities and submits a copy of the plan to the *Project Manager*, for acceptance in accordance with the requirements of the Works Information, prior to commencement of training, which includes the following as a minimum:

- Off-site class room training;

- On-site class room training;
- Hands on training;
- Refresher training; and
- Visits to relevant sites (where appropriate).

Training is to include operation of the overall system and includes individual Plant and Materials.

Training refers to the relevant sections of the O&M Manuals, Drawings and Specification.

Training is to provide a thorough understanding of the purpose and intent of all Plant and Materials, and systems for the purposes of safe operation, fault finding, maintenance, repair and overhaul, and include but not be limited to the following:

- Plant control functions;
- Plant monitoring and action on alarms;
- Operation of safety systems;
- Operation of set-point adjustment and controls;
- Fault or failure shutdown of main elements of Plant whilst in automatic mode;
- Restarting of Plant and Materials following shutdown;
- Operational function from SCADA;
- Operation of the main elements of plant when the various Programmable Logic Controller (PLC) controls fail;
- Total power failure during normal operation and auto start-up on restoration of power;
- Access to, and removal (as necessary) of Plant and Materials;
- Routine maintenance tasks; and
- Lifting arrangements.

The *Contractor* provides course notes and any visual aid equipment that may be required.

The *Contractor* ensures that only competent trainers deliver sessions.

WI420 **Final clean**

Not Used

WI420.1 **Final clean of Site**

(1) Prior to Completion the *Contractor* ensures that the Site is clear of all Equipment and unused Plant and Materials and other items to permit free and unobstructed access by the *Employer* and Others.

WI425 Security

WI425.1 Security on Completion

(1) The *Contractor* prepares a plan eight weeks in advance of the Completion Date to enable the *Contractor* to transfer the possession of the Site or part(s) thereof to the *Employer*;

This includes;

- a process to ensure compliance with all health and safety;
- provisions to ensure adequate emergency egress and access for the *Contractor* and Others;
- boundary details of the relevant area;
- relevant drawings and condition surveys;
- security arrangements;
- handover of general and security asset keys, and
- confirmation of the completion of the relevant works within the area to be transferred.

Prior to submitting the Handover Plan to the *Project Manager* for acceptance, the *Contractor;*

- carries out a joint inspection (including a photographic survey) of the relevant area in conjunction with the *Project Manager* and the Others to whom the area is to be transferred. The joint inspection and survey report are included in the plan;
- consults with all relevant Others and with the *Project Manager* and takes account of their comments; and
- obtains the agreement of the *Project Manager* and/or Others to whom the relevant area will be transferred. The *Contractor* submits the pl*an (signed by t*he *Contractor* and the relevant Others) to the *Project Manager* for a*cceptance* at least four weeks before the Com*pletion Da*te.

There is no Completion of t*he Site or part*(s) thereof until the *Project Manager* has accepted the Handover Plan for that Site.

The *Contractor* manages and implements the Handover Plan in conjunction with the *Project Manager* and Others.

WI430 Correcting Defects (45.1, 45.2)

WI430.1 Access for correcting defects

(1) In complying with the requirements of the *defects correction period* as stated in the *conditions of contract* and Contract Data, the *Contractor* continues to make use of and

complies with the Access Plan and SABRE process requirements in order to arrange the appropriate access to the Site in order to correct any Defects.

WI435 Pre-Completion arrangements

WI435.1 Pre-Completion Meeting

(1) The *Project Manager* instructs the *Contractor* to attend a Pre-Completion meeting with the *Employer* to review the *Contractor's* progress and planning twelve (12) weeks prior to planned Completion as shown on the Accepted Programme, or if there is no updated Accepted Programme when the *Project Manager* deems it to be the appropriate time. This enables the *Employer* to consider what action may be required or assistance given in order to achieve Completion.

WI440 *Contractor's* Maintenance Obligations

(1) If the *Employer* uses or permits Others to use any part of the *works* prior to Completion being certified the *Contractor* remains responsible for the care and protection of the *works* and for its maintenance and remains in the role of Principal Contractor in accordance with the CDM Regulations.

WI440.1 Notice requirements;

(1) The *Contractor* provides the *Project Manager* no less than eight weeks' notice of the date that the *Contractor* believes he will achieve Completion.

WI440.2 Draft Operational & Maintenance Data

(1) Not less than sixteen weeks prior to Completion, the *Contractor* submits to the *Project Manager* for acceptance, a draft of the operation and maintenance (O&M) manual, including an outline plan for preventive maintenance, and a recommended list of spare parts holding (together the "O&M data").

(2) The *Project Manager* either accepts the O&M Data or notifies his non acceptance, giving reasons, within four weeks. A reason for not accepting the draft O&M data is that it is not sufficient to enable the *Employer* to accept responsibility for the maintenance of the *section* of the *works*.

(3) The *section* of the *works* which, following take over by the *Employer*, is to be transferred, is not accepted as complete until the O&M data are accepted by the *Project Manager*.

WI440.3 Consent to Operate

(1) Not used

WI 440.4 Maintenance of completed works;

(1) The *Contractor* is responsible for routine preventive maintenance and breakdown maintenance of all items of Plant and Materials which have been installed in the *works* and have not been taken over by the *Employer*.

(2) Responsibility for maintenance of new and altered assets passes from the *Contractor* to the *Employer's* maintainer at Handback or Handover of the asset.

Handback means the process by which the *Contractor* returns into use an altered or unaltered asset where the function of the asset is not changed by the *Contractor's* occupation or alteration. And the responsibility for maintenance after the Handback returns to *others*.

Handover means the same as Completion or take over by the *Employer* (in accordance with clause 35 of the *conditions of contract)*.

WI440.5 **Spares;**

(1) The *Contractor* submits the recommended list of operational asset spares for the *Project Manager's* acceptance as part of the draft O&M manual. The spare parts holding list identifies items required as a basic holding suitable for one year's routine preventive maintenance together with identification of all long delivery components.

(2) Where the system or item of Plant and Materials is innovative and is not commonly installed elsewhere on the LU network, the *Contractor* provides spare parts sufficient for six months' preventive maintenance together with spares of all long delivery components.

WI440.6 **Maintenance Training;**

(1) Where the system or item of Plant and Materials is innovative and is not commonly installed elsewhere on the LU network, the *Contractor* provides comprehensive training for maintenance staff for all electronic or electrical and mechanical Plant and systems prior to the Handover into operational use of that part of the *works.*

WI445 **Meeting post Completion**

The *Project Manager* instructs the *Contractor*'s Project delivery team to attend an 'estimate closure' meeting with the *Employer*'s programme assurance team on Completion of the Project, with a view to sharing any lessons learned in the course of the execution of the *works* that have relevance and impacted on the overall capital costs of the *works*.

WI450 **Post Completion review meeting**

Post-Completion, the *Contractor*'s project delivery team will be instructed to attend meetings fortnightly arranged by the *Project Manager* to review progress, planning and implementation of any outstanding works, commissioning and Defects Correction prior to the *defects date*.

WI455 **Planned and Reactive maintenance**

The responsibility for maintenance of assets is in accordance with the conditions of contract and includes:

a. The maintenance of new permanent assets brought into use but not Available remains the *Contractor's* responsibility in accordance with clause 35.2 of the *conditions of*

contract.

b. The maintenance of new temporary assets constructed or installed to enable the ongoing operability of the *Employer's* asset but not forming part of the permanent works remains the *Contractor*'s responsibility.

c. The responsibility for maintenance of existing assets is retained by the *Employer* save where access to such assets is prevented by the *Contractor* or the assets have been significantly modified by him such that a material change to the existing maintenance regime is required. In which case the *Contractor* becomes responsible for the maintenance of the affected assets until Available, where access is prevented, and until such time as they can be accessed.

d. The maintenance of existing assets that are unchanged by the *Contractor* remains the responsibility of the *Employer*.

e. The maintenance of new assets on being made available is the *Employer's* responsibility.

The *Contractor* is responsible for all planned and reactive maintenance of the works until the Defects Date.

WI460 **Maintenance records**

The *Contractor* submits to the *Project Manager* for acceptance, no less than ten weeks prior to the Defects Date, all maintenance records

WORKS INFORMATION

WI 500

PROGRAMME REQUIREMENTS

Document History: **Version:**	**Prepared by**		**Quality Checked by**		**Legal Review**		**Peer Review**	
	Name	Date	Name	Date	Tick	Date	Name	Date
1.0					☐			
2.0	Steffi Brereton		Willem van Zyl		☐		Ailsa Waygood	
3.0					☐			
4.0					☐			
5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

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WI505 Programme Requirements

(1) The *Contractor* submits within four weeks from the *starting date*, a programme and the associated Activity Schedule to the *Project Manager* for acceptance. This programme is to be referred to as the first programme issued for acceptance and its data date will be the Contract Date. No progress shall be shown on this programme.

(1A) Upon submission of the 'first programme issued for acceptance' to the *Project Manager* the *Contractor* submits a programme for acceptance showing progress made to the 'first programme issued for acceptance' in accordance with the requirements of clauses 31 and 32 of the *conditions of contract* and the Works Information.

(1B) The 'first programme issued for acceptance', when accepted by the *Project Manager*, shall form the basis of future reporting and will become the Accepted Programme.

(1C) The first progressed programme cannot be accepted until the 'first programme issued for acceptance' has been accepted. Until there is an Accepted Programme the *Project Manager* may base his payment assessment on assumed progress.

(2) In addition to the information listed in clauses 31 and 32 of the *conditions of contract* as amended, each programme which the *Contractor* submits for acceptance:

- Is in Primavera Enterprise Version 6.1 or later. Primavera Project Planner settings are as advised by the *Project Manager* to ensure compliance with the LU Programme Assurance Office Master Project Database (MPD) Desk Reference as defined in WI500 - Appendix 01 MPD Desk Reference defined within in the Works Information;
- Is be structured in accordance with the WBS example set out in WI500 – Appendix 02 Work Breakdown Structure, expanded as necessary and agreed with the *Project Manager*;
- Includes strategic milestones as advised by the *Project Manager*. If so required, such milestones shall be included in a logical manner;
- Includes Prices loaded by the *Contractor* onto a sufficient quantity of activities, with actual and remaining costs updated each Period to an acceptable level of detail to the *Project Manager*;
- Is used to create the Activity Schedule, the summation of which totals the Prices
- Includes a sufficient number of activities necessary to allow Earned Value Management to be used during this contract;
- Includes the total of the Prices for the items in the programme, reasonably distributed between the programme activities;
- Is resource loaded with the *Contractor's* supplied main Plant and Materials, all major Equipment and manpower by trade and man hours, including all Subcontractors. The level of resources are substantiated by the production rates and manpower details described in the programme narrative and by the sequencing and deployment plan described in the safe system of work;
- Is resource loaded with the *Employer's*, and Others, critical resources as required by the *works;.*
- Identifies a summary programme for the *works* in linked bar chart format showing the critical path(s), *sectional* Completion Dates, Key Dates and other major milestones;
- Interfaces to other *works* controlled by Others are represented as one milestone at the end of a string of activities to be delivered Others to allow co-ordination and integration with the *Contractor's works*;

- Shows the *starting date*, *access dates*, Key Dates, if applicable, and Completion Date taken from the Contract Data part 1 as milestones on the programme which are in a separate 'key milestone' section;
- Shows the planned date for Completion as a milestone on the programme which is logically linked to the programme activities, and is shown in a separate 'key milestone' section;
- Shows the Contract Completion Date as a fixed milestone in a separate 'key milestone' section;
- Includes all major milestones to Completion of the *works* including issuance of a Take Over Certificate by the *Project Manager* and any other dates notified by either the *Employer,* Others or the *Project Manager*;
- Includes the terminal float for the whole project (or individual section where Sectional Completion applies) as a separate activity;
- Includes *Contractor's* Time Risk Allowances which must clearly be identified;
- Except for the first programme issued for acceptance reports and records updated physical progress on each programme activity using physical percentage complete and its effect upon the timing of the remaining *works* to be performed within the programme;
- Includes the impacts and changes in time, resource and cost of any implemented compensation events on existing and additional activities;
- Monitors progress at the lowest activity level agreed by the *Project Manager* to enable a suitable lookahead to be generated and identifies the required corrective actions to avoid and mitigate any delay to the Completion Date;
- Identifies and includes respective elements of the *works* in accordance with the *Project Manager's* instructions*;*
- Includes, without limitation detailed supplier and Subcontractor programmes which represent the *works*;
- Identifies the dates when the *Contractor* plans to submit all deliverables required to ensure timely progress of the *works*, including but not limited to those referenced within Works Information WI600*;*
- Includes the agreed dates when documents are submitted, for Acceptance by the *Project Manager* and/or Others, in respect of design or third party consents;
- Includes all Engineering Hours access dates;
- Includes all engineering train dates and any contingencies;
- Includes all weekend closures, possessions and/or blockades required to undertake the *works*;
- Includes impacts of any *Employer's* weekend closures possessions and/or blockades;
- Includes the dates of submission of any method statements, access requests, planning requests and outage requests;
- Includes the dates of submission of any logistics plan;
- Includes the dates of commencement of all permanent and temporary construction and installation activities;
- Includes the dates of factory and site inspection, tests and sampling that require to be notified and co-ordinated with the *Employer, Project Manager, Supervisor* and and Others;
- Includes all quality hold points and quality control points, including QICC sign offs for each relevant activity;

- Includes all the dates contained within the *Contractor's* Subcontract Procurement Plant;
- Includes the dates when the *Contractor* consent submissions, if relevant, are required to be submitted and/or accepted;
- Shows activities relating to (but not limited to) the surveys, design, procurement, manufacture, installation, testing and handover of Plant and Materials;
- Identifies the timescales required for the testing and approval of Plant and Materials in accordance with the requirements of this contract;
- Has at least one Critical Path to the Project Completion Date;
- Shows that the critical path duration of data activities on the critical path is no greater than eight weeks duration unless accepted by the *Project Manager*;
- Identifies the order and timing of training to be provided to the *Employer* and Others*;*
- Identifies the order and timing of training to be provided by the *Employer* and Others;
- Allows sufficient time for the process of review, revision, resubmission and approval of all deliverables to be submitted to the *Project Manager* so that such process may be completed without delaying the placing of orders and the execution of the *works*;
- Includes the agreed dates when, in order to Provide the Works in accordance with the programme, the *Contractor* requires *works*, requirements, services, design information or other information to be provided by the *Employer* and Others;
- Includes the dates when the *Contractor* requires the *Project Manager* to issue instructions to undertake, if applicable, any of the Fixed Price Options to ensure the *Contractor* carries them out to achieve Completion on or before Completion and in all instances no later than the Completion Date;
- Is set to use 'retained logic';
- Is fully logic linked;
- Identifies the working pattern for any given activity, using a specific calendar as agreed with the *Project Manager*. The programme should be based on calendars including statutory holidays, unless the nature of the works require weekend working and working on statutory holidays. For approval periods and any dependencies relating to Others a 5 day calendar is assigned including statutory holidays and a Christmas shutdown period;
- Is clearly titled, numbered and dated;
- Adheres to the following naming convention:
  - Contract ID;
  - *Contractor*;
  - Title of Contract (where applicable);
  - Period;
  - Financial year;
  - Status, i.e. draft or final revision; and
  - Date of issue.

(3) All activity IDs are prefixed with the contract portfolio number and package ID. The remainder of the activity ID forms a unique identification. The activity IDs and/or descriptions are not to be amended, changed and/or deleted without the prior approval of the *Project Manager*.

(4) All implemented compensation events and their costs are to be clearly identified as separate activities and/or sub-activites and referenced in the activity ID in the format 'CEXXX' and activity name.

(5) All requirements identified as *Employer* or *Project Manager* requirements are to be clearly identified in the activity ID in the format 'LULXXX' and activity name.

(6) In addition to the codes required by the Master Project Database Desk Reference (MPDDR), the programme incorporates all activity coding as specified in the Project Activity Code List which will be provided as and when the *Project Manager* requires..

(7) The *Employer* may require the *Contractor* to apply and maintain additional codes as deemed necessary, in order to facilitate the roll up of the *Contractor's* activities into a Master programme. The codes required against each of the *Contractor's* activities are specified by the *Project Manager* and/or Planning Manager

(8) In the event the *Contractor* wishes to utilise other activity codes in communication with the *Employer*, the *Contractor* first agrees such activity codes provided that in any case they will be deemed to be domestic to the *Contractor*.

(9) Each programme submitted for acceptance contains a Work Breakdown Structure (WBS) which is represented within the Primavera Programme using the WBS development tool contained within Primavera Enterprise Version 6.1 or later.

(10) Each programme submitted for acceptance contains, if required, a Cost Breakdown Structure (CBS) coded to the LUL CBS for each particular Project and as defined elsewhere in the Works Information.

(11) The programme will be subject to an *Employer's* risk assessment utilising Quantitative Schedule Risk Analysis which may require further programme revisions and justification from the *Contractor* including, but not limited to, the usage of constraints, leads and lags.

WI510 Programme Revisions

(1) The *Contractor* submits to the *Project Manager* for acceptance a:

- Draft updated programme in '.xer' as well as PDF format on each Wednesday of week 4 of the *Employer's* reporting Period with the data date in the programme set to the Sunday (beginning) of week 1 of the next Period (or 01 April for Period 13 even if it is not a weekend).
- Programme for acceptance on each Tuesday of Week 1 of the *Employer's* reporting Period in '.xer' format as well as PDF format. The data date in the programme is set to the Sunday (beginning) of week 1 of that Period in line with the data date set in the draft programme (or 01 April for Period 13 even if it is not a weekend).

(2) The *Contractor* may also submit a revised programme to the *Project Manager* for Acceptance:

- following the implementation of a compensation event and/or *Project Manager's* instruction;
- where the *Project Manager* has agreed to a decrease in any extension of time to the Completion Date previously determined; or
- where there has been an agreed change of logic, activity durations or scheduling of the *works* which significantly changes the forecasts.

(3) All revised programmes submitted for acceptance include a programme narrative in line with the requirements set out in WI515 of this document.

(4) Unless previously agreed with the *Project Manager* the *Contractor* does not amend costs assigned to activities on the Accepted Programme and concomitant Activity Schedule in any of the revised programmes and Activity Schedules submitted for acceptance

(5) For the purposes of earned value reporting the *Contractor* uses the Accepted Programme

and the programme issued for acceptance.

(6) The *Contractor's* planning manager meets regularly (minimum of every four weeks) with the *Project Manager's* planning manager and as necessary with the *Project Manager's* commercial manager where the effects of any compensation events are being incorporated.

WI515 Programme Narrative

(1) The *Contractor* submits a programme narrative, together with the first programme issued for acceptance, detailing procedures for the establishment and revision of programmes including the responsibilities for and methods to be used to measure the actual progress achieved. This includes a reference document which defines the Project Work Breakdown Structure (WBS), Activity ID numbering system, Activity Codes and Project Calendars, including a summary of statutory holidays applied to calendars for each year of the contract. The programme narrative also contains all items listed within WI515 (3).

(2) In addition to the programme narrative the *Contractor* provides a change log detailing all new, deleted or adjusted activities. This also includes the addition or removal of lags and any changes to the sequence of *works* applied.

(3) The *Contractor* provides a programme narrative with each programme submitted for acceptance to explain how the programme has been put together, and includes an explanation of, but not limited to:

- Changes to the programme and explanation of slippage, changed durations and mitigations applied;
- Changes to costs on existing activities and any additional costs added to the programme;
- Description of the critical path;
- Work sequences;
- The time risk allowance against each relevant activity;
- Float and terminal float allowances;
- The deployment of *Contractor*'s Equipment and labour and *Employer's* and Package 5A supplied items, such as critical resources, access;
- The shifts assumed in determining durations;
- Intended working hours;
- The schedules of quantities used in developing the programme;
- Any calendars used including what statutory holidays and other holidays have been allowed for and any changes to the calendar applied during the course of the project;
- Dependencies and changed dependencies;
- Project specific activity codes used;
- Project specific user defined fields used;
- Key assumptions identified during the development and throughout the course of the programme;
- Programme risks identified during the development and throughout the course of the programme; and
- Any other proposed changes which the *Contractor* proposes to make to the programme

(3) The programme narrative is in sufficient detail to enable the durations, leads and lags in the

logic diagram to be reconciled and substantiated, and to enable the projected levels of labour (by trade) and staff and flows of goods, Plant and Materials, and Equipment identified to be substantiated.

WI 520 Work of the *Employer* and Others

(1) The *Contractor* ensures that the programme identifies the interfaces with materials and services supplied by the *Employer* and Others.

(3) The *Employer* is to contract directly with Others including but not limited to the Package 5A contractor to carry out the design, manufacture, supply and installation of their works. The installation of these works will interface with those of the *Contractor* who is to make provision in the programme for the necessary co-ordination, design interface, operational timescales and access arrangements to enable the implementation of these works.

