

SECTION 4 – SCOPE

0. DOCUMENT CONTROL

0.1 Document History

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0.2 Final Version Approval

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1. ORGANISATIONAL OVERVIEW

1.1 Transport for London (TfL)

TfL is an executive body of the Greater London Authority, created in 2000 as the integrated body responsible for the Capital's transport system. Its primary role is to implement the Mayor of London's Transport Strategy and manage transport services across the Capital. TfL is made up of many predecessor organisations covering almost all transport modes in London, and therefore has the ingredients and accumulated experience to provide one of the largest integrated transport systems in the world.

TfL comprises of different modes. The modes are Surface Transport, Corporate, London Underground and Rail. TfL is a partner in Crossrail.

TfL manages London's transport network and is responsible for London's buses, the Underground, the Docklands Light Railway (DLR), London Overground, London River Services, London Cycle Hire, electric vehicles and policing. TfL also runs Victoria Coach Station and the London Transport Museum.

TfL is responsible for managing 360 miles (580km) of the TfL Road Network (TLRN) – all the red routes in London; including junctions, tunnels, bridges, flyovers, and all of London's 4,600 traffic lights, keeping them safe and the traffic flowing every minute of every day. In addition, it manages the London Congestion Charging and Lane Rental schemes and regulates the city's taxi and private hire trade. TfL also promotes a range of walking and cycling initiatives across the Capital.

1.2 Business Unit

The scheme is sponsored by TfL's Asset Management Directorate (AMD) Tunnels & Structures team who lead on design, operation and management of the highway structures on London's road network through the use of 21st century techniques and technology, ensuring road space works efficiently for all users.

This Feasibility Study is to be managed and delivered by TfL's Project and Programmes Directorate (PPD) who will report to AMD as sponsor.

TfL's Asset Management Directorate (AMD) ensures TfL's Surface Transport assets: roads; pavements; bridges; lighting; traffic signals; bus stations; bus stops and shelters; and trees, within the boundaries of the TRLN, are provided and managed in a way that is fit for now and for the future, by minimising whole-life costs, and creating safe, reliable and cared for infrastructure for our customers. AMD is the TfL asset client/owner and also the Technical Approval Authority for any proposed works affecting the TRLN.

2. INTRODUCTION

2.1 Structures and Tunnels Investment Programme 2 (STIP 2)

The Structures and Tunnels Investment Programme 2 (STIP 2) shall deliver part of this investment to bring Transport for London Road Network (TLRN) structures and tunnels up to a state of good repair and address risks to safety, functionality and environment.

STIP2 comprises the following six projects:

- Lambeth Bridge Refurbishment
- Vauxhall Bridge Refurbishment
- Rotherhithe Tunnel Refurbishment
- Blackwall Tunnel Southbound Ventilation Renewal
- Westway Structures Refurbishment
- Brent Cross Structures Refurbishment

This ITT document pertains to the **Brent Cross Structures Refurbishment** Project only

2.2 Pathway Stages

TfL follows an integrated project management delivery methodology, Pathway. Pathway comprises six stages as set out below:

- Stage 1 – Outcome Definition
- Stage 2 – Feasibility
- Stage 3 – Concept Design
- Stage 4 – Detailed Design
- Stage 5 – Delivery
- Stage 6 – Project Close

This commission relates to the first part of Stage 2 which aims to produce a Management Plan (including surveys, investigations and testing) only.

2.3 Background Information

The Brent Cross Interchange is at the junction of the A406 North Circular Road and A41 Hendon Way and is a strategic point in the Transport for London Road Network (TLRN) in North London. It was constructed between 1965 and 1967. The interchange comprises of 19 bridges, subways, culverts and retaining walls.



Brent Cross Interchange (A41/A406 junction)

A list of structures, location plan and description of structures are included in Section 3.

Over 50 years the condition of the structures has deteriorated and several components have reached or are nearing the end of their life in line with expectations and normal wear and tear.

The aim of this project is to plan and implement these works in a manner that minimises disruption to the TLRN and optimises road occupation by coordinating all works and to deliver value for money.

Stage 1 Outcome Definition was carried out between January 2015 and July 2016, and it delivered the following:

- Outcomes and benefits of the project
- Indicative scope for the project
- Potential constraints, dependencies and risks to delivery of the outcomes and benefits
- Summary of gaps in available information
- Review of the original order of magnitude cost estimate
- Indicative programme for the project
- Business case for the project
- Baseline value for money assessment

The outputs from Stage 1 confirmed that there are gaps in information, which could potentially affect the current risk to safety, functionality and environment. Investigations, testing and surveys are proposed in Stage 2 to enable an accurate determination of the existing condition of the structures and identify the full nature and extent of the works that are required to improve the state of good repair and address any potential risks to safety, functionality and environment.

2.4 Anticipated project works

Stage 1 Outcome Definition has identified the deficiencies in the structures that, based on current information, need to be addressed to achieve the reprioritised programme outcomes. These are listed, by structure, in Table 1 (refer to Outcome Definition Report ST130011-AMD-STR-30-RP-KC-0003 in [Annex A](#)).

Stage 2 will include investigations, which will assist in defining the extent of the work required to address these deficiencies. The investigations also target areas of the structures where the condition is unknown, and while it is not currently anticipated that work is required, this cannot be confirmed until the investigations are complete. The scope of the project is therefore not confirmed until completion of stage 2.

Table 1

Structure	Anticipated works
A406/12.60	Brent Cross North Bridge
	Replace sub-standard parapet and vehicle restraint system
	Replace waterproofing
	Replace or remove expansion joints
	Replace existing blocked drainage system
	Pier 15 & crosshead concrete repairs
	Restore exposed corroded and damaged tendons (targeted location)
	Replace joint material around Mesnager hinges
A406/12.40/2	Brent Cross South Bridge
	Replace sub-standard parapet and vehicle restraint system
	Replace waterproofing
	Replace or remove expansion joints
	Replace existing blocked drainage system
	Span H, Span 17 and Pier 20 concrete repairs
	Replace heavily corroded dowel bars at fixed end supports
	Replace joint material around Mesnager hinges
A406/12.60/1	Brent Cross NW Slip Road Bridge
	Replace sub-standard parapet and vehicle restraint system
	Replace waterproofing
	Replace expansion joints
	Replace polysulphide sealants across structure
	Replace existing blocked drainage system
	Replace joint material around Mesnager hinges
A41/08.70	Brent Cross Flyover
	Replace sub-standard parapet and vehicle restraint system (including on central reserve)

	Replace waterproofing (part replacement)
	Replace expansion joints
	Replace existing blocked drainage system
	Remove silt from internal cells and clean out weep holes
	Replace seals to access manhole covers
	Replace manhole cover
	Improve the existing drainage system to the internal cells
	Concrete repairs to targeted locations
	Replace joint material around Mesnager hinges
A41/12.50	Brent Cross Flyover Footbridge
	Repair and refurbish deck bracings (steel lateral supports on flyover piers)
	Replace polysulphide joints
	Treat corrosion near the anchorages and repaint hanger bars
	Corrosion treatment/repairs to hanger bar anchorages and plates at footbridge soffit and within flyover deck cells
A406/12.40	Brent Cross SW Slip Road Bridge
	Replace sub-standard parapet and vehicle restraint system
	Replace waterproofing
	Replace expansion joints
	Replace polysulphide sealants across structure
	Replace existing blocked drainage system
	Replace Mesnager hinges
	Replace heavily corroded dowel bars at fixed end supports

2.5 Interface with Brent Cross Cricklewood Development Project

In addition to the STIP2 project at Brent Cross, there is a large redevelopment project, Brent Cross Cricklewood Development, in progress based around the shopping centre on the north side of the A406 and a new town centre on the south side. The planning approval mandates capacity enhancements to the highway network, including changes to the A406/A41 interchange at Brent Cross. Construction works are planned January 2019 to December 2021. As part of the proposed scope of this enhancement is the demolishing and replacement of the other two existing slip roads, the Brent Cross NE & SE Slip Road Bridges.

2.6 Project boundaries

Following the reprioritisation process for STIP2, the scope of the project has been reduced to eight structures to address the deficiencies presenting the greatest risk. Through gaining an understanding of the scope of the Brent Cross Cricklewood project, this has been further reduced to six structures. The structures that are within scope for the project are listed below:

A406/12.60	Brent Cross North Bridge
A406/12.40/2	Brent Cross South Bridge
A406/12.60/1	Brent Cross NW Slip Road Bridge
A41/08.70	Brent Cross Flyover

A41/12.50	Brent Cross Flyover Footbridge
A406/12.40	Brent Cross SW Slip Road Bridge

2.7 Objectives

The constraints around the project, namely the construction of the development project's capacity enhancement works and the financial environment have caused the implementation of the project to be deferred until after the development project's work has been completed. Therefore, the requirements that are to be delivered in stage 2 at the present time are limited to ensuring that the structures remain safe and available until the STIP2 refurbishment works can be carried out.

2.8 Exclusions

Works to any of the other Brent Cross interchange structures are excluded from this project.

The following items of work are to be excluded:

- Any works to increase the capacity of the structures for abnormal loads (noted as inadequate HB load capacity)
- Any works to improve the highway alignment at the junction
- Any works to address defective lighting on or around the structures
- Any works associated with geotechnical structures

2.9 Potential Additional Scope

The scope of this commission has a potential to vary as the adjacent Brent Cross Cricklewood development project refines the scope of its highways capacity enhancement work. For example, some elements of TfL scope refurbishment work may require construction by the developer as part of their capacity enhancement works, which would change timescales. It is considered unlikely, but the scope of the STIP project could be varied to either include or remove structures or specific elements from scope should there be a significant change in the scope of the development project. This change is most likely to affect the slip roads. The Project Manager shall confirm the status on contract award and keep the project team up to date.

The Consultant may also be required to provide support or additional information for the STIP prioritisation to take place towards the end of the contract.

