Transport for London

London Overground

NEC3 ENGINEERING AND CONSTRUCTION CONTRACT – MAIN OPTION C (with amendments)

Agreement for:

White Hart Lane Station Upgrade Main Works Contract

July 2017

Contract ref: LOWHL-DB1

Rail for London, a division of Transport for London
Stratford Broadway Offices, 5th Floor, 29-35 West Ham Lane, London, E15 4PH

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Form of Agreement

Conditions of Contract including Schedules

Contract Data Part One

Contract Data Part Two

Works Information

Site Information

Appendices

THIS AGREEMENT is made the 07th day of July 2017

BETWEEN:

(1) **Rail for London Limited** (registered number 05965930) whose registered office is at Windsor House, 42 – 50 Victoria Street, London SW1H 0TL ("the *Employer"* which expression shall include its successors in title and assigns); and

(2) **Vinci Construction UK Limited (t/a Taylor Woodrow)** (registered number 02295904) whose registered office is at Astral House,Imperial Way,Watford, Herts,WD24 4WW ("*the Contractor*").

WHEREAS:

(A) The *Employer* wishes to have provided Station Upgrade ("the *works*") at White Hart Lane Station.

(B) The *Employer* has accepted a tender by the *Contractor* for the design and construction of the *works* and correction of Defects therein in accordance with the *conditions of contract* (as amended).

NOW IT IS AGREED THAT:

1. Terms and expressions defined in the *conditions of contract* (as amended) have the same meanings herein.

2. The *Contractor* Provides the Works in accordance with the *conditions of contract* (as amended).

3. The *Employer* pays the *Contractor* the amount due in accordance with the *conditions of contract* (as amended).

4. The documents forming the contract are:

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

   (b) the NEC Engineering and Construction Contract *conditions of contract* Third Edition June 2005 (with amendments dated June 2006, September 2011 and April 2013) for **Main Option C** as amended by the *additional conditions of contract* (Z1 and Z2 clauses);

   (c) the Contract Data Part 1;

(d) the Contract Data Part 2;

(e) the Works Information;

(f) the Site Information; and

(g) Schedules to the *conditions of contract*;

(h) the Risks (in Appendix A), the Activity Schedule (in Appendix B)

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

First	:	This Form of Agreement;
Second	:	The consolidated conditions of contract appended to this Form of Agreement as amended by the *additional conditions of contract* designated Z1 or Z2 (including any references to the Contract Data and any necessary parts of the Works Information referred to therein);
Third	:	The *conditions of contract* (including any references to the Contract Data and any necessary parts of the Works Information referred to therein); and
Fourth	:	The Works Information and any other documents included in this contract.

IN WITNESS whereof this Agreement has been executed as a deed for and on behalf of the *Employer* and the *Contractor* the day and year written above.

Executed as a deed by

affixing the Common Seal of

RAIL FOR LONDON LIMITED

in the presence of:

Authorised signatory [redacted]

For and on behalf of
VINCI CONSTRUCTION UK LIMITED (t/a TAYLOR WOODROW) (the *Contractor*)

Signature [redacted]

Print name and Position [redacted] Managing Director

Date 6/7/17.

Signature [redacted]

Print name and Position [redacted] COMMERCIAL DIRECTOR

Date 05/07/2017

Agreement Part 4b Conditions of Contract

See Agreement Appendix C

Agreement Part 4c

MAIN OPTION C

CONTRACT DATA

PART 1

CONTRACT DATA

Part One – Data provided by the *Employer*

Statements given
in all contracts

1. General

- The *conditions of contract* are the core clauses and the clauses for main Option C and secondary Options clauses **X4, X7, X15, X16, X18, X21, X22, X23, X24** and Y(UK)2 and Z clauses of the NEC3 Engineering and Construction Contract June 2005 (incorporating amendments June 2006, September 2011 and April 2013) as amended or inserted in each case in accordance with secondary Option Z.

- The *works* are White Hart Lane station upgrade project as more particularly described in the Works Information

- The *Employer* is

  Name: Rail for London Limited
  Address: Windsor House, 42 – 50 Victoria Street, London SW1H 0TL

- The *Project Manager* is
  Name: [redacted]
  Address: Rail for London, (White Hart Lane Station Upgrade Grade Project(LOWHL), Stratford Broadway Offices, 5TH Floor , 29-35 West Ham Lane, London E15 4PH

- The *Supervisor* is
  Name: [redacted]
  Address: Rail for London, (White Hart Lane Station Upgrade Grade Project(LOWHL), Stratford Broadway Offices, 5TH Floor , 29-35 West Ham Lane, London E15 4PH

- The Works Information is in Part 4e of the Agreement section of the contract documents.

- The Site Information is in Part 4f of the Agreement section of the contract documents

- The *boundaries of the site* are referenced in Appendix A of the Contract Data Part 1

- The *language of this contract* is English

- The *law of the contract* is the law of England and Wales

- The *period for reply* is:

    - 6 weeks for submissions requiring acceptance by Network Rail or London Overground Rail Operations Ltd (or a replacement operator of the Underground and Overground Network) or by the *Employer* as the owner and/or operator of the Underground and Overground Network or by Others with a right of approval in respect of the operation of the Underground and Overground Network and/or the Network,

    - 2 weeks for design submissions

    - 1 week for design re submissions; and

    - 2 weeks for all other communications provided that if the *Employer* marks a communication as 'Urgent' the *Contractor* responds within such shorter period of time as the *Employer* may reasonably require

- Days where stated in the Works Information are calendar days unless expressly stated otherwise.
- The following matters will be included in the Risk Register:
  Refer to White Hart Lane Station Upgrade Risks
  (Appendix A of the Agreement)

- The *Principal Contractor* is:

  Name: Vinci Construction UK Limited (t/a Taylor Woodrow)
  Address: Registered office is at Astral House, Imperial Way,
  Watford, Herts, WD24 4WW (Registered in
  England and Wales-Company Number 02295904)

  The P*rincipal Designer* is: the *Contractor*

3. Time

- The *starting date* is: 05th June 2017
- The *access dates* are:

Part of the Site	Date
1. The Whole of the works	01 September 2017

- The *Contractor* submits revised programmes at intervals no longer than 4 weeks.

4. Testing and Defects

- The *defects date* is 52 weeks after Completion of the whole of the *works.*
- The *defect correction period* is 4 weeks

5. Payment

- The *currency of this contract* is UK Pounds Sterling (£UK)
- The *assessment interval* is 4 weeks in accordance with UK railway accounting periods
- The *interest rate* is 2 % per annum above the base lending rate of the Bank of England.
- The *Contractor* submits invoices to Transport for London, Financial Services Centre, PO Box 45279, 14 Pier Walk, London SE10 1AP for the attention of [redacted], Accounts Payable Manager. The invoices shall contain the following information:

Project Name, description and number on Company Letterhead

Purchase order number

SAP Vendor Number

Account number and sorting code and

An attached authorised Payment Certificate from the *Project Manager*.

8. Risks and insurance

Insurances taken out by the *Employer*

- **Construction All Risks Insurance** - details and minimum limit of indemnity as set out in the Insurance Table in clause 84.2 of the consolidated conditions of contract.
- **Public liability insurance** - details and minimum limit of indemnity as set out in the Insurance Table in clause 84.2 of the consolidated conditions of contract.
- **Non-negligence insurance** - details and minimum limit of indemnity as set out in the Insurance Table in clause 84.2 of the consolidated conditions of contract.

Insurances taken out by the *Contractor*

- ***Employer's* liability insurance -** details as set out in the Insurance Table in clause 84.2 of the consolidated conditions of contract with a minimum limit of indemnity in the amount of £10,000,000 per occurrence.
- ***Contractor's* equipment loss insurance -** details and minimum limit of indemnity as set out in the Insurance Table in clause 84.2 of the consolidated conditions of contract.
- **Professional indemnity insurance -** details as set out in the Insurance Table in clause 84.2 of the consolidated conditions of contract with a minimum limit of indemnity in the amount of £10,000,000 for each and every claim.

Optional statements

If the *Employer* has decided the *completion date* for the whole of the *works*

- The *completion date* for the whole of the *works* is 11th June 2019

If the *Employer* is not willing to take over the *works* before the Completion Date

- The *Employer* is not willing to take over the *works* save for the P Way and OLE element prior to the Station Open Date.

If no programme is identified in part two of the Contract Data

- The *Contractor* is to submit a first programme for acceptance within 4 weeks of the Contract Date.

If the *Employer* has identified work which is to meet a stated *condition* by a *key date*

- The *key dates* and *conditions* to be met are

condition to be met	*key date*
1. Approval of GRIP 4 Stage	[redacted]
2. Use of the station, operational ticket office and gate lines	[redacted]

If Y(UK)2 is used and the final date for payment is not 14 days after the date when payment is due

- The period for payment is 28 days after the date when payment becomes due in accordance with clause 51.1A of the conditions of contract.

If there are additional *Employer's* risks

• These are the additional *Employer's* risks:

The risks defined in Appendix A of the Agreement as being Employer's risks are additional *Employer*'s risks.

Cover/deductibles for insurances provided by the *Employer*

1 **Construction All Risks Insurance** (as stated in the Insurance Table)

Cover/indemnity is: the full reinstatement value of the *works*

The deductibles are:

- £250,000 for each and every loss in respect of tunnelling and for loss or damage to the *works* caused by defects in design plan specification materials or workmanship (DE5 1995). Such deductible in respect of DE5 1995 shall only apply in respect of reinstatement or making good of that part which is itself defective;
- £75,000 for each and every loss in respect of loss or damage to the works caused by defect in design plan specification materials or workmanship (DE3 1995);
- £75,000 for each and every loss in respect of loss or damage caused by storm, tempest, water damage, subsidence or collapse;
- £25,000 each and every other loss.

2 **Public liability insurance** (as stated in the Insurance Table)

Cover/indemnity is not less than £25,000,000 per occurrence.

The deductibles are: £10,000 per occurrence

3 **Non-negligence Insurance** (as stated in the Insurance Table)

Cover/indemnity is not less than £25,000,000 per occurrence.

The deductibles are: £10,000 per occurrence

If additional insurances are to be provided

- The *Contractor* provides these additional insurances
- Not applicable

- The *Contractor's share percentages* and the *share ranges* are

share range	*Contractor's share percentage*
Less than 85%	100%
Greater than 85% to 100%	50%
Greater than 100% to 115%	50%
Greater than 115%	100%

- The Contractor prepares forecasts of Defined Cost for the *works* at intervals no longer than 4 weeks.
- The *exchange rates* are those published in the Financial Times on the date of the relevant transaction.

If Option X1 is used

- Not applicable

If Option X5 is used

- Not applicable

If Options X5 and X6 are used together

- Not applicable

If Options X5 and X7 are used together

- Not applicable

If Option X6 is used (but not if Option X5 is also used)

- Not applicable

If Option X7 is used (but not if Option X5 is also used)

- Delay Damages are [redacted] per calendar day or part thereof.

If Option X12 is used

- Not applicable

If Option X13 is used

Not applicable

If Option X14 is used

- Not applicable

If Option X16 is used

- The *retention free amount* is nil
- The *retention percentage* is [redacted]

If Option X17 is used

- Not applicable

If Option X18 is used

- The *Contractor's* liability to the *Employer* for indirect or consequential loss is the Contract Value
- For any one event, the *Contractor's* liability to the *Employer* for loss of or damage to the *Employer's* property is the Contract Value
- The *Contractor's* total liability to the *Employer* for all matters arising under or in connection with this contract, other than excluded matters is the Contract Value

The Contract Value is defined as being the Total of the Prices (Target Cost) as stated in Contract Data Part 2 plus Implemented Compensation Events. The Implemented Compensation Events shall be evidenced by the ASITE Contract Administration Management System which will be used in administrative support of this contract.

If Option X20 is used (but not if Option X12 is also used)

- Not applicable

If Option X24 is used:

- These are the *specified termination events*

1. The *Employer* may terminate the *Contractor's* obligation to Provide the Works at the GRIP 4 design stage if the *Employer* (at his discretion) determines that the project comprising the *works* is not feasible.

2.A reason for termination stated in the Asset Protection Agreement.

3.The *Employer's* land acquisition is not completed by the access date.

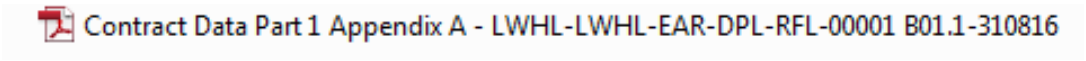
4.The project of which the works form part is terminated or postponed for political reasons

Option Z

- The *additional conditions of contract* are the amendments to core, main and secondary option clauses and additional conditions of contract incorporated in the consolidated conditions of contract and included in Part 4b of the Agreement section of the contract documents.

Contract Data Part 1 Appendix A

Boundaries of the Site as contained in the following Adobe PDF file:



This information is provided on the CD-Rom that forms part of this contract.

Agreement Part 4d

MAIN OPTION C

CONTRACT DATA

PART 2

CONTRACT DATA

Part Two – Data provided by the *Contractor* for the Works

The *Contractor* is

Name: Vinci Construction UK Limited (t/a Taylor Woodrow)

Address: Registered office is at Astral House, Imperial Way, Watford, Herts,WD24 4WW (Registered in England and Wales- Company Number 02295904

- The *direct fee percentage* is [redacted]
- The *subcontracted fee percentage* is [redacted]
- The *working* areas[1] are the Site and the Contractors' designers office (any other locations as agreed with the *Employer*'s Project Manager) for the following people (and any others as notified to the *Employer*'s Project Manager) prior to the *access date* stated in Contract Data Part 1 only.

  a) Project Manager ([redacted])

  b) Commercial Manager ([redacted])

  c) Planner [redacted])

  d) Construction Manager ([redacted])

  e) Design Lead Engineering Manager [redacted])

- The *Contractor's Representative* is

  Name: [redacted], Project Director

  Address: Astral House, Imperial Way, Watford, Herts,WD24 4WW

  Telephone Number [redacted]

- The key people are as defined in Appendix A to the Contract Data Part 2

[1] The *working areas* should not include the *contractor's* head or satellite offices

- The following matters will be included in the Risk Register:

  Refer to Appendix A of the Agreement section of the contract documents.

Optional Statements

If the *Contractor* is to provide Works information for his design

- The Works Information for the *Contractor's* design is in Part 4e of the Agreement section of the contract documents.

If a programme is to be identified in the Contract Data

- The Programme identified in the Contract Data is

  Not Applicable

If the *Contractor* is to decide the *completion date* for the whole of the works

- Not applicable

- Subcontractors named are

  a) [redacted]

  b) [redacted]

  c) [redacted]

  d) [redacted]

  e) [redacted]

- The maximum sum for clauses 26.2.1 to 26.2.3 is [redacted]

- The *activity schedule* is: in Appendix B of the Agreement section of the contract documents.

- The Total of the Prices is £17,768,234.49

[redacted]

Data for Schedule of Cost Components

- The listed items of Equipment purchased to work on this contract, with an on cost charge, are

  Not Applicable

- The rates for special Equipment are

  Not Applicable

- The percentage for Working Areas overheads is- Not Applicable

- The hourly rates for Defined Cost of manufacture and fabrication outside the Working Areas are

category of employee	hourly rate
Fabricator	[redacted]
Welder	
Labourer	

- The percentage for manufacture and fabrication overheads is [redacted]

Data for both schedules of cost components

- The hourly rates for Defined Cost of design outside the Working Areas are

category of employee	hourly rate
Principal Engineer	[redacted]
Senior Engineer	
Design Engineer	
Graduate Engineer	
BIM Designer	

- The percentage for design overheads is [redacted]

  The categories of design employees whose travelling expenses to and from the Working Areas are included as a cost of design of the *works* and Equipment done outside the Working Areas are all of the above.

Data for the Shorter Schedule of Costs Components

- The percentage for people overheads is – Not applicable
- The published list of Equipment is the last edition of the list published by Civil Engineering Contractors Association (CECA)
- The percentage for adjustment for Equipment in the published list is minus [redacted]
- The rates for other Equipment are

  Not Applicable

Appendix A of the Contract Data Part 2 Key People

1	Name	[redacted]
	Job	**Project Manager**
	handover period	4 weeks
	Responsibilities	Overall responsibility, on a day-to-day basis, for all aspects of the project performance. Leader of the integrated project delivery team.
	Qualifications	BEng (Hons) Civil Engineering; MSc Geotechnical Engineering; Chartered Engineer; Member of the Institution of Civil Engineers
	Experience	Over 15 years in the industry. His experience includes the design and management of infrastructure projects, and civil engineering works in a London Underground environment, including Victoria Station Upgrade and Metronet Civils Delivery Unit. Experience of large scale piling, major temporary works, enabling works / utilities diversions, demolition, structural steel works and working in congested urban environments.
2	Name	[redacted]
	Job	**Commercial Manager**
	handover period	4 Weeks
	Responsibilities	Ensuring compliance with the contract commercial reporting, risk management and change management requirements. Responsible procurement, contract administration of subcontracts, and internal financial management and commercial reporting.
	Qualifications	BTech N Diploma Construction; NVQ Lev 5 Quantity Surveying. Member of the Institution of Civil Engineers; ARICS
	Experience	Over 15 years in the industry. Extensive hands-on experience in working with the NEC suite of contracts as employer, contractor and subcontractor, from inception to final account. Has worked on Network Rail, London Underground and CTRL civils infrastructure projects

3	Name	[redacted]
	Job	**Planner**
	handover period	4 Weeks
	Responsibilities	Management of the NEC contract Accepted Programme; short and medium term planning and productivity monitoring in liaison with designers and subcontractors; input into value engineering and risk management and change management.
	Qualifications	BEng Civil Engineering; Postgraduate Diploma in Construction Management; Project Management Professional (PMP) Certification
	Experience	Over 15 years in the industry. Has worked on Network Rail, London Underground and Crossrail civils infrastructure projects managing programmes under NEC3 contract, Earned Value Analysis, change management, risk management.
4	Name	[redacted]
	Job	**Construction Manager**
	handover period	4 Weeks
	Responsibilities	Providing constructability advice during design development, one delivering the underpass, new station buildings and other works until the fit out stage.
	Qualifications	BEng Hons; MSc Management in Construction; Chartered Engineer; Member of the Institution of Civil Engineers
	Experience	Over 10 years in the industry. Has planned and successfully delivered technically demanding elements of civil engineering and refurbishment projects in urban rail environments, most recently on Victoria Station Upgrade for London Underground and King's Cross Station Redevelopment for Network Rail.

5 Name	[redacted]
Job	**Engineering Manager**
handover period	4 Weeks
Responsibilities	Will lead all design functions to provide clear ownership of design development and ensure technical assurance including the CEM for Network Rail asset approvals and compliance.
Qualifications	BEng Hons Civil Engineering; Chartered Engineer; Fellow of the Chartered Institution of Civil Engineers
Experience	Extensive experience, over 25 years, in managing major civil engineering projects in the transport sector including the construction of major infrastructure design and build schemes, including the Channel Tunnel Rail Link, Copenhagen Metro, Crossrail, London Overground's East London Line and Network Rail's Crossrail West Stations.

6 Name	[redacted]
Job	**Engineering Design Lead -** [redacted]
handover period	4 weeks
Responsibilities	Responsible for technically assured delivery of the engineering design, and integration with other design disciplines.
Qualifications	BSc Civil Engineering; Chartered Engineer; Member of the Institution of Civil Engineers; Member of Association for Project Management
Experience	Over 30 years' experience working as a projects director and engineering manager, combining a strong technical background with proven project management capabilities and commercial aptitude. Familiar with achieving Network Rail, London Overground and London Underground engineering design standards.

7	Name	[redacted]
	Job	**Architectural Design Lead –** [redacted]
	handover period	4 weeks
	Responsibilities	Responsible for technically assured delivery of the architectural design including human factors, and integration with other design disciplines. Also lead designer ensuring coordination of the design.
	Qualifications	RIBA Part 3 – Chartered Architect; Dip Arch; BA (Hons) Architecture
	Experience	Fully qualified architect with over 25 years' experience, the majority of this being in the transport and infrastructure sectors. Familiar with Network Rail, and London Underground design standards.
8	Name	[redacted]
	Job	**MEP & Comms Design Lead –** [redacted]
	handover period	4 Weeks
	Responsibilities	Responsible for technically assured delivery of the MEP and comms design, and integration with other design disciplines.
	Qualifications	HNC Electrical Engineering; Incorporated Engineer; MIET and MCIBSE
	Experience	Over 20 years' experience in electrical and telecommunications design and engineering management in the rail industry, including surface and subsurface infrastructure.
9	Name	[redacted]
	Job	**Rail Systems Design Lead –** [redacted]
	handover period	4 weeks
	Responsibilities	Responsible for technically assured delivery of the rail systems design and integration with other design disciplines.
	Qualifications	BSc (Hons) Applied Science; HNC Civil Engineering Member of the Association for Project Management
	Experience	Over 15 years' multi-discipline project and design management experience, in both the Network Rail (NR) and London Underground (LU) environments. Fully conversant with the NR GRIP process and has managed a number of schemes through GRIP 1-8.

Agreement Part 4e

Works Information

The Works Information is contained in the following documents and any appendices to these documents:

Infrastructure Requirements - Works Description (IR-W)

Infrastructure Requirements - Health & Safety (IR-H&S)

Infrastructure Requirements - Environmental (IR-E)

Infrastructure Requirements - Assurance (IR-A)

Infrastructure Requirements - Construction (IR-C)

Infrastructure Requirements - Planning (IR-P)

Commercial Assurance

- **Infrastructure Requirements – Works Description (IR-W)**

Document: LWHL-ALLW-CCA-REQ-RFL-00001 revision T02

This document is inclusive of the following Appendices:

Appendix A: Reference Documentation

Appendix B: Scope Boundary Drawing

LWHL-LWHL-EAR-DPL-RFL-00001 Revision B02.1:
WHITE HART LANE STATION UPGRADE SCOPE BOUNDARY DRAWING

Appendic C: Master Deliverables List

London Overground

White Hart Lane Station Upgrade Project

Section 3 – Infrastructure Requirements – Works Description

LWHL-ALLW-CCA-REQ-RFL-00001

Revision T02

November 2016

Project: White Hart Lane Station Upgrade (LOWHL)

Document reference: LWHL-ALLW-CCA-REQ-RFL-00001_T02

		Signature	Date
Prepared by	[redacted] Assurance Manager		
		Signature	Date
Accepted by	[redacted] Project Development Manager	[redacted]	
	[redacted] Project Manager	[redacted]	
	[redacted] Designated Project Engineer		

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White Hart Lane Station Upgrade Requirements

ID		Text Type
LOWHL-IRW-001	**Introduction**	Heading
LOWHL-IRW-002	This document, the “LOWHL Infrastructure Requirements Works Description (IR-W) describes the works to be undertaken at White Hart Lane Station.	Information
LOWHL-IRW-004	The IR-W forms part of the overall Infrastructure Requirements documentation and sets out what the Employer requires to be designed and constructed as part of the Works.	Information
LOWHL-IRW-004	In addition to the requirements listed within this document, further requirements are detailed within the Employer's Works Information (IR-A, IR-C, IR-E, IR-P and IR-H&S)	Requirement
LOWHL-IRW-005	The details of planning consents and conditions that apply are noted in the IR-P. The Contractor is to comply with all conditions contained within these consents.	Requirement
LOWHL-IRW-006	The Contractor shall ensure that whilst providing the Works the existing station is kept operational (save for planned closures for possessions).	Requirement
LOWHL-IRW-007	The Contractor shall ensure that any temporary station facilities are provided to the same standard as existing i.e. free from obstruction, pinch points and trip hazards with compliant levels of lighting and CCTV. The Contractor can assess this by as-built record (if available) or survey.	Requirement
LOWHL-IRW-008	The Contractor shall provide construction phasing drawings detailing the temporary phasing arrangements to the Employer and Operator for Acceptance 20 working days prior to starting on site.	Requirement
LOWHL-IRW-009	**Works Description**	Heading
LOWHL-IRW-010	The Contractor shall provide the Works as described in and shown in the appendices of this document. “Provide” shall include, but not be limited to, designing, procuring, supplying, delivering, commissioning, all plant and materials, design, co-ordination and labour required to undertake and complete the Works.	Information
LOWHL-IRW-011	The Works to be undertaken by the Contractor shall comprise (but are not limited to);	Information
LOWHL-IRW-012	• Adopting the GRIP 3 (AiP) design including the White Hart Lane Station Upgrade Urban Realm RIBA Stage 3 report issued by the Employer and developing to GRIP 4 and 5 level and gaining approval for his GRIP 5 design from Employer.	Requirement

LOWHL-IRW-2030	• Provision of a new station building to the south of the existing station entrance fronting Love Lane	Requirement
LOWHL-IRW-2031	• Provision of a new station entrance on Penshurst Road	Requirement
LOWHL-IRW-2032	• Creation of a twin lane underpass beneath the railway linking the ticket hall and Penshurst Road entrance	Requirement
LOWHL-IRW-2037	• The station shall provide Step free access from street level to the platforms via lifts on the paid side of the gate line	Requirement
LOWHL-IRW-013	• Design and implementation of additional Event Day staff facilities	Requirement
LOWHL-IRW-014	• Supply and installation of all necessary services (including, but not limited to; lighting, CCTV, PHPs, CER cooling)	Requirement
LOWHL-IRW-015	• Co-ordination with the Employer and Others to enable installation of new ticket vending machines (TVMs) and ticket barriers. (Note: TVMs and ticket barriers will be supplied and installed by Others and will require a period of 10 days to be allowed in the Contractor's programme) The Contractor shall allow for attendance and managing the technical and programme co-ordination of these works. The obligations of Others shall be clearly shown on the Contractor's programme.	Requirement
LOWHL-IRW-016	• Controlled demolition and site clearance of: - garages adjacent to the station on the eastern side - existing station building - canopy and fence to the north of the station - lean to shed adjacent to the former station building - concrete plank fence to the east of the station - fences at the western side of the station	Requirement
LOWHL-IRW-017	• Site clearance of the western side of the railway to allow access and construction of the new station.	Requirement
LOWHL-IRW-018	• All necessary temporary works and temporary works design.	Requirement
LOWHL-IRW-019	• The currently unused station building shall be made good in accordance with the architectural design and finishes for the station.	Requirement

LOWHL-IRW-020	The Engineering deliverables listed in Master Deliverables List shall be produced to demonstrate compliance with the requirements of this document. If during the development of the project additional deliverables are required or the need for some deliverables is no longer required then an amendment to the deliverables list can be agreed with the DPE.	Requirement
LOWHL-IRW-021	**Safety Verification**	Heading
LOWHL-IRW-022	TfL will comply with the requirements of the Commission Implementing Regulation (EU) 2015/1136 of 13 July 2015 on the common safety method for risk evaluation and assessment (CSM-RA) which amends Regulation (EU) No 402/2013.	Information
LOWHL-IRW-023	The assist on the implementation of the regulations, ORR's 'Guidance on the application of Commission Regulation (EU) 402/2013' will be used. At the time of writing of this document the Guidance was on its third issue, dated March 2015.	Information
LOWHL-IRW-024	The following RSSB Guidance Documents may also be used to develop and define the application of the CSM to the Project: • GEGN8640 Guidance on Planning an Application of the Common Safety Method on Risk Evaluation and Assessment • GEGN8641 Guidance on System Definition • GEGN8642 Guidance on Hazard Identification and Classification • GEGN8643 Guidance on Risk Evaluation and Risk Acceptance • GEGN8644 Guidance on Safety Requirements and Hazard Management • GEGN8645 Guidance on Independent Assessment	Information
LOWHL-IRW-025	To ensure compliance with Network Rail's internal assurance processes; the application of CSM-RA shall be done in accordance with NR/L2/RSE/100/02 - 'Safety Verification'.	Requirement
LOWHL-IRW-026	RfL will provide the updates to the existing System Safety Plan and System Definition.	Information
LOWHL-IRW-027	The Contractor shall attend the GRIP Stages 4 & 5 hazard identification workshops.	Requirement
LOWHL-IRW-028	The Contractor shall collate evidence from sub-contractors to support the HAZID.	Requirement

LOWHL-IRW-029	The hazard identification process will be managed by RfL.	Information
LOWHL-IRW-030	Rfl will produce the Product Authorisation Strategy.	Information
LOWHL-IRW-031	Approvals and acceptance of Engineering Deliverables shall be carried out in accordance with the relevant Tfl Engineering Management Plan and supporting processes.	Requirement
LOWHL-IRW-032	The Asset Protection Agreement between TfL and Network Rail shall define who within the project team or Network Rail is authorised to review/accept/ approval as appropriate all Engineering Deliverables at all points in the Project Lifecycle.	Information
LOWHL-IRW-033	**Whole Life Cycle Cost Assessment**	Heading
LOWHL-IRW-034	A life cycle cost (WLC) model shall be used to determine and optimise the full cost ownership measured on a life cycle basis, typically 25 years. The WLC model and report shall include the following cost elements and report outputs: Capital expenditure (e.g. enhancement development & implementation) Condition based renewals Operating expenditure (e.g. staff, operating & support facilities) Scheduled Maintenance (reflecting system RAM characteristics) Unscheduled Maintenance (reflecting system RAM characteristics) Schedule 4 costs Schedule 8 costs Renewal costs Degradation/terminal values of assets Tax effects (consider whether timing differences and/or treatment of expenditure, e.g. capital allowances, affect the outcome) Benefits Reliability Total cash flow Summary results including NPV and sensitivity analysis	Requirement
LOWHL-IRW-035	The Network ail guidance document “Whole Life Cost Manual” 11 April 2014 provides details on the requirements for undertaking WLC assessments. This is supported by PAN/P&PD/CD/ADV/0104 and compliance with this shall be achieved.	Requirement