WORKS INFORMATION

WI 600

QUALITY AND ASSURANCE

Document History: **Version:**	**Prepared by**		**Quality Checked by**		**Legal Review**		**Peer Review**	
	Name	Date	Name	Date	Tick	Date	Name	Date
1.0					☐			
2.0	Howard Cocking		Willem van Zyl		☐		Ailsa Waygood	
3.0					☐			
4.0					☐			
5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

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WI605 **Terminology**

(1) The following are Quality and Assurance System terms used in this section of the Works Information;

Term	Meaning
Assurance	Process of ensuring and providing evidence that the *works* have been designed and constructed in compliance with the *Employer's* Requirements.
Conformity	Fulfilment of specified requirements.
Contractor's Project Quality and Assurance Plan	A document setting out how the quality requirements of this contract will be achieved, controlled, assured, demonstrated andmanaged.
Corrective Action Request (CAR)	A statement prepared to record a failure to implement a specified process or contractual requirement. Generally identified during an audit.
Employer's Requirements	The output from the *works* in respect of spatial and operational improvements documented in the *Employer's* Requirement Statement in Works Information Chapter 1A, and the Standards and legislation applicable.
Handback	The process by which the *Contractor* returns into use an altered or unaltered asset where the function of the asset is not changed by the *Contractor's* occupation or alteration. And the responsibility for maintenance after the Handback returns to the Infraco or PFI Contractor.
Handover	The process by which a new asset or an existing asset where the function has changed, is handed over to the *Employer* and the responsibility for maintenance after the Handover transfers to the *Employer* and is carried out on the *Employer's* behalf by an Infraco or PFI Contractor.
Hold Point	A point in time in the construction of an element of the *works* at which the *Project Manager* is invited to inspect the *works* to verify quality or completeness prior to the work progressing. The *Project Manager* will identify these points during his review of the Inspection and Test Plans.
Inspection & Test Plans (ITPs)	Plans specifying the activities required to establish how Conformity is to be verified. They identify the responsibilities for executing the activities, the documents controlling them and the records required to provide Assurance. These are prepared for a particular element of the *works* to support the *Contractor's* Project Quality and Assurance Plan.
Safe System of Work	A statement submitted in accordance with the requirements of clause 31.2 of the *conditions of contract* describing how the *Contractor* plans to do the work, and identifying the principal Equipment and resources which he plans to use.
Non	A statement raised to record a Non-conformity (Defect)

Conformance Report (NCR)	in the product, workmanship, or system.
Non conformity	A Defect – as defined in clause 11.2 (5) of the *conditions of contract*. (The term "Non-conformity" is used to be consistent with industry practice and includes System Defects as defined below.)
Outstanding Work List	A list generated at an inspection or acceptance stage to identify Defects which must be remedied before an asset can be put intooperational use.
Quality and Assurance System	The management system for achieving the quality requirements described in the Works Information and for demonstrating that achievement, including the provision of documentary evidence and supporting records.
Quality Control Procedures(QCPs)	Documents that specify operational techniques or activities that areused to fulfil requirements for quality, and as such support thecontract quality plan.
Site Query (SQ)	A request for information, clarification or agreement to a proposed action.
System Defect	A failure to comply with the quality and Assurance management requirements specified in this Works Information Chapter 11.
Verification Activity Plan	Document prepared and owned by the *Employer* in accordance with LUL Standard S1538.

WI610 **Quality Statement**

(1) The *Employer* requires the *Contractor* to adopt and apply effectively and efficiently Quality Management Principals [*ISO 9000*] for this Project that enables

- achievement of all the Project objectives,
- sustainable culture of Continuous Improvement and Innovation to correct and prevent non-conformances ,
- Enables a robust and adequate application of Quality Management Systems [*ISO 9001*].

The approach to be taken is to be based on the eight Quality Management Principals of Customer Focus, Leadership, Involvement of People, Process Approach, System Approach to Management, Continuous Improvement, Factual Approach to Decision Making and Mutually Beneficial Supplier Relationships.

The *Contractor* will show in their Quality and Assurance Plan(s) [*ISO 10005*] how these eight principals throughout the contract are applied and validated by self Assurance, Processes and Controls and Validation.

WI610.1 ***Contractor's* Quality System**

(1) The *Contractor's* Quality System complies with the following requirements:

(i) For contractors without existing quality management system certification: The *Contractor* at all times manages quality using suitably scaled and defined management system(s) that meet(s) the requirements as a minimum contained in ISO 9001 or similar.

(ii) For contractors with existing quality management system certification: The *Contractor* at all times manages quality using suitably defined management system(s) that meet(s) the requirements of standards ISO 9001 or similar.

(iii) Third party registration of assessed capability (i.e. approval to BS EN ISO 9000:2005, BS EN ISO 9001:2008 and BS EN ISO 9004:2000) is not considered to be demonstration that any specified quality and Assurance requirements of the contract have been met.

WI615 Quality and Assurance Management System

WI615.1 Quality and Assurance Management Systems requirements

(1) The *Contractor* provides a Quality and Assurance Management System which meets the requirements of LU Standard S1538 including appropriate quality management plans.

The *Contractor* shall, during the mobilisation period prepare and implement the *Contractor*'s Quality Management System as required in QUENSH, to Provide the Works.

(2) The systems identify how the *Contractor,* by audit, inspection, self certification, collation and provision of evidence, demonstrates that the *works* are designed and constructed in compliance with all the requirements of the relevant Standards and applicable laws.

(3) The *Contractor* submits plans and proceduresfor acceptance by the *Project Manager* to demonstrate how he will satisfy these requirements.

(4) The *Contractor's* quality and Assurance documentation are designed to minimise the duplication of information between plans and procedures.

WI615.2 Quality system requirements

(1) The *Contractor*, his designers, Subcontractors and suppliers establish and implement quality management systems which comply with BS EN ISO 9001:2008.

(2) The *Contractor* provides access to his quality system documentation for review, inspection, and audit by the *Project Manager*, to support the requirements of the *Employer's* Verification Activity Plan.

(3) Any intervention by the *Project Manager* in Hold Point inspections, and critical interventions, in audits, or in oversight of the progress of the *works*, does not relieve the *Contractor* of his obligations under this contract.

(4) Quality system documentation which supports Subcontractor and supplier activities in the *works* is reviewed and accepted by the *Contractor* before work starts on the relevant activities. This contract makes the documentation available to the *Project Manager* for audit on request.

(5) The *Employer*, the *Project Manager*, CRL and Others including statutory authorities and Statutory Undertakers have the right to observe, witness, conduct audits, inspections and tests of all *works* that are being executed by the *Contractor*, his designers, Subcontractors, suppliers and sub-tiers thereof.

(6) The *Contractor* provides all inspection and testing necessary to demonstrate compliance with the specified requirements. All Non-conformities are resolved before final acceptance of the whole of the *works* or any *section* thereof.

WI615.3 Quality and Assurance Manager

(1) The *Contractor* appoints a Quality and Assurance Manager to be responsible for all quality and Assurance matters on this contract. The Quality and Assurance Manager is suitably empowered and supported to enable the quality of work on this contract to be managed effectively.

(2) The Quality and Assurance Manager is independent of the design and construction functions, and has an independent link to senior director level. The Quality and Assurance Manager is full-time for the duration of this contract, dedicated to quality and Assurance matters on this contract, and is provided with adequate resources and authority to enable the quality of work on the contract to be managed effectively.

(3) The Quality and Assurance Manager:

- develops and implements a Project Quality and Assurance Plan as detailed in WI625 below;
- ensures the *Contractor's* Quality and Assurance Plan complies with BS/150 1055 and LU Standard S1538
- develops and provides quality training for all personnel to include induction and training for staff with specific quality responsibilities;
- manages all quality personnel;
- approves the quality elements of the *Contractor's* Safe Systems of Work;
- ensures compliance with legal and contractual requirements;
- provides advice and instruction to construction teams to deal rapidly and effectively with quality non-conformities and complaints;
- analyses individual quality non-conformities and complaints to identify trends, root causes and the corrective and preventive actions needed;
- ensures the provision and review of ITPs;
- undertakes audits of the *Contractor* and Subcontractors including compliance with legal and contractual requirements;
- produces information for the Management Review with senior management, that as a minimum should comply with ISO 9001 paragraph 5.6, and attend the Management Review meeting to ensure that the quality management system remains suitable, adequate and effective; and
- reports to the *Project Manager* on all quality issues.

(4) The Quality and Assurance Manager has the following key competencies:

- appropriate experience of quality management and the delivery functions of the contractor/supplier under self certification contracts;
- good knowledge and practical experience of developing, implementing and improving quality management systems;
- be a member of the Chartered Quality Institute (or an equivalent recognised quality body) or an appropriate engineering institute; and
- be a competent auditor or have access to competent auditors (eg IRCA registered)

(5) Designers, Subcontractors, suppliers and sub-tiers thereof each provides a quality assurance representative with adequate resources and appropriate authority to ensure the quality of work on this contract.

WI615.4 Samples for submission

(1) The *Employer*, the *Project Manager*, CRL and authorised Others including statutory authorities and Statutory Undertakers, have the right to observe, witness, conduct audits, inspections and tests of all *works* that are being executed by the *Contractor*, his designers, Subcontractors and supply chain.

(2) The *Contractor* provides all inspection and testing necessary to demonstrate that all

the requirements of the Works Information and the Standards and applicable law have been met. All non-conformities are resolved before final acceptance of the *works* or any *section* of the *works*.

(3) All on-Site and off-Site testing is carried out by laboratories accredited by UKAS or by a similar national body or by persons accredited to a similar standard and are subject to acceptance by the *Project Manager*. The quality system provides procedures for witnessing the manufacturing, construction, installation, testing and commissioning of the *works*.

WI620 Assurance management

WI620.1 General

(1) *Contractor* Assurance requires the *Contractor* to provide sufficient evidence to demonstrate to the *Project Manager* that the general and specific requirements of the Works Information and the Standards have been complied with.

(2) The *Project Manager* monitors Assurance by a process of planned sampling and critical intervention. The extent of sampling and intervention is risk and confidence based and recorded in the *Employer's* Verification Activity Plan which will be issued to the *Contractor* from time to time.

(3) The *Contractor* monitors, inspects, audits and verifies that his suppliers and Subcontractors and all tiers supplying the suppliers and Subcontractors are providing acceptable Assurance, through procedures and evidence, in compliance with general and specific requirements and the relevant Standards.

WI620.2 Design Assurance

(1) The *Contractor* provides Assurance to the *Project Manager*, that the proposed design is compliant with all relevant the *Employer's* requirements and Standards (subject to any concessions granted by the *Employer*), and reduction of all risks associated with the assets to as low as reasonably practicable (ALARP). The *Contractor's* processes for achieving Assurance are identified in the *Contractor's* Project Quality and Assurance Plan.

(2) Where there is a Defect, the *Contractor* carries out such redesign as may be necessary (and appropriate having regard to the extent of the *Contractor's* design obligations under the contract) to correct, rectify or prevent a recurrence of such Defect. Any such redesign ensures that the performance and operation of the *works* and the relevant part thereof is not degraded or reduced by virtue of such redesign from the Standards specified in the Works Information and/or in this contract or if no Standard is so specified, from the Standard reasonably inferred from this contract.

(3) As a minimum, the design management process is documented in the *Contractor's* or Subcontractor's management system to meet both LU Standard S1538 and ISO 9001 paragraph 7.3.

(4) The *Contractor* ensures that the Designer(s) have the appropriate professional qualifications to achieve the design assurance requirements.

WI620.3 Construction (including Testing and Commissioning) Assurance

(1) The *Contractor* Provides the Works in accordance with the assured design and with all applicable law, the Standards and the contract requirements.

(2) The *Contractor* assures the *Employer,* through submissions to the *Project Manager,* that the *works* have been constructed in accordance with this contract. The *Contractor* prepares, retains and provides evidence to the *Project Manager* to that effect.

(3) The *Contractor* implements self certification processes to ensure that the *works* have been constructed in accordance with the contract. Such self certification processes includes demonstrably independent scrutiny, monitoring, checking and audit regimes in accordance with the contract requirements. The *Contractor* ensures independence in assessment, and certification in the quality assurance, quality control and building control processes. The processes are identified in the *Contractor's* Project Quality and Assurance Plan which will indicate the relevant processes and procedures used.

WI620.4 Handover Assurance

(1) The process of access to the *Employer's* asset (e.g. Station and railway) and Handback at the end of engineering hours or a closure and Handover of new and altered assets are dealt with elsewhere in this Work Information.

(2) The *Contractor* develops a strategy, for acceptance by the *Project Manager*, to provide Assurance when it is necessary to take existing assets out of service and to bring new or altered assets into use.

WI625 *Contractor's* Project Quality and Assurance Plan

WI625.1 Project Quality and Assurance Plan

(1) The *Contractor* submits a Project Quality and Assurance Plan to the *Project Manager* for acceptance within eight weeks of the *starting date*. The *Contractor* reviews and updates the plan no less frequently than at six monthly intervals or sooner if significant changes occur to the processes, organisation or requirements.

(2) The *Contractor's* Project Quality and Assurance Plan is supported by applicable QCPs, ITPs, Safe Systems of Work and references to and extracts from LUL Standards.

(3) The *Contractor's* Project Quality and Assurance Plan include the controls to be applied by designers, Subcontractors, suppliers and sub-tiers thereof, both directly and by identifying the Quality and Assurance System documentation that designers, Subcontractors, suppliers and sub-tiers thereof are required to produce. The *Contractor* ensures that designers, Subcontractors, suppliers and sub-tiers thereof agree to and implement the applicable controls specified in the *Contractor's* Project Quality and Assurance Plan and the identified quality system documentation.

(4) The *Contractor*, the designers, Subcontractors, suppliers and sub-tiers thereof do not commence any activity on any part of the *works* for which the *Contractor's* Project Quality and Assurance Plan, applicable QCPs and ITPs, have not been accepted by the *Project Manager*.

(5) The *Contractor's* Project Quality and Assurance Plan, as a minimum, complies with the requirements of LUL Standard S1538, addresses the guidelines set out in BS EN ISO 10005:2005 and, as appropriate:

- Covers the relevant phases of the contract (design, assessments, procurement, manufacture, condition/defect surveys, construction, installation, monitoring, testing, commissioning and maintenance);
- Complies with BE EN ISO 9000, BS EN ISO 9001 and BS EN ISO 9004 (as applicable);
- Incorporates comprehensive quality system procedures for all identified risk and processes associated with this contract;
- Identifies clear and robust QCPs to provide independence of all inspection and checking processes to ensure that self certification is in place and evidence provided to assure the design and construction;
- Indicates the inter-relationship of the *Contractor's* Project Quality and

Assurance Plan with other associated documentation of the *Contractor*;

- Describes the interrelationship between the partners' quality systems in any joint venture or consortium;
- Describes the relationships and activities of the *Contractor*, designers, Subcontractors, suppliers and consultants including organograms;
- Specifies the requirements of the quality systems to be operated by the *Contractor's* designers, Subcontractors and suppliers;
- Includes *Contractor's*, designers' and Subcontractors' design control systems/procedures;
- Identifies the requirements for self certification, audit, intervention and inspection of all subcontracted processes;
- Incorporates a monitoring system for procurement, maintenance and condition of Plant and Materials to ensure that contract objectives can be fulfilled;
- Allows for external second and third party audits to be carried out as required by the *Project Manager*, CRL and Others as described above;
- Incorporates comprehensive Quality and Assurance System audit procedures including the preparation of audit reports;
- Specifies procedures to rectify Non-conformities raised, including System Defects raised as a result of both internal and external audits;
- Describes the statistical process techniques to be used to prevent the occurrence of Non-conformities;
- Provides for regular management reviews of the contract Quality and Assurance System;
- Includes records management procedures including for review and verification of records by the *Contractor's* quality assurance manager and compilation of Assurance packages at Handover of new and altered assets; and
- Identifies quality related Key Performance Indicators.
- How the requirements of it's customer's quality statement will be achieved

(6) The *Contractor* prepares, and updates as required, QCPs to support the *Contractor's* Project Quality and Assurance Plan for the *works*. The *Contractor* incorporates requirements for review and update of the QCPs in the *Contractor's* Project Quality and Assurance Plan. The *Project Manager* identifies those QCPs which require *Project Manager* acceptance.

(7) The primary activities addressed by QCPs and to be implemented by the *Contractor* are to include:

- Preparation of QCPs for design (including temporary works);
- Procurement, manufacture, construction, installation and testing along with all quality control processes;
- Design control including verification, validation, approval and acceptance by CRL and Others where relevant;
- Design change control;
- Preparation of Safe Systems of Work;
- Preparation, review and approval of ITPs;
- Preparation of Materials requisitions and approval of purchase orders inaccordance with accepted specifications;

- Performance of quality verification inspections;
- Control and calibration of measuring and test Equipment;
- Scheduling of necessary testing;
- Interim inspection of work including Equipment and temporary works;
- Monitoring against Safe Systems of Work;
- Monitoring the activities of designers, Subcontractors, suppliers and sub-tiers thereof, to ensure their compliance with the contract;
- Review of Material suppliers' and Subcontractors' quality verification documentation;
- Administration of Non-conformity and reporting to the *Project Manager*;
- Certification control and co-ordination;
- Quality verification inspection of the completed *works* and collation delivery of quality control records;
- Collation delivery of design and construction compliance verification and Assurance records;
- Administration of design, procurement, manufacture, construction, installation, test and functional Non-conformities and concessions and reporting of them to the *Project Manager*;
- Production of four-weekly reports of quality issues including Nonconformity records and Key Performance Indicators; and
- Verification of Plant and Materials and system compliance through conducting inspection, testing and commissioning.

(8) The *Contractor*, the designers, Subcontractors and suppliers completes the *works* in accordance with the *Contractor's* Project Quality and Assurance Plan and QCPs.

WI630 Surveillance and Audits

WI630.1 Surveillance

(1) The *Contractor's* Quality Management System provides a process and procedure for surveillance of the design and construction of the *works* by a process of audits, certification and self certification. The *Contractor* collates all the quality documentation from his inspection and testing processes and other verification activities.

WI630.2 Audit Programme

(1) The *Contractor* submits, with his *Contractor's* Project Quality and Assurance Plan, a twelve month rolling schedule of internal, designer, Subcontractor and supplier audits that will be conducted by the *Contractor's* personnel. The schedule, scope and method of the audits enable the *Contractor* to verify that all aspects of the *works* are conducted in accordance with contractual requirements.

(2) The twelve month rolling schedule and any amendments are subject to acceptance by the *Project Manager*. The twelve month rolling audit schedule is reviewed by the *Contractor* with the *Project Manager*, every four weeks, to reflect all relevant aspects and the developing and changing nature of the Project and the construction programme. This review will consider trends from audit findings and the adequacy of preventative measures put in place.

WI630.3 **Audit participation**

(1) The *Contractor* allows the *Employer*, the *Project Manager*, CRL and authorised Others to observe or participate in these audits and to conduct additional independent audits, as they consider appropriate, to provide Assurance that the *works* are being conducted in accordance with the contract requirements. The *Contractor* provides the facilities and access necessary for these audits to be carried out effectively.

(2) The *Contractor* places similar requirements on his designers, Subcontractors, and suppliers and all tiers thereof.

WI630.4 **Audit process and outputs**

(1) All audits performed by the *Contractor* are carried out as described in BS ENISO 19011: 2011 and all reports are, unless otherwise agreed by the *Project Manager*, tobe submitted for acceptance.

(2) The *Contractor* maintains an audit/CARs/preventative action reports database for use by the *Contractor* and the *Project Manager*.

WI635 ***Contractor's* resources**

WI635.1 **Resources**

(1) The *Contractor's* Project Quality and Assurance Plan includes organisation charts for the *Contractor* and all designers, Subcontractors, and suppliers to show the reporting structure of those personnel responsible for quality on this contract and particularly those personnel responsible for self certification activities.

(2) The *Contractor's* Project Quality and Assurance Plan includes curriculum vitae for all such quality personnel, including those of Subcontractors, designers, and suppliers and particularly those nominated for self certification activities.

(3) The *Contractor* demonstrates that adequate resources are provided to fulfil the contract requirements for quality and Assurance, audits, inspection and testing and self certification.

(4) The *Contractor* provides appropriate training to all personnel in the operation of the Quality Management System and maintains training records.

WI640 **Self Certification**

WI640.1 **Self certification requirements**

(1) The *Contractor* implements a quality control system for this contract to include monitoring, inspection and corrective action to ensure that the specified requirements are achieved.

(2) The *Contractor* submits, to the *Project Manager* for acceptance, his proposals forself certification within the *Contractor's* Project Quality and Assurance Plan. This self certification plan demonstrates the processes to be employed and proformas to be used to verify compliance with the specified requirements. The plan is based on the *Contractor's* existing company management system procedures and proformas. The *Contractor* submits the plan to the *Project Manager* for acceptance before commencement of the *works*.

(3) The plan identifies the means provided to achieve self certification of designers, Subcontractors and suppliers. The plan states when the designers', Subcontractors' and suppliers' own systems will be employed, and where the *Contractor* will exercise quality control over the designer, Subcontractor or supplier.

(4) There are specific requirements within the Works Information for independent

checking and inspection of elements of the *works*.

(5) The *Contractor* ensures that all quality control of construction of the *works* is independent of the production control of the *works*.

(6) The *Contractor* submits, to the *Project Manager* for acceptance, the ITPs and inspection check lists for the elements of the *works*. The *Project Manager* may identify Hold Points at which *Project Manager* inspection and acceptance is required before work proceeds.

(7) The *Contractor* produces appropriate self certification records to demonstrate that supporting documents (*inter alia:* ITPs, inspection check lists, supplier compliance certificates, concrete and other Site measurement commissioning records, audit records, “red-line” mark-ups, and “as-built” details) have been completed in accordance with contract requirements.

(8) The *Contractor* raises a NCR whenever corrective action for an identified Defect cannot be implemented within the shift.

(9) The *Contractor* submits NCR corrective proposals to the *Project Manager* for acceptance (if appropriate the *Project Manager* consults the infrastructure owner or maintainer). The *works* do not proceed until the *Project Manager* has accepted the relevant NCR corrective proposal. Records showing the successful corrective and preventative action are included in the quality control records.

(10) The *Contractor* maintains the quality control records in an accepted database to verify Assurance at Completion of a *section* of the *works*. The *Project Manager* may access and interrogate the database and records at any time during the progress of the *works*. The database is indexed and formally transferred to the *Project Manager* at Completion of a *section* of the *works*.

(11) The *Contractor* carries out scheduled, structured audits on specific elements of quality control for the *works*, by trade or by location, to verify that the records areprepared and maintained in an acceptable form. The *Project Manager* may attend these audits.

(12) The *Project Manager* audits the records and NCR registers and reports during the progress of the *works*.

(13) The *Project Manager* monitors the effectiveness of the *Contractor’s* self certification system through:

- surveillance,
- witnessing appropriate key activities,
- review of certification and records,
- monitoring and participation in the *Contractor’s* audit schedule,
- independent auditing.

(14) If the *Contractor* fails to demonstrate that the specified requirements are being met, the *Project Manager* may notify the *Contractor* that the quality management system is ineffective.

(15) An ineffective quality management system is demonstrated by the following, although this list is not exhaustive:

- Non-conformities not being identified by the *Contractor* in a timely manner;
- Non-conformities not being resolved in a timely manner;
- failure to prevent recurring Non-conformities;
- consistent failure to provide required certification and records as the *works* are executed;
- audits by the *Contractor*, the *Project Manager* or any other party identifying significant inadequacies in the quality management system; or
- identified inadequacies in the quality management system not being resolved in a timely manner.