3. SITE INFORMATION

3.1 Description of Structures

3.1.1 Brent Cross Flyover

The Brent Cross Flyover superstructure is made up of two main decks, one under each carriageway, with the central gap between the decks bridged by precast concrete planks. Each deck has two forms of construction. The approach span main decks are made up of precast, pre-stressed concrete inverted "T" beams placed at close centres, infilled and topped with in-situ reinforced concrete. The central three span main decks are in-situ post-tensioned cellular concrete. Each cellular deck is made up of five cells that vary in depth resulting in a curved soffit profile, with the deepest section over the two internal support columns. In addition, the central decks support a suspended footbridge across the A406 North Circular Road.

The ends of the central deck section are supported on leaf piers, with fixed bearings to the west (Pier 3) and roller bearings at the east end (Pier 6). Piers 4 and 5 are built into the deck. The approach span decks are supported by pad bearings on top of pier crossheads: each of these piers has two columns. The ends of the approach spans sit on cellular abutments. All substructure components are reinforced concrete. The abutment and wing walls are finished with precast concrete panels that have an exposed aggregate finish.

3.1.2 Brent Cross Footbridge

The footbridge is a single span structure whose deck comprises of 18No reinforced concrete deck slabs, which are suspended by 32mm diameter steel hanger bars attached to the overhead Brent Cross Flyover and bears onto concrete bank seats at both ends. The deck is attached to the columns of the Brent cross Flyover on either side by horizontal steel fixings for lateral restraint. The substructure consists of reinforced concrete piers, abutment and wing walls.

3.1.3 Brent Cross South Bridge

Brent Cross South Bridge is a 7 span structure whose deck comprises two types of construction, pre-cast pre-stressed beams with concrete infill and in-situ reinforced concrete deck slabs. All spans are simply supported. The substructure consists of reinforced concrete piers, abutment and wing walls.

3.1.4 Brent Cross North Bridge

Brent Cross North Bridge is a 7 span structure whose deck comprises three types of construction, pre-cast pre-stressed beams with concrete infill, and in-situ reinforced concrete deck slabs with the third form being a combination of both. All spans are simply supported. The substructure consists of reinforced concrete piers, abutment and wing walls.

3.1.5 Brent Cross NW Slip Road Bridge

The A406 Brent Cross North West Slip Road Bridge is a 3 span structure that carries the entry slip road to the A406 North Circular eastbound carriageway from the midlevel roundabout. The

deck comprises pre-cast pre-stressed concrete T beams with reinforced concrete infill. All spans are simply supported. The substructure consists of reinforced concrete piers, abutment and wing walls. The abutment wing walls form retaining walls to the ramp to the A406 and are 73.8m in length.

3.1.6 Brent Cross SW Slip Road Bridge

The A406 Brent Cross South West Slip Road Bridge carries the exit slip road from the A406 North Circular eastbound carriageway up to the mid-level roundabout. The bridge has 2 spans of two types of construction. The higher deck comprises an in-situ concrete slab. The lower deck comprises pre-cast pre-stressed concrete T beams with reinforced concrete infill. Both decks are simply supported. The substructure consists of reinforced concrete piers, abutment and wing walls.

3.2 Undertakers Plant

The Consultant should confirm all utilities and 3rd party equipment/plant affecting the scope of the investigations. Available Statutory Utility (C2 stage) information is provided in [Annex D](#).

3.3 Existing Information

3.3.1 General arrangement

General arrangement drawings are provided in [Annex A](#).

3.3.2 Detailed information

TfL uses BridgeStation as its asset information system for highway structures. The BridgeStation record for each structure is the Health and Safety file for that structure. Read-only access to the relevant parts of BridgeStation will be provided to all tendering parties. TfL will require email addresses from the Consultant to facilitate this.

BridgeStation holds as-built drawings, inspection and maintenance record and other useful information for the structures. A list of all available drawings that are on BridgeStation is in [Appendix 2](#). Note that many of these drawings may be illegible because they are old inherited drawings and may contain limited information.

TfL's CDM Datastore system also holds Health and Safety information and reference shall be made to access all relevant information.

3.3.3 Outcome definition report

An Outcome Definition report was produced at the end of Stage 1. This includes a review of available information by the Stage 1 consultant. This report (and its appendices) is contained in [Annex A](#).

3.4 Lane rental

The Lane Rental charge system will be operational during the construction period and its impact should be considered at all times. TfL's general approach is to organise works outside of lane rental charging times. Exceptions to this may be required occasionally however these should be

minimised. This should be carefully considered during development of investigations, phasing and programming.

The lane rental scheme information can be accessed via the following link:

<https://tfl.gov.uk/info-for/urban-planning-and-construction/lane-rental-scheme>

The Brent Cross Interchange Structures area is 'high charge'.

4. SCOPE

4.1 Stage 2 Scope

This contract is divided into two parts:

4.1.1 PART A

- (1) Undertake structural investigations to further understand the asset condition and fill the gaps in knowledge identified in Stage 1 (Refer to [Annex A](#)).

Investigations, testing and surveys are required to enable an accurate determination of the existing condition of the structures from an Operational Risk Assessment basis, and identify the full nature and extent of the interventions required to keep these structural assets operational for up to a 10-year period without the need for major refurbishment.

4.1.2 PART B

- (2) Develop a management plan to ensure structural safety and availability until 2025, including recommendations for interim measures and remedial works, considering restrictions on access during the development project's construction phase.
- (3) In the case of remedial works, develop preferred options.

4.2 PART A - Surveys, Testing and Investigation

4.2.1 Introduction

Structural investigations have already taken place on some of the structures that are within scope for this project. These were undertaken on behalf of TfL and the development partners to support the development project's proposals.

The reports from the investigations that have been carried out are available, and referenced in the Outcome Definition Report (refer to [Annex A](#)). In summary, the investigations identified high chloride content in the concrete structures, which gives a high risk of further chloride induced corrosion.

There remain some gaps in the information required in order to achieve the objectives of this commission. In stage 1, further investigations were proposed to address those gaps.

The Consultant shall deliver the investigations.

4.2.2 Specification

The Consultant shall take responsibility for the specification of the investigations (Technical Plan) to ensure that the objectives can be achieved. A testing sub-contractor, if required, shall be proposed by the Consultant at tender stage. Subsequent changes in the proposed supply-chain shall be subject to approval by the Project Manager.

Technical Plan

The inspections, surveys, testing and investigations that were proposed in Stage 1 are detailed in the Technical Plan ([Annex A](#)) and contained in the Outcome Definition Report. The following structures are included in the scope of the Technical Plan:

A406/12.60	Brent Cross North Bridge
A406/12.40/2	Brent Cross South Bridge
A41/08.70	Brent Cross Flyover
A41/12.50	Brent Cross Flyover Footbridge

Asbestos management surveys

The work completed in Stage 1 confirmed the presence of asbestos in the Brent Cross Flyover (refer to *Identified Works and Risks* reports for the structures, contained within the Outcome Definition Report). There is currently no information regarding asbestos for the remainder of the structures.

TfL Health and Safety Team engaged 4Rail, TfL's asbestos specialist contractor to carry out a desk-top study of the structures within the scope of the project (except for SW Slip Bridge, which is a recent addition). The desk-top study has produced the following recommendations for further surveys and investigations, which should be delivered alongside the structural investigations:

- Brent Cross Flyover:

- Management survey (including internal cells)
- Localised refurbishment survey inside man-holes (drainage pipes), of waterproofing, of construction joint sealants and a presence at exposure of post-tension ducts
- Inspection of abutment chambers to confirm that previously discovered asbestos containing material has been either removed or encapsulated
- Brent Cross NW and SW Slip Road Bridges
 - Management survey (including of enclosed spans of NW Slip Road Bridge, if void)
 - Localised refurbishment survey inside man-holes (drainage pipes) , of construction joint sealants and of waterproofing
- Brent Cross North and South Bridges
 - Localised refurbishment survey inside man-holes (drainage pipes) , of construction joint sealants and of waterproofing

Supplementary investigations

The following additional investigations are required, that are not included in the Technical Plan:

A406/12.60/1 Brent Cross NW Slip Road Bridge

- Investigation of the enclosed span(s) to determine whether they are filled or voided.
- Where the span(s) are voided, creation of access (which could be made to form a permanent inspection access), and inspection from within touching distance, where possible

4.2.3 Site Documentation

Method statements and risk assessments will need to be submitted a minimum of 4 weeks prior to any site activity, for review and acceptance by the PPD Project team and the TfL H&S representative. Upon Contract award the Consultant shall be required to submit a schedule or matrix table identifying all method statements, risk assessments and any other core site documents which require TfL review and approval.

Core documentation such as Construction Phase and Health & Safety Plans (CPP), Emergency Preparedness Plans (EPP), Material Specifications, Approval of Sub-contractors, must be submitted to the client for approval 4 weeks in advance of any works starting on site.

It is important to note that it is not acceptable to be submitting any documents which require TfL review and approval at short notice, TfL cannot accept responsibility for any delay to programme if adequate time has not been provided for review and approval, all approval time frames have been provided within this document.

The Consultant shall provide a programme to include completion milestones for the completed investigation works. These milestones may be broken into investigations per structure, or the grouping of tests. These dates must include any making good after the respective tests have been completed.

4.2.4 Asbestos management surveys

It is recommended that an asbestos specialist is commissioned to undertake the asbestos management surveys. To minimise cost and disruption, these surveys shall be undertaken within the same traffic management, wherever possible, as the structural investigations.

4.2.5 Site access

The Consultant shall obtain all consents and arrange all access required. A plan of the site boundaries can be found in [Appendix 1](#).

Information about site access can be found in the Pre-Construction Information (PCI) document in Annex B.

4.2.6 Site work

Prior to any site work, the Project Manager shall be informed. All consents from relevant authorities shall be obtained by the Consultant.

All parties shall comply with TfL's Health and Safety requirements as detailed in the PCI including the preparation of Risk Assessments and Method Statements.