LOWHL-IRW-036	**Contractor's Design**	Heading
LOWHL-IRW-037	The Contractor shall design, construct, install, test and commission the Works so they are delivered in accordance with the Infrastructure Requirements.	Requirement
LOWHL-IRW-038	The Contractor shall adopt and develop the GRIP 3 design included in the appendices of this document into a co-ordinated detailed design and submit to the Employer for Acceptance in accordance with Network Rail standards and procedures including (but not limited to):	Requirement
LOWHL-IRW-039	• Engineering Management for Projects (NR/L2/INI/02009)	Requirement
LOWHL-IRW-040	• Engineering Assurance Arrangements for Building and Civil Engineering Works (NR/L2/CIV/003)	Requirement
LOWHL-IRW-041	• Engineering Assurance Requirements for Design and Implementation of Electrical Power Engineering Infrastructure Projects (NR/L2/ELP/27311)	Requirement
LOWHL-IRW-042	• Engineering Assurance Requirements for Communications Engineering Schemes and Services (NR/L2/TEL/30022)	Requirement
LOWHL-IRW-043	For the avoidance of doubt, the Employers GRIP 3 design includes drawings, drawing notes, specifications, reports (issued as Works Information) and amendments as captured in the appendices of this document.	Information
LOWHL-IRW-044	**Design General**	Heading
LOWHL-IRW-045	The design for the upgrade of White Hart Lane station has been developed in accordance with relevant Network Rail and TfL standards to a GRIP 3 (Approval in Principle) status.	Information
LOWHL-IRW-046	The appearance of White Hart Lane station has been updated following community and stakeholder feedback. The Contractor shall develop his detailed design in accordance with these drawings (included electronically in Appendix D of this document) and ensure all other design disciplines are updated to take account of this. A CAD model of the updated architectural elements is provided in the Site Information for reference.	Requirement
LOWHL-IRW-047	The Contractor shall validate the 3D model prior to carrying out design work.	Requirement
LOWHL-IRW-048	The Contractor shall adopt all design information including the London Overground Station Design Idiom and develop the design to GRIP 5 (Detailed Design) status - continuing to model the design in 3D (in accordance with the London Overground CAD standards (see IR-A).	Requirement
LOWHL-IRW-049	The Contractor shall co-ordinate his design with the existing site conditions in order to produce a fully co-ordinated, compliant design for the entire station.	Requirement
LOWHL-IRW-050	In developing his design, the Contractor shall ensure that any outstanding comments (i.e. comments relating to items to be resolved in the detailed design phase) included on the Form 001 or Form 002 Document Review Notices (DRN) are addressed. DRNs are included in Appendix M of this document.	Requirement

LOWHL-IRW-051	The Contractor shall notify the Employer of any changes he proposes to the station designs prior to implementation.	Requirement
LOWHL-IRW-052	The Contractor shall ensure he is aware of the current site conditions on site when developing his Detailed Design and shall conduct additional surveys in order to either validate and/or complete the Site Information included in Section 5 of the Contract documentation. The Contractor's surveys shall include a buried services search (GPR or similar) in order to mitigate the risk of unchartered services delaying the construction works.	Requirement
LOWHL-IRW-053	In no case shall any infrastructure alterations compromise the route clearance of vehicles currently permitted to use the routes covered by this specification, and as specified in the relevant Sectional Appendices.	Requirement
LOWHL-IRW-054	Route clearance shall be provided for the following rolling stock (the rolling stock parameters are given below): Stepping Analysis **Clearance** DMU – 150 (Track Recording Unit), 153, 170 EMU- 315, 317, 321, 325 (Hauled Pan down run as tare), 378 (Aspirational LO in absence of 710, 379 Coach – MK1, MK2 Loco – Loco 2nd Gen, Freight – WK6a (3rd Gen), W7 (3rd Gen), W8 (3rd Gen), W10 (3rd Gen), W12 (3rd Gen) **Stepping** DMU – 153, 170 EMU – 315, 317, 321, 378, 379 Coach – MK1. MK2	Requirement
LOWHL-IRW-055	**Safe By Design**	Heading
LOWHL-IRW-056	The Design shall be developed using the Safe By Design protocol to ensure that the following are duly considered and captured in the Designers Risk Assessments; Risks, and the potential for harm during Construction, Operation, Maintenance and Demolition Residual risks for transfer to the subsequent design phase Processes to be employed during construction that have minimal risk	Requirement

	Red/Green lists of acceptable/unacceptable processes and materials SHE boxes and Hazard warning data shall be shown on drawings The requirements for specific control measures that will require instructions to be issued prior to bringing the assets into use	
LOWHL-IRW-057	**Standard Designs**	Heading
LOWHL-IRW-058	Standard Designs, as published in Network Rail's Standard Design Catalogue shall be used as the preferred solution, where appropriate, unless otherwise stated.	Requirement
LOWHL-IRW-059	**Design Service Life - Structures**	Heading
LOWHL-IRW-060	New Structures shall have as a minimum a designed service life in accordance with the relevant Network Rail Asset policies and governing line standards	Requirement
LOWHL-IRW-061	New Ancillary Structures shall have a minimum design service life of 60 years, and where incorporated into a major structure such as a bridge or viaduct, they shall have a designed service life equal to the supporting structure.	Requirement
LOWHL-IRW-062	**Design Software**	Heading
LOWHL-IRW-063	Designs shall be developed in Bentley Rail Track v8i select series 2 and Microstation	Requirement
LOWHL-IRW-064	**Design - Building Information Modelling**	Heading
LOWHL-IRW-065	Designs shall be BIM Level 2 compliant and enable virtual construction management	Requirement
LOWHL-IRW-066	**Redundant Structures**	Heading
LOWHL-IRW-067	All redundant Structures that have no identified further use shall have all services properly terminated and be demolished to ground level with all materials arising transported off site to a suitably approved tip.	Requirement
LOWHL-IRW-068	Redundant platform, Overhead Line Equipment (OLE), signalling and other ancillary foundations shall be removed as follows: 1100mm below rail level of the proposed track layout if located within 800mm from the edge of the sleeper 100mm below ground level elsewhere	Requirement
LOWHL-IRW-069	Following removal of redundant infrastructure, the formation shall be suitably graded.	Requirement

LOWHL-IRW-2045	The existing station building will be demolished. The existing underpass will be retained and gated at both ends to allow for maintenance access.	Requirement
LOWHL-IRW-070	**Maintenance**	Heading
LOWHL-IRW-071	The design shall provide safe and permanent access to all items of Equipment, which require inspection, repair and maintenance.	Requirement
LOWHL-IRW-072	The design shall enable economic replacement of readily available components and avoid the need for specialist ongoing maintenance.	Requirement
LOWHL-IRW-073	The design shall provide a system to enable preventative and corrective maintenance work to take place without disruption to the operational railway as far as reasonably practicable during the Works and throughout the life of the asset.	Requirement
LOWHL-IRW-074	Works shall be implemented to allow continued access to operational equipment as far as reasonably practicable.	Requirement
LOWHL-IRW-075	So far as reasonably practicable all line-side infrastructure shall be located such that it can be installed, accessed, operated, inspected maintained and repaired without disruption to the operational railway.	Requirement
LOWHL-IRW-076	**System Engineering**	Heading
LOWHL-IRW-077	The Project shall adhere to current Network Rail standards and policy.	Requirement
LOWHL-IRW-078	The Following Systems Engineering Management Plan, Doc Ref - LC00-ALLW-EMF-PLA-RFL-00001 shall be used in the development of the Project	Requirement
LOWHL-IRW-079	**Design Standards**	Heading
LOWHL-IRW-080	The Contractor shall adhere to applicable standards and notify the Employer at the earliest opportunity of any derogation from standards that may be required.	Requirement
LOWHL-IRW-081	The Contractor shall avoid derogating from standards as far as is reasonably practicable.	Requirement
LOWHL-IRW-082	**Application of Standards**	Heading
LOWHL-IRW-083	The following are mandatory requirements: European and National Legislation Railway Group Standards Network Rail Company Standards	Requirement

	Network Rail Asset and Environment Policies The requirements of applicable temporary non compliances pending standard change for Group and Company Standards British Standards European Standards - Euronorms Transportation Specifications for Interoperability	
LOWHL-IRW-084	The following shall be used for design guidance. They become mandatory requirements if quoted in this document: RSSB Rail Industry Standards (RIS-ENE) Network Rail Guidance Notes and Project Advice Notes Other: Industry Standards, Instructions, Guidance, and Codes of Practice that are relevant.	Requirement
LOWHL-IRW-085	A standards baseline shall be established as part of Approval in Principle. Where standards are updated after this baseline then any changes to requirements shall be carried out through the agreed change control process.	Requirement
LOWHL-IRW-086	Where standards refer to other updated or superseded standards the current version of the referenced standard shall apply.	Requirement
LOWHL-IRW-087	Conflicts between applicable standards shall be reported immediately by the Designer..	Requirement
LOWHL-IRW-088	Proposals that provide a business benefit by developing alternatives to standards shall be developed as a non compliant option where the implications of the deviation to standards are understood and equivalence or betterment can be demonstrated.	Requirement
LOWHL-IRW-089	Proposed deviations shall be agreed by the authorising body before work takes place to consider them further.	Requirement
LOWHL-IRW-1017	It may be necessary to make formal applications for deviations to standards during the project, proposed deviations should be explained clearly so that the risks and benefits are explained. The Designer shall prepared the relevant application for derogation or deviation and produce all supporting evidence required for this in consultation with the Designated Project Engineer.	Requirement
LOWHL-IRW-995	**SECURITY, TRESPASS AND VANDALISM**	Heading
LOWHL-IRW-999	Fences shall be provided to prevent unauthorised pedestrian access to the track or platforms. The minimum height of fencing at the back of the platform shall be 1.5 m. The preferred fencing type is blunt top solid steel rails with a black finish, though this will be subject to site specific agreement with the Station or Depot Operator.	Requirement
LOWHL-IRW-1000	Barriers and Railings will be provided to meet BS EN 1991-1-1:2002, Actions on Structures.	Requirement

LOWHL-IRW-1001	Permanent safety barrier of untensioned corrugated beam construction shall be erected along the length of any car park / access road and the operational track / trackside and will be in addition to any fencing to prevent access by the public to the operational railway.	Requirement
LOWHL-IRW-1002	Existing Railway Boundary fencing shall be assessed and where necessary brought up to an enhanced level of protection for the railway assets by use of Palisade fencing as agreed with the Off Track Engineer	Requirement
LOWHL-IRW-1003	New Railway Boundary fencing shall be of a Palisade construction and compliant to BS 1722-12:2006, where compliance requires the use of GRP alternatives to mitigate induced voltages then the closest alternative to full BS 1722 shall be used	Requirement
LOWHL-IRW-1007	New stations and station facilities shall be designed to achieve Secure Stations compliance	Requirement
LOWHL-IRW-1008	New station security systems shall be capable of future connection to local urban security CCTV systems control rooms	Requirement
LOWHL-IRW-638	**Track and Gauging**	Heading
LOWHL-IRW-639	The following contains details of requirements that are specific to this project, the default assumption is that there are no specific requirements in addition or different to standards NR/L2/TRK/2102 or NR/L2/TRK/2049. Where the RAM(T) proposes deviations from standards the process specified in NR/L2/EBM/STP001 shall still apply.	Requirement
LOWHL-IRW-629	The tracks shall be reinstated to the existing levels after the construction of the underpass.	Requirement
LOWHL-IRW-516	During the construction phase, the existing tracks shall be monitored to ensure that the permanent way line and level is observed at key project stages such as underpinning of the masonry piers, driving of the soil nails, driving of the tubes and during the excavation of large volumes of fill material.	Requirement
LOWHL-IRW-517	The Contractor shall mitigate against potential track twist due to differential settlement.	Requirement
LOWHL-IRW-642	**Asset Condition**	Heading
LOWHL-IRW-643	RAM (T) in conjunction with the TME shall provide details of: Current TSR and PSR sites due to COT (rail, sleepers, ballast, formation) including structures or earthworks TSR risk sites due to COT (rail, sleepers, ballast, formation) including structures or earthworks Track componentry condition concerns if speed and tonnage is increased, S&C and Plain Line, included or in addition to '2102 Section 14, e.g. SHC sleepers, side wear, rail depth etc Formation or drainage issues Tight clearances known/monitored	Requirement

LOWHL-IRW-649	**Track Componentry**	Heading
LOWHL-IRW-650	Plain Line track construction requirements shall be compliant to the Track Construction Standard NR/L2/TRK/2102	Requirement
LOWHL-IRW-655	**Track Design**	Heading
LOWHL-IRW-657	The design shall achieve normal design values. The use of maximum and exceptional design values should only be made in circumstances when site constraints justify their use. If there is agreement for the use of maximum or exceptional values the justification shall be provided in the relevant engineering deliverable	Requirement
LOWHL-IRW-660	If a bearing change in straight track is unavoidable, a regular curve shall be provided between the two straights. If the curve has no transitions then the curve shall be a minimum length of 12.2m to accommodate the virtual transitions.	Requirement
LOWHL-IRW-676	**Track Design Report Requirements**	Heading
LOWHL-IRW-677	Designs and the appropriate reports shall contain as a minimum the following: A scope schedule detailing the following: Extents of project work and proposed works Existing conditions/materials Design criteria Design Standards and versions Matters not covered by design standards A correlation schematic diagram illustrating the project scope of works and asset renewals Location of proposed new track components Location of all proposed abolitions Locations of proposed line speed alteration (increase or decrease) Existing and proposed Line speed, EMGTPA and track category Whether achieves use of preferred S&C units Whether achieves S&C located on a straight, to a standard design that is parallel and coplanar Whether achieves use of modular S&C units Whether achieves 42m between S&C units (toe to toe & heel to heel distances to be considered)	Requirement

	Whether achieves a minimum of 40m from S&C toes and LLB to a change in horizontal or vertical alignment or change	
LOWHL-IRW-678	**Drawing Detail Requirements**	Heading
LOWHL-IRW-681	Horizontal design drawings shall include lengths of geometrical elements of straights, transitions and radius of curves. Horizontal alignment changes/tangent points to be shown. Existing and proposed alignment to be shown as follows: existing track realigned to proposed alignment (shown in black), proposed new track (shown in red), existing track to be removed (shown in green dashed) and existing track unaffected (shown in grey). All the above to be clearly shown on a key on the design drawing	Requirement
LOWHL-IRW-682	Vertical long section design drawings, where required for new build schemes, shall include the following: gradients shown as %, 1 in X and direction, direction, length, radius and intersection points of vertical curves, vertical alignment changes/tangent points, horizontal alignment line diagram, existing levels (shown in green) and proposed levels (shown in red) and proposed lifts and lowers (only possible with Aerial or Top Survey)	Requirement
LOWHL-IRW-684	Track cross-sections shall be produced showing formation treatments	Requirement
LOWHL-IRW-685	Existing and proposed embankments and cuttings are shall be clearly denoted	Requirement
LOWHL-IRW-686	Location of any proposed structures and platforms shall be shown	Requirement
LOWHL-IRW-687	Tangent marker points at geometrical changes shall be shown	Requirement
LOWHL-IRW-688	Curve direction arrows shall be shown	Requirement
LOWHL-IRW-691	A location plan shall be shown	Requirement
LOWHL-IRW-693	Plain Line General Arrangement Drawings or sections of Plain Line are to be at 1:1000 Scale	Requirement
LOWHL-IRW-694	Lifts and slues at interfaces to existing track and realignment of existing track shall be shown above the horizontal alignment schematic	Requirement
LOWHL-IRW-695	Cross sections shall show cross fall and any likely drainage.	Requirement
LOWHL-IRW-696	Indicative welding diagram illustrating pull-points shall be in included on 1:500 drawing.	Requirement
LOWHL-IRW-697	**Ground and Trackbed Investigation**	Heading

LOWHL-IRW-698	A suitable level of Ground Investigation shall be provided where for example, track lowering or sluing may be required, electrification schemes, new infrastructure on existing solum [line re-openings], line speed improvements over historically weak formations [e.g. peat]. This could include GPR, record searches and limited SI.	Requirement
LOWHL-IRW-699	Trackbed Investigation shall consist of; 1. Window Sampling to 1.8m below sleeper bottom (BSB) at 40m centres along all tracks which are to be Renewed or Installed as new. 2. Window Sampling to 1.8m BSB at all S&C locations to be either Renewed, Installed or Abandoned 3. Ground Penetrating Rader surveys to be carried out to all running lines affected by the project to identify ground condition interfaces and buried assets such as culverts.	Requirement
LOWHL-IRW-700	Samples sufficient to undertake chemical analysis for classification of waste shall be taken at all window sample locations.	Requirement
LOWHL-IRW-701	The TBI output report shall be compliant with the requirements of NR/SP/TRK/4239 for presentation and logging keys.	Requirement
LOWHL-IRW-702	TBI report shall, as a minimum, include recommendations on ballast depth, geosynthetic separator types, use of geogrid, and sand blanket. Ballast depths shall be no less than 300mm through S&C and 250mm on plain line sections	Requirement
LOWHL-IRW-703	Where piled foundations are proposed for structure support piles and pile caps, Boreholes shall be undertaken to a depth sufficient to prove the anticipated pile design or to bedrock.	Requirement
LOWHL-IRW-704	Borehole data shall be used to support the F002 design submission for the piled structures	Requirement
LOWHL-IRW-705	**Gauging**	Heading
LOWHL-IRW-706	Gauging requirements are detailed in PAN/AM(T)/GM1/0062 which shall be mandatory. Study is to include over and under bridges, platforms, other structures and passing clearances	Requirement
LOWHL-IRW-707	Clearoute shall be used for clearance and stepping analysis for platforms, for structures .sco files are to be used with any additional structures being surveyed on site to create base files unless specific guidance is received from the NR Gauging Engineer in York.	Requirement
LOWHL-IRW-708	A gauging assessment report based on a summary sheet shall be completed to include normal, reduced and special reduced clearances of over bridges, under bridges, platforms, other structures identified and passing clearances	Requirement
LOWHL-IRW-808	**Civils and Buildings**	Heading

LOWHL-IRW-82	The Contractor shall submit Form 003 and Form 004 designs to the Employer for acceptance.	Requirement
LOWHL-IRW-83	The Contractor shall allow for carrying out relevant checks on his Civils and Structures submissions in accordance with NR/L2/CIV/003.	Requirement
LOWHL-IRW-85	*Static load testing of piles is not a requirement of the Works Information. Testing of piles to be carried out in compliance with the appropriate standards and agreed with the Employer and Network Rail.*	Information
LOWHL-IRW-809	**Civils and Buildings Standards**	Heading
LOWHL-IRW-810	Technical and risk assessments shall be prepared to support the Evaluation of changes to existing civil engineering infrastructure and shall be carried out in accordance with the requirements of NR/L1/CIV/032.	Requirement
LOWHL-IRW-811	Requirements given in NR/CS/CIV/044 shall be taken as mandating the use of European and British Standards and relevant Civil engineering industry standards as appropriate for the design of Structures.	Requirement
LOWHL-IRW-812	The requirements of NR/L3/CIV/140 shall be mandatory	Requirement
LOWHL-IRW-813	Standard Design NR/L3/CIV/151 shall be followed wherever possible	Requirement
LOWHL-IRW-815	Technical requirements for Designs based on the suite of Structural Eurocodes are contained in the following forms: F1990 Technical Design Requirements - BS EN 1990 Basis of structural design F1991 Technical Design Requirements - BS EN 1991 Actions of structures F1992 Technical Design Requirements - BS EN 1992 Design of concrete structures F1993 Technical Design Requirements - BS EN 1993 Design of steel structures F1994 Technical Design Requirements - BS EN 1994 Design of composite steel and concrete structures F1997 Technical Design Requirements - BS EN 1997 Geotechnical design These forms summarise Network Rail's Design requirements for implementing Structural Eurocode clauses where options and choices are available through either the Eurocode text or its accompanying National Annex. References to the relevant Eurocode clause, and where appropriate related National Annex clauses, are included along with the Network Rail Design r	Requirement
LOWHL-IRW-816	Where choices are permitted in F1990 - 1997 for individual projects these shall be recorded using Network Rail's technical approval process for civil engineering works.	Requirement
LOWHL-IRW-817	Technical requirements for the design of timber1, masonry2 and aluminium3 structures, as well as the design of structures for earthquake resistance4, shall be agreed with the Professional Head (Buildings and Civil Engineering) on a project specific basis.	Requirement

	1BS EN 1995 'Design of timber structures', 2BS EN 1996 'Design of masonry structures', 3BS EN 1999 'Design of aluminium structures', and 4BS EN 1998 'Design of structures for earthquake resistance'.	
LOWHL-IRW-818	**Civils and Buildings - Surveys**	Heading
LOWHL-IRW-819	**Services Infrastructure**	Heading
LOWHL-IRW-820	A survey of all services support infrastructure, buried or above ground at Track Level including electrical (domestic supply and operational supply, HV distribution cables, 415V/240V domestic distribution cables, points heating cables and 750V positive and negative cables), gas, water, telecommunications data cables (CIS and Operational), signalling cables, and 3rd party cables shall be carried out. The survey shall identify size, condition, type, route, joint or termination points and location (depth or height). Where services are in containment then the type, condition, and capacity of the containment shall be recorded.	Requirement
LOWHL-IRW-821	The nearest available water, mains drainage and surface water drains in the area shall be plotted with stated size, direction, condition, and depth included in the recorded data.	Requirement
LOWHL-IRW-822	Surveys shall encompass the extents that could reasonably be affected, directly or indirectly, by the proposed works and be extended a further 1.5 metres out.	Requirement
LOWHL-IRW-823	Drainage surveys shall be undertaken from the entry point to the outfall or connection into the public system.	Requirement
LOWHL-IRW-824	**Civils Assets Condition Survey**	Heading
LOWHL-IRW-825	A non-intrusive survey of existing Network Rail assets that are affected by the works shall also be undertaken.	Requirement
LOWHL-IRW-826	The level of detail obtained from the survey shall be sufficient to support the production of a Structural Assessment in accordance with NR/GN/CIV/025 (Form AA, Form BA), or Evaluation Report where required.	Requirement
LOWHL-IRW-827	**Geotechnical Surveys**	Heading
LOWHL-IRW-829	The scope and type of ground investigation works shall be agreed with the Designated Project Engineer and Project Engineer - Civil Engineering	Requirement
LOWHL-IRW-831	After Ground investigations are undertaken a Geotechnical Design Report shall be submitted in PDF format, compliant with the requirements of Eurocode 7, signed by the CRE for both Earthworks and Track.	Requirement
LOWHL-IRW-842	**Geotechnical / Earthworks**	Heading
LOWHL-IRW-844	**Design of Earthworks and Foundations**	Heading

LOWHL-IRW-846	Design requirements for railway infrastructure relating to earthworks, earthwork remediation and geotechnical aspects of foundations for structures are given in NR/SP/CIV/071 supplemented by civil engineering industry standards and guidance and shall be applied during design.	Requirement
LOWHL-IRW-847	NR/SP/CIV/071 contains a listing of miscellaneous geotechnical standards and reference works that shall be used where appropriate in development of designs for railway infrastructure. BS 6031 Code of Practice for Earthworks BS 8006 Code of Practice for strengthened/reinforced soils and other fills BS 8081 Code of Practice for Ground Anchors BS EN 1537:2000 BS EN 1997-1	Requirement
LOWHL-IRW-848	NR/SP/CIV/071 sets out requirements for the design life tthat shall be delivered for earthworks, earthwork remediation schemes and for geotechnical aspects of foundation designs for structures. Minimum default values for design life for permanent works shall be: 120 years for new earthworks 120 years for bored pile schemes for earthwork remediation 120 years for sheet piling schemes for earthwork remediation 60 years for gabions, soil nails, reinforced soil, ground anchors used for earthwork remediation	Requirement
LOWHL-IRW-849	Where a Designer considers that a design life less than that specified above is appropriate, the alternative proposal shall be justified in the Reference Design taking account of direction given in NR/SP/CIV/071.	Requirement
LOWHL-IRW-850	**Earthworks Drainage**	Heading
LOWHL-IRW-851	The impact of changes to the existing earthworks drainage shall be assessed upon any proposal to change such earthworks.	Requirement
LOWHL-IRW-852	**General Drainage Arrangements**	Heading
LOWHL-IRW-855	Works shall not block, interfere with, or otherwise damage or impair existing railway, road or other surface water drainage (including ditches, culverts, catch pits, gullies and watercourses) and shall permit access to drainage for inspection, maintenance and renewal.	Requirement
LOWHL-IRW-856	Station Building	Heading
LOWHL-IRW-857	The new station building should support the forecasted demand captured in the pedestrian modelling report contained within the Site Information.	Requirement

LOWHL-IRW-412	**Station Facilities**	Heading
LOWHL-IRW-2100	**Ticket Office**	Heading
LOWHL-IRW-2101	A ticket office shall be design and built to contain the following items as detailed in the Operational Concept. Where these iteams are to be procured and installed by others it is noted below. The design shall make provision for these;	Requirement
	FasTIS;	
	Display/PC	
	Printer 1	
	Printer 2	
	Customer Display	
	Keyboard, mouse etc	
	Pearl Device	
	Chip & Pin	
	IGEL PC; (to be procured and installed by others)	
	PC	
	Monitor	
	Keyboard, mouse etc	
	CCTV Control;	
	PC	
	Monitor	
	Keyboard, mouse etc	
	Printer	
	Induction Loop;	
	Commend - GEC882	
	Phone;	
	Handset - Landline	
	Charger - Mobile	

	Oyster Reader;	
	Movie (portable device) charger	
	Cubic Gateline;	
	SCU (if internal)	
	Cubic Gateline;	
	EMO	
	Cubic Gateline;	
	One Shot release	
	Bank Note Reader	
	Safe;	
	Tindell spec Eurovault Aver Graded, size 3	
	Key Cupboard	
	TVM Mini Safe;	
	Yale Spec	
	Intruder Alarm;	
	Tindell Spec through existing contract	
	Station Radio;	
	Radio base Station/Charger	
	CIS;	
	20" TFT	
	PA;	
	Microphone	
	Roaming Mic chargers	
	Volume Controller	
LOWHL-IRW-2103	**Staff Accommodation**	
LOWHL-IRW-2104	The design shall make provision for the following equipment within the staff accommodation room. All items are to be supplied and installed by the Contractor;	Requirement

	A sink and draining board with hot and cold running water. Cold water shall be potable.	
	Work surface for the preparation of food.	
	Under and above surface cabinets and drawers for the storage of utensils.	
	Power supply and space for fridge, microwave, kettle, toaster, chargers.	
	Table and two chairs.	
	Space under work surface for fridge	
	4 Half height lockers	
	Notices boards (usually 2 large)	
LOWHL-IRW-2105	Toilet facilities shall be provided to accommodate 5no. Operational staff.	Requirement
LOWHL-IRW-2106	The toilet facilities shall include as a minimum; An electronic hand drier and washbasin shall be provided within the toilet cubicle. Hot and cold water Soap dispenser Mirror over sink	Requirement
LOWHL-IRW-2107	If only one toilet is required, this may be unisex	Information
LOWHL-IRW-2108	**Cleaner Store**	
LOWHL-IRW-2109	The cleaners' store shall contain the following;	Requirement
	A butler type sink for the washing of mops etc and disposal of contaminated dirty water	
	Space for storage of materials, equipment and chemicals	
	A shelving unit for the storage of equipment	
LOWHL-IRW-2110	**Storage**	
LOWHL-IRW-2111	The station shall also have storage facilities for the following;	Requirement
	Station ticket office supplies eg. Ticket stock, paper, posters etc.	
	Winterisation equipment eg, salt, spreader, broom, snow shovel	

	An area for the safe storage of two 1100 litre capacity wheelie bins	
LOWHL-IRW-2112	**Entrances**	
LOWHL-IRW-2113	Entrances to the station shall be provided in order to meet the forecast demand as detailed in the passenger flow modelling report contained in the Site Information.	Requirement
LOWHL-IRW-2114	The contractor shall design and deliver an entrance on the West side of the railway for use as part of the match day queueing strategy, utilising the existing maintenance access	Requirement
LOWHL-IRW-2115	The match day entrance shall be designed and built to the same operational standard as the main station entrances	Requirement
LOWHL-IRW-2116	The Penshurst Road underpass access shall be secured by a Bostwick type gate or similar	Requirement
	Under Pass	
LOWHL-IRW-2040	A new twin lane underpass shall be provided connecting the ticket hall on the Eastern Side with the Entrance on the Western Side	Requirement
LOWHL-IRW-2041	The underpass shall support the demand figures as described in the Pedestrian Modelling report in the Site Information	Requirement
LOWHL-IRW-2042	The underpass shall have one ‘paid’ link that is only accessible once the customer has passed through the ticket gates	Requirement
LOWHL-IRW-2043	The underpass shall have one ‘unpaid’ link that allow members of the public to pass from Love Lane to Penshurst Road through the Station without passing through a ticket gate	Requirement
LOWHL-IRW-2044	The underpass shall be designed and constructed such that it will only be open during station operational hours. This applies to both the unpaid and paid side.	Requirement
LOWHL-IRW-2117	**General Facilities**	
LOWHL-IRW-424	Heat recovery ventilation for the ticket office and staff accommodation to be designed for a maximum of 5 persons per room.	Requirement
LOWHL-IRW-437	The Contractor shall allow for designing a hot water system to meet the specification and building regulations. If the dead legs specified are too long to comply with building regulations they will need to be trace heated and thermally insulated.	Requirement
LOWHL-IRW-446	The Contractor shall provide 110v (Blakely or similar approved) outlet for cleaning/maintenance purposes to be fitted in the concourse area	Requirement