(16) If, following notification by the *Project Manager* of an ineffective quality management system, the *Contractor* fails to correct the quality management system within one week from notification, the *Project Manager* may either implement his own quality control regime on the *works* to correct the quality control or may instruct the *Contractor* to stop or not to start any further work. If the *Project Manager* implements his own quality control / quality Assurance the costs thereof will be recoverable from the *Contractor*.

WI645 **Plant and Materials and Construction**

(1) The *Contractor* develops a Plant and Materials Proposal Schedule (PMPS) listing all proposed permanent works materials and products and indicating any variances from the specified materials. The PMPS identifies:

- architectural & non-architectural items;
- samples/ mock-ups/ prototypes/ test panels required;
- Specification and technical reference numbers;
- material approvers (*Contractor* /sub contractor organisations/persons, including applicable BREAM specialists); and
- target dates (approval, delivery, overdues)

(2) The *Contractor* regularly submits the Plant and Material Proposal Schedule and a matrix of approvers for all materials and products, commencing within six weeks following the *starting date.*

(3) The *Contractor* ensures that the Project's quality certification requirements are established in the preparation of material requisitions and orders for manufactured goods and materials.

(4) Unless otherwise accepted by the *Project Manager,* Plant and Materials forming part of the permanent works or temporary works incorporated into the *works* are procured from sources that hold appropriate certification from a United Kingdom Accreditation Service (UKAS) accredited certification body (or one that has mutual recognition with UKAS). The existence of UKAS or similar acceptable accreditation does not relieve the *Contractor* from ensuring the quality of the products.

(5) The *Contractor* makes available certification to demonstrate that Plant and Materials used comply with the relevant legal requirements and standards. Plant and Materials quality and traceability requirements for *Employer* designed parts of the *works* are described on the drawings and in the materials and workmanship specifications in WI2000 of the Works Information. For *Contractor* designed parts of the *works* the material quality and traceability requirements are indicated on applicable drawings or materials and workmanship specifications or by reference to appropriate codes of practice.

(6) Verification of the quality and material traceability of each element of the *works* is the responsibility of the *Contractor* and is achieved through checks, tests, inspections, audits and reviews, planned and implemented in accordance with the Project Quality and Assurance Plan and ITPs developed by the *Contractor*.

(7) Unless otherwise accepted by the *Project Manager*, the *Contractor* and his Subcontractors and suppliers use the Project pro-formas for inspection & test records and construction certificates (refer WI710 of the Works Information).

(8) The *Contractor* provides representative samples of proposed manufactured items, mock-ups/ prototypes of proposed fabricated or constructed items, and test panels of standard finishes, including concrete, to be achieved during construction as required

by the drawings and materials and workmanship specifications in WI300 of the Works Information and applicable drawings or materials and workmanship specifications produced by the *Contractor* as part of his design obligations. Each sample is offered for inspection and acceptance from the *Supervisor* prior to construction of the parts of the *works* represented. The sample is subsequently protected and retained by the *Contractor* and made available as an inspection reference until the completion of the *works*.

(9) The *Contractor* maintains for *Project Manager's* acceptance, a schedule of all samples, mock-ups, prototypes, test panels and Quality Benchmarks within the Material Proposal Schedule which identifies for each:

- the planned date at which each sample will be made available for inspection by the *Supervisor*;
- the planned date at which the *Supervisor's* acceptance will be needed;
- the part of the Works Information that requested it;
- the part(s) of the *works* that it represents;
- a unique reference number;
- the secure location (accepted by the *Project Manager*) where the item is stored or located; and
- the acceptance status of the sample by *Contractor* and by the *Supervisor.*

(10) The preliminary schedule is submitted for *Project Manager's* acceptance within 12 weeks of the *starting date*, and is subsequently regularly updated and resubmitted to incorporate changes and updates.

WI650 Schedule of *Contractor's* Management Plans and other procedural documentation

WI650.1 Management Plans and other procedural requirements

(1) The following schedule of Management Plans must be in place and accepted by the *Project Manager* prior to commencement of the *works*.

Priority 1 = Required within 4 weeks of *starting date*
Priority 2 = Required within 8 weeks of *starting date*
Priority 3 = Required within 12 weeks of *starting date*
Priority 4 = Required within 18 weeks of *starting date*

Priority	Deliverable
1	Insurance details - evidence in place
1	Parent Company Guarantee
2	Key Persons Succession Plan
2	Construction Health and Safety Plan
2	Project Execution Plan (PEP)
2	*Contractor's* Project Quality and Assurance Plan (PAP)
2	Design Management Plan (DMP)

2	Training Plan
2	Design Deliverables log
2	Access Plan
3	Site Waste Management Plan (SWMP)
4	Plant and Materials Proposal Schedule
4	Inspection and Test Plans

WORKS INFORMATION

WI 700

TESTS & INSPECTIONS

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3.0					☐			
4.0					☐			
5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

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WI705 Tests and inspections (Cl. 40.1, 40.2, 41.1, 60.1(16))

(1) The objective of inspection and testing is to demonstrate to the *Employer* and the *Contractor* that that the *works* provided meet and comply with the requirement of the Works Information.

The inspections and tests are carried out compliant with the design standards requirements, manufacturer's recommendations and requirements together with industry best practice.

(2) The *Contractor* prepares and submits for the *Project Manager's* acceptance an Inspection and Test Plan (ITP) together with a programme to complete all the activities within the ITP.

(3) The ITP defines all factory tests, site tests, inspections and checks to be undertaken for the works together with acceptance criteria for each activity. The acceptance criterion is agreed with the *Supervisor*.

(4) The *Contractor* arranges access to carry out tests and inspections together with the supply of all materials, equipment and is cognisant of the system interfaces and integration.

(5) All tests and inspections are recorded by the *Contractor*. Test certificates, equipment calibration certificates and records of all test results are submitted by *Contractor* for the *Project Manager's* and *Supervisor's* acceptance.

All *works* supplied and installed by the *Contractor* are tested by *Contractor* and witnessed by the *Project Manager, Supervisor* or *Employer's* appointed representative.

The *Contractor* identifies in the ITP the tests that are:

- Routine tests
- Batch Tests
- One off tests – specific to plant/system/equipment employed.
- Factory tests
- Site tests.

(6) The *Contractor* implements remedies as agreed with the *Project Manager* to correct any failures/snags as pertaining to the *works*.

(7) The *Contractor* is compliant to/with the following *Employer's* Standards

- Technical Specification T00005; Bridges and Structures – Materials and Workmanship (listed in WI100- Appendix 01),
- LU standard S1939 High Voltage A.C Indoor Switchboards up to 36kV for Use on the System - Section 11 (listed in WI100- Appendix 01),

The *Contractor* prepares a list of Plant and Materials that require specific certification and submits to the *Project Manager* the required certification for acceptance.

With the agreement of the *Project Manager* and in compliance with the agreed ITP schedule, the *Contractor* carries out tests on the following:

- Concrete
- Concrete constituent materials,
- Fresh concrete
- Wielding and wields,
- Other materials as required,
- Proprietary materials; and
- HV and FO cabling in accordance with WI700 - Appendix 01

The *Contractor* obtains the *Project Manager's* acceptance of any independent testing authority the *Contractor* proposes to use.

WI705.1 Test and inspection schedule

(1) The *Contractor* complies with the requirements of the following Inspection and Test Plan schedule and allows within the Accepted Programme for inspections and test carried out by the *Supervisor* and Others;

WI705.2 Terminology

(1) The following are terms used in this section of the Works Information;

Term	**Meaning**
Assurance	Process of ensuring and providing evidence that the *works* have been designed and constructed in compliance with the *Employer's* Requirements.
Conformity	Fulfilment of specified requirements.
Employer's Requirements	The output from the *works* in respect of spatial and operational improvements documented in the *Employer's* Requirement Statement in Works Information Chapter 1A, and the applicable Standards and legislation.
Hold Point	A point in time in the construction of an element of the *works* at which the *Project Manager* shall be invited to inspect the *works* to verify quality or completeness prior to the work progressing. The *Project Manager* will identify these Hold Points during his review of the Inspection and Test Plans.
Inspection & Test Plans (ITPs)	Plans specifying the activities required to establish how Conformity is to be verified. They identify the responsibilities for executing the activities, the documents controlling them and the records required to provide Assurance. These are prepared for a particular element of the *works* to support the *Contractor's* Project Assurance Plan.

Non Conformance Report (NCR)	A statement raised to record a Non-conformity (Defect) in the product, workmanship, or system.
Nonconformity	A Defect - as defined in clause 11.2 (5) of the *conditions of contract*. (The term "Non-conformity" is used to be consistent with industry practice and includes System Defects as defined below.)

Term	**Meaning**
Outstanding Work List	A list generated at an inspection or acceptance stage to identify Defects which must be remedied before an asset can be put into operational use.
Quality Control Procedures (QCPs)	Documents that specify operational techniques or activities that are used to fulfil requirements for quality, and as such support the contract quality plan.
Site Query (SQ)	A request for information, clarification or agreement to a proposed action.
Verification Activity Plan	Document prepared and owned by the *Employer* in accordance with LUL Standard S1538.

WI710 Management of tests and inspections

(1) The *Contractor* carries out the tests and manages the testing activities in time with the Works Information WI500 Programme Requirements.

(2) The *Contractor* manages the inspection and testing activities on a programme and submits the programme to the *Project Manager* updated every four weeks or if required more frequently.
The *Contractor* gives four weeks advance notice to the *Project Manager* and *Supervisor* of each test or inspection.

(3) The *Contractor* carries out a site inspection on the completion of the erection of the works or any part thereof. The *Contractor* invites the *Project Manager*, *Supervisor* and *Employer* to the Site inspection.
All Site inspections are recorded by the *Contractor* and the report issued to the *Project Manager*. Defects identified during the inspection are recorded and sent to the *Project Manager* and *Supervisor* for acceptance for each inspection and the *Contractor* identifies each Defect on the Defects list. The *Contractor* manages the Defect correction and remedy and completes the Defect list.
The Defects list is included and maintained with the Quality Inspection Completion Certificate, LU Standard S1900 for each item of plant.

WI710.1 Inspection and testing requirements

(1) The *Contractor*, his designers, Subcontractors and suppliers engaged in design, supply, manufacture, construction, installation, commissioning and testing or any other service connected with the *works*, maintains ITPs to satisfy the requirements of ISO 9001, and of LUL Standard S1939, and other relevant Statutory Requirements appropriate for the deliverables being provided, which

have been accepted by the *Project Manager*.

(2) These accepted ITPs stipulate the necessary level and frequency of tests and inspections for each aspect of the *works* and also stipulate:

- Item(s) being inspected and tested;
- The inspection and test activity;
- Acceptance criteria;
- Involvement of various parties including Hold Points and witness points;
- Controlling specifications; and
- Certification/ documentation/ records required as verification data.

(3) The *Contractor* stipulates, in the ITPs, detailed acceptance criteria. As a minimum the acceptance criteria complies with the requirements specified in the Works Information. Where criteria are not specified the *Contractor* proposes acceptance criteria for the *Project Manager's* acceptance, including the method and frequency of inspection and testing.

(4) The *Contractor* implements QCPs to verify conformance with the contract specifications. Verification is accomplished by examinations, tests, measurement and inspection and by verification records including those of his consultants, Subcontractors and suppliers. Verification procedures (QCPs) are developed using applicable testing and inspection methods along with acceptance criteria from engineering design documents.

(5) All records from the inspection and testing process are referenced to the location of the item in the *works*, and collated and assembled as part of the verification documentation to provide Assurance.

(6) The *Contractor* conducts inspections and tests in accordance with his detailed plans and ITPs. *Contractor* personnel performing key inspection activities are independent of those carrying out the *works*. Key inspection activities are submitted to the *Project Manager* for acceptance prior to construction. The *Contractor* records the completion of inspections and tests and collates comprehensive records of the results.

(7) The *Contractor* raises a NCR where a Non-conformity in a *works* item is noted during inspection, and which cannot be put back in compliance within the same shift.

(8) Where a specified *works* activity has not been carried out in accordance with agreed procedural requirements, a NCR is raised.

(9) Non-conforming *work* is not covered over until evidence is provided that the Non-conformity has been rectified.

(10) The *Contractor* raises Defects and Outstanding Works lists at appropriate inspection and acceptance stages to record work that has not been completed correctly or is outstanding.

(11) All Defects identified during the inspection and Outstanding Works List are

recorded on NCRs.

(12) Defects which have been previously identified and recorded on an NCR, and on inspection have not yet been repaired, are recorded on the Outstanding Works List.

(13) SQs are used by the *Contractor* to formally request information, clarification or agreement to a proposed action from the *Project Manager*.

(14) The *Contractor* submits a SQ for each NCR requiring a concession or design change to the *Project Manager* for acceptance.

(15) The *Project Manager's* acceptance is required where an exception or deviation from specified requirements is proposed by the *Contractor*.

(16) The *Contractor* implements agreed remedial action prior to the starting any further activities that may render the non-conforming item inaccessible or difficult to repair.

(17) The *Contractor's* Non-conformity system provides for monitoring and tracking of all Non-conformities that occur within the contract regardless of who identifies the Non-conformity. Copies of all NCRs are submitted to the *Project Manager* for information, when raised and when closed. Non-conformities are recorded within each shift and reported to the *Project Manager* at the start of the following shift.

(18) The *Contractor* maintains an ITP/NCR/SQ database. The database links ITP management and NCRs, and is cross-reference to SQs raised. The *Contractor* maintains the ITP/NCR database provides access to the *Project Manager* on request.

(19) The *Contractor* provides a copy of all test and inspection results to the *Project Manager* undertaken in the course of Providing the Works, unless otherwise stated in the Works Information.

WI700 - Appendix 01 indicates tests that are required to complete the *works*.

WI715 Covering up completed work

(1) Notwithstanding the requirements of the safe system of working and the requirements of any permits or limitations of access the *Contractor* covers up the *works* on successful completion of the inspection and inspection is recorded.

(2) The *Contractor* may remove covers, enclosures and other mechanical permanent protection for testing when the requirement of the test makes it necessary. The *Contractor* replaces these on successful completion and record of the test.

WI720 *Supervisor*'s procedures for inspections and watching tests

(1) The *Contractor* notifies the *Project Manager* and *Supervisor* in advance on a Witness Notification Form of the intention to conduct a factory test and site test. The notice to test given is at least 28 days in advance.

(2) The *Contractor* submits for the *Project Manager's* and *Supervisor's* agreement the specific factory acceptance plan and site acceptance plans for each item of plant.

(3) The factory and site test results are project deliverables and form part of the operation and maintenance documentation. The format of the test results record sheets are submitted for agreement with the *Project Manager, Supervisor and Employer*. The test record sheets are included within the factory acceptance plan and the site acceptance plan.

WORKS INFORMATION

WI 800

MANAGEMENT OF THE *WORKS*

Document History: **Version:**	**Prepared by**		**Quality Checked by**		**Legal Review**		**Peer Review**	
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4.0					☐			
5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

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WI805 **The *Contractor's Representative* (14A.1)**

(1) The *Contractor* appoints a *Contractor's Representative* to act on behalf of the *Contractor* through out the project.

(2) As part of the *Contractor's* mobilisation duties the *Contractor* understands the structure and format of the *Employer's* project team, in particular the appointment of the *Project Manager* and *Supervisor* and any delegations thereto and submits to the *Project Manager* for acceptance a communication plan such that there are clear lines of communications between the *Contractor* and the *Employer's* team to facilitate:

- Receipt of instructions
- Understanding of levels of authority to receive instructions by the *Project Manager* or *Supervisor*
- Receipt of other contractual communications

(3) The *Contractor* ensures that his project team and site organisation are established and changed as necessary to facilitate effective communications between the *Employer's* representatives.

(4) The *Contractor's Representative* is the Site Person in Charge as required by Standard 1-552 QUENSH (WI100 - Appendix 01).

WI 810 **Progress meetings**

(1) The *Project Manager* advises the *Contractor* of the dates of the *Project Manager's* Progress Meetings within fourteen (14) calendar days of the Contract Date and issues a schedule of progress meeting dates.

(2) The purpose of these meetings is to review and discuss the Progress Report, the progress of the *works*, programme and to discuss technical and non-technical aspects of the Project. The *Contractor* shall ensure that suitable delegated representative shall attend the periodic progress meeting.

(3) 'Site Progress/Technical Meetings' shall be held as required by the *Project Manager*, for the purpose of keeping all parties informed of the progress of the *works*, for discussion of technical subjects, for reviewing the progress of the *works* and for ensuring the quality, environmental impact and safety of the *Contractor's* operations.

(4) 'Senior Client Meetings' shall be arranged by the *Project Manager*. The *Contractor* shall attend such meetings and ensure that the *Contractor's* Project Director, Project Manager, senior Commercial Manager and others as required from time to time, shall attend.

(5) The *Contractor* shall attend such other meetings (and ensure a suitable delegated representative shall attend) as identified by the *Project Manager* including, but not limited to:

- technical and/or design meetings;
- commercial meetings;
- programme meetings;
- depot Co-ordination/Liaison Meetings
- closure, track possession and access planning meetings; and
- all other meetings as identified in the Project Start-Up Meeting.

(6) Meetings shall in each case be held at the location designated and notified to the *Contractor* by the *Project Manager*. The *Contractor* shall ensure attendance at such meetings by all necessary, appropriate and relevant personnel.

(7) The *Contractor* shall advise the *Project Manager* of any meetings between himself, Subcontractors, *Employer's* representatives, , Infracos, PFI Contractors, Others and/or a Third Party, which the *Project Manager* has the right to attend.

(8) The table below details the frequency and scope of the project meetings:

Type of meeting	**Frequency**	**Subject**
Start-up Meeting	Once	Set up control, administration and reporting systems, confirm lines of communication, information flows, change control and adoption procedures.
Site Progress/Technical Meeting/Access & Closure Arrangement / Programme /Technical/ HSE	Weekly/Bi-Weekly (or as determined by the Project Manager)	Review progress of *works*, technical issues, safety, quality, environmental issues, impacts, interfaces, project risks and adoption.
Project Manager's Progress Meeting/Risk & Issues Meeting/ Commercial	4-weekly	Review Progress Report, technical issues, safety, quality, environmental issues, planning, impacts, interfaces and property issues, costs and risks.
Senior Client Meeting	4-weekly	Review overall progress (technical and commercial), compensation events, early warnings, key risks, issues and concerns

The above meetings will be chaired by the *Project Manager*. The *Contractor* shall be responsible for taking of minutes and distribution thereof. The minutes shall be formally issued within two (2) Working Days of the meeting, except where agreed otherwise by the *Project Manager*.

(9) The *Contractor* is to attend meetings convened by the *Project Manager* at the times and places instructed.

These meetings include reviews on:

- progress and programme
- health and safety
- environment
- commercial
- risk
- performance
- quality
- technical and design
- Subcontracting
- Others and Third Party liaison, and

- special subjects as the need arises.

The *Contractor's* procurement process must include the requirement for his Subcontractors to attend these meetings as required by the *Project Manager*.

WI 810.1 **Project Start-Up Meeting**

(1) Within two (2) weeks of the Contract Date the *Contractor* shall attend a Project start-up meeting with the *Project Manager* and the *Employer*. The key objectives of this meeting are to:

- review understanding of the conditions of contract;
- review understanding of the scope of works and processes;
- review and agree the *Contractor's* Work Breakdown Structure;
- review and agree the *Contractor's* Cost Feedback Structure;
- ensure the *Contractor* fully understands the *Employer's* requirements;
- review and agree key dates;
- review the *Contractor's* programme and agree a sufficient level of detail for project control and co-ordination to further develop an accepted programme baseline;
- table and discuss the *Contractor's* project risk and issues register;
- establish lines of communication and single points of contact;
- agree a meeting and reporting schedule;
- ensure that the *Employer's* systems, processes and procedures are understood;
- notify the *Contractor* of the CAMS and CAMS Communications;
- identify any other meetings that are necessary; and

agree the format and content of the Progress Report

WI 815 **Reporting**

WI 815.1 **Progress report**

(1) The *Contractor* issues a comprehensive progress report at four week intervals to suit the *Employer's* 13 period calendar reporting cycle to the *Project Manager* for review. The first progress report is issued at a date to be instructed by the *Project Manager* which will be no more than 28 days after the *starting date.*

The *Contractor* submits one (1) printed copy and one (1) electronic copy of each progress report to the *Project Manager*.

The *Contractor* shall ensure that all control documentation supplied by him is appropriate and is incorporated in his Progress Reports.

The detailed format of the report is agreed with the *Project Manager* prior to the submission of the first report but the submission shall include the following as a minimum:

- Executive Summary and Key Issues
- Health and Safety, Environmental, Security and loss prevention
- Progress
- Programme Narrative
- Resources (Manpower and Equipment)

- Design/Technical
- Procurement
- Commercial
- Risk Management
- Others and Third Parties;
- List of substation keyholders;
- *Contractor's* concerns;
- Quality and Assurance
- Site Access and
- Progress photographs

Details of each part of the report are set out in the following paragraphs.

(2) **Executive Summary and Key Issues**

This part should be no more than two pages summarising the achievements and key issues and interfaces experienced during the period, the safety report, and the commercial position.

Achievement of Key Performance Indicators shall be reported here together with concerns/issues requiring action by the *Contractor*, *Project Manager*, *Employer* or Others.

Progress in obtaining cable route or substation approvals, wayleaves, and consents.

(3) **Health and Safety, Environmental, Security and Loss Prevention**

This part contains a summary of all activities related to health and safety environmental,, security and loss prevention, such as meetings, instructions, inductions, and special achievements. Safety defects and security breaches are summarised together with a brief description of any lost time due to injury or damage to property.

Safety statistics, Accident Frequency Rates (AFR) including all Lost Time Incidents (LTI) and RIDDOR in the period and cumulative shall be included.

Trends are provided together with proposed action to improve safety performance.

The health and safety information required to be reported every four weeks in accordance with of the Works Information is included here.

Environmental Activities

This part details:

- The latest revision of the Environmental Management Plan;
- Status of all environmental consents;
- Status of all environmental incidents;
- Status of all environmental NCRs;
- Record of all environmental audits performed;
- Status of all dust monitoring in hand; and

Status of all noise and vibration monitoring in hand.