4.2.7 Traffic management

Traffic management (TM) schematic drawings for the structural investigations shall be submitted in advance of planned works and detailed TM drawings must be issued at least 8 weeks in advance of the works. These are required in order to inform the TfL Planned Interventions team, who co-ordinate and manage all road space bookings. Booking of road space is the responsibility of the consultant. Lane or road closures proposals shall be planned to be undertaken outside the Lane Rental hours. (see [Section 3.4](#)), should lane rental be required this should be included in the tenderers pricing.

4.2.8 Deliverables

The following deliverables shall be submitted to the Project Manager for review and approval by the technical approvals manager and sponsor.

Asbestos management plans shall be produced per structure. The draft plans shall be submitted within four weeks of completion of surveys, and the final report shall be submitted within one week of receipt of comments.

Factual Reports shall be produced per structure regarding the investigations and testing. The draft reports shall be submitted within four weeks of completion of site work, and the final reports shall be submitted within one week of receipt of comments from the Employer.

Interpretive reports shall be produced based on the contents of the factual reports. The draft interpretative reports shall be submitted within two weeks of completion of the factual report, and the final report shall be submitted within one week of receipt of comments from the Employer.

The Consultant shall provide completion milestones for the completed final reports; these dates must include any review periods for comment and updating reports (see section **4.5** for TAA requirements).

Deliverables shall be uploaded to BridgeStation by the Consultant, as advised by the project manager.

4.3 PART B – Management Plan

4.3.1 Introduction

A management plan is required for the structures within scope of this project to avoid a significant increase in operational risk or cost.

The recommended option in the management plan shall propose the lowest whole life cost option within the constraints described in this Scope. The cost, operational risk and asset condition profile shall be included.

The management plan will be used to inform the management of the structures for the foreseeable future and will also inform a prioritisation of the STIP programme.

4.3.2 Methodology

TfL are interested in the methodology the Consultant shall adopt to deliver a robust, balanced and structured management study. The client deems it essential that the study is developed collaboratively with key stakeholders.

The methodology and programme for undertaking the investigations and subsequent management study shall be agreed at the beginning of the contract at the Planning Workshop.

4.3.3 Constraints

The main constraint on works at the interchange is the construction of capacity enhancement works. The current expectation is that these will commence in January 2019 and complete December 2021. No planned works shall be carried out at this time, although reasonable access for inspection shall be maintained. These dates are subject to change and the latest information shall be confirmed at contract award.

The Consultant shall gain an understanding of the various constraints at the beginning of the contract. The Project Manager shall assist with providing access to stakeholders.

4.3.4 Risk assessment

A significant part of the methodology shall be a risk assessment. The risk assessment shall assess the likelihood of further deterioration over the specified time period and what the possible consequences are that may impact safety, functionality and the environment. Where the associated risk is then deemed too great during this period, appropriate mitigation options shall be proposed.

The management plan shall include a risk profile per asset without intervention and then show the revised risk profile with intervention.

The Consultant shall advise on major intervention timescales in the Management Plan to assist the client with longer term asset management planning.

4.3.5 Risk mitigation proposals

It is expected that the proposals for risk mitigation will appear in three phases:

- 1) Remedial works before the developer's contractor starts on site, January 2019.
- 2) Monitoring activities before, during and after the developer's contractor is working on site, between January 2019 and December 2021.
- 3) Remedial works after the developer's contractor finishes on site, and before a major refurbishment project commences, after December 2021.

It is expected that proposals in the latter phase would only be implemented if necessary, depending on the planned time of the proposed refurbishment. This option may be used where the risk is expected to remain tolerable while the developer's contractor is on site but the risk afterwards is difficult to determine.

Any proposals should avoid the need for substantial design and bespoke solutions. It is expected that any intervention should align with current maintenance practices rather than major project initiated solutions.

Proposals shall be accompanied by cost, programme and risk estimates for their implementation. The management plan shall also provide information about the residual risk to TfL in managing these structures.

In the event that it is not possible to achieve the objective of avoiding significant increase in risk and cost, alternative recommendations should be proposed.

4.3.6 Workshops

The Consultant shall attend and organise project workshops during the contract.

Planning workshop

An interactive planning workshop shall be arranged by TfL within 2 weeks of contract award.

The interactive planning workshop shall aim to achieve the following:

- Finalise the scope and specification for the surveys, investigations and testing, including access, traffic management arrangements, consents and approvals
- Agree the programme for delivery, including interim milestones and workshop dates
- How the contract is monitored and controlled
- Discuss risks and opportunities
- Health and Safety requirements
- Management plan outline structure
- How all parties will contribute

Documents for review shall be circulated at least one week in advance of the workshop.

Interim review workshops

TfL seeks assurance that the Consultant shall provide methodical structure to their overall approach and delivery of the management plans. Therefore we are expecting interim review workshops, which include presentation of draft plans, to be divided regularly into the overall delivery programme. It is essential that TfL has visibility in the direction and development of the plans as it is ongoing. This method will ensure early identification of any issues and also prevent the plans developing in a direction which is not suitable for the Sponsor and the TAA.

This includes the submission of draft plans which shall be issued at least one week in advance for review and will be presented to PPD Project Team, STIP Sponsor, TAA, Operational maintenance and Risk Manager. The Consultant shall accommodate a maximum of 12 persons from the TfL team. The purpose of these workshops is to understand the proposals on a technical level and to jointly contribute towards the proposals from a TfL Sponsorship, Delivery and Operational Maintenance perspective.

The Consultant shall take minutes of the workshop and record the allocation actions and agreement of close out dates. In addition, the Consultant shall update the draft plans and respond to comments/feedback.

4.3.7 Technical Approval Support

The TfL technical approval authority team provides technical approval and assurance to any applicable works on the Transport for London Road Network. This includes the Brent Cross Cricklewood development project.

The Consultant may be requested to provide additional resource from time to time to support the TfL team at times of demand on TfL resources. This resource shall be located at a TfL office to provide this support. Reasonable notice will be provided to allow the Consultant to manage their resources. The details will be agreed with the Project **Manager** at the time of the request.

4.3.8 Deliverables

One management plan per structure is required.

Exact presentation of each specific plan or document shall be agreed with TfL at the beginning of the task. The report shall include a cost and risk profile for each structure for the recommended option.

4.5 Technical approval and assurance

The allocated TfL technical approvals manager shall be engaged via the Project Manager and consulted on all aspects of the investigations and surveys. Time is to be included in the programme for review and preparation of comments by the technical approval manager, and for further iterations of deliverables. The period of time required for reviews shall be agreed in advance with the technical approval manager. The standard practice review period is 25 working days, however, collaborative working and issue of documents of the expected standard should allow this to be reduced towards a minimum of 10 days. At the beginning of commission, the technical approvals team should be engaged to agree methods of working. As a minimum the following requirements should be considered:

- The TAA shall be consulted sufficiently in advance about all technical matter / submissions, departures of engineering standards or specification, before they are submitted formally for acceptance into the study.
- The Consultant's Lead Designer shall attend all technical meetings in person with the TAA.
- A meetings schedule / table matrix for the entire length of the management study should be prepared and agreed at the beginning of the contract – stating location, timings, attendees, agenda.
- Some elements may need technical assurance by other teams such as TAA highways and drainage engineers. The Consultant shall notify and highlight any potential technical approvals to the Project Manager and he shall co-ordinate such reviews for approval. The same level of review periods that are required by the TAA for structures will apply to the other disciplines.

The guidance set out in the following documents shall be complied with

- Design Manual for Roads and Bridges
- Specification for Highway Works
- Eurocodes
- TfL guidance notes ([Annex A](#)):
 - SMT/GN/03/15 – Technical approval of highway structures and tunnels schemes
 - SMT/GN/02/14 – Requirements for the acceptance of proposals for structures and tunnels capital schemes
 - TfL Streetscape guidance

Industry good practice guidance for design, maintenance and management of structures shall be followed and complied with where possible. If there are good reasons for deviating from good practice or standards, justification should be submitted to the TAA for agreement before proceeding.

4.6 Stakeholder engagement

The delivery of this project will need to be undertaken in close co-ordination with other Key Stakeholders ([Appendix 3](#)) who have operations or works programmed in immediate locality of this project that may be impacted upon. The development partners and the TfL development project sponsor team are significant stakeholders in this project.

4.6.1 During Structural Investigation works

The Consultant shall develop a specifically tailored plan to manage external stakeholders to enable the SI works to proceed with minimal impact on road users, surrounding businesses, residents and other key stakeholders that may be affected. The Client is expecting all forms of communication to be produced by the Consultant and submitted to the Client for review and comment. All agreed communications shall be distributed (by various methods, to be agreed with the Project Manager) by the Consultant in a timely and efficient manner. The Stakeholder Engagement Strategy for the project is included in [Annex B](#) for information.

4.6.2 During management study

In addition the Client is seeking confirmation from the Consultant on the identification of Stakeholders (a general list can be found in the Stakeholder Engagement Strategy). The Consultant shall during the management study:

- further develop the register, identifying additional stakeholders and detailing interfaces, desired levels of engagement, power and interest information and risks concerning new and existing stakeholders
- identify opportunities and project synergies throughout the different project phases
- identify and understand the impact of constraints which affect the management plans
- make this information available to the Client. TfL will use this information to refine the Stakeholder Engagement Strategy.

4.7 Project management

4.7.1 Programme

The Consultant shall produce a programme for the duration of the contract, including all works from parts A and B. The programme logic shall be optimised through identification of critical path and micro critical paths (sub-paths), analysing activities that can be brought forward, overlapped, or worked on concurrently to ensure programme logic is optimised (lean and efficient).

TfL undertake a programme review which is in the form of APT – Advance Programme Thinking. This will be conducted as a joint effort between the TfL Planner and Consultant's Planner. The purpose of APT is to monitor in detail the programme and look at progress through a 'buffer chart' which track critical path and shows either positive or negative progress against planned progress (net buffer). APT also allocates actions, responsibility and close out dates which monitors individual parties' input towards the programme.

Critical path, Time Risk Allowance (TRA), Project Constraints, Calendar type, Public Holidays (and any Christmas shut-down) and milestones shall be identified on the programme.

Indicative milestones are detailed in section 5. The client expects programme logic to be optimised for 'lean and efficient' programming.