LOWHL-IRW-447	The Contractor shall provide 240v outlets shall be provided to non-public areas with a minimum of 4no. outlets per room spare (i.e. the Contractor shall ensure that adequate provision is supplied in the back-of-house rooms for all operational equipment required to run the station).	Requirement
LOWHL-IRW-450	Heaters to be provided above the gate line where staff are stationed. A suitable outlet on a timer switch for a radiant heater (such as Dimplex QXD3000). A timer switch shall be positioned in a location close to the gate line as agreed with the Station Operator.	Requirement
LOWHL-IRW-451	Rooms in the staff area shall have motion detection for lighting in addition to a manual switch.	Requirement
LOWHL-IRW-453	Columns that require painting or DDA banding shall be the responsibility of the Contractor.	Requirement
LOWHL-IRW-460	The Contractor shall review the platform lighting to ensure it is compliant over the entire length of the platform. The Contractor shall produce a report detailing the findings.	Requirement
LOWHL-IRW-418	Emergency escape stairs shall be enclosed at low level to prohibit unauthorised access. A mag-lock gate shall also be fitted at platform level with control taken back to the ticket office.	Requirement
LOWHL-IRW-419	The existing stairs at the north end of the platforms shall be retained and modified for use as a secondary means of escape.	Requirement
LOWHL-IRW-462	Access shall be provided to the roof level for maintenance purposes.	Requirement
LOWHL-IRW-463	A new canopy will be provided at platform level for the length of the new station building on both platforms	Requirement
LOWHL-IRW-124	**New Station Signage**	Heading
LOWHL-IRW-125	Co-ordination with the Employer and Others to enable survey for and installation of the new signage. (Note: signage will be supplied and installed by Others and will require a period of 10 days to be allowed in the Contractor's programme) The Contractor shall allow for attendance and managing the technical and programme co-ordination of these works. The obligations of Others shall be clearly shown on the Contractor's programme.	Requirement
LOWHL-IRW-860	**Stations**	Heading
LOWHL-IRW-861	The requirements of NR/L3/CIV140, NR/L3/CIV/030 and NR/L3/CIV/162 shall be mandatory. These clauses refer to all phases including design, construction and demolition. Any changes of substance shall be agreed.	Requirement
LOWHL-IRW-862	Structures to be reused, modified or subjected to changed loading shall be structurally assessed.	Requirement
LOWHL-IRW-863	Structures made redundant by the project shall be reused where possible otherwise they shall be demolished and be removed from site with the area being made good .	Requirement

LOWHL-IRW-864	Boundary fencing should be adequately reinstated or replaced upon completion of the works.	Requirement
LOWHL-IRW-872	**Station Design Report**	Heading
LOWHL-IRW-873	A station Design Report shall be produced for each new or modified station and shall cover the following subjects; The visual quality of the passenger environment The benchmark palette of acceptable materials Station sizing Passenger Flow and navigation The durability and life expectancy of building design elements The durability and life expectancy of building design elements The sustainability of the building design Station entrances Integration with surroundings Whole life analysis Stakeholders consulted (British Transport Police (BTP) etc.) Environmental performance levels	Requirement
LOWHL-IRW-902	**Station Control Rooms and Ticket Offices**	Heading
LOWHL-IRW-904	Ergonomics Design Studies shall apply to new or significantly altered station control rooms, ticket offices and related facilities.	Requirement
LOWHL-IRW-905	**Stations - Accessibility**	Heading
LOWHL-IRW-906	In compliance with the DfT Code of Practice Accessible Train and Station Design for Disabled People, new or significantly modified stations shall be developed to provide safe and secure access to passengers with a range physical needs and sensory impairments. The PRM-TSI COMMISSION REGULATION (EU) No 1300/2014 defines the basis of the Code and shall be complied with.	Requirement
LOWHL-IRW-907	The design of stations shall address, but is not limited to, the following types of aspects: Step-free access, door opening systems, luggage gates and provision of lift facilities for passengers with limited mobility and for those with pushchairs / young children and heavy / bulky luggage	Requirement

	Provision of facilities at a height / position suitable for passengers in wheelchairs such as ticket counters, ticket machines, telephones, help points, lift controls etc Provision of emergency access provisions which may include safe refuges and fireman's lifts for passengers with limited mobility High visibility markings, suitably coloured handrails, lighting systems, tactile strips and labels using Braille marking to assist the visually impaired Induction loops and visual information displays to provide assistance to those with hearing difficulties	
LOWHL-IRW-908	Passenger lifts shall be in compliance with PRM TSI: 4.2.1.2.2 with a minmimum capacity for at least 16 persons as defined in EN 81-70:2003+A1:2004	Requirement
LOWHL-IRW-940	**Access Roads, Car Parks, Cycle Parks and Hard Standings**	Heading
LOWHL-IRW-941	Access Roads, Car Parks, Cycle Parks and Hard Standings shall have a suitable formed surface and edging as defined within the applicable Railway Industry and National Highway Standards.	Requirement
LOWHL-IRW-942	Bicycle and motorcycle parking shall be located in an area of natural surveillance close to the station entrances.	Requirement
LOWHL-IRW-944	Bicycle parking shall be provided with Sheffield stands spaced at least 1.0m apart.	Requirement
LOWHL-IRW-945	**Surface Water Drainage**	Heading
LOWHL-IRW-947	The necessary consents for connections to public or private sewer(s) and for changes to discharges arising from the Works shall be obtained.	Requirement
LOWHL-IRW-86	**Mechanical and Electrical Engineering**	Heading
LOWHL-IRW-87	The Contractor shall submit Form B Detailed Designs for Mechanical and Electrical Engineering to the Employer for Acceptance.	Requirement
LOWHL-IRW-88	All Building Management System control systems shall be stand alone.	Requirement
LOWHL-IRW-116	**Lifts**	Heading
LOWHL-IRW-117	The Contractor shall submit a Form B detailed design for the new lifts at White Hart Lane station.	Requirement
LOWHL-IRW-121	The lifts are drawn as a single entry in the GRIP 3 design. The use of a walk-though lift may be acceptable to the Employer should it be feasible.	Information

LOWHL-IRW-122	The Contractor shall provide a fully compliant lift installation to Network Rail Standards with all necessary services required to operate and maintain.	Requirement
LOWHL-IRW-123	Lift shafts shall be fitted with passive ventilation.	Requirement
LOWHL-IRW-584	The lift shall incorporate functionality to operate for three cycles following a power failure.	Requirement
LOWHL-IRW-546	**Stations - Electrical**	Heading
LOWHL-IRW-547	**Electrical Switch Room and Switchgear**	Heading
LOWHL-IRW-548	The electrical switch room sized to accomodate DNO service head and metering equipment and station electrical distribution including photovoltaic equipment shall be located within the building footprint. The main distribution board shall be Form 4.	Requirement
LOWHL-IRW-549	**Earthing & Bonding**	Heading
LOWHL-IRW-550	Earthing System design shall be compliant with BSEN50122, NR/SP/ELP/21085, PAN/E&P-E/EE/ESD/0102 and BS 7671.	Requirement
LOWHL-IRW-551	**Electrical supplies**	Heading
LOWHL-IRW-552	The Contractor shall assess the demand requirement and make arrangements for a new DNO supply.	Requirement
LOWHL-IRW-582	The Contractor shall install an isolating transformer to maintain separation of traction and DNO earthing systems as required.	Requirement
LOWHL-IRW-583	The Contractor shall decommission the existing DNO supply.	Requirement
LOWHL-IRW-588	**Photovoltaic System**	Heading
LOWHL-IRW-589	A 40 sq m photovoltaic system shall be provided on the roof to meet the Haringey Council requirement of reducing the regulated CO2 emissions by 20%.	Requirement
LOWHL-IRW-555	**Ventilation and Cooling**	Heading
LOWHL-IRW-556	Ventilation and cooling shall be designed, supplied and installed in designated areas.	Requirement
LOWHL-IRW-557	**Station Lighting**	Heading

LOWHL-IRW-558	The station shall be lit in accordance with RIS-7702-INS Rail Industry Standard for Lighting at Stations. DOO lighting requirements shall be complied with.	Requirement
LOWHL-IRW-585	For covered platforms, the illumination shall be 150 lux at 0.6 uniformity.	Requirement
LOWHL-IRW-559	LED lighting shall be provided where the required lighting levels can be obtained.	Requirement
LOWHL-IRW-560	Standby lighting shall be provided in the event of failure of the main lighting including all evacuation routes. The duration of such lighting shall be a minimum of 1 hour.	Requirement
LOWHL-IRW-498	**OLE**	Heading
LOWHL-IRW-499	There is an existing OLE stanchion for portal structure CE/07/06 that is located in front of the proposed underpass location. The OLE stanchion shall be relocated to allow for construction of the underpass.	Requirement
LOWHL-IRW-563	The installed dimensions shall be certificated. Track position and tolerance at restricted clearance features e.g. bridges, tunnels, gantries etc shall be agreed prior to production of detailed OLE design.	Requirement
LOWHL-IRW-564	The design development shall take due cognisance of BS EN 50119, BS EN 50122, Railway Group Standards, Network Rail Policy, Network Rail Standards, Letter of Instructions and campaign changes applied to existing systems to avoid repeating known reliability problems.	Requirement
LOWHL-IRW-565	Registration assemblies shall be mechanically independent where reasonably practicable subject to architectural constraints, signal sighting and build ability limitations.	Requirement
LOWHL-IRW-566	Access for maintenance and inspection shall be considered.	Requirement
LOWHL-IRW-567	Screens shall be designed in accordance with BS EN50122.	Requirement
LOWHL-IRW-568	Anti-climb guards shall be fitted to climbable structures (e.g. double channel, fabricated angle or lattice) located in areas of public access.	Requirement
LOWHL-IRW-569	No live equipment shall be located above public standing surfaces (e.g. platforms) with the exception of public level crossings.	Requirement
LOWHL-IRW-570	Systems and equipment shall be designed so that they can be constructed and renewed with minimum disruption to the timetable.	Requirement
LOWHL-IRW-571	Suitable risk assessments shall be undertaken to ensure that location and type of any construction considers the possible effects of consequential damage in the event of derailment.	Requirement
LOWHL-IRW-711	**OLE TECHNICAL SPECIFICATION**	Heading
LOWHL-IRW-712	Changes to the existing wire runs shall utilise equipment compatible with the current system . Any new wire runs installed shall be SERIES 2 equipment.	Requirement

LOWHL-IRW-713	Overlaps and interfaces between Mk3B and Mk3D equipment shall be configured to avoid 'Copper Washing' should they exist.	Requirement
LOWHL-IRW-715	The design shall be capable of supporting line speeds up to 75 mph or as otherwise specified on individual sections of the route for the whole life of the installation.	Requirement
LOWHL-IRW-716	Wind load - local / site wind speed shall be calculated in accordance with UK National Annex to EN 1991-1-4 with factors for height difference at embankments and viaducts taken from R/ELP/GN/27039. A 50 year return period to be assumed for wind speeds for both structures loading & blow-off.	Requirement
LOWHL-IRW-720	**OLE System parameters and acceptance criteria**	Heading
LOWHL-IRW-721	OLE system parameters shall be in accordance with approved OLEMI design criteria and compatible with the current system.	Requirement
LOWHL-IRW-722	**OLE Foundations & Structures**	Heading
LOWHL-IRW-723	Geotechnical surveys shall be carried out for new structure locations. Geotechnical Design Reports as required by the Eurocodes shall be produced to justify the chosen foundation design.	Requirement
LOWHL-IRW-724	In areas of 25kV A.C. "classic" construction, where reasonably practicable, additional mechanical load capability shall be included to cater for future conversion to ATF.	Requirement
LOWHL-IRW-725	Protective coatings shall be applied in order to achieve minimum maintenance intervention period of 40 years.	Requirement
LOWHL-IRW-727	Foundation design shall incorporate electrical properties such that the combined system earthing impedance < 1Ω.	Requirement
LOWHL-IRW-734	**OLE Support & Registration Assemblies**	Heading
LOWHL-IRW-735	Registration assemblies shall be mechanically independent where reasonably practicable subject to architectural constraints, signal sighting and build ability limitations.	Requirement
LOWHL-IRW-737	Installed design on open route, mechanically independent registration assemblies, shall allow full maintenance adjustment tolerance +/- 100mm lateral / vertical wire position.	Requirement
LOWHL-IRW-744	Access for maintenance and inspection shall be considered.	Requirement
LOWHL-IRW-745	**OLE Conductors / Wires**	Heading
LOWHL-IRW-746	Return screening conductors and / or earthwire conductors to be routed / positioned or otherwise protected to make theft difficult.	Requirement
LOWHL-IRW-748	AT Feeder, Return Conductors or Earth return wires shall not be routed directly above S&T equipment that is not directly bonded to the traction return system.	Requirement

LOWHL-IRW-752	The number of joints, splices & connectors shall be kept to a minimum.	Requirement
LOWHL-IRW-758	**OLE Screening & Protection**	Heading
LOWHL-IRW-759	Screens shall be designed in accordance with BS EN50122.	Requirement
LOWHL-IRW-760	Anti-climb guards shall be fitted to climbable structures (e.g. double channel, fabricated angle or lattice) located in areas of public access.	Requirement
LOWHL-IRW-761	No live equipment shall be located above public standing surfaces (e.g. platforms) with the exception of public level crossings.	Requirement
LOWHL-IRW-774	**OLE Earthing & Bonding (including DEPs)**	Heading
LOWHL-IRW-775	Mechanical connections / joints & clamps subjected to flow of traction load & fault current shall have adequate electrical rating so as not to be damaged (or cause damage to conductors) by repeated flow of fault current of 12kA or continuous flow of rated traction load current.	Requirement
LOWHL-IRW-776	DEPs and associated components shall have adequate electrical rating for repeated fault current to 12kA without damage.	Requirement
LOWHL-IRW-777	DEP stalks (earth attachment points) shall not be installed higher than 5.2m.	Requirement
LOWHL-IRW-778	DEP earthing of ATF or return conductors shall be designed to minimise risk of inadvertent portable earth contact with live OLE during the process of earth application.	Requirement
LOWHL-IRW-779	**OLE Signage / labelling**	Heading
LOWHL-IRW-780	To facilitate remote monitoring, the following signage shall be located & installed at consistent height Structure number at each structure Unique number of each sectioning device at section insulator / neutral section locations	Requirement
LOWHL-IRW-781	To facilitate asset inspection via train borne cameras or manual foot patrolling, the following identification plates shall be installed so that they are viewable from cab height and ground level:- Wire run number at each termination location Unique number of each sectioning device at section insulator / neutral section locations Signage / reference markers at balance weight anchor locations to mark correct height of balance weight stacks with respect to ambient temperature and where reasonably practicable on pulley wheels to show correct movement with respect to ambient temperature	Requirement

	Electrical section number plate at each DEP earth attachment point	
LOWHL-IRW-782	Track datum markers shall be installed at bridges, tunnels and other locations where reduced track position tolerance is necessary to maintain reduced electrical clearance	Requirement
LOWHL-IRW-783	Signage shall be designed to remain visible without regular maintenance cleaning.	Requirement
LOWHL-IRW-784	Electrical hazard signs (152mm circular) shall be fitted to the OLE at locations where it is not possible to undertake routine maintenance inspection with adjacent line live, (e.g. unscreened adjacent live OLE closer than 600mm).	Requirement
LOWHL-IRW-790	**OLE Testing, Commissioning & Handover**	Heading
LOWHL-IRW-791	Where alterations to in-running equipment are made, these shall be tested with a pantograph equipped vehicle before entry into service.	Requirement
LOWHL-IRW-792	Prior to service running, drawings, instructions, data, training, spares, tools/equipment and associated plant shall be provided for designated Maintainer to make safe installed OLE and minimise impact on operational railway.	Requirement
LOWHL-IRW-794	**OLE Records**	Heading
LOWHL-IRW-795	Operational drawings, instructions including isolation diagrams, isolation instructions, electrical control room instructions and signalling overlays shall be updated prior to commissioning/taking into service of new OLE.	Requirement
LOWHL-IRW-796	As built drawings, instructions, manuals and other records shall be provided in electronic “parent format” and hard copy formats. These shall include but not be limited to:- Cross sections Layout plans Bonding plans Special structure drawings Foundation drawings ECR Instructions Isolation Diagrams Alternate feeding diagrams Schedule of bridge clearances and locations of restricted clearance e.g. signals/ station awnings etc. Schedule of bridge clearances and locations of restricted clearance e.g. signals/ station awnings etc Schedule of power line crossings & clearances	Requirement

	Schedule of screens & warning signs Schedule of spares Track Possession Diagrams (exemplars available from Network Rail) Track datum certificates Test certificates DEP schedule Energisation notices Section proving documentation and test schedules Entry of asset data into Ellipse database	
LOWHL-IRW-798	**OLE Constructability and Sustainability**	Heading
LOWHL-IRW-799	Systems and equipment shall be designed so that they can be constructed and renewed with minimum disruption to the timetable.	Requirement
LOWHL-IRW-800	Suitable risk assessments shall be undertaken to ensure that location and type of any construction considers the possible effects of consequential damage in the event of derailment.	Requirement
LOWHL-IRW-518	**Signalling**	Heading
LOWHL-IRW-519	The main Signalling & Telecoms cable route runs through the DOWN platform with a UTX at the south end of the station. Though most signalling cables are located within the body of platform 2 there is a signalling cable running from the AWS magnet 209m from L1341 signal along the platform face trowards L1341 signal.	Information
LOWHL-IRW-496	The stop board on Platform 1 at White Hart Lane station shall be relocated by the Contractor in line with a provided stop marker sighting form	Requirement
LOWHL-IRW-137	**Signal Sighting**	Heading
LOWHL-IRW-138	The Contractor shall undertake a signal sighting assessment in order to ascertain any impact of the proposed works on the signal sighting. The Contractor shall provide a report of his finding to the Employer for review and action as appropriate.	Requirement
LOWHL-IRW-139	The Contractor shall, in designing his temporary works, take cognisance of signal sighting implications and obtain any necessary approvals.	Requirement
LOWHL-IRW-524	**Telecommunications**	Heading

LOWHL-IRW-1050	**Communications Equipment Room (CER)**	Heading
LOWHL-IRW-3000	All telecoms equipment for White Hart Lane Station new and existing shall be served from a single CER.	Requirement
LOWHL-IRW-1051	The GRIP 3 proposes that the existing CER located within the ticket office at the north of the station be moved to a new location on the west side of the station as part of the redevelopment.	Information
LOWHL-IRW-1052	If a new CER is to be provided then the equipment currently housed in the existing CER shall be migrated to the new CER.	Requirement
LOWHL-IRW-1053	**Nodal SISS Cabinet**	Heading
LOWHL-IRW-1054	The existing nodal SISS cabinets on each platform shall be reused with additional CCTV and field telecoms equipment (except PA) connected to them.	Requirement
LOWHL-IRW-1055	**Closed Circuit Television System (CCTV)**	Heading
LOWHL-IRW-1056	New colour IP CCTV cameras shall be deployed to cover areas between set down points and lift doors (at ticket hall and platform levels), internal lift cars and new public areas around the station.	Requirement
LOWHL-IRW-1057	The new CCTV cameras shall be of the same type and manufacturer as the existing station CCTV cameras.	Requirement
LOWHL-IRW-1058	The technical solution shall allow the integration of all new CCTV cameras by adding to the capacity of the existing CCTV systems equipment.	Requirement
LOWHL-IRW-1059	The existing CCTV system shall be reconfigured to provide coverage for the new underpass, stairs, lifts and new platform access arrangements.	Requirement
LOWHL-IRW-1060	The server configuration at the Control Centre Server at Overground House shall be updated by the operator. The Contractor shall provide the relevant design and as-built information that allows them to do so.	Requirement
LOWHL-IRW-1061	The IP addresses for the new CCTV cameras are assigned by the operator.	Information
LOWHL-IRW-1062	The new CCTV cameras shall be fixed to new or existing station structures.	Requirement
LOWHL-IRW-1063	The new CCTV cameras shall be adjustable in each plane to achieve the desired view.	Requirement
LOWHL-IRW-1064	All cable entries to all external camera housings shall be via a weatherproof gland.	Requirement
LOWHL-IRW-1065	The position and mountings shall consider maintenance access and aim to reduce the risk of vandalism.	Requirement

LOWHL-IRW-1066	The location of the CCTV camera on the station infrastructure shall be co-ordinated with the lighting system to ensure the highest level of quality images.	Requirement
LOWHL-IRW-1067	CCTV cameras shall be powered via Power Over Ethernet (POE).	Requirement
LOWHL-IRW-1068	**Passenger Awareness Monitor (PAM)**	Heading
LOWHL-IRW-1069	PAMs shall be provided in the ticket hall and within the Entrance area of the station.	Requirement
LOWHL-IRW-1070	**CCTV Head End Equipment**	Heading
LOWHL-IRW-3001	The Contract shall review the existing capacity within the CER and is responsible for ensuring that there is adequate capacity for new assets plus the required 25% spare capacity.	Requirement
LOWHL-IRW-1071	The GRIP 3 design proposes an additional 23 CCTV cameras connected via the existing nodal cabinets.	Information
LOWHL-IRW-1072	With the additional CCTV cameras and telecoms field equipment, the following head end equipment shall be required: - 2 x 24 port Patch Panel - 2 x 24 port Switches	Information
LOWHL-IRW-1073	**CCTV Video Recording and Storage**	Heading
LOWHL-IRW-1074	The existing CCTV recorder and Mass Storage Array is configured with 12 x 750 GB SATA (9 TB) hard drives for CCTV recording.	Information
LOWHL-IRW-1075	The required capacity to fulfil the GRIP 3 design is calculated as follows:	Information
LOWHL-IRW-1076	- Existing 29 cameras at 720p, recorded at 6.5 fps for 31 days = 9 TB storage	Information
LOWHL-IRW-1077	- Compression method = MPEG4-30	Information
LOWHL-IRW-1078	- Network bandwidth requirement for 29 cameras = 29 Mbits/s	Information
LOWHL-IRW-1079	To add an additional 23 cameras (incl. lift cameras)	Information
LOWHL-IRW-1080	- 52 cameras at 720p, recorded at 6.5 fps for 31 days = 17 TB storage	Information

LOWHL-IRW-1081	- Compression method = MPEG4-30	Information
LOWHL-IRW-1082	- Network bandwidth requirement for 52 cameras = 52 Mbits/s	Information
LOWHL-IRW-1083	The station network CCTV storage shall be a minimum of 22 TB (including 25% spare capacity).	Requirement
LOWHL-IRW-1084	The Station CCTV recorder server and Master CCTV recorder servers at both Overground House and at the Disaster Recovery at Willesden Junction shall be re-configured.	Requirement
LOWHL-IRW-1085	The capacity shall be reviewed and increased as required by the Contractor.	Requirement
LOWHL-IRW-1086	The station network has sufficient bandwidth capacity to accept the additional cameras.	Information
LOWHL-IRW-1087	**Lift Cameras**	Heading
LOWHL-IRW-1088	Two CCTV cameras with wide angle lenses shall be mounted onto the ceiling of each lift car (2 new lifts).	Requirement
LOWHL-IRW-1089	The Lift CCTV cameras shall provide a view of the entire lift car.	Requirement
LOWHL-IRW-1090	The video images produced by each lift camera shall be presented as an RJ45 socket at the demarcation point (to be agreed).	Requirement
LOWHL-IRW-1091	The lift cameras will be provided by the Contractor.	Requirement
LOWHL-IRW-1092	**CCTV Workstation**	Heading
LOWHL-IRW-1093	Subject to an ergonomics design study, the CCTV workstation shall be updated to reflect the increase in camera numbers.	Requirement
LOWHL-IRW-1094	**Lift Intercom System**	Heading
LOWHL-IRW-1095	The lift shall be provided with the following facilities that require communication links:	Requirement
LOWHL-IRW-1096	- Lift emergency voice intercom & alarm and lift status remote monitoring system	Requirement
LOWHL-IRW-1097	- Lift alarm interface with CCTV for increased frame rate recording	Requirement

LOWHL-IRW-1098	The emergency intercom facility within each lift will be provided with an induction loop for the hearing impaired	Requirement
LOWHL-IRW-1099	An Elevator Monitoring Unit (EMU) including an auto-dialler will be provided by the Contractor	Requirement
LOWHL-IRW-1100	Two standard analogue PSTN telephone lines to operate lift emergency voice intercom and EMU shall be provided (one for each lift)	Requirement
LOWHL-IRW-1101	The cabling between the telephone socket and the incoming telecoms PTO (BT) distribution point shall be undertaken by the telecoms contractor. The new PTO interface point will be at the new entrance to the station.	Requirement
LOWHL-IRW-1102	**Public Announcement System (PA)**	Heading
LOWHL-IRW-1103	The PA system includes an ATOS Personal Computer Digital Voice Announcement (PCDVA) system. The PCDVA is installed within the central SISS equipment cabinet and interfaces directly with the PA audio router.	Information
LOWHL-IRW-1104	The station PA cabling system shall be extended to provide connectivity between the new CER and the end devices at platform level.	Requirement
LOWHL-IRW-1105	An ambient Noise Sensor (ANS) shall be provided at each side of the station (east and west) to allow automatic volume adjustments. The exact location shall be determined at GRIP Stage 5.	Requirement
LOWHL-IRW-1106	Loudspeakers and ANS shall be located at least 3.5 metres from the OLE contact wire.	Requirement
LOWHL-IRW-1107	The current public address zones are: - Zone 1: Platform 1 - Zone 2: Platform 2 - Zone 3: Non-Platform - Zone 4: Stairs & Entrances	Information
LOWHL-IRW-1108	It is proposed that that new ticket hall shall form part of Zone 4.	Requirement
LOWHL-IRW-1109	There are 52 existing speakers on platform 1, platform 2 and platform 1 stairs.	Information
LOWHL-IRW-1110	The GRIP 3 designs proposes the following additional speakers: - Platform 1 and Stairs - 18 nos. - Platform 2 and Stairs - 23 nos. - Ticket hall - 4 nos. ceiling speakers and 24 nos. column speakers	Information

LOWHL-IRW-1111	The loudspeakers shall be wired alternately on separate circuits.	Requirement
LOWHL-IRW-1112	PA speakers and peripherals shall be powered via the PA mainframe.	Requirement
LOWHL-IRW-1113	**Audio Frequency Induction Loops (AFIL)**	Heading
LOWHL-IRW-1114	New intercoms with integrated AFIL shall be provided at the new ticket counter.	Requirement
LOWHL-IRW-1115	**Customer Information System (CIS)**	Heading
LOWHL-IRW-1116	If a new CER is to be provided all new and existing CIS head end control equipment shall be located in the new CER.	Requirement
LOWHL-IRW-1117	The existing CIS displays shall be re-used and relocated as necessary	Requirement
LOWHL-IRW-1118	The new entrances to the station shall be equipped with new CIS screens including external screens on the eastern facade and match day entrance for queue management purposes	Requirement
LOWHL-IRW-1119	CIS displays shall be powered by a local isolated 230v supply.	Requirement
LOWHL-IRW-1120	**Next Train Indicators (NTI)**	Heading
LOWHL-IRW-1121	There are 2 NTI displays located at the northern end of the platform.	Information
LOWHL-IRW-1122	2 nos. 3 line, double sided NTI displays shall be installed on platform level at the location of the new stairway.	Requirement
LOWHL-IRW-1123	2 nos. 3 line, single sided NTI displays shall be installed on platform level at the southern end.	Requirement
LOWHL-IRW-1124	2 nos. NTI displays shall be installed at ticket hall level at the bottom of each stairway.	Requirement
LOWHL-IRW-1125	Each new CIS display shall be located at least 3.5 metres from the OLE contact wire.	Requirement
LOWHL-IRW-1126	**Summary of Departure Boards (SOD)**	Heading
LOWHL-IRW-1127	2 nos. of SODs shall be installed in the new ticket hall. The new SODs shall be fixed to the new station structure.	Requirement

LOWHL-IRW-1128	The new SODs shall be fixed using Network Rail approved fixings and bracket arrangements.	Requirement
LOWHL-IRW-1129	**Passenger Help Point System (PHP)**	Heading
LOWHL-IRW-1130	The existing PHP units on the platforms shall be relocated.	Requirement
LOWHL-IRW-1131	The station structured cabling system shall be extended to provide connectivity between the new CER at underpass level and the end devices at platform level.	Requirement
LOWHL-IRW-1132	A single PHP shall be provided within the ticket hall on the unpaid side of the gateline.	Requirement
LOWHL-IRW-1133	At Overground House, the IP addresses of the additional PHP will be configured to connect to the PHP and associated CCTV camera by the Operator	Information
LOWHL-IRW-1134	The existing PHPs shall be reconfigured with the associated new CCTV cameras.	Requirement
LOWHL-IRW-1135	The IP address for the new PHP will be assigned by the operator.	Information
LOWHL-IRW-1136	PHPs shall be powered by a local isolated 230v supply.	Requirement
LOWHL-IRW-1137	**Ticket Vending Machines (TVM)**	Heading
LOWHL-IRW-1138	Two TVMs will be placed within the ticket hall on the east side near the ticket office.	Information
LOWHL-IRW-1139	New connections to the LAN (Cat5 cable) shall be provided from the CER to each TVM.	Requirement
LOWHL-IRW-2035	Oyster validators shall be provided/retained at the station for match days, for all stairs in use on event days unless already accommodated with ATGs.	Requirement
LOWHL-IRW-1140	**Wider Area Network (WAN)**	Heading
LOWHL-IRW-1141	On completion of the new fibre optic WAN link under the WASP scheme, it is envisaged that there will be sufficient capacity for the work under this scheme.	Information
LOWHL-IRW-1142	**Station Local Area Network (LAN)**	Heading
LOWHL-IRW-1143	A review shall be undertaken in GRIP Stage 5 to determine if the two nodal SISS cabinets on the platforms can be recovered and replaced with line extenders.	Requirement