(4) **Progress**

This part comprises a narrative report on the progress achieved against that planned in the period, together with explanations of any delays incurred and details of plans on how the delays are recovered. Progress is reported against both the latest

accepted programme and original accepted baseline programme on a physical percentage complete basis by discipline and overall and on schedule performance indicators (SPIs) and a professional opinion on progress in general

A progressed programme showing in bar chart form the cumulative completed work to date for each activity against the planned programme

The report describes the work which is on the critical path(s), noting the amount of remaining work.

(5) **Programme Narrative**

This part identifies the current Accepted Programme and summarises the information contained in each programme which the *Contractor* submits for acceptance. The *Contractor* comments on the progress of all aspects of the *work*s. The *Contractor* provides a list of planned activities for the current and next period. Special emphasis is given to issues notified, or to be notified, as early warnings which may delay Completion or delay achievement of a Key Date. The *Contractor* provides a summary of progress on the Employer's milestones.

(6) **Resources (Manpower and Equipment)**

This part shows in tabular and graphical form the planned and actual manhours (by discipline and craft), including Subcontractor manpower, deployed for each activity during the period and cumulatively. A narrative describes any items where a shortfall of manpower is affecting progress.

Productivity factors by work crews, by discipline and by shift, is analysed and reported with reasons for underperformance including measures being taken to achieve the plan and recover performance.

The *Contractor* reports workforce turnover in the period and cumulative, and the measures being taken to recover and maintain the planned workforce level.

This part also schedules the actual Equipment used, and its performance versus that planned, in the period. Equipment breakdowns impacting on progress during the period is reported. Measures being taken to recover lost production are identified.

(7) **Design/Technical**

This part describes the status of the design and engineering of the *works*. The percentage status of completion of each drawing proposed, the percentage of drawings completed and the number and category of drawings to be completed shall be recorded. The *Contractor* identifies the progress on preparation of the assurance package(s).

The *Contractor*, from the design sub-network in the accepted programme described below in this Chapter 5 and in Chapter 4, reports the status of design relative to the critical path and measures being taken to address any slippage.

(8) **Procurement**

This part describes the status of procurement (including procurement of Subcontractors) and purchasing, including delivery of all Equipment, Plant and Materials. It shall highlight those items that have long delivery times or where the procurement dates have limited float.

(9) **Commercial**

(a) Compensation Events

The *Contractor* provides a summary and the current status of all compensation events in the period of report, and to date including request for quotations, request for information, etc.

(b) Early Warning Matters

The *Contractor* provides a summary of all early warning matters raised in accordance

with clause 16 of the *conditions of contract* giving the date raised, date of any risk reduction meeting held and a reference to records made by the *Project Manager.*

(c) Forecast of Defined Cost

The *Contractor* provides a forecast in accordance with clause 20.4 of the *conditions of contract*. The forecast includes a summary of all expenditure to date, assessment of earned value to date, and shall identify all risk allowances and compensation events and early warnings which the Contractor has allowed for in the forecast. The forecast is updated at intervals no longer than set out in the Contract Data.(d) Earned Value Analysis

Earned value analysis techniques are utilised by the *Contractor*. Earned value versus planned earned value and Defined Cost shall be represented in both tabular and graphic formats. Progress measurement methods shall be as submitted to the *Project Manager* for acceptance. Earned value reports are included with each four weekly progress report.

(e) Cost and Schedule Performance

The report highlights any cost and/or schedule variances between budgeted / forecasted and actual, both in the period and cumulatively and describes the impact of the variances on the final cost and schedule.

Cost performance indicators and schedule performance indicators are developed from the earned value analysis to trend the overall performance of this contract. The numerical analysis are supported by narrative explaining the reasons for any variances and giving the *Contractor's* proposed mitigation plans and actions to correct or minimise any overruns.

(f) Cash flow forecasts

The *Contractor* submits a cash flow forecast broken down to correspond with each activity within the *activity schedule* incorporating all the latest time and cost adjustments. All forecasts are to be submitted in both electronic and hard copy formats and show potential liability profile, together with an explanation of the changes made since the previous forecast;

(g) Change Register

A summary of the changes register (a record of all variations and other cost and time changes), detailing all changes submitted, pending or approved (the full register to be made available to the *Project Manager* upon request).

(10) **Risk Management**

The *Contractor* identifies in this part of the report, the top ten risks to the *works* as identified by the risk grading; current in the report period.

This part address the following issues in relation to each of the identified ten risks:

- Risk control measures as assessed against cost of implementation;
- Control measures for the risks identified;
- Action completion dates;
- Completion of actions; and
- Any further issues raised.

A narrative is provided in this part of the report for each risk identified.

(11) **Others and Third Parties**

The *Contractor* lists all meetings held with Others and/or Third Parties and lists any items required from Others and/or Third Parties

(12) **List of substation keyholders**

The *Contractor* provides a list of all substation keyholders.

(13) ***Contractor's* concerns**

The *Contractor* lists concerns/issues requiring action by the *Contractor*, the *Project Manager*, the *Employer*, or Others

(14) **Quality and Assurance**

This part details:

- The latest revision of the *Contractor's* Project Assurance Plan;
- A summary of changes to the *Contractor's* Project Assurance Plan;
- Progress on safe system of works, procedures, inspection and test plans;
- Any concerns or difficulties in providing certification or quality records to demonstrate the compliance of completed work;
- A summary of the assessment and monitoring of suppliers and Subcontractor's quality systems that has been carried out;
- Summary of recent ongoing and planned quality audits;
- Status of all non-conformance reports (NCRs);
- Status of all corrective action requests (CARs); and
- Any other significant quality issues.
- A summary of progress of the QICC process.
-

(15) **Site Access**

The *Contractor* lists Access planned in Period versus actual Access and reasons why they might differ. The *Contractor* lists the next two Period's planned access.

(16) **Progress photographs**

The *Contractor* provides a minimum of 50 No progress photographs at each period report. Comprehensive progress reportage in still, dated, colour, digital photography shall be submitted.

A representative selection of the photographs is included in the *Contractor's* four-weekly progress report.

The *Project Manager* may specify particular locations and details to be recorded at any time as a record of progress.

The photographs are held in the *Contractor's* central electronic records and submitted in electronic storage to the *Project Manager*.

Photographs are suitable for reproduction at A3 size.

WI 820 **Work Plan**

(1) When requested by the *Project Manager* for each element of work in hand, the *Contractor* issues a work plan(s), no later than 0900 on Monday of each week. The work plan comprises a four week rolling programme (one week look back and three weeks look ahead) covering day to day activities. This work plan is in Gantt chart format and be resource loaded with labour resources, Equipment, Plant and Materials

by discipline.

The headings include Safety, Progress, Programme, Design, Quality, Access, Environment and Issues.

The work plan indicates the timing of all proposed hold points in the inspection and test plans identified by the *Project Manager,* for inspection by the *Project Manager* or the *Supervisor* or by Others who have the right of inspection.

There is a narrative report on each section/discipline of the work describing the progress over the week look back and planned for the three weeks look ahead.

The *Contractor* marks up progress achieved on the look back week with weightings linked to the overall Accepted Programme. Schedule performance indicators (SPIs) and cost performance indicators (CPIs) shall be calculated for the planned and actual work.

The *Contractor* provides details and reasons for targets not being achieved and actions that the *Contractor* intends to take to recover any lost time.

The format of the work plan is to be agreed by the *Project Manager*, and the work plan is submitted in electronic format and hard copy.

The work plan is discussed at a work plan meeting to be held at the time of issue of the work plan. The *Project Manager* is to be invited to attend the work plan meeting. The *Contractor* requires the *Contractor's* section managers accountable for the delivery of the *works* to present their section and account for the performance and the short term plan.

WI 825 **Daily Log**

(1) For each area of work in hand the *Contractor* maintains a daily log to be completed and filed no later than 1000 hours the next day, inclusive of all weekends.

The daily log shall be available to the *Project Manager* and his staff and contains as a minimum:

- Daily manpower report: The report states the number of actual personnel on Site during the day against that planned. For manual workers the personnel are grouped by trade and for non-manual workers by work title;
- Daily Equipment report: The report indicates all actual items of Equipment on Site against that planned, and their availability for work;

Daily construction report. The report includes:

i. a brief description of the work carried out that day

ii. the initiation or completion of any significant event

iii. major items of Equipment received, removed or installed

iv. work stoppages, interruptions, delays and potential causes of delay, and

v. Weather records: The report shall include a general description and any significant weather events during the course of the day.

The format of the daily log shall be set by the *Project Manager*, and the log(s) are made available by electronic data transfer.

WI 830 ***Contractor's* Proposals to change the Works Information**

(1) Any proposal submitted by the *Contractor* to the *Project Manager* to change the Works Information contains:

- a detailed scope of the change, clearly identifying the specific sections of the Works Information which are proposed to be changed;
- a schedule detailing how the proposed change is to be effected, including activities and anticipated durations for any resulting design changes to be undertaken by the *Contractor*, additional or revised consents, additional or revised concessions, amended Completion Date, amended Key Dates and other relevant information;
- a proposed revised programme if the programme for the remaining work is affected, and
- proposed changes to the Prices.

The *Project Manager* replies in accordance with the *conditions of contract*. The reply is:

- a rejection of the proposal; or
- a request to submit more information, stating details of the information required; or
- a request to submit a revised proposal to suit the *Project Manager's* broader considerations, stating details of the amendments; or
- an acceptance of the change to the Works Information which arises from a fault of the *Contractor* and therefore the Prices, the Completion Date and the Key Dates are not changed; or
- an acceptance of the proposal.

(2) The *Project Manager* may extend the time allowed for the *Contractor* to submit a revised proposal and the *Contractor* may extend the time for the *Project Manager* to reply to any proposal or revised proposal if the *Project Manager* and the *Contractor* agree to the extension before the submission or reply is due.

The *Contractor* ensures that the submission and review of the proposal to change the Works Information does not adversely affect the Completion Date(s) or Key Dates or Prices.

The *Project Manager* is under no obligation to accept any proposal or revised proposal and does not need to give any reasons for doing so or not doing so. The emphasis on any proposal is on a cost, schedule or risk reduction without impacting on safety.

Acceptance of the proposal by the *Project Manager* is deemed to be implementation of a compensation event under the provisions of clause 65 of the *conditions of contract* (as amended).

(3) Without prejudice to the *Contractor's* obligations in respect of the CAMS, the *Contractor* maintains a log of notifications and acceptance/assessments of compensation events which must include:

- notification number
- notification date
- brief description of compensation event, including reference to the applicable Contract provision
- proposed adjustment to the Prices (if any)
- proposed effect on the date of planned Completion and the Accepted Programme (if any)
- date and content of *Project Manager's* notifications, acceptances

and/or instructions with respect to any compensation event, and

- any change to the date of planned Completion agreed, accepted or assessed by the *Project Manager*.

WI 835 **Geological Records**

(1) Not Used

WI 840 **Record Drawings**

(1) The *Contractor* keeps a set of all drawings used for construction or fabrication, and associated data and specifications, on the Site marked up to record accurately all changes during construction including any instructions and technical query responses.

Drawings and specifications are to be marked up on a continuous basis by the *Contractor* in a format acceptable to the *Project Manager*. The *Project Manager* has access to these Site records at all times and is entitled to a copy for review as and when requested by the *Project Manager*.

Within two weeks of all work shown on a specific drawing, associated data or specification being completed, the *Contractor* produces the as-built drawings and other information which are clearly marked As Built. The *Project Manager* may audit the record information.

As directed by the CDM Coordinator, the *Contractor* includes or reference these "As Built" drawings in the documentation produced for the Health & Safety File.

WI 845 **Risk Management**

(1) **Requirements**

The *Employer* is committed to identifying and managing risk.

Risk in this context includes (but is not limited to) those events that, if they do occur, could impact on safety, the environment, cost, programme, the *Employer's* interests or reputation, or the interests of Others. The *Employer's* strategy for this process is summarised below.

The *Contractor* co-operates with the *Project Manager,* the *Employer*, and with Others in providing information needed in connection with risk management of this contract.

(2) ***Employer's* Risk Management strategy**

Risk management is utilised as an action and decision support tool on the project. The process identifies high risk activities and processes and these risks are reviewed to ensure that all reasonable practicable measures are taken to mitigate the risk.

Risk control measures shall be determined for all risks identified.

The project Risk Management Process (RMP) is prepared by the *Employer*. The RMP generates information to be used in support of management decision making, and drives action in the prioritisation and reduction of risks to which the Project may be exposed.

The RMP includes a statistical analysis of the identified risks, issues and contingencies. This analysis provides information which is used in management reporting both by the project and the *Employer* as a whole.

It is emphasised that the risk management process is an ongoing activity comprising regular review and the incorporation of measures so that contract risks shall be fully mitigated or to ALARP status as appropriate.

The objectives of the risk management process are:

- To identify risks to the contract before they occur; i.e. events or circumstances that may have an impact on one or more of the project's objectives, including time and cost.
- Eliminate risks wherever possible or reduce the likelihood of occurrence.
- Develop risk management strategies and fall-back plans to deal with risks should they occur.
- Mitigate or reduce the scale of the potential impact of the risk occurring.
- Assess cost and programme effect of any agreed risk and link to the project cost plan and schedule.

Having conducted a risk reduction meeting or other risk review, the *Project Manager,* with the *Contractor's* co-operation, ensures that the Risk Register is updated and provides all relevant information:

The Risk Register shall be in the format agreed between the *Project Manager* and the *Contractor* and shall be provided as a spreadsheet using a Microsoft Excel format. The Risk Register shall include, as a minimum, the following fields

- Description of risk
- Probability of risk occurring
- Impacts if risk occurs (schedule and cost descriptions and level)
- Mitigation strategies and actions with dates
- Risk owner.
- Risk number - A number that uniquely identifies the risk
- Date of estimated impact - An expected time of when any contingent event is likely to occur
- Residual effect/Status - A statement of the acceptability of the residual levels following effect of mitigation strategies

(3) ***Contractor's* Responsibility for Risk Management**

The *Contractor* submits, within eight weeks of the *starting date*, for acceptance by the *Project Manager*, a Risk Management Plan. The *Contractor* liaises with the *Project Manager* during this time to identify and agree the parameters to be used in the identification and evaluation of risk.

The focus of the Risk Management Plan should be reduction of risk exposure. It should be results-oriented and not place undue weighting on analysis at the expense of action. It is in the interests of the *Employer* and the *Contractor* to share relevant risk information and work together to prevent the realisation of risks where possible.

In conjunction with clause 16 of the *conditions of contract* the *Contractor* identifies any changes or newly identified risks to the *Project Manager*

The *Contractor* identifies to the *Project Manager* any risks which have been realised and become issues.

The *Contractor* reports risks and provides risk related information in accordance with the requirements of this contract, the RMP and his risk management plan.

Management of trends

The *Contractor* shall notify the *Project Manager* of any potential issues which are likely to impact on the programme, the Accepted Programme or the Price for Work Done to Date. In addition to changes, these may arise from items such as pricing issues, constructability matters, ground conditions and working constraints.

An initial review of these issues will be carried out between the *Contractor* and the *Project Manager* (or his delegated representative) who will reject, request additional information or accept the issue as a potential trend.

Potential trends will be analysed to determine whether they will have a material effect

on cost or programme. The *Contractor* will participate in the assessment of the likely cost and schedule impacts of potential trends and offer mitigation, corrective action and recommendations.

For the avoidance of doubt, no trend shall modify the Accepted Programme or Prices unless it is accepted or assessed by the *Project Manager* as a compensation event.

The *Contractor* submits an updated version of their Risks and Issues registers, as separate documents, for approval by the *Project Manager* with the 4 weekly period progress report or earlier as required by the *Project Manager*.

The *Contractor* provides, both in hard-copy and electronic format, a copy of the *Contractor's* current project risk register for reference at each meeting.

The C*ontractor* participates in the client's QSRA (Quantitative Schedule Risk Assessment) on the agreed plan once upon the Contract Date and a second time before proceeding to implementation

(4) **Risk Reduction meetings**

The *Contractor* meets with the *Project Manager* not less than once in each four week period to review the Risk Register in accordance with clause 16 of the *conditions of contract*. The *Contractor* provides the appropriate level of representation at the meetings to review and action the identified risks and notified early warnings.

WI 850 Accounts and Records of Defined Cost

WI 850.1 Commercial Administration

(1) The *Contractor* submits, to the *Project Manager* for acceptance, within twelve weeks of the *starting date*, procedures to be implemented by the *Contractor* to provide maximum confidence that the contract will be properly administered and that the *Employer* will obtain value for money.

The procedures includes detailed measures on how the *Contractor* intends to:

- Administer purchase orders, subcontracts and service orders in due time;
- Make timely payments to Subcontractors and suppliers;
- Maintain a cost and commitment ledger and reporting system;
- Monitor Equipment on and off hire dates;
- Control utilisation of Equipment;
- Maintain and review an Equipment register;
- Monitor, check and record deliveries of Plant and Materials;
- Provide Equipment and labour returns to the *Project Manager* on a weekly basis;
- Verify working hours claimed for all people involved in Providing the Works;
- Operate a labour control system based on time-sheets authorised by Site staff and coded according to the agreed code of cost allocations;
- Control Materials wastage, reconciliation and management;
- Code all costs in accordance with the agreed coding system by each activity and by each main element of the Schedule of Cost Components (People, Equipment and Plant and Materials etc.);
- Code compensation events and Disallowed Costs in accordance with the agreed coding system; and
- Carry out any other procedures to ensure that this contract is being

adequately administered.

WI 850.2 **Accounting Procedure**

(1) The *Contractor* submits, to the *Project Manager* for acceptance, within twelve weeks of the *starting date*, the procedures by which the *Contractor* intends to carry out the accounting for all aspects of Defined Cost.

WI 855 **Procurement Procedures**

WI 855.1 **General**

(1) The *Contractor* submits detailed procurement procedures, to the *Project Manager* for acceptance, within four weeks of the *starting date*. The procurement procedures defines the processes leading to the procurement of Equipment, Plant and Materials, Subcontractors and services including the acceptance by the *Project Manager* of Subcontractors and suppliers in accordance with the accepted Subcontract Procurement Plan. The *Contractor* complies with the accepted procedure.

The procedures as a minimum provides the following:

- a detailed Procurement Plan identifying purchase orders, subcontracts and service orders to be placed;
- procedures for the procurement of Plant and Materials, Equipment, subcontracts and services which will achieve best value;
- identifying means of achieving and verifying compliance with the *Employers* Responsible Procurement Principles;
- procedures for the procurement of Plant and Materials, Equipment, subcontracts and services using accurate documentation and latest information;
- procedures for the procurement of Plant and Materials, Equipment, subcontracts and services using contract conditions which adequately reflect the *Contractor's* obligations under the *conditions of contract*;
- control systems to ensure purchased Plant and Materials are supplied to the specified quality and are delivered to Site at the agreed times; and
- procedures for ensuring that Plant and Materials and Equipment received on Site are properly stored, cared for, and issued for construction.

WI 855.2 **Responsible Procurement Principles**

(2) The GLA Group aims to improve London's sustainability through its procurement processes.

The *Employer* is committed to the implementation of responsible procurement, based on the seven key themes:

1. Encouraging a diverse base of suppliers. TfL (LU) is committed to the GLA Group Statement of Principles on Supplier Diversity, supporting Diversity Works for London, and ensuring that procurement processes are open to all of the supplier community including the voluntary and community sectors.
2. Promoting fair employment practices. This includes the implementation of a London Living Wage, working with contractors to ensure reasonable minimum standards for their employees and the promotion of fair employment practices.
3. Promoting greater environmental sustainability. TfL (LU) is committed to, waste minimisation, sourcing green energy, purchasing fair trade and organic food and drink, minimising emissions and reviewing the environmental management practices of suppliers.
4. Promoting community benefits. TfL (LU) works to understand the impact of its

procurement activities on the local community, encourage a positive contribution from suppliers to local communities and explore opportunities for developing contracts to deliver specific community benefits.

5. Encouraging ethical sourcing practices. TfL (LU) is committed to equality of opportunity, compliance with national law and good practice human resources procedures, for instance in relation to working hours, health and safety and preventing the use of unethical labour sources, for instance child labour.
6. Meeting strategic labour needs and enabling apprenticeships and training opportunities. TfL (LU) contracts (and Framework Agreements) include the provision of apprenticeships and relevant training and employment opportunities for under-represented groups and the long term unemployed and the promotion of new roles created by contracts within the local community.
7. Promoting workforce welfare. TfL (LU) ensures its contract terms require suppliers to make provision for the welfare of their workforce and do not prevent, discourage or discriminate against employees who hold trade union membership.

The *Contractor* identifies in the procurement procedures the process proposed in respect of each of these themes to the extent applicable to the project, summarising the *Contractor's* current policy and approach, and supporting these where appropriate by relevant evidence of actual practices, and compliance with the aims and outcomes.

The *Contractor* consults the following published documents, which are available in the "Corporate" and "Business and Partners" section of the TfL web site http://www.tfl.gov.uk :

- TfL's Green Definitions;
- TfL's Green Strategy;
- Supplier Diversity Policy Statement;
- Supplier Diversity Definitions;
- Supplier Diversity Policy;
- Supplier Diversity Strategy; and
- GLA sustainable Procurement Policy

The *Contractor* clarifies how these policy documents have been considered and how it will support the *Employer* in complying with its obligations under the policies.

WI 860 **Computer Set-up and Electronic Data Transfer**

(1) **IT Plan**

The *Contractor's PEP describes an* information technology plan containing his computing and communications proposals. This plan includes but not be limited to a description of his major computer systems, hardware/software and communications (data and telephone) installations, including any external links, any software development and training plans.

(2) **Computer Hardware**

The *Contractor* establishes a computer network to service this contract and makes access to certain central records available to the *Project Manager* and *Others* from the *Project Manager* or *Employer's* teams as notified by the *Project Manager*. The *Contractor* and *Project Manager* provides computer hardware and software for use by their own personnel.

(3) **Data Transfer Methods**

All drawings, CAD Models, setting-out data, correspondence, reports, financial cost data, risk register data and construction programmes are transferable electronically.