4.7.2 Progress Meetings and Reports

The Consultant shall submit a progress report to align with TfL's four-weekly reporting periods. This shall include a high-level summary of progress of the commission; a financial update, including Value of Work Done (VOWD) within the period, with any variations against planned cost profile will need a justification narrative; a Health and Safety update; a risk update and highlight key issues. Dates for submission of the progress reports shall be agreed with the Project Manager at the start of the commission.

The Consultant shall organise progress meetings to be held once every two weeks, or as otherwise agreed with the Project Manager. The Consultant shall be responsible for recording and maintaining minutes of all progress meetings, which shall include Consultant's supply chain, including any buildability/construction advisor to ensure issues can be discussed and actions agreed within the meeting.

The purpose of the progress meeting is to assess progress and performance, and identify any emerging issues and appropriate actions. The agenda shall include health and safety, progress, programme, commercial, risks and an opportunity to discuss other business.

4.7.3 Project Governance – Pathway Products

The Consultant and Contractor shall together assist the Project Manager during the preparation and / or updating of the following Stage 2 Pathway products

- Business Case
- Lessons Learned
- Operational Concept
- Maintenance Concept
- SDR – Scope / Design Review (Buildability)
- Estimate / Cost Plan & Forecast
- Stakeholder Engagement & Communications Plan
- Schedule
- Risk Register
- Progress Report

4.8 Health and safety

4.8.1 Construction (Design and Management) Regulations 2015

The project shall comply with the Construction (Design and Management) Regulations 2015 and all other applicable health and safety legislation. The investigation work to be undertaken will require a contractor and so there will be a requirement for a Principal Designer and a Principal Contractor to be appointed on the project.

The Consultant will be appointed to act as Principal Designer.

The Consultant shall confirm as part of his tender submission that he is also capable to undertake the role of Principal Contractor.

If both of these roles can be undertaken with adequate independence maintained throughout the project, the Consultant shall act as Principal Designer and Principal Contractor as defined by Construction (Design and Management) Regulations 2015. Both appointments will be made by the Client.

Alternatively, the Consultant shall nominate to TfL a preferred contractor to undertake the role of Principal Contractor, which TfL shall then appoint as the Principal Contractor for the project. The Consultant shall demonstrate to the satisfaction of TfL that the Contractor is willing and capable to fulfil this role.

TfL shall not seek a direct contractual relationship with the Principal Contractor.

4.8.2 Pre-Construction Information (PCI)

Refer to Vol 2 [Annex B](#) for the PCI documents.

4.8.3 Health and Safety Team

The Consultant shall provide CVs for all members of the project Health and Safety Team with their proposal and ensure that these people once accepted are available during the contract. The Consultant shall inform the Project Manager of any proposed changes in personnel and provide CVs for new members of the Team, for the approval of the Project Manager.

4.8.4 Hazards

All identified hazards shall be recorded within the graphical model in addition to within the Designer's Hazard Log.

4.9 Delivery team staff and experience

The Consultant shall identify and list all key staff that will be employed on the Project and present a project organisation diagram showing interdependencies. The Consultant shall provide CV's for all staff listed. Once the Contract has been awarded any changes to the Consultant's staff shall be agreed with TfL Project Manager prior to the individual commencing works on the Project. All staff shall demonstrate that they have a relevant qualification in civil or structural engineering with recent experience of similar projects and have the necessary knowledge and skills required, ensuring successful delivery. Below is a list (not exhaustive) of some of the key individuals that the Client expects to see on the Project

- Project Director
- Project Manager
- Technical / Discipline Lead(s)
- Specialist advisors
- Construction advisor/s
- Information Manager
- Health and Safety Manager / Advisor
- Planner / programmer
- Quantity Surveyor
- Estimator

- Risk Manager.

4.10 Co-location

Experience from STIP1 shows the benefits of a co-located and integrated team. However, with the current project scope full co-location is not required.

Both the sponsor and the project manager shall promote the ethos of collaborative working and support the integrated team and all suppliers are expected to do likewise.

Both TfL teams, the Consultant and supply chain should be willing and should make provision for project team members to work alongside each other, regardless of organisation, to suit the project, but without the expense of specific IT equipment or specifically allocated desks.

4.11 Quality Requirements

The Consultant shall operate a Quality Management System conforming to BS EN ISO 9001. The Consultant shall carry out their duties in accordance with the accepted quality procedures forming part of his Quality Proposal.

The Consultant shall conform to the BIM quality requirements in section **4.13**.

When requested by the Employer, the Consultant shall make available the quality manuals and all other relevant information for inspection. The Consultant shall provide copies of any certification, technical reviews, audit reports etc. and related documentation.

The Consultant shall provide details of authorised signatories for the various elements of the review, checking and approval of design, reports and the like at the beginning of the contract and inform the Project Manager of any proposed changes, which must be agreed with the Project Manager.

The Consultant shall allow the Employer's authorised representatives to undertake any inspection, audit or check at any time within working hours, and within the period of notice of five working days, of any aspect of the Consultant's carrying out of the services, including, but not limited to, inspection of the Consultant's technical and organisational security measures for the protection of Personal Data.

4.12 Better Information Management (BIM)

The Asset Management Directorate is implementing the principles of Building Information Modelling through its Better Information Management (BIM) change programme in line with the BIM Protocol in the TfL Professional Services Framework. Whilst this is in the early stages of development, the principles shall be applied to the STIP2 programme and projects to ensure that good practice relating to information generation, modelling, management and collaboration is embedded from the outset.

The STIP2 projects are part of the BIM Pioneer Projects trial. This will entail early use of the TfL BIM standards, processes and guidance which are under development to enable them to be tested and refined before wider roll-out across the business.

The project participants will be expected to contribute to this development by providing feedback and suggestions for improvement to the BIM team through interviews and workshops.

The Employer's Information Requirements ([Annex C](#)) document explains in further detail how information is to be provided.

4.13 Records and archives

The Consultant shall be given access to all available records and archived documents. This shall include but not be limited to: BridgeStation and CDM DataStore.

The Consultant shall ensure that all required record information is transferred and stored within the CDE, and BridgeStation records are updated.

Once all the inspections, surveys and studies are complete, the information will be entered onto BridgeStation by the Consultant, in accordance with TfL's file-naming convention and guidelines.

4.14 Deliverables

The format of all deliverables shall be agreed with the Project Manager in advance, who shall consult with the Sponsor and Technical Approvals Manager and other stakeholders as required.

A list of all deliverables can be found in the Information and Model Production and Delivery Table (IMPDT) ([Annex C](#)).

All deliverables shall be shared using the CDE in accordance with the BIM protocol and Employer's Information Requirements and shall be shared in their native format for review by the project team. The distribution of deliverables by email or other media shall be considered poor practice.

Deliverables shall be published in portable document format (pdf) and native file formats. Each deliverable shall be a single file, containing all appendices. Deliverables shall be fully searchable and the contents page and cross references shall be created as hyperlinks to aid navigation. The native file formats shall also be provided.

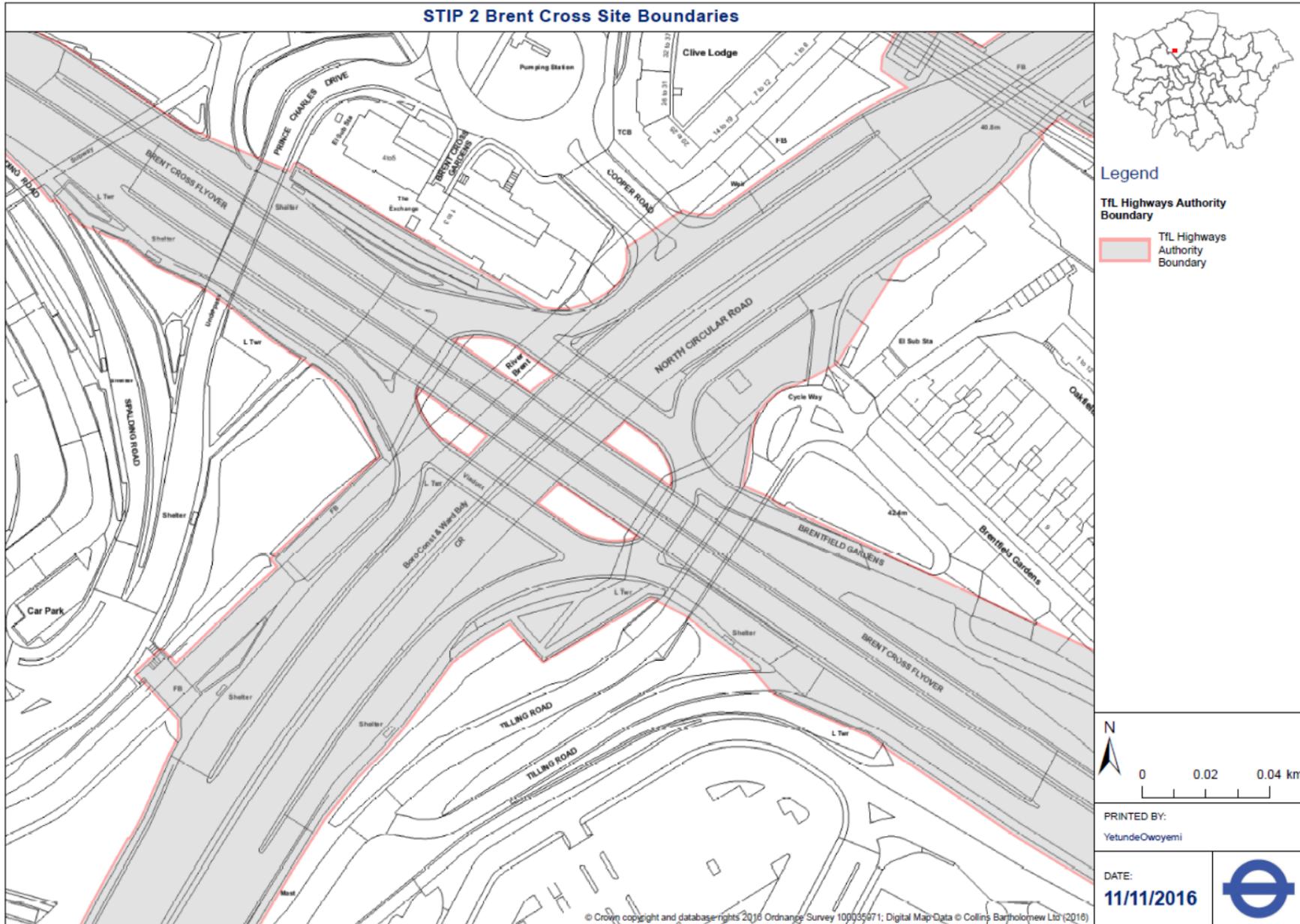
Signatures on published deliverables, where required to demonstrate compliance with the Consultant's quality assurance procedures, shall be applied in ink along with a printed version of signatory's name and the date the signature was applied. The signature page shall include the document title, document reference and revision number. The signature page shall then be digitised and inserted into the pdf document.