LOWHL-IRW-1144	**Equipment and Cable Labelling**	Heading
LOWHL-IRW-1145	All cables shall be labelled at both ends and at strategic points. The label shall include the cable ID number.	Requirement
LOWHL-IRW-1146	The label type shall be resistant to UV and chemicals to prevent deterioration over time.	Requirement
LOWHL-IRW-1147	**Vermin / Pigeon Deterrent**	Heading
LOWHL-IRW-1148	All new equipment at its installed locations shall be assessed to ascertain the need to fit pigeon deterrent spikes or equivalent.	Requirement
LOWHL-IRW-3002	Pigeon deterrent shall be provided where necessary	Requiremen
LOWHL-IRW-1149	**Staging Requirements**	Heading
LOWHL-IRW-1150	The Contractor shall produce a detailed migration strategy for the relocation of the telecoms equipment from the existing CER to the new CER.	Requirement
LOWHL-IRW-964	**Electromagnetic Compatibility**	Heading
LOWHL-IRW-128	**Temporary Works**	Heading
LOWHL-IRW-129	The Contractor shall provide a Form 002 and Form 003 submission for each temporary works item required in order to complete the Works.	Requirement
LOWHL-IRW-130	The Contractor shall submit a temporary signage drawing for each phase of the works to the Employer and Operator for acceptance.	Requirement
LOWHL-IRW-131	The Contractor shall allow for carrying out a relevant checks on all temporary works submissions in accordance with NR/L2/CIV/003. The schedule of relevant checks shall be agreed with the DPE.	Requirement
LOWHL-IRW-134	**Fabrication and Shop Design**	Heading
LOWHL-IRW-135	The Contractor shall provide fabrication/shop assembly drawings for structural steelwork and any other bespoke elements of the work.	Requirement
LOWHL-IRW-136	The Contractor shall invite the Employer's representative to witness any factory acceptance of items prior to them being delivered to site.	Requirement
LOWHL-IRW-140	**Value Engineering**	Heading

LOWHL-IRW-141	The Contractor, in developing his detailed design, may submit value engineering proposals to the Employer for acceptance.	Information
LOWHL-IRW-142	Value engineering proposals shall be submitted no later than 20 working days before the proposed completion date of the Detailed Design.	Requirement
LOWHL-IRW-143	The Contractor shall demonstrate in any submission how the value engineering proposal will not impair the performance of the Works.	Requirement
LOWHL-IRW-636	The Contractor shall undertake sufficient Value Engineering workshops in order to produce a Value Engineering Report	Requirement
LOWHL-IRW-354	**Surveys**	Heading
LOWHL-IRW-355	**Dilapidations**	Heading
LOWHL-IRW-356	The Contractor shall carry out a dilapidations survey on site prior to commencement of works on site attended by the Employer and Network Rail/London Overground	Requirement
LOWHL-IRW-361	**Ground Investigations**	Heading
LOWHL-IRW-362	The Contractor shall undertake sufficient ground investigations to justify the use of any design parameters in the design of the work - permanent and temporary. This shall supplement the results of any investigations undertaken at GRIP 3 where appropriate.	Requirement
LOWHL-IRW-363	The Employer has provided results of his ground investigation studies and ground investigation studies carried out by Others within the Site Information.	Information
LOWHL-IRW-364	**Other Surveys**	Heading
LOWHL-IRW-365	The Contractor shall allow for carrying out an asbestos survey. Should asbestos be found that requires removal this shall be the responsibility of the contractor.	Requirement
LOWHL-IRW-367	**Construction and Implementation**	Heading
LOWHL-IRW-368	**Site Access**	Heading
LOWHL-IRW-369	The Contractor shall confirm his own site access arrangements and submit these to the Employer for acceptance.	Requirement
LOWHL-IRW-370	The Employer notes that access may be available through Love Lane and Penshurst Road. The Contractor shall note in his construction methodology proposal and programme should he require access through this route.	Requirement
LOWHL-IRW-371	**Working in Possession**	Heading

LOWHL-IRW-372	The Employer has provided a list of the available possessions in Appendix XYZ of the IR-C. The Contractor shall make use of these possessions in order to implement the Works.	Requirement
LOWHL-IRW-407	**Site Compound**	Heading
LOWHL-IRW-409	The Contractor shall be responsible for security of the site.	Requirement
LOWHL-IRW-377	**Fire Planning and Preparation**	Heading
LOWHL-IRW-378	The Contractor shall update the Fire Strategy document issued by the Employer to take account of any changes made during the Detailed Design phase.	Requirement
LOWHL-IRW-379	The Contractor shall, in designing the Works (both permanent and temporary) take account the impact his Works will have on the station's fire loading.	Requirement
LOWHL-IRW-380	The Contractor shall provide break glass units alongside the PHP (whether this be wall mounted on pole mounted). PHPs with integrated fire break glass units are not to be used.	Requirement
LOWHL-IRW-382	The fire alarm shall be a self-contained system. The station currently has no fire alarm system.	Requirement
LOWHL-IRW-383	**Spares**	Heading
LOWHL-IRW-384	The Contractor shall provide a spares list to the Employer for acceptance.	Requirement
LOWHL-IRW-387	**Training**	Heading
LOWHL-IRW-388	The Contractor shall provide training for the Employer and Operator staff on a “train the trainer” basis for all new and modified assets installed as part of the Works.	Requirement
LOWHL-IRW-389	The Contractor shall provide a schedule of the proposed training to the Employer for Acceptance.	Requirement
LOWHL-IRW-390	The Contractor shall show the training activities to be provided on his programme.	Requirement
LOWHL-IRW-391	The Contractor shall provide a record of the training to the Employer (name of trainer, type of course and attendees) within 48 hours of completion.	Requirement
LOWHL-IRW-454	**Site Boundary**	Heading
LOWHL-IRW-455	The site boundary diagram is shown in Appendix 2 of the Interface Agreement provided in the Site Information.	Information

LOWHL-IRW-479	**Architectural Design & Finishes**	Heading
LOWHL-IRW-480	The Contractor shall provide Form 004 'Architectural Acceptance and Layout' for acceptance by the Employer.	Requirement
LOWHL-IRW-2000	**Event Day Briefing Room**	Heading
LOWHL-IRW-2001	This section of the “LOWHL Infrastructure Requirements Works Description (IR-W) describes the works to be undertaken at White Hart Lane Station to provide additional operator facilities These requirements have been developed post GRIP 3 and as such have no current design information.	Information
LOWHL-IRW-2002	It is proposed that WHL station has facilities for an event day briefing room. This must have capacity for staff to be briefed and for British Transport Police (BTP) staff to view and control the station CCTV system. This facility may be located within the new station building, or make use of the disused station building rooms on Platform 1.	Information
LOWHL-IRW-2003	**Building premises Conditions**	**Heading**
LOWHL-IRW-2004	The event day room shall have a BMS to control heat and lighting.	Requirement
LOWHL-IRW-2005	The power supply shall be sufficient to support vital building services for the event day facility as a whole.	Requirement
LOWHL-IRW-2006	The event day room shall comply with standards and legislation for internal environmental conditions.	Requirement
LOWHL-IRW-2007	The event day room shall be designed such that it accounts for the needs, capabilities and limitations of potential users.	Requirement
LOWHL-IRW-2009	The building shall not be readily identifiable to the public	Requirement
LOWHL-IRW-2010	Accommodation shall be provided of sufficient size for 15no. operational staff to be briefed in one sitting. This should include tables and chairs for use during briefings and event day staff breaks.	Requirement
LOWHL-IRW-2011	**Additional facilities**	**Heading**
LOWHL-IRW-2012	Provision of sufficient welfare facilities for operational staff and BTP staff.	Requirement
LOWHL-IRW-2013	Sufficient secure storage shall be provided.	Requirement

LOWHL-IRW-2014	The event day room and associated facilities need to be operational during Station Operational hours	Requirement
LOWHL-IRW-2015	A fire risk assessment must be conducted for the facility.	Requirement
LOWHL-IRW-2016	**CCTV viewing station**	**Heading**
LOWHL-IRW-2017	Provision of an additional viewing station to replicate the functionality provided in the ticket office, enabling the user to control which images are visibile on the screen	Requirement
LOWHL-IRW-2021	Cable routes shall be provided such that sufficient data points can be installed to allow a PC to be connected to the data network.	Requirement
LOWHL-IRW-2022	Where possible the CCTV viewing station should be contained within the event day briefing room	Information
LOWHL-IRW-2023	**Urban Realm**	**Heading**
LOWHL-IRW-2024	The urban realm works shall be designed and delivered as per the planning application	Requirement
LOWHL-IRW-2025	The extent of urban realm works is detailed in Appendix B of the IR-W	Information
LOWHL-IRW-2026	Any changes to materials/finish will require prior agreement with the London Borough of Haringey	Information
LOWHL-IRW-2027	The Raised table on Love Lane and the Raised table on Penshurst Road will be delivered by others	Information
LOWHL-IRW-2028	The Kerb lines will be delivered by others	Information

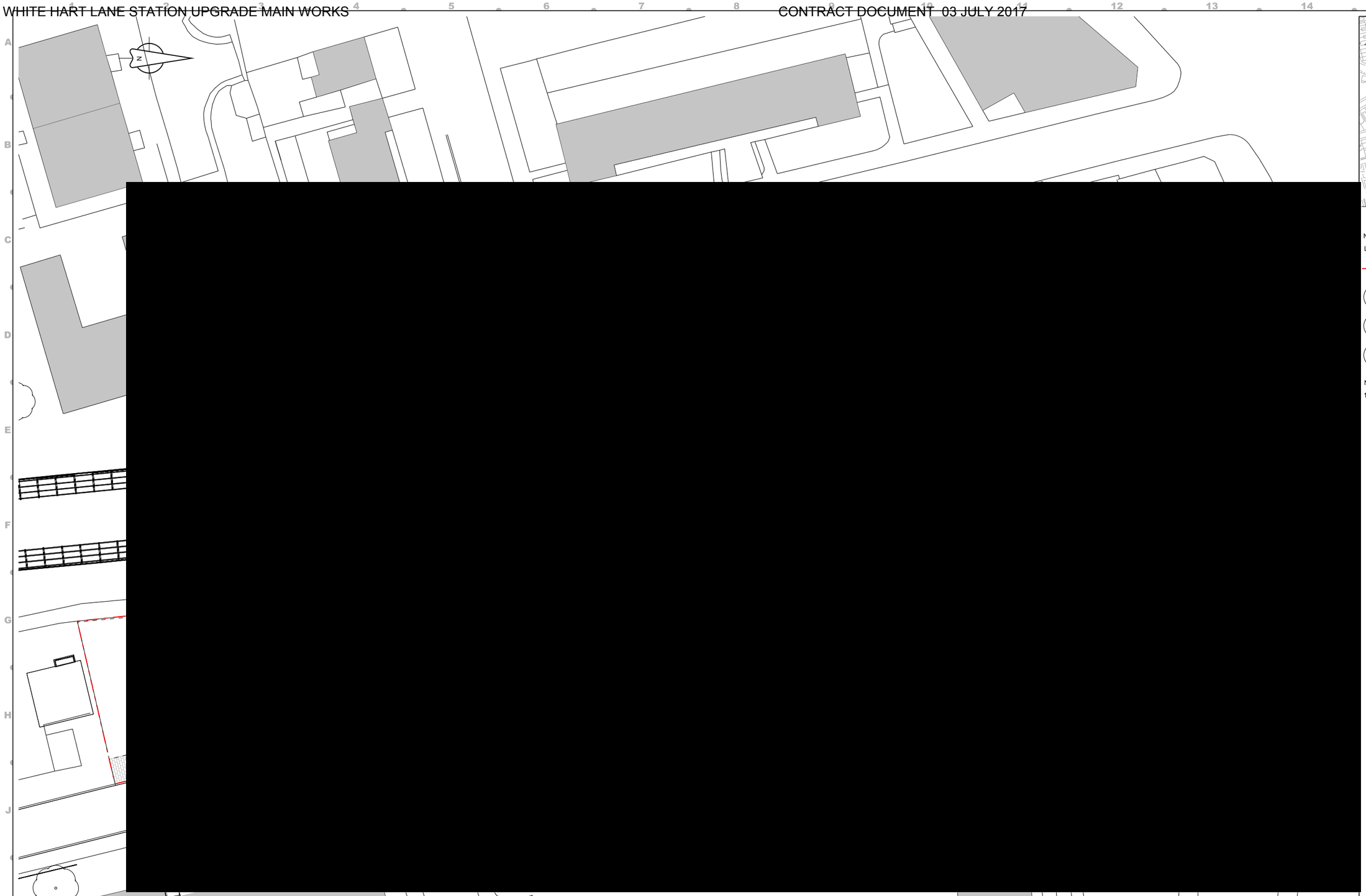
Appendix A – Reference Documentation

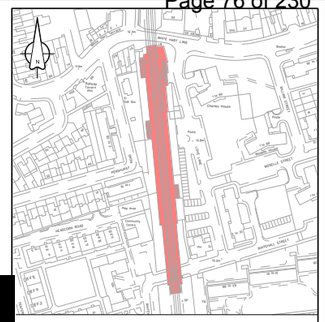
IR-W Appendix A: Reference Documentation

NOTE the following is provided on the CD-ROM that forms part of this contract:

Approval in Principle Design			Notes
Civils - Underpass			
LWHL-ALLW-ECV-F01-MMD-00001	A02	Form 001 – Underpass Bridges and Foundations	Design document
LWHL-ALLW-ECV-DRN-MMD-00003	A07	White Hart Lane Building Structures and Civils Form 001 DRN	DRN
Civils - Station Building			
LWHL-ALLW-ECV-F01-MMD-00002	A02	Form 001 – Building Structures and Ancillary Civils	Design document
LWHL-ALLW-ECV-DRN-MMD-00002	A06	White Hart Lane Building Structures and Ancillary Civils Form 001 DRN	DRN
		LOIM Document Review Form - White Hart Lane Building Structures and Ancillary civils DRF	RAM Review comment form
MEP			
LWHL-ALLW-EME-FOA-MMD-00001	A02	White Hart Lane Form A - MEP	Design document
LWHL-ALLW-EME-DRN-MMD-00002	A04	White Hart Lane Form A - MEP DRN	DRN
		LOIM Document Review Form - White Hart Lane Station Upgrade - MEP	RAM Review comment form
OLE			
LWHL-ALLW-EOL-FOA-MMD-00001	A02	Form A - OLE	Design document
LWHL-ALLW-EOL-DRN-MMD-00002	A03	Form A - OLE DRN	DRN
Telecommunications			
LWHL-ALLW-ETL-F0A-MMD-00001	A02	Form A - Telecommunications	Design document
LWHL-ALLW-ETL-DRN-MMD-00002	A04	Form A - Telecommunications DRN	DRN
		LO Document Review Form - White Hart Lane Comms Upgrade	RAM Review comment form
Permanent Way			
LWHL-ALLW-EPW-F0A-MMD-00001	A02	Form A - Track	Design document
LWHL-ALLW-EPW-DRN-MMD-00002	A02	Form A - Track DRN	DRN
Architectural			
LWHL-ALLW-EHF-F04-MMD-00001	B01	Form 004 - Architectural	Design document
LWHL-ALLW-DRN-F04-MMD-00001	B04	Form 004 - Architectural DRN	DRN
Signalling			
LWHL-ALLW-ESG-PLA-MMD-00001	A01	Confirmation of no Signal Design Required	Design document
LWHL-ALLW-ESG-PLA-MMD-00001	A01	Confirmation of no Signal Design Required DCF	Document comment form
Architectural drawings			
LWHL-LWHL-EAR-DEL-LAB-01004	A01	Demolition Elevations	
LWHL-LWHL-EAR-DEL-LAB-01006	A01	Existing Elevations	
LWHL-LWHL-EAR-DEL-LAB-01401	A01	Proposed Elevations 1 New Station Building East	
LWHL-LWHL-EAR-DEL-LAB-01402	A01	Proposed new station building West Elevations 2	
LWHL-LWHL-EAR-DEL-LAB-01403	A01	Long Elevations New Station Building	
LWHL-LWHL-EAR-DEL-LAB-01404	A01	Proposed Elevation 3 Existing Stairs	
LWHL-LWHL-EAR-DEL-LAB-01000	A01	Site Location Plan	
LWHL-LWHL-EAR-DEL-LAB-01110	A01	Proposed Ground Floor Plan New Station Building 1 of 2	
LWHL-LWHL-EAR-DEL-LAB-01111	A01	Proposed Ground Floor Plan Existing Stairs 2 of 2	
LWHL-LWHL-EAR-DEL-LAB-01120	A01	Proposed Platform Plan New Station Building 1 of 2	
LWHL-LWHL-EAR-DEL-LAB-01121	A01	Proposed Platform Plan Existing Stair 2 of 2	
LWHL-LWHL-EAR-DEL-LAB-01130	A01	Proposed Roof Plan New Station Building	
LWHL-LWHL-EAR-DEL-LAB-01301	A01	Proposed Section 1 New Station Building	
LWHL-LWHL-EAR-DEL-LAB-01302	A01	Proposed Section 2 New Station Building	
LWHL-LWHL-EAR-DEL-LAB-01003	A01	Demolition Site Plan	
LWHL-LWHL-EAR-DEL-LAB-01010	A01	Proposed Site Plan New Station Building	
Urban Realm			
LWHL-LWHL-EAR-DGA-MMD-00001	A03	Landscaping General Arrangement Plan	
LWHL-LWHL-EAR-DSE-MMD-00010	A03	Landscaping Sections	
LWHL-ALLW-EGM-REP-MMD-00003	A01	White Hart Lane Station Upgrade Urban Realm RIBA Stage 3 Report	

Appendix B – Scope Boundary Drawing





KEY PLAN
1:2500

NOTES - LEGEND:

LEGEND:

- WHL STATION UPGRADE PROJECT BOUNDARY (BACK OF KERB UNLESS NOTED BELOW)

1. URBAN REALM WORKS TO BE DELIVERED BY LONDON BOROUGH OF HARINGEY (LBH)
2. URBAN REALM WORKS TO BE DELIVERED BY LONDON BOROUGH OF HARINGEY (LBH) BOUNDARY BACK OF FOOTWAY
3. URBAN REALM WORKS TO BE DELIVERED BY LONDON BOROUGH OF HARINGEY (LBH)

NOTES:

1. KERB LINES TO BE COMPLETED BY LBH.

COORDINATES TO LONDON SURVEY GRID.
PROJECT LEVEL DATUM IS
100 METRES BELOW NEWLYN DATUM.

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DO NOT SCALE
DISTORTION CAN OCCUR

REV	DATE	DESCRIPTION	BY	CHK	APP	AUTH
B01	02/09/16	FIRST ISSUE	PW	PW	PW	PW
B02.1	17/10/16	MINOR AMENDMENTS	--	--	--	--

$DATE$ $TIME$ $USER$ $FILE$

TfL - CAD COMPLIANCE CHECK
XXX ##.##.## ####
PASS or FAIL

	NAME	DATE
DRAWN / AMENDED BY	---	--
ENG CHECK BY	---	--
CAD CHECK BY	Cad Checked Name	##.##.##
APPROVED BY	---	--

(SIGNATURE)

PROJECT: LONDON OVERGROUND - STATIONS
White Hart Lane Station Upgrade

Transport for London
London Overground

TITLE: WHITE HART LANE
STATION UPGRADE
SCOPE BOUNDARY DRAWING

SUITABILITY: S2

STATUS: Fit for Information

SHEET: 1 of 1

DRAWING SHEET SIZE = A1

SCALE: 1:200

DRAWING NUMBER: LWHL - LWHL - EAR - DPL - RFL - 00001

REVISION: B02.1

WIP

Appendix C – Master Deliverables List

Deliverer	Identifier (Ref)	Deliverable	Discipline	Sub Category	Description	Source Reference	Key Clause Reference	Document Type	O	1	2	3	4	5	6	7	8
1		2	3	4	10	5	6		7	8	9	10	11	12	13	14	15
		Risk & Value Management															
Contractor	MDL-971	Value Engineering Workshop Report (Value Management 3)	GRIP	Risk & Value Management	This product evaluates the effectiveness of each design option and identifies opportunities to add value and cost / efficiency benefits.	GRIP Product index	3.9	Deliverable Document					4	5			
Contractor	MDL-972	Lessons Learned Workshop Report (Value Management 4)	GRIP	Risk & Value Management	Network Rail's Investment Regulations stipulate that projects have a Completion Report that states the financial and programme targets and 'Lessons Learned' from the project. This product identifies key lessons that can be gained from the recently completed project. These can then be used as a starting point for future projects.	GRIP Product index	3.1	Deliverable Document								7	
		Consents & Approvals															
Contractor	MDL-973	Drainage Discharge Consent	GRIP	Consents & Approvals	The purpose of the Land and Consents Strategy is to identify the broad scope of land and consent requirements for a project and set out how these will be obtained/ satisfied and supported through the project. The Strategy is first required to be prepared in GRIP 1. From this point, the Strategy will be a live document that is reviewed as the project progresses.	GRIP Product index	4.1	Deliverable Document					4	5			
		Environmental Management															
Contractor	MDL-976	Environmental Action Plan	GRIP	Environmental Management	The purpose of the product is to assist the Project Managers in tracking environmental issues and risks throughout the design lifecycle. Building on previous TWAO work, the section from Choats Road to Railway boundary needs to be assessed.	GRIP Product index	5.2	Deliverable Document					4	5			
Contractor	MDL-2067	Environmental Risk Assessment	GRIP	Environmental Management	Building on previous TWAO work, the section from Choats Road to Railway boundary needs to be assessed.	GRIP Product index	5.2	Deliverable Document					4	5			
Contractor	MDL-977	Project Environment Strategy	GRIP	Environmental Management	The Project Environmental Strategy describes in greater detail the environmental management arrangements and activities needed to carry forward the Environmental Appraisal and Action Plan.	GRIP Product index	5.3	Deliverable Document					4	5			
Contractor	MDL-978	Materials and Design Waste Management Plan	GRIP	Environmental Management		GRIP Product index	5.8.1	Deliverable Document					4	5			
Contractor	MDL-2069	Sustainable Deisgn Action Plan	Pathway	Environmental Management	Produced by TfL at GRIP3 to be updated in GRIP 4 and 5.								4	5			
Contractor	MDL-1079	Carbon & Energy Efficiency Plan (CEEP)	Engineering Management	Environmental Management				Deliverable Document					4				
Contractor	MDL-1080	CEEQUAL Assessment	Engineering Management	Environmental Management				Deliverable Document					4				
Contractor	MDL-980	Environment Inspection Record	GRIP	Environmental Management	This product provides a template mechanism for the inspection and monitoring of all aspects relating to the Environment on a project.	GRIP Product index	5.11	Deliverable Document							6		
Contractor	MDL-2070	Environmental Action Plan	GRIP	Environmental Management	Implementation EAP by delivery contractor.	GRIP Product index	5.2	Deliverable Document							6		
Contractor	MDL-979	Materials and Design Waste Management Plan Acceptance (post construction phase)	GRIP	Environmental Management		GRIP Product index	5.8.2	Deliverable Document							6	7	
		Common Safety Method	**Engineering Management**														
Contractor	MDL-988	Project Hazard Log	GRIP	Common Safety Method (CSM)	The purpose of the Network Rail CSM Hazard Record is to provide a robust and comprehensive repository for risk management information, thereby providing sufficient evidence to facilitate an assessment of the correct application of the process by an independent body (the assessment body). It aims to align the existing mechanisms for safety data capture with the requirements of CSM. This realignment and the explicit identification of significant change by the NRAP should reduce the impact of the transition to CSM compliance.	GRIP Product index	6.3.3	Deliverable Document					4	5			
		Engineering Management	**Engineering Management**														
Contractor	MDL-599	Constructability Report including Staging Plans for Track, OLE Civils and Signalling at agreed GRIP stage	Engineering Management	Construction Mgt	Constructability Assessment (Construction Options, Buildability & Feasibility)	See Relevant Standard for Discipline Area for further detail		Deliverable Document					4	5			
Contractor	MDL-1045	Construction Compund and Access Plans	Engineering Management	Construction Mgt				Supporting Detail for a submission					4	5			
Contractor	MDL-1078	Quality Plan (All clauses selected by default)	Engineering Management	General		NR/L3/INI/CP0028		Deliverable Document					4	5	6	7	
Contractor	MDL-600	Details of Equipment and Materials	Engineering Management	Construction Mgt	Bill of Materials			Supporting Detail for a submission						5	6	7	
Contractor	MDL-602	Drawing Register	Engineering Management	Drawings	Document Controlled - register of drawings produced, often included as part of a design submission.			Deliverable Document					4	5	6	7	
Contractor	MDL-2066	BIM Execution Plan	Engineering Management	Drawings	Document Controlled - register of drawings produced, often included as part of a design submission.			Deliverable Document					4				
Contractor	MDL-604	CAD Quality Report	Engineering Management	General	CAD Compliance reporting on internal quality checking outputs within Designers orgnaisation, principles may be deatiled in the Quality Plan and BIM Execution plan.			Deliverable Document					4	5	6	7	8
Contractor	MDL-607	Integration Plan / Drawings All disciplne integrated General Arrangements	Engineering Management	Interfaces	BIM L2 compliant design model for the Project works and interfacing assets sufiicient to allow CAM for steelwork and Formwork, 4D virtual construction and signal sighting works. Bently Verticals, Bentley Raitrack and Bentley Microstation to be used	NR/L2/INI/02009		Deliverable Document					4	5			
Contractor	MDL-615	Maintenance Strategy	Engineering Management	Asset Management	Project during its lifecycle and asset specific following construction via a Proff of Maintenace Document.			Deliverable Document					4	5	6	7	
Contractor	MDL-751	Security Plan	Engineering Management	Security & Emergency	Plans / procedures to protect project locations / assets etc			Deliverable Document					4	5	6		
Contractor	MDL-608	Inter Disciplinary Design Check (IDC)	Engineering Management	Interfaces	Evidence normally as part of a report or minutes, following an IDC that demonstrates that the design is satisfactory and that any issues or risks are mitigated or an action plan is in place.	NR/L2/INI/02009		Deliverable Document					4	5	6		
Contractor	MDL-594	Updated Asset Register	Engineering Management	Asset Management	Geogis, CARRS updates			Deliverable Document							6	7	
Contractor	MDL-601	As Builts	Engineering Management	Construction Mgt	Relates to all disciplines and all projects. Design documentation describing the infrastructure that has been physically installed. Created as per discipline Standard requirements as appropriate for the design including but not limited to dimensions and geometry of design including gauging, utilities and drainage information.	NR/L2/INF/02018 See Relevant Standard for Discipline Area for detail E&P - 27406. Track - NR/L2/TRK/3201 : NR/L3/TRK003/TEF3034, TEF3049 & TEF 3050 Telecoms 30100	E&P Section 4 Track - NR/L2/TRK/3201 : SECTION 8.4	Deliverable Document							6	7	
Contractor	MDL-603	Approved for Construction Design	Engineering Management	Construction Mgt	The Network Rail accepted Design required to construct. The term "Approved for Construction" is found under CDM regulations	NR/L2/INI/CP0047		Deliverable Document							6		
		Asset Management Plan	**Engineering Management**														
Contractor	MDL-634	Snagging & Defects Register	Engineering Management	Maintenance	Register required to formally collate and mangae to close out all snags and defects that are identified as part of the construction and completion lifecycle. Sign off for completion required.			Deliverable Document								7	
		Utilities	**Engineering Management**														
Contractor	MDL-629	Statutory Utilities Requests	Engineering Management	Utilities	Building services Buried Services Underground Hazards			Deliverable Document					4	5	6		
Contractor	MDL-629a	Statutory Utilities Records	Engineering Management	Utilities	Building services Buried Services Underground Hazards			Deliverable Document					4	5	6	7	
		Records Health and Safety File	**Engineering Management**														
Contractor	MDL-630	Master Records Register (NRG) Request	Engineering Management	National Records Group	Request for Source Records for existing assets			Deliverable Document					4	5			
Contractor	MDL-1101	Health and Safety File	Engineering Management	National Records Group				Deliverable Document					4	5			
		Testing and Commisioning															
Contractor	MDL-636	Project Testing & Commissioning Plan	Engineering Management	Testing & Commissioning	EIS	Exists as part of Discipline relevant Standards	Telecoms, Signalling , E&P, EMC	Deliverable Document						5			
Contractor	MDL-637	Project Testing & Commissioning Strategy	Engineering Management	Testing & Commissioning	EIS	Exists as part of Discipline relevant Standards	Telecoms, Signalling , E&P, EMC	Deliverable Document					4	5	6		
Contractor	MDL-587	Engineering Completion Certificate (ECC)	Engineering Management	Assurance	The ECC will be expected to contain evidence for the acceptance of the project. This evidence might contain: Compliance Matrix System Design Justifications Test Reports Analysis Product Acceptance Certificates	NR/L2/INI/02009 & PAN/PMSE-E/CD/ADV/0094	0	Deliverable Document					4	5	6	7	
Contractor	MDL-762	Photographic Record	Engineering Management	Testing & Commissioning	Evidence to be provided as part of closeout and to record work completed to enable review at a letter date without necessitating a survey or site visit in the first instance.	NR/L2/INF/02202	Structure of the Health & Safety File	Deliverable Document					4	5	6		
Contractor	MDL-635	Testing & Commissioning Certificates	Engineering Management	Testing & Commissioning	Certification confirming testing and acceptance, including results, condition of any asset brought into operational use/entered into service. These can be both internally and externally produced and should form part of the Health & Safety File.	Exists as part of Discipline relevant Standards	Telecoms, Signalling , E&P, EMC, Track	Deliverable Document							6	7	
Contractor	MDL-932	Testing Specifications	Engineering Management	Testing & Commissioning	The detailed tests to be undertaken for the equipment concerned including pass/fail criteria and test sheets.	Exists as part of Discipline relevant Standards	Telecoms, Signalling , E&P, EMC	Deliverable Document							6	7	