Contractor central records, drawings, specifications, Site queries, photographs, inspection and testing reports, and the ITP/NCR/SQ database and the Audit/CARs database are accessible to the *Project Manager*.

Version control systems are proposed by the *Contractor* to ensure that only intended versions are used.

WI 865 **Project Team**

(1) The *Contractor* issues within fourteen days from the *starting date* an organogram detailing the following information:

- all key people (including Project, Commercial and Technical Management Divisions)
- reporting lines
- names of staff allocated to roles
- Key Subcontractors and Subcontractors

(2) The organogram shall be reissued when any changes are made.

(3) The *Contractor* shall notify the *Project Manager* with the contact details (including e-mail addresses and mobile phone numbers) of all key people set out in the organogram (as amended from time to time).

(4) The *Contractor* establishes and deploys within four weeks the *Contractor*'s key people and all other necessary support staff and resources as required for the commencement of *works* from the Contract Date.

(5) The *Contractor* prepares and submits once every two weeks a resource status and progress to fulfill project requirements, until all resources have been allocated to the project. The resources must be integrated within the programme;

WI 870 **Communications (13.1, 13.2)**

(1) Lines of communication shall be confirmed at the Project Start-Up Meeting. No variance from the agreed lines of communication will be permitted without the agreement of the *Project Manager*

(2) At the Project Start-Up Meeting the *Project Manager* shall notify the *Contractor* of the:

- CAMS to be used by the parties for the Project;
- CAMS Communications; and

date on which the use of the CAMS for CAMS Communications is to commence under this Contract.

(3) The *Employer* is responsible for providing or procuring the provision of the necessary licenses and initial training required by the *Contractor* in order to utilise the CAMS. The *Contractor* confirms at the Project Start–Up Meeting the number of licenses it requires and the number of its Staff that will require training together with their names and disciplines.

(4) Until such time as the use of a CAMS commences under this contract and unless otherwise instructed by the *Project Manager* the parties send the communications that this Contract requires via a method complying with clause 13.1.

(5) If for any reason a CAMS will not be utilised for the Project the *Project Manager* shall notify the *Contractor* within eight weeks of the starting date and in such circumstances unless otherwise instructed by the *Project Manager* the parties send the communications that this Contract requires via a method complying with clause 13.1.

(6) All correspondence between the *Contractor* and other parties appointed or under the control of the *Project Manager* shall be through the *Project Manager* unless otherwise agreed.

WI 870.1 **General**

(1) The *Employer* utilises a document management system for the purpose of document and information management.

(2) All contractual communication required under this contract are to be made under A-site unless the *Project Manager* has suspended use or advised it is not to be used.

(3) Formal correspondence and notices are by letter or a fax-mail, except where the CCM System is to be used (Asite), and addressed for the attention of the *Project Manager*. Email is not to be used for formal Contract correspondence but is acceptable as a means of forwarding correspondence.

(4) The CCM (Asite) system is a web-based providing a secure basis for holding and communication contract information and instructions.

(5) Purpose:

- Ensure that *periods for reply* are adhered to
- Track actions of both parties
- Assists contracts to be administered in accordance with the *conditions of contract*
- Maintain contract time frames
- Maintains a record of all contract correspondence sent/received via the Asite system

(6) Features of computer application

- Free training course given by LU for Asite – approx. 3 hours
- Free licence for the *Contractors* – 'Read & Write' and 'Read Only'
- Direct access to information by all relevant parties
- Electronic signature – no e mails necessary
- Use of standard contract forms
- Notices linked to each other
- Tracking of actions – traffic light system - gives notice of response required
- Only contractually designated persons can send notices
- Contemporary record of events & costs is provided

WI 870.2 **Document Management**

(1) The *Contractor* is required to develop and implement a document management system. The system shall enable the *Contractor* to manage, control and track all documentation and communications in relation to this project. The following minimum requirements shall be met:

- The *Contractor* tracks all incoming and outgoing correspondence on a contracts communication register, which shall be kept up to date and supplied to the *Project Manager* whenever requested
- The *Contractor* additionally keeps a separate record of any early warning, compensation event notice, compensation event quotation and responses by the *Project Manager* (the change control register)
- All communications and documents will have a unique reference number, as

per the following format:

- Project Code (4-numbers: 0000) – Originator Code (3 letters) – recipient code (3 letters) – document code (3 letters) – sequential number (4 digits + 2 digits revision number)
- An example would be 0000-LUL-ABC-DEF-0001, being the first project general communication sent from LUL to ABC.
- The sequential number is specific to the code combination that precedes it
- A list of accepted codes will be provided to the *Contractor* by the *Employer* prior to contract award

- All contract communications are to be signed by the *Contractor*
- All communications are to be delivered via electronic mail, to the document control email account, to be notified by the *Employer*, unless otherwise required by the web-based Asite system
- All communications have an issue type (for information, for comment, for action). If the communication is issued for comment, the nature of the comment required (e.g. approval) shall be clearly stated in the communication. If the communication is issued for action, the action(s) required is to be clearly stated in the communication.
- All communications issued in response to a previous communication are to reference the original's reference number.
- Should a communication require re-issuing, e.g. to rectify an inaccuracy in the original, a new communication is to be issued, with new identification number, voiding the previous erroneous communication.
- All documents and drawings are to be revision controlled. Any document or drawing that is submitted to LUL following a prior formal submission must have all changes tracked or highlighted (e.g. by using a tracked changes function on a word processor, or using revision clouds on drawings). This will ensure a quicker review period. The *Project Manager* reserves the right to refuse any revised document received without changes tracked.

If a document is re-submitted in response to an *Employer's* review with associated comments log, the document must be accompanied with the original comment log, annotated by the *Contractor*, detailing the response to each comment. The *Project Manager* reserves the right to reject any document submitted without the associated completed comments log.

(2) Unless the required communication is issued via CAMS then communications shall be sent to PowerUpgradesDocumentControl@tfl.gov.uk and any other recipients that the *Project Manager* may, from time to time, instruct.

The *Project Manager* reserves the right to reject any submission intended for onward transmission, e.g. a design change for engineering approval, without comprehensive commentary if, in the *Project Manager's* opinion, it does not meet a minimum quality standard.

(3) The procedure shall be applied to each external document received by the *Contractor* by allocating a unique number and recording the date on which it was received. Review, approval and authorisation and issuing are not applicable for external documents.

WI 875 **Labour and Plant Returns**

(1) The *Contractor*, in addition to such other returns and reports, notices and the like required under this contract, submits the following in a form accepted by the *Project Manager*:

- Daily Labour Returns giving the numbers, including trade classifications, of

all personnel employed on the Site, including those of subcontractors, and the number and position of supervisory and administrative staff.

- Details of works to be carried out each night and the names of personnel involved (to be submitted by 1200 hours on the day of the works or 1200 hours Friday for weekend works).
- Weekly Equipment Returns recording the numbers and types of all mechanical plant & Equipment on the Site and, where applicable, the dates when the plant or Equipment was brought on to and removed from the Site, including the activity the plant or Equipment is required for.
- Incident notification reports for all incidents occurring on Site, in a form to be agreed with the *Project Manager*.
- List of all Plant and Materials prior to delivery to Site.
- Timesheets are completed by all *Contractor* personnel. These are signed and endorsed by the relevant line manager. The timesheets are kept in a suitable single location within the *Contractor*'s offices and be available for regular audit by the *Project Manager*. A weekly summary of timesheets are submitted to the *Project Manager* by Thursday of the following week. The summary sheet includes a list of all staff working on the Project, the rate being charged, hours expended, and cumulative hours expended.

WI 880 **Key Persons Succession Plan**

(1) The *Contractor* submits to the *Project Manager* a key person succession plan for acceptance within four (4) weeks of the *starting date*. A reason for not accepting the key person succession plan is that it does not give sufficient comfort to the *Project Manager* that replacement key people will be properly inducted and their workload handed over to them in a structured and ordered fashion.

The *Contractor* includes, as a minimum, in his key person succession plan the following:

- details of any planned replacement key people
- processes for handing over duties, including length of shadowing time
- submission of CV's,
- details of how the *Contractor* proposes to effect any replacement such that there is no impact on the *Contractor* Providing the Works.

WI 885 **Principals group**

Not Used

WORKS INFORMATION

WI 900

WORKING WITH THE *EMPLOYER* AND OTHERS

Document History: **Version:**	**Prepared by**		**Quality Checked by**		**Legal Review**		**Peer Review**	
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3.0					☐			
4.0					☐			
5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

CONTENTS

WI905 **Sharing the Working Areas with the *Employer* and Others**

(1) The *Contractor* co-ordinates his design, construction and programme of *works* with the *Employer* and Others and allows the *Employer* and Others to complete their works within the Working Areas in compliance with the requirements of the Works Information.

WI905.1 **General Requirements**

(1) Certain operations not forming part of the *works* may be carried out within or adjacent to the Site by the *Employer* and/or Others under separate arrangements with the *Employer*.

(2) In addition, certain parts of the project will also be carried out by the *Employer* and/or Others under separate arrangements with the *Employer*.

(3) The *Contractor* is responsible for the co-ordination of the *works* with the activities of the *Employer* and/or Others on the Site in respect of programme and technical interfaces. Failure to demonstrate this within the programme issued for acceptance may give grounds for non-acceptance by the *Project Manager*.

(4) The *Contractor* exercises the duties of Principal Contractor in respect of access for the Employer and/or Others and ensures the safety of his workforce and the workforce of Others, and ensures that the safety and progress of the *works* is not compromised.

(5) Where the *Contractor* is not the Principal Contractor as set out in the CDM Regulations for a particular area within the Site, the *Contractor* provides all necessary information required by the Principal Contractor for that area in order to ensure the safety of the *works*, and in order to comply with the CDM Regulations.

(6) Any communication required under this contract from the *Contractor* to the *Employer* and/or Others is copied simultaneously to the *Project Manager*, unless otherwise stated in the Works Information.

WI905.2 **Station Security**

Not used.

WI905.3 **London Underground (Station and Train Operator)**

(1) The *Employer*, and particularly the Station manager, is responsible for the operation of the Station and for running trains.

(2) The *Contractor* takes all steps to minimise the impact of his construction activities on the Station operations and co-operates with the *Employer's* operational staff in providing safe and alternative routes and access for the travelling public.

(3) Where there is an effect or potential effect on safety in train operations and service, such operations and service takes priority over the execution of the works.

WI905.4 **Tube Lines (PPP Contractor and the Jubilee Line Infraco)**

(1) Tube Lines is responsible for the operation of the Jubilee, Northern and Piccadilly Lines

(2) The *Contractor* takes all steps to minimise the impact of his construction activities on Tube Lines' operations and co-operates with the Tube Lines' operational staff in providing safe and alternative routes and access for the travelling public.

(3) Where there is an effect or potential effect on safety in train operations and service, such operations and service takes priority over the execution of the works.

Access into the Site

(1) Access into the Stations and to trackside is managed in accordance with the prevailing Access Code Requirements which provides for reservation and interface management of all access during Engineering Hours and during disruptive closure.

(2) NOT USED

WI905.5 **Other Works Contractors**

(1) Other contractors will be working on the project and/or Underground Network during the construction period.

(2) The following operations may require the *Contractor* to share the Site with Others:

- SSR Power Upgrade Package Contractors,
- SSR Power Upgrade Package 5B Contractor
- *Employer's* station upgrade contractors
- *Employer's* signalling upgrade project contractors
- *Employer's* Test Trains
- *Employer's* Engineering, Sleet, Sandite, Weedkilling Trains
- The *Employer's* maintainers
- Others

(3) The *Contractor* liaises and co-ordinates on programme and technical interface matters with such contractors listed above. The *Contractor* co-ordinates the *works* with such other contractors' activities.

(4) The *Contractor* makes suitable allowances within his programme submitted for acceptance for the interfaces with such contractors; activities.

WI910 **Co-operation (25.1)**

(1) The *Contractor* shall be required to interface with the *Employer's* staff and Others to acquire information, services and resources, in order to Provide the Works; the following is a non-exhaustive list:

(a) The *Employer's* AP Power Team

(b) the *Employer's* maintainers

(c) Infracos

(d) Network Rail

(e) SSR Contractors

(f) Not Used

(g) any other party in contract with the *Employer* whose works interface with, are adjacent to and/or have the potential to impact upon the *works*

(h) TfL Group

(i) British Transport Police and LUL Operational Security, Security and Policing

(j) Statutory Undertakers

(k) the London Fire and Emergency Planning Authority (LFEPA)

(l) any other relevant Third Party

.

(2) The *Contractor* cooperates, liaises and provides all reasonable assistance and information to the parties listed in WI910 (1). .

(3) The *Contractor* engages, consults, liaises and co-operates with, and provides all reasonable assistance to the other SSR Contractors in relation to the timing and carrying out of the works to avoid any delay, disruption or interference being caused to the other SSR Contractor.

WI915 Coordination

(1) The *Contractor* co-operates, liaises and provides all reasonable assistance and information to the *Project Manager* in order to obtain the following (non-exhaustive) services from the *Employer's* AP Power Team:

(a) approval of Planning Requests and Method Statements

(b) obtaining the *Employer's* AP Power Team testers and engineers to assist the *Contractor* where appropriate

(c) provision of training

(d) provision of information, and

(e) Meetings with the *Employer's* AP Power Team.

(2) The *Contractor* complies with the *Employer's* AP Power Team requirements regarding the provision of testers for HV/LV isolations and provision of information, and the *Employer's* AP Power Team procedures for approval of Method Statements and Planning Requests, Site Entry and Exit Procedure and Substation Access Training.

(3) The *Contractor* identifies in the programme the dates by when (taking into account the time periods for drawing requests contained in the relevant *Employer's* AP Power Team procedures drawings and other information are required from the *Employer's* AP Power Team.

(4) Where the *Contractor* reasonably requires verification of any information it has received from the *Employer's* AP Power Team (or any other Third Party) it verifies, in accordance with the *conditions of contract* and as stated elsewhere in the Works Information, the information by any possible means, including the carrying out of site surveys and inspections.

(5) The *Contractor* contacts the *Employer's* AP Power Team Interface Manager for all information required from the *Employer's* AP Power Team in relation to the works and copies the *Project Manager* into any correspondence. In the absence of a nominated the *Employer's* AP Power Team Interface Manager the *Contractor* contacts the *Project Manager*.

The *Contractor* ensures that all *Contractor* personnel entering an *Employer's* sub-station shall:

(a) possess a LUL sub-station entry permit, and

(b) possess an LUL entry permit.

Where applicable the relevant *Contractor*'s personnel shall satisfactorily complete all relevant Police security checks.

(6) The *Contractor* interfaces, co-operates, liaises and attends all necessary meetings in order to ensure that the designs and the *works* being carried out by the *Contractor* are entirely compatible, integrated and co-ordinated with all Other's activities; and

The *Contractor* ensures that the *works* are sufficiently co-ordinated, programmed and interfaced with the relevant Others' activities, to avoid any delay or disruption being caused to Others in the carrying out of Others' activities.

The *Contractor* ensures that the *works* (including those in relation to sub-station buildings) are in accordance with all relevant local authority requirements.

If the *Contractor*, having complied with the provisions of this Schedule, is unable to procure any necessary documentation, information or services from any Third Party in accordance with the timescales set out in this Schedule, or at any other time if the lack of such documentation, information or services is likely to cause a delay to the Completion Date, he contacts the *Project Manager* immediately and provides all necessary assistance to the *Project Manager* in order to mitigate any potential delay to the Completion Date.

WI915.1 Responsibility for Co-ordination

(1) The *Contractor*, as Principal Contractor, holds regular general co-ordination meetings as specified below, to which the *Project Manager* is invited. All Others who share the Site are invited as required.

(2) The *Contractor* liaises with Others as to their actual progress and arranges the delivery schedules for his Equipment, Plant and Materials accordingly.

(3) Where the *Contractor* is required to use shared areas within or adjacent to the Site the *Contractor* agrees who is to be the Principal Contractor for these parts of the Site and shall ensure that the limits of primacy are clearly delineated.

(4) The *Contractor* attends coordination meetings chaired by the respective Principal Contractor as agreed for that part of the Site, and provide the necessary assistance to the Principal Contractor to enable him to manage the construction area.

WI915.2 Co-ordination Meetings

(1) In order to be able to co-ordinate the works being carried out by Subcontractors and by Others, the *Contractor* arranges three types of co-ordination meeting to which he will convene with the relevant personnel and offers the *Project Manager* the right to attend.

The area(s) of the Site allocated to each contractor during any period of work shall be determined in these meetings.

a) Four weekly meetings

During these meetings, after the updating of the *works* execution programmes, the *Contractor* draws up a forward *works* programme and a list of resources (personnel, Plant and Materials and Equipment) to be employed by any contractors working at the relevant area of the Site during the following four

weeks.

b) Weekly meetings

During these meetings the *Contractor* draws up detailed coordinated arrangements for access and deliveries of resources, Plant and Materials, and Equipment for the next week and prepares the arrangements for the coordination of the activities for the following two weeks after that.

c) Daily briefing report

As part of the briefing, the *Contractor* draws up a common programme for the *works* to be performed the next day. This programme includes in particular:

- The schedule of activities to be carried out during normal working hours in areas segregated from depot operations by any contractors working in the relevant area of the Site;
- The schedule of equipment movements for the Site in respect of any contractors working in the relevant area of the Site*;*
- The list of deliveries of Plant and Materials to the Site in respect of any contractors working in the relevant area of the Site*;*
- The schedule of activities to be carried out by any contractors working in the relevant area of the Site.
- The *Contractor* and Others sign this report which constitutes a safety document.

WI920 **Authorities and utilities providers**

Not Used

WORKS INFORMATION

WI 1000

SERVICES AND OTHER THINGS TO BE PROVIDED

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5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

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WI1005 **Services and other things for the use of the *Employer*, *Project Manager* or Others to be provided by the *Contractor* (25.2)**

- provision of personnel protective Equipment for the *Employer*, *Project Manager*, *Supervisor* or any visitors

WI1005.1 **Services and things provided by the *Contractor***

(1) The *Contractor* allows for the provision of up to five sets of PPE as listed below for visitors to the Site. The number of visitors and actual sizes of PPE requirements will be advised to the *Contractor* in appropriate time in advance of the planned visit.

- hard hat
- hi Visibility coat
- hi Visibility vest
- flame retardant overalls;
- safety boots and socks
- safety glasses
- gloves, and
- ear plugs/ear defenders.

WI1005.2 **Meter Readings**

(1) Not used

WI1005.3 **Scheme Sign Boards**

(1) Not used

WI1010 **Services and other things to be provided by the *Employer* for use by the *Contractor* (25.2)**

- Access to the Site and various worksites therein

WI1010.1 **Services and other things provided by the *Employer***

(1) The *Contractor* (where required in order to Provide the Works) shall obtain free of charge the following services from the *Employer*, Others and the Infracos:

- provision of relevant training
- HV1 engineer, SCADA TRI engineer
- LV1 engineer, Tunnel Telephone engineer, Signal Technical Officers, Cable Linesman
- provision of relevant information
- meetings with relevant Infraco personnel
- identification of space within Infraco sites. and
- provision of Infraco resource and personnel including train driver, train protection master, train protection crew (and associated Engineering Train),

together with any other services which the *Contractor* requires in order to Provide the Works.

For the avoidance of doubt the *Contractor* is responsible for procuring at his own cost all required track/station protection staff (e.g. protection master), fire watchman and T002 staff.

For the avoidance of doubt the *Contractor* provides suitably competent personnel to be trained and authorised by LU as HV2 & LV2 Acceptors in accordance with the *Employer's* HV & LV Safety Rules.

WI1010.2 **Free Issue**

(1) The *Employer* may provide free issue Plant and Materials, or Equipment to the *Contractor*.

WORKS INFORMATION

WI 1100

HEALTH, SAFETY AND ENVIRONMENTAL REQUIREMENTS

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	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

CONTENTS

WI1105 Health, Safety and Environmental requirements

WI1105.1 General Health, Safety and Environmental requirements (including Contract QUENSH Conditions)

(1) The *Contractor* complies with all of the requirements listed in the Contract QUENSH Conditions menu (P5A_WI1100 - Appendix 01 - QUENSH PUP5A)

(2) The *Contractor* also complies with the *Employer's* Health, Safety and Environmental Management System "Standards" (as scheduled in WI100 - Appendix 01) containing mandatory Category 1 Standards and, if stated, Category 2 and 5 Standards, Guidance Documents and template documentation.

(3) The *Contractor* will systematically identify health, safety and environmental risks and impacts of the *works*. Wherever practicable negative impacts will be removed, designed out or avoided and positive impacts maximised. Risks that were not able to be avoided will be recorded and communicated to the *Project Manager* and other relevant parties (such as other designers and contractors)

(4) The *Contractor* shall report any Work Related Ill Health, Fatalities, Dangerous Occurrences, Injuries, Damage to Infrastructure, Environmental Incidents, Loss of Service/Production, Breaches of Security or Near Hits (events which may have in slightly different circumstances led to harm to people, property or the environment) to the Project Manager immediately.

Note: *Contractor* must also report all incident within 24 hours using the *Employer's* Incident Reporting Hotline tel no: 0844 292 0292

WI1110 *Contractor's* Health, Safety, and Environmental Management systems

WI1110.1 Health, Safety, and Environmental arrangements

(1) The *Contractor's* Health, Safety and Environmental arrangements comply with the following requirements;

(a) The *Contractor's* Environmental Management

(i) For contractors without existing environmental management system certification: The *Contractor* at all times manages environment using suitably scaled and defined management system(s) that meet(s) the requirements as a minimum contained in ISO 14001 or similar.

(ii) For contractors with existing environmental management system certification: The *Contractor* at all times manages environment using suitably defined management system(s) that meet(s) the requirements of standards BS EN 14001 or similar.

(b) The *Contractor's* Health and Safety Management

(i) For contractors without existing health and safety management system certification: The *Contractor* at all times manages health and safety using suitably scaled and defined management system(s) that meet(s) the requirements as a minimum contained in OHSAS18001 and HSG65 or similar.

(ii) For contractors with existing health and safety management system certification: The *Contractor* at all times manages health and safety using suitably defined management system(s) that meet(s) the requirements of standards OHSAS18001 and HSG65 or similar.