Published documents, which have been accepted by the Client and where relating to a structure shall be uploaded to BridgeStation by the Consultant.

All outputs shall be delivered by 31st October 2017.

APPENDICES

Appendix 1: Site Boundary



Appendix 2: Schedule of documents provided in [Annex A](#)

Doc ref	Title	Date
ST130011-AMD-STR-30-RP-KC-0003	Outcome definition report	09/06/2016
SMT-GN-02-14	Development and Acceptance of Proposals	01/04/2014
SMT-GN-03-15	Technical Approval of Highway Structures and Tunnels Schemes	01/04/2015
ST130011-AMD-STR-30-DRG-SP-0001	Location Plan	30/06/2016
ST130011-AMD-STR-30-DRG-SP-0002	General Arrangement A41/08.70 Brent Cross Flyover	15/08/2016
ST130011-AMD-STR-30-DRG-SP-0003	General Arrangement A406/12.50 Brent Cross Footbridge	15/08/2016
ST130011-AMD-STR-30-DRG-SP-0004	General Arrangement A406/12.60 Brent Cross North Bridge	15/08/2016
ST130011-AMD-STR-30-DRG-SP-0005	General Arrangement A406/12.40/2 Brent Cross South Bridge	15/08/2016
ST130011-AMD-STR-30-DRG-SP-0006	General Arrangement A406/12.60/1 Brent Cross NW Slip Bridge	15/08/2016
ST130011-AMD-STR-30-DRG-SP-0009	General Arrangement A406/12.40 Brent Cross SW Slip Bridge	15/08/2016

The H&S file and other available information for each structure is available on TfL's BridgeStation portal. Documents referenced to in the "Identified Works and Risks" reports are part of this information. Read only access to the relevant parts of BridgeStation will be provided to all tendering parties.

Appendices to Outcome Definition Report

Document number	Document	Folder
ST130011-AMD-STR-30-RP-YD-0014	A41-08.70 Brent Cross Flyover – Identified Works and Risks	Identified Works and Risks
ST130011-AMD-STR-30-RP-YD-0026	A406-12.40 Brent Cross SW Slip Road - Identified Works and Risks	Identified Works and Risks
ST130011-AMD-STR-30-RP-YD-0030	A406-12.50 Brent Cross Footbridge - Identified Works and Risks	Identified Works and Risks
ST130011-AMD-STR-30-RP-YD-0034	A406-12.60 Brent Cross North Bridge- Identified Works and Risks	Identified Works and Risks
ST130011-AMD-STR-30-RP-YD-0036	A406-12.60.1 Brent Cross NW Slip Road- Identified Works and Risks	Identified Works and Risks
ST130011-AMD-STR-30-RP-YD-0040	A406-12.40.2 Brent Cross South Bridge- Identified Works and Risks	Identified Works and Risks
ST130011-AMD-STR-30-RP-YD-0015	A41-08.70 Brent Cross Flyover – Structure Review	Structure Review Reports
ST130011-AMD-STR-30-RP-YD-0027	A406-12.40 Brent Cross SW Slip Road- Structure Review	Structure Review Reports
ST130011-AMD-STR-30-RP-YD-0031	A406-12.50 Brent Cross Footbridge- Structure Review	Structure Review Reports
ST130011-AMD-STR-30-RP-YD-0035	A406-12.60 Brent Cross North Bridge- Structure Review	Structure Review Reports
ST130011-AMD-STR-30-RP-YD-0037	A406-12.60.1 Brent Cross NW Slip Road- Structure Review	Structure Review Reports
ST130011-AMD-STR-30-RP-YD-0041	A406-12.40.2 Brent Cross South Bridge- Structure Review	Structure Review Reports
60319718_M118_REP_0001-B	A406/A41 Brent Cross Junction Structural Investigation: Final Report Section 1	Investigation Reports
60319718_M118_REP_0001-B	A406/A41 Brent Cross Junction Structural Investigation: Final Report Section 2	Investigation Reports
A12970/VAA/F	A41/A406 Brent Cross Concrete Structural Investigations Technical Report	Technical Plan
ST130011-AMD-STR-30-RP-KC-0006	Gaps and Assumptions Log	Gaps and Assumptions Log

List of drawings available on BridgeStation

The hyperlinks should allow direct access, once access to BridgeStation has been provided. Please refer to Section 3.3 for further information about the limitations of these drawings.

A406/12.60 Brent Cross North Bridge

Filename	Number	Description	Comment
2002-09 Location Plan	0	Location Plan - Sept 2002	Readable
GA.pdf	0	General Arrangement Drawings	Readable
Untitled_01.pdf	0	General Arrangement Drawings	Unreadable
DCS_TL_58293_5-69.pdf	0	Impact Damage Drawing	Readable
General Arrangement - Repair and Protective Plate	0	As-Built - 2011-12 Damage Repair Scheme	Readable
Extent of Damage to Edge Beam 1 of 2	0	As-Built - 2011-12 Damage Repair Scheme	Readable
Extent of Damage to Edge Beam 2 of 2	0	As-Built - 2011-12 Damage Repair Scheme	Readable
Drawing Extent of Impact Damage - 2007 WSP	0	WSP Special Inspection Drawing - 2007	Readable
48271 Brent Cross Flyover 58294 113 A41 8.70-4305.pdf	48271	0	Majority readable
58294 118 A41 8.70-4438.pdf	48258	Other Drawings	Majority readable
58294 118 A41 8.70-4443.pdf	48264	Spans 12 and 25	Part readable
58294 122 VARIOUS-4558.pdf	70451	Revised dimensions of spans 10-11	Unreadable
Brent Cross Flyover 58294 113 A41 8.70-4303.pdf.pdf	48268	Foundation key plan	Majority readable
48286 Brent Cross Flyover 58294 113 A41 8.70-4324.pdf	48286	Drainage plan (North circular road)	Majority readable
48287 Brent Cross Flyover 58294 113 A41 8.70-4325.pdf	48287	Drainage details	Majority readable
48288 Brent Cross Flyover 58294 113 A41 8.70-4326.pdf	48288	Drainage sections	Part readable
48289 Brent Cross Flyover 58294 113 A41 8.70-4327.pdf	48289	Drainage plan- Hendon way and flyover	Part readable
70438 Brent Cross Flyover 58294 122 VARIOUS-4550.pdf	70438 aka B/C/ 6944/89	Fencing details	Part readable
Brent Cross Flyover 58294 122 VARIOUS-4542.pdf.pdf	70431 aka B/C/ 6944/67	Parapet fencing and bow topped fence	Majority readable
48236 Brent Cross Flyover 58294 118 A41 8.70-4450.pdf	48236	Crash barrier	Part readable
Brent Cross Flyover 58294 118 A41 8.70-4447.pdf.pdf	48239 aka B/C/F/ 81	Details of M5 railings flat top type	Majority readable
Brent Cross Flyover 58294 118 A41 8.70-4445.pdf.pdf	48266	Typical details of retaining wall abutment corners and facing panels	Part readable
48270 Brent Cross Flyover 58294 113 A41 8.70-4304.pdf	48270	Spans 13, 14, 18, 19, 30 and E	Part readable
Brent Cross Flyover 58294 118 A41 8.70-4446.pdf.pdf	48267	Details of pile caps and footings for piers 1, 2, 7-10,15,16, 21, 23-25 and 27	Majority readable
Brent Cross Flyover 58294 118 A41 8.70-4448.pdf.pdf	0	Details of pier No.'s 10, 11, 15, 16, 21-28 and 30	Majority readable
Brent Cross Flyover 58294 122 VARIOUS-4531.pdf.pdf	70465 aka 6944/52	Pile caps for piers 11-14, 17-20, 22, 26, 28 and 30	Part readable
Brent Cross Flyover 58294 118 A41 8.70-4430.pdf.pdf	48243	Roundabout and flyover piers No's 1, 2, 4, 5, 7-10, 12-14, 17-20 and 29 Reinforcement details	Majority readable
70428 Brent Cross Flyover 58294 122 VARIOUS-4541.pdf	B/C 6944/67	Bearings on piers	Unreadable

A406/12.40/2 Brent Cross South Bridge

Filename	Number	Description	Comment
58294_46_A41_A5-803.pdf	70448	Revised details for spans 21, 29 and H	Unreadable
58294_113_A41_8.70-4304.pdf	48270	Spans 13, 14, 18, 19, 30 and E	Part readable
58294_118_A41_8.70-4452.pdf	48238	Spans 17, 21 and K	Majority readable
58294_122_VARIOUS-4531.pdf	70465 aka B/C 6944/52	Pile caps for piers 11-14, 17-20, 22, 26, 28 and 30	Part readable
Brent_Cross_Flyover_58294_113_A41_8.70-4303.pdf.pdf	48268	Foundation key plan	Majority readable
48285_Brent_Cross_Flyover_58294_113_A41_8.70-4323.pdf	48285	Diversion of MCC foul sewer	Readable
48286_Brent_Cross_Flyover_58294_113_A41_8.70-4324.pdf	48286	Drainage plan (North circular road)	Majority readable
48287_Brent_Cross_Flyover_58294_113_A41_8.70-4325.pdf	48287	Drainage details	Majority readable
48288_Brent_Cross_Flyover_58294_113_A41_8.70-4326.pdf	48288	Drainage sections	Part readable
48289_Brent_Cross_Flyover_58294_113_A41_8.70-4327.pdf	48289	Drainage plan- Hendon way and flyover	Part readable
70438_Brent_Cross_Flyover_58294_122_VARIOUS-4550.pdf	70438 aka B/C/ 6944/89	Fencing details	Part readable
Brent_Cross_Flyover_58294_122_VARIOUS-4542.pdf.pdf	70431 aka B/C/ 6944/67	Parapet fencing and bow topped fence	Majority readable
48236_Brent_Cross_Flyover_58294_118_A41_8.70-4450.pdf	48236	Crash barrier	Part readable
Brent_Cross_Flyover_58294_118_A41_8.70-4447.pdf.pdf	48239 aka B/C/F/ 81	Details of M5 railings flat top type	Majority readable
Brent_Cross_Flyover_58294_118_A41_8.70-4445.pdf.pdf	48266	Typical details of retaining wall abutment corners and facing panels	Part readable
Brent_Cross_Flyover_58294_118_A41_8.70-4442.pdf.pdf	48271	Details of spans 26, C and H	Majority readable
48271_Brent_Cross_Flyover_58294_113_A41_8.70-4305.pdf		Precast beams	Majority readable
Brent_Cross_Flyover_58294_118_A41_8.70-4446.pdf.pdf	48267	Details of pile caps and footings for piers 1, 2, 7-10, 15, 16, 21, 23-25 and 27	Majority readable
Brent_Cross_Flyover_58294_118_A41_8.70-4448.pdf.pdf	48241	Details of pier No.'s 10, 11, 15, 16, 21-28 and 30	Readable
Brent_Cross_Flyover_58294_118_A41_8.70-4430.pdf.pdf	48243	Roundabout and flyover piers No's 1, 2, 4, 5, 7-10, 12-14, 17-20 and 29 Reinforcement details	Majority readable
Brent_Cross_Flyover_58294_118_A41_8.70-4429.pdf.pdf	48242	Pile caps for piers 4, 5 and 29	Majority readable
Brent_Cross_Flyover_58294_122_VARIOUS-4552.pdf.pdf	70445 aka B/C 6944/101	Sketches S2 and S4 (Pile cap 21 and 4 East)	Unreadable
70428_Brent_Cross_Flyover_58294_122_VARIOUS-4541.pdf	B/C 6944/67	0	Unreadable

A406/12.40/2 Brent Cross NW Slip Bridge

Filename	Number	Description	Comment
58294_118_A41_8.70-4439.pdf	48259	Span L; Abutment L and Pier M	Part readable
58294_118_A41_8.70-4432.pdf	48249	Retaining walls No. D11 and D12	Majority readable
58294_118_A41_8.70-4449.pdf	48240	Spans D, 15, 16, 23, 24, 27, 28 and D	Part readable

58294_114_BRENT_CROSS_FLYOVER-4360.pdf	70498 aka 6944/36	Retaining wall D11 and D12	Part readable
58294_114_BRENT_CROSS_FLYOVER-4371.pdf	70461 aka B/C 6944/48	Abutment J and walls under spans K and L	Part readable
58294_122_VARIOUS-4543.pdf	B/C 6944/68	Bearings on pier D and abutments	Unreadable
Brent Cross Flyover 58294_113_A41_8_70-4303.pdf.pdf	48268	Foundation key plan	Majority readable
48286 Brent Cross Flyover 58294_113_A41_8.70-4324.pdf	48286	Drainage plan (North circular road)	Majority readable
48287 Brent Cross Flyover 58294_113_A41_8.70-4325.pdf	48287	Drainage details	Majority readable
48288 Brent Cross Flyover 58294_113_A41_8.70-4326.pdf	48288	Drainage sections	Majority readable
48289 Brent Cross Flyover 58294_113_A41_8.70-4327.pdf	48289	Drainage plan- Hendon way and flyover	Part readable
70438 Brent Cross Flyover 58294_122_VARIOUS-4550.pdf	70438 aka B/C/ 6944/89	Fencing details	Part readable
Brent Cross Flyover 58294_122_VARIOUS-4542.pdf.pdf	70431 aka B/C/ 6944/67	Parapet fencing and bow topped fence	Majority readable
48236 Brent Cross Flyover 58294_118_A41_8.70-4450.pdf	48236	Crash barrier	Majority readable
Brent Cross Flyover 58294_118_A41_8_70-4447.pdf.pdf	48239 aka B/C/F/ 81	Details of M5 railings flat top type	Readable
Brent Cross Flyover 58294_118_A41_8_70-4445.pdf.pdf	48266	Typical details of retaining wall abutment corners and facing panels	Part readable
48291 Brent Cross Flyover 58294_113_A41_8.70-4328.pdf	48291	Layout of crash barrier and fencing for NW and NE slip roads	Part readable
48271 Brent Cross Flyover 58294_113_A41_8.70-4305.pdf	48271	Precast beams	Majority readable
Brent Cross Flyover 58294_118_A41_8_70-4446.pdf.pdf	48267	Details of pile caps and footings for piers 1, 2,7-10,15,16,21,23-25 and 27	Majority readable
Brent Cross Flyover 58294_118_A41_8_70-4448.pdf.pdf	48241	Details of pier No.'s 10, 11, 15, 16, 21-28 and 30	Majority readable
Brent Cross Flyover 58294_122_VARIOUS-4531.pdf.pdf	70465 aka 6944/52	Pile caps for piers 11-14, 17-20, 22, 26, 28 and 30	Part readable
Brent Cross Flyover 58294_114_BRENT_CROSS_FLYOVER-4372.pdf.pdf	B/C 6944/48 (70463)	Abutments E, F, G and wall E13	Unreadable
70428 Brent Cross Flyover 58294_122_VARIOUS-4541.pdf	B/C 6944/67	Bearings on piers	Unreadable

A406/12.40 Brent Cross SW Slip Bridge

Filename	Number	Description	Comment
58294_118_A41_8.70-4437.pdf	48254	Retaining wall G8	Majority readable
58294_118_A41_8.70-4440.pdf	48255	Retaining wall G7	Part readable
Brent Cross Flyover 58294_113_A41_8_70-4303.pdf.pdf	48268	Foundation key plan	Majority readable
48286 Brent Cross Flyover 58294_113_A41_8.70-4324.pdf	48286	Drainage plan (North circular road)	Part readable
48287 Brent Cross Flyover 58294_113_A41_8.70-4325.pdf	48287	Drainage details	Majority readable
48288 Brent Cross Flyover 58294_113_A41_8.70-4326.pdf	48288	Drainage sections	Majority readable
48289 Brent Cross Flyover 58294_113_A41_8.70-4327.pdf	48289	Drainage plan- Hendon way and flyover	Part readable
70438 Brent Cross Flyover 58294_122_VARIOUS-4550.pdf	70438 aka B/C/ 6944/89	Fencing details	Part readable
Brent Cross Flyover 58294_122_VARIOUS-4542.pdf.pdf	70431 aka B/C/ 6944/67	Parapet fencing and bow topped fence	Majority readable

48236_Brent_Cross_Flyover_58294_118_A41_8.70-4450.pdf	48236	Crash barrier	Part readable
Brent_Cross_Flyover_58294_118_A41_8.70-4447.pdf.pdf	48239 aka B/C/F/ 81	Details of M5 railings flat top type	Readable
Brent_Cross_Flyover_58294_118_A41_8.70-4445.pdf.pdf	48266	Typical details of retaining wall abutment corners and facing panels	Majority readable
48292_Brent_Cross_Flyover_58294_113_A41_8.70-4329.pdf	48292 B/C/F/81	Layout of crash barrier and fencing for roads 6 and 7 (SW and SE slip roads)	Unreadable
48258_Brent_Cross_Flyover_58294_118_A41_8.70-4438.pdf	48258	Details of spans 10, 11, span 29	Majority readable
48271_Brent_Cross_Flyover_58294_113_A41_8.70-4305.pdf	48271	Precast beams	Majority readable
Brent_Cross_Flyover_58294_118_A41_8.70-4448.pdf.pdf	48241	Details of pier No.'s 10, 11, 15, 16, 21-28 and 30	Readable
Brent_Cross_Flyover_58294_122_VARIOUS-4531.pdf.pdf	70465 aka 6944/52	Pile caps for piers 11-14, 17-20, 22, 26, 28 and 30	Part readable
Brent_Cross_Flyover_58294_114_BRENT_CROSS_FLYOVER-4372.pdf.pdf	B/C 6944/48 (70463)	Abutments E, F, G and wall E13	Unreadable
70428_Brent_Cross_Flyover_58294_122_VARIOUS-4541.pdf	B/C 6944/67	Bearings on piers	Unreadable

A406/12.50 Brent Cross Footbridge

Filename	Number	Description	Comment
Main Drawing	0	Main Drawing	Readable
Location Plan	0	Location Plan	Readable
Brent_Cross_Flyover_58294_118_A41_8.70-4445.pdf.pdf	48266	Typical details of retaining wall abutment corners and facing panels	Part readable
70438_Brent_Cross_Flyover_58294_122_VARIOUS-4550.pdf	70438 aka B/C/ 6944/89	Fencing details	Part readable
Brent_Cross_Flyover_58294_122_VARIOUS-4542.pdf.pdf	70431 aka B/C/ 6944/67	Parapet fencing and bow topped fence	Majority readable
Brent_Cross_Flyover_58294_118_A41_8.70-4447.pdf.pdf	48239 aka B/C/F/ 81	Details of M5 railings flat top type	Majority readable

A41/08.70 Brent Cross Flyover

Filename	Number	Description	Comment
58294_46_A41_A5-801.pdf		Span L General crosssectional drawing (unreadable detail)	Unreadable
58294_46_A41_A5-802.pdf	B/C/F/7	Crash barrier details	Unreadable
58294_46_A41_A5-804.pdf	70595	Borehole drawing (unreadable)	Unreadable
58294_46_A41_A5-806.pdf		Unreadable Borehole drawing	Unreadable
58294_46_A41_A5-807.pdf		General crosssectional drawings	Unreadable
58294_46_A41_A5-808.pdf		Elevation of wall No.4	Part readable
58294_46_A41_A5-809.pdf	70441 aka O/C/6944/92	0	Unreadable
cs.pdf	48328	Flyover Cross sections 1-8	Majority readable
cs2.pdf	48329	Flyover Cross sections 9-13	Majority readable
cs3.pdf	48330	Flyover Cross sections 14-17	Majority readable
ga.pdf	6944/1	Scheme location plan	Unreadable
ga2.pdf	70596 aka O/C/6944/1	Scheme location plan	Unreadable
ga3.pdf	70596 aka O/C/9644/1	Scheme location plan	Unreadable

58294_49_VARIOUS-964.pdf	15263	Location Plan	Readable
58294_49_VARIOUS-927.pdf	70594 aka O/C/6944/4	0	Part readable
58294_49_VARIOUS-914.pdf	6944/1	GA + Longitudinal Profile Drawings	Unreadable
58294_49_VARIOUS-915.pdf	70596	GA + Longitudinal Profile Drawings	Unreadable
58294_49_VARIOUS-916.pdf	6944/1	GA + Longitudinal Profile Drawings	Unreadable
58294_49_VARIOUS-917.pdf	6994/1	GA + Longitudinal Profile Drawings	Unreadable
58294_49_VARIOUS-918.pdf	6944/1	GA + Longitudinal Profile Drawings	Unreadable
58294_49_VARIOUS-919.pdf	6944/1	GA + Longitudinal Profile Drawings	Unreadable
58294_49_VARIOUS-920.pdf	O/C/6944/63	GA + Longitudinal Profile Drawings	Unreadable
58294_49_VARIOUS-921.pdf	O/C/6944/63	GA + Longitudinal Profile Drawings	Unreadable
58294_49_VARIOUS-922.pdf	70462 aka O/C/6944/63	GA + Longitudinal Profile Drawings	Unreadable
58294_49_VARIOUS-923.pdf	70450	GA + Longitudinal Profile Drawings	Unreadable
58294_49_VARIOUS-924.pdf	70441 aka O/C/6944/92	0	Unreadable
58294_49_VARIOUS-925.pdf	70442 aka O/C/6944/91	Layout of crash barriers and fencing	Unreadable
58294_49_VARIOUS-926.pdf	70437 aka O/C/6944/90	Layout of crash barriers and fencing	Part readable
58294_51_SEND TO GET SCANNED-1006.pdf		Lighting- Layout and circuit schematic	Part readable
58294_51_SEND TO GET SCANNED-998.pdf	48332	0	Part readable
58294_83_A41_A1-3153.pdf	J2328/1	Details of Expansion Joint	Readable
58294_83_A41_A1-3151.pdf	J2328/5	Details of Expansion Joint	Readable
58294_83_A41_A1-3152.pdf	J2328/3	Details of Expansion Joint	Readable
58294_110_A406_18.70-4204.pdf	70439 aka O/C/6944/87	Typical foundation for floodlight masts	Majority readable
58294_110_A406_18.70-4197.pdf	48327	Levels on roundabout	Readable
58294_110_A406_18.70-4198.pdf	48328	Flyover Cross sections	Majority readable
58294_110_A406_18.70-4199.pdf	48329	Flyover Cross sections	Majority readable
58294_110_A406_18.70-4200.pdf	48330	Flyover Cross sections	Majority readable
58294_110_A406_18.70-4218.pdf	(Removed prior to scanning)	Spans 1-3, 7-9 and B	Part readable
58294_110_A406_18.70-4205.pdf	70444	Section drawings	Part readable
58294_110_A406_18.70-4206.pdf	70449 aka B/C/ 6944/106	Details of anchor block for expansion joint	Readable
58294_110_A406_18.70-4207.pdf	70473 aka B/C/F/ 59	Drainage details	Part readable
58294_110_A406_18.70-4208.pdf	70450	Slip roads elevations	Unreadable
58294_110_A406_18.70-4209.pdf	70474	Drainage sections	Part readable
58294_110_A406_18.70-4210.pdf	O/C/6944/23	Spans 12 and 25	Part readable
58294_110_A406_18.70-4211.pdf	70496 aka O/C/6944/33	Details of subway Hendon way north	Part readable
58294_110_A406_18.70-4212.pdf	70606 aka O/C/6944/10	Cross sections flyover	Unreadable
58294_110_A406_18.70-4213.pdf		Main flyover bridge two external beams	Part readable
58294_110_A406_18.70-4214.pdf		Main flyover bridge Details of internal	Part readable

		beam	
58294_110_A406_18.70-4215.pdf		Other Detailed Drawings	Part readable
58294_110_A406_18.70-4216.pdf		Other Detailed Drawings	Part readable
58294_110_A406_18.70-4217.pdf	B/C/F/25	Precast beams	Part readable
58294_113_A41_8.70-4310.pdf		Detailed Drawings	Part readable
58294_114_BRENT_CROSS_FLYOVER-4342.pdf	70607 aka O/C/6944/12	Flyover Cross sections 42-46	Unreadable
58294_113_A41_8.70-4303.pdf	48268	Foundation layout plan	Majority readable
58294_113_A41_8.70-4305.pdf	48271	Precast beams	Majority readable
58294_113_A41_8.70-4307.pdf	48273	Spans 1-3, 7-9 and B	Majority readable
58294_113_A41_8.70-4308.pdf	48290	Paving and drainage details under spans 1-3, 7-9 and B	Part readable
58294_113_A41_8.70-4309.pdf	48296	Fencing details	Majority readable
58294_113_A41_8.70-4312.pdf		Main flyover bridge Slabs and bearings	Majority readable
58294_113_A41_8.70-4313.pdf	48340	Main flyover bridge Details of internal beams	Majority readable
58294_113_A41_8.70-4314.pdf		Main flyover bridge reinforcement details	Majority readable
58294_113_A41_8.70-4315.pdf	48338 aka B/C/F 18	Main flyover bridge external beams No.'s 1 and 12	Part readable
58294_113_A41_8.70-4316.pdf	48337	General arrangement Piers 3-6	Part readable
58294_113_A41_8.70-4317.pdf	48336	Cross sections North circular road	Part readable
58294_113_A41_8.70-4318.pdf	48335	Cross sections North circular road	Majority readable
58294_113_A41_8.70-4319.pdf	48334	Cross sections North circular road	Part readable
58294_113_A41_8.70-4320.pdf	48333	Cross sections flyover	Part readable
58294_113_A41_8.70-4321.pdf	48260 aka B/C/F/ 4	Retaining wall No.10 Part1	Majority readable
58294_113_A41_8.70-4322.pdf	48261 aka B/C/F/ 4	Retaining wall No.10 Part 2	Majority readable
58294_113_A41_8.70-4323.pdf	B/C/F 61 aka 48285	Diversion of MCC foul sewer	Majority readable
58294_113_A41_8.70-4324.pdf		Detailed Drawings	Majority readable
58294_113_A41_8.70-4325.pdf	48287 aka B/C/F 59	Drainage details	Majority readable
58294_113_A41_8.70-4326.pdf	48288	Drainage sections	Part readable
58294_113_A41_8.70-4331.pdf	48299	Sub-stations for abutments A and B	Part readable
58294_113_A41_8.70-4332.pdf	48294	Diversion of 21" foul sewer at south subway manhole C details	Majority readable
58294_113_A41_8.70-4333.pdf	48293	Layout of crash barrier and parapet bonding roundabout spans 5 and 6	Part readable
58294_113_A41_8.70-4327.pdf	48289	Drainage plan Hendon way and flyover	Part readable
58294_113_A41_8.70-4311.pdf	48383	Details of subway Hendon way north	Majority readable
58294_118_A41_8.70-4429.pdf	48242	Pile caps for piers 4, 5 and 29	Majority readable
58294_118_A41_8.70-4430.pdf	48243	Roundabout and flyover piers No's 1, 2, 4, 5, 7-10, 12-14, 17-20 and 29 Reinforcement details	Majority readable
58294_118_A41_8.70-4431.pdf		Pile caps for piers 11-14, 17-20, 22,	Majority

		26, 28 and 30	readable
58294_118_A41_8.70-4434.pdf	48251 aka B/C 6944/35	Piers 3, 6 and side abutments	Part readable
58294_118_A41_8.70-4445.pdf	48266	Typical details of retaining wall abutment corners and facing panels	Part readable
58294_118_A41_8.70-4446.pdf	48267	Details of pile caps and footings for piers 1, 2, 7-10, 15, 16, 21, 23-25 and 27	Majority readable
58294_118_A41_8.70-4447.pdf	48239 aka B/C/F/ 81	Details of M5 railings flat top type	Majority readable
58294_118_A41_8.70-4448.pdf	48241	Details of pier No.'s 10, 11, 15, 16, 21-28 and 30	Readable
58294_118_A41_8.70-4450.pdf	48236	Crash barrier	Majority readable
58294_129_A41_8.00-4697.pdf	48246	Retaining walls No. A2 and H3	Majority readable
58294_129_A41_8.00-4690.pdf	48298	Section images for widening of road	Majority readable
58294_129_A41_8.00-4693.pdf	48263 aka B/C/F 6	Details of footbridge	Majority readable
58294_129_A41_8.00-4694.pdf	48247	Retaining wall B6	Majority readable
58294_129_A41_8.00-4695.pdf	48245	Retaining wall No. A1	Majority readable
58294_129_A41_8.00-4696.pdf	48248 aka B/C/F/41	Retaining wall No. A1	Majority readable
58294_114_BRENT_CROSS_FLYOVER-4335.pdf	70608 aka B/C/F/90	Flyover Cross sections	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4336.pdf	70589 aka O/C/6944/5	Flyover Cross sections	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4337.pdf	70590 aka O/C/6944/6	Flyover Cross sections	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4338.pdf	70591 aka O/C/6944/7	Flyover Cross sections 14-17	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4339.pdf	70592 aka O/C/6944/8	Flyover Cross sections 18-22	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4340.pdf	70606 aka O/C/6944/10	Flyover Cross sections 29-34	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4341.pdf	70609 aka O/C/6944/11	Flyover Cross sections 37-41	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4343.pdf	70610 aka O/C/6944/13	Flyover Cross sections 47-51	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4344.pdf		Main flyover bridge GA	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4345.pdf	Spans 6, 13, 14, 18-20 and 30	Flyover Cross sections + Other Drawings	Part readable
58294_114_BRENT_CROSS_FLYOVER-4346.pdf	O/C/6944/22	Details of spans C, H and 26	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4347.pdf	70486 aka O/C//6944/23	Spans 12 and 25	Part readable
58294_114_BRENT_CROSS_FLYOVER-4348.pdf	O/C/6944/24	Spans 19, 21 and K	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4349.pdf	O/C/6944/25	Precast beams	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4350.pdf		Flyover Cross sections + Other Drawings	Part readable
58294_114_BRENT_CROSS_FLYOVER-4353.pdf	70490 aka O/C/6944/28	RC Details of River Brent Retaining walls	Part readable
58294_114_BRENT_CROSS_FLYOVER-	70491 aka	RC Details of River Brent Retaining	Part readable

4354.pdf	O/C/6944/29	walls	
58294_114_BRENT_CROSS_FLYOVER-4355.pdf	70521 aka O/C/6944/30	Details of footbridges A and D over River Brent	Part readable
58294_114_BRENT_CROSS_FLYOVER-4357.pdf	B/C 6944/35	Piers 3, 6 and side abutments	Part readable
58294_114_BRENT_CROSS_FLYOVER-4359.pdf		Flyover Cross sections + Other Drawings	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4361.pdf	70500 aka 6944/36	Retaining wall F9	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4362.pdf	70501 aka 6944/39	Retaining wall G7	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4363.pdf	70502 aka 6944/40	Retaining wall G	Part readable
58294_114_BRENT_CROSS_FLYOVER-4364.pdf	70504 aka O/C/6944/42	Retaining walls No.'s A2 and H3	Part readable
58294_114_BRENT_CROSS_FLYOVER-4365.pdf	70505 aka O/C/6944/43	Retaining wall B6	Part readable
58294_114_BRENT_CROSS_FLYOVER-4366.pdf	70462 aka O/C/6944/46	Typical details of retaining walls abutment corners and facing panels	Part readable
58294_114_BRENT_CROSS_FLYOVER-4367.pdf	70506 aka 6944/44; B/C/F/44	Retaining wall No.10 Part 1	Part readable
58294_114_BRENT_CROSS_FLYOVER-4368.pdf	70503	Retaining wall No. A1 GA	Part readable
58294_114_BRENT_CROSS_FLYOVER-4369.pdf	70507 aka 6944/45	Retaining wall No.10 Part 2	Part readable
58294_122_VARIOUS-4560.pdf	70496 aka O/C/6944/33	Details of subway Hendon way North	Part readable
58294_122_VARIOUS-4530.pdf	48287	Drainage plan (North circular road)	Unreadable
58294_122_VARIOUS-4533.pdf	70467 aka O/C/6944/53	Pile caps for piers 4, 5 and 29	Part readable
58294_122_VARIOUS-4534.pdf	70468 aka O/C/6944/55	Details of piers No.'s 10, 11, 15, 16, 21-28 and 30	Part readable
58294_122_VARIOUS-4535.pdf	70480 aka O/C/6944/56	Pier K, Pier D and slab deck	Unreadable
58294_122_VARIOUS-4536.pdf	70471 aka B/C/ 6944/51	Drainage plan Hendon way and flyover	Unreadable
58294_122_VARIOUS-4537.pdf		Other Drawings	Unreadable
58294_122_VARIOUS-4538.pdf		Other Drawings	Part readable
58294_122_VARIOUS-4539.pdf	70483 aka O/C/6944/62	Longitudinal profile along flyover	Part readable
58294_122_VARIOUS-4541.pdf	B/C 6944/67	Bearings on piers	Unreadable
58294_122_VARIOUS-4542.pdf	70431 aka B/C/ 6944/67	Parapet fencing and bow topped fence	Majority readable
58294_122_VARIOUS-4544.pdf		Other Drawings	Part readable
58294_122_VARIOUS-4545.pdf	70433 aka O/C/6944/80	Details of Substation at abutment B	Part readable
58294_122_VARIOUS-4546.pdf	70436 aka O/C/6944/84	Electric spans for ducts 14, 19 and 20	Readable
58294_122_VARIOUS-4547.pdf	70493	Abutments A and B	Part readable
58294_122_VARIOUS-4548.pdf	70434 aka O/C/6944/81	Details of MS railings (flat top type)	Part readable
58294_122_VARIOUS-4549.pdf	70439	Typical foundation for floodlight masts	Majority readable
58294_122_VARIOUS-4550.pdf	70438 aka B/C/ 6944/89	Fencing details	Part readable
58294_122_VARIOUS-4551.pdf	70473 aka B/C/F/ 59	Drainage details	Part readable

58294_122_VARIOUS-4552.pdf	70445 aka B/C 6944/101	Sketches S2 and S4 (Pile cap 21 and 4 East)	Unreadable
58294_122_VARIOUS-4553.pdf	70444 aka B/C/ 6944/102	Access to Brentmead place	Unreadable
58294_122_VARIOUS-4554.pdf		Other Drawings	Unreadable
58294_122_VARIOUS-4555.pdf	70446 aka O/C/6944/104	Foundations of floodlight masts	Majority readable
58294_122_VARIOUS-4556.pdf	70443 aka B/C/ 6944/105	Details of Manholes 86 and 87	Part readable
58294_122_VARIOUS-4557.pdf	70447 aka B/C/ 6944/105	Expansion joints	Majority readable
58294_122_VARIOUS-4559.pdf	70503 aka B/C/F/ 41	Retaining wall No. A1	Part readable
6944_60_EUSTON_ROAD_IMPROVEMENT.TIF		Drainage Plan	Part readable
SA0057615-00080.pdf		Drainage Plan	Part readable
SA0057615-00144.pdf		Other drawings	Part readable
58294_114_BRENT_CROSS_FLYOVER-4351.pdf	70493 aka O/C/6944/2	Abutments A and B	Part readable
58294_114_BRENT_CROSS_FLYOVER-4352.pdf	70522 aka O/C/6944/27	RC Details of River Brent retaining walls	Part readable
58294_114_BRENT_CROSS_FLYOVER-4356.pdf	70618 aka O/C/6944/20	Details of spans 10, 11 and 29	Unreadable
58294_114_BRENT_CROSS_FLYOVER-4358.pdf	O/C 6944/22	Spans 1-3, 7-9 and B	Part readable
58294_118_A41_8.70-4435.pdf	48252	Abutment GA	Part readable
58294_122_VARIOUS-4532.pdf	70466 aka O/C/6944/51	Details of pile caps and footings for 1, 2, 7-10, 15, 16, 21, 23-25 and 27	Part readable

Appendix 3: Stakeholder Log

Refer to Communications Stakeholder Engagement Strategy in [Annex B](#) for full details

Stakeholder Name/Group
Central Government, including Department for Transport (DfT)
Highways England
London Borough of Barnet
Mayor, GLA
TfL-Road Space Management
TfL-Community Safety, Enforcement and Policing (CSEP)
TfL-Operations and Maintenance Teams
TfL-Asset Management Directorate
TfL-Property
TfL-Legal
TfL-London Underground
London Fire & Emergency Planning Authority (LFEPA)
Police authorities
Other transport providers – e.g. Network Rail/Crossrail
TfL-Commercial
TfL-Freight Services
TfL-Project and Programme Delivery
TfL-Forward Planning
TfL-Environment Team
Contractors
Hammerson and Standard Life Partners (HSL) – Brent Cross Development Partners
Aecom
MPs, Local Councillors
Environment Agency
Utility companies
Statutory undertakers
Coach Operators
Brent Cross Shopping Centre
Tesco, Brent Cross
Taxi and Private Hire Trades

Appendix 4: List of Annexes and contents

These annexes can be accessed via the TfL one space account.

Annex	Document Title
Annex A – Technical Info	Gaps and Assumptions Log
	General Arrangements
	Identified Works and Risks
	Investigation Reports
	Structure Review Reports
	Schedule of documents
	SMT-GN-02-14 Rev 00 – Development and Acceptance of Proposals
	SMT-GN-03-15 Rev 06 – Technical Approval of Highway Structures and Tunnel Schemes
	ST130011-AMD-STR-30-DRG-SP-0001 Location Plan
	ST130011-AMD-STR-30-RP-KC-0003 Outcome Definition Report
	STIP2 – Structural Investigation – Technical report – Rev F 300316
TfL Whole-Life Cost Template	
Annex B – H_S and Stakeholder	Communications Stakeholder Engagement Strategy
	Construction Phase Plan Checklist
	Pre-Construction Information (PCI)
Annex C – IMM_ICT	Information Security Classification Standard v6.0
	ST130011-AMD-STR-30-EIR-SP-0001 EIR
	ST130011-AMD-STR-30-MID-SP-0001 IMPDT
	TfL Code of Connection Policy – Partner Edition v1.4
	TfLIMM-ECS-X-GBR-SP-IS-0027 File Naming Convention
	TfLIMM-HYD-X-GBR-SP-IS-0020_5.0 BIM File Naming Convention
Annex D – PI_C2 Searches	Colt, Confirmed unaffected, ESP, Instalcom, London Underground,
	London Underground High Voltage (LUHV)
	National Grid, Network Rail, Thames Water, UKPN
	SQA-0573 – Planned Interventions Works Process
	TMAN Major Works Process V1.1