Contractor	MDL-767	Test Results	Engineering Management	Testing & Commissioning	These are completed findings of tests undertaken.	Exists as part of Discipline relevant Standards	Telecoms, Signalling , E&P, EMC	Deliverable Document			6	7
Contractor	MDL-592	Operation & Maintenance Instructions/Manuals	Engineering Management	Maintenance	Content for H&S Files			Deliverable Document				7
		Systems Engineering	**Engineering Management**									
Contractor	MDL-631	Schedule of Deviations from Standards / Technical Non-Compliance (TNC)	Engineering Management	Assurance	Any NR or RSSB requires certification to be provided to evidence agreement of relevant body.			Deliverable Document	4	5	6	
Contractor	MDL-985	Engineering Compliance Certificate (ECC)	GRIP	Engineering	The purpose of the ECC is to formally accept evidence of compliance to the Technical Scope and Requirements Documentation, identify any formalised changes or variations to this scope, as well as present any non compliance to Network Rail Group Standards.	GRIP Product index	6.2	Deliverable Document	4	5		
Contractor	MDL-555	Technical Interface Management Plan	Engineering Management	Requirements	The purpose of this plan is to describe and define how interfaces between the physical systems and operations and maintenance will be managed, demonstrate the processes that will be used to identify the interfaces. The plan will also define how the interfaces identified will be aligned to programme requirements, and compliance will be proven.			Deliverable Document	4	5	6	
Contractor	MDL-545	Assumptions Register	Engineering Management	System Definition	An assumptions register provides a repository for all assumptions, dependencies and data sources that are used within a project. (Needs to be managed and reviewed throughout the project lifecycle)	0	0	Deliverable Document	4	5	6	7
		Systems Architecture	**Engineering Management**									
Contractor	MDL-557	System Architecture	Engineering Management	System Architecture	Could include one or more of the following examples: System Breakdown Structure Operational Systems Architecture Geographic Systems Architecture Functional Architecture Physical Architecture			Deliverable Document	4	5		
Contractor	MDL-550	Reliability Availability Maintainability (RAM) Plan	Engineering Management	System Reliability	Plan defining the RAM activities within a project/programme.			Deliverable Document	4	5		
Contractor	MDL-551	Systems Architecture Plan	Engineering Management	System Architecture	Plan defining the Systems Architecture activities within a project/programme as part of the SEMP			Deliverable Document	4			
		System Modelling	**Engineering Management**									
		Verification and Validation	**Engineering Management**									
Contractor	MDL-728	V&V Reporting Matrix	Engineering Management	Requirements	0	0	0	Deliverable Document	4	5	6	7
		EMC	**EMC**									
		Ergnomics	**Ergonomics**									
Contractor	MDL-563	Ergonomics Notification - Form 004	Engineering Management	Ergonomics	Classification of the Project and notification to the Professional Head of Ergonomics (Or the nominated representative)	NR/L2/ERG/24020	NR/L2/ERG/24020 Section: 5.0	Deliverable Document	4			
Contractor	MDL-564	Ergonomics Plan	Engineering Management	Ergonomics	Development of a programme for the completion of ergonomics deliverables identified in the PRS	NR/L2/ERG/24020	NR/L2/ERG/24020 - Section: 7.2	Deliverable Document	4	5		
Contractor	MDL-565	Ergonomics AIP - Form F005	Engineering Management	Ergonomics	This form is completed in support of the Single Option Selected for projects that require Ergonomic consideration.	NR/L2/ERG/24020	Section: 7.8	Deliverable Document		5		
Contractor	MDL-2053	Ergonomics and Human Factors Issues Log	Engineering Management	Ergonomics	This form is completed in support of the Single Option Selected for projects that require Ergonomic consideration.	NR/L2/ERG/24020		Supporting Detail for a submission	4	5		
Contractor	MDL-2054	Ergonomics and Human Factors Close Out Report	Engineering Management	Ergonomics		NR/L2/ERG/24020		Deliverable Document		5		
Contractor	MDL-567	Ergonomics Operational Readiness Form F006	Engineering Management	Ergonomics	As part of Entry Into Service Submission F006	NR/L2/ERG/24020	NR/L2/ERG/24020 - Section: 7.4	Deliverable Document			6	
		Interfaces	**Engineering Management**									
Contractor	MDL-568	Technical Interface Definition Specification	Engineering Management	Interfaces	Defines the (agreed) interfaces between physical systems and operations and maintenance. Defines the external interfaces and any internal interfaces. See SP's additional description - Note: Including Register of interfaces for the project - Integration needs to be considered			Deliverable Document	4	5	6	
Contractor	MDL-569	Technical Interface Register	Engineering Management	Interfaces	Including Register of interfaces for the project			Deliverable Document	4	5	6	7
		Contact systems - OLE	**Electrification and Plant**									
Contractor	MDL-14	Structures Interface Strategy	Electrification and Plant	Contact Systems - OLE	Details how the interface with structures owned by 3rd parties is to be managed in accordance with Civil Engineering Requirements	NR/L3/ELP/27406	Module B	Supporting Detail for a submission	4			
Contractor	MDL-1053	Form B Submission - Detail Design Contact Systems - OLE	Electrification and Plant	Contact Systems - OLE	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, installation and commissioning stages of the scheme to progress.	NR/L3/ELP/27406 NR/L2/ELP/27311	Module B	Deliverable Document		5		
Contractor	MDL-8	OLE Layout Plan	Electrification and Plant	Contact Systems - OLE	Required to identify new, modified redundant and future installations as part of the proposed scheme. (Form B to include height & stagger data - but not at Form A)	NR/L3/ELP/27406	Module B	Supporting Detail for a submission	4	5		
Contractor	MDL-26	Electrification Signage Schedule	Electrification and Plant	Contact Systems - OLE		NR/L2/SIG/11201 NR/L3/ELP/27406	Module B	Supporting Detail for a submission		5		
Contractor	MDL-27	Conductor Tension Records	Electrification and Plant	Contact Systems - OLE		NR/L2/SIG/11201 NR/L3/ELP/27406	Module B	Record				7
Contractor	MDL-24	Balance Wheel / Pulley Wheel Settings	Electrification and Plant	Contact Systems - OLE		NR/L2/SIG/11201 NR/L3/ELP/27406	Module B	Record			6	
Contractor	MDL-1098	Deatiled foundation Design OLE, and Ancillary Structures	Building and Civils	General	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, construction, installation and commissioning stages of the scheme to progress.	NR/L2/CIV/003		Deliverable Document			6	
Contractor	MDL-1047A	Detailed Design AFC -OLE structures (Foundations, Steelwork and Site Plans, General Arrangements including Cross sections)	Building and Civils	General		NR/L2/CIV/003		Deliverable Document	4	5		
Contractor	MDL-17	OLE Cross Sections and Allocation Schedules	Electrification and Plant	Contact Systems - OLE	Required for particular situations dependant on scope	NR/L3/ELP/27406	Module B	Supporting Detail for a submission		5		
Contractor	MDL-21	Schedule of Limited Clearances	Electrification and Plant	Contact Systems - OLE	To provide details of limited clearance locations, provide design clearance and any risk mitigation	NR/L3/ELP/27406	Module B	Supporting Detail for a submission		5		
Contractor	MDL-2019	Form E Submission - Engineering Completion	Electrification and Plant	General	Created on completion of installation in accordance with the Form B and appropriate testing and commissioning. Any known outstanding work (including snagging) must be included.	NR/L3/ELP/27406 NR/L2/ELP/27311	As detailed per Module	Record			6	
		Lighting	**Electrification and Plant**									
Contractor	MDL-2064	Form A Submission - Lighting White Hart Lane Station	Electrification and Plant	Lighting	The AIP submission is made when the scheme has been developed to such a stage that a single option has been determined, and the PRS requirements for development have been achieved, the information shall be presented to the RAM (E&P), or their representative, for approval.	NR/L3/ELP/27406	Module G	Deliverable Document	4			
Contractor	MDL-2065	Form B Submission - Detail Design Lighting White Hart Lane Station	Electrification and Plant	Lighting	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, installation and commissioning stages of the scheme to progress.	NR/L3/ELP/27406	Module G	Deliverable Document		5		
Contractor	MDL-118	General Arrangement Drawings	Electrification and Plant	Lighting	Drawings depicting the site layout to show the physical arrangement of all significant assets (buildings/ modules, HV/DC switchgear, transformers, marshalling/SCADA, cables routes etc.)	NR/L3/ELP/27406 RIS-7702-INS	Module G	Supporting Detail for a submission	4	5		
Contractor	MDL-119	Lux Levels	Electrification and Plant	Lighting	Statement identifying the lux levels to be achieved, with further detail Yes such as existing lux values, compliance , uniformity and basic lux calculations.	NR/L3/ELP/27406 RIS-7702-INS	Module G	Supporting Detail for a submission	4			
Contractor	MDL-120	Environmental Considerations	Electrification and Plant	Lighting	Where applicable basic lux calculations will be presented to confirm consideration has been given to energy efficiency, glare, signal sighting and obtrusive lighting.	NR/L3/ELP/27406 RIS-7702-INS	Module G	Supporting Detail for a submission	4			
Contractor	MDL-121	Electrical Calculations Report	Electrification and Plant	Lighting	This document should detail the methodology followed for the protection study and should include all the calculations relevant to the design.	NR/L3/ELP/27406 RIS-7702-INS	Module G	Supporting Detail for a submission	4			
Contractor	MDL-122	Earthing & Bonding Strategy	Electrification and Plant	Lighting	Include details of any connections to traction return and if required provide details of any staging works. Distances between all bonded equipment should be clearly identified.	NR/L3/ELP/27406 RIS-7702-INS	Module G	Supporting Detail for a submission	4	5		
Contractor	MDL-1044	Emergency Lighting Design	Electrification and Plant	Lighting		NR/L1/FIR/100 NR/L1/FIR/101 BS 5266 RIS-7702-INS		Supporting Detail for a submission	4	5		
Contractor	MDL-123	Interface with Existing Infrastructure	Electrification and Plant	Lighting	This confirms that the proposals will be acceptable to other disciplines (e.g. signalling operations) and the main users of the facility being installed/renewed. It assesses impact of works on other infrastructure.	NR/L3/ELP/27406	Module G	Supporting Detail for a submission	4	5		
Contractor	MDL-2030	Form E Submission - Engineering Completion	Electrification and Plant	General	Created on completion of installation in accordance with the Form B and appropriate testing and commissioning. Any known outstanding work (including snagging) must be included.	NR/L3/ELP/27405	Module G	Record			6	
		Building and Civils	**Building and Civils**									
Contractor	MDL-251	Standard Design Application / Check	Building and Civils	General		NR/L2/CIV/003 & NR/L3/CIV/151	5.6 (8)	Supporting Detail for a submission	4	5		
Contractor	MDL-252b	Form 2 Submission - Temporary Works	Building and Civils	General		NR/L2/CIV/003		Deliverable Document			6	

Contractor	**MDL-252c**	Form 3 Submission - Temporary Works	Building and Civils	General	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, construction, installation and commissioning stages of the scheme to progress.	NR/L2/CIV/003		Deliverable Document							6		
Contractor	**MDL-253**	Fire Engineering Report	Building and Civils	Fire	Including emergency evacuation	NR/L1/FIR/100 NR/L1/FIR/101 BS 5266 RIS-7700-INS		Deliverable Document					4				
Contractor	**MDL-257**	Form 2 Submission - Statement of Design Intent all assets as required	Building and Civils	General		NR/L2/CIV/003		Deliverable Document					4				
Contractor	**MDL-258**	Form 3 Submission - Detailed Design All Assets as required	Building and Civils	General	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, construction, installation and commissioning stages of the scheme to progress.	NR/L2/CIV/003		Deliverable Document						5			
Contractor	**MDL-2056**	Form 4 Submission - Architectural Design and Specifications	Building and Civils	General	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, construction, installation and commissioning stages of the scheme to progress.	NR/L2/CIV/004							4				
Contractor	**MDL-2057**	Form 1 Submission - AIP Demolition and Downtaking.	Building and Civils	General	The AIP submission is made when the scheme has been developed and a single option has been determined. The PRS requirements have been achieved.	NR/L2/CIV/003		Deliverable Document					4				
Contractor	**MDL-2058**	Form 2 Submission - Statement of Design Demolition and Downtaking.	Building and Civils	General		NR/L2/CIV/003		Deliverable Document					4				
Contractor	**MDL-2059**	Form 3 Submission - Detailed Design Demolition and Downtaking.	Building and Civils	General	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, construction, installation and commissioning stages of the scheme to progress.	NR/L2/CIV/003		Deliverable Document						5			
Contractor	**MDL-2047**	Manufacturing Drawings - Steelwork	Building and Civils	General	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, construction, installation and commissioning stages of the scheme to progress.	NR/L2/CIV/003		Deliverable Document							6		
Contractor	**MDL-2048**	Pile Design	Building and Civils	General	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, construction, installation and commissioning stages of the scheme to progress.	NR/L2/CIV/003		Deliverable Document							6		
Contractor	**MDL-1098**	Deatiled foundation Design OLE, Signalling and Ancillary Structures	Building and Civils	General	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, construction, installation and commissioning stages of the scheme to progress.	NR/L2/CIV/003		Deliverable Document							6		
Contractor	**MDL-1047A**	Detailed Design AFC -OLE structures (Foundations, Steelwork and Site Plans, General Arrangements including Cross sections)	Building and Civils	General		NR/L2/CIV/003		Deliverable Document					4	5			
Contractor	**MDL-261**	Additional Design Criteria Specification	Building and Civils	General	Details of the design criteria not covered in Standards, normally used, additional maintenance choices not specified by the Asset Manager.	NR/L2/CIV/003	5.3 (1.)	Supporting Detail for a submission					4				
Contractor	**MDL-262**	Application of Structural Eurocodes	Building and Civils	General	Decisions on the options selected of applying Structural Eurocodes	NR/L2/CIV/003	5.3 (2) & 5.6 (2)	Supporting Detail for a submission					4				
Contractor	**MDL-264**	Preliminary Staging of the Works	Building and Civils	General	Including details of proposed stages and associated method of work, demonstrating the structural adequacy and integration with new, altered and existing structures at all stages of construction	NR/L2/CIV/003	5.6(1)	Deliverable Document					4	5			
Contractor	**MDL-264a**	Implementation Staging of the Works	Building and Civils	General	Including details of proposed stages and associated method of work, demonstrating the structural adequacy and integration with new, altered and existing structures at all stages of construction	NR/L2/CIV/003	5.6(1)	Deliverable Document							6		
Contractor	**MDL-265**	Design Checklist	Building and Civils	General	Review the Design Checklist and strike out non-applicable items	NR/L2/CIV/003	5.6 (4)	Supporting Detail for a submission					4				
Contractor	**MDL-266**	Schedule of Continuation of Use	Building and Civils	General	Type & extent of elements of existing structures and services required to continue in use in association with new construction	NR/L2/CIV/003	5.6 (5)	Supporting Detail for a submission					4				
Contractor	**MDL-267**	Schedule of Hidden Parts - Retained	Building and Civils	General	Details for all hidden parts to be retained, including justification, investigations and proposed remedial works. Arrangements for visual observation and/or techniques for verification of structural integrity should also be included.	NR/L2/CIV/003	5.3 (5) & 5.6 (6)	Supporting Detail for a submission					4				
Contractor	**MDL-268**	Schedule of Hidden Parts - New	Building and Civils	General	Details for all hidden parts to be introduced by the works, including justification and arrangements for visual observation and/or techniques for verification of structural integrity should also be included.	NR/L2/CIV/003	5.3 (5) & 5.6 (6)	Supporting Detail for a submission					4	5			
Contractor	**MDL-1060**	Form AA for structures modified or affected by the works	Building and Civils	General	Details for all hidden parts to be introduced by the works, including justification and arrangements for visual observation and/or techniques for verification of structural integrity should also be included.	NR/L2/CIV/003	0	Deliverable Document					4				
Contractor	**MDL-2026**	Form BA for structures modified or affected by the works	Building and Civils	General	Details for all hidden parts to be introduced by the works, including justification and arrangements for visual observation and/or techniques for verification of structural integrity should also be included.	NR/L2/CIV/003	0	Deliverable Document						5			
Contractor	**MDL-260**	Form 5 Submission - Certificate of Fitness to Be Taken into Use (Completion)	Building and Civils	General		NR/L2/CIV/003		Record							6		
		Buidlings Sevices and Plant	**Electrical & Plant**														
Contractor	**MDL-1074**	Form B Submission - Detail Design Plant and Services incluidng cable manegment systems	Electrification and Plant	General	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, installation and commissioning stages of the scheme to progress.	NR/L3/ELP/27406		Deliverable Document						5			
Contractor	**MDL-1025**	Lifts Schedule - 1	Electrification and Plant	Lifts		NR/SP/ELP/27228 NR/GN/ELP/27230		Deliverable Document					4				
Contractor	**MDL-1026**	Lifts Schedule - 2	Electrification and Plant	Lifts		NR/SP/ELP/27228 NR/GN/ELP/27230		Deliverable Document						5			
Contractor	**MDL-1027**	DNO Supply Design	Electrification and Plant	DNO		GI/RT7007		Deliverable Document					4				
Contractor	**MDL-1028**	DNO Supply application	Electrification and Plant	DNO		GI/RT7007		Deliverable Document					4				
Contractor	**MDL-1029**	DNO Installation Design	Electrification and Plant	DNO		GI/RT7007		Deliverable Document							6		
Contractor	**MDL-1030**	LV Distribution Load calculations	Electrification and Plant	LV		GI/RT7007		supporting Detail for a submission					4	5			
Contractor	**MDL-1031**	LV Distribution Design	Electrification and Plant	LV		BS7671		supporting Detail for a submission					4	5			
Contractor	**MDL-1033**	LV system Earthing and Bonding Strategy	Electrification and Plant	LV		GI/RT7007		Deliverable Document					4				
Contractor	**MDL-1034**	Uniterruptible Power supply Design	Electrification and Plant	UPS				Deliverable Document					4	5			
Contractor	**MDL-2040**	Form E Submission - Engineering Completion	Electrification and Plant	General	Created on completion of installation in accordance with the Form B and appropriate testing and commissioning. Any known outstanding work (including snagging) must be included.	NR/L3/ELP/27406		record							6		
		Telecommunications	**Telecommunications**														
Contractor	**MDL-383**	Detail Design Submission Retail Comms	Telecommunications	General	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, installation and commissioning stages of the scheme to progress.	NR/L2/TEL/30022	5.2.2	Deliverable Document						5			
		CCTV Transmission	**Telecommunications**														
Contractor	**MDL-2045**	Form B Submission - Detail Design CCTV Transmission	Telecommunications	CCTV Transmission	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, installation and commissioning stages of the scheme to progress.			Deliverable Document						5			
Contractor	**MDL-399**	Circuit Allocations	Telecommunications	CCTV Transmission				Supporting Detail for a submission						5			
Contractor	**MDL-400**	Fibre locations joints and allocations	Telecommunications	CCTV Transmission				Supporting Detail for a submission						5			
Contractor	**MDL-401**	Codec types and locations	Telecommunications	CCTV Transmission				Supporting Detail for a submission						5			
Contractor	**MDL-402**	IP addressing	Telecommunications	CCTV Transmission				Supporting Detail for a submission						5			
Contractor	**MDL-403**	Interface design	Telecommunications	CCTV Transmission				Supporting Detail for a submission						5			
Contractor	**MDL-404**	Availability calculations	Telecommunications	CCTV Transmission				Supporting Detail for a submission						5			
Contractor	**MDL-405**	Proposed Camera shots (Using tripods)	Telecommunications	CCTV Transmission				Supporting Detail for a submission					4				
Contractor	**MDL-406**	Final Camera Shots	Telecommunications	CCTV Transmission				Supporting Detail for a submission						5			
Contractor	**MDL-407**	UPS/Power requirements	Telecommunications	CCTV Transmission				Supporting Detail for a submission						5			
Contractor	**MDL-408**	Cone Diagrams/coverage plot (software)	Telecommunications	CCTV Transmission				Supporting Detail for a submission						5			
Contractor	**MDL-409**	Product Approval/Trial criteria	Telecommunications	CCTV Transmission				Supporting Detail for a submission						5			
Contractor	**MDL-2046**	Form E Submission - Engineering Completion	Telecommunications	CCTV Transmission	Created on completion of installation in accordance with the Form B and appropriate testing and commissioning. Any known outstanding work (including snagging) must be included.			record							6		
		IP Networks and Systems	**Telecommunications**														
Contractor	**MDL-1084**	Form B Submission - Detail Design IP Networks and Systems	Telecommunications	IP Networks and Systems	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, installation and commissioning stages of the scheme to progress.			Deliverable Document						5			
Contractor	**MDL-439**	Network Schematics	Telecommunications	IP Networks and Systems				Supporting Detail for a submission					4	5			

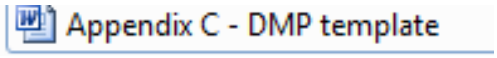
Contractor	MDL-440	Quality of Service Design Strategy	Telecommunications	IP Networks and Systems	Availability, Throughput, Delay/ latency, Delay variation, including jitter and wander, Packet loss, etc.			Supporting Detail for a submission					4				
Contractor	MDL-441	Bandwidth Requirements	Telecommunications	IP Networks and Systems				Supporting Detail for a submission						5			
Contractor	MDL-442	LAN/WAN Design	Telecommunications	IP Networks and Systems				Deliverable Document						5			
Contractor	MDL-443	Bandwidth Availability Calculations	Telecommunications	IP Networks and Systems				Supporting Detail for a submission						5			
Contractor	MDL-444	IP Addressing Details	Telecommunications	IP Networks and Systems	Consultation is required between the Designer and LOROL to agree the IP Addressing Detail for the SISS network requirements.			Supporting Detail for a submission						5			
		Station Information & Security Systems	**Telecommunications**														
Contractor	MDL-1088	Form B Submission - Detail Design SISS	Telecommunications	SISS	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, installation and commissioning stages of the scheme to progress.			Deliverable Document						5			
Contractor	MDL-436	SISS bonding design	Telecommunications	SISS	Detail design for earthing and bonding arrangements for SISS, E&P Discipline normally take the lead with Earthing & Bonding requirements but will require relevant information from each other discipline.	NR BR 13422		Deliverable Document					4	5			
Contractor	MDL-478	Train Operator & Station Requirements (Including Clocks)	Telecommunications	SISS				Supporting Detail for a submission					4				
Contractor	MDL-479	Station - Safety & Security Risk Assessment (including CCTV)	Telecommunications	SISS				Supporting Detail for a submission					4				
Contractor	MDL-480	Station CCTV - Train Operator and Local Authority & BTP Requirements	Telecommunications	SISS				Supporting Detail for a submission					4				
Contractor	MDL-481	PA - Zones and Announcement Schedule	Telecommunications	SISS				Supporting Detail for a submission						5			
Contractor	MDL-482	PA / PAVA; Induction Loops - Location and Coverage; Speaker Types and Mounting Arrangements	Telecommunications	SISS				Supporting Detail for a submission						5			
Contractor	MDL-483	Induction Loop Design	Telecommunications	SISS				Supporting Detail for a submission					4	5			
Contractor	MDL-447	Help Points	Telecommunications	Lineside Telephones (including Tunnel Telephones & direct line)	Detail Design for location of Help Points and designation of Emergency and Information Calls			Supporting Detail for a submission					4	5			
Contractor	MDL-484	Station Management System / SISS control Design & Commissioning	Telecommunications	SISS				Supporting Detail for a submission						5			
Contractor	MDL-485	Operator Facilities	Telecommunications	SISS				Supporting Detail for a submission						5			
Contractor	MDL-486	Camera Mounting Arrangements	Telecommunications	SISS				Supporting Detail for a submission						5			
Contractor	MDL-487	Proposed Camera shots (Using tripods)	Telecommunications	SISS				Supporting Detail for a submission					4				
Contractor	MDL-489	Cone Diagrams/coverage plot (software)	Telecommunications	SISS				Supporting Detail for a submission						5			
Contractor	MDL-490	Calculation of Recording Rate and Quality (CIF Level)	Telecommunications	SISS				Supporting Detail for a submission						5			
Contractor	MDL-491	Camera Mounting Arrangements incl. Loading Calculations	Telecommunications	SISS				Supporting Detail for a submission						5			
Contractor	MDL-492	Power Supply Arrangements	Telecommunications	SISS				Supporting Detail for a submission						5			
Contractor	MDL-493	System schematic	Telecommunications	SISS				Supporting Detail for a submission						5			
Contractor	MDL-494	UPS Requirements	Telecommunications	SISS				Deliverable Document					4				
Contractor	MDL-495	Local/Remote monitoring and workstations	Telecommunications	SISS				Deliverable Document					4	5			
Contractor	MDL-488	Final Camera Shots	Telecommunications	SISS				Record							6		
		Track	**Track**														
Contractor	MDL-165	Form B - Approval of Detailed Design & Checking	Track	General	The detailed design shall be prepared to comply with the CR-T, contain sufficient technical information, to allow the manufacturing, installation and commissioning stages of the scheme to progress.	NR/L2/TRK/2500	5.2.4	Deliverable Document						5			
Contractor	MDL-167	Drawing Register	Track	General	Document Controlled - register of drawings produced.	NR/L2/TRK/2500	Appendix A	Supporting Detail for a submission					4	5	6		
Contractor	MDL-168	Layout Plan	Track	Switches & Crossings	Drawings that define the general arrangement of the proposed Track layout	NR/L2/TRK/2500	Appendix A	Supporting Detail for a submission					4	5			
Contractor	MDL-169	Staging Drawing	Track	Switches & Crossings	Drawings that define distinct construction stages within a project to enable a contractor to install the works over several access periods.	NR/L2/TRK/2500	Appendix A	Supporting Detail for a submission					4	5			
Contractor	MDL-170	Longitudinal Section	Track	Switches & Crossings & Plain Line	Drawings that define the existing and designed vertical gradients and curves of Track.	NR/L2/TRK/2500	Appendix A	Supporting Detail for a submission					4	5			
Contractor	MDL-171	Track Drainage Design	Track	Switches & Crossings & Plain Line	To include existing drainage details where applicable, Outline Design at GRIP 3/4 and Detail Design at GRIP 5. To include diameters, gradients & outfalls if applicable.	NR/L2/TRK/2500	Appendix A	Supporting Detail for a submission					4	5			
Contractor	MDL-172	Horizontal Alignment Design	Track	Switches & Crossings & Plain Line	Using straight curve and transition elements a horizontal design is produced that meets the needs of the PRS requirements.	NR/L2/TRK/2500	Appendix A	Supporting Detail for a submission					4				
Contractor	MDL-173	Typical Cross sections	Track	Switches & Crossings & Plain Line	If required, perpendicular sections detailing features such as Track ballast formation and drainage.	NR/L2/TRK/2500	Appendix A	Supporting Detail for a submission					4	5			
Contractor	MDL-174	Clearance information at Structures, Gauging Report	Track	Switches & Crossings & Plain Line	Gauging information existing and proposed relating to structures in close proximity. E.g. Bridges & Platforms etc. At GRIP 5 this will require updating and amended existing & proposed tie details to existing marker plates.	NR/L2/TRK/2500	Appendix A	Deliverable Document					4				
Contractor	MDL-175	Formation Investigation Report	Track	Switches & Crossings & Plain Line	Record of ground investigation and analysis of existing formation (Track Bed) to determine proposed solutions.	NR/SP/TRK/4239	Appendix A	Deliverable Document					4				
Contractor	MDL-176	Formation Treatment Plan	Track	Switches & Crossings & Plain Line	Recommendations for formation (Track Bed) treatments based upon factual and interpretive report findings.	NR/SP/TRK/4239	Appendix A	Supporting Detail for a submission						5			
Contractor	MDL-177	Formation Design	Track	Switches & Crossings & Plain Line	The design of the formation (Track Bed) based upon the Formation Treatment Plan. Taking into account drainage needs.	NR/SP/TRK/4239	Appendix A	Supporting Detail for a submission						5			
Contractor	MDL-178	Line Diagram	Track	Switches & Crossings & Plain Line	Usually forms part of the Layout Plan. A schematic showing layout and existing and proposed line speeds	NR/L2/TRK/2500	Appendix A	Supporting Detail for a submission					4				
Contractor	MDL-181	Interface Drawing/Plan - Fully BIM compliant GA	Track & All Interfacing Disciplines	Switches & Crossings & Plain Line	Interdisciplinary General drawing used to indicate the position of proposed works interfacing with the Track design, such as the position of proposed cable routes, UTX's & Location Cases.	NR/L2/TRK/2500	Appendix A	Deliverable Document						5			
Contractor	MDL-182	Stressing Methodology / Plan	Track	Switches & Crossings & Plain Line	Required to demonstrate that proposed Trackwork can be stressed post installation. It is NOT the definitive plan that will be used during installation.	NR/L2/TRK/2500	Appendix A	Supporting Detail for a submission						5			
Contractor	MDL-903	Form G - Infrastructure Conformance Certificate	Track	General	and will contribute to Health & Safety File	NR/L2/TRK/001/MOD13	7	Record							6	7	
Contractor	MDL-904	Handback Form A: Track Geometry Certificate	Track	General	Documents the checks the speedraiser carries out in order to open the track.	NR/L2/TRK/001/MOD13	7	Record							6	7	
Contractor	MDL-905	Handback Form B: System Component Certificate	Track	General	Checks the Track system down to component level installed & completed correctly	NR/L2/TRK/001/MOD13	7	Record							6	7	
Contractor	MDL-906	Handback Form C: CWR Stress Condition Record	Track	General	Stressing record for the file, to record any mitigation required as a result of the work	NR/L2/TRK/001/MOD13	7	Record							6	7	
Contractor	MDL-907	Handback Form D: Signalling Re-Connection Certificate	Track	General	Documented check that the signalling system is fit for use following works to the Track (Bonds/point operating equipment)	NR/L2/TRK/001/MOD13	7	Record							6	7	
Contractor	MDL-908	Handback Form E: Electrification Certificate	Track	General	Documented check that the overhead line or conductor rail system is fit for use following works to the Track.	NR/L2/TRK/001/MOD13	7	Record							6	7	
Contractor	MDL-909	Handback Form F: Site Condition & Speed Restriction Signage Certificate	Track	General	Where a speed restriction is required, this form records the opening speed restriction and makes other more general required checks.	NR/L2/TRK/001/MOD13	7	Record							6	7	
Contractor	MDL-911	Critical Rail Temperature Management Plan	Engineering Management	Critical Rail Temperature	This plan is required to be produced by any Project or Programme whenever the proposed works plan is to disturb the track or the track support Zone.	NR/L2/TRK/001 - Mod 14 & PAN/IP(T)/C/ADV/0058	Scope Section	Deliverable Document							6		
Contractor	MDL-912	Critical Rail Temperature (CRT) Register	Engineering Management	Critical Rail Temperature	The DPE shall provide the Principal Contractor's, Contractor's Engineering Manager (CEM) with the Critical Rail Temperature Register format specified nationally as per template. It is the responsibility of the PM and the CEM to make sure that the CRT Register is populated and issued at the pre-agreed frequency (recorded in the Asset Management Plan) to the local Track Maintenance Engineer.	NR/L2/MTC/088 & PAN/IP(T)/C/ADV/0058	0	Deliverable Document							6		
Contractor	MDL-1092	Stucture Gauging Record files, .scp and .sco formats	Track	Gauging				Record							6		
Contractor	MDL-1093	Platform Gauging Record Sheet TEF3034	Track	Gauging				Record							6		
Contractor	MDL-1036	Track Geometry Monitoring Plan	Engineering Management	Track Monitoring of excavation in support zone			0	Deliverable Document							6		
Contractor	MDL-1099	AFC Track installation Deisgn, setting out, construction details and installtion design files	Track				0	Deliverable Document							6		