WI1115 Particular Health, Safety and Environmental requirements

WI1115.1 Health, Safety and Environmental Training

(1) The *Contractor* makes full allowance in programming, controlling and executing the *works* for Health, Safety and Environmental training requirements, with particular reference to section

WI215.3.

(2) The *Contractor* ensures that all staff have been provided appropriate Health, Safety and Environmental training and information in order to undertake their duties to the required standard.

(3) The *Contractor* ensures that only competent persons including Subcontractors are employed. This includes the supply of any Site Person-in-Charge. The *Contractor* shall supply at the commencement of this contract, and shall maintain and keep current a matrix of training, certification and competencies for all the *Contractor's* staff and personnel involved in the performance of the *works*, in accordance with the requirements of the Works Information.

WI1115.2 Site Hazards

(1) Not Used.

WI1115.3 Health, Safety and Environmental Requirements

(1) The *Contractor* provides the *Project Manager* with all necessary assistance in the preparation of the Health and Safety File for the work they are undertaking. The *works* are not considered Complete unless the *Project Manager* is in possession of all Health, Safety and Environmental information required to meet the *Employer's* requirements.

(2) The *Contractor* ensures that adequate if any welfare facilities are available on Site before commencing work. The *Contractor* shall refer to the Works Information for details of facilities to be provided to him for his use, and for those which he is required to provide.

Suitable and sufficient sanitary conveniences shall be provided at a readily accessible place. All facilities either shared by arrangement or provided by the *Contractor* shall be kept clean at all times and shall meet the requirements of Schedule 2 of CDM Regulations 2007.

(3) The *Contractor* is responsible for cleaning, inspecting and maintaining all sanitary conveniences and facilities provided in the Working Areas, whether shared or provided for use by the *Contractor* or *Employer.*

(4) The *Employer* is committed to reducing its environmental impact by working with the *Contractor* to ensure that their products and services meet the environmental requirements of the Responsible Procurement Policy. The *Contractor* makes provisions for compliance with the environmental sustainability strategy, for which the principles, objectives, records and environmental performance requirements are set out by the *Employer* in the following Environmental Reports and Plans;

LU Biodiversity Action Plan

TfL Environment Strategy

(5) In addition to (4), the *Employer* has a number of initiatives to promote good Health, Safety and Environmental behaviours in line with World Class HSE Leadership practices set out in the CPD_HSE_Strategy_2011-2014 (W1100 – Appendix 02). The *Contractor* co-operates with the *Employer* to ensure that such initiatives are implemented as part of the management for executing the *works*.

(6) The *Contractor* ensures that his staff participates in the HSE initiatives that the *Employer* uses to review and improve HSE performance collectively with the *Employer*'s supply chain. This includes the requirement to attend routine HSE committee meetings, briefings and forums, and to cascade, communicate and circulate associated bulletins and notices.

(7) To support the analysis of health, safety and environmental performance, the *Contractor* must submit a Supplier Period HSE Report (WI1100 - Appendix 03) to the *Employer's* Safety & Environmental Analysis team mailbox LUSEA@tube.tfl.gov.uk The report provides detail of the hours worked, number of personnel involved (which includes all contractors working on

the project), incidents, injuries, waste levels etc, in each four week Period . This data is submitted to LUSEA by Wednesday of Week 1 of the following Period. This report to LUSEA is in addition to the progress report identified in WI815.1 of the Management of Works Information

WI1115.4 The Construction (Design and Management) Regulations 2007

(1) The *Employer* is the Client and CDM Co-ordinator for the purposes of the CDM Regulations as named in the Contract Data Part 1.

(2) The *Contractor* fulfils the role of Principal Contractor and Designer as required by CDM Regulations.

(3) A copy of the *Employer's* F10 Notification informing the Health & Safety Executive (HSE)/Office of the Rail Regulator (ORR) of this project's planned construction works in accordance with CDM requirements will be issued to the contractor within four weeks of the Start Date..

(4) The *Contractor* acknowledges the *Employer's* statutory duty to provide a safe and efficient public passenger transport service and the *Contractor* is to, at all times during the *works,* have regard to those statutory duties. The *Contractor* does not in Providing the Works in any manner endanger the safety of or interferes with the convenience of the Underground Network or the public and takes all reasonable steps to minimise any disruption to the same.

(5) WI1100 – Appendix 06 contains a copy of the *Employer's* Health, Safety and Environmental Pre-Construction Information.

WI1115.5 Audit Schedule

(1) The *Contractor* provides a Health, Safety and Environmental audit schedule in accordance with QUENSH 27.3. More detailed requirements can be found in Category 1 Standard 1-566 Monitoring Health Safety and Environmental Performance

WI1115.6 Personal Protective Equipment (PPE) and clothing

(1) The *Employer* does not have a Personal Protection Equipment (PPE) policy therefore the *Contractor* assesses and provides the appropriate PPE requirements for use of his personnel and subcontractors as follows;

a) The *Contractor* provides PPE free of charge to all personnel, as required and appropriate, for the job task.

b) PPE fits the individual and is laundered, maintained and/or replaced to ensure that it remains effective at all time.

c) The minimum equipment to be provided is:

- hard hat with company branding;
- eye protection (safety glasses);
- hand protection (gloves);
- safety footwear; and
- high visibility jacket and/or vest with company branding.

d) Dependant on the job task function and Site conditions, personnel are also provided as a minimum with:

- respiratory protection equipment;
- fire retardant overalls
- hearing protection;
- hot, wet or inclement weather protection.

e) The *Contractor* ensures that all PPE is suited to the task on the basis of health &

safety risk assessment.

The *Contractor* ensures that all personnel wear PPE appropriate to the health & safety risks of each task and demonstrate that risk control systems are in place.

WI1115.7 *Employer's* PPE and clothing requirements

(1) The *Contractor* provides specialist PPE and clothing requirements where required for use on Site by the *Project Manager*, his staff and other agents involved in the contract.

WI1115.8 Use of equipment, materials or substances hazardous to health

(1) The *Contractor* gives the *Project Manager* such written notice as the *Project Manager* requires prior to the use under the contract of any Equipment, Plant and Materials or materials or substances that may be hazardous and a risk to the safety, health or welfare of persons or property. The *Contractor* identifies the hazards and provides full details of any precautions to be taken on the use of such Equipment or Plant and Materials or substances.

(2) The *Contractor* only specifies substances and materials for incorporation in the *works* and incorporate substances and Materials;

- which are in accordance with the relevant Standards and general good building and engineering practice, and which are in accordance with the guidelines contained in any publication of the Building Council of Offices' "Good Practice in the selection of Construction Materials" current at the time of incorporation of such substances or materials into the *works* provided that this sub-bullet does not apply where an experienced contractor would have judged at the time of the substances or materials being specified that there was no reasonable prospect of them being declared 0 by the scheduled date for their incorporation into the *works*.

WI1115.9 Consumables

(1) In accordance with the *Employer's* commitment to reducing its environmental impact through responsible procurement, the *Contractor* is required to use cleaning products and consumables that have minimal environmental impact. The products used by the *Contractor* comply with the European Eco-label or equivalent standard, these include:

- all purpose cleaners
- sanitary cleaners
- toilet roll and hand towels
- soaps

Products which meet the European Eco-label can be found at http://www.eco-label.com.

WI1115.10 Fire

(1) The *Contractor* ensures that all works are compliant with the relevant legislation, Standards and LUL guidance on fire safety.

(2) The *Contractor* ensures that regular Site inspections include those of the *Contractor's* fire safety arrangements, are recorded and the completed forms are maintained on Site in the appropriate site files.

(3) The Site Person in Charge (SPC) is the primary point of contact for all issues relating to fire safety on the Site. The SPC ensures that all personnel on Site receive a site briefing prior to work commencing and comply with the contents of specific conditions relative to fire safety on the Site. The SPC coordinates all activities relative to fire related emergency procedures in accordance with the Emergency Plan defined in section 8 of QUENSH (See LUL Standards WI100 - Appendix 01. The Emergency Plan procedures must also comply with Regulation 39 CDM Regulations.

(4) In the event of a fire emergency the *Contractor* complies with the requirements of the Emergency Plan in order to ensure a speedy evacuation of the Site and to account for all personnel.

(5) The *Contractor's* Emergency Plan includes emergency pollution control measures compliant with Environment Agency (EA) guidelines including emergency phone numbers and the method of notifying local authorities and statutory authorities.

(6) The *Contractor* complies with the requirements of the LFEPA or other relevant fire authority for the provision of Site access points. Where appropriate, the accesses are designed to the requirements of LFEPA Publication: Fire Safety Guidance Note Number 29 "Access for Fire Appliances". The access points must also be suitable for access for ambulances.

WI1115.11 Isolation of fire protection and detection systems

(1) Not Used

(2) Isolation of automatic fire prevention and detection equipment is controlled in accordance with LUL Reference Manual Standard Bb229 "Fire precautions – Isolation of automatic fire detection and protection equipment."

(3) The *Contractor* agrees the proposed isolation plan to suit his method of working with the *Project Manager*, and requests the isolation from the Fault Reporting Centre.

(4) As well as requesting isolation from the Fault Reporting Centre, the *Contractor* requests exemption from the *Employer's* Fire Asset Engineer, where applicable, no later than four weeks before work is planned to take place and confirms that:

i) the Fire Asset Engineer passes the request to the London Fire and Emergency Planning Authority (LFEPA);

ii) the Fire Asset Engineer confirms that isolation requests have been approved and where necessary, that exemptions are in place before a Hot Work Permit is issued;

iii) the *Contractor* maintains a presence on Site and undertakes an hourly fire inspection of the isolated area until the fire protection or detection system is reinstated.

(5) The *Contractor* is particularly aware of the procedures for raising the alarm, in the event of outbreak of fire at a location where work activity is taking place.

(6) The *Contractor* provides dedicated Fire Points when and where Hot Works are carried out.

WI1115.12 Emergency Plan Procedures

(1) The Emergency Plan procedures manual is submitted to the *Project Manager* for acceptance prior to commencement of work on Site.

(2) The *Contractor* carries out training for key emergency management personnel as required for the effective implementation of the procedures.

(3) The *Contractor* arranges at least one simulated emergency exercise in each twelve week period following commencement of work on Site.

(4) Immediately following an emergency, or following a simulated emergency exercise, the *Contractor* reviews the actions taken, against the requirements set out in the Emergency Plan procedures manual, and shall issue revisions to the Emergency Plan procedures manual when appropriate. The *Contractor* reviews in full the Emergency Plan manual procedures at maximum six monthly intervals. Any revisions in the Emergency Plan procedures manual are submitted to the *Project Manager* for acceptance

WI1115.13 Work Related Road Risk

WI1115.13.1 Definitions;

(1) **Approved Driver Training** means the Safe Urban Driving course as accredited by the Joint

Approvals Unit for Periodic Training details of which can be found at: www.fors-online.com;

(2) **Bronze Membership** means the minimum level of FORS membership, the requirements of which are more particularly described at: www.fors-online.org.uk

(3) **Class VI Mirror** means a mirror fitted to a Freight Vehicle that allows the driver to see what is immediately in front of the vehicle and that complies with Directive 2003/97/EC;

(4) **Close Proximity Sensor** means a device consisting of a sensor system that detects objects in a vehicle's blind spot and alerts the driver via in-cab visual and/or audio stimuli and which alerts other road users to the planned movement of the vehicle when the vehicle's indicators are engaged;

(5) **Collision Investigation** means the investigation of a collision in order to ascertain its cause and to ascertain what procedures may be implemented to prevent recurrence of the collision;

(6) **Collision Report** means a report detailing the results of the Collision Investigation and those procedures, which have been put in place in order to prevent recurrence of the collisions;

(7) **Driver** means any employee of the Service Provider (including an agency driver), who operates Freight Vehicles on behalf of the Service Provider while delivering the Services;

(8) **DVLA** means the Driver and Vehicle Licensing Agency;

(9) **FORS** means the Fleet Operator Recognition Scheme, which is an accredited membership scheme for businesses operating van and lorry fleets. It is free to join and offers impartial, independent advice and guidance to motivate members to improve their compliance with relevant laws and their environmental, social and economic performance;

(10) **FORS Membership Terms** means the terms of the membership agreement of the Fleet Operator Recognition Scheme, a copy of which can be found at: www.fors-online.org.uk

(11) **Freight** means any commodity moved by a vehicle, including but not limited to, raw and processed materials, goods, waste, servicing and construction equipment, money and valuables, post and parcels;

(12) **Freight** Vehicle means a Lorry or a Van;

(13) **Fresnel Lens** means a clear thin plastic lens that is press fitted to a lorry window on the passenger side and allows the driver to see that which is in the vehicle's blind spot;

(14) **Initial Collision Report** means a report detailing the circumstances of the collision including time, location, weather conditions, possible cause(s) of the collision, damage and/or injury caused, the identity of the driver, model of vehicle, type of Freight being carried at the time (if relevant) and the licence plate number;

(15) **Lorry** means a vehicle with an MAM exceeding 3,500 kilograms;

(16) **MAM** means the maximum authorised mass of a vehicle or trailer including the maximum load that can be carried safely while used on the road;

(17) **Side Guards** means guards that are fitted between the front and rear axles of a Lorry and that comply with EC Directive 89/297/EEC and the Road Vehicles (Construction and Use) Regulations 1986; and

(18) **Van** means a vehicle with a MAM not exceeding 3,500 kilograms including a van, a car-derived van or other vehicle designed for carrying Freight (excludes passenger cars, motorcycles, mopeds and bicycles).

WI1115.13.2 Fleet Operator Recognition Scheme Membership

(1) The *Contractor*:

- registers for membership of FORS (or similar scheme accepted by the *Employer*) and attains Bronze membership within 90 days of the contract date;
- maintains his Bronze membership with an annual independent assessment or less frequently for Silver or Gold membership in accordance with the FORS membership

terms;

- ensures that any of his Subcontractors or suppliers who operate Freight Vehicles comply with these requirements; and
- ensures his Subcontractors comply at any tier with the FORS Membership Terms.

WI1115.13.3 Safety Equipment on Vehicles

(1) The *Contractor* ensures that any Van, which he operates:

- bears prominent signage on the rear of the vehicle to warn cyclists of the dangers of passing the vehicle on the inside.

(2) The *Contractor* ensures that any Lorry, which he operates:

- has Side Guards fitted, unless it can be demonstrated to the reasonable satisfaction of the *Employer,* that the Lorry will not perform the function, for which it was built, if Side Guards are fitted;
- has a close proximity warning system fitted comprising of a front mounted, rear facing CCTV camera (or Fresnel Lens where this provides reliable alternative), a Close Proximity Sensor, an in-cab warning device (visual or audible) and an external warning device to make the road user in close proximity aware of the driver's planned manoeuvre;
- has a Class VI Mirror; and
- bears prominent signage on the rear of the vehicle to warn cyclists of the dangers of passing the vehicle on the inside.

WI1115.13.4 Driver Licence Checks

(1) The *Contractor* ensures that each of its Drivers, who work on this contract, has a driving licence check with the DVLA before commencing to work on this contract. The *Contractor* undertakes driving licence checks as indicated in the following risk scale, and as instructed from time to time by the *Project Manager*:

- points incurred on a driving licence within 12 months of any check:

  0 – 3 points – annual checks;

  4 – 8 points – six monthly checks;

  9 – 11 points – quarterly checks;

  12 or more points – monthly checks.

WI1115.13.5 Driver Training

(1) The *Contractor* ensures that each of its Drivers, who works on this contract:

- undertakes the Approved Driver Training within 60 days of the Contract Date unless they have undertaken such Approved Driver Training in the last three years, and
- satisfactorily completes a FORS e-learning "Work Related Road Safety" module (or an approved equivalent safety module) at least every 12 months.

(2) The *Contractor* provides evidence to the *Project Manager* that he has complied with these requirement before any Freight movements are undertaken for this contract and thereafter on a 12 month basis or as instructed by the *Project Manager*.

WI1115.13.6 Collision Investigations, Collision Reports and FORS Reports

(1) From the *starting date* until Completion, in the event of a collision involving the *Contractor's* Freight Vehicles, the *Contractor*:

- provides an Initial Collision Report to the *Project Manager* and a copy to the *Employer* at fors@tfl.gov.uk *as so*on as is practicable after the collision and in any case not more than 24 hours after the collision; and
- undertakes a Collision Investigation as soon as practicable after the collision; and
- provides a Collision Report to the *Project Manager* and a copy to the *Employer at* fors@tfl.gov.uk within a reasonable time following the collision and in any case within 21 days of the conclusion of the Collision Investigation.

(2) The *Contractor* within 30 days of becoming a FORS Bronze member or for existing members within 30 days of the *starting date*:

- makes a written report to the *Employer* at fors@tfl.gov.uk, providing a copy to the *Project Manager*,detailing his use of Subcontractors (including sub-Subcontractors), and his compliance with the requirements in paragraphs: 3 (Safety Equipment on Vehicles), 4 (Driver Licence Checks) and 5 (Driver Training), and
- provides updates of the report to the *Employer* at fors@tfl.gov.uk, providing a copy to the *Project Manager*, every three months following the *Contractor's* initial report.

WI1115.13.7 Duty of the *Contractor* Relating to His Subcontractors

(1) The *Contractor* ensures that each Subcontract he lets in relation to this Contract contains provisions passing on these Work Related Road Risk requirements.

WI1115.13.8 Failure to Comply with Work Related Road Risk Requirements

(1) If the *Contractor* or his Subcontractors or suppliers fails to comply with these Work Related Road Risk requirements any Freight Vehicle operated by the *Contractor* or his Subcontractors or suppliers may be refused entry to the Working Areas. Any Losses arising from such refusal of entry shall not constitute a compensation event.

WI1120 Construction Phase & Environmental Plans requirements

WI1120.1 Construction Phase & Environmental Plans - General

(1) *The Contractor* ensures that all Health, Safety and Environment Pre-Construction Information provided by the *Employer* is considered and addressed in the Construction Phase Plan (CPP) and/or the Environmental Management Plan (EMP). The EMP may be included in the CPP or may be a separate document.

(2) The Construction Phase must not start before a suitable CPP and EMP are in place and accepted by the *Project Manager*. Reviews of the CPP and EMP must be carried out at least every 6 months unless reviewed earlier in response to an incident, significant change or corrective action.

WI1120.2 Construction Phase Plan

(1) The *Contractor* maintains the Construction Phase Plan (CPP) as required by the CDM Regulations. Further to the *Project Manager's* acceptance of the initial CPP, subsequent updates are submitted to the *Project Manager* for review and acceptance . The *Contractor* responds accordingly to comments raised by the *Project Manager*.

WI1120.3 Environmental Management Plan

(1) The *Contractor* develops, maintains and updates the Environmental Management Plan (EMP) to demonstrate how he addresses the contract specific environmental issues throughout the

duration of the *works.*

(2) Prior to *works* commencing on working areas the *Contractor* provides to the *Project Manager* for acceptance an appropriately detailed EMP and project-specific policy describing the systems of work for each part of the *works*. Details include:

- The environmental management system being operated (including details of any accreditation e.g. ISO 14001)
- Partnership working on environmental matters (regulators, environmental bodies, industry groups/clients/supply chains)
- Identification of the environmental aspects and impacts of the contract and how the *Contractor* intends to minimise or negate the potential risks

The EMP includes, but is not limited, to the following;

- Emergency planning
- Vehicle management
- Noise and vibration management
- Dust management
- Lighting management
- Waste and materials management
- Ecology management
- Water management
- Green travel plan

No works on the Site commences until the *Project Manager*'s acceptance of the EMP has been obtained. Thereafter the *Contractor* updates, maintains and complies with the EMP for the duration of the contract. If the *Project Manager* comments on any aspect of the EMP, requiring a response and/or corrective action, the *Contractor* must respond accordingly allowing sufficient time to obtain *Project Manager's* acceptance prior to commencing on that element of the works.

WI1125 Detailed Safe Systems of Work

WI1125.1 Safe systems of work

(1) a) The *Contractor* is responsible for producing all safe systems of work.

b) The *Contractor* submits an initial schedule of proposed safe systems of work for use throughout this contract to the *Project Manager* for acceptance at *starting date* and provides subsequent updates as the contract develops and as instructed by the *Project Manager*. A four week look ahead including any updates should be included in the Periodic Project Progress Report.

c) The *Contractor* submits for acceptance safe systems of work specifically instructed by the *Project Manager* for review no later than 20 working days prior to the commencement of the relevant element of works.

d) The *Project Manager* responds to a safe system of work submitted for acceptance within 20 working days.

e) If the *Project Manager* has commented on a proposed safe system of work that requires a response and/or corrective action, the *Contractor* must respond accordingly allowing sufficient time to obtain the *Project Manager's* acceptance prior to commencing the element of the *works*.

f) No element of the *works* commences without a safe system of work for that element of the *works* being produced by the *Contractor* and accepted and being readily available for review by *Project Manager*.

g) All safe systems of work and supporting documentation, including any relevant approvals from Others, represent and detail the *Contractor's* planned works and addresses construction sequences, co-ordination with third parties and the relevant

control and mitigation measures for identified risks.

h) With each safe system of work the *Contractor* produces a risk assessment that demonstrates how potential risks resulting from the *works* have been mitigated to ALARP.

WI1125.2 Aspect and Impact assessments

(1) Aspect and impact assessments are carried out by the *Contractor* to identify all potential aspects and their impacts and provide details of the necessary environmental control measures. These are included and reflected in risk identification, control and mitigation measures outlined in safe systems of work for any element of the *works*.

WI1130 Control of Pollution and Environmental Nuisance

WI1130.1 Monitoring

(1) The *Contractor* employs a trained and competent person to undertake monitoring if required by the *Project Manager* and the *Contractor* complies with any additional measures required by the *Project Manager* including relocation or modification of equipment to reduce noise, vibration, nuisance, light, dust, pollution and disturbance.

(2) The *Contractor* reports all environmental complaints to the *Project Manager* and informs the Incident Report Line on Tel: 0844 292 0292.

WI1130.3 Noise and Vibration - General

(1) The *Contractor* uses best practical means to reduce noise and vibration at all times having regard to the provisions of the current / latest edition BS5228 - Code of Practice for Noise and Vibration Control on Construction and Demolition Sites and as defined under sect 72 of the Control of Pollution Act (COPA) 1974.

The *Contractor* consults with the relevant Local Authority (LA) about the works and applies for a S61 if required. In case, no formal S61 agreement is requested by the LA, the *Contractor* shall provide written evidence to the *Project ManagerLU* about the consultation.

WI1130.4 Dust

(1) The *Contractor* complies with the requirements of the Best Practice Guidance – "The control of dust and emissions from construction and demolition" (WI1100 - Appendix 04). If the *Project Manager* decides that the *Contractor* is not dealing adequately with the control of dust, the *Project Manager* may instruct the *Contractor* to carry out such additional measures as he or the *Employer* considers are necessary. Such measures will not be considered a compensation event.

WI1130.5 Lighting

(1) To minimise the impact of lighting required for the Working Areas during night works, the *Contractor* ensures that, where applicable, lighting designs comply with the provisions of latest edition of BS5489, Code of Practice for the Design of Road Lighting. Further guidance is contained within the Guidance Notes for the Reduction of Light Pollution 2000, published by the Institute of Lighting Engineers or its most recent equivalent.

WI1130.6 Pollution

(1) The *Contractor* ensures that, where reasonably practicable and appropriate, the Working Area layout(s) and appearance will be designed using the principles of the Environment

Agency's "Working at construction and demolition sites" : PPG 6 Pollution Prevention Guidelines including:

(a) sites at prominent locations will be screened;

(b) all sites will be fully secured;

(c) existing features will screen the sites where appropriate;

(d) storage sites, fixed plant and machinery equipment and temporary offices will be located to limit environmental impacts, as far as reasonably practicable, having due regard to neighbouring accommodation, as far as allowed by the constraints of each site;

(e) security cameras (if required) will be sited and directed so that they do not intrude into occupied residential properties;

(f) Site plant and facilities will be powered from mains electrical sources wherever practicable.

(g) the *Contractor* will display a contact name, telephone number and address, and the Helpline number at appropriate locations on the boundaries of the sites.

(h) the extent and height of hoarding or fencing at a particular location will be selected to maintain effective security and achieve appropriate noise attenuation and visual screening.

(i) all vehicle access and egress points will have gates positioned such that no gate will be permitted to open out onto the highway. As far as reasonably practicable, gates will be located to allow vehicles to drive clear of any public highway. Where provided for noise control, gates will be of a similar material and construction to the boundary in which they are situated and will be closed except when being used for access.

(j) disturbance of environmental features such as vegetation and watercourses will be minimised.

(2) The *Contractor* complies with EA's note "PPG05: works in near or liable to affect water courses" and CIRIA's report "C532: control of water pollution from construction sites."

(3) Site drainage, including surface runoff and dewatering effluents, will be discharged to sewers where reasonably practicable and relevant permissions will be obtained from the sewerage or statutory undertaker. Discharge to watercourses will only be permitted where discharge consent or other relevant approval has been obtained. The *Contractor* ensures that the site drainage meets the sustainable drainage, effluent and flood risk standards required by the sewerage undertaker, Environment Agency or Local Authority as appropriate, in accordance with the relevant environmental permits, discharge consents and maintain holding or settling tanks, separators and other measures as may be required. The relevant sections of BS6031: Code of Practice for Earthworks for the general control of site drainage will be followed where appropriate.

WI 1130.7 **Contaminated Land**

(1) The *Contractor* assesses contaminated land under guidance contained within the Environmental Protection Act 1990 (Part IIA). This guidance, referred to as the Part IIA regime, came into force in England in April 2000 by enactment of Section 57 of the Environment Act 1995. The accompanying Contaminated Land (England) (Amendment) Regulations 2012 (SI 2000/227) state the conditions under which land is defined as contaminated. The *Contractor* develops mitigation measures in accordance with these regulations.

WI1135 Waste Management and Reporting

WI1135.1 Waste Management

(1) Not Used.

(2) Not Used.

(3) The *Contractor* ensures their EMP supports the TfL objective to reduce waste and use materials efficiently, specifically to reduce waste to landfill by reusing and recycling 95% of Construction, Demolition and Excavation waste by 2017/18.

The *Contractor* develops a Waste Management Planfor the Construction Phase taking account of all relevant information provided by the *Employer* and Designer prior to commencing the *works* on site. The *Contractor* does not commence works on site prior to the *Project Manager's s* acceptance of the WMP.

(4) The *Contractor* makes available Waste Management records for review by the *Project Manager* on request. The Contractor is to include a WMP update in the Periodic Project Progress Report.

(5) Not Used

(6) The *Contractor* is responsible for registering any sites falling under the Hazardous Waste (England and Wales) Regulations, 2005.

(7) Unless otherwise stated in this Works Information, and in particular the Site Waste Management Plan, the *Contractor* is responsible for the disposal of rubbish, debris and spoil arising from the *works* as soon as practicably possible.

(8) The *Contractor* makes available to the *Project Manager* , within 28 working days, any waste management and transfer records upon request of the *Project Manager.*

(9) Not Used

(10) The *Contractor* uses the Smartwaste Tool, or similar, to forecast waste, quantify potential reductions in wastage and costs, identify actions to reduce and recover waste and compare forecast and actual waste arising

(11) The *Contractor* ensures that waste management and minimisation is an agenda item in all start up and progress meetings. The *Contractor* ensures a minimum of 20% of total material value of the *works* derives from reused and recycled content. The *Contractor* submits proposals to the *Project Manager* regarding the areas of opportunity to exceed this waste management target figure. The *Contractor* provides detailed explanation and justification to the *Project Manager* for failure to achieve the 20% target figure.

(12) The *Contractor* ensures his WMP supports the *Employer's* objective to use materials more efficiently and reduce waste to landfill by reusing and recycling to achieve the following target figures by 2017/18;

a) 95% of construction, demolition and excavation waste, and

b) 70%of commercial and industrial waste.

As a minimum requirement, the *Contractor* is to achieve the *Employer's* current targets for reducing waste by reusing and recycling materials in line with the following;

Financial Year 2014/15;

a) 92% of construction, demolition and excavation waste

WI1135.2 Waste Reporting

(1) The *Contractor* submits a substantiated waste report each period for each of the following elements:-

a) *Contractor's* waste data for each of the Key Performance Indicators shown below:

- tonnes of waste produced (including hazardous waste in total), and

- tonnes of hazardous waste produced (including hazardous waste in total), and
- tonnes of waste reused and recycled, and
- tonnes of proportion of hazardous waste reused and recycled; and
- details of waste that cannot be demonstrated to have been disposed of correctly
- tonnes disposed to landfill per £100k of *works* spend; and
- tonnes recycled per £100k of *works* spend, and
- tonnes of waste diverted from landfill
- tonnes of material reused on site
- tones of material reused off site

b) The *Contractor* includes Subcontractors waste data for the same Key Performance Indicators within the total reported figures,.

c) The *Contractor* also within final, lessons learnt of the SWMP evidence of meeting the following requirements:

- Recover a minimum of 92 % of construction, demolition and strip out and excavation materials, and aim to exceed this figure (based on TfL target of 95% in 2017-18)
- Ensure that at least 20% of total material value derives from reused and recycled content in new build, select the top opportunities to exceed this figure without increasing the cost of materials, and report actual performance.

WI1140 Timber

WI1140.1 Sourcing of Timber

(1) The *Contractor* is expected to incorporate recycled, reclaimed and sustainably sourced timber into the temporary and permanent works. Usage of these materials will be measured as part of the performance measurement process. Should the *Contractor* propose not to use recycled, reclaimed and sustainably sourced timber within the *works* then he must obtain the *Project Manager's* written consent prior to starting *work*.

(2) The *Contractor* is to maintain records of all timber deliveries for the purposes of this contract.

(3) Timber used by the *Contractor* must be accredited to meet the Forest Stewardship Council (FSC) or equivalent. Where it is not practicable to use FSC standard accredited timber, the *Employer* will accept timber accredited through other schemes approved by the Central Point of Expertise on Timber (CPET).

WI1145 Mayor's Green Initiatives

WI1145.1 Green Travel Plan

(1) As part of the *Employer's* green transport initiatives, the *Contractor* submits a "green travel plan" to the *Project Manager* for acceptance as soon as possible after the *starting date*. The plan is developed and updated throughout this contract to primarily encourage *Contractor's* staff to use public transport and outline the measures taken to control nuisance "fly-parking".

WI1150 Ecological Requirements

WI1150.1 Ecological habitat

(1) Where species protected by specific legislation require removal and/or relocation in order to Provide the Works, the *Contactor* uses approved guidance /codes or practice to comply with the legal requirements, allows sufficient time to survey, obtain the required licences or

consents and include relevant control measures in the Construction Phase Plan (or Environmental Management Plan, where required).

(2) The *Contractor* uses reasonable practicable measures to minimise loss of trees. Should remedial or protective works to trees adjacent to the *works* be required, the *Contractor* employs a suitably trained tree specialist to advise and or carry out the work.

(3) Where vegetation and topsoil is removed, the *Contractor* submits a proposal to use a suitable grassland or replacement species in keeping with the local environment for the *Project Manager's* acceptance. The *Contractor* does not proceed with the replacement vegetation or topsoil unless the *Project Manager* has accepted the proposal in writing.

The *Contractor* considers the feasibility of using a green roof/ wall (in whole or in part) on the building. The green roof should be designed to manage water runoff from the building and with a view to improving biodiversity. The roof should be designed in accordance with the guidance in CIRIA C697: The SUDS Manual; CIRIA C644: Building Greener and The GRO Green Roof Code 2011.

WI1155 Energy Saving and Carbon Reduction Requirements

WI1155.1 Energy use and operational reduction

(1) Whereby the *Contractor* is responsible for the design;

- The *Contractor* conducts an Energy Demand Assessment that includes an:
  a) identification of all significant sources of consumption
  b) estimate of the annual energy costs associated with design decisions
  c) annual reduction in energy use will be specified and savings calculated
- The *Contractor* assesses the feasibility of renewable energy options as per current Mayor's London Plan. In situations where design options provide estimated annual savings but increased capital costs, the details are provided to the *Employer* for consideration by means of a variant bid as detailed in the instructions to tenders.

WI1155.2 Reduction in water main consumption

(1) Not Used

WI1155.4 Control of Vehicle Emissions

(1) All *Contractor* and Subcontractor vehicles are procured or leased in accordance with the following principles:

- Consider CO_2, air quality and noise impacts as part of the decision making process when procuring and leasing vehicles.
- Adopt a technology neutral approach in the procurement and leasing of vehicles.

(2) All vehicles used for this Contract meet or exceed the following CO_2 limits and European emission standards (Euro Standards) at the commencement of the Contract:

- Cars - maximum certified CO_2emissions of 105 g/km and a minimum of Euro V emission standards
- Vans equal to or less than 1205 kg kerb weight – maximum certified CO_2 emissions of 115 g/km CO_2 and a minimum of Euro V emission standards
- Vans between 1205 and 1660 kg kerb weight – maximum certified CO_2 emissions of 155 g/km CO_2 and a minimum of Euro V emission standards
- Vans greater than 1660 kg kerb weight – maximum certified CO_2 emissions of 215 g/km CO_2 and a minimum of Euro V emission standards.
- Heavy duty vehicles greater than 3500 kg kerb weight – Euro V emission standards.

(3) All *Contractor's* non-road diesel engines meet or exceed the following emission standards at the commencement of the contract:

- Non road diesel engines between 19 and 36 kW – Stage 3A European emission standards
- Non road diesel engines between 37 and 55 kW – Stage 3A European emission standards
- Non road diesel engines between 56 and 560 kW – Stage 3B European emission standards.

(4) If any vehicles or non road diesel engines used on this contract are due for replacement during the period of the Contract, the *Contractor* ensures that the replacement vehicle/engine meets or exceeds the European emission standards and CO_2 limits (if applicable) for that year in which it is introduced into the fleet. Standards and the years in which they apply are shown in the tables below. If vehicles/engines to meet the requirements are not available by the specified deadline, then the *Project Manager* will consider acceptance of an alternative standard proposed by the *Contractor* until such time as those vehicles become available.

European Emission Standards for Road Vehicles

Vehicle	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Cars	Euro 5	Euro 5	Euro 6	Euro 6	Euro 6	Euro 6	Euro 6
Vans ≤ 1205kg kerb weight	Euro 5	Euro 5	Euro 6	Euro 6	Euro 6	Euro 6	Euro 6
Vans 1205-1660kg kerb weight	Euro 5	Euro 5	Euro 5	Euro 6	Euro 6	Euro 6	Euro 6
Vans >1660kg kerb weight	Euro 5	Euro 5	Euro 5	Euro 6	Euro 6	Euro 6	Euro 6
Heavy Duty Vehicles >3500kg	Euro 6	Euro 6	Euro 6	Euro 6	Euro 6	Euro 6	Euro 6

Certified CO_2 Limits (g/km)

Vehicle	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Cars	100	95	90	85	80	75	70
Vans ≤ 1205kg kerb weight	110	105	100	95	90	85	80
Vans 1205-1660kg kerb weight	150	145	140	135	130	125	120
Vans >1660kg kerb weight	210	205	200	195	190	185	180

European Emission Standards for Non Road Diesel Engines

Vehicle	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Non road diesel engines 19-37kW	Stage 3A	Stage 3A	Stage 3A	Stage 3A	Stage 3A	Stage 3A	Stage 3A
Non road diesel engines 37-56kW	Stage 3A	Stage 3B	Stage 3B	Stage 3B	Stage 3B	Stage 3B	Stage 3B
Non road diesel engines 56-560kW	Stage 3B	Stage 3B	Stage 4	Stage 4	Stage 4	Stage 4	Stage 4

Source: Relevant EU Directives as presented on www.dieselnet.com

(5) In line with Mayoral environmental strategies and the *Employer's* commitments to reduce carbon dioxide emissions, the *Contractor* is encouraged to include zero or ultra low carbon vehicles in their fleet such as electric or plug-in hybrid or biomethane vehicles where possible.

(6) Any necessary recharging/refuelling infrastructure required for low carbon vehicles to be supplied by the *Contractor on Employer premises* would only be permitted subject to the *Project Manager's Employer's* written acceptance and by separate agreement on maintenance, installation and running costs. Where the *Contractor* operates such vehicles, operating experience and data will be shared with the *Employer* on request.

(7) The *Employer* expects the *Contractor* to select vehicles which meet the highest environmental criteria and will be eligible for a 100% discount from the Congestion Charge. The *Project Manager* does not accept any claims for reimbursement of Congestion Charges.

(8) All vehicles used under this contract are operated in such a way to ensure that environmental impacts are reduced as far as reasonably practicable.

(9) The *Contractor*:

- Ensures vehicles are regularly serviced
- Ensures all faults or problems are repaired/addressed as soon as practicable

Monitors and records vehicle fuel and mileage

(10) The *Contractor* reports the following information on a quarterly basis. The *Project Manager* reserves the right to include additional monitoring requirements throughout this contract period if required.

- vehicle make and model
- vehicle servicing frequency
- vehicle fuel (fuel type and litres used)
- vehicle mileage

(11) All driving staff undertake a fuel efficient driver training course within three months of the *starting date*. This also applies to all new driving staff employed throughout the duration of this contract. The training course consists of theoretical training and practical implementation skills and is a minimum duration of one hour.

The *Contractor* ensures that Subcontractors also undertake fuel efficient driver training. The *Contractor* provides the driver training records to the *Project Manager.*

WI1155.5 Equipment

(1) The *Contractor* ensures that the adverse impacts of Equipment emissions are controlled. Measures to be considered for limiting emissions and avoiding nuisance will include one or more of the following as appropriate and as far as reasonably practicable:

(i) ensures that the engines of all vehicles and Equipment on Site are not left running unnecessarily;

(ii) uses low emission vehicles and Equipment fitted with catalysts, diesel particulate filters or similar devices;

(iii) uses ultra low sulphur fuels in plant and vehicles;

(iv) requires Equipment is well maintained, with routine servicing of Equipment and vehicles to be completed in accordance with the manufacturers recommendations and records maintained for the work undertaken;

(v) requires all project vehicles, including off-road vehicles, hold current MOT certificates, where required due to the age of the vehicle, (or tested to an equivalent standard) and that they comply with exhaust emission regulations for their class;

(vi) site haul routes and operate Equipment away from potential receptors such as houses, schools and hospitals;

(vii) avoid the use of diesel or petrol powered generators and instead use mains electricity or battery powered Equipment;

(viii) maximise energy efficiency (this may include using alternative modes of transport, maximising vehicle utilisation by ensuring full loading and efficient routing); and

(ix) all commercial road vehicles used in construction must meet the European Emission Standards as stated in section WI1155.4 during the *works*.

WI1160 Additional performance monitoring

Not Used

WI1165 Police and Traffic Regulations

WI1165.1 Traffic requirements

The *Contractor* will provide a Traffic Management Plan (TMP) which incorporates the requirements of CDM 2007, QUENSH and local procedure and reflects Best Practice in the management of pedestrian and vehicle traffic. The TMP can be incorporated in the CPP.

WI1165.2 Police requirements

Not Used

WORKS INFORMATION

WI 1200

SUBCONTRACTING

Document History: **Version:**	**Prepared by**		**Quality Checked by**		**Legal Review**		**Peer Review**	
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5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

CONTENTS

WI1205 **Restrictions for subcontracting**

(1) The *Employer* does not consider that there are any particular tasks or work packages that cannot be subcontracted, with the exception of

the *Contractor's* management of the *works.*

WI1210 **Requirements for all Subcontracts**

(1) The *Contractor* ensures that each subcontract he lets in relation to this contract contain provisions:

- requiring the proposed Subcontractor (and sub-subcontractors of any tier) to meet the Conditions stated for a *section*, if applicable, on or before such *section* and to achieve Completion on or before the Completion Date and to minimise the level of Defined Cost,
- requiring the proposed Subcontractor (and sub-subcontractors of any tier) to meet the Conditions stated for a Key Date, if applicable, on or before such Key Date and to achieve Completion on or before the Completion Date and to minimise the level of Defined Cost,
- requiring the proposed Subcontractor (and sub-subcontractors of any tier) to maintain accounts and records and grant audit rights to the *Employer* and its authorised representatives of an equivalent extent and nature to those required by this contract,
- requiring the proposed Subcontractor (and sub-subcontractors of any tier) to assign to the *Employer* the IPR in all documents, drawings, materials, computer software and any other material or works prepared or developed by or on behalf of the proposed Subcontractor in the performance of the subcontract,
- requiring the proposed Subcontractor (and sub-subcontractors of any tier) to grant a non-exclusive, perpetual, irrevocable, royalty-free licence to the *Employer* to use Background IPR (including the right to grant sub-licences) of an equivalent extent and nature to those required by this contract,
- imposing equivalent obligations of confidentiality on the proposed Subcontractor (and sub-subcontractors of any tier) to those required by this contract,
- imposing equivalent obligations regarding Prohibited Acts and health and safety (including Safety Breaches) as required by this contract on Subcontractors (and sub-subcontractors of any tier),
- in equivalent terms to clause 50.12 of this contract together with an obligation to procure that equivalent provisions are included in sub-subcontracts of any tier,

WI1215 **Submission of Subcontract Documentation**

(1) The *Contractor* submits to the *Project Manager* for acceptance within eight weeks of the *starting date*, the name of the proposed Subcontractor for any subcontract over £250,000 (two hundred and fifty thousand pounds), or series of subcontracts with the same Subcontractor exceeding £250,000 (two hundred and fifty thousand pounds) in the aggregate, together with a copy of the proposed subcontract documentation and such other information as the *Project Manager* may require.

(2) The *Project Manager* also has the right to object to any proposed Subcontractor for any subcontract (or series of subcontracts) under £250,000 in value.

The *Contractor* submits the name of the proposed Subcontractor for any such

subcontract to the *Project Manager* if requested by the *Project Manager* to do so together with a copy of the proposed subcontract documentation and such other information as the *Project Manager* may require and the *Project Manager* provides the *Contractor* with his written objection (if any) to any such proposed Subcontractor within 4 weeks of submission.

If the *Project Manager* does not object to any such proposed Subcontractor for a subcontract with a value under £250,000 within this period the *Project Manager* is deemed to have accepted the proposed Subcontractor.

WI1220 **Acceptance procedures**

(1) There are no additional procedures that the *Contractor* is to comply with other than those stated in clause Z1.14 of the *conditions of contract* with regard to subcontract procurement

WI1225 **The Subcontract Procurement Plan**

(1) The *Contractor* submits a detailed Subcontractor Procurement Plan to the *Project Manager* for acceptance prior to the *starting date*.

(2) The Subcontractor Procurement Plan contains, as a minimum, the *Contractor's* proposal for the following:

- A subcontract procurement policy statement
- A subcontract procurement quality statement including a commitment to meeting the *Employer's* requirement for best value and responsible procurement.
- Overall procurement programme detailing when the *Contractor* intends to commence procurement for the parts of the *works* that are to be subcontracted, along with how this fits with the Accepted Programme.
- A statement detailing which parts of the *works* the *Contractor* intends to subcontract along with the reason why.
- A statement explaining how the *Contractor* intends to pass risk to his Subcontractors and how this transfer meets with requirement of the *Contractor's* Risk Management Plan.
- A statement explaining how the *Contractor* intends to manage health and safety in his supply chain.
- The proposed form of contract for each Subcontractor identified in the Subcontractor Procurement Plan
- Details of which, in accordance with this Works Information, Subcontractors the *Contractor* intends to submit to the *Project Manager* the full subcontract details.
- How the *Contractor* proposes to meet LU Standard 1-551 'Procuring and managing suppliers and contractors - HS&E requirements'

WI1225.1 **Updating the Subcontract Procurement Plan**

The *Contractor* submits a revised Subcontract Procurement Plan to the *Project Manager* for acceptance

- within the *period for reply* after the *Project Manager* has instructed him to
- when the *Contractor* chooses to and, in any case,
- whenever the there is a change to the planned Subcontractor Procurement

plan by virtue of a change to the programme, additional works identified to be subcontracted or when the Subcontractor Procurement plan is affected by a compensation event.

The *Contractor* shows on each revised Subcontractor Procurement Plan how the plan has differed from the previous plan.

A reason for not accepting the revised plan is that it does not contain the information required by this contract and/or it will not allow the *Contractor* to Provide the Works.

WI1230 **Responsible procurement (Z2.13)**

WI230.1 **Responsible Procurement Policy**

(1) The *Contractor* complies with the requirements and principles of the Responsible Procurement Policy in accordance with the following;

The Greater London Authority (GLA) has developed a Responsible Procurement Policy (RPP), through which it aims to improve London's sustainability across the following themes:

- encouraging a diverse base of suppliers
- promoting fair employment practices
- promoting greater environmental sustainability
- promoting community benefits
- encouraging ethical sourcing practices
- meeting strategic labour needs and enabling training opportunities
- promoting workforce welfare

The seven themes are set out in more detail in the GLA and TfL public websites which may be accessed using the following link:

http://www.tfl.gov.uk/businessandpartners/sellingtotfl/1337.aspx

(2) The *Contractor* submits, prior to the *starting date*, a responsible procurement policy setting out his proposed arrangements in respect of the GLA RPP to the *Project Manager* for acceptance. In the event that any policy submission is found to be inadequate, the *Contractor* implements an improvement plan to bring the policy arrangements to an acceptable standard within an agreed timescale and thereafter to maintain the policy in operation for the duration of this contract.

WORKS INFORMATION

WI 1300

TITLE

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4.0					☐			
5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

CONTENTS

WI1305 **Marking (71.1)**

WI305.1 **Marking by the *Supervisor***

(1) The *Contractor* will mark the Plant and Materials and Equipment outside of the Working Areas as property of the *Employer*. The Plant and Materials and Equipment will be stored in a secure location as agreed by the *Supervisor* and/or *Project Manager*, protected from weather and climatic conditions, accessible for inspection by the *Supervisor*, *Project Manager* or *Employer* on request, insured appropriately and labelled as agreed with the *Supervisor* and/or the *Project Manager.*

WI1310 **Materials from excavation and demolition (73.2)**

Not Used

WI1310.1 **Disposal of Materials from Site**

(1) Unless otherwise stated in the Works Information the benefits of credit for sale of all redundant materials, including all cabling, removed from the Site shall be to the benefit of the *Employer*.

WORKS INFORMATION

WI 1500

ACCOUNTS AND RECORDS

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4.0					☐			
5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

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WI1505 **Accounts and Records**

(1) Clause Z2.5 of the *conditions of contract* sets out the minimum records to be retained by the *Contractor* along with the *Employer's* compliance requirements in this respect.

This section of the Works Information sets out the additional records to be retained by the *Contractor* and its Subcontractors.

The *Contractor* is required to retain records in respect of the following:

(a) documents submitted to provide assurance and to verify compliance with the Employers Requirements as required by Works Information WI600 and the LUL Standard S1538;

(b) documents and records to be retained as required by QUENSH;

(c) records submitted to record progress and contract performance; and

(d) records required by other parts of the Works Information

All records to be retained are signed off by a member of the *Contractor's* staff with the appropriate level of authority.

The *Contractor* refines the lists of records to be provided and to be retained in discussion with any relevant Others including asset owners, CRL, Infracos, and consenting bodies.

WI1510 **Definitions and General Provisions**

(1) Deliverable Records means records that the *Contractor* is required to supply to the *Project Manager* and which are retained by the *Project Manager* or subsequently provided to the *Employer*, CRL or Others.

Contractor Records means records that the *Contractor* is required to retain and maintain.

(2) Deliverable Records are issued in hard copy and electronic format in numbers as set out in the QUENSH

Deliverable Records drawing files shall be prepared and issued in accordance with the LU CAD Standard S1037.

Contractor Records are issued in electronic and hard copy format in accordance with the QUENSH menu and shall comply with the relevant provisions of Clause 4.2.3 of ISO 9001 with regard to document version control.

Superseded documents are also considered to be records. The *Contractor* utilises the *Employer's* pro-formas where available or proposes standard forms for deliverable documents for acceptance by the *Project Manager*.

WI1515 **Records Management**

(1) The *Contractor* submits within four weeks of the *starting date*, for acceptance by the *Project Manager*, a procedure for agreement of the records to be provided, and for production and submission of all Deliverable Records.

The dates on which the *Contractor* will prepare and submit the Deliverable Records for review by the *Project Manager* are included in the *Contractor's* programme submitted for acceptance.

Those documents requiring acceptance or approval by the *Employer*, CRL and Others (including documents submitted for the *Employer* or ORR Safety Inspectorate non objection) are identified, and submission dates agreed with the *Project Manager* to prevent delays in the execution of the *works*.

Deliverable Records are collated, packaged, indexed and submitted by the

Contractor in a phased manner to the *Project Manager* for each element, structure, activity or Section as agreed with the *Project Manager*.

Access to Deliverable Records are provided by the *Contractor* to the *Project Manager*, or to third parties nominated by the *Project Manager*, as soon as the records become available.

Access to *Contractor* Records are provided to the *Project Manager*, or to the *Employer*, CRL and Others authorised by the *Project Manager*, who is allowed to copy records as required.

The *Employer* shall have the right to audit any and all of the *Contractor's* and Subcontractors' (and sub-subcontractors) records at any time during the performance of the Contract and during the period stated in this contract.

WI1520 **Management System Records**

(1) In addition to records required in accordance with clause Z2.5 of the *conditions of contract*, the *Contractor* maintains records of the following:

(2) Deliverable Records

- Schedule of Deliverable Records and *Contractor* Records
- Construction Phase Plan
- *Contractor's* Project Assurance Plan
- Environmental Management Plan and procedures
- Site Waste Management Plan
- *Contractor's* management procedures
- Quality Control Procedures
- Competence assurance records
- Other assurance evidence as called up in the accepted *Contractor's* Project Assurance Plan.
- Risk Management Plan
- Register of Auditors, including name of each auditor and associated
- company, qualification and brief details of experience
- Audit schedules and programme
- Audit reports
- Assurance Compliance Submission(s)
- Certificate of Conformity to EMC Regulations
- Community and Media Relations Plan
- Compliance with Crossrail Commitments
- Required Planning, Heritage, Design and Construction consents
- Acceptance letters, certificates, records
- Archaeology Plan
- Safety documents as required in Works Information WI1100
- Incident/Accident reports
- Identification and resolution of system non-conformities/Defects
- Schedule of work/ programme

- Daily logs and work plans
- Corrective actions initiated and implemented
- Certificates of competency
- Certificates of conformity to quality management
- BBA certificates (including date of latest successful surveillance/assessment visit)

(3) *Contractor* Records

- Technical and commercial correspondence
- Minutes of meetings
- Records of training

WI1525 **Design Records**

(1) In addition to records required in accordance with clause Z2.5 of the *conditions of contract*, the *Contractor* maintains records of the following:

(2) Deliverable Records

- Conceptual Design Statements (AIP submissions)
- Design Check Certificates (including Certificates for Contractor's Change)
- Compliance Submission
- Fire Compliance Certificate Bb224
- Technical reports
- Surveys and associated drawings
- Detailed designs and Designer's risk assessments
- Specifications
- Design drawings (including temporary works)
- Design calculations (including temporary works)
- Any other documents required by the QICC process
- Further documents if required for MAID.

(3) *Contractor* Records

- Marked up drawings
- Check prints of drawings, reports and calculations
- Design Risk Management Log

WI1530 **Construction and Manufacturing records**

(1) In addition to records required in accordance with clause Z2.5 of the *conditions of contract*, the *Contractor* maintains records of the following:

(2) Deliverable Records

- Competitively tendered Subcontractor and supplier evaluations
- Site Queries
- Construction safe system of work

- Risk assessments
- ICTBU Plans, and Inspection & Test Plans and supporting check sheets and inspection/test certificates
- Consent to test / trial certification report
- Working drawings
- Inspection and Test Reports including specified Certification
- Acceptance Certificates
- Settlement building and other infrastructure Condition and Damage
- Reports
- As built drawings
- As-built records
- Specifications of installed Plant
- Reports of the final disposition of nonconforming, defective or repaired work
- Geological records, ground investigation records, groundwater level and quality records, ground movement monitoring records, earthworks control records, piling and embedded walling records.
- Live risk register
- Materials testing records
- Records of outstanding work and Defects lists and implementation programmes for Completion
- Staged Completion Report
- Any other documents required by the QICC process
- Further documents if required for MAID

(3) *Contractor* Records

- Consultant, Subcontractor and supplier correspondence
- Construction diaries
- Inspection and test logs
- Calibration records
- Building settlement/damage logs
- Surveys diaries and records

WI1535 **Commissioning Records**

(1) In addition to records required in accordance with clause Z2.5 of the *conditions of contract*, the *Contractor* maintains records of the following:

(2) Deliverable Records

- Inspection and test reports (including ICTBU and ACHL where appropriate).
- Completion and Consent to Operate Certification Report
- Handover certification (for Maintainer acceptance of Asset)
- Details of testing and commissioning activity
- Records of testing and commissioning results

- Records of O&M training
- Acceptance and Completion Certificates
- Third party approvals, where required
- Plant reliability predictions
- Licences and consents
- Snagging Lists.
- Commissioning Plan
- Any other documents required by the QICC process

Further documents required by legislation

(3) *Contractor* Records

- Inspection and test logs

WI1540 **Operation and Maintenance records**

(1) In addition to records required in accordance with clause Z2.5 of the *conditions of contract*, the *Contractor* maintains records of the following:

(2) Deliverable Records

- Completion and Consent to Operate Certification Report
- Maintenance Manuals including spares requirements
- Maintenance procedures
- Emergency maintenance procedures
- Inspection procedures
- Maintenance programmes
- Operations manuals
- Records of modifications made to the completed infrastructure or installed Plant
- Reports of failures faults and incidents
- Any other documents required by the QICC process

WI1545 **Records for assessing the amount due**

(1) In order for the *Project Manager* to assess the amount due, along with his application the *Contractor* submits to the *Project Manager* the Activity Schedule clearly identifying all completed activities and activities forecast to be complete in the relevant Period.:

(2) Not used

(3) The *Contractor* submits forecasts of the activities on the Activity Schedule still to be completed during the Period. The forecast is based on the last programme submitted for acceptance and the planned work to be carried out during the Period.

The *Contractor* submits an application for payment seven (7) days prior to each Period End Date. The application states the sum that the *Contractor* considers to be

due to him at the payment due date and the basis on which that sum is calculated and shall include:

(a) A verification data pack to support the application. The *Project Manager* reserves the right to request additional information in order to approve the application. The data pack shall include, but not be limited to:

a. progressed programme plan
b. confirmation of reports produced by the *Contractor*
c. confirmation of drawings and calculations completed
d. photographs of progress
e. sample documentations e.g. witness notifications etc.

(b) each completed activity or group of completed activities in the Activity Schedule;

(c) Show, as a percentage physical completion of work achieved, each item of work in the programme. This assessment shall be used by the *Contractor* to calculate his cumulative progress at the end of each Period, expressed as a percentage of the whole of the *works*; and

The *Contractor* holds in readiness for review by the *Project Manager* all data and calculations supporting the payment application

The final date for payment is thirty (30) days after the date on which payment becomes due.

(4) Each invoice contains all information required by the *Project Manager*, including the SAP order number, the *Employer's* account details, the *Contractor's* name and address and a brief description of the works provided during the Period to which such invoice relates and be clear, concise, accurate and adequately descriptive to avoid delays in processing and subsequent payment. The invoice clearly shows which amounts applied for form part of the total of the Prices and which amounts applied for constitute claims for additional payment and includes the relevant supporting documentation to substantiate the amounts applied for. The invoice shows VAT separately.

(5) All additional payments applied for by the *Contractor* which are calculated in accordance with the Shorter Schedule of Cost Components (and the Supplementary Notes thereto) must constitute Reasonable and Documented Costs.

Reasonable and Documented Costs means costs which:

- clearly demonstrate the manner, the basis and the circumstances under which such costs were incurred;
- have been reasonably incurred in the circumstances;
- have been mitigated to the extent reasonable in the circumstances;
- in relation to staff-related costs (including all the costs of the Contractor's employees or other staff, agents, consultants and Subcontractors, and the employees or other staff, agents, consultants and subcontractors (of any tier) of Subcontractors), are where necessary evidenced by the provision of daily time sheets (cross-referenced to activity numbers in the programme or the Accepted Programme (as the case may be)) which are delivered to the Project Manager with an application for payment; and
- in respect of all other costs, copies of invoices or other evidence, are provided together with, if appropriate, an explanation of the costs to which the invoice or other evidence relates, cross-referenced to programmed activities.

WI1550 **Additional Accounts and Records;**

(1) In addition to records required in accordance with clause Z2.5 of the *conditions of contract* and elsewhere in the Works Information the *Contractor* maintains records of the following:

- subcontract documentation and changes thereto;
- Invoices and credit notes;
- Subcontract final accounts;
- Delivery tickets for Plant, Material and Equipment and off hire notices for Equipment; and
- Any other relevant records that the *Project Manager* may reasonably require to verify any aspect of the *works* or requirement of this contract.

WI1555 **Construction Industry Scheme;**

(1) Where the Construction Industry Scheme applies to any payment made by the *Employer* to the *Contractor* under this contract, the obligations of the *Employer* to make such payment are subject to the provisions and requirements of the Construction Industry Scheme.

(2) The *Contractor* hereby undertakes that where, in relation to any payment to be made to the *Contractor* under this contract, a certificate of registration for gross payment is required in accordance with the Construction Industry Scheme, he will for the period between the *starting date* and the final date for payment of any amount due under the final assessment:

- ensure that such a certificate is in place;
- provide a copy of such certificate to the *Employer* upon receipt of a written request to do so; and
- uses all reasonable endeavours to ensure that no circumstances arise whereby HM Revenue and Customs may be entitled to cancel such certificate.

(3) The *Contractor* further acknowledges and undertakes that if the certificate referred to in sub-clause (2) above, is not in place, or ceases to be in force for any reason during the currency of this contract, he notifies the *Employer* forthwith.

(4) If at any time between the Contract Date and the final date for payment of any amount due under the final assessment, the *Contractor* does not have a valid certificate of registration for gross payment under the Construction Industry Scheme in place, or if he fails to provide a copy of such certificate when requested by the *Employer*, the *Employer* deducts any tax from payments due to the *Contractor* under the contract at the rate specified by HM Revenue and Customs pursuant to the Construction Industry Scheme before paying the balance to the *Contractor*. The *Employer* accounts to HM Revenue and Customs for any tax so deducted.

WORKS INFORMATION

WI 2000

EMPLOYER'S WORK SPECIFICATIONS AND DRAWINGS

Document History: **Version:**	**Prepared by**		**Quality Checked by**		**Legal Review**		**Peer Review**	
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4.0					☐			
5.0					☐			

	Final Sign-off	
	Commercial Line Manager	**Project Manager**
Name	Andrew Thornton	James Carter
Signature		
Date		

CONTENTS

WI2005 *Employer's* work specification

(1) The *Employer* prepares a design for the *Contractor's* information.

(2) The *Employer's* design is a Concept Design Statement.

(3) The *Employer* is responsible for the correctness of the Concept Design Statements (CDS).

(4) The *Contractor* uses the *Employer's* conceptual design to develop and prepare the *Contractor's* detailed design required to complete the *works* as contained in this Works Information and the CDSs.

(5) Table 1 and 2 of Appendix 01 indicates the *Employer's* design statements which outline the requirements for the SSR P5A Power Upgrade Programme for the *Contractor's* guidance and use.

(6) The *Contractor* develops *Employer's* design to a detailed design and identifies all further construction, Plant and Materials design required to complete the *works*.

(7) The *Contractor* uses EMC management practice when implementing the *works*, as detailed in WI2000 Appendix 03.

T

(8) Cable data sheets for 300mm 3 core 22KV cable are included within WI2000 Appendix 04.

WI 2010 Drawings

(1) The *Employer* allocates the space for the *Contractor* to construct, install, joint and terminate the cables routes onto designated switchgear.

The assigned space and route allocation, the route drawings and site survey reports are indicated and contained in the appendices of the *Employer's* design as listed in Tables 1 and 2 of Appendix 01.

(2) WI2000 Appendix 02 identifies the cable route line drawing related to the *works*.

(3) WI2000 Appendices 01, 03 and 04 are contained on a CD-Rom entitled 'SSR Power Upgrade Package 5A Works Information WI100 and WI2000'.

APPENDIX 01

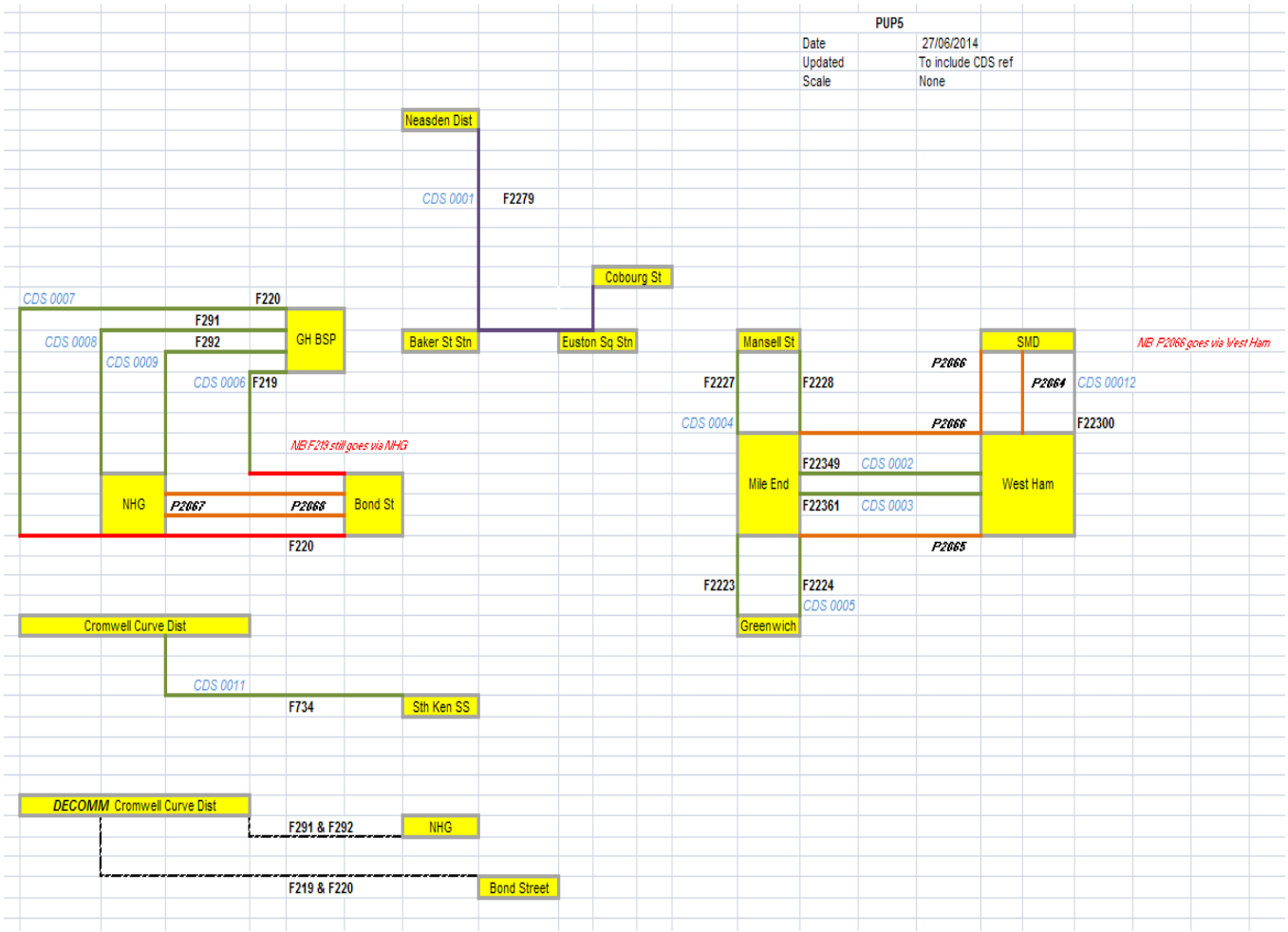
Table: 1 *Employer's* design – 22kV Cable route design		
Design reference	**Route**	**Cable circuit ID**
LUL-SSR-2039-R001-CDS-0001	Cobourg Street to Neasden	F2279
LUL-SSR-2039-R001-CDS-0002	Mile End switch-house to West Ham (new)	F22349
LUL-SSR-2039-R001-CDS-0003	Mile End switch-house to West Ham (new)	F22361
LUL-SSR-2039-R001-CDS-0004	Mansell Street to Greenwich	F2227/F2223
LUL-SSR-2039-R001-CDS-0005	Mansell Street to Greenwich	F2228/F2224
LU-SSR-2039-R001-CDS-0012	West Ham sub-station to Stratford Market Depot	F22300

Table: 2 *Employer's* design - 11kV Cable route design		
Design reference	**Route**	**Cable circuit ID**
LUL-SSR-2039-R001-CDS-0006	Griffith House to Bond Street	F219
LUL-SSR-2039-R001-CDS-0007	Griffith House to Bond Street	F220
LUL-SSR-2039-R001-CDS-0008	Griffith House to Notting Hill Gate	F291
LUL-SSR-2039-R001-CDS-0009	Griffith House to Notting Hill Gate	F292
LUL-SSR-2039-R001-CDS-0011	Cromwell Curve to South Kensington	F734

Table: 3 *Employer's* design - Master Equipment Schedule (Plant and Materials)		
SSL Package 5A&5B MES Rev 6		

APPENDIX 02

Package 5A cable route line drawing.



Appendix 03

G222 EMC Best Practice

EMC Standard S1222

ASMJV/ML/DOC/EN/1008

Appendix 04

Extruded insulation Stranded copper conductor 3-core armoured LUL MDPE	22kV - LUL TCTA MDPE (Twin Wall PE Dct)
Extruded insulation Stranded copper conductor 3-core armoured LUL LSOH	22kV - LUL TCTA LSOH (Twin Wall PE Dct)
Technical Specification for Three Core Armoured Cables	2XSR(FeZn+Cu)H_3x300RM_22kV_MK14040