- **Infrastructure Requirements - Health & Safety (IR-H&S)**

  Section 3 – Infrastructure Requirements – Health & Safety

  Document: LWHL-ALLW-HSE-REQ-RFL-00001 revision B01

  Note that Appendix C (Design Management Plan Template) of this document is provided on the CD-ROM that forms part of this contract:

  Template reference F-10740 Version A02App C

London Overground
White Hart Lane Station Upgrade Project

Section 3 – Infrastructure Requirements – Health & Safety

LWHL-ALLW-HSE-REQ-RFL-00001

Revision B01

August 2016

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Project: White Hart Lane Station Upgrade (LOWHL)

Document reference:LWHL-ALLW-HSE-REQ-RFL-00001_B01

Section 3 – Infrastructure Requirements – Health and Safety

		Signature	Date
Prepared by	[redacted] HSE Manager		
		Signature	Date
Accepted by	[redacted] Project Development Manager	[redacted]	2/11/16
	[redacted] Project Manager	[redacted]	2/11/16

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1. Health, Safety and Environment Requirements

1.1 Legislation and Standards

The *Contractor* shall comply with all current safety, health, welfare and environmental legislation and with all current approved Codes of Practice.

The *Contractor* shall comply with all notified TfL and other Standards.

1.2 HSE Meetings

Health and Safety will be an agenda item at all project meetings which are described elsewhere in the Contract.

2. Health Safety and Environment Management System

2.1 HSE Management System

Unless otherwise agreed with the Project Manager, the *Contractor's* H&S Management System arrangements shall comply with the following requirement:

- The *Contractor* shall operate a health and safety management system that, as a minimum, meets the requirements contained in OHSAS 18001, HSG65 or can be demonstrated as equivalent

2.2 HSE KPI reporting

The *Contractor* shall report its own and its subcontractors HSE performance to the *Employer* on a periodic basis. The data shall be provided in the format prescribed by the *Employer* (details of the current requirements can be found in Appendix A. The data is to be submitted within 3 business days of the TfL accounting period ending.

2.3 Audit

The *Contractor* shall provide a risk-based Health, Safety and Environmental audit schedule. The reports completed after all audits shall be forwarded to the Project Manager, for information, within 2 weeks of the audit being completed. The report shall include details of any identified issues and any proposed corrective actions. The report shall be reviewed during periodic HSE progress meetings.

The *Contractor* allows the *Employer* to observe or participate in these audits and to conduct additional independent audits, acting reasonably with the cooperation of the *Contractor*, to provide Assurance that the *works* are being conducted in accordance with the contract requirements. The *Contractor* shall provide the facilities and access necessary for these audits to be carried out.

2.4 Inspections

The *Contractor* shall undertake regular Health, Safety and Environmental inspections of the Site at a frequency agreed with the Project Manager to monitor performance in

respect of health, safety and the environment. Completed inspection reports shall be submitted to the Project Manager for Information no later than 5 business days following the date of inspection.

The *Contractor* allows the *Employer* to observe or participate in these inspections and to conduct additional independent inspections, as they consider appropriate, to provide assurance that the works are being carried out in accordance with the contract requirements.

2.5 Incident Reporting and Investigation

The *Contractor* shall report all HSE incidents, accidents and near miss events which occur during the Contract via the TfL Incident Line before the end of the shift in which the incident occurred. (Details of how to report an incident to the TfL Incident Line are provided in Appendix B).

The *Contractor* shall, within forty eight (48) hours submit an initial written report and after 14 days a full report detailing as a minimum the following:

- Description of the incident
- Immediate actions taken
- Immediate causes
- Root causes
- Actions taken to prevent a recurrence;

With the agreement of the Project Manager a longer timescale to complete the final report may be agreed.

All investigation reports will be completed to establish root causes and to a level of detail acceptable at the time to the *Employer*. Any comments provided by the *Employer* shall be addressed by the *Contractor* and an updated report submitted if required.

Where serious accidents occur – Major injuries and Dangerous Occurrence (as defined in RIDDOR) - these shall be subject to a thorough formal investigation. The *Employer* reserves the right to take part in any investigation led by the *Contractor* and/or in certain instances lead their own investigation.

If the incident is serious enough to warrant press attention – all communications with the press will be via the *Employer*.

Nothing in this document supersedes the *Contractor's* responsibility for statutory reporting of incidents/accidents.

3. Health, Safety and Environmental Competence and Training

3.1 HSE Advice

The *Contractor* shall at all times have access to competent Health, Safety and Environmental support to fully implement all the applicable HSE requirements and to ensure a presence on Site at regular periods for inspections, advice and instruction.

3.2 HSE Training

All operatives and management on site employed directly or indirectly by the *Contractor* shall have received such HS&E training the work they are required to undertake and are to be made fully aware of the techniques and procedures to be used during the works with regard to their own health and safety and the health and safety of others and the protection of the environment.

3.3 Licenses

The following licenses are required when working for London Rail:

London Overground

- London Overground Induction (when working on the East London Line)
- PTS (when working on or near the track)
- COSS (when controlling works on or near the track)

3.4 Briefings

The *Contractor* shall attend any HSE briefings specified by the *Employer* and include all relevant information from these in their own briefings.

The *Contractor* shall ensure that all visitors to the Site (including Employers staff) are provided with HSE briefing and induction, which will include as a minimum an overview of the activities taking place on Site, the likely hazards on site, the areas where they are permitted to walk, emergency evacuation routes, PPE and First Aid. These briefings/inductions must be aligned with the *Employer's* local inductions where applicable.

The *Contractor* shall make available to the *Employer* a record of training and the relevant certification for all of their site operatives under their control in order to demonstrate that the operatives are suitably qualified for the operations they are carrying out.

The *Contractor* shall arrange regular relevant toolbox talks for his staff, and maintains a register of attendees of these sessions for the Project Manager to inspect. The *Contractor* shall take a pro-active stance on promoting health, safety and environmental awareness on the site and may be asked to participate acting reasonably in any *Employer* led HSE forums and campaigns.

3.5 Construction Skills Certification Skills

The *Contractor* shall ensure that all employees, sub contractors and suppliers of any tier and other contractors entering the Working Areas are in possession of a valid

Construction Skills Certification Scheme (CSCS) card. The *Contractor* shall ensure that the CSCS card held by individuals is appropriate to the specific role on the project.

An exception to this requirement is granted where the individual holds a valid card from a CSCS affiliated or amalgamated scheme or other accepted scheme which has been assessed as meeting similar standards. Dispensation against this requirement may given by the *Employer's* Project Manager following a written request by the *Contractor*.

3.6 Non English Speaking Workers

The *Contractor* shall have adequate arrangements in place to communicate health and safety information to non-fluent English speakers on site such that:

- They receive the required HSE training/briefing (including any emergency procedures before commencing the work);
- Instructions are effectively communicated to, and understood by, all such team members

These arrangements shall be described in the Construction Phase Plan.

3.7 Safety Critical Work

The *Contractor* shall identify all Safety Critical tasks (as defined by Railways and Other Guided Transport Systems (Safety) Regulations 2006 and amendments) associated with the Contract and agree these with the *Employer*.

The *Contractor* shall demonstrate that they have suitable and sufficient arrangements in place to monitor the competence and fitness of those carrying out safety critical tasks. These arrangements should be described in the Construction Phase Plan.

The *Contractor* shall provide a means of identification for all staff employed on safety critical tasks.

4. CDM

4.1 Client

The *Employer* is the Client for the purposes of the CDM Regulations 2015.

4.2 Principal Contractor, Principal Designer and Designer

The *Contractor* is appointed as Principal Contractor and Principal Designer as required by the Construction (Design and Management) Regulations 2015 from the Contract Date.

4.3 F10

The F10 will be provided by the *Employer* and shall be displayed in the site offices by the *Contractor*.

4.4 Health and Safety File

A Health and Safety File shall be produced for all projects, even where there is only one contractor involved. The *Contractor* shall work with the *Employer* and/or Principal Designer to compile the Health and Safety File in a format specified by the *Employer*..

Where the Principal Designer appointment is terminated or where there is no Principal Designer appointment the *Contractor* shall be responsible for the compiling of the Health and Safety File.

4.5 Design Management Arrangements

The *Contractor* shall describe its arrangements for managing the pre-construction phase in a Design Management Plan (DMP) (or equivalent). The DMP shall include details how the health, safety, environment, sustainability and CDM requirements of the design will be met and managed.

All topics set out in the TfL Pathway DMP template (provided in Appendix 4) shall be addressed.

5. PPE

The *Contractor* shall assess and provide the appropriate PPE for his personnel, sub-contractors, suppliers and visitors.

The *Employer* requires that high visibility clothing compliant with:

- Railway Group Standard GO/RT3279

must be worn at all times when on or near the line or lineside.

This high visibility clothing shall carry the *Contractor's* company name. The *Contractor's* staff shall not wear London Rail branded high visibility clothing, unless working under a 'labour only' contract and requested to by the Project Manager.

Contractors shall not wear any garment or article that impedes their vision or hearing when working for London Rail, unless required as part of a safe system of work e.g. hearing protection.

The wearing of hats, clothing with hoods and any other headwear is prohibited when working for London Rail with the exception of:

- Hoods or headwear required as PPE in response to a risk assessment
- Headwear specifically designed:
    - To be compatible with PPE and
    - Not to impede vision or hearing

6. Hazardous Materials

6.1 Control of Substances Hazardous to Health (COSHH)

The *Contractor* is obliged to notify the *Employer* of any substances to be used in the works that are, or may be, classified as hazardous and which could impact on others in the vicinity of the work where the material is to be used. The *Contractor* shall provide full details of such substances, including storage details and the Risk Assessment for the works to be undertaken. These details shall be submitted to the Project Manager prior to the work involving these materials commencing.

6.2 Asbestos

The *Employer* will supply all information in his possession in respect of the presence of asbestos within the site. The information will be included in the Health and Safety Pre-Construction Information. Based on this information, the *Contractor* shall liaise with the *Employer* to determine where additional surveys will be required and the type of survey to be undertaken.

Where the *Contractor* believes that they have disturbed asbestos as a consequence of their works, they shall stop works immediately, inform the Project Manager and report the incident as a Near Miss via the TfL reporting line

7. Site Rules

7.1 Agreement of Site Rules

The *Contractor* shall propose site rules for agreement by the *Employer* and shall ensure that all persons for whom the *Contractor* is responsible abide by the same. The Site Rules shall be included in the Construction Phase Plan.

7.2 Drugs and Alcohol

The *Contractor* shall operate a drugs and alcohol policy at least as stringent as; London Overground Misuse of Drugs; London Overground Alcohol at Work Procedure; Railway Group Standard GE/RT8070 where safety critical work is to be undertaken on Network Rail infrastructure.

The *Contractor* shall implement suitable arrangements to verify compliance with its policy including undertaking the necessary alcohol and drug testing. In addition the *Contractor* shall co-operate with the *Employer* who may require the execution of random and/or for cause alcohol and drug tests. The *Contractor* shall provide records of testing if requested by the *Employer*. The testing arrangements shall be described in the Construction Phase Plan.

7.3 Smoking

Smoking (including e-cigarettes) within the working areas is prohibited with the exception of designated smoking areas. The *Contractor* shall provide suitably signed designated smoking areas within the working areas close to welfare facilities but

away from the work locations, site access routes and sensitive neighbouring properties. The *Contactor* shall take all reasonable measures to prevent personnel under his control from smoking on the streets adjacent to worksites.

8. Documentation

8.1 Construction Phase Plan

The Contractor shall ensure that all Health, Safety and Environment Pre-Construction Information provided by the *Employer* is addressed in the Construction Phase Plan (CPP) and/or the Environmental Management Plan (EMP) in the format agreed with the *Employer*. For smaller scale works and with the agreement of the *Employer*, the EMP can be incorporated into the CPP.

The Construction Phase must not start before a suitable CPP and EMP are in place and accepted by the Employer.

For larger/more complex projects, a separate Security Plan may be required, otherwise Security arrangements shall be incorporated into the CPP.

For larger/more complex projects a separate Traffic Management Plan may be required, otherwise traffic management arrangements shall be incorporated into the CPP.

The *Contractor* shall maintain the CPP as required by the CDM Regulations. Following the *Employer's* acceptance of the initial CPP, subsequent updates shall be submitted to the *Employer* for acceptance.

8.2 Emergency Preparedness Plan

The Emergency Preparedness Plan (EPP) shall be submitted to the *Employer* for acceptance prior to commencement of work on Site. In addition to describing the emergency arrangements for the works on site, the plan shall consider potential impacts beyond the site boundary, especially where there are interfaces with neighbours, operational assets etc. Any existing site specific EPPs will be provided as part of the pre-construction information, and should be incorporated in the *Contractor's* EPP as appropriate. For smaller scale works, and with the agreement of the *Employer*, the EPP can be incorporated into the CPP.

Immediately following an emergency, or following a simulated emergency exercise, the *Contractor* shall review the actions taken, against the requirements set out in the EPP, and revise the EPP accordingly. The output of these reviews shall be shared with the *Employer*.

8.3 Method Statements/Work Package Plans

The *Contractor* is responsible for producing and approving all Method Statements (also known as Safe Systems of Work and Work Package Plans) in a format agreed with the *Employer*. The *Contractor* shall submit a schedule of Method Statements to

the *Employer* for acceptance at contract start date. The *Employer* shall determine which Method Statements they will review for acceptance.

The *Contractor* shall submit all Method Statements to the *Employer* with adequate time allowed for any required acceptances to be gained prior to that element of the works starting on site. The time allowed for review will be agreed with the *Employer*. No element of the work shall commence without a Method Statement being produced and approved by the *Contractor* and being accepted by the *Employer* where required.

All Method Statements and supporting documentation, including any relevant approvals from others, shall represent and detail the *Contractors* planned works and address construction sequences, co-ordination with third parties and the relevant control and mitigation measures for identified risks.

Within each Method Statement the *Contractor* shall include a risk assessment that demonstrates how potential HSE risks resulting from the works have been mitigated to ALARP status.

Where sub-contractors are used, the *Contractor* shall ensure that they have reviewed and approved all Method Statements produced by the sub-contractor before they are submitted to the *Employer*.

9. Fire

9.1 General Requirements

The *Contractor* shall ensure that all works are compliant with the relevant legislation, Standards, TfL guidance and industry best practice in terms of fire compliance.

The *Contractor* shall make himself aware of any existing fire evacuation arrangements for the site, and co-ordinate their own arrangements with those of the site Landlord (as provide in the HSE pre-construction information).

The *Contractor* shall develop a fire evacuation procedure for agreement with the *Employer*. The *Contractor* shall ensure that all persons working on Site or who may have authority to visit site form time to time are aware of this procedure and receive any instruction that might be appropriate. These arrangements shall be recorded in the Emergency Preparedness Plan.

The *Contractor* shall remove all superfluous flammable materials from site on a daily basis.

The *Contractor* shall obtain the consent in writing from the *Employer* before storing or using plant, equipment or materials involving risk of fire or posing any hazard to any person and property.

The *Contractor* shall provide any additional fire extinguishers or other fire suppression systems on site as may be required to deal with the *Contractor's* method of working and/or any materials, packaging and equipment brought or stored on site by the *Contractor*.

The *Contractor* shall take all precautions to prevent the outbreak of fire arising from the works.

9.2 Isolations of Fire Detection and Suppression Systems

The *Contractor* shall agree the proposed isolation plan to suit his method of working with the *Employer*, and shall liaise with the *Employer* to make the necessary arrangements for these isolations.

9.3 Hot Works

The *Contactor* shall liaise with the *Employer* regarding Hot Works and the obtaining of any necessary permits associated with these works.

10. Electromagnetic Disturbance

The *Contractor* shall take all necessary precautions to avoid excessive electromagnetic disturbance of apparatus outside of the site. The *Contractor* shall ensure that all electrical equipment and plant is supressed so as to cause no unacceptable electrical or other interference to surrounding properties.

11.0 Work Related Road Risk

11.1 Work Related Road Risk

For the purposes of clauses 11.1 to 11.10 (inclusive) of this Contract, the following expressions shall have the following meanings:

"Approved Progressive Training" – An ongoing programme of personal development that uses a combination of theoretical, e-learning, practical and on the job training to ensure Drivers have the knowledge, skills and attitude to operate safely on urban roads and shall include:

(i) Safe Urban Driving (SUD) training to be undertaken every five years; or
(ii) A training course, which in the reasonable opionion of the *Employer* is an acceptable substitute to SUD; and
(iii) One safety related FORS e-learning module to be undertaken every twelve (12) months;

"Bronze Accreditation" - the minimum level of accreditation within the FORS Standard, the requirements of which are more particularly described at: www.fors-online.org.uk

"Category N2 Lorry" – means a vehicle designed and constructed for the carriage of goods having a MAM exceeding 3,500 kilograms but not exceeding 12,000 kilograms;

"Category N3 Lorry" – means a vehicle designed and constructed for the carriage of goods and having a MAM exceeding 12,000 kilograms;

"Car-derived Vans" - a vehicle based on a car, but with an interior that has been altered for the purpose of carrying larger amounts of goods and/or equipment;

"Collision Report" - a report detailing all collisions during the previous 12 months involving injuries to persons or fatalities;

"Delivery and Servicing Vehicle" - a Lorry, a Van or a Car-derived Van;

"Driver" - any employee of the *Contractor* (including an agency or contracted driver), who operates Delivery and Servicing Vehicles on behalf of the *Contractor* while delivering the Works;

"DVLA" - the Driver and Vehicle Licensing Agency;

"Direct Vision Standard" or "DVS" – Direct Vision Standard, a performance based assessment and rating tool, as updated from time to time, that measures how much direct vision a Driver has from a Category N3 Lorry cab in relation to other road users. Further information can be found at www.tfl.gov.uk;

"FORS" - the Fleet Operator Recognition Scheme, which is an accreditation scheme for businesses operating van and lorry fleets. It offers impartial, independent advice and guidance to motivate companies to improve their compliance with relevant laws and their environmental, social and economic performance;

"FORS Standard" - the standard setting out the accreditation requirements for the Fleet Operator Recognition Scheme, a copy of which can be found at www.fors-online.org.uk;

"Front Underrun Protection" – devices that are fitted at the front of Lorries and which comply with EC Directive 2000/40/EEC and the Road Vehicles (Construction and Use) Regulations 1986;

"Gold Accreditation" - the highest level of accreditation within the FORS Standard, the requirements of which are more particularly described at www.fors-online.org.uk;

"Lorry" - a vehicle with an MAM exceeding 3,500 kilograms;

"MAM" - the maximum authorised mass of a vehicle or trailer including the maximum load that can be carried safely while used on the road

"Side Underrun Protection" – devices that are fitted between the front and rear axles of Lorries and which comply with EC Directive 89/297/EEC and the Road Vehicles (Construction and Use) Regulations 1986;

"Silver Accreditation" - the intermediate level of accreditation within the FORS Standard, the requirements of which are more particularly described at: www.fors-online.org.uk;

"Van" - a vehicle with a MAM not exceeding 3,500 kilograms

11.2 Fleet Operator Recognition Scheme Accreditation

Where the *Contractor* operates Delivery and Servicing Vehicles to Provide the Works, it shall within 90 days of the Contract Commencement date;

(i) (unless already registered) register for FORS or a scheme, which in the reasonable opinion of the *Employer* is an acceptable substitute to FORS (the "Alternative Scheme"); and

(ii) (unless already accredited) have attained the standard of Bronze Accreditation (or higher) or the equivalent within the Alternative Scheme and shall maintain the standard of Bronze Accreditation (or equivalent standard within the Alternative Scheme) by way of an annual independent assessment in accordance with the FORS Standard or take such steps as may be required to maintain the equivalent standard within the Alternative Scheme. Alternatively, where the *Contractor* has attained Silver or Gold Accreditation, the maintenance requirements shall be undertaken in accordance with the periods set out in the FORS Standard.

11.3 Safety Features on Lorries

The *Contractor* shall ensure that every Lorry, which he uses to Provide the Works, shall have:

(i) Side Underrun Protection fitted at a height not exceeding 550mm from the ground, unless the *Contractor* can demonstrate to the reasonable satisfaction of the *Employer* that the Lorry will not perform the function for which it was built if the Side Underrun Protection is fitted;

(ii) Front Underrun Protection fitted at a height not exceeding 400mm from the ground, unless the *Contractor* can demonstrate to the reasonable satisfaction of the *Employer* that the Lorry will not perform the function for which it was built if the Front Underrun Protection is fitted;

(iii) equipment fitted with an audible means of warning other road users of the Lorry's left manoeuvre;

(iv) prominent signage on the Lorry to warn cyclists and other road users of the dangers of passing the Lorry's near side blind spot and of getting too close to the Lorry; and

(v) front, side and rear blind spots completely eliminated or minimised as far as practical and possible, through the use of direct vision, fully operational indirect vision aids and driver audible alerts.

11.4 Direct Vision Standard

Where applicable,

(i) The *Contractor* shall comply with the Heavy Goods Vehicle Direct Vision Standard attached to this contract.
(ii) The *Contractor* shall ensure that:
  (a) From and including 1 October 2018, all Category N3 Lorries used in the provision of the Works achieve a minimum of a One (1) star Direct Vision Standard rating;
  (b) From and including 1 April 2020, all Category N3 Lorries used in the provision of the Works achieve a minimum of three (3) star Direct Vision Standard rating; and
(iii) The conditions at all sites and locations where:
  (a) The Works are being delivered, or
  (b) In connection with the performance of the Works any waste is being disposed of or suppliers are being delivered to or from,

are appropriate for each Category N2 Lorry and Category N3 Lorry being used in the provisions of the Works.

11.5 Driver Licence Checks

Where the *Contractor* operates Delivery and Servicing Vehicles to Provide the Works the *Contractor* shall ensure that:

(i) it has a system in place to ensure all its Drivers hold a valid driving licence for the category of vehicle that they are tasked to drive, along with recording any endorsements, or restrictions on the Drivers licence; and

(ii) each of its Drivers, who work on this contract, has a driving licence check with the DVLA or such equivalent before that Driver commences work on this contract and that the driving licence check with the DVLA or equivalent authority is repeated in accordance with either the following risk scale (in the case of the DVLA issued licences only), or the Contractor's risk scale, provided that the Contractor's risk scale has been Approved in writing by the *Employer* within the last 12 months:

- 0 – 5 points on the driving licence – six monthly checks;
- 6 – 8 points on the driving licence – quarterly checks;
- 9 or more points on the driving licence – monthly checks;

11.6 Driver Training

Where the *Contractor* operates Delivery and Servicing Vehicles to Provide the Works the *Contractor* shall ensure that each of its Drivers attend Approved Progressive Training throughout the Term of the Contract.

11.7 Collision Reporting

Where the *Contractor* operates Delivery and Servicing Vehicles to Provide the Works, the *Contractor* shall:

(i) ensure that it has a system in place to capture, investigate and analyse road traffic collisions that results in fatalities, injury or damage to vehicles, persons or property and for generating Collision Reports; and

(ii) within 15 days of the commencement date, provide to the *Employer* a Collision Report. The *Contractor* shall provide to the *Employer* an updated Collision Report within 5 days of a written request from the *Employer*

11.8 Self Certificate of Compliance

Where the *Contractor* operates Delivery and Servicing Vehicles to Provide the Works, within 90 days of the commencement date, the *Contractor* shall make a written report to the *Employer* detailing its compliance with paragraphs 11.2, 11.3, 11.4, 11.5, 11.6 and 11.7 (the "WRRR Self-certification Report"). The *Contractor* shall provide updates of the WRRR Self-certification Report to the *Employer* on each three month anniversary of its submission of the initial WRRR Self-certification Report

11.9 Obligations of the Service Provider regarding sub-contractors

The *Contractor* shall ensure that those of its Subcontractors who operate Category N2 Lorries, Category N3 Lorries, Vans and/or Car-derived Vans to Provide the Works shall comply with the corresponding provisions of this Contract:

(i) Clause 11.2;

(ii) For Category N2 Lorries – Clauses 11.3, 11.5, 11.6, 11.7 and 11.8;

(iii) For Category N3 Lorries – Clauses 11.3, 11.4, 11.5, 11.6 and 11.7; and, where applicable, the appropriate provisions of the Heavy Goods Vehicle Direct Vision Standard Schedule; and

(iv) For Vans and Car-derived vans – Clauses 11.5, 11.6 and 11.7,

as if those sub-contractors were a party to this Contract.

11.10 Failure to comply

Without limiting the effect of any other clause of this Contract relating to termination, if the *Contractor* fails to comply with paragraphs 11.2 to 11.9:

(i) the *Contractor* has committed a material breach of this Contract; and

(ii) the *Employer* may refuse the *Contractor*, its employees, agents and Delivery and Servicing Vehicles entry onto any property that is owned, occupied or managed by the *Employer* for any purpose (including but not limited to deliveries).

12.0 Compliance with GRIP

The *Contractor* shall comply with the NR Guide to Railway Investment Projects (GRIP) for Stages 4, 5, 6 and 7 of the Works and shall produce the GRIP 6 & 7

Contractor responsible deliverables specified in the GRIP Manual (Issue 7). These are summarised below:

- Environmental Management Plan
- Stages 6&7 Health and Safety File (provision of required information, in the required format)
- Stages 6&7 Construction Phase Plan
- Stage 6 Safety Method Statements (Work Package Plans)
- Stage 6 Temporary Works Designs

The *Contractor* shall confirm completion of the relevant deliverables prior to and shall be required to attend the GRIP 7 Stage Gate Review.

Appendix A– HSE KPI Reporting Requirements

HEALTH, SAFETY and ENVIRONMENT	Unit of Measure	Guidance
Number of hours worked	**No.**	**The total number of hours worked by employees and operatives on the project**
Construction, Demolition and Excavation Waste	**tonnes**	**Total amount of waste generated**
Construction, Demolition and Excavation Waste, Reused, Recycled and Recovered	**tonnes**	**Amount of waste generated that was reused, recycled or recovered**
Hazardous (Construction, Demolition and Excavation) Waste	**tonnes**	**Total amount of hazardous waste generated**
Hazardous (Construction, Demolition and Excavation) Waste, Reused etc.	**tonnes**	**Amount of hazardous waste generated that was reused, recycled or recovered**
Number of HSE related complaints	**No.**	**Number of HSE complaints received - please provide a short explanation of any complaints received**
No. Of PGIs completed	**No.**	**Number of Planned General Inspections completed in the period**
No. Of Safety Tours completed	**No.**	**Number of Safety Tours completed in the period**
No. Of Toolbox talks delivered	**No.**	**Number of Toolbox talks delivered in the period**
% of safety actions completed	**%**	**% of actions from inspections or investigations that have been completed by the due date**
Number of Incidents	No.	The total number of incidents including Near Misses, Minor Injuries, Major Injuries, LTIs and RIDDOR reportable incidents
Number of Near Misses	Mo.	Total number of Near Miss (Near Hit) incidents reported
Number of Minor Injuries	Mo.	The total number of injuries that are not classed as Major Injuries
Number of Major Injuries	No.	The total number of Major Injuries, including those which are RIDDOR reportable
Number of LTIs	No.	Number of Lost Time Injuries including those which are also minor injuries, major injuries of RIDDOR reportable injuries
Number of RIDDORs (Injuries)	No.	Number of RIDDOR reportable injuries
Number of RIDDORs (Dangerous Occurrences)	No.	Number of RIDDOR reportable dangerous occurrences

Appendix B – Incident Line Instructions

Incident Line Instructions

0844 292 0292 (24 hours) or 1558 from TfL Auto Phone/Mobile

What must be reported – all incidents as soon as practicable following the incident

What is an incident?:
An unplanned, undesired event that resulted in, or under slightly different circumstances could have resulted in **(i.e. includes near miss)**, harm to people, damage to property, damage to the environment or loss of service/process

Who will report incidents to the incident line?
The Principal Contractor/Contractor should report all incidents to the incident line

What information does the reporter need?
The reporter will be asked a number of routing questions to ensure the incident is allocated to the correct area. These should be responded to as follows (the Incident Line operator has drop down menus on these screens and so can only go by the defined organisational structure).

Responsible Area/Project	London Overground Programme Delivery
Location	London Overground White Hart Lane Station OW121
Exact Location	Construction Site On-Railway

Details of the incident!
Their email address (if they want to receive a copy of the report)

What happens if there is no answer?

If there is no answer within 2 minutes the call will be diverted to voice mail. Please leave your name and contact details and the incident line will call you back within 30 minutes.

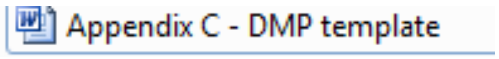
What happens once the incident is reported?

The accountable manager will be sent an email requesting that the incident is reviewed. The accountable manager (along with the LO HSE Manager) must:

- Check all the information reported on the incident record
- Ensure that the supplier undertakes an adequate investigation
- Ensure that the incident is closed once the agreed final report is received from the Supplier

Appendix C – Design Management Plan template

Please see the following file that is provided on the CD-ROM that forms part of this contract:



Template reference F-10740 Version A02

Appendix D – Heavy Goods Direct Vision Standard Schedule

1 Introduction

1. In this Schedule, the following terms shall have the corresponding meanings:

"Business Day"	means any day excluding Saturday, Sundays or public or bank holidays in England;

2 HGV DVS Plan

2.1 The *Contractor* shall comply with the Initial HGV DVS Plan from the Contract Commencement Date. Within fifteen (15) Business Days of the Contract Commencement Date the *Employer* shall either;

2.1.1 confirm that the Initial HGV DVS Plan is approved, in which case such plan shall become the Agreed HGV DVS Plan; or

2.1.2 provide the *Contractor* with any comments on and/or amendments to the Initial HGV DVS Plan.

2.2 Within thirty (30) Business Days (for the purpose of paragraph 2.1.2) or 15 Business Days (for the purpose of paragraph 2.3.2) of receipt of any comments and/or amendments from the *Employer* in accordance with paragraph 2.1.2 or paragraph 2.3.2 (as applicable), the *Contractor* shall:

2.2.1 develop the Initial HGV DVS Plan to reflect such comments and/or amendments; and

2.2.2 submit an updated Initial HGV DVS Plan to the *Employer* for approval.

2.3 Within fifteen (15) Business Days of receipt of the updated Initial HGV DVS Plan, the *Employer* shall confirm that either the updated Initial HGV DVS Plan:

2.3.1 is approved, in which case it shall become the Agreed HGV DVS Plan; or

2.3.2 not approved and provide its further comments and/or amendments to the *Contractor* and the *Contractor* shall revise and re-submit the updated Initial HGV DVS Plan for approval in accordance with paragraph 2.3.

The process set out in this paragraph 2.3 shall be repeated until the updated Initial HGV DVS Plan is approved by the *Employer*.

2.4 Where the *Employer*, acting reasonably, has not approved the updated Initial HGV DVS Plan, the *Contractor* may refer that decision to the dispute resolution process set out in the Contract.

2.5 Without limiting any other provision of this Contract, the *Contractor* shall, at no additional cost to the *Employer*, and as part of the Works:

2.5.1 implement, observe and comply with the Agreed HGV DVS Plan; and

2.5.2 review and amend the Agreed HGV DVS Plan (as necessary) on each 12 month anniversary of the Contract Commencement Date or earlier if requested by the E*mployer*, to reflect:

2.5.2.1 any changes to the nature of the Works; and

2.5.2.2 any comments and/or amendments made or proposed by the *Employer*.

3 HGV DVS Co-ordinator

3.1 The *Contractor* shall nominate an employee/member of the *Contractor's* Personnel with the necessary experience, competency and authority to:

3.1.1 be responsible for implementation and compliance with the Agreed HGV DVS Plan; and

3.1.2 act as the *Contractor's* authorised representative on all matters concerning the Agreed HGV DVS Plan ("**HGV DVS Co-ordinator**").

3.2 The *Contractor* shall add the HGV DVS Co-ordinator's details to their list of Key Personnel.

4 Self Certification and Reporting

On each 12 month anniversary of the Contract Commencement Date, the *Contractor* shall submit a report to the *Employer* which sets out the *Contractor's* progress in respect of implementation of the Agreed HGV DVS Plan and confirms (with supporting evidence) that the *Contractor* has complied with the Agreed HGV DVS Plan.

5 DVS Infractions

5.1 Without limiting the effect of any other provision of this Contract relating to termination, if the *Contractor* fails to comply with the terms of this Schedule:

5.1.1 the *Contractor* shall be deemed to have committed a material breach of this Contract; and

5.1.2 TfL may refuse the *Contractor*, its employees, agents/Service Provider Personnel and each Category N3 Lorry and Category N2 Lorry entry onto any property that is owned, occupied or managed by or on behalf of TfL for any purpose (including but not limited to deliveries).

Appendix 1 to HGV DVS Contract schedule

Note

Appendix 1 is the Initial HGV DVS Plan (normally submitted at tender stage) and will be developed to form the Agreed HGV DVS Plan.

- **Infrastructure Requirements – Environmental (IR-E)**

Infrastructure Requirements – Environment (IR-E)
Document: LWHL-ALLW-HSE-REQ-RFL-00001 revision T01

London Overground White Hart Lane Station Upgrade (LOWHL)

Infrastructure Requirements – Environment (IR-E)

LWHL-ALLW-HSE-REQ-RFL-00001

Revision T01

August 2016

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LO White Hart Lane Station Upgrade (LOWHL)

Project: White Hart Lane Station Upgrade (LOWHL)

Document reference: LWHL-ALLW-HSE-REQ-RFL-00001_T01

Section 3 – Infrastructure Requirements – Environment

		Signature	Date
Prepared by	[redacted] HSE Manager	[redacted]	02/11/2016
		Signature	Date
Accepted by	[redacted] Project Development Manager	[redacted]	11/2/16
	[redacted] Project Manager	[redacted]	11/2/16

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Abbreviations

BS	British Standard
BS EN	European Standard which has the status of a British Standard
BSI	British Standards Institute
EMP	Environmental Management Plan
EMS	Environmental Management System
HSE	Health, Safety & Environment
IR-A	Infrastructure Requirements - Assurance
IR-E	Infrastructure Requirements – Environmental
SQE	Safety, Quality and Environment
SUDs	Sustainable Urban Drainage Systems
TfL	Transport for London
TPO	Tree Preservation Order

1.0 Environmental Requirements

1.1 Preface

This document contains the environmental requirements that the Contractor shall adhere to at all times when undertaking the Works.

1.2 Environmental Staffing

The Contractor shall employ a sufficient number of suitably qualified and experienced staff to ensure the full implementation of all the environmental requirements during both the design and construction phases.

The person leading on environmental matters must be able to demonstrate the attainment of suitable environmental qualifications (e.g. membership of IEMA), and shall be available to attend periodic environment meetings with the Project Manager, to review key environmental issues.

1.3 Environmental Management Plan

The Contractor shall submit an Environmental Management Plan (EMP) to the Project Manager for acceptance within 14 days of appointment.

If the above documentation is not accepted by the Project Manager, the Contractor shall revise and resubmit it to the Project Manager until such time as acceptance is granted.

The EMP shall cover both the design and construction phases of the Works; however, separate documents may be submitted for each phase, or the design requirements may be covered in another document (e.g. a design management plan). Works shall not start on site until the Project Manager has accepted an EMP that adequately addresses the management of the construction works.

The Contractor shall comply with the accepted EMP at all times.

The EMP shall define the environmental management system (based on ISO 14001) to be operated to manage the environmental components of the Works. The EMP shall clearly set out the identified environmental aspects and impacts and the mitigation measures that the Contractor will employ to minimise or negate any potential risks.

As a minimum, the EMP shall include or define the approach to:

- Environmental policy – implementing the commitments in the Contractor's and TfL's environmental (HSE) Policies
- Planning – including the identification of significant environmental aspects and impacts, a register of legislation and other requirements, and a set of environmental objectives and targets and a programme for achieving these

- Implementation and operation – defining roles and responsibilities, competence and training, documentation and its control, and the operational controls that will be employed to manage the identified significant environmental aspects
- Emergency planning and response (refer to the requirements in **Appendix A**)
- Checking – detailing the processes to be employed to inspect, monitor and audit the Works to ensure compliance with the environmental requirements and the accepted EMP
- Management review – detailing frequency, scope, attendees and output

The EMP shall also detail the procedures that will be employed to ensure that environmental considerations are taken into account when procuring services and products.

1.4 Environmental Targets

As a minimum, the Contractor shall adopt the following environmental targets and put in place appropriate systems to achieve them. The Contractor may propose additional environmental targets either to support the attainment of the objectives and targets in TfL's Corporate Environmental Framework, or their own corporate goals.

The Contractor shall report on progress against all environmental targets within the 4-weekly progress report – including justification and / or proposals for achieving the target if it is not being met.

Description	Target
Environmental enforcement/regulatory notices	0
Major environmental incidents	0
Construction, demolition and excavation waste reused, recycled and recovered	96%
Noise and vibration complaints	<0.65 complaints/100,000 hours worked

2.0 Environmental Controls

The Contractor shall comply with the environmental controls listed below when undertaking the Works, and the EMP shall detail the measures and management processes that will be implemented to fulfil these requirements.

2.1 Noise and Vibration

2.1.1 General – Best Practicable Means

The Contractor shall use best practicable means to reduce noise and vibration at all times, and shall comply with the provisions of the current edition of BS5228 - Code of Practice for Noise and Vibration Control on Construction and Demolition Sites.

2.1.2 Noise / Vibration Receptors

The Contractor shall identify any noise / vibration sensitive receptors in the EMP, and shall ensure adequate controls are put in place to minimise the disturbance to these receptors

2.1.3 Section 61 consent applications

Prior to undertaking any Works, the Contractor shall obtain a Consent, from the Local Authority, under Section 61 of the Control of Pollution Act, 1974, (a Section 61 consent).

The Contractor shall ensure that all applications for Section 61 consent are submitted in time to allow the Local Authority a minimum of 28 days to determine and issue the consent. No works covered by a Section 61 application shall be commenced until the Contractor has obtained the relevant consent from the Local Authority.

The Contractor shall develop a draft Section 61 consent application (prepared by competent acoustic professionals) and agree this with the Project Manager before submitting it to the Local Authority. The draft Section 61 consent application shall be developed using a pro forma and the good practice guidance which are available from the Project Manager.

Once the draft application is agreed with the Project Manager, the Contractor shall submit it to the relevant Local Authority and seek formal consent.

The Contractor is advised that the Local Authority can take up to 28 days to determine a Section 61 application. In addition, the Project Manager requires that a draft of the Section 61 application is submitted for review at least 7 days prior to submission to the Local Authority, and that the Contractor addresses any comments raised by the Project Manager prior to submission to the Local Authority. The Contractor shall allow for the above timescales in their programme.

No works covered by a Section 61 application shall be commenced until the Contractor has obtained the relevant consent from the Local Authority.

The Contractor shall comply with the Section 61 consent at all times.

The Contractor shall ensure that all Section 61 consent related correspondence with the Local Authority is copied to the Project Manager. This shall include provision of all applications for, or variations to, a consent, all consents granted by the Local Authority, all over-run notifications and any associated matters.

2.1.4 Working Hours

The normal working hours shall be from 0800 to 1800 on weekdays (excluding public and/or bank holidays), from 0800 to 1300 on Saturdays with no working on Sundays. The Contractor shall undertake works within these normal working hours for each site as far as reasonably practicable and, where practicable, operations anticipated to cause disturbance will be limited to these hours.

It is acknowledged that elements of the Works will need to be undertaken outside of normal working hours during railway possessions / blockade. In accordance with best practicable means, care shall be taken with the programming of these Works to try and undertake any particularly noisy activities during less sensitive times of the day (i.e. avoiding night-time if possible).

Work outside of normal working hours must be agreed with the Project Manager and the Local Authority before being undertaken.

If 'out of hours' works are to be undertaken, the Contractor shall notify local residents or other sensitive receptors in advance of commencing the works. The form of the notification shall be agreed with the Project Manager, and, as far as possible, issued one week in advance of the works.

Subject to agreement with the Local Authority, the Contractor may use a period of up to one hour before and up to one hour after normal working hours for start up and close down of activities, including;

- arrival and departure of workforce and staff on site;
- deliveries;
- maintenance and checking of plant and machinery;
- start-up of machinery and movement to/from work site;
- general refuelling;
- site inspections and safety checks prior to commencing work;
- site meetings; and
- site clean up.

The start up and close down periods are not an extension of normal working hours, and particular care must be taken to limit and control disturbance to local residents during such periods.

2.1.5 Noise or Vibration Monitoring

The Contractor shall undertake any monitoring required by the Section 61 Consent.

As a minimum, the Contractor shall install fixed noise monitoring positions in the vicinity of the two receptors who are predicted to be worst affected by construction noise. The equipment used shall confirm to Class 1 of IEC 61672-1:2002.

In addition, the Contractor shall supplement this long-term monitoring by undertaking short-term noise monitoring adjacent to the closest noise sensitive receptors at the start of each new phase of works, and if undertaking any works outside of normal working hours.

The short-term monitoring shall be undertaken for a minimum of 10 minutes at each location, and shall, as a minimum, record the LAeq over this time period, together with notes on the dominant noise sources and the calibration levels at the beginning and end of the measurement period.

The Contractor shall also undertake noise or vibration monitoring in response to any complaints, or requests from the Project Manager or the Local Authority.

The noise monitoring data shall be submitted to the Project Manager for information each Period.

2.2 Dust and Air Quality

2.2.1 General

The Contractor shall ensure that air quality impacts (including dust) from demolition, construction-related activities and construction traffic are controlled through careful planning and effective site management.

The Contractor shall use best practicable means at all times to avoid creating a dust nuisance. The Contractor shall comply with the requirements of the current version of the GLA's Best Practice Guidance – 'The control of dust and emissions from construction and demolition'.

The Contractor's attention is drawn to Chapter 7 of the above guidance (issued in July 2014) which includes requirements related to emissions from non-road mobile machinery (NRMM). In particular, the best practice guidance requires that, from 1 September 2015, all NRMM of net power between 37kW and 560kW used on Major Development Sites in Greater London shall meet the Stage IIIA European emission standard for both NOx and particulate matter – and more stringent requirements apply within the Central Activity Zone and Canary Wharf.

As these Works constitute major development, the Contractor shall adhere to the emissions standards and the other applicable requirements related to NRMM. Consequently, in line with the guidance, the Contractor shall maintain an inventory of all NRMM used on site stating the emission limits for all equipment, and shall ensure that all machinery is regularly serviced and that service logs are kept on-site for inspection. The Contractor shall also ensure that procedures are in place for complying with these requirements and that records are maintained and available to confirm that all plant on site meets the stated standards.

If required by the Local Authority, the Contractor shall also submit and agree the dust control measures with the Council prior to undertaking any Works on site.

2.2.2 Dust Receptors

The Contractor shall identify any dust sensitive receptors in the EMP, and shall ensure adequate controls are put in place to minimise the air quality effects to these locations.

2.2.3 Dust Monitoring

As a minimum, the Contractor shall undertake visual inspections during any activities likely to cause dust. These inspections shall be undertaken at appropriate time intervals to ensure the application of dust mitigation measures. The Contractor shall maintain a record of these visual checks and provide copies to the Project Manager upon request.

2.3 Contaminated Land

Ground conditions are the Contractor's risk.

The Contractor will apply all relevant statutory and industry best practice guidance in relation to contaminated land.

Prior to commencing works, the Contractor shall identify any areas of potential contaminated land that may be affected by the works, and shall undertake a programme of site investigations to enable the risks to human health and the environment to be quantified, and any necessary mitigation measures or remediation proposals to developed. Such proposals, which shall comply with statutory guidance and industry best practice, shall be submitted to the Project Manager for acceptance. Landfill shall only be used if other remediation options (e.g. on-site treatment, off site treatment) are not reasonably practicable.

The Contractor shall plan and undertake the Works in a manner which minimises the disturbance of any contaminated land and avoids the creation of pollution pathways. This shall include the use of piling techniques which minimise the potential for vertical contamination pathways to be created.

In the event of discovery of unexpected contaminated land the Contractor shall inform the Project Manager.

2.4 Ecology

Prior to commencing any works on-site, the Contractor shall arrange for a suitably qualified and experienced Ecologist to undertake an ecology survey to identify the presence of any protected species or habitats that may be affected by the Works (note that the two storey former station building with a pitched roof in the north of the site has been identified as having a low potential for supporting roosting bats). The Ecologist's report, which shall be provided to the Project Manager, shall contain recommendations for dealing with any ecological issues which are identified and for enhancing the ecological value of the development. The Contractor shall adhere to these recommendations and any applicable guidance or code of practice when undertaking the works.

The Ecologist's report shall also identify any areas of vegetation or other areas of potential ecological interest that may be affected by the Works. The Contractor shall implement the Works in a manner which, as far as practicable, minimises the impact on these areas, the Contractor shall allow for the price and programme implications arising from same. The Contractor shall undertake the Works in such a way to minimise disturbance of any vegetated areas. If there is the potential for any areas of nature conservation interest, protected species or habitats to be disturbed by the Works, the Contractor shall ensure they adhere

2.4.1 Trees

The Contractor shall take all reasonably practical measures to minimise the loss of trees. Should remedial or protective works to trees on or adjacent to the works be required, the Contractor shall employ a suitably trained and qualified arboriculturalist to advise and/or carry out the works in accordance with the latest version of BS 5387 "Guide for trees in relation to construction".

Prior to undertaking any Works which may affect a tree, the Contractor shall confirm that it is not protected by a Tree Protection Order.

2.4.2 Birds

Birds and their nests are protected under UK legislation and it is an offence to intentionally (recklessly) take, damage or destroy the nest or eggs of any wild bird, whilst the nest is in use or being built.

The site has potential to support nesting birds within areas of vegetation (trees and scrubs) and structures or station buildings.

The discovery of nesting birds has the potential to cause delay to the construction programme, as nests cannot be damaged, relocated, or destroyed until the young birds fledge and leave the area. The Contractor shall implement the following control measures:

- Where possible, undertake any clearance of scrubs and/or trees outside of the peak nesting bird season (typically March to August inclusive).

- If clearance of scrubs and/or trees or other works affecting structures with the potential for nesting birds is required during the breeding season, engage a suitably qualified ecologist to undertake checks prior to these works to ensure nesting birds are not affected. If nesting birds are found, the area must be left until the birds have fledged, as is required by the legislation.

2.4.3 Invasive Species

The Contractor shall identify any invasive species (such as Japanese Knotweed, Giant Hogweed etc) that may be on, or adjacent to the Site, prior to commencing Works.

If such species are present, the Contractor shall develop and implement proposals for controlling these plants and ensuring they are not spread by the Works. The Contractor shall allow for the price and programme implications arising from same. These proposals shall be agreed with the Project Manager before commencing any works with the potential to disturb the identified invasive species.

2.5 Water

The Contractor shall undertake the Works in a manner which protects the water environment. This shall include, but shall not be limited to:

- Identifying any water sensitive receptors (such as ponds, drains, watercourses or groundwater) which may potentially be affected by the Works, and assessing the risk to them

- Identify any mitigation measures which shall be employed to minimise the risk to these water sensitive receptors – including any necessary pollution prevention measures. The Contractor shall avoid the use of drip trays (due to their propensity to fill with water which can either overflow or be spilt). Instead, the Contractor shall use ‘plant nappies’ under plant etc to contain any drips or spillages.

- Obtaining and complying with the appropriate abstraction, discharge and other water environment consents.

- Undertaking any water quality monitoring programme agreed with the Project Manager.

The Contractor shall use water in an efficient manner.

The Contractor shall not make temporary or permanent connections to any mains, drains, pipes, watercourses or utility services without the necessary consent.

2.6 Waste Management

The Contractor shall comply with all applicable waste management legislation.

The Contractor shall proactively consider waste during the design and construction phases and implement measures at all stages to reduce waste production and to minimise the volume of waste disposed of in landfill. This shall be achieved by measures including, but not limited to:

- Designing out waste (reference can be made to guidance including WRAP's Achieving Good Practice Waste Minimisation and Management – Guidance for construction clients, design teams and Contractors or WRAP's Achieving Effective Waste Minimisation)
- Appropriate ordering, storage, handling and use of materials
- Adopting enhanced waste storage and segregation practices to facilitate higher recycling and recovery rates
- Opportunities to reduce the volume of packaging waste will be identified prior to work commencing.
- Entering into takeback agreements with suppliers for surplus materials and / or packaging
- Implementing the waste management hierarchy of reduce / reuse / recycle / recover / dispose - with disposal to landfill being the least preferred option.

The Contractor shall record, within a waste Management Plan, the steps that have been taken to design out and minimise waste, and maximise its diversion from landfill.

The Contractor shall take all reasonable steps to achieve the waste target set out in Section 1.4.

TfL uses the BRE's SMARTWaste online reporting system for recording waste data and tracking performance against corporate targets. The Contractor is encouraged to register with and use the SMARTWaste system to record data about the volumes of waste generated, reused/recovered/recycled, and to assist with complying with their Duty of Care requirements. However, the Contractor may use another system or template (e.g. the WRAP Netwaste Tool and WMP template) as long as it helps delivers demonstrable improvements in waste and materials management, demonstrates compliance with legal duty of care obligations and shows progress against the waste targets.

Waste data shall be reported to the Project Manager each period.

2.7 Archaeology

The Historic Desk-Based Assessment submitted to support the planning application for the White Hart Lane Station Upgrade identified that, in those parts of the site which have not been subjected to previous ground disturbance there is a low potential for prehistoric and Anglo-Saxon remains, a moderate potential for Roman and medieval remains and a moderate to high for post-medieval remains.

In accordance with the recommendations of the Historic Desk-Based Assessment, the Contractor shall ensure that the results of any geotechnical or ground investigation undertaken within the area of the new station buildings are reviewed by a suitably qualified archaeologist order to confirm the depth of made ground and the potential for the survival of any archaeological horizons.

The suitably qualified archaeologist shall produce a report on the above for acceptance by the Project Manager and subsequent submission to GLAAS who will, on behalf of the LB Haringey, determine the requirement for any further archaeological investigation of the site.

Should any further archaeological investigations or evaluations of the site be required, the Contractor shall provide all necessary support to the engaged archaeologists, and shall not commence any works which may affect buried archaeology until all necessary approvals and supervisory requirements are in place.

Unexpected Discoveries

In the event that unforeseen archaeological remains are discovered, the Contractor shall immediately cease all relevant works and shall inform the Project Manager as soon as possible within 24 hours of the discovery. The Contractor may be required to carry out additional works to protect or preserve the exposed remains. Works cannot continue until agreement is reached with the Project Manager on methods for continuance of the Works.

2.8 Timber

Where it is necessary to use timber, the Contractor shall ensure that only timber from recycled, reclaimed or sustainably sources is incorporated into the temporary and permanent works.

Should the Contractor propose to use non recycled, reclaimed and sustainably sourced timber within the works then he must obtain the Project Manager’s written consent prior to using such timber.

Sustainably sourced 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 Project Manager will accept timber accredited through other

schemes approved by the Central Point of Expertise on Timber (CPET).

The Contractor shall maintain records of all timber deliveries in order to verify compliance with the above requirements.

2.9 Site Boundaries and Hoardings

The Contractor shall ensure that the worksite is bounded by secure fencing. Site hoarding shall be erected by the Contractor along boundaries that abut areas of residential housing or areas where the public have access, unless otherwise agreed with the Project Manager.

Any hoarding required shall be at least 2.4m above local ground level and constructed of a material with a minimum surface density of 7kg/m2 with no gaps or openings at the joints. The required surface density could be provided by the provision of 19mm plywood. The hoarding shall bepainted in a uniformed colour (e.g. Rail 5002 or Pantone ref 072).

2.10 Lighting

The Contractor shall use best practicable means to reduce light intrusion. During the construction phase, this shall include, but not be limited to:

- Avoiding the use of lighting or using the appropriate lux levels to minimise disturbance.
- Using directional lighting to avoid intrusion.
- Use alternative energy sources, for example batteries or mains power, rather than generators.

2.11 Public Highways

The Contractor shall undertake any necessary consultation with the Highways Authority for works affecting public highways.

The Contractor shall minimise the impacts of construction traffic on the public highways and access routes by:

- Implementing measures to prevent the spread of mud on roads
- Avoiding, wherever practicable, the parking of vehicles on public highways
- Ensuring vehicles are switch off when not in use
- Sheeting over vehicles which remove waste material or deliver potentially dusty materials to the site
- Planning delivery routes and times to avoid sensitive sites – e.g. schools at the start or end of the school day

2.12 Sustainability

Sustainability is a key driver for TfL and the Mayor of London, and the Contractor shall endeavour to identify and include initiatives within the Project to improve its social, economic and environmental performance, and deliver an asset with due regard to whole life costs.

The Contractor shall detail in their EMP the approach that will be adopted throughout the duration of the contract to ensure that regular and effective consideration is given to the identification, development and implementation of initiatives to increase the Project's sustainability performance, and to communicate to the Project Manager on a regular basis that progress is being made towards achieving the above requirements.

In accordance with TfL's 'Pathway' requirements, TfL's Sustainability Assessment Toolkit has already been used to provide an initial assessment of the Project's sustainability performance against the following core sustainability themes from the Mayor's Transport Strategy:

- Economic Progress
- Climate Change
- Safety and Security
- Quality of Life
- Transport for All

The Contractor shall be cognisant of the Sustainability Assessment undertaken to-date, and shall ensure the identified actions are taken forward and implemented.

At at least one key point in the deign phase, the Contractor shall undertake a reassessment using TfL's Sustainability Assessment Toolkit and shall identify any further actions that can be taken to improve the Project's sustainability performance.

The Contractor shall submit a summary report to outline all of the sustainability initiatives which have been incorporated into the Project, and to capture the quantum of the benefits that have been realised, and to demonstrate delivery of all applicable Mayoral and other sustainability requirements.

The Sustainable Design and Construction Statement submitted to support the White Hart Lane Station Upgrade Planning Application includes a number of design principles and design measures for adoption within the development. As a minimum, the Contractor shall develop these items and ensure they are incorporated into the scheme.

In addition, the Contractor shall comply with the following:

LO White Hart Lane Station Upgrade (LOWHL)

Energy - Ensure that the delivered infrastructure minimises the use of energy and carbon emissions whilst achieving the performance requirements, and that due consideration is given to complying with the Mayor's Energy Hierarchy, i.e.:

- Be lean: use less energy (via passive design and energy efficiency);
- Be clean: supply energy efficiently (e.g. by connecting to district heating networks); and
- Be green: use renewable energy (by incorporation of on-site renewable energy technologies).

An Energy Demand Assessment has been undertaken for White Hart Lane Station (LWHL-ALLW-EGM-ASS-MMD-00002, July 2016) to estimate the annual energy consumption and CO_2 emissions and demonstrate that the Haringey Council requirement of reducing the regulated CO2 emissions by 20% can be achieved, through the use of renewable energy technologies. The Contractor shall take forward the initiatives identified in the Assessment and ensure compliance with Haringey Council's requirement.

Materials - Select materials with due consideration to their environmental properties (e.g. with reference to the Building Research Establishment's (BRE) Green Guide to Specification), and where possible, source materials locally and responsibly.

Coatings - Where possible, all coatings and other treatments used on site should be specified as low-VOC. All coatings and treatments should be factory applied where practicable.

Noise: Public Address Systems (PA) – The station's PA system shall be designed to comply with any applicable planning conditions or local authority requirements. As a minimum, the Contractor shall ensure that the rating level at the worst affected residential receptor location does not exceed the background sound level, when assessed in accordance with BS 4142:2014, Methods for rating and assessing industrial and commercial sound.

The Contractor shall submit a report to verify that the above standards have been achieved, and to confirm how best practicable means have been used to minimise overspill (of environmental noise) arising from the PA system. Such means may include, but are not limited to: distributed loudspeaker location, directional loudspeakers, ambient noise sensing and level and timed change of output level (e.g. quieter setting for evening and night-time).

2.13 Environmental Inspections

The Contractor shall implement a programme of environmental inspections to ensure compliance with all legal and contract requirements.

The Contractor shall record the results of these inspections on an inspection pro-forma.

In the case of non-compliance, or where improvements could be made, the pro-forma shall detail the action required, the name of the individual responsible for the action, a reasonable timescale for completing the action, and close out of the action once it has been completed.

2.14 Environmental Data

The Contractor shall report the following information as part of their 4-weekly report.

- The Environmental Data set out in **Appendix B**
- Details of any environmental incidents that occurred and, how the incident was resolved
- Details of any interaction with environmental regulators
- A summary of the environmental monitoring undertaken – including noise, dust and vibration
- Details of any complaints about noise, dust or vibration – including how these were resolved
- Details of any issues identified during environmental inspections or audits and the status of closing out such issues

2.15 Communication

The Contractor shall provide the Project Manager with a copy of all environmentally related correspondence with third parties (e.g. the Local Authority or Environment Agency) on the date of issue.

LO White Hart Lane Station Upgrade (LOWHL)

Appendix A

Environmental Incidents and Reporting

Emergency Preparedness and Response

As a minimum, the Contractor's EMP shall define the following:

- The potential types of environmental incident relevant to the works and the envisaged control measures;
- Responsibilities of the Contactor's staff for dealing with an environmental incident;
- The systems (and contact details) for notifying the appropriate statutory authorities, emergency services, Project Manager and the Contractor's personnel in the event of an environmental incident;
- The information to be recorded in the event of an environmental incident (to include date, time, location, description of incident, action taken, personnel involved and notifications, photographs);
- A simple flowchart to show the process and responsibilities; and,
- The minimum types and stock levels of spill kits material to be held on Site.

Response and Investigation of Environmental Incidents

The Contractor shall notify the Project Manager immediately (and no later than within one working day) of all environmental incidents or 'near misses'.

In the event of any environmental near miss or incident, the Contractor shall record the following information and provide it to the Project Manager as soon as practicable, and not later than within 2 Working Days:

- Time and date;
- Location of incident;
- Description of incident – including an outline of events, personnel and parties involved and any mitigation measures applied;
- Where the incident is a Category 1 or 2 environmental incident or a near miss.

In order to identify root causes and prevent recurrence, all environmental incidents and near misses shall be investigated by the Contractor within 3 Working Days. The Contractor shall produce a report of the investigation and shall submit this to the Project Manager for Assurance Acceptance within 5 Working Days of the incident.

In addition to containing the bullet point information above, the report shall, as a minimum, include the following:

- Photographs / a sketch showing what happened and where;
- Details of any notification/third party involvement;
- Immediate causes;
- Root causes – e.g. inadequate procedures, conflicting targets, poor communication, lack of training, inadequate maintenance, extreme weather conditions or lack of security;

- Remedial actions implemented and/or proposed and timescales; and
- Measures to prevent recurrence and timescales.
- Approvals by the Contractor's senior individual responsible for ensuring the actions are completed satisfactorily.

If not accepted by the Project Manager, the Contractor shall rework the report. The Contractor shall resubmit it to the Project Manager within 1 week of the date of issue of the comments by the Project Manager and shall repeat this process as required until Assurance Acceptance is granted.

The Contractor shall monitor the implementation of any actions / recommendations resulting from the investigation of the environmental incident, and shall ensure that they are completed by the scheduled completion dates.

LO White Hart Lane Station Upgrade (LOWHL)

Appendix B

Environmental Data template

LO White Hart Lane Station Upgrade (LOWHL)

Environmental Data template

The below table sets out the minimum environmental data that London Overground is required to maintain and report to TfL for corporate reporting.

Environmental KPI	Data Required	Units
Basis for normalising performance	Spend on new capital works *(spend reported here must only be on the projects for which environmental data are provided below)*	£100k
Energy consumption, by type	Electricity consumption (normal grid mix)	kWh
	Natural gas consumption	kWh
	Petrol consumption	litres
	Diesel consumption	litres
	Heavy fuel oil consumption	tonnes
	Other (please specify)	Please specify
Noise complaints	Noise complaints	number received
	Noise complaints / 100,000 hrs worked	Number/100,000
Waste produced and proportion recycled	Amount of construction and demolition (C&D) waste produced	tonnes
	Amount of C&D waste reused/recycled/recovered	tonnes
	Amount of waste classified as hazardous	tonnes
Water consumption	Mains water consumed	m^3
	Non-mains water consumed	m^3
	Total water consumed	m^3

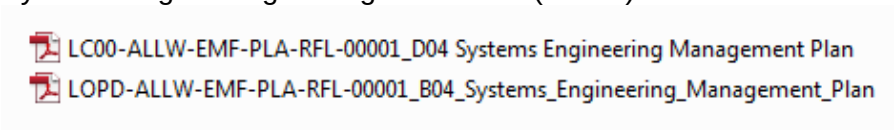
The following documents that form part of the Works Information are provided on the CD-ROM that forms part of this contract:

- **IR-A Infrastructure Requirements Assurance**

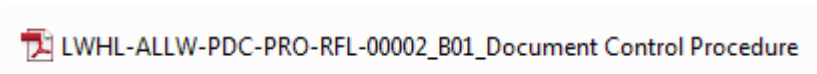
  Section 3 – Infrastructure Requirements – Assurance
  Document: LWHL-ALLW-PQA-REQ-RFL-00001 rev T01

  The following documents are provided on the CD-ROM in addition to those listed in Appendix A of the IR-A:

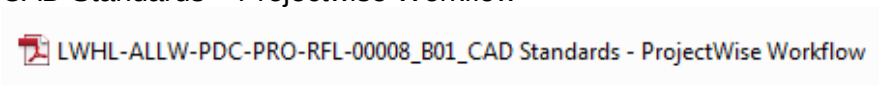
  Systems Engineering Management Plan (SEMP):

  Document Control Procedure:

  CAD Standards – Projectwise Workflow

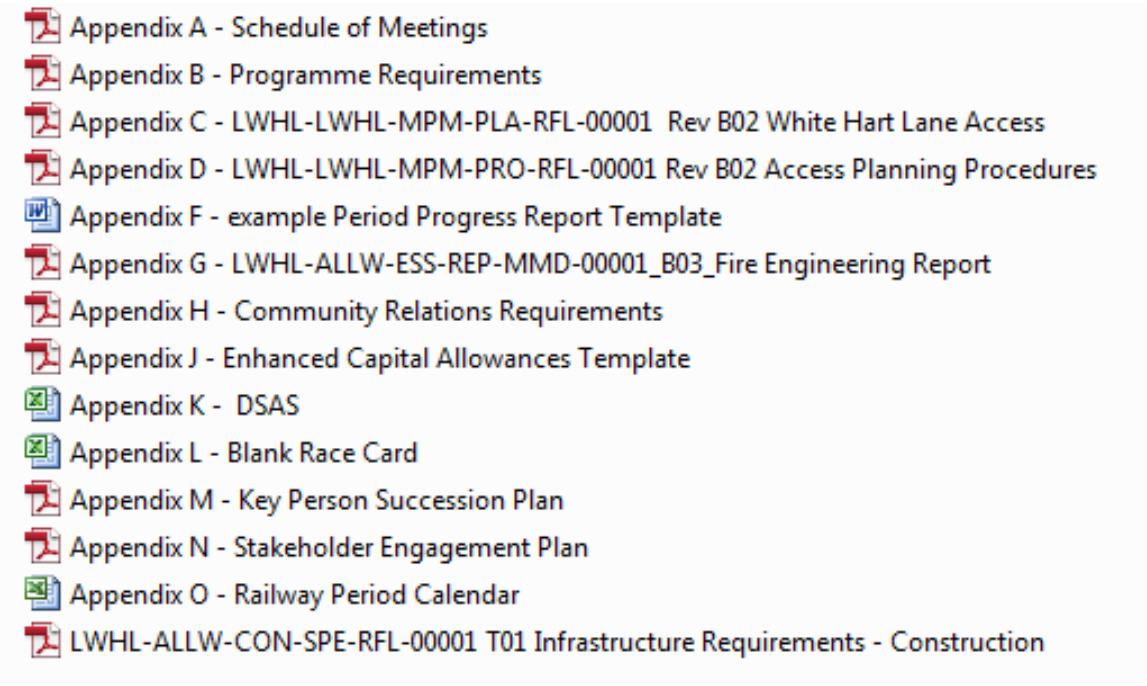
  

The following documents that form part of the Works Information are provided on the CD-ROM that forms part of this contract:

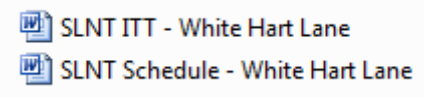
- **Infrastructure Requirements – Construction (IR-C)**

Section 3 – Infrastructure Requirements – Construction
Document: LWHL-ALLW-CON-SPE-RFL-00001 revision T01

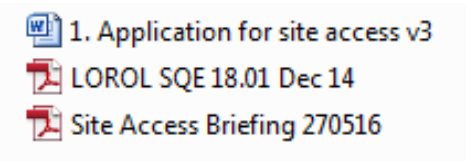
The IR-C includes the below as separate appendices:



Appendix E: SLNT Requirements:



Appendix I: Operator Access Requirements:



White Hart Lane Potential Access Opportunities

Potential Available Access Opportunities are as stated in the IR-C Appendix C (LWHL-LWHL-MPM-PLA-RFL-00001 Rev B02 White Hart Lane Access)

Transport for London
London Overground

London Overground Project Delivery

White Hart Lane Access

Report Number:
LWHL-LWHL-MPM-PLA-RFL-00001 Rev B02

October 2016

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Issue Record

Client: London Overground
Report no. LWHL-LWHL-MPM-PLA-RFL-00001 Rev B02
Title: White Hart Lane Access

Issue record

Issue	*Date*	*Author*	*Approved*	*Description*
B01	31/08/2016	[redacted]		WHL ITT Access Information
B02	27/10/2016	[redacted]		WHL ITT Access Information

Signature: *Prepared By* [redacted]	*Name:* [redacted] *Job Title: Access Planning Manager* *Date: 27/10/2016*
Signature: *Approved By* [redacted]	*Name:* [redacted] *Job Title: Project Manager* *Date: 27/10/2016*

Table of Contents

1. Introduction 4

2. Worksite Requests 4

3. Disruptive Possession Availability (See Appendix 1) 4

4. Standard Possession Opportunities (See Appendix 2) 4

5. Appendix 1: Disruptive Possession Availability 5

6. Appendix 2: Standard Possession Opportunities 6

1. Introduction

This document covers potential available access for London Overground White Hart Lane Project works.

2. Worksite Requests

As per LWHL-LWHL-MPM-PRO-RFL-00001 the Employer will be responsible for managing worksite requests and meeting attendance with NR throughout the project. The Contractor will be responsible for planning in line with the available access and notifying the Employer of any additional access requirements.

Initial disruptive possessions have been requested from NR by the Employer for White Hart Lane Project works. These are detailed below in section 3.

[These requests are within the NR EAS process and had their first formal submission to the TOC/FOCs in October 2016. This means that the requested disruptives may be subject to some change.]

Standard possession opportunities will be requested at DPPP or T-14 stage depending on Contractor requirements. Availability and expected durations for these are detailed in section 4 below.

3. Disruptive Possession Availability (See Appendix 1)

Appendix 1 to this document shows the current draft edition of the EAS 2018 Anglia Quarterly maps of the weeks where disruptive possessions have been requested for White Hart Lane Project Works. In planning on track time, at least 2 hours should be reduced from the given disruptive possession durations to account for the time to apply and remove protection arrangements during the possession. As a minimum these cover up to the adjacent stations of Silver Street and Bruce Grove. Weeks are given below:

Wk45 - 03/04.02.18 - 28hr
Wk51 - 17/18.03.18 - 52hr
Wk52 - 24/25.03.18 - 52hr
Wk18 - 28/29.07.18 - 28hr
Wk22 - 25/26.08.18 - 28hr

4. Standard Possession Opportunities (See Appendix 2)

Appendix 2 to this document is the EAS Statement for 2016 with Section 4 standard possession opportunities. This is to give an indication of currently expected access in EAS 2018, though this may be subject to change in both duration and regularity.
Due to the required time for protection arrangements to be put in place within possessions the Contractor should only plan against a weekly possession opportunity of 0115-0725 Sun with 4 hours on track time during this.

5. Appendix 1: Disruptive Possession Availability

PAGES 138 to 142 have been REDACTED

6. Appendix 2: Standard Possession Opportunities

EA1170 HACKNEY DOWNS NORTH JN TO ENFIELD TOWN

SECTION		Periods A and B 13.12.2015 to 14.02.2016	Period C 15.02.2016 to 03.04.2016	Period D 04.04.2016 to 14.05.2016	Periods E to G 15.05.2016 to 11.09.2016	Periods H and J 12.09.2016 to 10.12.2016	REMARKS
Hackney Downs North Jn and Seven Sisters Jn 1170.1	**WEEK END**	0025 Sun to 0725 Sun Down BLOCKED 0115 Sun to 0745 Sun Up BLOCKED	0025 Sun to 0725 Sun Down BLOCKED 0115 Sun to 0745 Sun Up BLOCKED	0025 Sun to 0725 Sun Down BLOCKED 0115 Sun to 0745 Sun Up BLOCKED	0025 Sun to 0725 Sun Down BLOCKED 0115 Sun to 0745 Sun Up BLOCKED	0025 Sun to 0725 Sun Down BLOCKED 0115 Sun to 0745 Sun Up BLOCKED	
	SUN/ MON	2350 Sun to 0340 Mon Down BLOCKED 0215 Mon to 0515 Mon Up BLOCKED	2350 Sun to 0340 Mon Down BLOCKED 0215 Mon to 0515 Mon Up BLOCKED	2350 Sun to 0340 Mon Down BLOCKED 0215 Mon to 0515 Mon Up BLOCKED	2350 Sun to 0340 Mon Down BLOCKED 0215 Mon to 0515 Mon Up BLOCKED	2350 Sun to 0340 Mon Down BLOCKED 0215 Mon to 0515 Mon Up BLOCKED	
	MID WEEK	2325 M-Th to 0515 T-F Down and Up Enfield/ Down and Up Southbury BLOCKED 4 w.p.a. (WA Cyclic Type B) ① 0025 TWTh to 0525 TWTh 0025 FS to 0345 FS Down BLOCKED 0050 TW to 0530 TW 0115 Th to 0530 Th 0115 FS to 0510 FS Up BLOCKED ②					

NOTES

A route to be available for Stansted Express services unless diverted via Tottenham Hale

① Divert and/or re-time via STP. See Section 5.

② C21 Grinder operating between Hackney Downs and Cheshunt via Southbury M/T and T/W of week 29 – no standard possession opportunities

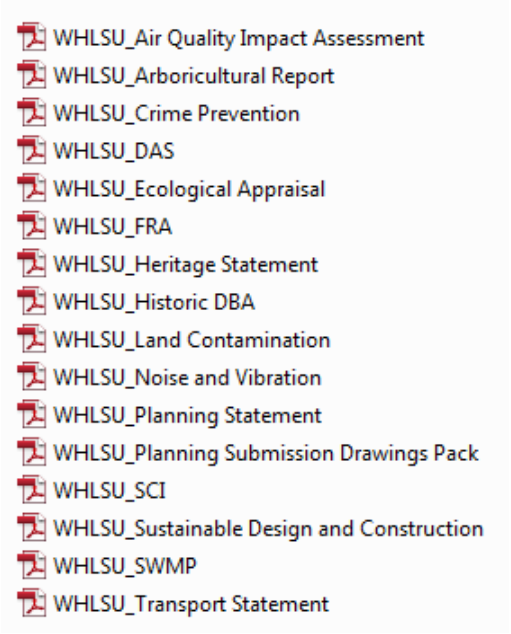
Electronic copy - uncontrolled when printed. Check schedule dates for next issue

The following documents that form part of the Works Information are provided on the CD-ROM that forms part of this contract:

- **Infrastructure Requirements – Planning (IR-P)**

  Section 3 – Infrastructure Requirements – Planning and Consents
  Document: LWHL-ALLW-PPL-REQ-RFL-00001 rev T01

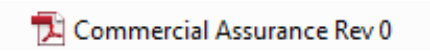
  The following documents are provided on the CD-ROM as Appendix A to the IR-P:



The following documents that form part of the Works Information are provided on the CD-ROM that forms part of this contract:

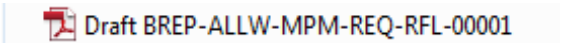
- **Commercial Assurance**

  Commercial Assurance
  Document: LWHL-LWHL-CPO-REP-RFL-00001 rev B01

- **Employers Information Requirements**

  Employers Information Requirements
  Document: LOPD-ALLW-MPM-REQ-RFL-00001 Rev B01

Agreement Part 4f

Site Information

The following documents are provided on the CD-ROM that forms part of this contract:

Buried Services

LWHL-ALLW-MPM-LET-NRA-00001_Underground_Services_Search_-_White_Hart_Lane

Design Reports

LWHL-ALLW-EGE-REP-MMD-00001_A02_Ground_Investigation_Report
LWHL-ALLW-EGM-PLA-MMD-00003_A04_Security_Plan
LWHL-ALLW-EGM-REP-MMD-00005_A02_Outline_Constructability_Review
LWHL-ALLW-EGM-REP-MMD-00006_A03_WHL_Sustainability_Appraisal_Report
LWHL-ALLW-EHF-REP-MMD-00002_A03_Human_Factors_Requirements_and_Assessment
LWHL-ALLW-ELL-REP-MMD-00002_A03_LV_Systems_&_Earthing_Report
LWHL-ALLW-ESS-REP-MMD-00001_B03_Fire_Engineering_Report

Factual Ground Report

LWHL-LWHL-EGE-REP-MMD-00001_B01_Factual_Ground_Investigation_Report

Ground Investigation

LWHL-ALLW-EGE-REP-MMD-00001_A02_Ground_Investigation_Report

Interface Agreement

Appendix 1 - LWHL-LWHL-EAR-DPL-RFL-00001 B02.1-171016
Appendix 2 - LWHL-LWHL-EAR-DPL-RFL-00003 B02.1-171016
Appendix 3 - LBH Local Implementation Plan (LIP)
Appendix 4 - 1.63-A-P-100RevC North East Corner
LWHL-ALLW-MPM-AGT-RFL-00001 LBH interface doc
LWHL-ALLW-MPM-AGT-RFL-00001 LBH interface doc

Overground Design Idiom

LS00-ALLW-MPM-DEB-RFL-00001_B08 [Design Guide] REDUCED

Operational Concept

LWHL-ALLW-MPM-REP-RFL-00002 Operational concept

Pedestrian Modelling

Pedestrian Modelling Report for White Hart Lane Station Upgrade_08_11_16_hi res

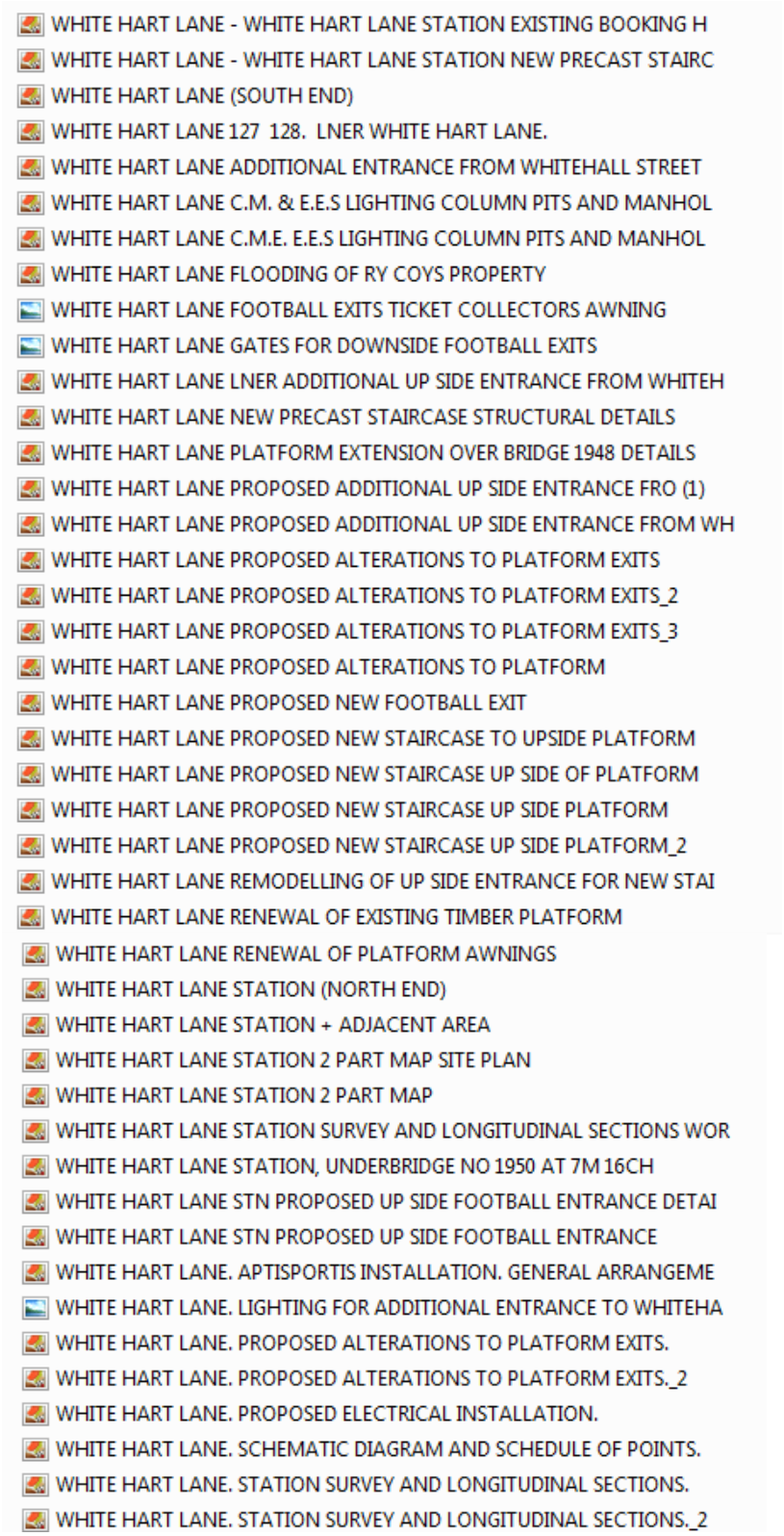
Pre-Construction Information

FL15_047 TFL Health Safety and Environment Policy A4 v7 TfL
LWHL-ALLW-HSE-REP-RFL-00001_B01 LOWHL - HSE PCI FINAL
LWHL-ALLW-HSE-REP-RFL-00001_B01 LOWHL - HSE PCI FINAL

NRG Records

297284
297291
Axonometric design scheme
Beam Reinforcement
BETWEEN BRUCE GROVE AND WHITE HART LANE BRIDGES NOS 1942 & 1
BRITISH RAILWAYS EASTERN REGION WHITE HART LANE
Diagram of locking
Door Details
General Arrangement for Roof steel work for new ticket offic
General Plan Station
HACKNEY DOWNS SECTION WHITE HART LANE
HDT. WHITE HART LANE. 40 WATT AMPLIFIER. B.R. WHITE HART LAN
HDT. WHITE HART LANE. 40 WATT AMPLIFIER. EASTERN REGION. WH
HDT. WHITE HART LANE. CIRCUIT DIAGRAM SYSTEM 1. B.R. WHITE
HDT. WHITE HART LANE. CIRCUIT DIAGRAM SYSTEM 2. B.R. WHITE
HDT.WHITE HART LANE. TOWN PLAN.
HDTWHITE HART LANE RENEWAL OF CONNECTIONS ITEM N. 15M111
HDTWHITE HART LANE. WHITE HART LANE RENEWAL OF CONNECTIONS
HDTWHITE HART LANE. WHITE HART LANE STATION.
New ticket office rooflight to staircase
Plan
Roof finishes plan
Roof structure plan
Sections and elevations
Sections over ticket office roof
Sections thro front wall of ticket office
Site Plan
Speccial coping details
SSV782 -SHENFIELD - SOUTHEND EXTENSION OF ELECTRIFICATION RE
Station Foot Bridge
Steelwork details
Steelwork details_2
Steelwork details_3
Temporary works and temporary ticket office
Ticket hall of messroom window
WHITE HART LANE - PROPOSED RETAINING WALL ON UP SIDE
WHITE HART LANE US STAIRCASE
WHITE HART LANE - WHITE HART LANE ADDITIONAL ENTRANCE FR (1)
WHITE HART LANE - WHITE HART LANE ADDITIONAL ENTRANCE FROM W
WHITE HART LANE - WHITE HART LANE FOOTBALL EXITS TICKET COLL
WHITE HART LANE - WHITE HART LANE GATES FOR DOWNSIDE FOO (1)
WHITE HART LANE - WHITE HART LANE GATES FOR DOWNSIDE FOOTBAL
WHITE HART LANE - WHITE HART LANE PROPOSED ALTERATIONS TO PL

NRG Records - Continued



West Anglia Stations Design Information

Architectural

- WASP-LWHL-EAR-DDE-PEL-00006 C01
- WASP-LWHL-EAR-DDE-PEL-00007 C01
- WASP-LWHL-EAR-DDE-PEL-00008 C01
- WASP-LWHL-EAR-DDE-PEL-00009 C01
- WASP-LWHL-EAR-DDE-PEL-00010 C01
- WASP-LWHL-EAR-DDE-PEL-00011 C01
- WASP-LWHL-EAR-DGA-PEL-00001 C01
- WASP-LWHL-EAR-DGA-PEL-00002 C01
- WASP-LWHL-EAR-DGA-PEL-00003 C01
- WASP-LWHL-EAR-DGA-PEL-00004 C01
- WASP-LWHL-EAR-DPL-PEL-00005 C01
- WASP-LWHL-EAR-SCH-PEL-00001_C01
- WASP-LWHL-EMF-DPL-PEL-00001 C01

Civils

- WASP-LWHL-EMF-DPL-PEL-00001 C01

Communications

- WASP-LWHL-ETL-DDI-PEL-00009 C01
- WASP-LWHL-ETL-DPL-PEL-00001 C01
- WASP-LWHL-ETL-DPL-PEL-00002 C01
- WASP-LWHL-ETL-DPL-PEL-00003 C01
- WASP-LWHL-ETL-DPL-PEL-00004 C01
- WASP-LWHL-ETL-DSC-PEL-00005 C01
- WASP-LWHL-ETL-DSC-PEL-00006 C01
- WASP-LWHL-ETL-DSC-PEL-00007 C01
- WASP-LWHL-ETL-DSC-PEL-00008 C01
- WASP-LWHL-ETL-SCH-PEL-00001_C01

Mechanical and Electrical

- WASP-LWHL-ELL-DPL-PEL-00001_C01
- WASP-LWHL-ELL-DPL-PEL-00003_C01
- WASP-LWHL-ELL-DSC-PEL-00002_C01
- WASP-LWHL-EME-SCH-PEL-00001_C01
- WASP-LWHL-EMF-DPL-PEL-00001 C01

Agreement Part 4g
Schedules to the Conditions of Contract

See Agreement Appendix C

Agreement Appendix A

White Hart Lane Station Upgrade Risks

All identified risks stated as being owned by the *Contractor* are deemed to be included in the Target Cost (Total of the Prices).

A risk register will be established and maintained throughout the contract. The risks and risk owner will be included in the risk register.

Pages 154 to 157 have been REDACTED

Agreement Appendix B

White Hart Lane Station Upgrade Activity Schedule

White Hart Lane Station Upgrade

SUMMARY

Item	Description	Quantity	Unit	Rate (£)	Total (£)
	SUMMARY				
1	Preliminaries & General cost	1	item		
2	Design	1	item		
3	Eastern Concourse	1	item		
4	Western Concourse	1	item		
5	Subway	1	item		
6	Urban Realm	1	item		
7	Platform Level	1	item		
8	Risk	1	item		
9	Fee (being 8.99% of sum of items 1 to 8 above)	1	item		
	TOTAL OF THE PRICES				£17,768,234.49

Pages 160 to 194 have been REDACTED

Agreement Appendix C

Conditions of Contract

The NEC Engineering and Construction Contract *conditions of contract* Third Edition June 2005 (with amendments dated June 2006, September 2011 and April 2013) for **Main Option C** as amended by the *additional conditions of contract* (Z1 and Z2 clauses);

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CONSOLIDATED CONDITIONS OF CONTRACT FOR MAIN OPTION C

These conditions are based on the NEC family of contracts, the copyright of which belongs to the Institution of Civil Engineers (incorporating 2006, 2011 and 2013 amendments to the NEC3 suite of contracts)

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Agreement Appendix D

Schedules to the Conditions of Contract

These Schedules form part of the Conditions of Contract. The schedule titles are as follows:

Schedule	
1	Additional definitions
2	Form of Performance Bond
3	Form of Parent Company Guarantee
4	Form of Warranty from *Contractor*
5	Form of Warranty from Subcontractor
6	Form of Warranty from Subconsultant
7	Conditions Precedent
8	Dispute Resolution Procedure
9	Form of Deed of Novation

The detailed schedules are contained in the following file that is provided on the CDRom that forms part of this contract: