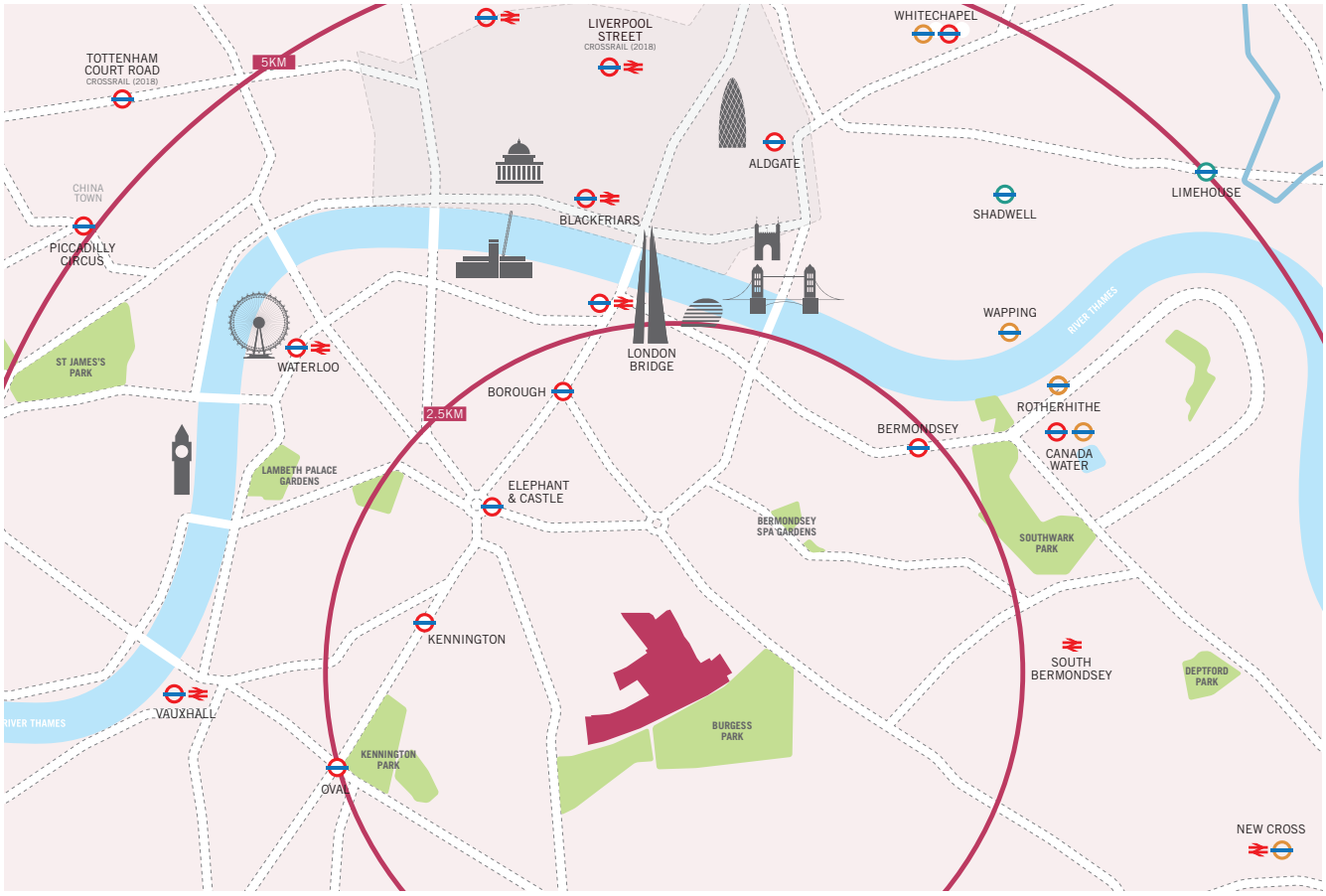

Planning Application for the Aylesbury Estate Regeneration

Masterplan & First Development Site Application

Utility Infrastructure Report

WSP

v1

Nottinghill Housing · Southwark Council · BARRATT LONDON · hta · Hawkins\Brown · mæ · WSP · Deloitte. · Soundings

AYLESBURYNOW

Appendix 5.1 Framework Construction Environmental Management Plan (CEMP)

This framework CEMP provides a document structure for mitigating likely significant environmental effects during the demolition and construction works. The CEMP will be further developed and implemented on a site specific basis by the contractors appointed to carry out the works prior to construction works commencing in response to appropriate planning conditions.

Contents

- Introduction – project overview – key issues and considerations.
- Method Statement and logistics plan.
- Site Management and resources.
- Programme.
- Health & Safety.
- Travel plan – overview, liaison with LB Southwark and the Police, constraints, routes, parking of vehicles.
- Deliveries - Loading and unloading of plant and materials.
- Storage of plant and materials used in constructing the development.
- A secure and safe site boundary.
- The control of dust during demolition and construction.
- The control and monitoring of noise.
- Waste Management - recycling and disposal of waste.
- Public space – protection of the public.
- Security.
- Fire Prevention – fire strategy during construction.
- Environmental Policy.
- Considerate Constructors Policy.

Appendix 5.2 Framework Code of Construction Practice (CoCP)

This framework CoCP follows the Southwark Council Environmental Code of Construction Practice (Reference 5.1) and provides a document structure for the required control measures and the standards to be implemented across the Estate throughout the project to ensure that existing and new residents and businesses are protected from environmental impact during the construction phase of the adjacent new development.

The CoCP will be further developed and implemented on a site specific basis by the contractors appointed to carry out the works prior to construction works commencing in response to appropriate planning conditions. .

Contents

- Encroachment into Wildlife Areas
- Protection of River Corridors and Wetland features
- Lorry Movements
- Roads and Footpaths
- Mud on Roads
- Skips
- Control of Construction Site Run Off
- Rodent Infestations
- Finishes and Maintenance Works

- The Considerate Contractor Scheme

Appendix 5.3 Utility Infrastructure Report

UNITED BY OUR DIFFERENCE

WSP

AYLESBURY ESTATE REGENERATION

Utility Infrastructure Report

15/08/2014

05/09/2014

Quality Management

Issue/revision	Issue 1	Revision 1	Revision 2
Remarks	DRAFT	FINAL DRAFT INTERNAL AND CLIENT/LEGAL REVIEW	
Date	15/08/2014	5/9/2014	
Prepared by	Wayne Fortune	Wayne Fortune	
Signature			
Checked by	Alastair Edwards	Alastair Edwards	
Signature			
Authorised by	Alastair Edwards	Alastair Edwards	
Signature			
Project number	50600304	50600304	
Report number	140815 Aylesbury Estate Utilities Planning Application Report_DRAFT	140905 Aylesbury Estate Utilities Planning Application Report_PLANNING ISSUE	
File reference	\\ser01brm1uk\buildings\Projects\2464\1_Projects\50600304 - Aylesbury\C Documents\Post BAFO\Rpts\Utilities Planning Report	\\ser01brm1uk\buildings\Projects\2464\1_Projects\50600304 - Aylesbury\C Documents\Post BAFO\Rpts\Utilities Planning Report	

Aylesbury Estate Regeneration

Utility Infrastructure Report

15/08/2014

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Appendices

1 Executive Summary

This report provides a summary assessment of the existing utility infrastructure within and in proximity to the site boundary of the proposed Aylesbury Estate regeneration project.

The report considers the Masterplan and First Development Site separately.

The Masterplan considers Phases 2, 3 and 4 and Site 10/Plot 18 of the project and the First Development Site considers Phase 1 of the project - Sites 1b/1c.

Consultation has taken place with each of the Utility Companies owning and operating the infrastructure services networks within and surrounding the site of the proposed development to determine the extent of works required to retain and/or adapt the networks to accommodate the requirements of the development.

The consultation process is ongoing and the following key elements have been established to date:

- Reinforcement of the existing electricity network is not currently required to accommodate the Masterplan based on the response received from UKPN. For the Masterplan, 2 No. new supply cables will be provided from spare panels UKPN's main substation located off-site at Verney Road.
- Connections to the existing Intermediate Pressure (IP) gas network are required to provide the required gas load for the proposed Energy Centres to provide the heating and hot water requirement for the Masterplan and the First Development Site. Southern Gas Networks have confirmed that network reinforcement is not currently required.
- Initial feedback from Thames Water has confirmed that there is insufficient capacity within the existing potable water network to support the Masterplan at full build out. This will be confirmed on receipt of the results from an on-going network modelling exercise.

  On completion of the network studies, Thames Water will look at what works are required to potentially avoid laying new trunk mains within the development.

  These measures could include, for example, off-site reinforcement, rezoning supplies and connection into alternative pressure systems.

For the purposes of this report, the First Development Site is considered in greater detail with C4 budget costs and quotations obtained for identified utility diversions and new supplies respectively.

The C4 budget costs, quotations and drawings for the First Development Site provide a 'snap shot' on the current strategy for enabling and servicing the proposed site. The coordination of the routes and the phasing of the utilities works (new supplies and diversions) to support the First Development Site are subject to on-going development through detailed design.

2 Introduction

WSP Power Systems has been commissioned by Notting Hill Housing (NHH) to undertake a study to assess the existing utility infrastructure within and in proximity to the site boundary of the proposed Aylesbury Estate regeneration project.

The statutory undertakers have been contacted to confirm the location of their assets in relation to the application site. This base information has been, and will continue to be, augmented by a series of intrusive and non-intrusive surveys completed in key areas to validate record information obtained during the course of developing the Masterplan.

The report reviews the existing utility networks to understand the extent of network modifications generated by the development proposals and assesses the ability of the existing electricity, gas, telecommunications and potable water networks to support the additional network loads.

This report provides a summary of the existing utility infrastructure within the application site (and surrounding area) and outlines the proposed utility strategy for the proposed development.

The report considers the Masterplan and First Development Site separately, whereby the Masterplan considers Phases 2, 3 and 4 and Site 10/Plot 18 of the project and the First Development Site considers Phase 1 of the project - Sites 1b/1c.

For the purposes of this report, the First Development Site is considered in greater detail with C4 budget costs and quotations obtained for identified utility diversions and new supplies respectively.

The C4 budget costs, quotations and drawings for the First Development Site provide a ‘snap shot’ on the current strategy for enabling and servicing the proposed site. The coordination of the routes and the phasing of the utilities works (new supplies and diversions) to support the First Development Site are subject to on-going development through detailed design.

Similarly, the information provided in this report pertaining to the site wide masterplan is subject to refinement and further development when each site comes forward for detailed design.

This report does not cover the foul and surface water sewer systems (refer WSP Flood Risk Assessment document) or the Energy Strategy (refer WSP Energy Assessment and District Heating Study) which are covered by separate documents.

3 Utility Infrastructure Strategy

WSP have consulted utility stakeholders to identify required network alterations to accommodate the masterplan proposals.

Diverting utility infrastructure to accommodate land development is a regular occurrence within the industry. Further consultation and surveys will be required to confirm the scopes of work for required network alterations in line with statutory requirements.

The network alterations are described in Section 5.

An assessment has been carried out, in the form of a load profiling exercise, to understand the load growth for the application site and to assess the impact on the existing utility infrastructure networks. Load profiling provides an estimate of the maximum peak utility demand.

Utility stakeholders have been consulted in order to assess the impact of the demands on existing networks.

The regulatory regimes under which public service supply companies operate dictate that any network expansion results in no loss or reduction of service to existing customers.

WSP have consulted with the supply companies and will therefore ensure the minimum regulatory standards are maintained.

Utility services will be supplied from existing networks with new supplies distributed throughout the application site below ground and arranged in accordance with National Joint Utilities Group (NJUG) guidelines.

New supplies are described in Section 6.

4 Existing Utility Infrastructure

WSP have obtained utility record information for statutory undertaker apparatus within the application site and the surrounding area. The following companies own and operate the existing utility networks:

Electricity	UK Power Networks (UKPN)
Gas	Southern Gas Networks (SGN)
Water	Thames Water (TW)
Communications	Openreach, Virgin Media (VM), Vodafone
Other	3, Orange, T-Mobile (Mobile Communications Base Stations)

Non-intrusive surveys, in the form of an underground service mapping survey (including Ground Penetrating Radar) have been completed for the First Development Site to determine the approximate line and level of existing below ground utilities.

At the time of writing, intrusive surveys, in the form of excavating slot trenches to determine the location of utilities, are underway within the First Development Site to determine the location of existing services at strategic points throughout the site.

Drawing records of the underground service mapping survey completed for the First Development Site are located in Appendix 1.

Masterplan

Electricity

Electricity supplies to the existing building stock are provided from the UKPN 11kV network and are distributed throughout the site via high voltage (HV)/ low voltage (LV) substations and LV substations which are typically located at ground floor level within the existing building stock.

The existing infrastructure also serves customers beyond the application site.

Extra high voltage (EHV) circuits operating above 11kV are noted within the existing footways/carriageways within the application site.

Gas

Low pressure (LP) gas mains [various sizes/materials] are located throughout the application site and provide supplies to the existing building stock. The mains are routed within the existing footways/carriageways.

There are no Medium Pressure (MP) mains within the application site save for the short section serving the existing Energy Centre as noted below.

The existing infrastructure also serves customers beyond the application site.

An intermediate pressure (IP) main is routed through the application site in both the footway and carriageway. The IP main provides a connection to the existing Energy Centre via an IP/MP Pressure Reduction Station (PRS).

Potable Water

Distribution mains [various sizes/materials] are located throughout the application site and provide supplies to the existing building stock. The mains are routed within the existing footways/carriageways.

The existing infrastructure also serves customers beyond the application site.

Telecommunications

Below ground ducts/chambers and above ground cabinets are located throughout the application site and provide connections to the existing building stock for both Openreach and VM.

The existing infrastructure also serves customers beyond the application site.

Vodafone have a route through the application site, connections to the existing building stock are to be confirmed**.**

Mobile communications base stations are noted within the application site.

District Heating

District heating mains are distributed from the Energy Centre located adjacent to Thurlow Street (on Inville Road) to thermal substations located within the existing building stock.

Secondary mains provide connectivity to end point connections. The majority of mains are routed within the existing footways/carriageways with some being located on above ground structures.

First Development Site

Electricity

Electricity supplies to the existing building stock are provided from the UKPN 11kV network.

A HV/LV substation (Boyson Road Bradenham 90057) is located within the Bradenham block. Further, LV substations are located within the Chartridge 77 to 105 block (Westmoreland Rd Chartridge 90434) and Chiltern block (Portland Street Chiltern 90319).

HV and LV cables are routed below ground through the site (and external to the site in Albany Road, Bradenham Close, Westmoreland Road and Portland Street) between the above mentioned on-site substations and other off-site substations.

The existing infrastructure also serves customers beyond the application site.

An extra high voltage (EHV) circuit operating above 11kV is noted in the footway/carriageway of Portland Street.

Gas

A 150mmØ Ductile Iron (DI)/4”Ø Cast Iron (CI) LP main is routed adjacent to the Bradenham block from Albany Road to Westmoreland Road.

A 100mmØ DI/150mmØ DI LP main is routed adjacent to the Chiltern block from Albany Road to Westmoreland Road.

Further to the above, there are 100mmØ DI/4”Ø DI mains routed throughout the site, a 12”Ø CI LP main located in the footway/carriageway adjacent to the site in Albany Road and an 75mmØ/90mmØ Polyethylene (PE) LP main in the footway/carriageway of Westmoreland Road.

Supplies to the existing building stock are taken from the mains routed adjacent the Bradenham and Chiltern blocks and from the 100mmØ DI/4”Ø DI mains routed throughout the site

The existing infrastructure also serves customers beyond the application site.

Potable Water

A 180mmØ High Performance Polyethylene (HPPE) distribution main is routed in Bradenham Close, passes through the walkway at the north end of the Bradenham block and continues in Westmoreland Road and then crosses Portland Street and continues off-site. The distribution main is generally routed in the carriageway.

A 125mmØ HPPE distribution main is connected to the above mentioned 180mmØ HPPE main and is routed into the site via the walkway through the Chartridge 1-68 block and terminates adjacent to the Chartridge 120-149 block. The distribution main is generally routed in the carriageway.

Further to the above, there are 2 No. 250mmØ HPPE mains routed in the carriageway of Albany Road.

Supplies to the existing building stock are taken from the 125mmØ, 180mmØ and 250mmØdistribution mains.

The existing infrastructure also serves customers beyond the application site.

Telecommunications

Openreach

Openreach have below ground fixed telecommunications networks (chambers and ducts) located in Albany Road, Bradenham Close, Westmoreland Road and Portland Street.

Chambers and ducts are routed adjacent to the Chiltern block and provide connectivity between the duct routes in Albany Road and Westmoreland Road and an associated cabinet in Westmoreland Road.

Duct routes are located throughout the site providing connectivity to the existing building stock.

Openreach have confirmed the duct routes contain both copper and fibre cables.

The existing infrastructure also serves customers beyond the application site.

Virgin Media

Virgin Media (VM) have below ground fixed telecommunications networks located in Bradenham Close, Westmoreland Road and Portland Street.

There are 2 No. major cabinets located in the existing verge of Westmoreland Road.

Chambers, ducts and cabinets are routed adjacent to Chartridge 1-68 block and provide connectivity between the duct routes in Bradenham Close and Westmoreland Road. Further, chambers, ducts and cabinets routed adjacent to Chartridge 77-105 and 120-129 blocks provide connectivity between the duct route in Bradenham Close and a road crossing over Albany Road serving 235 Albany Road.

The duct routes and cabinets located within the site provide connectivity to the existing building stock.

Virgin Media have confirmed the duct routes contain both coaxial and fibre cables.

The existing infrastructure also serves customers beyond the application site.

Mobile Communications

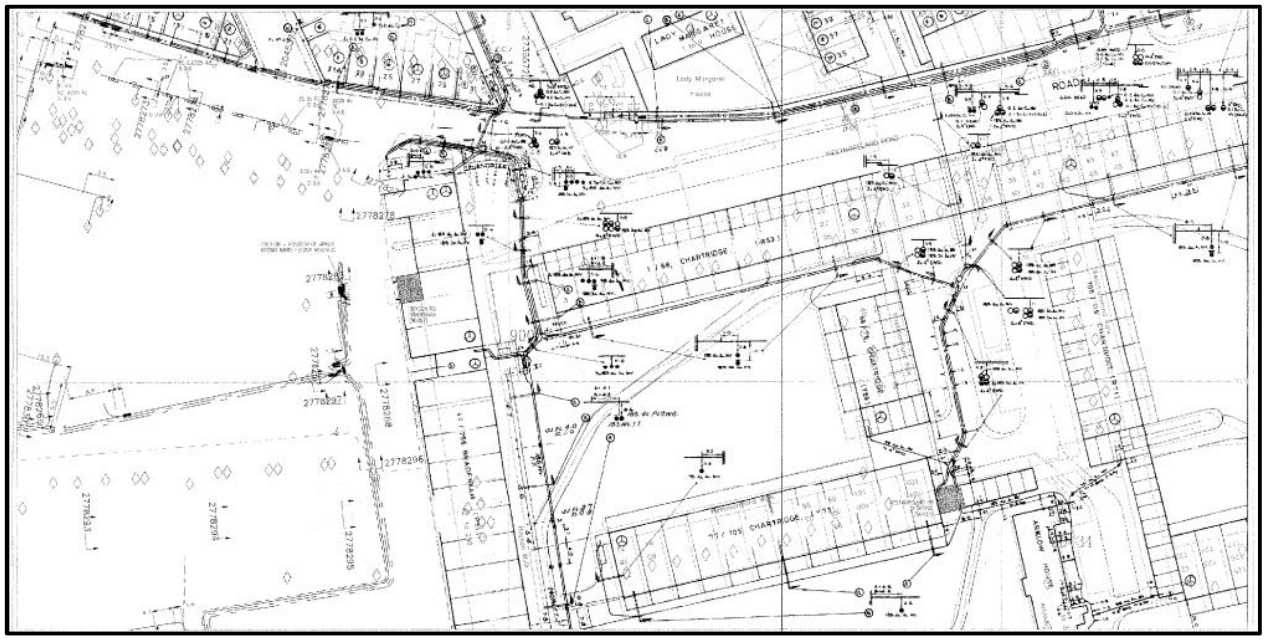
There are 2 No. Orange mobile telecommunications base stations (Ref: GLN0191) located on the Chiltern block within the First Development Site.

District Heating

The existing district heating mains are routed to the site from the Energy Centre and enter the First Development Site via Portland Street. District heating pipework is located on a pipe bridge which crosses Portland Street between Gayhurst and Chiltern blocks.

Primary district heating mains are routed to thermal substations in Chiltern, Bradenham and Chartridge blocks with secondary district heating mains providing supplies to the existing building stock.

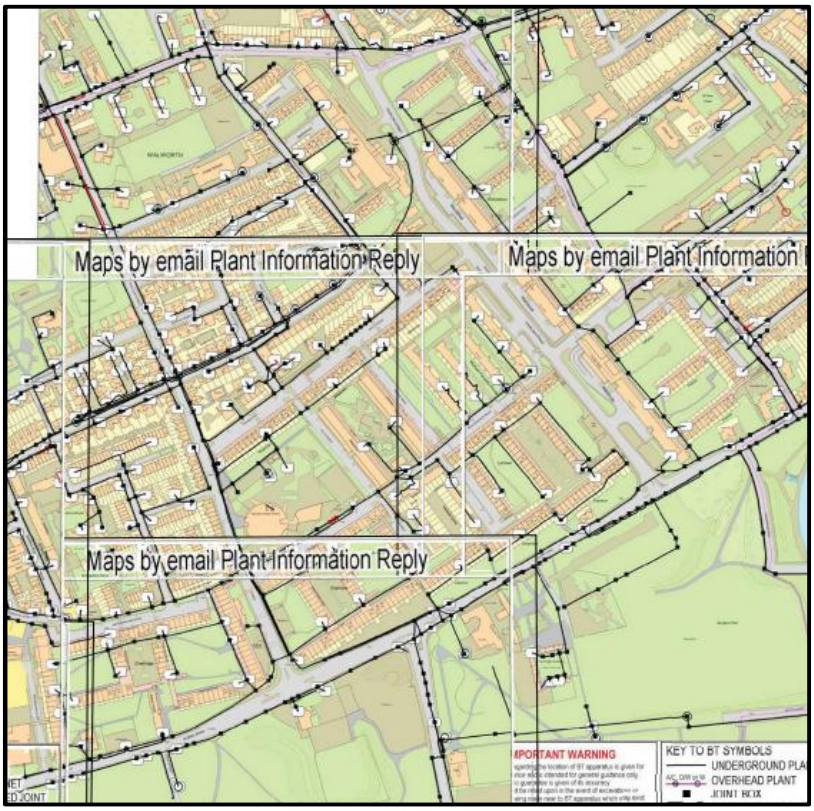
Extract from UKPN record mapping [part FDS shown]



Extract from SGN record mapping

Extract from TW potable water record mapping

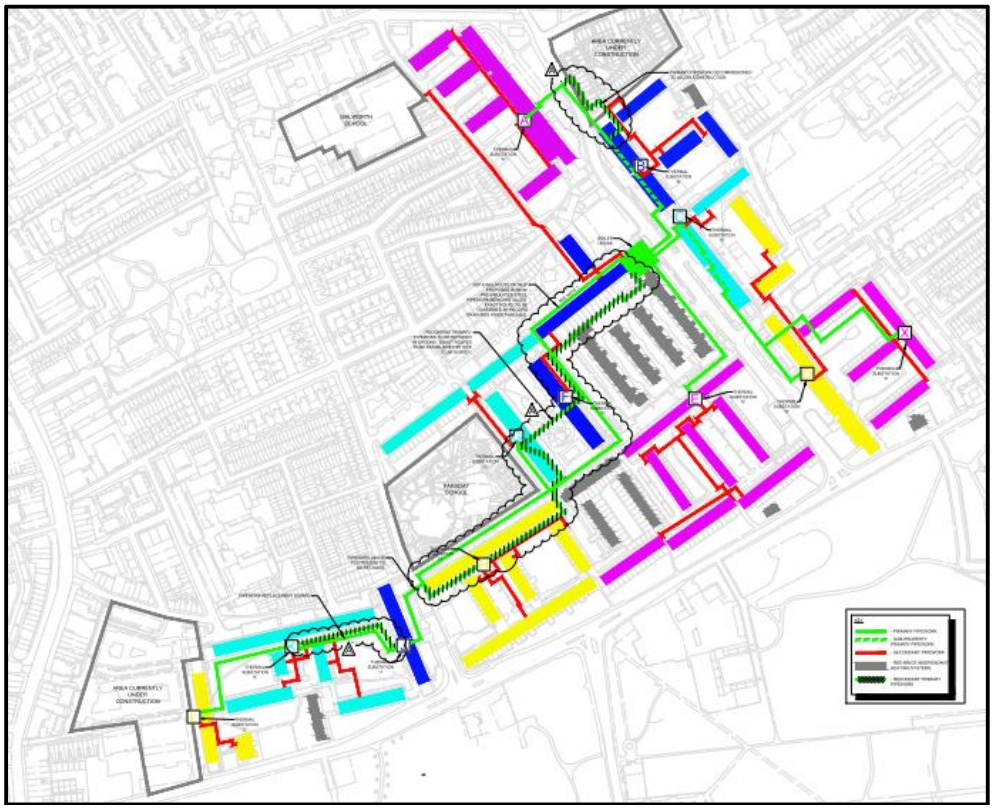
Extract from Openreach record mapping



Extract from VM record mapping

Location of mobile communications base stations

Extract from District Heating record mapping



5 Network Alterations

A desktop review of utility infrastructure services has been conducted and consultation with utility stakeholders is now at an advanced stage in understanding the impact of the proposals on existing utility infrastructure.

Further consultation and surveys will be required to establish scopes of work for required network alterations and to confirm routes for diverted infrastructure services.

As the First Development Site is considered in greater detail, estimates and quotations have been obtained for network alterations. The scope, coordination of the routes and the phasing of the diversions are subject to on-going development through detailed design.

The following outlines the proposed network alterations required to accommodate the proposed Aylesbury Estate regeneration project.

Key correspondence and drawings for the Masterplan are located in Appendix 2 and in Appendix 3 for the First Development Site.

Masterplan

Electricity

HV and LV networks located within the site boundaries will be abandoned and removed ahead of demolition/construction works.

It will be necessary to establish temporary HV/LV substations to serve retained off-site circuits from the existing substations located within the existing building stock which will need to be decommissioned and removed ahead of demolition. Off-site retained circuits are to be transferred to the location of the permanent substations constructed and commissioned to support the application site on completion.

HV and LV diversions will also be required to accommodate future construction and proposed alterations to the existing footway/carriageway layout.

EHV circuits EHV 313 (66kV) and EHV 386 are to be diverted to accommodate the current proposals. It is prosed to divert these circuits south in Kinglake Street and into Thurlow Street.

During consultation, UKPN have expressed the opinion that EHV circuits M19A and M25, which are located in Alsace Road, are thought to be idle. It will be necessary for UKPN to carry out further surveys to confirm this and whether or not diversions will be required.

Gas

LP gas mains and supplies located within the site boundaries will be abandoned and removed ahead of demolition/construction works.

LP diversions will also be required to accommodate future construction and proposed alterations to the existing footway/carriageway layout.

The IP main routed through the application site will require to be protected/diverted to accommodate the proposed landscaping strategy.

The IP connection to the PRS and the PRS associated with existing Energy Centre will be removed when the Energy Centre is decommissioned and removed from site.

Potable Water

Distribution mains and supplies within the site boundaries will be abandoned and removed ahead of demolition/construction works.

Diversion of the existing distribution mains will also be required to accommodate future construction and proposed alterations to the existing footway/carriageway layout.

Telecommunications

Below ground ducts/chambers and above ground cabinets (Openreach and VM) within the site boundaries will be abandoned and removed ahead of demolition/construction works.

Diversion of below ground ducts/chambers will also be required to accommodate future construction and proposed alterations to the existing footway/carriageway layout.

Vodafone have a below ground fixed telecommunication network (chambers and ducts) located in the footway adjacent to Plot 18 and Phases 3 and 4 which may need to be altered to accommodate proposed alterations to the existing footway/carriageway layout.

The existing mobile communications base stations noted within the application site are to be relocated prior to demolition/construction.

District Heating

District heating mains located within the site boundaries will be abandoned and removed ahead of demolition/construction works.

Diversion of district heating mains may also be required to accommodate future construction and proposed alterations to the existing footway/carriageway layout.

First Development Site

Electricity

It will be necessary to establish a temporary substation in the location of the Chartridge 1-68 block to allow existing off-site circuits from the Boyson Road Bradenham 90057 substation to be retained during demolition and construction works.

Existing circuits (HV and LV) will be transferred to the temporary substation ahead of decommissioning and removing the Boyson Road Bradenham 90057 substation. The Boyson Road Bradenham 90057, Westmoreland Rd Chartridge 90434 and Portland Street Chiltern 90319 substations are to be decommissioned and removed ahead of demolishing the existing building stock.

In order to remove the existing HV and LV cables routed through the site it will be necessary to provide new HV circuits in Westmoreland Road and Bradenham Close and provide new LV circuits in Westmoreland Road, Portland Street, Bradenham Close and Albany Road.

A new LV circuit is required in Bradenham Close/Albany Road to maintain connectivity to Ellison House.

Further, alterations to existing circuits are required to accommodate new footway/carriageway layouts surrounding the site.

The EHV circuit located in the footway/carriageway of Portland Street is affected by the current footway/carriageway layout and will require to be diverted/protected.

Existing service disconnections, including removal of meters, are to be completed ahead of demolition.

Gas

The 150mmØ DI/4”Ø CI and 100mmØ DI/150mmØ DI LP mains routed adjacent to the Bradenham and Chiltern blocks will be cut and capped in Albany Road and Westmoreland Street prior to demolition. The100mmØ DI/4”Ø DI mains routed throughout the site are to be abandoned prior to demolition.

To facilitate the above it will be necessary to provide a new 180mmØ PE LP main in Portland Street between Albany Road and Westmoreland Road. Further, a new 180mmØ PE LP link is required in Camberwell Road between the existing 180mmØ PE LP mains located either side of the existing footway/carriageway.

Alterations to the existing 12”Ø CI and 75mmØ/90mmØ PE LP mains in Albany Road and Westmoreland Road are required to accommodate the new footway/carriageway layouts surrounding the site.

Existing service disconnections, including removal of meters, are to be completed ahead of demolition.

Potable Water

The 180mmØ HPPE distribution main passing through the walkway at the north end of the Bradenham block will be diverted into Bradenham Close.

At this stage, diversion of the 180mmØ HPPE distribution main in Westmoreland Road has been allowed for to accommodate the new footway/carriageway layouts. However, the current location of the main is to be confirmed during intrusive investigation, following which a decision will be made as to whether or not the diversion is required.

The 125mmØ HPPE distribution main which is routed into the site via the walkway through Chartridge 1-68 block and other connections provided from Bradenham Close and Albany Road will be cut and capped prior to demolition.

Alterations to the existing 250mmØ HPPE mains in Albany Road are required to accommodate the new footway/carriageway layouts surrounding the site.

Existing service disconnections, including removal of meters, are to be completed out ahead of demolition.

Existing supplies from Albany Road to Ellison House are to be retained prior to demolition.

Telecommunications

Openreach

A new below ground chamber and duct route is to be installed in Albany Road/Portland Street to facilitate the diversion of the existing route which passes below the Chiltern block.

The remaining duct routes located throughout the site will be abandoned once the existing building stock is vacated. Openreach will cut and cap the existing incoming cables within the chambers surrounding the site.

Diversions of the chamber and duct routes in Albany Road and Bradenham Close are required to accommodate the new footway/carriageway layouts surrounding the site.

Existing connectivity to Ellison House is to be retained through a cable diversion via Albany Road prior to demolition.

Virgin Media

New below ground chamber and duct routs are to be installed in Albany Road, Westmoreland Road and Portland Street to facilitate the diversion of the routes located within the site. Two new street cabinets are to be constructed in the southern footway of Albany Road opposite the First Development Site to allow for the necessary cable diversions. VM are in the process of revising their C4 estimate for the site to provide ducts for the necessary diversions in Albany Road south.

As VM have cables pass through the site and serve customers beyond the First Development Site, it is necessary to continue the new below ground chamber and duct route to a point adjacent to the Wendover block (beyond Thurlow Street) and install a new below ground duct route in Bagshot Street to allow for the necessary cable diversions.

The duct routes and cabinets within the site will be abandoned once the existing building stock is vacated and the above diversions are complete.

Alterations to the existing duct routes in Westmoreland Road and Portland Street are required to accommodate the new footway/carriageway layouts surrounding the site.

Virgin Media do not provide connectivity to Ellison House.

Mobile Communications

WSP are aware that negotiations are on-going between the London Borough of Southwark estates team and Orange regarding the relocation of the existing mobile telecommunications base stations.

WSP are not party to current status of the negotiations and are working on the basis that the base stations will be relocated ahead of demolition.

District Heating

The incoming district heating mains, from Portland Street, are to be disconnected at the site boundary once the existing building stock is vacated.

The existing primary and secondary mains will therefore be abandoned and removed as part of the demolition process.

Temporary boiler plant is to be provided for Ellison House to provide heating and hot water supplies prior to demolition.

6 New Supplies

An assessment has been carried out, in the form of a load profiling exercise, to understand the load requirement of the application site and to understand the impact on the existing utility infrastructure networks.

It should be noted that the utility networks are dynamic and the responses received from the utility companies are based on the network at the time of the response being issued.

The following details the area/land use schedule and assumptions which form the basis of the load profiling exercise:

Masterplan

- 2,702 residential units
- Up to 2,500m^2 of employment space
- Up to 1,100m^2 of retail space
- Up to 1,600m^2 of healthcare facilities
- Up to 1,050m^2 of pre-school facilities
- Up to 500m^2 of community space

First Development Site

- 825 residential units
- A Community Centre

Assumptions made during load profiling exercise:

- The space heating and hot water supplies in the residential dwellings will be provided from the proposed Energy Centres and their associated District Heating Systems.
- Flats/maisonettes will be provided with electrical cooking appliances and residential units with gas cooking appliances.
- Dedicated cooling for the proposed residential units is not included in the electrical demand calculations.
- The appointed ESCo will confirm the required infrastructure for the export of electricity from the proposed Energy Centres.
- Landlord's electrical loads assumed to account for external feature lighting provision within the site boundary.

Any changes to the area/land use schedule or the assumptions will impact on the findings of this report.

Initial consultation with utility stakeholders is underway in order to assess the impact of the demands and to identify proposed points of connection and any reinforcement works required.

As the First Development Site is considered in greater detail, estimates and quotations have been obtained for new supplies. The coordination of the routes and the phasing of the new supplies to support the First Development Site are subject to on-going development through detailed design.

Loading calculations are to be revisited once the masterplan and mix of units is taken forward to detailed design. Final loads may vary from the initial calculations dependent on the strategy taken forward.

Formal connection applications will be pursued once the scheme is finalised in line with the construction programme.

New supplies will be distributed throughout the application site below ground and arranged in accordance with National Joint Utilities Group (NJUG) guidelines.

As far as reasonably practicable and through agreement with the network operator, the new network will utilise common trenching.

Key correspondence and drawings for the Masterplan are located in Appendix 2 and in Appendix 3 for the First Development Site.

Masterplan

Electricity

It is anticipated the proposed development will impose a peak load of approximately **6,875kW** on the existing electrical network.

Initial consultation with UKPN has confirmed that the existing 11kV network currently has sufficient capacity to accommodate the additional load.

UKPN will install 2 No. new supply cables, for the whole Masterplan electrical load, from dedicated feeders fed from spare panels at UKPN's main substation located off-site at Verney Road which is situated approximately 2,500m east of the Masterplan.

A new 11kV network will be required within each development site to provide electricity to the proposed units. Below ground 11kV cables will connect to the existing UKPN network and will be distributed throughout the development and connect to a number of proposed substations.

Each distribution substation will be located at ground level and will either be; housed in a glass reinforced plastic (GRP) enclosure, brick built structure of approximately 3m tall or incorporated into the building fabric in line with UKPN guidance.

Service connections (low voltage circuits) will be provided from the substations to the individual units.

Gas

It is anticipated that the proposed development will impose a peak load of approximately **25,500kWh** and an annual load of approximately **32,194,050kWh/annum** on the existing gas network.

An Intermediate Pressure (IP) connection will be required to supply the proposed Energy Centre in Phase 2. It will also be necessary to establish a PRS associated with the IP connection to provide gas to the Energy Centre at the required pressure.

Based on the gas requirement for the heating and hot water load for the masterplan including the First Development Site (approximately 31MW), SGN have confirmed that reinforcement is not currently required to the existing IP network. The proposed Point of Connection to the existing gas network and the route to site will be confirmed during detailed design.

A new Low Pressure (LP) network will be required within each development site to provide gas, for cooking purposes, to the proposed houses and non-residential use types. The proposed Point of Connection and route to site will be confirmed during detailed design.

Below ground pipe(s) will connect to the existing SGN network and will be distributed throughout the development.

Service connections will be provided from the LP mains to the individual units.

Reference is to be made to the Energy Strategy for the distribution of the District Heating System supplies.

Potable Water

It is anticipated that the proposed development will impose a peak flow of approximately **31.40l/s** on the existing potable water network (excluding Fire Fighting Requirements).

Thames Water are currently in the process of completing a network modelling exercise for the Masterplan and First Development Site, the results of which are yet to be received. In consultation with Thames Water, the following is confirmed;

- Thames Water confirm network modelling is required and in progress. Full development should not commence until this exercise is complete.
- Initial feedback is that there is insufficient capacity within the existing network to accommodate the masterplan based on submitted potable water loads.
- On completion of the network studies, Thames Water will look at what works are required to potentially avoid laying new trunk mains within the development.

  These measures could include, for example, off-site reinforcement, rezoning supplies and connection into alternative pressure systems.

A potable water distribution network will be required within each development site to provide potable water to the proposed units.

Below ground pipe(s) (distribution mains) will connect to the existing TW network and will be distributed throughout the development.

Service connections will be provided from the distribution mains to the individual units.

Telecommunications

Below ground telecommunications networks (ducts and chambers) will be required within each development site to provide telecommunications connectivity to the proposed units. Above ground street cabinets will also be required. It is anticipated that both Openreach and VM will be approached for proposals.

Below ground ducts will connect to the existing Openreach and VM networks and will be distributed throughout the development.

Connections will be provided from the main telecommunications duct routes to the individual units.

Openreach (on request) will provide a proposal for the required on-site and off-site works once planning permission is granted and 4 weeks ahead of construction beginning on-site. If off-site reinforcement to the Openreach network is required to serve the development this will be carried out at Openreach's cost (up to an agreed value per plot).

Openreach's Walworth Exchange is closest to the application site and is currently under review for providing superfast broadband (Fibre to the Premise FTTP) within the masterplan area. An application will be made to Openreach for FTTP connectivity as each development site comes forward for detailed design.

Further, initial consultation with VM has confirmed that increasing the number of units within the masterplan area should not have a negative impact on the existing network. An application will be made to VM as each development site comes forward for detailed design.

District Heating

A network of primary and secondary mains will be distributed below ground within each development site between the Energy Centre, thermal substations and end point connections.

For further information refer to WSP document Energy Assessment and District Heating Study.

First Development Site

Electricity

It is anticipated that the First Development Site will impose a peak load of approximately **1,800kW** on the existing electrical network.

The First Development Site will be fed from feeder E2 of the Montford Place B substation by looping in and out between Grosvenor Terrace 93086 and Bethwin Road Boundary House 93021 substations.

HV circuits will be laid from the Point of Connection in Camberwell Road to the First Development Site via Westmoreland Road and Bradenham Close. HV circuits will be distributed within the site between the proposed double substation in Sub-plot 1 and the proposed single substation in Sub-plot 4.

The substations are to be located at ground floor level within the building fabric of Sub-plot 1 and Sub-plot 4. The location of the substations will provide 24/7 unrestricted access for UKPN personnel from the proposed footway/carriageway.

The double substation in Sub-plot 1 will also provide capacity for the retained circuits transferred to the temporary substation prior to demolition. The retained circuits will transferred to the Sub-plot 1 substation prior to the removal of the temporary substation.

LV cables will be distributed below ground within the First Development Site from the Sub-plot 1 and Sub-plot 4 substations to provide connections to the proposed building stock.

Gas

It is anticipated that the First Development Site will impose a peak load of approximately **7,500kWh** and an annual load of approximately **9,441,900kWh/annum** on the existing gas network.

An IP gas main is required to be brought to the site in order to provide the required quantity of gas for the proposed Energy Centre which is to be located within Sub-plot 5. The Energy Centre will supply the heating and hot water requirement for the First Development Site.

A Pressure Reduction Station (PRS) is required to provide gas at the required pressure for the prosed Energy Centre. The PRS will be located within the boundary of Sub-plot 6 and will be visually screened from the adjacent footway/carriageway and surrounding plots.

A new IP main will be laid below ground from the Point of Connection in Wells Way/Albany Road (TBC by SGN during detailed design) to the First Development Site via Albany Road. A low pressure (LP) pipe will be laid below ground from the PRS location at Sub-plot 6 to the Energy Centre in Sub-plot 5.

A new LP network is required to provide gas for to the proposed houses in Sub-plots 2 and 3 and to supply 2 No. catering loads within Sub-plot 1. The Point(s) of Connection to the existing network (assumed from Westmoreland Road and Portland Street) and the proposed routing within the First Development Site are to be confirmed on receipt of a formal SGN quotation.

Potable Water

It is anticipated that the First Development Site will impose a peak flow of approximately **11.60l/s** on the existing potable water network (excluding Fire Fighting Requirements).

A new potable water distribution network is required to provide individual connections for the proposed houses in Sub-plot 2 and Sub-plot 3 and provide connections to communal locations within Sub-plots 1, 4, 5 and 6. The Point(s) of Connection to the existing network will be from Albany Road, Bradenham Close and Westmoreland Road and routed within the First Development Site.

The proposed connections and route allow for the necessary Fire Fighting connections within the First Development Site.

Telecommunications

Openreach

A new below ground duct and chamber network is required to provide telecommunications connectivity to the First Development Site. Openreach have prepared initial proposals for the distribution of ducts and chambers throughout the First Development Site.

New street cabinets may also be required to serve the First Development Site, the location and number of cabinets as well as the final routing and phasing of the new below ground duct and chamber network will be confirmed during a pre-construction meeting with Openreach.

The proposed Point of Connection to the existing Openreach network is in Albany Road adjacent to Bradenham Close. Openreach have not confirmed whether or not off-site reinforcement works are required to their existing network to support the First Development Site. Any off-site works will be arranged for by Openreach in line with statutory requirements.

An application has been made to Openreach for FTTP connectivity for the First Development Site. Openreach have confirmed that they should be contacted again two to three months in advance of commencing on-site construction.

Virgin Media

A new below ground duct and chamber network is required to provide VM telecommunications connectivity to the First Development Site. VM infrastructure is to be incorporated into the First Development Site to provide further choice to end tenants in terms of telecommunications connectivity and to avoid potential future disruption due to VM installing infrastructure following completion of the site and the footways/carriageways being adopted.

VM have prepared initial proposals for the distribution of ducts and chamber and the location of street cabinets throughout the First Development Site. The proposed Point of Connection to the VM network will be to the diverted ducts in Albany Road and relocated ducts in Portland Street. New street cabinets will also be required in Portland Street to serve the First Development Site.

The location and number of cabinets as well as the final routing and phasing of the new below ground duct and chamber network will be confirmed during a pre-construction meeting with VM.

District Heating

A network of primary and secondary mains will be distributed below ground within the First Development Site between the Energy Centre (within Sub-plot 5), thermal substations and end point connections.

For further information refer to WSP document Energy Assessment and District Heating Study.

7 Approach to Phasing

The Aylesbury Estate regeneration project will be delivered in four phases over a number of years; as such the proposed phasing will impact of the approach to the provision of new utility supplies to accommodate the proposals.

The routing and phasing of new utility supplies to support the Masterplan and First Development Site are subject to on-going development through detailed design.

This section considers the phasing for the Masterplan and the First Development Site.

Masterplan

Electricity

UKPN proposed to install 2 No. new supply cables, for the whole Masterplan electrical load (excluding the First Development Site), from their Verney Road main substation. It will be necessary to install these cables from the Verney Road substation to the Masterplan prior to establishing and energising the proposed new substations within Phase 2.

New networks will be extended through phases to allow for connections to the proposed building stock in the following phase (where feasible) in order to minimise off-site disruption.

Gas

The Intermediate Pressure (IP) connection and construction of a PRS, to serve the Phase 2 Energy Centre, will need to be completed in line with the construction programme and be designed to accommodate the loading required to serve heating and hot water to the Masterplan.

At the time of enquiry, no reinforcement to the existing IP gas network is required to support the gas load required for the Masterplan.

The Low Pressure (LP) network required within each development site may need to be installed ahead of plot construction depending on the final Point of Connection to the existing network.

New networks will be extended through phases to allow for connections to the proposed building stock in the following phase (where feasible) in order to minimise off-site disruption.

Potable Water

The approach to phasing will be determined on receipt of the results from the network modelling exercise.

The potable water distribution network required within each development site may need to be installed ahead of plot construction depending on the final Point of Connection to the existing network.

New networks will be extended through phases to allow for connections to the proposed building stock in the following phase (where feasible) in order to minimise off-site disruption.

Telecommunications

The below ground telecommunications networks (ducts and chambers) required within each development site may need to be installed ahead of plot construction depending on the final Point of Connection to the existing networks.

New networks will be extended through phases to allow for connections to the proposed building stock in the following phase (where feasible) in order to minimise off-site disruption.

First Development Site

Electricity

The proposed double substation in Sub-plot 1 will be established to provide power for Sub-plots 1, 2, 5 and 6 with a ducted route provided to the single substation in Sub-plot 4 allowing the substations to be linked. The Sub-plot 1 substation will be established and energised prior to the removal of the temporary substation.

LV cables will be distributed below ground within the First Development Site from the Sub-plot 1 and Sub-plot 4 substations, in line with construction phasing, to provide connections to the proposed building stock.

Gas

The required PRS will be installed and commissioned ahead of Sub-plot 6 construction to provide gas to the Energy Centre in line with the construction programme. The Energy Centre will be constructed as part of Sub-plot 5, e.g. ahead of Sub-plot 6. The PRS, incoming Intermediate Pressure (IP) and outgoing Low Pressure (LP) mains will be installed ahead of plot construction.

The new LP network required to provide gas for to the proposed houses in Sub-plots 2 and 3 and to supply 2 No. catering loads within Sub-plot 1 may have to be installed ahead of plot construction depending on the Point of Connection (assumed to be Portland Street and Westmoreland Road) which is to be confirmed by SGN.

Potable Water

The new potable water distribution network required to provide individual connections for the proposed building stock may have to be installed ahead of plot construction depending on the Point of Connection (assumed to be Albany Road, Bradenham Close and Westmoreland Road) which is to be confirmed by Thames Water.

Telecommunications

Openreach

Due to the proposed Point of Connection in Albany Road it will be necessary to install ducts and chambers ahead of plot construction. The final routing and phasing of the new below ground duct and chamber network will be confirmed during a pre-construction meeting with Openreach.

Virgin Media

Due to the proposed Point of Connection in Albany Road and Portland Street it will be necessary to install ducts and chambers ahead of plot construction. The final routing and phasing of the new below ground duct and chamber network will be confirmed during a pre-construction meeting with VM.

8 Conclusions

In summary, utility infrastructure has been identified within the application site and the surrounding area.

As the First Development Site is designed in detail it will be necessary to continue consultation with the affected utilities to develop and agree the detailed scopes of work necessary to accommodate the proposals in terms of the required diversions to enable the site and new supplies to the proposed building stock.

The estimates and quotations obtained to date for the First Development Site will be further discussed with the affected utilities and firm orders placed in line with the proposed demolition and construction programmes.

As the Masterplan is developed, and each site comes forward for detailed planning, it will be necessary to re-engage with all the affected utilities to acquire detailed estimates and develop scopes of work for the anticipated diversionary works and new supplies to site.

Formal connection applications will be pursued, for the Masterplan, once the scheme is finalised in line with the proposed construction programme.

For the Masterplan and the First Development Site, so far as reasonably practicable, amendments to utility services affected by highway modifications will be carried out at the same time as the highway modifications to minimise disruption to the local community.

The routing and phasing of new utility supplies to support the Masterplan and First Development Site are subject to on-going development through detailed design.

For the Masterplan, as per the First Development Site, intrusive/non-intrusive surveys will be undertaken in key areas to validate record information obtained from affected utility stakeholders. Further investigation will include the following;

- Underground service mapping survey of the development area including ground penetrating radar (GPR) to determine approximate line and level of surveyed utilities.
- Excavation of slot trenches to determine underground utilities within the site as noted on record drawings at strategic points throughout the development.

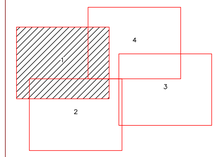
Appendices

Appendix 1

Co-ordinate Table			

Survey Note:

Survey information has been added to the original survey carried out by Adlen Limited (7836-011.3-01A). A scale factor of 0.99981058 was applied for the original survey drawings.
This provisional survey is related to the same grid and with the same scale factor applied.



SHEET LAYOUT

Revision	Description	Date

LEGEND

Survey control station	△ 5	Building	
Banking			
Gate (single)		Fence	
Gate (double)		Contour	22.50
		Wall	
Tree Spread and Girth shown to scale		Ordnance Survey	Value 15.37m

Abbreviations

Bollard	BD	Pipe	PE
Borehole	BH	Road Sign	RS
British Telecom Box	BTB	Rodding Eye	RE
BT Inspection Cover	BT	Service Marker	MK
Concrete Paving Slabs	CPS	Sign Post	SP
Cable Television Cover	CTV	Sluice Valve	SV
Electricity Cable Pit	EC	Stop Tap	ST
Electricity Pole	EP	Stop Cock	SC
Earth Rod	ER	Telegraph Pole	TP
Fire Hydrant	FH	Telephone Call Box	TCB
Flag Staff	FS	Traffic Light	TL
Gas Valve	GV	Unsurfaced	U\S
Gate Post	GP	Vent Pipe	VP
Gully	GY	Water Meter	WM
Inspection Cover	IC	Eaves Level	EL
Kerb Outlet	KO	Ridge Level	RL
Lamp Post	LP	Roof Level	RFL
Manhole	MH	Soffit Level	SFL
Marker Post	MK	Threshold Level	THL
Parking Meter	PM	Parapet Wall Level	PWL
Post	P	Finished Floor Level	FFL
Retaining Wall	RTW	Cover Level	CL
Barbed Wire Fence	BWF	Invert Level	IL
Close Boarded Fence	CBF	No Visible Connection	NVC
Chainlink Fence	CLF	Unable to Lift	UTL
Chestnut Paling Fence	CPF		
Post and Chain Fence	PCF	Flower Bed	F\B
Post and Rail Fence	PRF	Shrub Bed	S\B
Post and Wire Fence	PWF		
Wooden Panel Fence	WPF		

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Client
NOTTING HILL HOUSING

Project
AREA 1
AYLESBURY ESTATE

Title
TOPOGRAPHICAL SURVEY

Drawn by	Checked by
SM	CDW
Scale 1:200@A0	Date APR 2014
Drawing Number TS14-142S\1	Revision —
Sheet 1 of 4	

All levels related to Ordnance Survey GPS Network.

Value N/A

The Underground services information has been supplied by Amethyst Surveys Ltd

No signal on Gas supplies, no signal, taken from records. Unable to locate water main in Albany Road and Portland Street, no signals, taken from records (TFR).

Survey Note:

Survey information has been added to the original survey carried out by Adlen Limited (7836-011.3-01A). A scale factor of 0.99981058 was applied for the original survey drawings. This provisional survey is related to the same grid and with the same scale factor applied.

SHEET LAYOUT

Revision	Description	Date
A	Information from statutory utility records added.	13.05.14

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Client
NOTTING HILL HOUSING

Project
AREA 1
AYLESBURY ESTATE

Title
UNDERGROUND SERVICES

Drawn by	Checked by
TD	DCJ
Scale 1:200@A0	Date APR 2014
Drawing Number TS14-142S\5	Revision A
Sheet 2 of 4	

All levels related to Ordnance Survey GPS Network.

Value N/A

SCALE BAR 2 0 10 metres

3004632

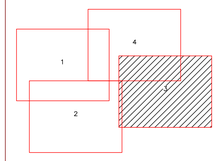
NORTH

The Underground services information has been supplied by Amethyst Surveys Ltd

No signal on Gas supplies, no signal, taken from records. Unable to locate water main in Albany Road and Portland Street, no signals, taken from records (TFR).

Survey Note:

Survey information has been added to the original survey carried out by Adlen Limited (7836–011.3–01A). A scale factor of 0.99981058 was applied for the original survey drawings. This provisional survey is related to the same grid and with the same scale factor applied.



SHEET LAYOUT

Revision	Description	Date
A	information from statutory utility records added.	13.05.14

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Client
NOTTING HILL HOUSING

Project
AREA 1
AYLESBURY ESTATE

Title
UNDERGROUND SERVICES

Drawn by TD	*Checked by* DCJ
Scale 1:200@A0	*Date* APR 2014
Drawing Number TS14–142S\6	*Revision* A
Sheet 3 *of* 4	

All levels related to Ordnance Survey GPS Network.

Value N/A

SCALE BAR
2 0 10 metres

177800N
177700N

2 0 10 metres
SCALE BAR

NORTH

The Underground services information has been supplied by Amethyst Surveys Ltd

No signal on Gas supplies, no signal, taken from records. Unable to locate water main in Albany Road and Portland Street, no signals, taken from records (TFR).

Survey Note:

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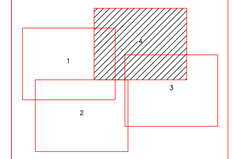

SHEET LAYOUT

Revision	Description	Date
A	information from statutory utility records added.	13.05.14

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Client
NOTTING HILL HOUSING

Project
AREA 1
AYLESBURY ESTATE

Title
UNDERGROUND SERVICES

Drawn by	Checked by
TD	DCJ
Scale 1:200@A0	Date APR 2014
Drawing Number TS14-142S\7	Revision A
Sheet 4 of 4	

All levels related to Ordnance Survey GPS Network.

Value N/A

Appendix 2

Registered Office:
Newington House
237 Southwark Bridge Road
London SE1 6NP

Registered in England and Wales No: 3870728

Company:
UK Power Networks
(Operations) Limited

Mr Wayne Fortune
WSP House,
70 Chancery Lane
London
WC2A 1AF

DNQ/NBC/CS/LPN/**401520613-201991**

01/09/2014

Contacting Us
If you need any help
07875 116539

Dear Mr Wayne Fortune

Re: Budget Estimate for Diversions & New Supplies.
Aylesbury Estate Regeneration, Albany Road, London, SE17 2BJ.
Project Reference Number: 401520613-201991

Thank you for your recent enquiry regarding the above location.
I am writing to you on behalf of London Power Networks PLC the licensed distributor of electricity for the above address trading as UK Power Networks.

I am pleased to be able to provide you with a Budget Estimate for the Works described below, Diversions & New Supplies (estimated total load of 6875 KW) at Aylesbury Estate Regeneration, Albany Road, London, SE17 2BJ, NOT including 1B/1C site.

It is important to note that this budget estimate is intended as a guide only. It may have been prepared without carrying out a Design, site visit or system studies. No enquiry has been made as to the availability of consents or the existence of any ground conditions that may affect the works.

1. Budget estimate

The budget estimate for this work is:

£7,500,000.00 (exclusive of VAT)

2. Budget Estimate summary of the Assumptions and Works:

The Works Described in this letter include for:

1. **Diversion of HV/LV cables,**
2. **Removal of existing substation,**
3. **Relocation of existing substations to temporary locations,**
4. **Provide 2 new cables supply for the entire development from a UKPN main substation,**
5. **Provision of new permanent substations,**
6. **Provide complete HV and LV Cable installation.**

Works to be carried out by the customer

- Install substations concrete base/plinth, for relocated temporary substations,
- Provide adequate area for the new permanent substations, at no cost to UKPN,
- Excavate and reinstate all trenches on site, with your boundary,
- Earthing for the substation will have to be installed in accordance with UK Power Networks plans.

Works to be carried out by UK Power Networks

- Decommission and safely remove existing HV substations,
- Decommission and safely temporary remove LV substations,
- Divert HV and LV cables,
- Provide and Install 2 new supply cables from 2 dedicated feeders fed from spare panels at Verney Road MSS, which is about 1.5 miles from the site,
- Supply and Install new permanent substations at new locations to replace existing,
- Excavate and supply/install new duct and cables for the HV circuits,
- Excavate and supply/install new duct and cables for the LV circuits,
- Test and commission new scheme and relocated new substation,
- New Leases will be obtained for the replacement Network substations while the existing are surrendered.

The sites included in this Estimate are: 2A/2B, 3A/3B, 4, 5 & 6, 8 & 9, 10, 11 TO 14, and not 1B/1C.

Important Note:
The Capacity requested for this site and the 2 spare panels allocated in this Budget Estimate cannot be reserved.

Please note that if any of the assumptions prove to be incorrect, this may have a significant impact on the price in any subsequent quotation. You should note also that UK Power Networks' formal connection offer may vary considerably from the budget estimate. If you place reliance upon the budget estimate for budgeting or other planning purposes, you do so at your own risk.

If you would like to proceed to a formal offer of connection then you should apply for a quotation, Please refer to our website http://www.ukpowernetworks.co.uk/internet/en/help-and-advice/documents/the_connection_process.pdf for '**The connection process**' which details our application process. To help us progress any future enquiry as quickly as possible please quote the UK Power Networks Reference Number from this letter on all correspondence.

If you have any questions about your budget estimate or need more information, please do not hesitate to contact me. The best time to call is between the hours of 9am and 4pm, Monday to Friday. If the person you need to speak to is unavailable or engaged on another call when you ring, you may like to leave a message or call back later.

Yours sincerely

Claude Fridja
UK Power Networks
Project Manager
Major Projects
Connections

Newington House
237 Southwark Bridge Road
London
SE1 6NP
Mobile: 0787 511 6539
E mail: claude.fridja@ukpowernetworks.co.uk

UK Power Networks
Delivering your energy

Registered Office:
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Registered in England and Wales No: 3870728

Company:
UK Power Networks
(Operations) Limited

Mr Wayne Fortune
WSP House,
70 Chancery Lane
London
WC2A 1AF

7 July 2014

Re: (NTR) Aylesbury Estate Regeneration. Albany Road, London. SE17 2BJ.
EHV Diversions
Project Reference Number: 401555280/208137

Dear Wayne

Thank you for your recent enquiry regarding the above location.
I am writing to you on behalf of London Power Networks PLC the licensed distributor of electricity for the above address trading as UK Power Networks.

I am pleased to be able to provide you with a budget estimate for the works, Diversions of the EHV cables.

It is important to note that this budget estimate is intended as a guide only. It may have been prepared without carrying out a site visit or system studies. No enquiry has been made as to the availability of consents or the existence of any ground conditions that may affect the works. It is not an offer to provide the connection and nor does it reserve any capacity on UK Power Networks' electricity distribution system.

1. Budget estimate

The budget estimate for this work is:

£3,000,000.00 (exclusive of VAT)

2. Budget estimate assumptions

This estimate is based on the diversion of EHV 313-66kV at the top end of the development area into Thurlow Road and then the diversion of cables into a utility corridor further down Thurlow Road.
The cable is oil filled and we have based the diversion on conecting between existing joint bays.
We combine the two diversions into one single diversion as they meet at the same joint bay in Thurlow Street.
We have assumed that the cables will not go in the utility corridor as we have no details of the utility corridor (e.g. drawings, construction, ownership, rights of access , maintenance etc.) and that the cables will run above the corridor with a suitable depth of cover.

This budget estimate is based on the following assumptions:

- Detail design required
- Route survey required to confirm proposed route/space in roads
- Circuit identification required to confirm that the cables are New Cross-Southbank 66kV
- Existing cable 66kV, 3 core, FFC, 0.6sq inch. Replacement cable to be 132kV, 1core,XLPE
- Use of by oil by pass pipe rather than installation of tanks at joint bays.
- Hydraulic design required to confirm use of oil by pass.
- Survey required to confirm if adequate space at joint bay locations for 3core FFC-3 x core XLPE joint.
- Diversion between existing joint bays
- Due to route length assumes central joint in XLPE cable
- As slewing of cables will not be allowed the diversion covers the whole length of the site in Thurlow Street.
- Includes diversion required at Northchurch
- Includes diversion in Kingslake Street, but not diversion into a utility corridor.
- Assumes cables can be run outside utility corridor

Please note that if any of the assumptions prove to be incorrect, this may have a significant impact on the price in any subsequent quotation. You should note also that UK Power Networks' formal connection offer may vary considerably from the budget estimate. If you place reliance upon the budget estimate for budgeting or other planning purposes, you do so at your own risk.

If you would like to proceed to a formal offer of connection then you should apply for a quotation, Please refer to our website http://www.ukpowernetworks.co.uk/internet/en/help-and-advice/documents/the_connection_process.pdf for **'The connection process'** which details our application process. To help us progress any future enquiry as quickly as possible please quote the UK Power Networks Reference Number from this letter on all correspondence.

If you have any questions about your budget estimate or need more information, please do not hesitate to contact me. The best time to call is between the hours of 9am and 4pm, Monday to Friday. If the person you need to speak to is unavailable or engaged on another call when you ring, you may like to leave a message or call back later.

Yours sincerely

Claude Fridja
UK Power Networks
Project Manager
Major Projects
Connections

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Mobile: 0787 511 6539
E mail: claude.fridja@ukpowernetworks.co.uk

Masterplan New Supplies

Our Ref: 794625
Your Ref: None given

Wayne Fortune
WSP UK Ltd
WSP House
70 Chancery Lane
London
WC2A 1 AF

SGN Connections Limited
St. Lawrence House
Station Approach
Horley
Surrey
RH6 9HJ
Tel: 0845 070 1431

12/08/2014

Dear Mr Fortune,

RE: New connection(s) at: Aylsebury Estate Regeneration, Southwark, London SE17 2BJ

Further to your request dated 04/06/2014 regarding the new connection at the above site, please find a budget indication quote detailed below.

Works to be carried out: SGN Connections to connect to the existing 6" Steel Intermediate Pressure main in the carriageway of Albany Road & install a new Intermediate pressure main, terminating at inlet of IP/MP governor. From outlet of governor install a new MP PE main to the kiosk location at the energy centre.

Location 6 Budget Indication 15.5MW: £388,400
Location 6 Budget Indication 31MW: £397,600
Location 7 Budget Indication 15.5MW: £493,400
Location 7 Budget Indication 31MW: £505,000
All prices quoted above will be subject to VAT at the appropriate rate,

Please note that this figure is a budget indication only and does not represent an offer to carry out the work. This budget cost is based on the information we have been provided with by you.

We will not be able to complete a firm quotation until a full design study has been carried out. There is a charge to carry out a design study that will provide a more accurate cost for work to be done. Upon receipt of a firm request, we will advise you of the cost for this design study.

Current capacity check indicates that no reinforcement is required however this is subject to change. A contribution from you may be required towards the cost of associated reinforcement works. Upon receipt of a firm request, we will evaluate the actual work required and let you know what those costs are.

It is assumed that no easements or third party permissions are required to carry out all works.

Please note that this budget indication does not take into account for any existing Southern Gas Networks infrastructure that may require diverting. Details of these can be obtained from **Southern Gas Networks Diversions/Isolations – 0845 070 3497, or at the following email address: planning&design_diversions@sgn.co.uk**
If you have any further queries relating to this budget indication, please feel free to contact me on the telephone number at the top of this letter.

Yours sincerely,

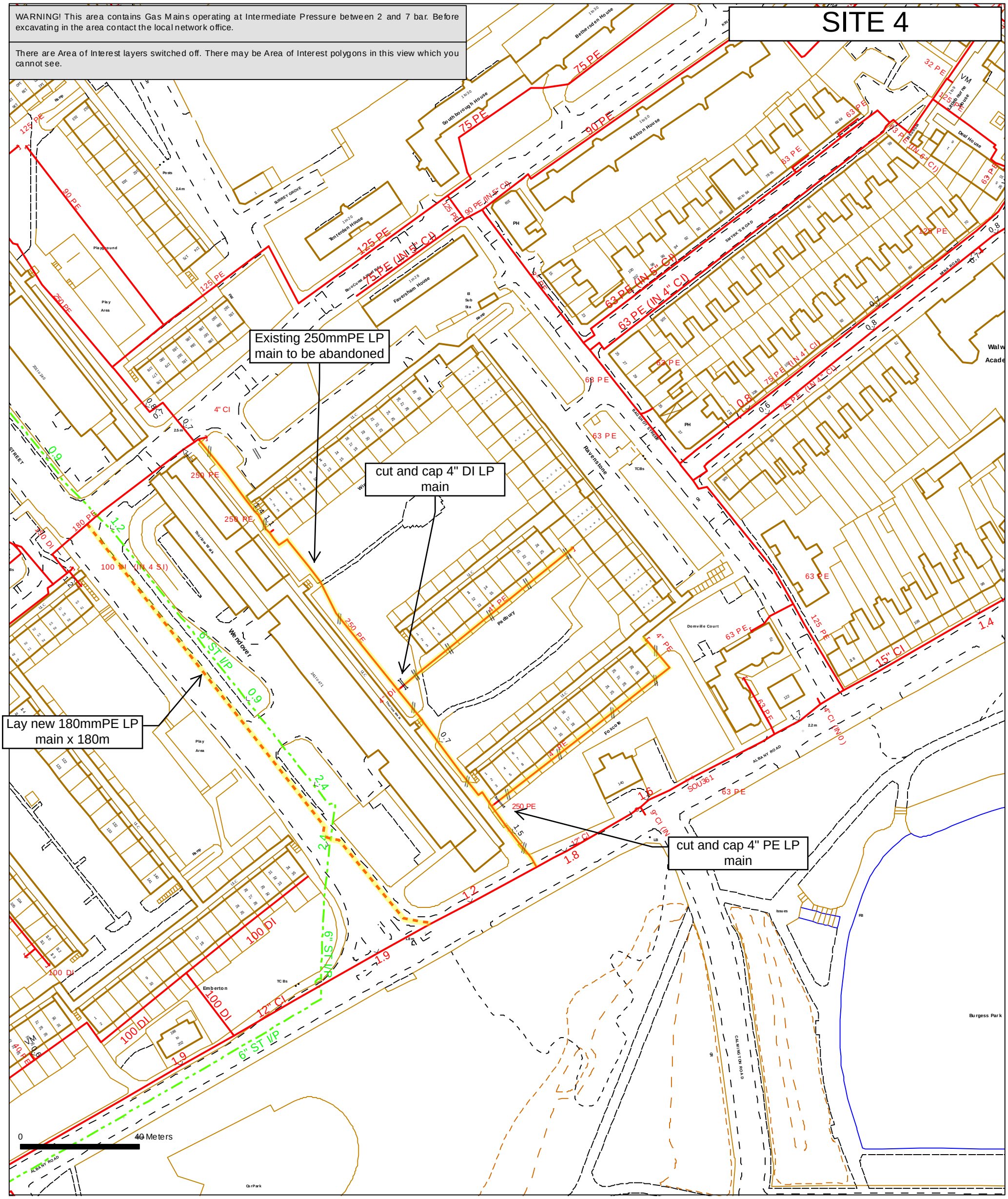
Kevin Wort
Design Assistant

Masterplan Diversions

WARNING! This area contains Gas Mains operating at Intermediate Pressure between 2 and 7 bar. Before excavating in the area contact the local network office.

There are Area of Interest layers switched off. There may be Area of Interest polygons in this view which you cannot see.

SITE 4



SCALE 1: 1250	LP MAINS
USER ID: NS67639	MP MAINS
DATE: 24/06/2014	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERENCE:	HISTORY DATA
E533283,N178110,TQ 33 78	LAs
	GTs SSSIs

Some examples of Plant items:

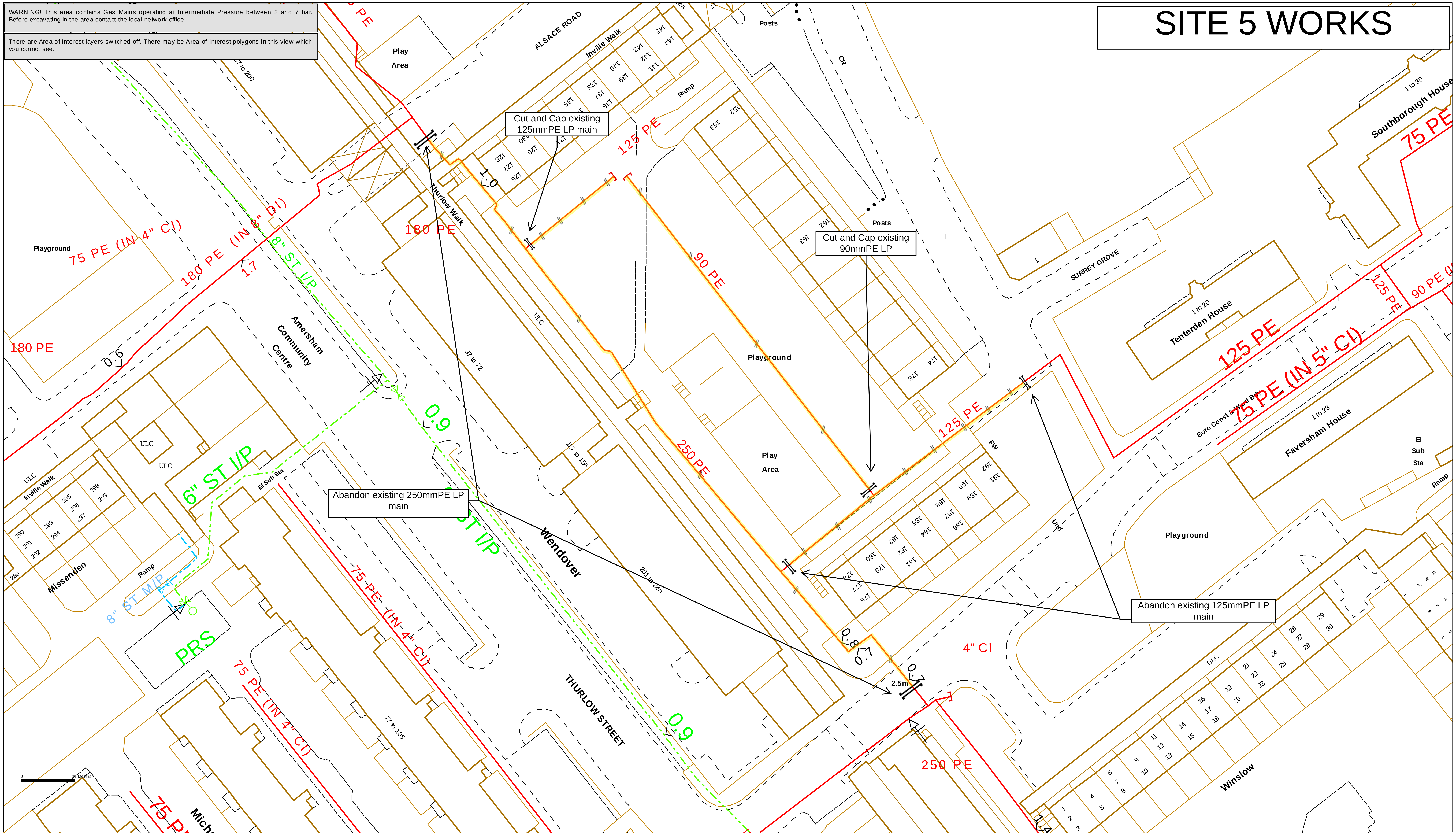
Valve | Depth of Cover | Syphon | Diameter Change | Material Change

This plan shows the location of those pipes owned by Scotia Gas Networks (SGN) by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs or third parties may also be present in this area but are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties are given with regard to the accuracy of the information shown on this plan. Service pipes, valves, siphons, sub-connections etc are not shown but their presence should be anticipated. You should be aware that a small percentage of our pipes/assets may be undergoing review and will temporarily be highlighted in yellow. If your proposed works are close to one of these pipes, you should contact the SGN Plant Protection Team on 08450703497 for advice. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HS (G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that plant location information is provided to all persons (whether direct labour or sub-contractors) working for you on or near gas apparatus. Information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

INTRANET MAP VERSION 2.1

Greater London Authority Area

Scotia Gas Networks plc



SCALE 1: 500	LP MAINS
USER ID: NS67639	MP MAINS
DATE: 06/08/2014	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERNCE: E533139,N178218,TQ 33 78	HISTORY DATA
	LAs
	GTs SSSIs

Some examples of Plant items: Valve, Depth of Cover, Syphon, Diameter Change, Material Change

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INTRANET MAP VERSION 2.1

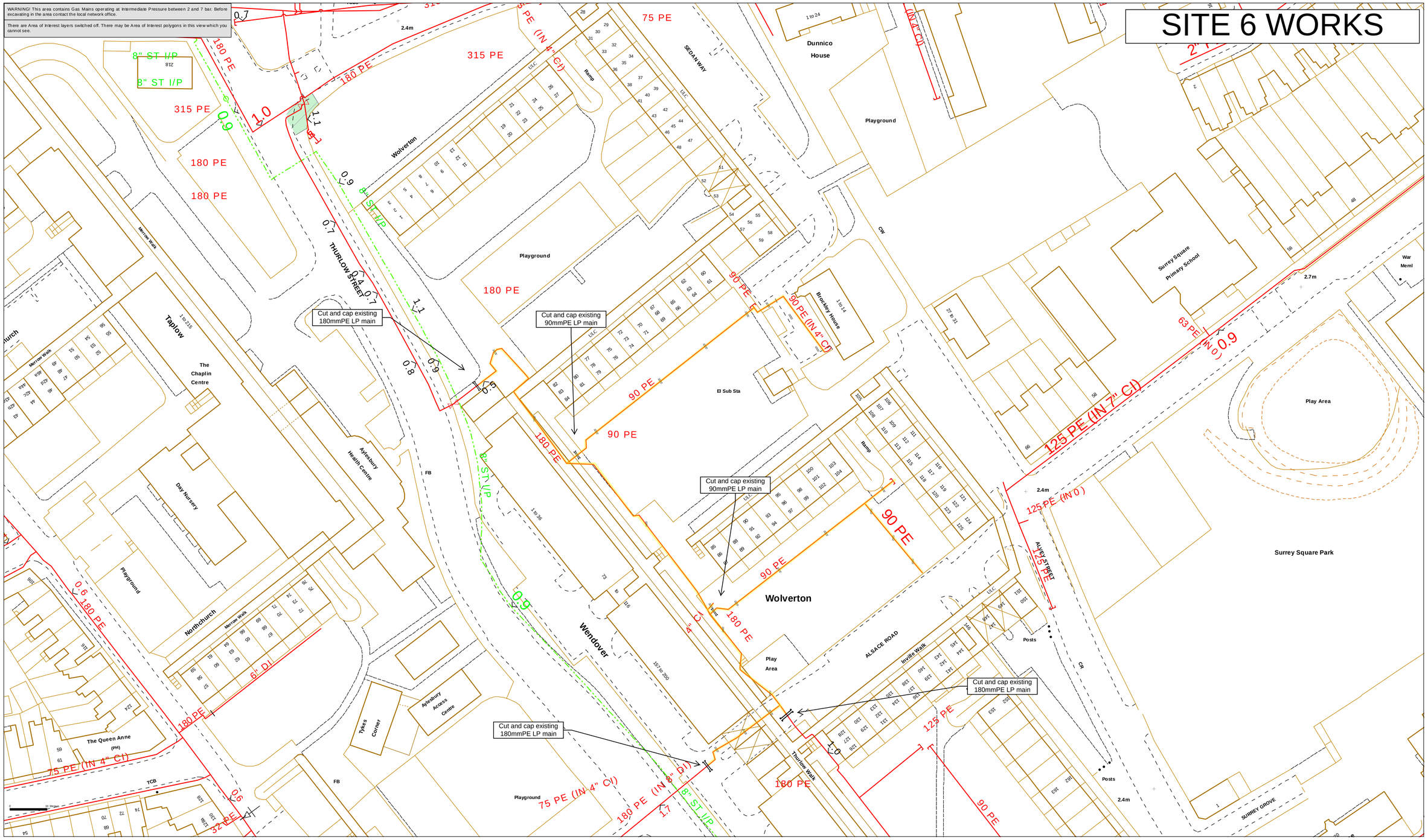
Greater London Authority Area

Scotia Gas Networks plc

SITE 6 WORKS

WARNING! This area contains Gas Mains operating at Intermediate Pressure between 2 and 7 bar. Before excavating in the area contact the local network office.

There are Area of Interest layers switched off. There may be Area of Interest polygons in this view which you cannot see.



SCALE 1: 500	LP MAINS
USER ID: NS67639	MP MAINS
DATE: 08/08/2014	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERNCE: E533062,N178352,TQ 33 78	HISTORY DATA
	LAs
	GTs SSSIs

Some examples of Plant items:
Valve | Depth of Cover | Syphon | Diameter Change | Material Change

This plan shows the location of those pipes owned by Scotia Gas Networks (SGN) by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs or third parties may also be present in this area but are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties are given with regard to the accuracy of the information shown on this plan. Service pipes, valves, siphons, sub-connections etc are not shown but their presence should be anticipated. You should be aware that a small percentage of our pipes/assets may be undergoing review and will temporarily be highlighted in yellow. If your proposed works are close to one of these pipes, you should contact the SGN Plant Protection Team on 08450703497 for advice. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HS (G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that plant location information is provided to all persons (whether direct labour or sub-contractors) working for you on or near gas apparatus. Information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

INTRANET MAP VERSION 2.1

Greater London Authority Area

Scotia Gas Networks plc

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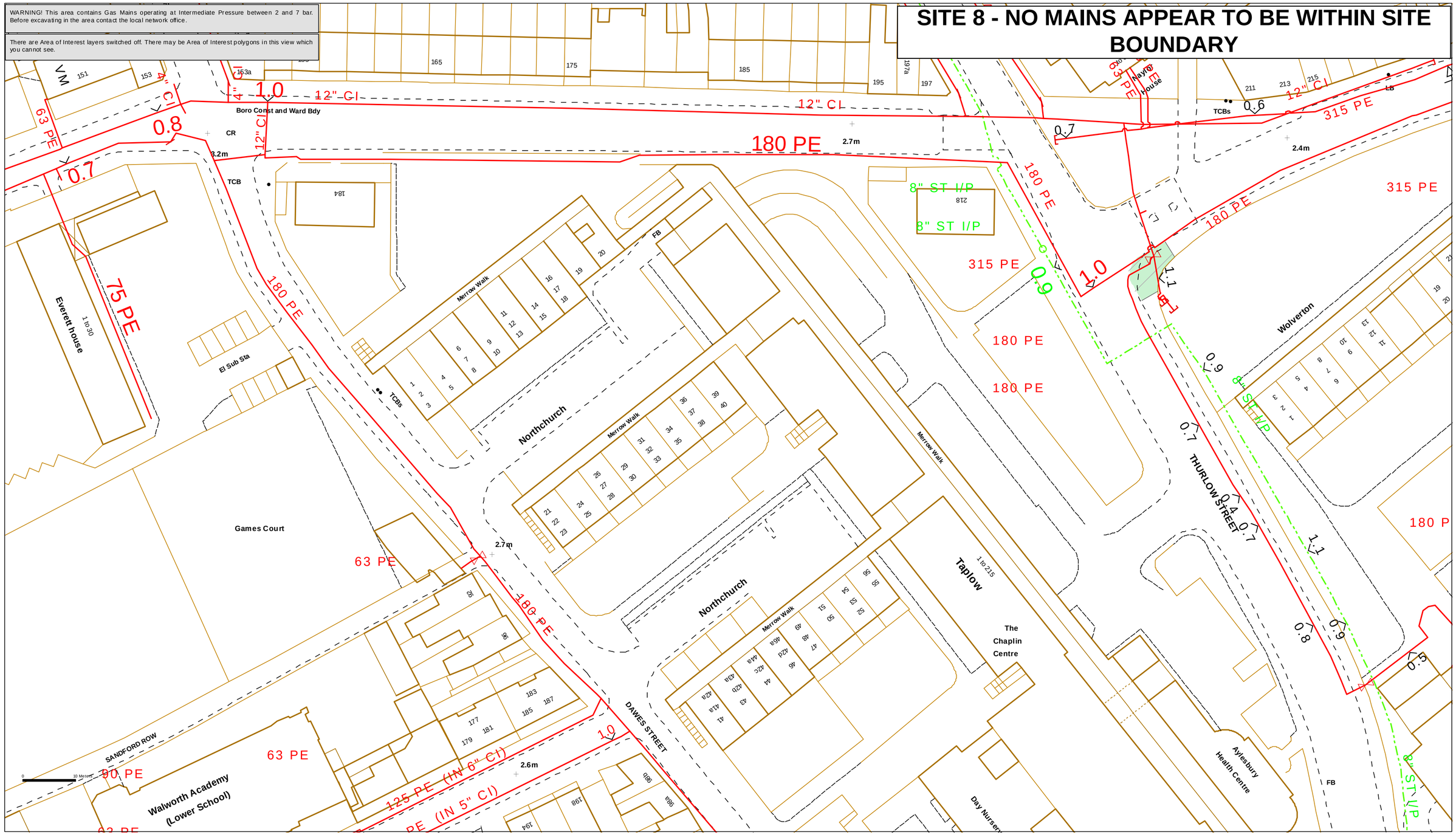
SITE 8 - NO MAINS APPEAR TO BE WITHIN SITE BOUNDARY



SCALE 1: 500	LP MAINS
USER ID: NS67639	MP MAINS
DATE: 04/08/2014	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERNCE: E532870,N178407,TQ 32 78	HISTORY DATA
	LAs
	GTs SSSIs

Some examples of Plant items:
Valve, Depth of Cover, Syphon, Diameter Change, Material Change

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INTRANET MAP VERSION 2.1

Greater London Authority Area

Scotia Gas Networks plc

SITE 9 WORKS

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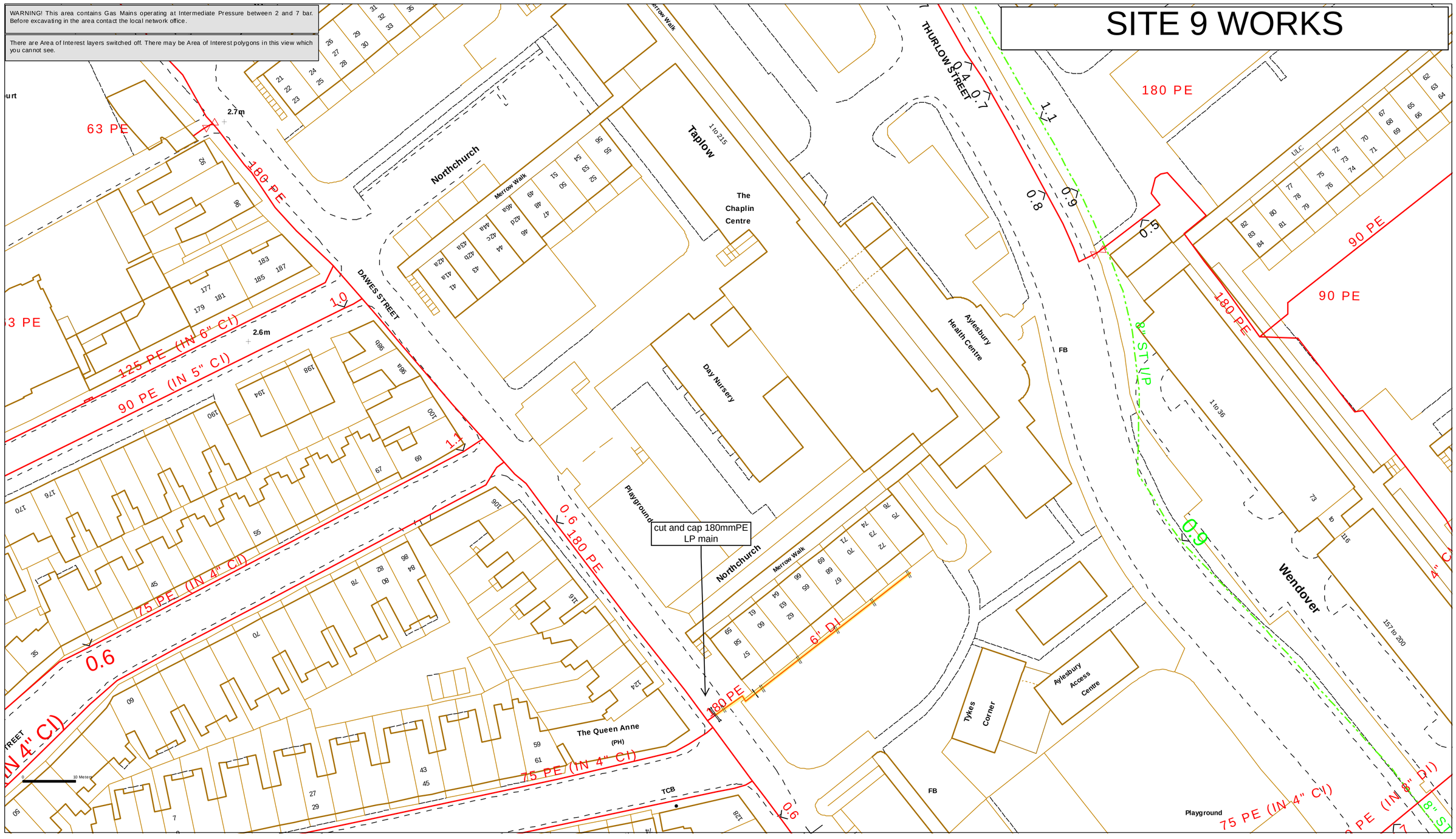

SCALE 1: 500	LP MAINS
USER ID: NS67639	MP MAINS
DATE: 04/08/2014	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERNCE: E532921,N178325,TQ 32 78	HISTORY DATA
	LAs
	GTs SSSIs

Some examples of Plant items: Valve, Depth of Cover, Syphon, Diameter Change, Material Change

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INTRANET MAP VERSION 2.1

Greater London Authority Area

Scotia Gas Networks plc

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Site 11&12 works

cut and cap existing 6" ST IP main.

cut and cap exising 100mmDI LP main.

cut and cap existing 75mmPE LP main.

cut and cap existing 75mmPE LP main.

cut and cap existing 75mmPE LP main.

40 Meters

SCALE 1: 1250	LP MAINS
USER ID: NS67639	MP MAINS
DATE: 11/08/2014	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERENCE:	HISTORY DATA
E533046,N178114,TQ 33 78	LAs
	GTs SSSIs

Some examples of Plant items:

Valve, Depth of Cover, Syphon, Diameter Change, Material Change

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INTRANET MAP VERSION 2.1

Greater London Authority Area

Scotia Gas Networks plc

SITE 13 WORKS

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Existing 75mmPE LP main to be protected during demolition / reconstruction works

Cut and Cap 63mmPE LP main

Cut and cap existing 63mmPE LP main.

Cut and cap existing 90mmPE LP main.

SCALE 1: 500	LP MAINS
USER ID: NS67639	MP MAINS
DATE: 04/08/2014	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERNCE: E532846,N178125,TQ 32 78	HISTORY DATA
	LAs
	GTs SSSIs

Some examples of Plant items: Valve, Depth of Cover, Syphon, Diameter Change, Material Change

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INTRANET MAP VERSION 2.1

Greater London Authority Area

Scotia Gas Networks plc

SITE 14 WORKS

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POSSIBLE SERVICE ALTERATIONS REQUIRED. PLEASE CONTACT SGN CONNECTIONS ON 0845 026 0015

SCALE 1: 1250	LP MAINS
USER ID: NS67639	MP MAINS
DATE: 11/08/2014	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERNCE: E532920,N178046,TQ 32 78	HISTORY DATA
	LAs
	GTs SSSIs

Some examples of Plant items: Valve, Depth of Cover, Syphon, Diameter Change, Material Change

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INTRANET MAP VERSION 2.1

Greater London Authority Area

Scotia Gas Networks plc

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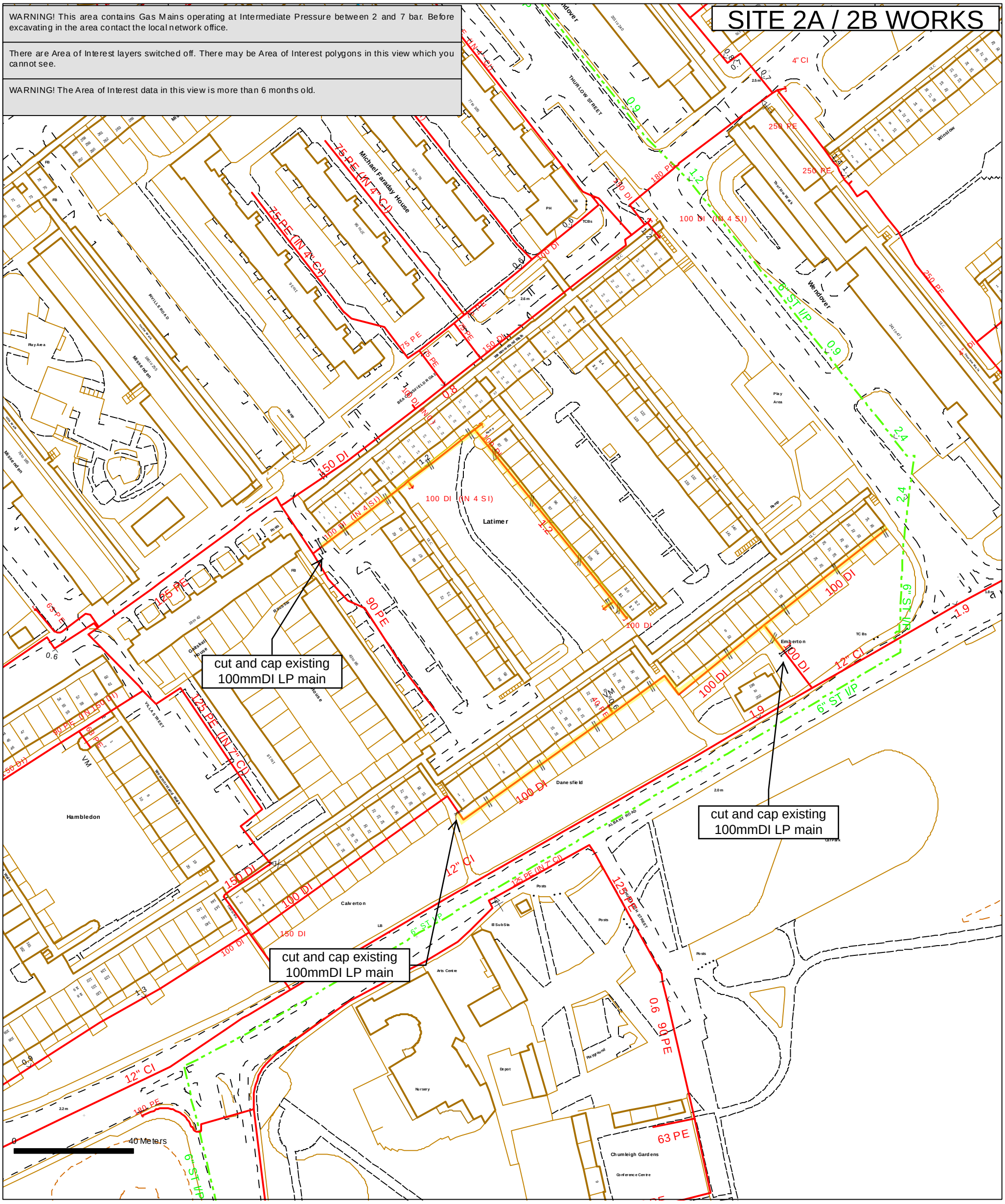
WARNING! The Area of Interest data in this view is more than 6 months old.

SITE 2A / 2B WORKS



SCALE 1: 1250	LP MAINS
USER ID: NS67639	MP MAINS
DATE: 12/08/2014	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERENCE:	HISTORY DATA
E533086,N177992,TQ 33 77	LAs
	GTs SSSIs

Some examples of Plant items:

Valve | Depth of Cover | Syphon | Diameter Change | Material Change

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INTRANET MAP VERSION 2.1

Greater London Authority Area

Scotia Gas Networks plc

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cut and cap existing 90mmPE LP main

cut and cap 100mmDI LP main

Main abandoned under previous phase.

cut and cap existing 150mmDI LP main

cut and cap existing 150mmDI LP main

cut and cap existing 150mmDI LP main

cut and cap existing 63mmPE LP main

0 40 Meters

SCALE 1: 1250	LP MAINS
USER ID: NS67639	MP MAINS
DATE: 12/08/2014	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERENCE:	HISTORY DATA
E532954,N177891,TQ 32 77	LAs
	GTs SSSIs

Some examples of Plant items:

Valve | Depth of Cover | Syphon | Diameter Change | Material Change

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INTRANET MAP VERSION 2.1

Greater London Authority Area

Scotia Gas Networks plc

Masterplan New Supplies

Fortune, Wayne

From: mark.benjamin@openreach.co.uk
Sent: 11 April 2014 17:36
To: Fortune, Wayne
Subject: RE: New Connection Enquiry - Aylesbury Estate Regeneration 50600304

Good Evening Wayne ,

I am adding the sites to our database once all the sites have been registered I will send you out a form and request plans .

Kind Regards

Mark Benjamin
New Site reception
BLP1P7 | Openreach New Sites Office
Telephone: 0800 141 2672
Mobile:
Fax: 01708 752403
Web: WWW.Openreach.co.uk

Openreach installs, services, supports and maintains the wiring, fibres and connections which link tens of millions of homes and businesses in Britain to their Communications Providers' networks.

Think before you print! Consider the environment before printing this e-mail.

From: Fortune, Wayne [mailto:Wayne.Fortune@WSPGroup.com]
Sent: 11 April 2014 17:31
To: newsiteromford1 G; Benjamin,MA,Mark,BLP1P7 R
Subject: RE: New Connection Enquiry - Aylesbury Estate Regeneration 50600304
Importance: High

Good evening Mark,

Looking to follow up on the below correspondence and wanted to confirm how we are going to progress.

I look forward to your response.

Best regards,

Wayne

From: Fortune, Wayne
Sent: 08 April 2014 14:15
To: 'newsitereceptionromford@openreach.co.uk'; Mark Benjamin (mark.benjamin@openreach.co.uk)
Subject: RE: New Connection Enquiry - Aylesbury Estate Regeneration 50600304
Importance: High

Hi Mark,

As per original email we are looking to:

- Detailed connection proposals for Sites 1B/1C and Site 10/Plot 18 to support detailed planning application due August 2014. I have passed on available site layouts, floor plans, etc. for Sites 1B/1C. We do not have any further detailed information for Site 10/Plot 18. We need to know the points of connection to the external network, number of ducts required to be routed within the site, location/size of chambers and any required cabinets (to be located within the public footway) to support the onsite proposals.

- Develop 'high level' proposals for the remainder of the masterplan to support an outline planning application due August 2014. For these sites I have passed on the available masterplan layout, detailed information is not available for these sites hence we are looking for 'high level' proposals e.g. the point of connection to the existing network will be in X and identify if any off-site works are required to support the proposals.

Going forward it may be worthwhile registering each site separately as detailed proposals will be required as each site comes forward for planning, I would suggest the following breakdown which tie up with the attached previously issued drawing – please note the development timescales for interaction between the sites which may impact proposed strategy:

- Site 1B/1C [Plot 1, 2 and 3]
- Plot 18
- Plot 4&5
- Plot 6&7
- Plot 8&9
- Plot 10
- Plot 11
- Plot 12
- Plot 13
- Plot 14&15
- Plot 16&17

Please let me know if you require any further information to progress. As mentioned previously, it would be appreciated if we can set up a meeting between ourselves and Openreach to discuss the requirements through in greater detail.

Many thanks for passing our information on to the network alterations team – is there a point of contact/reference for the project that I can follow up with?

Please call to discuss if need be.

I look forward to your response.

Best regards,

Wayne Fortune MICE MCMI AMIAT
Senior Engineer, Power Systems Plus

WSP UK, WSP House, 70 Chancery Lane, London, WC2A 1AF

These are the reference numbers of the other sites please can you send in a site location ,site layout and floors plans for these sites when you start work on them.

L ROD 344 PLOT 4

L ROD 345 PLOT 5

L ROD 346 PLOT6

L ROD 347 PLOT 7

L ROD 348 PLOT 8

L ROD 349 PLOT 9

L ROD 350 PLOT 10

LROD 351 PLOT 11

L ROD 352 PLOT 12

L ROD 353 PLOT13

L ROD 354 PLOT 14

L ROD 355 PLOT 15

L ROD 356 PLOT 16

L ROD 357 PLOT 17

L ROD 358 PLOT 18

SITE 4 DIVERSION ROUTES

Legend

CAUTION_AREA
BT.CAUTION_AREA

EQUIPMENT
TABCD FIBRE, TCODE
COPPER, CABINET
476R COPPER, DP

DUCT
A/C AERIAL
TUNNEL
DUCT

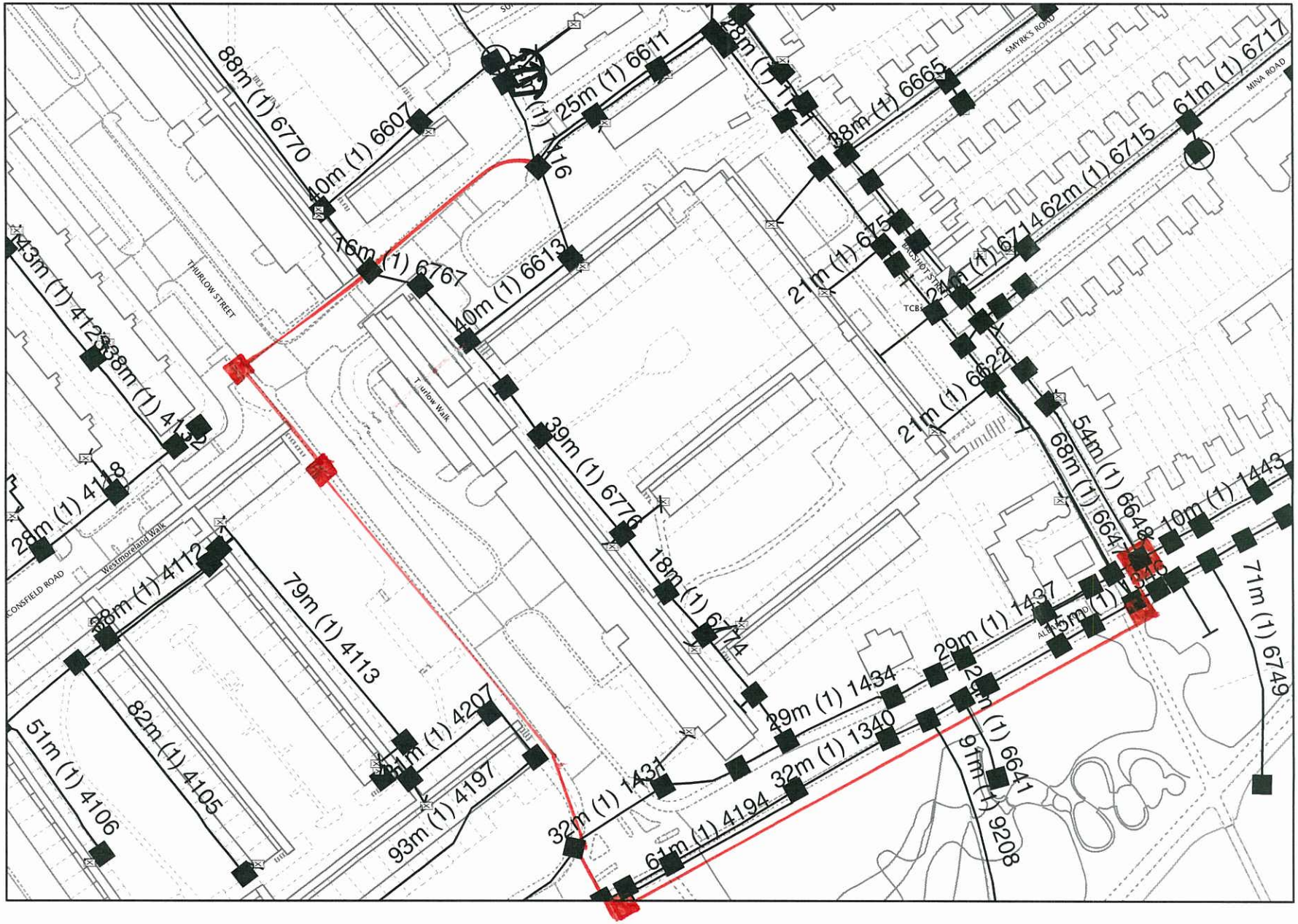
PROPOSED
A/C AERIAL
DUCT

STRUCTURE
YCODE
CABINET SHELL
SPLIT COUPLING
POLE
KIOSKS
MANHOLE
JOINTBOX
CHANGE OF STATE
DUCT TEE

PROPOSED
MANHOLE
JOINTBOX
DUCT TEE

Other proposed plant is shown using dashed lines.

BT symbols not listed above may be disregarded.



IMPORTANT WARNING:
Information regarding the location of BT apparatus is given for your assistance and is intend for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus, which may exist at various depths and may deviate from the marked route.

Exisiting BT plant may not be recorded.
Information valid at time of preparation.

FOR FREE ON-SITE LOCATION & MARKING SERVICE CALL THE EXCHANGE OPERATOR AND ASK FOR :-

FREEPHONE 0800 9173993
FAX 0208 3284050
NATIONAL NEWSITES 0800 616866

— PROPOSED

PLANT INFORMATION REPLY

<Double-Click to add Text>

<Double-Click to add Text>

openreach a BT Group business

SITE 5 DIVERSION ROUTES

Legend

CAUTION_AREA
- BT.CAUTION_AREA

EQUIPMENT
- TABCD — FIBRE, TCODE
- COPPER, CABINET
- 476R — COPPER, DP

DUCT
- A/C — AERIAL
- TUNNEL
- DUCT

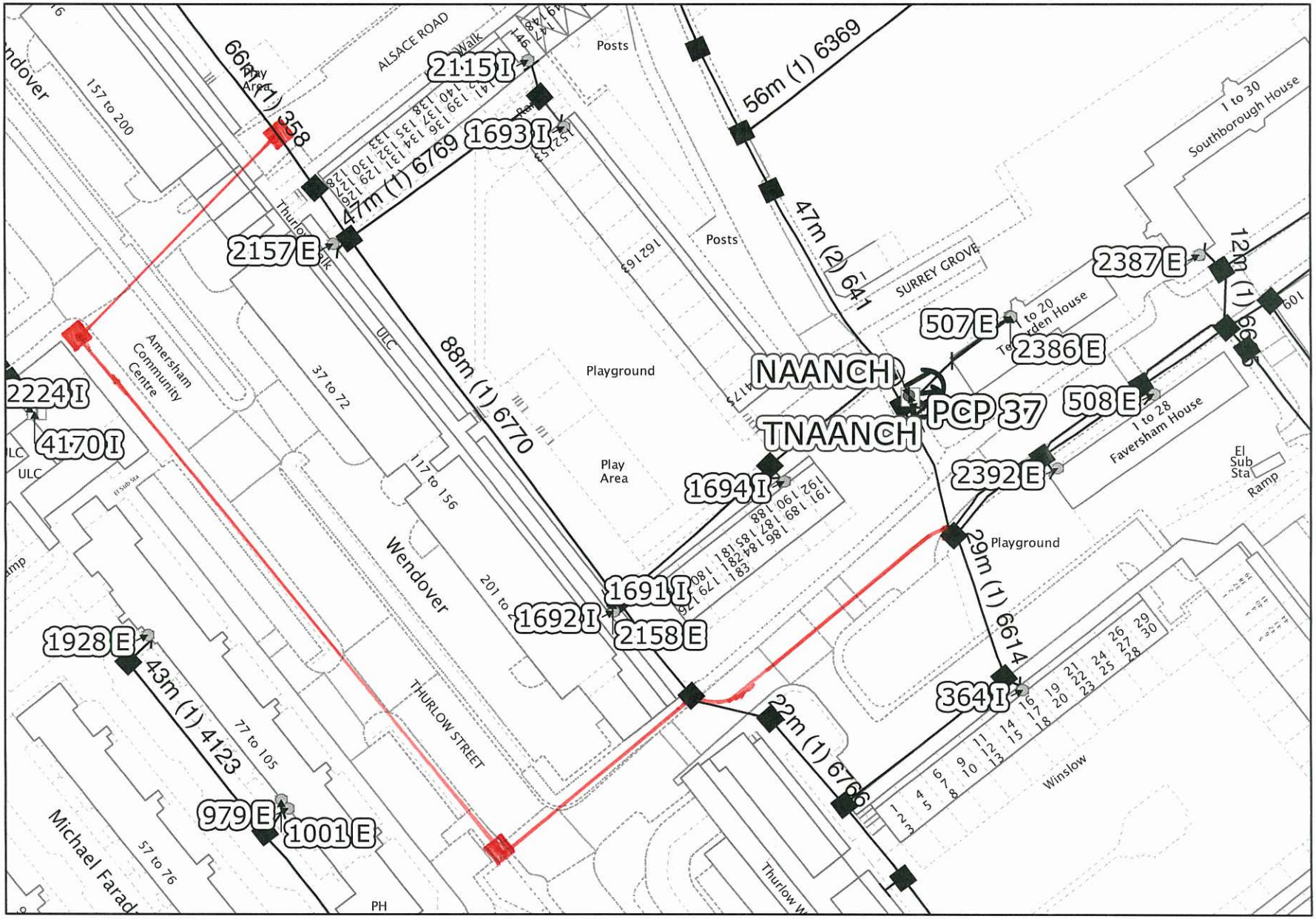
PROPOSED
- A/C — AERIAL
- DUCT

STRUCTURE
- YCODE
- CABINET SHELL
- SPLIT COUPLING
- POLE
- KIOSKS
- MANHOLE
- JOINTBOX
- CHANGE OF STATE
- DUCT TEE

PROPOSED
- MANHOLE
- JOINTBOX
- DUCT TEE

Other proposed plant is shown using dashed lines.

BT symbols not listed above may be disregarded.



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FAX 0208 3284050
NATIONAL NEWSITES 0800 616866

PROPOSED BT ROUTE

PLANT INFORMATION REPLY
<Double-Click to add Text>
<Double-Click to add Text>

openreach
a BT Group business

SITE 6 DIVERSION ROUTES

Legend

CAUTION_AREA
- BT.CAUTION_AREA

EQUIPMENT
- TABCD FIBRE, TCODE
- COPPER, CABINET
- 476R COPPER, DP

DUCT
- A/C AERIAL
- TUNNEL
- DUCT

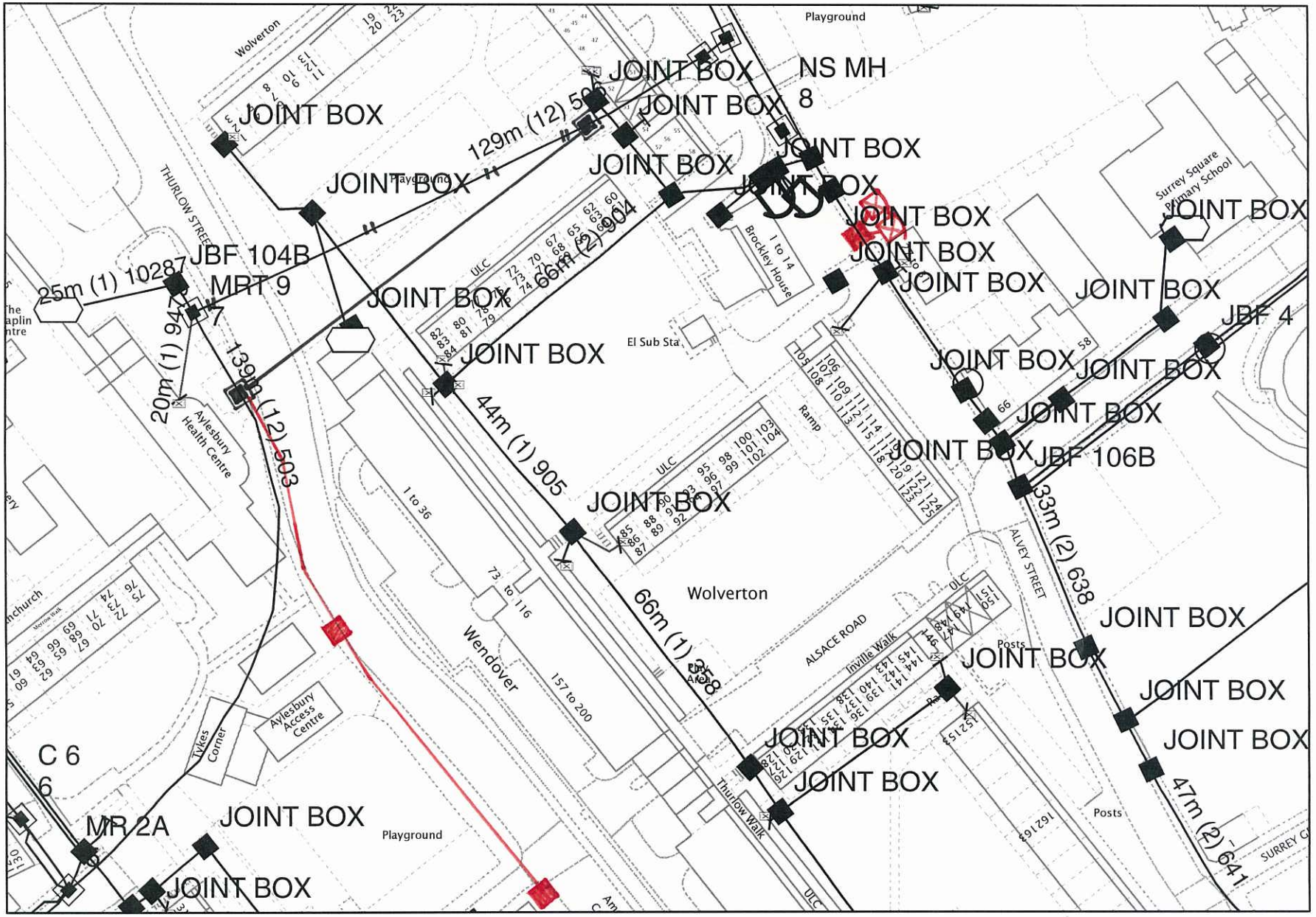
PROPOSED
- A/C AERIAL
- DUCT

STRUCTURE
- YCODE
- CABINET SHELL
- SPLIT COUPLING
- POLE
- KIOSKS
- MANHOLE
- JOINTBOX
- CHANGE OF STATE
- DUCT TEE

PROPOSED
- MANHOLE
- JOINTBOX
- DUCT TEE

Other proposed plant is shown using dashed lines.

BT symbols not listed above may be disregarded.



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Exisiting BT plant may not be recorded.
Information valid at time of preparation.

FOR FREE ON-SITE LOCATION & MARKING SERVICE CALL THE EXCHANGE OPERATOR AND ASK FOR :-

FREEPHONE 0800 9173993
FAX 0208 3284050
NATIONAL NEWSITES 0800 616866

← PROPOSED BT ROUTE

PLANT INFORMATION REPLY

<Double-Click to add Text>

<Double-Click to add Text>

openreach
a BT Group business
BT

SITE 10 DIVERSION ROUTES

Legend

CAUTION AREA
BT.CAUTION_AREA

EQUIPMENT
TABCD FIBRE, TCODE

COPPER, CABINET

476R COPPER, DP

DUCT
A/C AERIAL

TUNNEL

DUCT

PROPOSED
A/C AERIAL

DUCT

STRUCTURE
YCODE

CABINET SHELL

SPLIT COUPLING

POLE

KIOSKS

MANHOLE

JOINTBOX

CHANGE OF STATE

DUCT TEE

PROPOSED
MANHOLE

JOINTBOX

DUCT TEE

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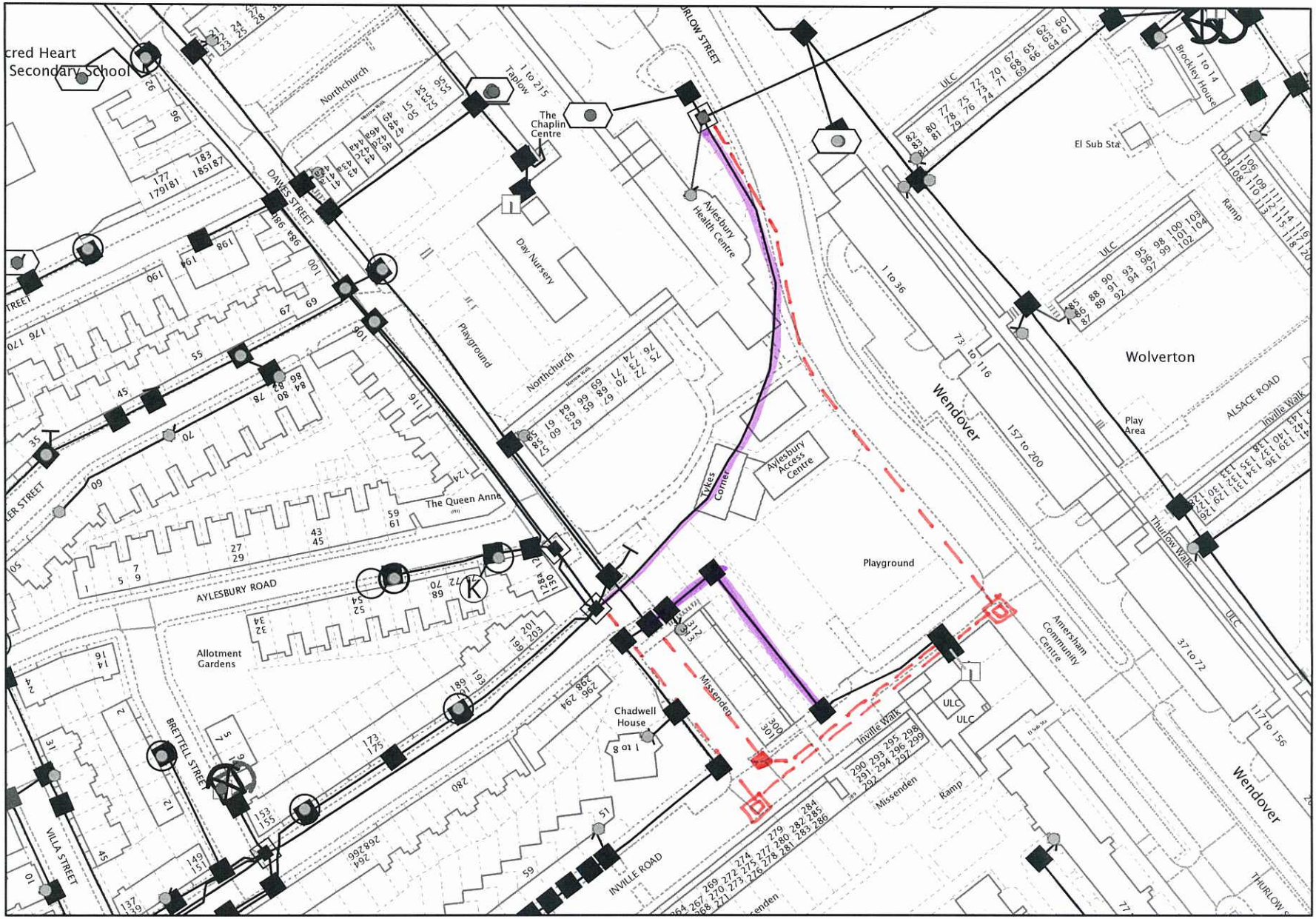

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FREEPHONE 0800 9173993
FAX 0208 3284050
NATIONAL NEWSITES 0800 616866

PLANT INFORMATION REPLY

<Double-Click to add Text>

<Double-Click to add Text>

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SITE 8 DIVERSION ROUTES

Legend

CAUTION_AREA
- BT.CAUTION_AREA

EQUIPMENT
- TABCD FIBRE, TCODE
- COPPER, CABINET
- 476R COPPER, DP

DUCT
- A/C AERIAL
- TUNNEL
- DUCT

PROPOSED
- A/C AERIAL
- DUCT

STRUCTURE
- YCODE
- CABINET SHELL
- SPLIT COUPLING
- POLE
- KIOSKS
- MANHOLE
- JOINTBOX
- CHANGE OF STATE
- DUCT TEE

PROPOSED
- MANHOLE
- JOINTBOX
- DUCT TEE

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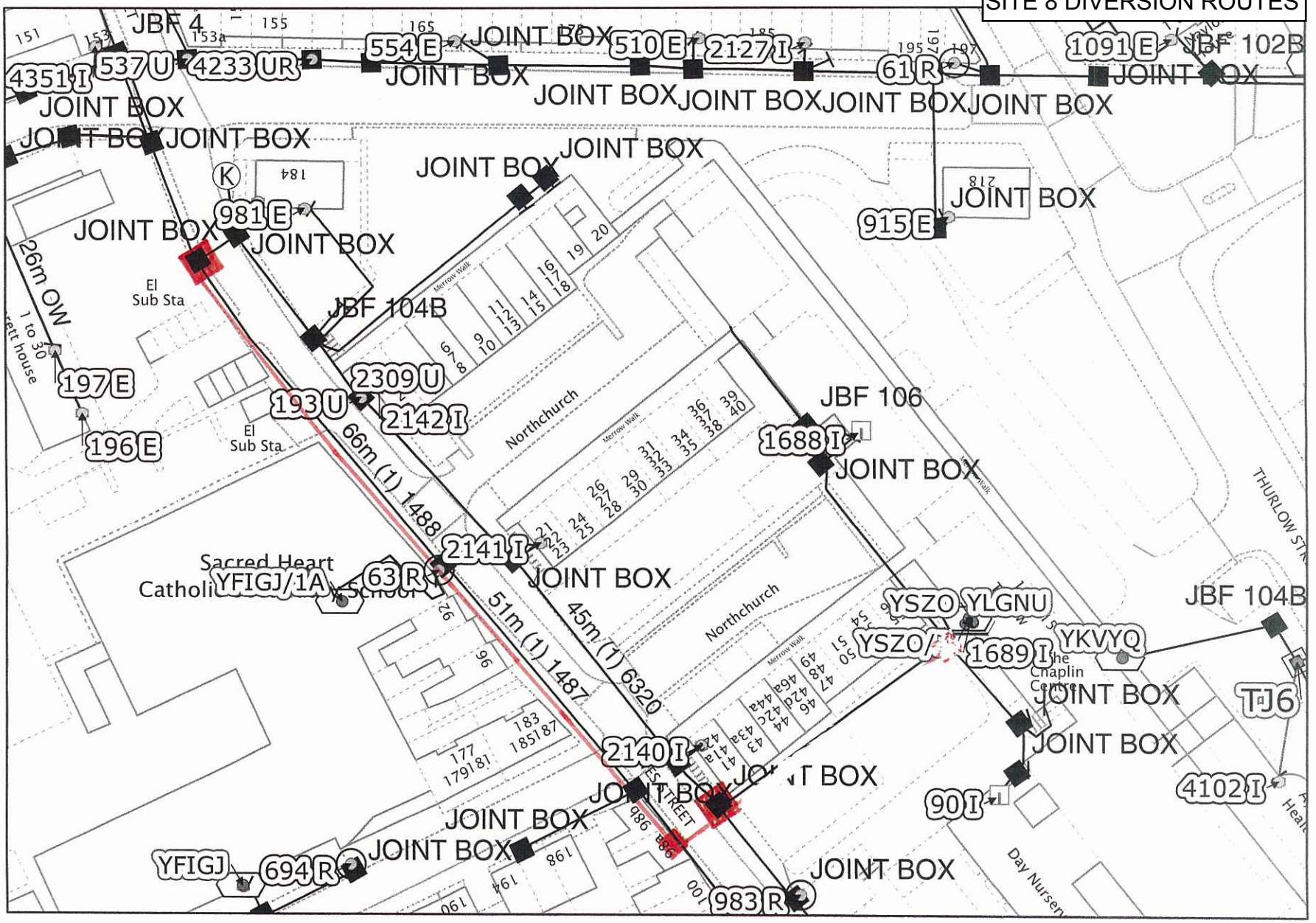

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FREEPHONE 0800 9173993
FAX 0208 3284050
NATIONAL NEWSITES 0800 616866

PROPOSED BT ROUTE

PLANT INFORMATION REPLY
<Double-Click to add Text>
<Double-Click to add Text>

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openreach
a BT Group business

WSP HOUSE
70 CHANCERY LANE
LONDON
WC2A 1AF

BT OPENREACH
REPAYMENTS PROJECTS
POST POINT 300
CLERKENWELL TE
35 IRONMONGER ROW
LONDON EC1V 3RJ

F. A. O. Wayne Fortune

Our Ref: 213112
Your Ref: SITE 9

Telephone: 0207 749 8701
Facsimile: 01908 860174

Date: 24 July 2014

Dear Sir.

RE: AYLESBURY ESTATE SITE 9 THURLOW STREET LONDON

Thank you for your letter and drawings dated 19th February 2014, concerning the above scheme.

I am returning copy of BT ordnance drawings showing approximate positions of BT apparatus.

BT apparatus may not be affected by your proposed works if the Manholes marked in red are left in-situ as per our earlier discussions.

Please contact our Plant Protection Officer by dialling 0800 917 3993 and asking for Dial Before You Dig to locate our existing apparatus well in advance of your start date. This will provide you with free on site advice and confirm the location of our apparatus.

If you wish to discuss your proposals further, please do not hesitate to contact me.

Yours faithfully

B Chohan
Projects Engineer

openreach
a BT Group business

WSP HOUSE
70 CHANCERY LANE
LONDON
WC2A 1AF

BT OPENREACH
REPAYMENTS PROJECTS
POST POINT 300
CLERKENWELL TE
35 IRONMONGER ROW
LONDON EC1V 3RJ

F. A. O. Wayne Fortune

Our Ref: 213855
Your Ref: SITE 11 & 12

Telephone: 0207 749 8701
Facsimile: 01908 860174

Date: 02 August 2014

Dear Sir.

RE: AYLESBURY ESTATE SITE 11 & 12 THURLOW STREET LONDON

Thank you for your letter and drawings dated 19th February 2014, concerning the above scheme.

I am returning copy of BT ordnance drawings showing approximate positions of BT apparatus.

BT apparatus may not be affected by your proposed works..

Please contact our Plant Protection Officer by dialling 0800 917 3993 and asking for Dial Before You Dig to locate our existing apparatus well in advance of your start date. This will provide you with free on site advice and confirm the location of our apparatus.

If you wish to discuss your proposals further, please do not hesitate to contact me.

Yours faithfully

B Chohan
Projects Engineer

SITE 13 DIVERSION ROUTES

Legend

CAUTION_AREA
- BT.CAUTION_AREA

EQUIPMENT
- TABCD FIBRE, TCODE
- COPPER, CABINET
- 476R COPPER, DP

DUCT
- A/C AERIAL
- TUNNEL
- DUCT

PROPOSED
- A/C AERIAL
- DUCT

STRUCTURE
- YCODE
- CABINET SHELL
- SPLIT COUPLING
- POLE
- KIOSKS
- MANHOLE
- JOINTBOX
- CHANGE OF STATE
- DUCT TEE

PROPOSED
- MANHOLE
- JOINTBOX
- DUCT TEE

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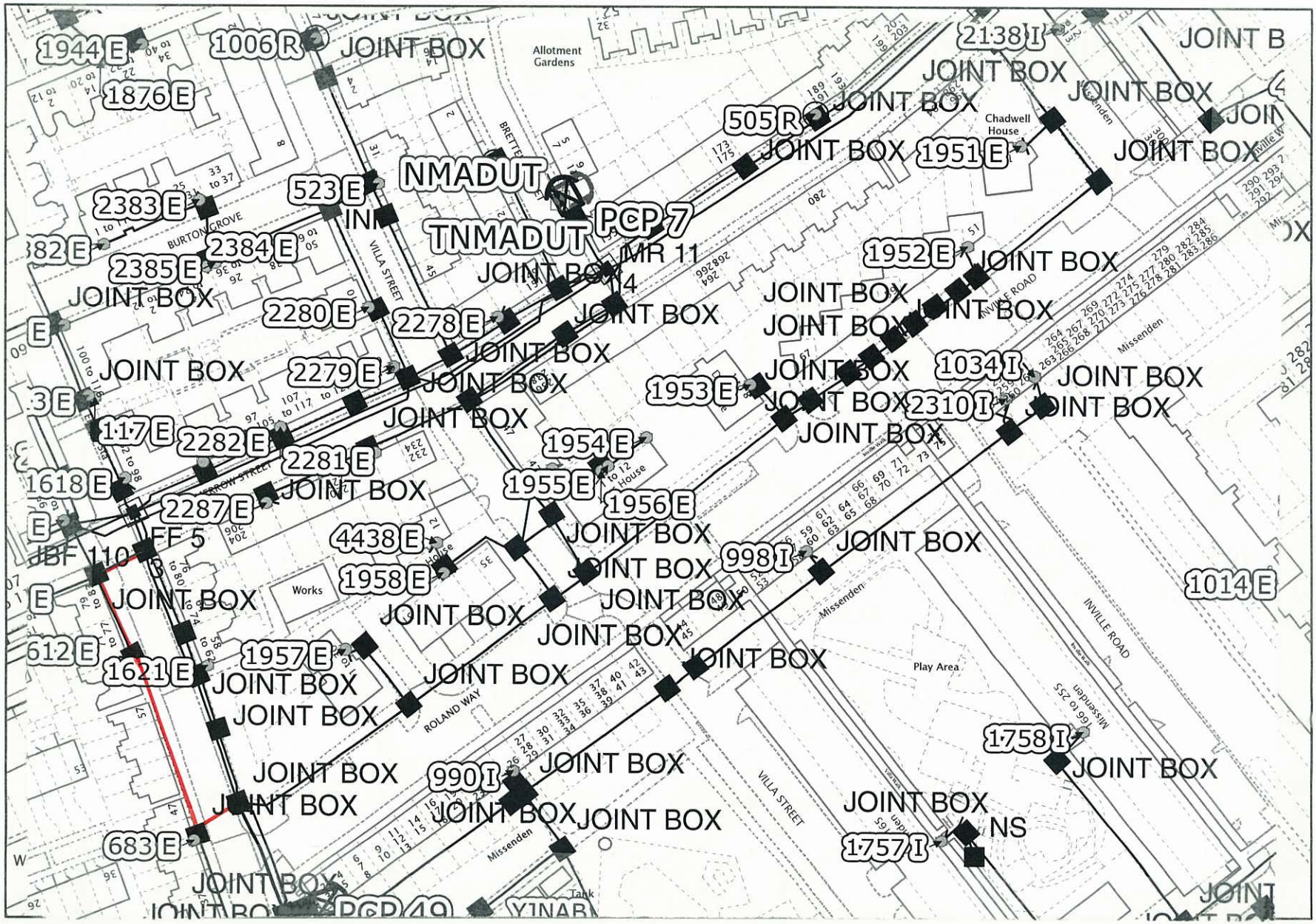

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FREEPHONE 0800 9173993
FAX 0208 3284050
NATIONAL NEWSITES 0800 616866

PROPOSED BT DUCT

PLANT INFORMATION REPLY

<Double-Click to add Text>

<Double-Click to add Text>

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SITE 14 DIVERSION ROUTES

Legend

CAUTION_AREA
- BT.CAUTION_AREA

EQUIPMENT
- TABCD FIBRE, TCODE
- COPPER, CABINET
- 476R COPPER, DP

DUCT
- A/C AERIAL
- TUNNEL
- DUCT

PROPOSED
- A/C AERIAL
- DUCT

STRUCTURE
- YCODE
- CABINET SHELL
- SPLIT COUPLING
- POLE
- KIOSKS
- MANHOLE
- JOINTBOX
- CHANGE OF STATE
- DUCT TEE

PROPOSED
- MANHOLE
- JOINTBOX
- DUCT TEE

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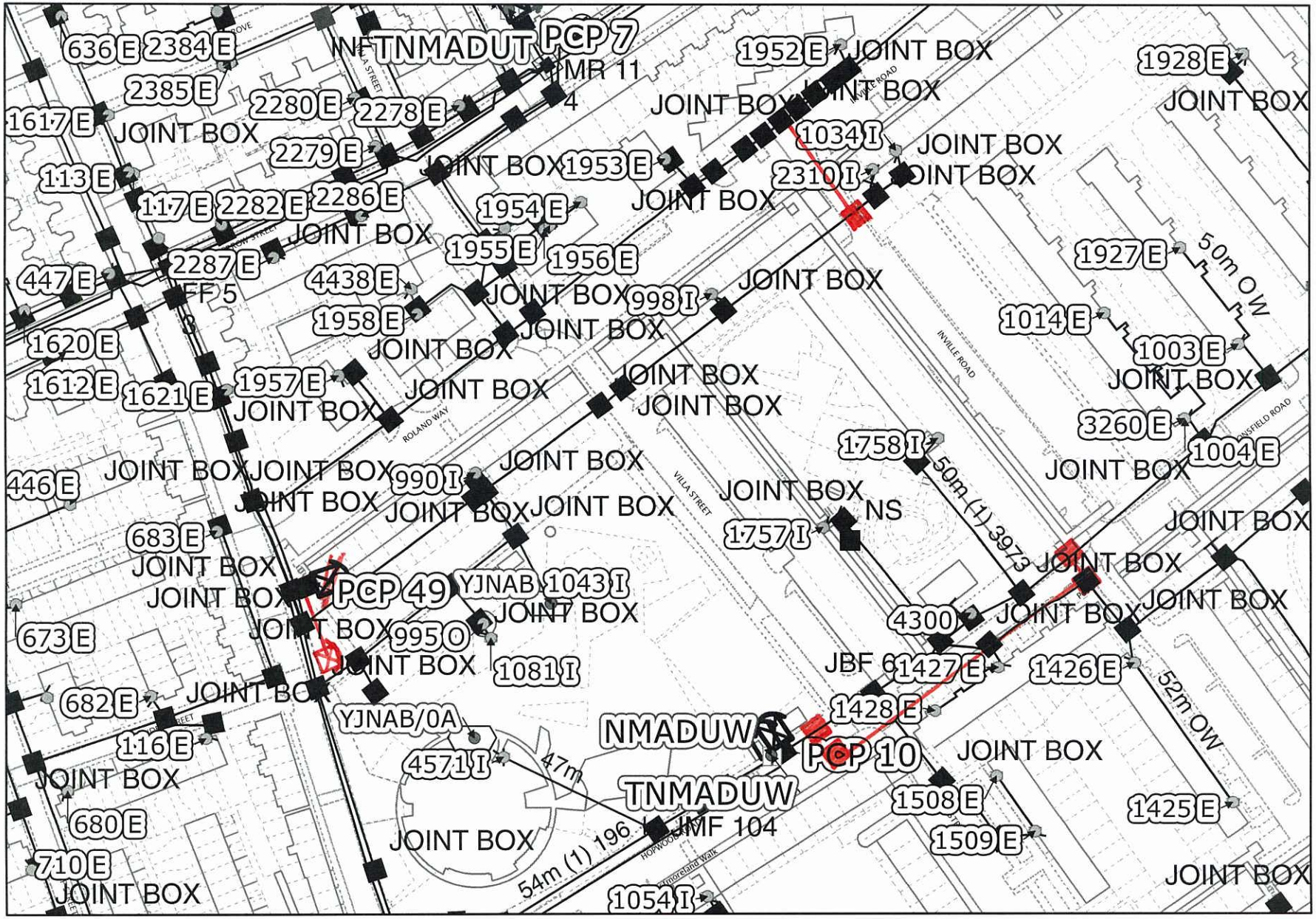

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PLANT INFORMATION REPLY

<Double-Click to add Text>

<Double-Click to add Text>

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a BT Group business

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BT

WSP HOUSE
70 CHANCERY LANE
LONDON
WC2A 1AF

BT OPENREACH
REPAYMENTS PROJECTS
POST POINT 300
CLERKENWELL TE
35 IRONMONGER ROW
LONDON EC1V 3RJ

F. A. O. Wayne Fortune

Our Ref: 213854
Your Ref: SITE 3A & 3B

Telephone: 0207 749 8701
Facsimile: 01908 860174

Date: 02 August 2014

Dear Sir.

RE: AYLESBURY ESTATE SITE 3A & 3B THURLOW STREET ALBANY ROAD LONDON

Thank you for your letter and drawings dated 19th February 2014, concerning the above scheme.

I am returning copy of BT ordnance drawings showing approximate positions of BT apparatus.

BT apparatus may not be affected by your proposed works.

Please contact our Plant Protection Officer by dialling 0800 917 3993 and asking for Dial Before You Dig to locate our existing apparatus well in advance of your start date. This will provide you with free on site advice and confirm the location of our apparatus.

If you wish to discuss your proposals further, please do not hesitate to contact me.

Yours faithfully

B Chohan
Projects Engineer

SITE 2A&2B DIVERSION ROUTES

Legend

CAUTION AREA
- BT.CAUTION_AREA

EQUIPMENT
- TABCD FIBRE, TCODE
- COPPER, CABINET
- 476R COPPER, DP

DUCT
- A/C AERIAL
- TUNNEL
- DUCT

PROPOSED
- A/C AERIAL
- DUCT

STRUCTURE
- YCODE
- CABINET SHELL
- SPLIT COUPLING
- POLE
- KIOSKS
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- DUCT TEE

PROPOSED
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- JOINTBOX
- DUCT TEE

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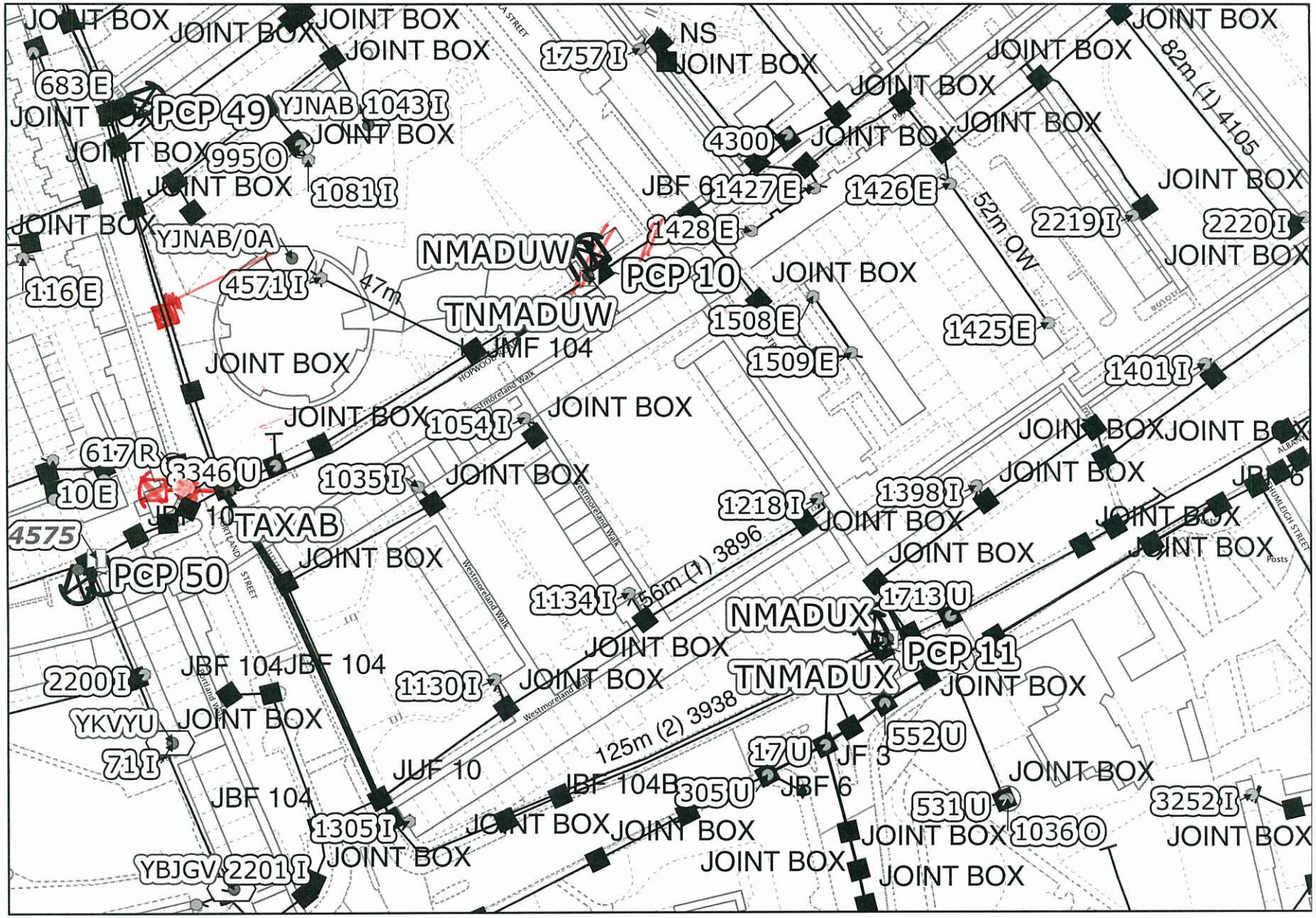

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FREEPHONE 0800 9173993
FAX 0208 3284050
NATIONAL NEWSITES 0800 616866

PROPOSED BT DUCT ROUTE

PLANT INFORMATION REPLY

<Double-Click to add Text>

<Double-Click to add Text>

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BT

Masterplan New Supplies

Fortune, Wayne

From: Rosi, Paul <paul.rosi@virginmedia.co.uk>
Sent: 07 March 2014 13:22
To: Fortune, Wayne
Cc: Sharp, Fidel
Subject: FW: New Connection Enquiry - Aylesbury Estate Regeneration 50600304

Hi Wayne

As discussed, it shouldn't be a problem for us to add around 900 homes to our network in this area within our new build budget however I can't confirm until we receive detailed plans

Please send the following over as soon as you can so we can confirm;

Masterplan
Scaled site plan
Elevation plans
Number of floors and number of units per floor

Thanks

Paul Rosi | National New Build Officer - London & South East
Virgin Media | Comms House, 5 Factory Lane, Croydon, Surrey, CR9 3RA
M 07985 807162 | D 0208 251 6848 | F 0208 251 6748 | E paul.rosi@virginmedia.co.uk
Visit www.virginmedia.com for more information and more fun.

From: Fortune, Wayne [mailto:Wayne.Fortune@WSPGroup.com]
Sent: 03 March 2014 10:31
To: >TW Diversionary; >New Build
Subject: RE: New Connection Enquiry - Aylesbury Estate Regeneration 50600304

Dear Sirs,

I submitted the below enquiry on 19th February 2014 for the Aylesbury Estate Regeneration project.

Please confirm that our enquiry has been received and is being progressed.

Due to the size and complexity of the project it would be appreciated if we can set up an early meeting/workshop with Virgin Media to discuss requirements for the project.

I look forward to your response.

Yours sincerely,

Wayne Fortune MICE MCMI AMIAT
Senior Engineer, Power Systems Plus

WSP UK, WSP House, 70 Chancery Lane, London, WC2A 1AF
Tel: +44 (0)20 7314 5872
Mob: +44 (0)7887 059 695

From: Fortune, Wayne
Sent: 19 February 2014 17:52
To: Diversionary@virginmedia.co.uk; new.developments@virginmedia.co.uk
Cc: Edwards, Alastair
Subject: New Connection Enquiry - Aylesbury Estate Regeneration 50600304

Dear Sirs,

Location of Works: Aylesbury Estate Regeneration
O.S. Grid Ref: TQ 32708 77782
Street Name: Albany Road
Programme: 2015 - 2032
Description of Works: redevelopment of the Aylesbury Estate

WSP are working on behalf of Notting Hill Housing, which has been appointed by the London Borough of Southwark as its preferred partner for the phased demolition and redevelopment of the Aylesbury Estate. Subject to the finalisation of contract negotiations, it is the intention of Notting Hill Housing to seek planning approval towards the end of 2014 – in detail for the first phase of the redevelopment, and outline for the remainder of the redevelopment.

Due the size of the proposed development we are seeking to engage Virgin Media at an early stage to understand if there is network capacity to support the site proposals and obtain indicative costs for any works required to provide connectivity to the site.

It is anticipated that Sites 1B/1C and Site10/Plot 18 will commence demolition/construction in 2015 and the anticipated programme for the remainder of the sites is to 2032.

It would be appreciated if we can set up an early meeting/workshop to discuss the connection and diversion proposals for the masterplan.

Existing Residential Units (all assumed to be flats)

Studio	45
1 Bedroom	507
2 Bedroom	896
3 Bedroom	828
4 Bedroom	283
5 Bedroom	88
Total	2647

Proposed Units

1 bed flat	1003	Other use areas: 2,000m^2 Community Space 500m^2 Fast Food Outlet 1,000m^2 Minor Retail Units 1,500m^2 Medical Centre 2,500m^2 Office Space
2 bed flat	1020	
3 bed flat	336	
2 bed maisonette	170	
3 bed maisonette	364	
4 bed maisonette	60	
4 bed house	363	
5 bed house	222	
Total	3538	Use areas assumed based on available information.

Detailed development of the new connection proposals will be required for Sites 1B/1C and Site 10/Plot 18 to support detailed planning application due August 2014. High level development of the new proposals will be required for the remaining sites to support an outline planning application due August 2014. Find attached SK-PSP-003 COMMS GROWTH which provides the indicated phased growth for the masterplan and SK-PSP-013 VM DIVERSIONS which highlights the required disconnections, diversions, etc. to accommodate the masterplan proposals.

Please note that the accommodation mix/areas, etc. are subject to change during masterplanning.

Can you please provide an indication of the timescales for providing a response to our enquiry and please highlight any further information required to progress.

Please do not hesitate to get in touch to discuss.

Yours faithfully,

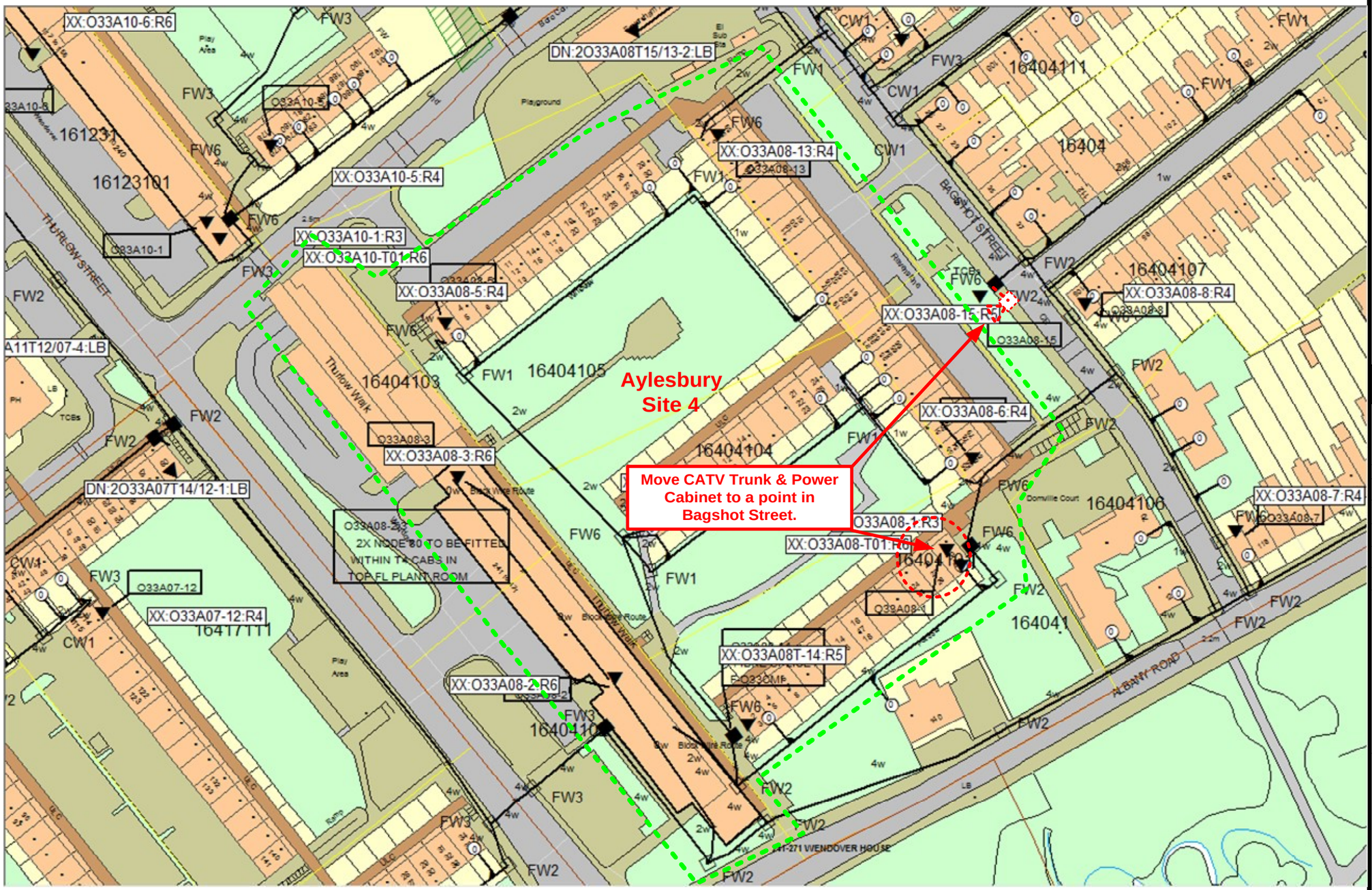
Wayne Fortune MICE MCMI AMIAT
Senior Engineer, Power Systems Plus

WSP UK, WSP House, 70 Chancery Lane, London, WC2A 1AF
Tel: +44 (0)20 7314 5872
Mob: +44 (0)7887 059 695

Website: www.wspgroup.co.uk

Masterplan Diversions

A3



ISSUE 1
Notes:

Existing Duct

New Duct

Abandoned or recovered Apparatus

Ducting to be abandoned only after all diversionary works are complete (if applicable).

UNMAINTAINED COPY FOR INFORMATION ONLY
LATEST REVISION HELD BY DRAWING OFFICE

ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	27/05/2014	ANP	191764	FS	MH

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

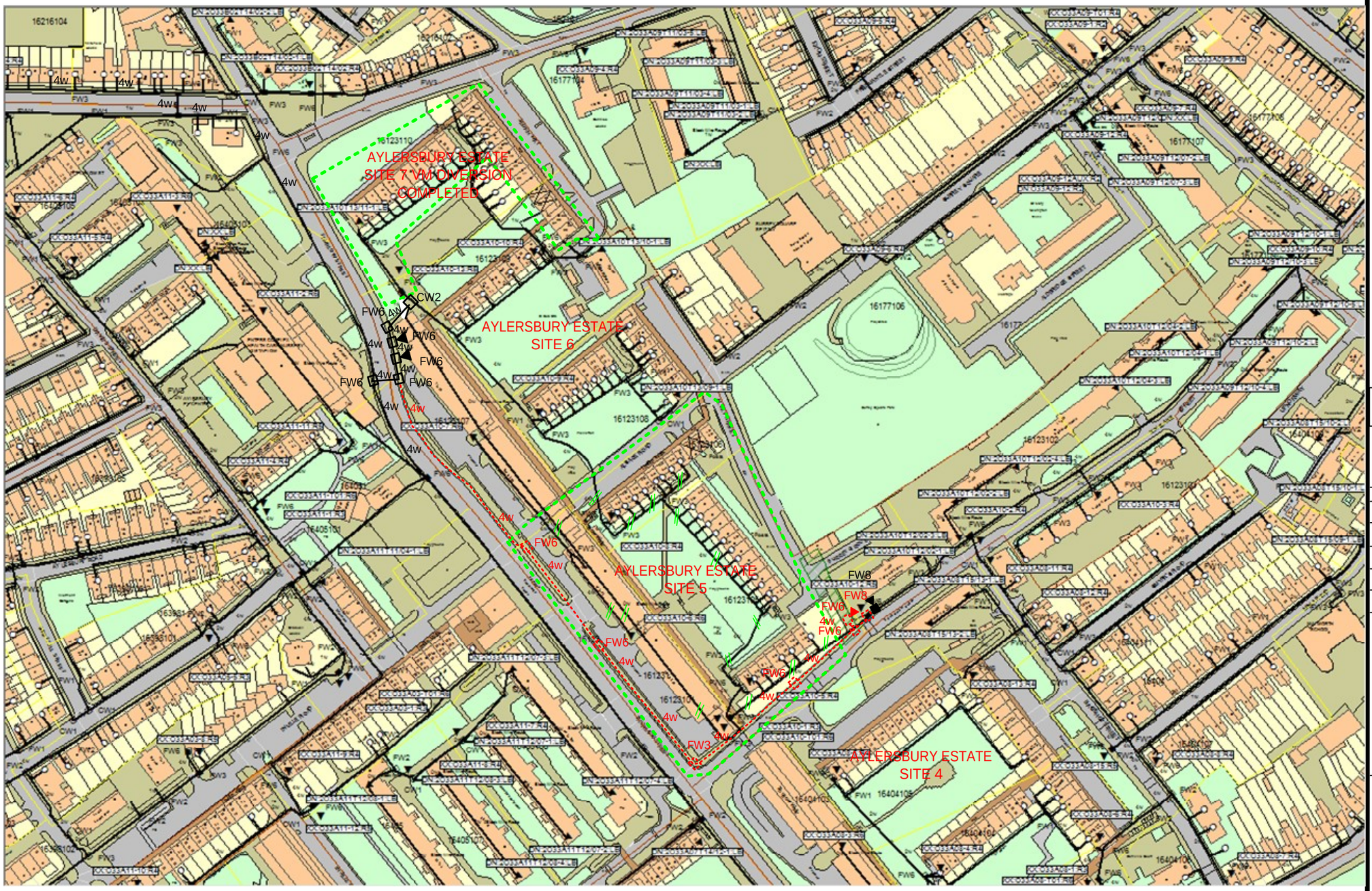
Proposed diversion of VM Plant due to proposed regeneration of The aylesbury Estate Site 4, off Bagshot Street, SE17 2AA.

DRAWING NUMBER
C4 VM/CIP/191764 Civils Diag

SCALE Not to Scale

SHEET NO. 1 of 1

A3



ISSUE 1
Notes:

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- - - New Duct
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ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	28/05/2014	ANP	191771	FS	MH

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and
Wales No. 2591237

Proposed diversion of VM Plant
due to proposed regeneration of
The aylesbury Estate Site 5,
off Alsace Road, SE17 2EP.

DRAWING NUMBER
C3 VM/CIP/191771 Civils Diag

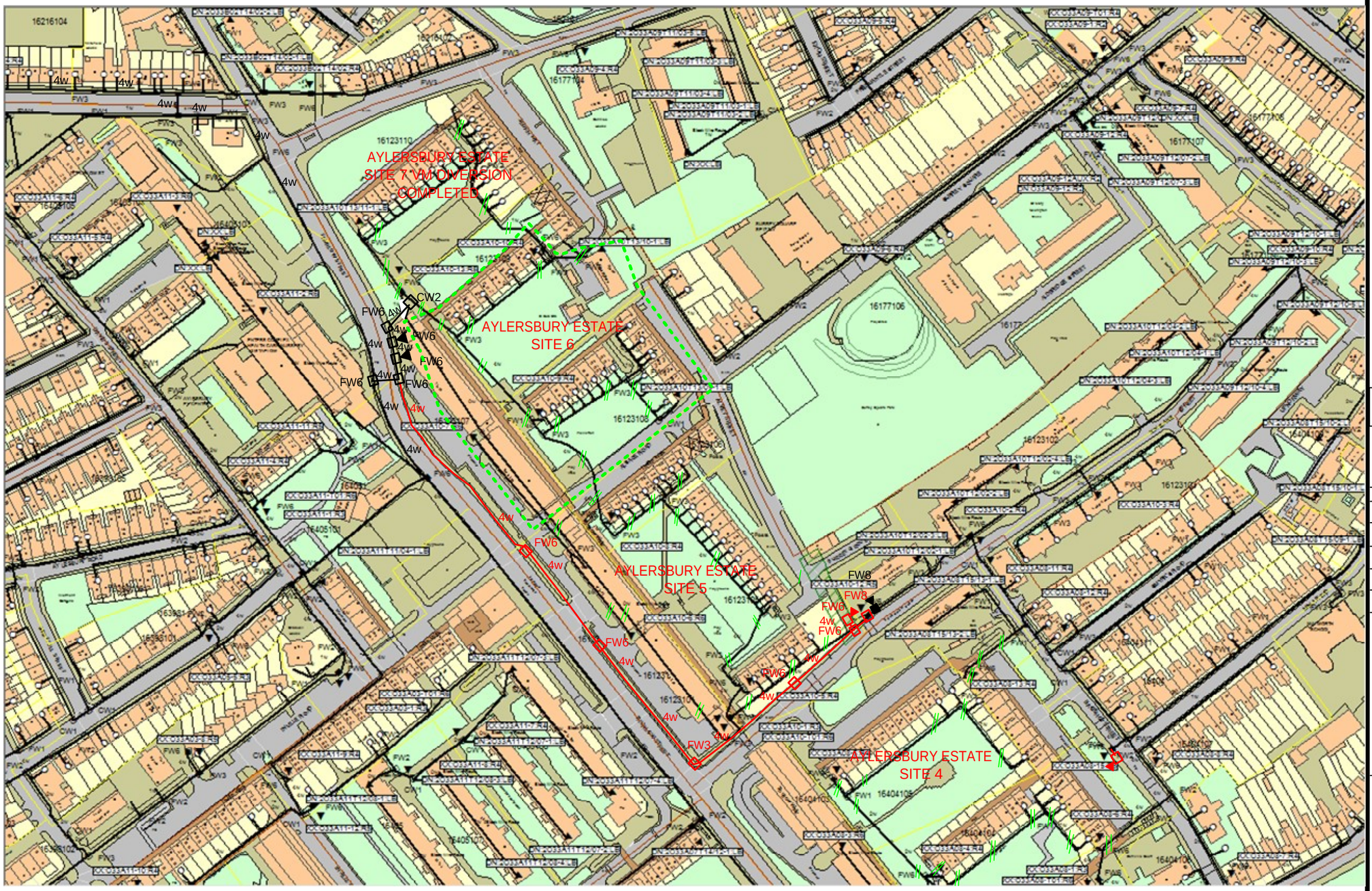
SCALE
Not to Scale

SHEET NO.
1 of 1

DISCLAIMER.

Information shown on the enclosed plan is for indication only. No warranty is made to its accuracy. This plan must not be relied upon in the event of excavation or other works carried out in the vicinity of Virgin Media plant. No liability of any kind whatsoever is accepted by Virgin Media, its servants or agents for any error or omission in respect of information contained on this plan. The actual position of the underground services must be verified and established on site before any mechanical plant is used.

A3



ISSUE 1
Notes:

Existing Duct

New Duct

Abandoned or recovered Apparatus

Ducting to be abandoned only after all diversionary works are complete (if applicable).

UNMAINTAINED COPY FOR INFORMATION ONLY
LATEST REVISION HELD BY DRAWING OFFICE

ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	30/05/2014	ANP	191771	FS	MH

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

Proposed diversion of VM Plant due to proposed regeneration of The aylesbury Estate Site 6, Wolverton Hse & Wendover Hse, off Thurlow Street, SE17 2AA.

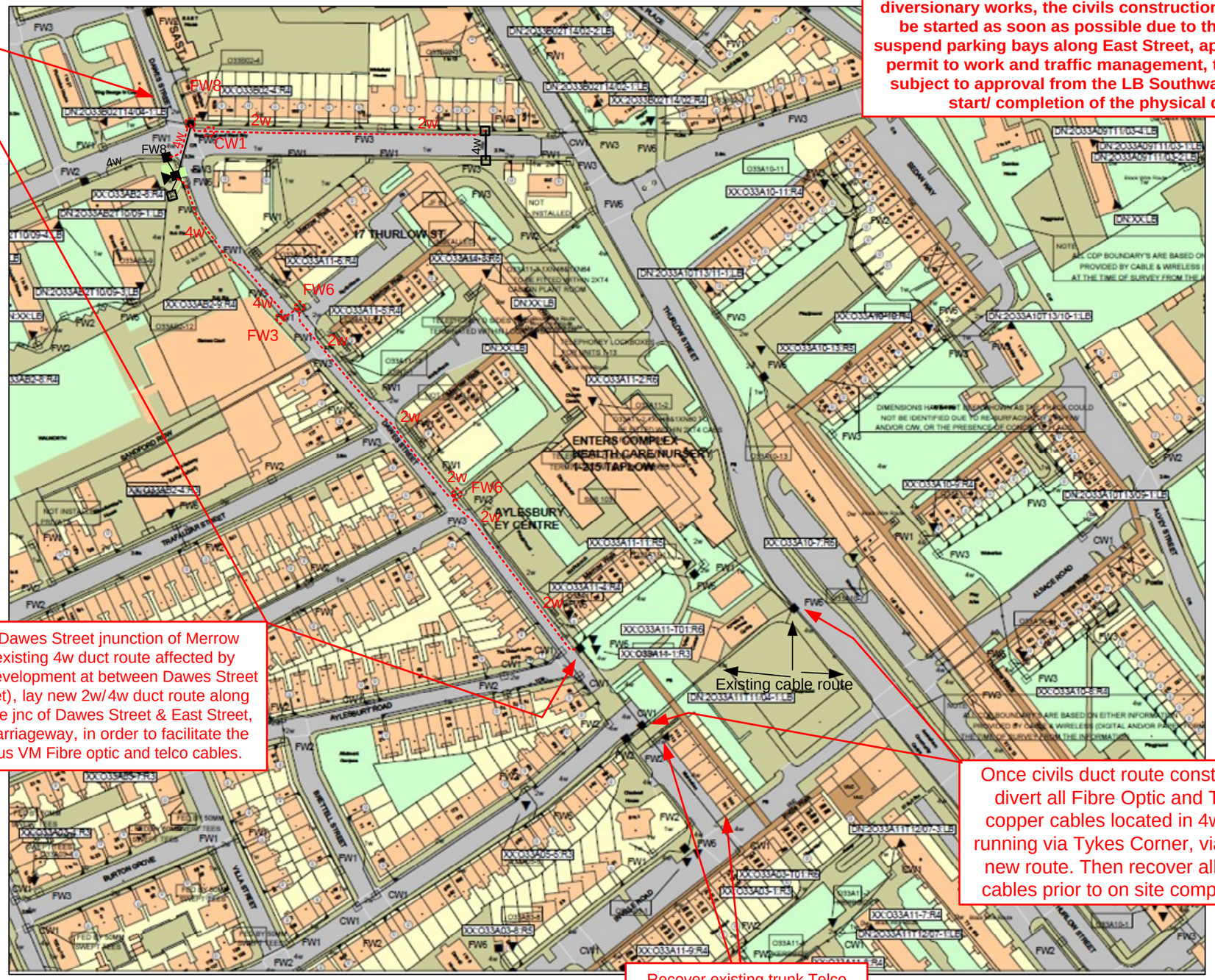
DRAWING NUMBER
C3 VM/CIP/191771 Civils Diag

SCALE Not to Scale

SHEET NO. 1 of 1

A3

NB: In order to avoid possible delays to the cable diversionary works, the civils construction work must be started as soon as possible due to the need to suspend parking bays along East Street, application for permit to work and traffic management, that will be subject to approval from the LB Southwark prior to start/ completion of the physical dig.



From a point in Dawes Street jnunction of Merrow Street (near to existing 4w duct route affected by proposed site 10 development at between Dawes Street and Thurlow Street), lay new 2w/4w duct route along Dawes Street to the jnc of Dawes Street & East Street, via footway and carriageway, in order to facilitate the diversion of various VM Fibre optic and telco cables.

Once civils duct route constructed divert all Fibre Optic and Telco copper cables located in 4w duct running via Tykes Corner, via same new route. Then recover all dead cables prior to on site completion.

Recover existing trunk Telco cable Coax CATV cable, equipment loom of cables and lock-box cabinet at/from flank wall of 301 313 Missenden House.

Existing duct located in Inville Road (leading from Dawes Street and Merrow Street) must be maintained because they currently contain various Fibre optic and Telco cables that are linked to live active customers.

ISSUE 1
Notes:

Existing Duct

New Duct

Abandoned Apparatus

Ducting to be abandoned only after all diversionary works are complete (if applicable).

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ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	09.05.2014	ANP	191757	MH	FS

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

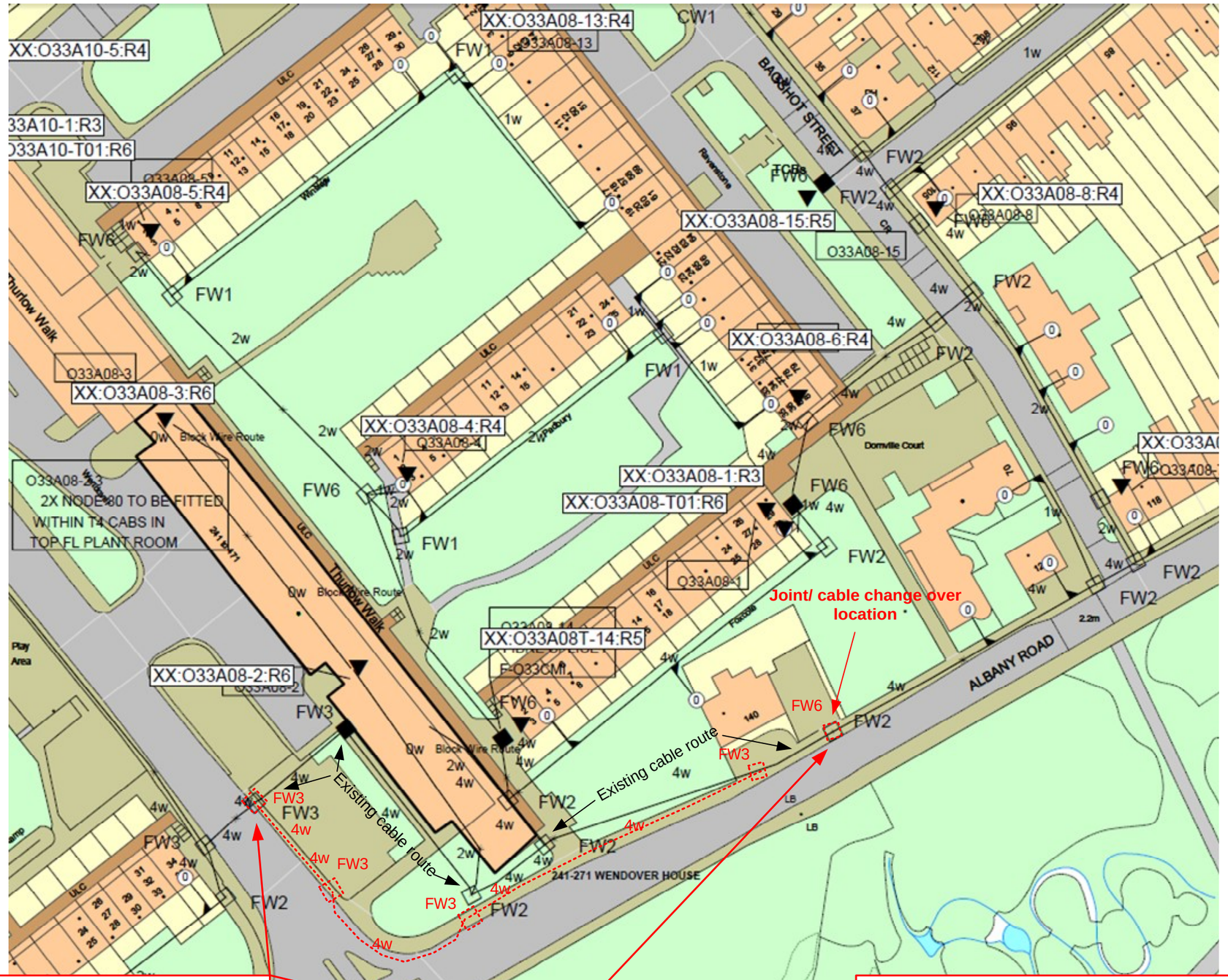
Proposed diversion of VM Plant
From Site 10, Missenden House and Tykes Corner (playground)
Thurlow Street/Dawes Street,
SE17 2EP (SE17 2AA).

DRAWING NUMBER
C4 VM/CIP/191757 Civils Diag

SCALE Not to Scale

SHEET NO. 1 of 2

A3



ISSUE 1
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Existing Duct

New Duct

Abandoned Apparatus

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Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

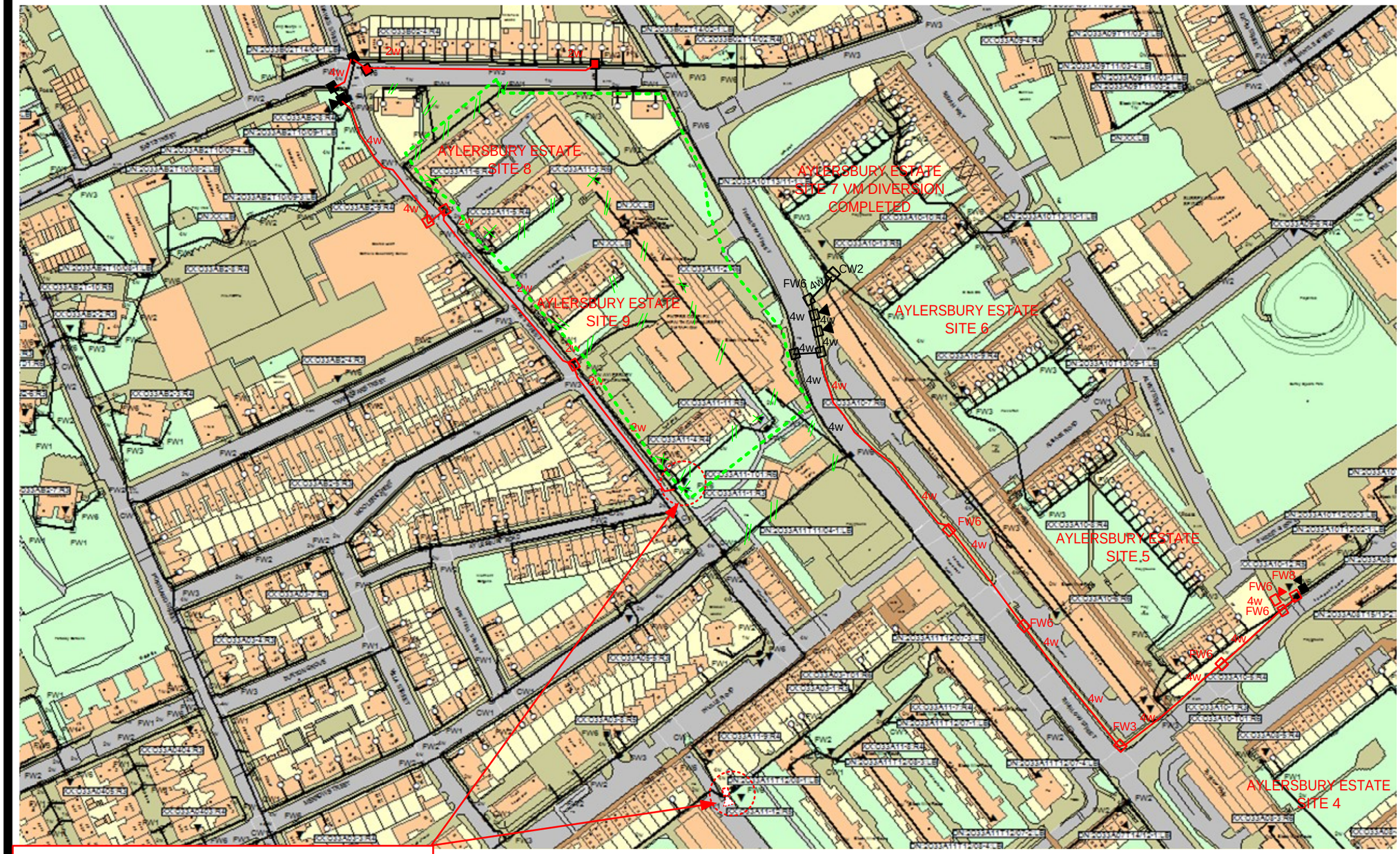
Proposed diversion of VM Plant
From Site 10, Missenden House and Tykes Corner (playground)
Thurlow Street/Dawes Street,
SE17 2EP (SE17 2AA).

DRAWING NUMBER
C4 VM/CIP/191757 Civils Diag

SCALE
Not to Scale

SHEET NO.
2 of 2

A3



Move existing CATV Trunk cabinet and Power supply In position to intercept existing CATV customer distribution nodes that will remain in situ. The cabinet will also provide Power connections to existing Telco Trunk/ Mux cabinet that will be lost due to diversion of plant in Dawes Street.

ISSUE 1
Notes:

Existing Duct

New Duct

Abandoned or recovered Apparatus

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UNMAINTAINED COPY FOR INFORMATION ONLY
LATEST REVISION HELD BY DRAWING OFFICE

ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	30/05/2014	ANP	191780	FS	MH

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

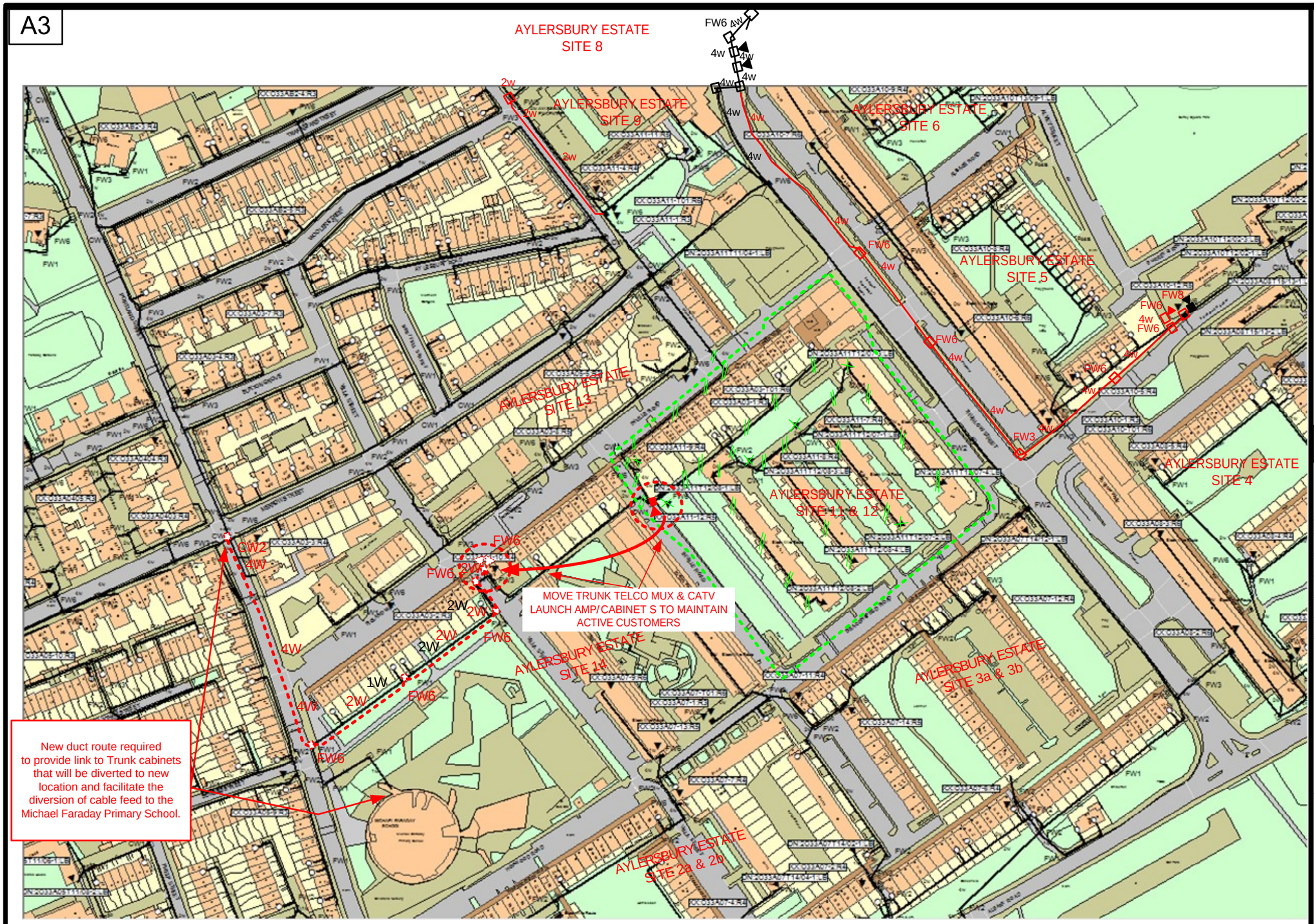
Proposed diversion of VM Plant due to proposed regeneration of The aylesbury Estate Site 8 & 9, Off Dawes Street and Thurlow Street, SE17 2AA.

DRAWING NUMBER
C3 VM/CIP/191780 Civils Diag

SCALE Not to Scale

SHEET NO. 1 of 1

A3



ISSUE 1
Notes:

Existing Duct

New Duct

Abandoned or recovered Apparatus

Ducting to be abandoned only after all diversionary works are complete (if applicable).

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LATEST REVISION HELD BY DRAWING OFFICE

ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	03/05/2014	ANP	191789	FS	MH

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

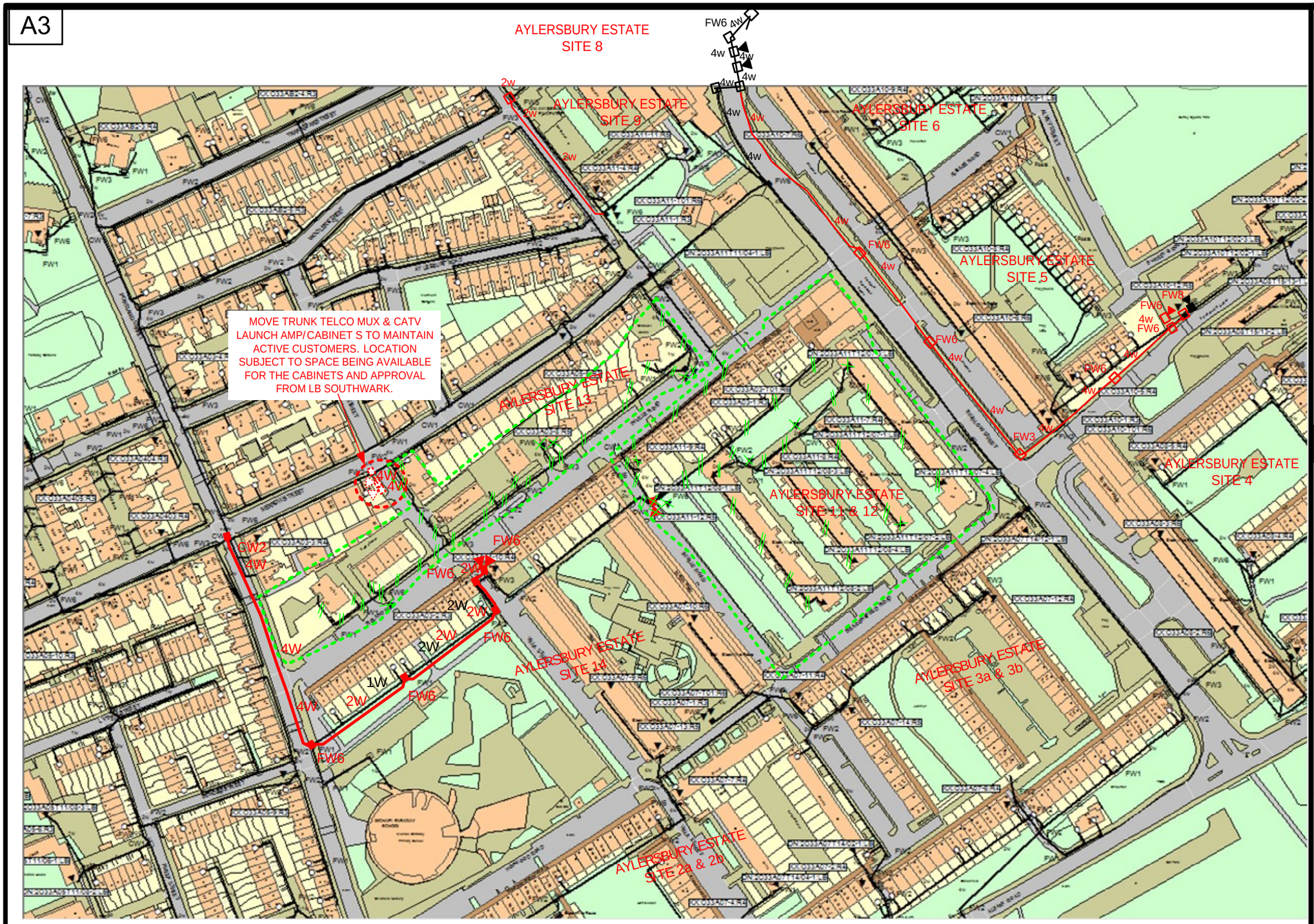
Proposed diversion of VM Plant due to proposed regeneration of The Aylesbury Estate
Site 11 & 12, Missenden House, Inville Road, SE17 2EP

DRAWING NUMBER
C3 VM/CIP/191789 Civils Diag

SCALE Not to Scale

SHEET NO. 1 of 1

A3



ISSUE 1
Notes:

Existing Duct

New Duct

Abandoned or recovered Apparatus

Ducting to be abandoned only after all diversionary works are complete (if applicable).

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LATEST REVISION HELD BY DRAWING OFFICE

ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	07/05/2014	ANP	191791	FS	MH

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

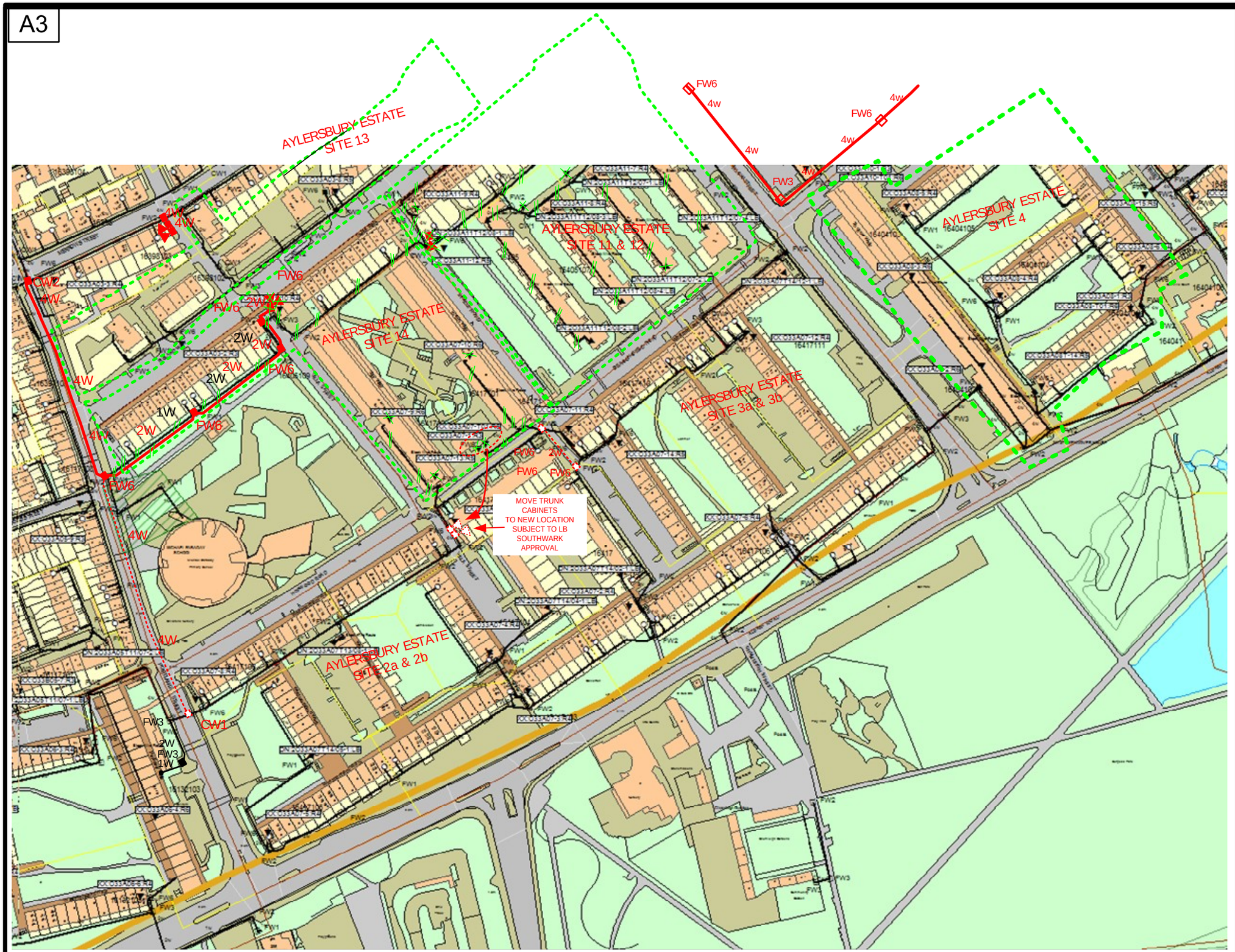
Proposed diversion of VM Plant due to proposed regeneration of The Aylesbury Estate Site 13, Inville Road, SE17 2EP

DRAWING NUMBER
C3 VM/CIP/191791 Civils Diag

SCALE Not to Scale

SHEET NO. 1 of 1

A3



ISSUE 1
Notes:

- Existing Duct
- New Duct
- Abandoned or recovered Apparatus

Ducting to be abandoned only after all diversionary works are complete (if applicable).

UNMAINTAINED COPY FOR INFORMATION ONLY
LATEST REVISION HELD BY DRAWING OFFICE

ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	20/06/2014	ANP	191796	FS	MH

Virgin media

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

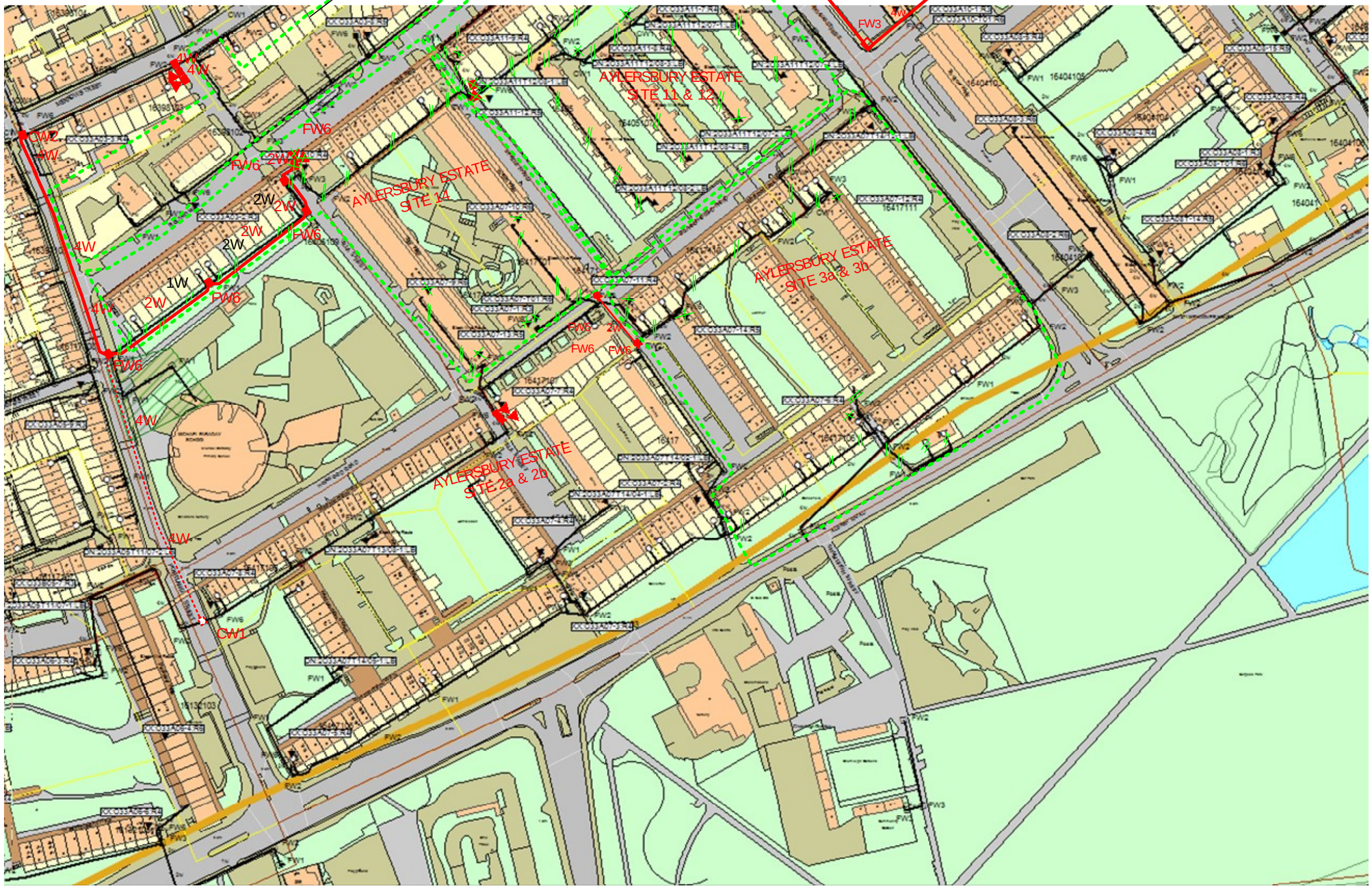
Proposed diversion of VM Plant due to proposed regeneration of The Aylesbury Estate Site 14, Roland Way, SE17 2EP

DRAWING NUMBER
C3 VM/CIP/191796 Civils Diag

SCALE Not to Scale

SHEET NO. 1 of 1

A3



ISSUE 1
Notes:

- Existing Duct
- New Duct
- Abandoned or recovered Apparatus

Ducting to be abandoned only after all diversionary works are complete (if applicable).

UNMAINTAINED COPY FOR INFORMATION ONLY
LATEST REVISION HELD BY DRAWING OFFICE

ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	19/06/2014	ANP	191763	FS	MH

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

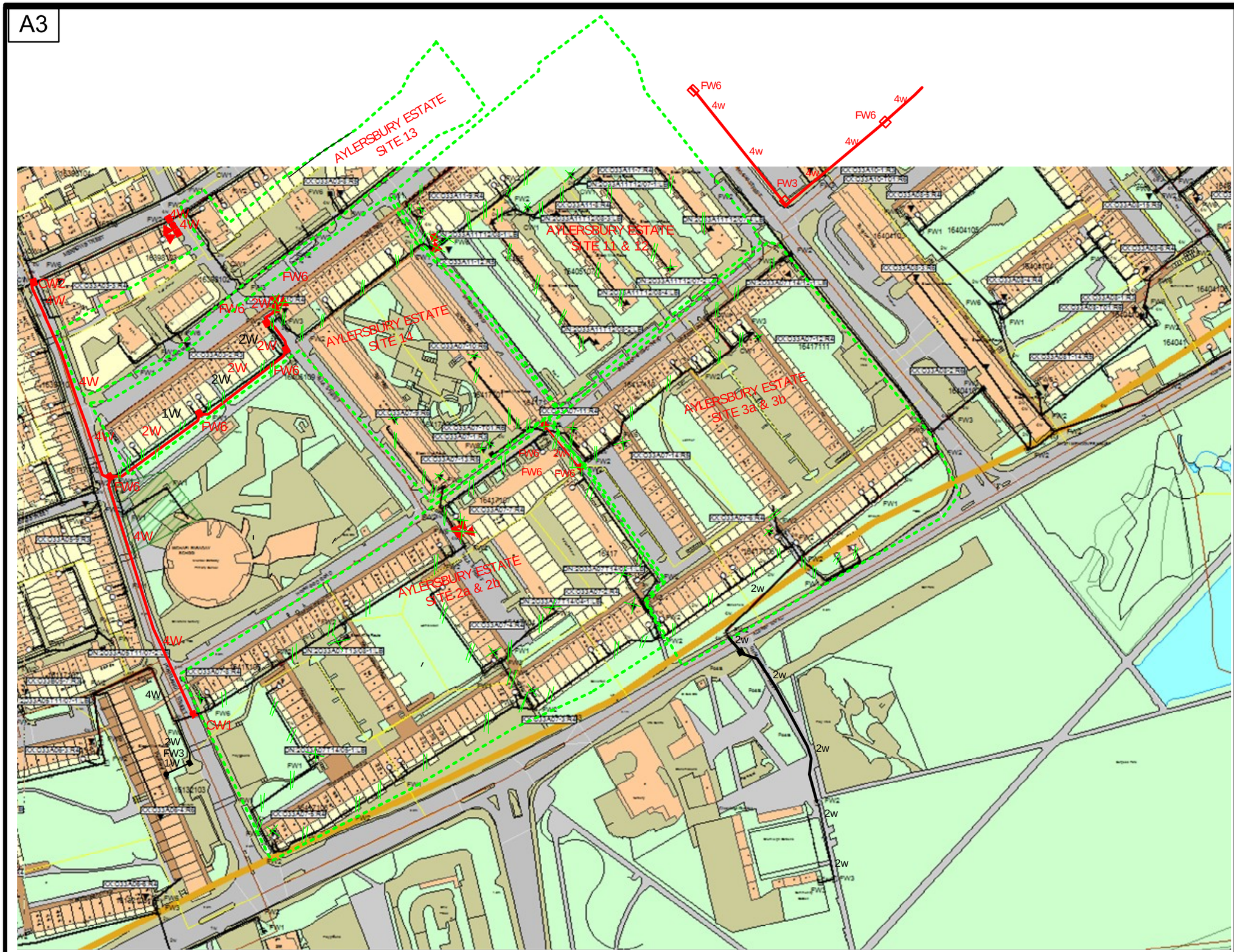
Proposed diversion of VM Plant due to proposed regeneration of The Aylesbury Estate Site 3A & 3B, Beaconsfield Road, SE17 2EP

DRAWING NUMBER
C3 VM/CIP/191763 Civils Diag

SCALE Not to Scale

SHEET NO. 1 of 1

A3



ISSUE 1
Notes:

Existing Duct

New Duct

Abandoned or recovered Apparatus

Ducting to be abandoned only after all diversionary works are complete (if applicable).

UNMAINTAINED COPY FOR INFORMATION ONLY
LATEST REVISION HELD BY DRAWING OFFICE

ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	21/06/2014	ANP	191798	FS	MH

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

Proposed diversion of VM Plant due to proposed regeneration of The Aylesbury Estate Site 2A & 2B, Hopwood Road, SE17 2EP

DRAWING NUMBER
C3 VM/CIP/191798 Civils Diag

SCALE
Not to Scale

SHEET NO.
1 of 1

Your ref
Our ref NRSWA/3.03/001700

Date 26-08-2014.

Smale House
114 Great Suffolk Street
London
SE1 0SL

C3requests@vodafone.com

Name
Wayne Fortune
WSP UK,
7 Lochside View,
Edinburgh Park,
Edinburgh,
EH12 9DH

Budget Estimate Diversion/Protection of Vodafone Apparatus

Dear Sirs,

New Roads and Street Works Act 1991

Proposed Works at: Aylesbury Estate, Merrow Street and Dawes Street.

Please find detailed below, a budget estimate for carrying out the necessary diversion/protection to Vodafone Limited's apparatus due to your proposed work. The estimated cost for these works is £9,814 plus VAT. Please be aware we reserve the right to amend this estimate dependent upon the actual costs of the works.

This estimate is based upon the current information provided and allows

Lowering of approximately 30m of the existing Vodafone apparatus over the area of your proposed works. This has been made on the assumption that access to existing apparatus and the space around our existing ducts is available. We would recommend that prior to requesting a C4 estimate, you undertake trial holes, and share them with all utilities, to help determine whether a slew/lower operation would be possible. If slew/lowering is not achievable, C&W requirements would have to be re-assessed and a full cable divert would have to be considered with the associated increase in costs and increased timescales.

Under the CDM regulations, please could you provide us with any risks or hazards that may be associated with these works.

The approximate lead-in time the implementation of civils only works is 6 working weeks from receipt of the Order/payment. If a full cable diversion is required then this lead-in time will extend to approximately 20 weeks.
Please note that Vodafone operate a full network freeze, during which no works can be carried out on our network, between 1st December and the first week of January every year, which may impact on the timescales for your works.

If you wish to obtain a C4 detailed estimate, the cost of providing this is £2500 plus VAT.

This letter is based upon the current information provided in respect of your proposed works and relates to Vodafone Limited's underground fibre optic network only, which includes all former companies; Cable & Wireless UK, Energis Communications Limited, Thus PLC and Your Communications Limited's networks.

All work will be carried out by a Vodafone approved contractor on receipt of your unconditional Order and correct advanced deposit. This should be made payable to "Vodafone Limited" for the attention of Rob Baker at Vodafone Diversionary Works Team, Smale House, Floor 2E, 114 Great Suffolk Street, London SE1 0SL.

Please quote the following reference in all correspondence/instructions to proceed: NRSWA/3.03/001700.

This estimate will remain valid for a period of three months from the date of this letter and all works resulting from this estimate shall be subject to the terms and conditions of Vodafone and/or where applicable the terms and conditions dictated by the New Roads & Street Works Act 1991 and associated codes of practice.

Please note that under the Diversionary Works Code of Practice, Appendix C and the associated Regulations that apply, Promoters are only entitled to one desktop costing per any given scheme. Any change in scope or a subsequent request for a revised costing on the same scheme is then deemed chargeable and will only be reviewed under the C4 Process.

Yours faithfully

Diversionary Works Team
Vodafone

Vodafone Limited
The Connection, Newbury,
Berkshire, RG14 2FN, United Kingdom

Phone +44 (0)1635 33251
Fax +44 (0)1635 682729

vodafone.co.uk

WSP UK

FAO Mr Wayne Fortune
WSP House
70 Chancery Lane
London
WC2A 1AF

Thames Water Utilities Ltd.
Developer Services

Your ref
Our ref 50023275
Name Richard Allen
Phone 0845 850 2777
E-Mail developer.services@thameswater.co.uk

4th Sept 2014

Dear Mr Fortune

Clean Water Budget Estimate for Diversions & New Supplies for Aylesbury Estate Regeneration, Albany Rd, London, SE17

Thank you for your request for budget estimates for diversions and new supplies for the Aylesbury Estate Regeneration project.

I can confirm that Thames Water are in the process of preparing budgets for Phases 2,3 and 4 and Site 10/Plot 18 of the project and will provide the requested information when available.

Yours sincerely

Richard Allen

Thames Water
Developer Services
0845 8502777

Thames Water Utilities Ltd
Developer Services
3rd Floor West
Clear Water Court
Vastern Road
Reading
Berkshire
RG1 8DB

T 0845 850 2777
I www.thameswater.co.uk

Fortune, Wayne

From: Karl Tuchscherer <karl.tuchscherer@thameswater.co.uk>
Sent: 06 August 2014 14:39
To: Fortune, Wayne
Subject: RE: IRef:1011778601 Aylesbury Estate Regeneration Walworth SE17 2UQ

Wayne,

I agree with the below.

Regards

Karl.

From: Fortune, Wayne [mailto:Wayne.Fortune@WSPGroup.com]
Sent: 06 August 2014 14:38
To: Karl Tuchscherer
Cc: Dyason, James; Edwards, Alastair; Dagnall, Mike
Subject: RE: IRef:1011778601 Aylesbury Estate Regeneration Walworth SE17 2UQ

Karl,

Thanks for wording/update in terms of the on-going exercise.

From our discussion and for my own clarification, current stance is;

- Thames Water confirm network modelling is required and underway and development should not commence until this exercise is complete.
- Initial feedback is that there is insufficient capacity within the existing network to accommodate the masterplan based on submitted potable water loads.
- On completion of the network studies, Thames Water will look at solutions e.g. required offsite reinforcement, rezoning supplies, alternative pressure systems, etc. to potentially avoid laying new trunk mains within the development
- On-site options to reduce magnitude of reinforcement may include on-site storage, incorporate of low flow/reduced water using appliances, etc.

Best regards,

Wayne

From: Karl Tuchscherer [mailto:karl.tuchscherer@thameswater.co.uk]
Sent: 06 August 2014 14:09
To: Fortune, Wayne
Subject: RE: IRef:1011778601 Aylesbury Estate Regeneration Walworth SE17 2UQ

Wayne,

The existing water supply infrastructure has insufficient capacity to meet the additional demands for the proposed development. Thames Water therefore recommend the following condition be imposed: Development should not be commenced until: Impact studies of the existing water supply infrastructure have been submitted to, and approved in writing by, the local planning authority (in consultation with Thames Water). The studies should determine the magnitude of any new additional capacity required in the system and a suitable connection point. Reason: To ensure that the water supply infrastructure has sufficient capacity to cope with the/this additional

demand. These studies are currently being undertaken with a completion date of the 5/9/2014, once completed solution will be available to supply the redevelopment of the Estate.

Thames Water recommend the following informative be attached to this planning permission. Thames Water will aim to provide customers with a minimum pressure of 10m head (approx 1 bar) and a flow rate of 9 litres/minute at the point where it leaves Thames Waters pipes. The developer should take account of this minimum pressure in the design of the proposed development.

Regards

Karl.

From: Fortune, Wayne [mailto:Wayne.Fortune@WSPGroup.com]
Sent: 05 August 2014 10:23
To: Developer Services
Cc: Karl Tuchscherer
Subject: IRef:1011778601 Aylesbury Estate Regeneration Walworth SE17 2UQ
Importance: High

FAO Karl Tuchscherer

Karl,

I know we are not due to complete the network modelling for the masterplan site until 5/9/2014, however we are in the process of preparing the planning submission and EIA chapters that go with it.

As previously discussed, we are looking for Thames Water to provide some text which can sit within our EIA chapters to satisfy the planning conditions with respect to clean water.

It would also be good if you are able to provide us with any early findings from the network modelling which may be of use in this instance.

Can you please arrange for this information to be provided to myself by Wednesday 6/8/2014.

Please call to discuss if need be.

Best regards,

Wayne Fortune MICE MCMI AMIAT
Senior Engineer, Power Systems Plus

WSP UK, 7 Lochside View, Edinburgh Park, Edinburgh,EH12 9DH

Tel: +44 (0)131 344 2374
Mob: +44 (0)7887 059 695

Website: www.wspgroup.co.uk

Appendix 3

Drawing Number 401567152 C Rev *

Existing HV cable. ----------

Proposed HV cable (Capital). ----------

Existing HV Switchroom / Substation. ----------

Proposed HV Switchroom / Substation. ----------

Proposed ducts to be supplied and laid by Developer. ----------

Proposed ducts to be supplied and laid by UK Power Networks. ----------

Cable Summary		
	Capital	Length
HV	300mm² AL Triplex	1200m

125mm Ducts
Installation of ducts by developer / by UK Power Networks.
125mm black plastic twin wallet Ridgduct by Polypipe Civils Ltd.
To be provided with draw wire.
Depth of cover:
455mm in footpath (LV Cable), 600mm in footpath (HV Cable).
600mm in carriageway (LV Cable), 750mm in carriageway (HV Cable).
All bends to be 1000mm minimum radius.
No Other Plastic Ducting is Acceptable.

Contractor
Contractor installing ducts for UK Power Networks must notify UK Power Networks Area Mains Recording Supervisor prior to back filling for recording purposes.
Tel: 01322 626461 or 01322 626464.

Caution
This construction drawing is NOT an accurate or complete positional record of electrical apparatus. Other cables and apparatus WILL be present. Refer to appropriate CABLE RECORDS for details.

Rev	Description	Revised By	Date

Issued For Information Only

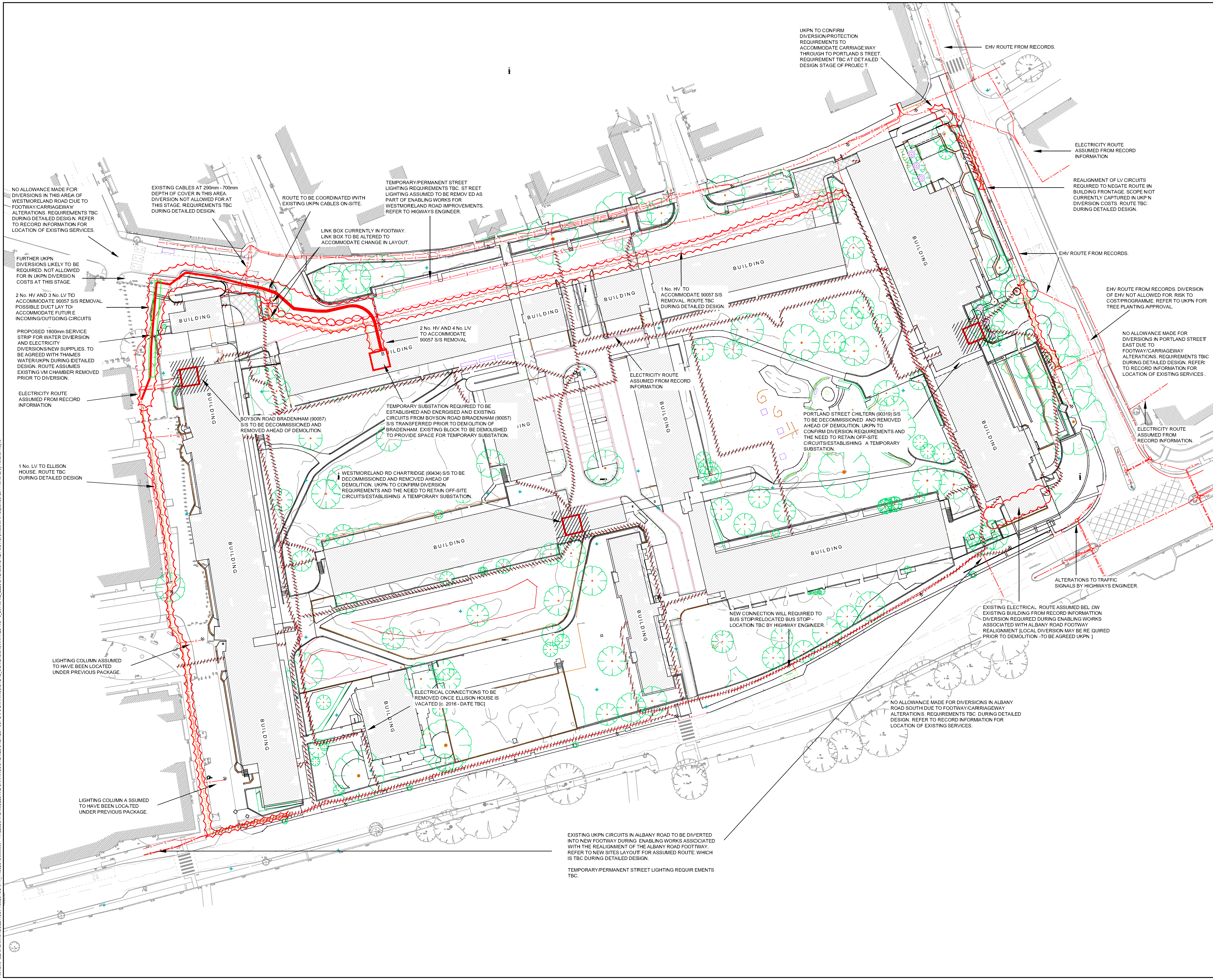
UK Power Networks

Substation Design Team
Metropolitan Hse, 3 Darkes Lane, Potters Bar, EN6 1AG.

Title
Establishment of double substation & single substation.
Block 1 & Block 4. Aylesbury Estate.
Albany Road. SE17.

Date Drawn	Scale @ A0	
24 July 14	1:500 @ A0	
Drawn By	Building Officer	Project Designer
H. Payton	P. Mladenova	C. Fridja

Drawing Number 401567152 C Rev *



DO NOT SCALE

THE LOCATION OF UTILITY SERVICES SHALL BE CONFIRMED ON SITE PRIOR TO COMMENCING ANY WORKS. IT SHOULD BE NOTED THAT THERE MAY BE UNRECORDED SERVICES IN EXISTENCE ON THE SITE, ON-SITE WORKING PROCEDURES SHALL TAKE THIS INTO ACCOUNT.

EXISTING GROUND CONDITIONS ARE AS YET UNKNOWN.

EXISTING BUILDINGS MAY CONTAIN CONTAMINANTS INCLUDING ASBESTOS.

LBS ARE TO ARRANGE FOR SERVICE DISCONNECTIONS AHEAD OF DIVERSIONS REQUIRED TO PROVIDE CLEAR SITE FOR DEMOLITION AND CONSTRUCTION.

THERE ARE EXISITING EHV CABLES IN CLOSE PROXIMITY TO THE SITE.

THERE AREA EXISTING HV CABLES WITHIN THE SITE AND IN CLOSE PROXIMITY TO THE SITE.

STANDARD NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS/DOCUMENTS. THIS DRAWING SHOULD ONLY BE USED FOR ITS INTENDED PURPOSE.

2. NO RESPONSIBILITY OR LIABILITY CAN BE TAKEN BY WSP FOR ERRORS OR OMISSIONS IN RECORD INFORMATION SHOWN IN THE DRAWINGS WHICH ARE PROVIDED IN GOOD FAITH. ANY UNRECORDED SERVICES SHALL BE REPORTED SO THAT RETENTION, DIVERSION OR ABANDONMENT CAN BE ARRANGED.

3. CROSS HATCHED LINES REPRESENT EXISTING UTILITIES TO BE DIVERTED/REMOVED FROM SITE.

4. STRATEGY FOR STREET LIGHTING [CONNECTIONS AND DISCONNECTIONS] TO BE CONFIRMED BY HIGHWAY ENGINEER.

REV	DATE	BY	DESCRIPTION	CHK	APP
D	04.09.2014	WF	TEXT REALIGNMENTS	WF	AE
C	29.08.2014	WF	UPDATED FOR PLANNING	WF	AE
B	01.08.2014	WF	EXISTING REVIEWED AGAINST FDS 25.07.14 DESIGN FREEZE	WF	AE
A	10.07.2014	WF	ISSUED FOR INFORMATION [WORK IN PROGRESS]	WF	AE

DRAWING STATUS: FOR INFORMATION

WSP
Three White Rose Office Park, Millshaw Park Lane, Leeds, LS11 0DL
Tel: +44 (0)113 395 6200 Fax: +44 (0)113 395 6201
www.wspgroup.com

CLIENT: NHH

ARCHITECT: HTA

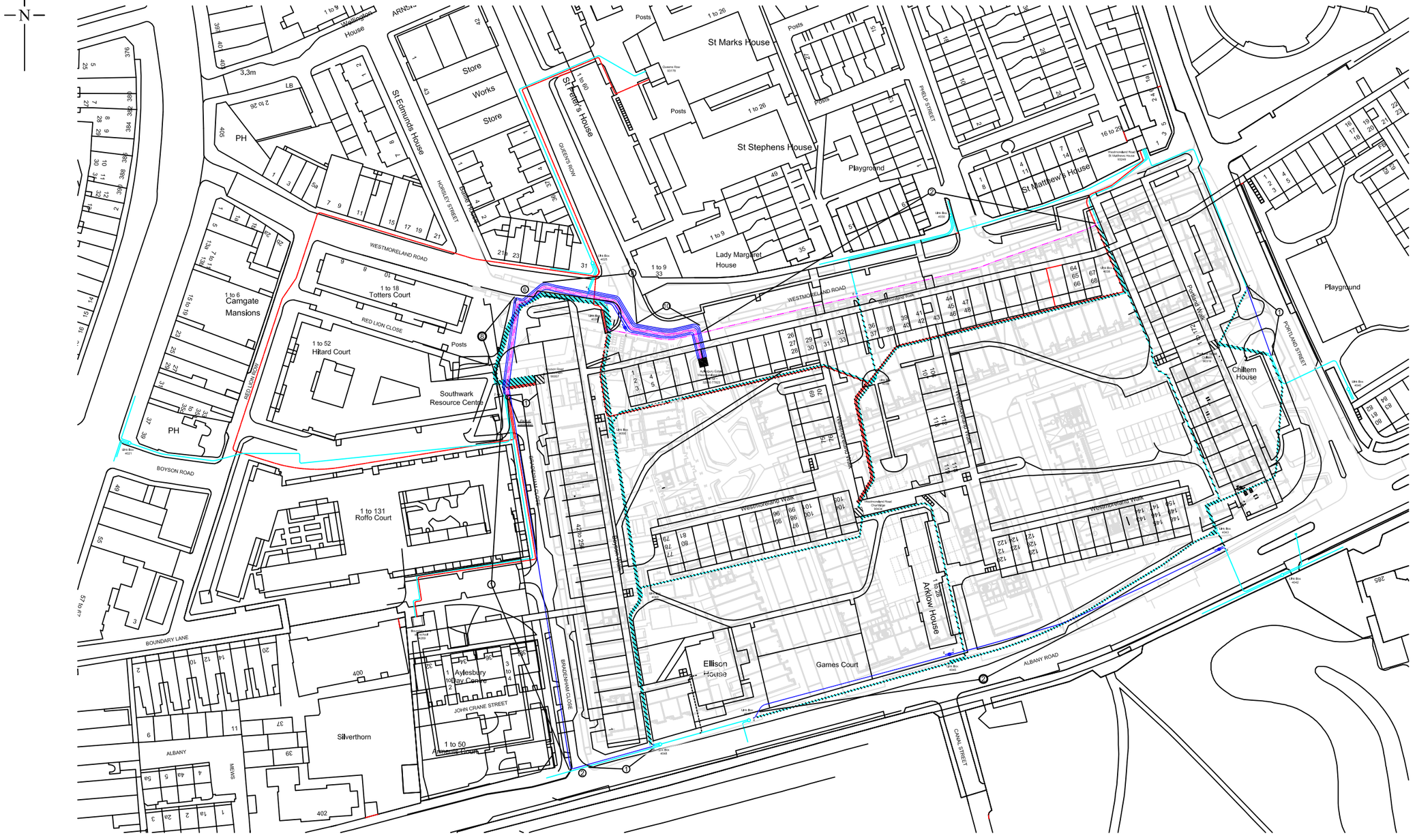
PROJECT: AYLESBURY ESTATE REGENERATION

TITLE: FIRST DEVELOPMENT SITE
SITE 1B/1C
ELECTRIC DIVERSIONS

SCALE @ A1: 1:500	CHECKED: WF		APPROVED: AE
PROJECT No: 50600304	DESIGNED: N/A	DRAWN: WF	DATE: JULY 2014

DRAWING No: NHH-AES-WSP-C_D01-00-M2_ELECTRIC DIVERSIONS — REV: D

Drawing Number 401567158 C | Rev 2



125mm Ducts.

Installation of ducts by developer / by UK Power Networks.
125mm black plastic twin walled Ridgiduct by Polypipe Civils Ltd.
To be provided with draw wire.
Depth of cover:
450mm in footpath (LV Cable), 600mm in footpath (HV Cable).
600mm in carriageway (LV Cable). 750mm in carriageway (HV Cable).
All bends to be 1000mm minimum radius.
No Other Plastic Ducting is Acceptable.

Contractor

Contractor installing ducts for UK Power Networks must notify UK Power Networks Area Mains Recording Supervisor prior to back filling for recording purposes.
Tel: 01322 626461 or 01322 626464.

Jointing

Where new LV cable is jointed to imperial size cable please ensure the neutral is bonded to sheath and armour.

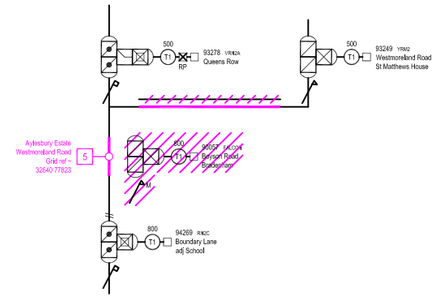
Caution.

This construction drawing is NOT an accurate or complete positional record of electrical apparatus. Other cables and apparatus WILL be present. Refer to appropriate CABLE RECORDS for details.

Cable Summary

	Rechargeable	Length
HV	300mm² Triplex	400m
LV	300wv	765m

- Existing HV cable.
- Proposed HV cable (Rechargeable).
- Existing LV cable.
- Proposed LV cable (Rechargeable).
- Existing LV service cable.
- Existing cable to be made dead and recovered where possible.
- Existing HV Switchroom / Substation.
- Proposed HV Switchroom / Substation.
- Existing HV Switchroom / Substation to be de-energised.
- Proposed ducts to be supplied and laid by Developer.
- Proposed ducts to be supplied and laid by UK Power Networks.
- Existing Link Box.
- Buried Earth Electrode. (E)
- Neutral bonded to sheath and armour. (e)



Rev	Description	Revised By	Date
2	General modifications.	M. Payton	2 Sept 14
1	Proposed substation & cables revised.	M. Payton	12 Aug 14

Issued For Information Only

UK Power Networks

Substation Design Team
Metropolitan Hse, 3 Darkes Lane, Potters Bar, EN6 1AG.

Title

Decommissioning of substations 90057, 90454 & 90519.
Establishmnet of unit substation.
Aylesbury Estate, Westmoreland Road, SE17

Date Drawn	Scale @ A0	
29 July 14	1:500 @ A0	
Drawn By	Building Officer	Project Designer
M. Payton	*	C. Fabja

Drawing Number 401567158 C | Rev 2

Our Ref: 818933
Your Ref: None Given

Mr Wayne Fortune
WSP UK
7 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

SGN Connections Limited
St. Lawrence House
Station Approach
Horley
Surrey
RH6 9HJ
Tel: 0800 912 1700

01/09/2014

Dear Mr Fortune,

RE: New connections at Aylesbury Estate Regeneration Site 1B/1C, Albany Road, London, SE5 0AW

Further to your request dated 30th July 2014 regarding the new connections at the above site, please find a budget indication quote detailed below.

Works to be carried out: SGN Connections to connect to the existing 75mm PE LP Main within Westmoreland Road & the Proposed (Diversion Main)180mm PE LP to be installed within Portland Street and install appropriately sized gas mains/service infrastructure to suitable location(s). SGN Connections to provide all excavation and reinstatement upto the customers site boundary. 47 x Semi-concealed Meter Boxes & 2 x GC4 GRP Kiosks to be provided and fitted by SGN. Customer to provided concrete bases for kiosks.

Your Budget Indication is: £ 45,400.00 (inc.VAT)

Please note that this figure is a budget indication only and does not represent an offer to carry out the work. This budget cost is based on the information we have been provided with by you.

Upon acceptance of a firm quotation, Southern Gas Networks will need to run further analysis to ensure that the existing gas infrastructure can manage your new gas loads (Security of Supply Check). If the existing infrastructure requires reinforcing to accommodate your loads, then this will incur time delays to the installation of your gas supplies. Reinforcement costs will be met by Southern Gas Networks and we will contact you where required.

It is assumed that no easements or third party permissions are required to carry out all works.

Please note that this budget indication does not take into account for any existing Southern Gas Networks infrastructure that may require diverting. Details of these can be obtained from **Southern Gas Networks Diversions/Isolations – 0845 070 3497.**

If you have any further queries relating to this budget indication, please feel free to contact me on the telephone number at the top of this letter.

Yours sincerely,
Anton Siwicki
Design Assistant

DO NOT SCALE

THE LOCATION OF UTILITY SERVICES SHALL BE CONFIRMED ON SITE PRIOR TO COMMENCING ANY WORKS. IT SHOULD BE NOTED THAT THERE MAY BE UNRECORDED SERVICES IN EXISTENCE ON THE SITE, ON-SITE WORKING PROCEDURES SHALL TAKE THIS INTO ACCOUNT.

EXISTING GROUND CONDITIONS ARE AS YET UNKNOWN.

EXISTING BUILDINGS MAY CONTAIN CONTAMINANTS INCLUDING ASBESTOS.

LBS ARE TO ARRANGE FOR SERVICE DISCONNECTIONS AHEAD OF DIVERSIONS REQUIRED TO PROVIDE CLEAR SITE FOR DEMOLITION AND CONSTRUCTION.

THERE ARE EXISITNG EHV CABLES IN CLOSE PROXIMITY TO THE SITE.

THERE AREA EXISTING HV CABLES WITHIN THE SITE AND IN CLOSE PROXIMITY TO THE SITE.

STANDARD NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS/DOCUMENTS. THIS DRAWING SHOULD ONLY BE USED FOR ITS INTENDED PURPOSE.

2. NO RESPONSIBILITY OR LIABILITY CAN BE TAKEN BY WSP FOR ERRORS OR OMISSIONS IN RECORD INFORMATION SHOWN IN THE DRAWINGS WHICH ARE PROVIDED IN GOOD FAITH. ANY UNRECORDED SERVICES SHALL BE REPORTED SO THAT RETENTION, DIVERSION OR ABANDONMENT CAN BE ARRANGED.

3. CROSS HATCHED LINES REPRESENT EXISTING UTILITIES TO BE DIVERTED/REMOVED FROM SITE.

4. REFER TO SGN C3 AND C4 FOR DIVERSION PROPOSALS.

NO ALLOWANCE MADE FOR DIVERSIONS IN THIS AREA OF WESTMORELAND ROAD DUE TO FOOTWAY/CARRIAGEWAY ALTERATIONS. REQUIREMENTS TBC DURING DETAILED DESIGN. REFER TO RECORD INFORMATION FOR LOCATION OF EXISTING SERVICES.
GAS IN THIS AREA TAKEN FROM RECORD DRAWINGS. CONTINUATION OF SURVEYED GAS LINE INDICATES CLASH AND DIVERSIONS WILL BE NECESSARY. DIVERSIONS NOT PREVIOUSLY ALLOWED FOR.
PROPOSED TREES SHOW CONFLICT WITH SGN 63mm DIA LP MAIN IN 4" CAST IRON DUCT. DIVERSION HAS NOT BEEN ALLOWED FOR AT THIS STAGE.
CUT AND CAP MAIN [REFER TO SGN C4]
GAS ROUTE ASSUMED FROM RECORD INFORMATION
NEW 180mm PE LP MAIN REQUIRED PRIOR TO ON-SITE DIVERSION. NEW 180mm PE LINK ALSO REQUIRED IN CAMBERWELL/WALWORTH ROAD [REFER TO SGN C4]
NO ALLOWANCE MADE FOR DIVERSIONS IN PORTLAND STREET EAST DUE TO FOOTWAY/CARRIAGEWAY ALTERATIONS. REQUIREMENTS TBC DURING DETAILED DESIGN. REFER TO RECORD INFORMATION FOR LOCATION OF EXISTING SERVICES.
ROUTE NOT SHOWN ON SGN RECORDS AND IS LIKELY TO BE SERVICE [ESTATES OWNED]. SERVICES TO BE DISCONNECTED AND PURGED PRIOR TO DEMOLITION.
CONNECTION WILL NEED TO BE CUT AND CAPPED PRIOR TO DEMOLITION. FLAG WITH SGN.
BUILDING
ROUTE NOT SHOWN ON SGN RECORDS AND IS LIKELY TO BE SERVICE [ESTATES OWNED]. SERVICES TO BE DISCONNECTED AND PURGED PRIOR TO DEMOLITION.
GAS ROUTE ASSUMED FROM RECORD INFORMATION. LATEST TREE PROPOSALS TO BE PROVIDED TO SGN FOR ACCEPTANCE.
GAS BOX IDENTIFIED DURING TOPO SURVEY. CONFIRM WITH SGN IF SERVICE CONNECTION IS TAKEN FROM 12" LP MAIN. WILL BE REQUIRED TO BE KEPT LIVE UNTIL ELLISON HOUSE DEMOLITION.
SGN TO CUT AND CAP MAIN WHILE RETAINING CONNECTION TO ELLISON HOUSE. GAS CONNECTION TO BE REMOVED ONCE ELLISON HOUSE IS VACATED [c. 2016 - DATE TBC]]
NO ALLOWANCE MADE FOR DIVERSIONS IN ALBANY ROAD SOUTH DUE TO FOOTWAY/CARRIAGEWAY ALTERATIONS. REQUIREMENTS TBC DURING DETAILED DESIGN. REFER TO RECORD INFORMATION FOR LOCATION OF EXISTING SERVICES.
12" LP GAS MAIN TO BE DIVERTED/LOWERED [TO ACCOMMODATE PROPOSED CAR PARKING] DURING ENABLING WORKS ASSOCIATED WITH THE REALIGNMENT OF THE ALBANY ROAD FOOTWAY. ROUTE TO BE DEVELOPED ONCE PROPOSED DESIGN IS FIXED. [REFER TO SGN C3]
CUT AND CAP MAIN FOLLOWING DECANT OF ELLISON HOUSE [REFER TO SGN C4]
PROPOSED NEW TREE IN THIS AREA WILL NECESSITATE THE NEED FOR DIVERSION OF 12" LP GAS MAIN. TREE TO BE REMOVED FROM SCHEME. SGN LIKELY TO REQUIRE EXTENSION OF DIVERSION IDENTIFIED EAST IN ALBANY ROAD. FURTHER, LIMITED SPACE FOR VM CHAMBER REQUIRED PRE-DEMOLITION AND FOR NEW SITES.

REV	DATE	BY	DESCRIPTION	CHK	APP
D	04.09.2014	WF	TEXT REALIGNMENTS	WF	AE
C	29.08.2014	WF	UPDATE FOR PLANNING	WF	AE
B	01.08.2014	WF	EXISTING REVIEWED AGAINST FDS 25.07.14 DESIGN FREEZE	WF	AE
A	10.07.2014	WF	ISSUED FOR INFORMATION [WORK IN PROGRESS]	WF	AE

DRAWING STATUS: FOR INFORMATION

WSP

Three White Rose Office Park, Millshaw Park Lane, Leeds, LS11 0DL
Tel: +44 (0)113 395 6200 Fax: +44 (0)113 395 6201
www.wspgroup.com

CLIENT: NHH

ARCHITECT: HTA

PROJECT: AYLESBURY ESTATE REGENERATION

TITLE: FIRST DEVELOPMENT SITE SITE 1B/1C GAS DIVERSIONS

SCALE @ A1: 1:500	CHECKED: WF	APPROVED: AE
PROJECT No: 50600304	DESIGNED: N/A · DRAWN: WF	DATE: JULY 2014

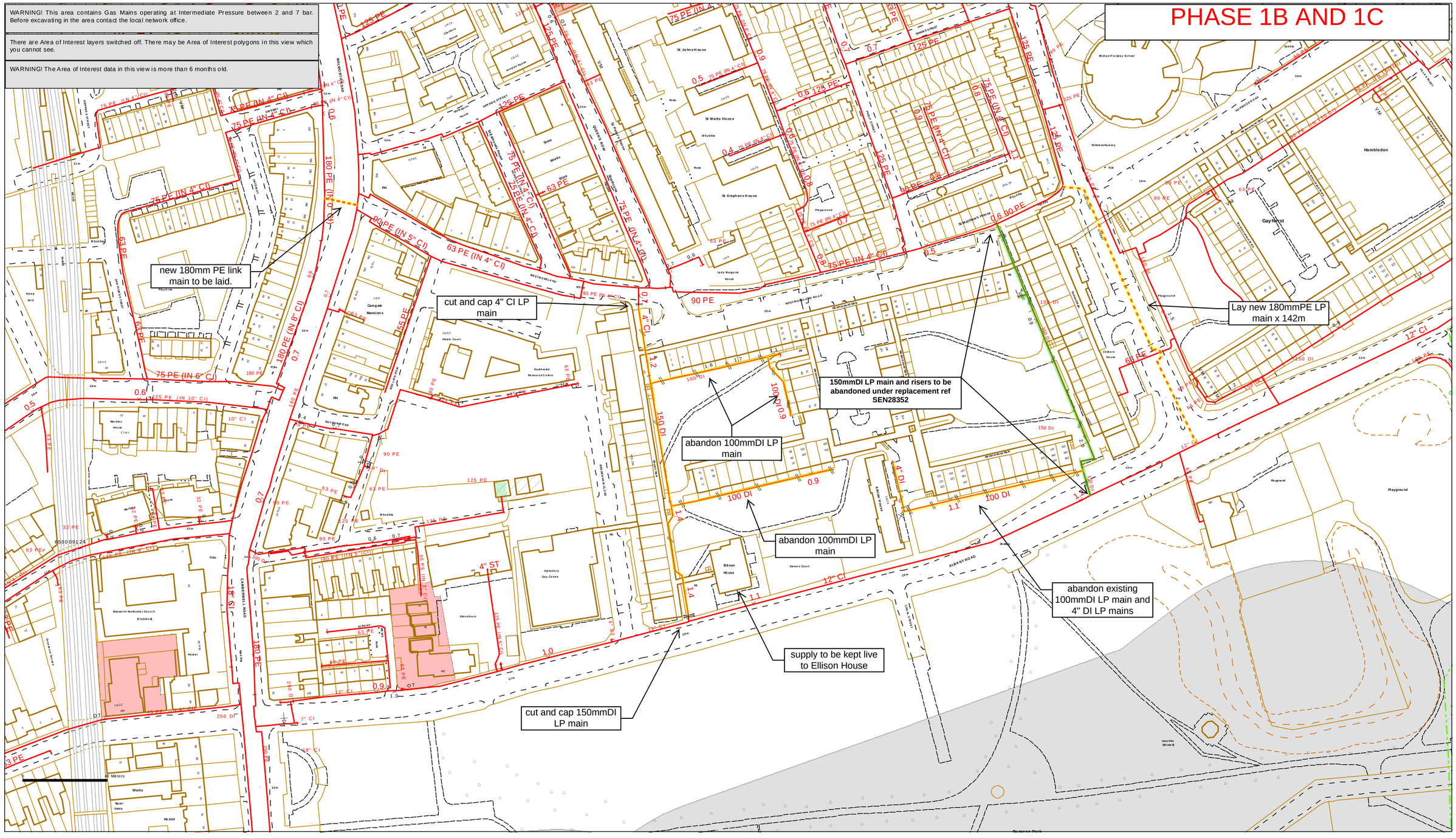
DRAWING No: NHH-AES-WSP-C_D01-00-M2_GAS DIVERSIONS — REV: D

WARNING! This area contains Gas Mains operating at Intermediate Pressure between 2 and 7 bar. Before excavating in the area contact the local network office.

There are Area of Interest layers switched off. There may be Area of Interest polygons in this view which you cannot see.

WARNING! The Area of Interest data in this view is more than 6 months old.

PHASE 1B AND 1C



SCALE 1: 1250	LP MAINS
USER ID: NS67639	MP MAINS
DATE: 23/06/2014	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERNCE: E532637,N177792,TQ 32 77	HISTORY DATA
	LAs
	GTs SSSIs

Some examples of Plant items: Valve, Depth of Cover, Syphon, Diameter Change, Material Change

This plan shows the location of those pipes owned by Scotia Gas Networks (SGN) by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs or third parties may also be present in this area but are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties are given with regard to the accuracy of the information shown on this plan. Service pipes, valves, siphons, sub-connections etc are not shown but their presence should be anticipated. You should be aware that a small percentage of our pipes/assets may be undergoing review and will temporarily be highlighted in yellow. If your proposed works are close to one of these pipes, you should contact the SGN Plant Protection Team on 08450703497 for advice. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HS (G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that plant location information is provided to all persons (whether direct labour or sub-contractors) working for you on or near gas apparatus. Information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

INTRANET MAP VERSION 2.1

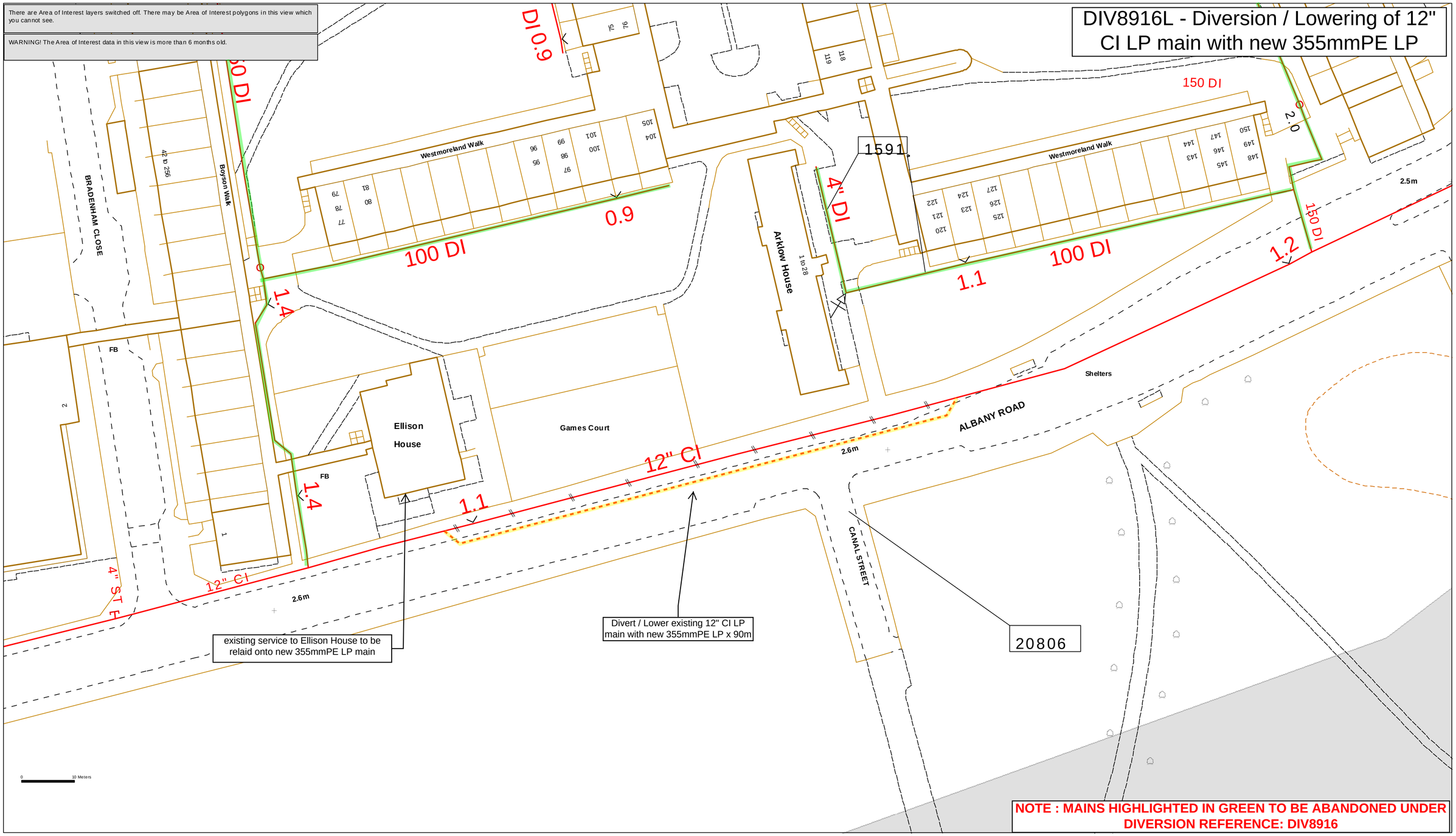
Greater London Authority Area

Scotia Gas Networks plc

There are Area of Interest layers switched off. There may be Area of Interest polygons in this view which you cannot see.

WARNING! The Area of Interest data in this view is more than 6 months old.

DIV8916L - Diversion / Lowering of 12" CI LP main with new 355mmPE LP



SCALE 1: 500	LP MAINS
USER ID: NS67639	MP MAINS
DATE: 25/06/2014	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERNCE: E532698,N177724,TQ 32 77	HISTORY DATA
	LAs
	GTs SSSIs

Some examples of Plant items:
Valve, Depth of Cover, Syphon, Diameter Change, Material Change

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INTRANET MAP VERSION 2.1

Greater London Authority Area

Scotia Gas Networks plc

Plant on Map Job Description: AYLESBURY ESTATE REGENERATION SITE PLOT 1, 2, 3

Important Notice - BT's joint boxes (JB & JUF) must be constructed in non carriageway situations only. If there is any deviation from this please contact your newSite Representative before work commences.

GenOSys 2.2.20G *PRINT NOT TO SCALE*

Certified by .....

Date .....

Exchange Area: WALWORTH
Estimate Number: L/ROD/341-
Planned By: MICHAEL STUBBERFIELD
NSI: L/ROD/341 Issue No: 1
Map Reference: 523763177815
Date: 25/06/2014

Fortune, Wayne

From:	martin.jenns@openreach.co.uk
Sent:	07 August 2014 09:33
To:	Fortune, Wayne
Cc:	nicola.portervaughan@openreach.co.uk
Subject:	FTTP
Attachments:	140725 Site 1B_C Aylesbury Estate_Fibre Forecast Request Form V12 December 13.pdf; PROP 2 L ROD 341.pdf

Wayne

Thanks for your discussion this morning,

As discussed please send me the site next year much nearer the start date, preferably two to three months in advance of site start date. We can then log you onto the pilot programme. By then you will have more accurate dates for us to work to. The dates you have provided are too vague.

Please would you be so kind as to include a red line drawing of the whole site from phase one to the final phase in 2020, so we can get a feel of the potential pipeline.

Martin Jenns

Fibre To The Premises Co-ordinator London & SE

Events & Exhibitions Co-ordinator London & SE

Office Number 01452 770400

Mobile Number 07802 192417 (Always try my landline number first)

(Group email for Events) LHC Events G

EXISTING OPENREACH CABINET TO BE RETAINED IN EXISTING LOCATION TO AVOID RELOCATION - BUILD OUT/PROTECTION DETAIL TO BE DEVELOPED BY ARCHITECT/HIGHWAYS ENGINEER.

OPENREACH WILL REQUIRE AN ADDITIONAL ROUTE IN PORTLAND STREET TO ALLOW DIVERSION OF EXISTING OPENREACH ROUTE IN ALBANY ROAD/REMOVAL OF ROUTES WITHIN SITE 1B/1C. ROUTE TO BE DEVELOPED FOLLOWING OPENREACH C4 SURVEY

NO ALLOWANCE MADE FOR DIVERSIONS IN PORTLAND STREET EAST DUE TO FOOTWAY/CARRIAGEWAY ALTERATIONS. REQUIREMENTS TBC DURING DETAILED DESIGN. REFER TO RECORD INFORMATION FOR LOCATION OF EXISTING SERVICES.

EXISTING DUCTS AND CHAMBERS WITHIN FOOTWAY. CHAMBER REBUILD WILL BE REQUIRED IF OPENREACH REQUIRE CHAMBERS TO REMAIN. CLASH WITH GEOCELL IF RETAINED.

NO ALLOWANCE MADE FOR DIVERSIONS IN THIS AREA OF WESTMORELAND ROAD DUE TO FOOTWAY/CARRIAGEWAY ALTERATIONS. REQUIREMENTS TBC DURING DETAILED DESIGN. REFER TO RECORD INFORMATION FOR LOCATION OF EXISTING SERVICES.

OPENREACH ROUTE LIKELY TO CLASH WITH TREE AND DIVERSION WILL BE REQUIRED. CAN TREE BE REMOVED FROM SCHEME TO AVOID DIVERSION.

OPENREACH ROUTE ASSUMED FROM RECORD INFORMATION

OPENREACH TO CONFIRM IF ROUTE IS ABANDONED FOLLOWING DISCONNECTION OF SITE 1B/1C CONNECTIONS.

OPENREACH ROUTED BELOW EXISTING BUILDING. DIVERSION REQUIRED PRE-DEMOLITION. AWAITING OPENREACH PROPOSALS

ROUTE NOT SHOWN ON OPENREACH RECORD DRAWINGS.

OPENREACH TO CONFIRM EXTENT OF ROUTE IN EAST SIDE OF BRADENHAM CLOSE DURING C4 SITE SURVEY AND WHETHER OR NOT THIS IS TO BE RETAINED. DIVERSION MAY BE REQUIRED TO ACCOMMODATE PROPOSED TREE PLANTING. LOCATION OF ROAD CROSSING ASSUMED FROM RECORD MAPPING.

OPENREACH CONNECTION TO BE REMOVED ONCE ELLISON HOUSE IS VACATED [c. 2016 - DATE TBC]

NO ALLOWANCE MADE FOR DIVERSIONS IN ALBANY ROAD SOUTH DUE TO FOOTWAY/CARRIAGEWAY ALTERATIONS. REQUIREMENTS TBC DURING DETAILED DESIGN. REFER TO RECORD INFORMATION FOR LOCATION OF EXISTING SERVICES.

OPENREACH RECORD DRAWINGS DO NOT SHOW A ROUTE ON THE WEST SIDE OF BRADENHAM CLOSE. OPENREACH CHAMBERS AND ROUTE TURNING INTO BRADENHAM CLOSE NOTED DURING TOPO/UTILITY SURVEY.

CLASH WITH OPENREACH CHAMBER IF RETAINED [TBC FOLLOWING OPENREACH SURVEY]. SUGGEST TREE AND GEOCELL REMOVED FROM THIS AREA.

EXISTING OPENREACH ROUTE IN ALBANY ROAD TO BE DIVERTED INTO NEW FOOTWAY DURING ENABLING WORKS ASSOCIATED WITH THE REALIGNMENT OF THE ALBANY ROAD FOOTWAY. REFER TO NEW SITES LAYOUT FOR ASSUMED ROUTE WHICH IS TBC DURING DETAILED DESIGN. OPENREACH ARE TO CONFIRM IF ANY DUCT ROUTES ARE REQUIRED TO FREE UP SITE 1B/1C.

BUILDING

DO NOT SCALE

THE LOCATION OF UTILITY SERVICES SHALL BE CONFIRMED ON SITE PRIOR TO COMMENCING ANY WORKS. IT SHOULD BE NOTED THAT THERE MAY BE UNRECORDED SERVICES IN EXISTENCE ON THE SITE, ON-SITE WORKING PROCEDURES SHALL TAKE THIS INTO ACCOUNT.

EXISTING GROUND CONDITIONS ARE AS YET UNKNOWN.

EXISTING BUILDINGS MAY CONTAIN CONTAMINANTS INCLUDING ASBESTOS.

LBS ARE TO ARRANGE FOR SERVICE DISCONNECTIONS AHEAD OF DIVERSIONS REQUIRED TO PROVIDE CLEAR SITE FOR DEMOLITION AND CONSTRUCTION.

THERE ARE EXISITNG EHV CABLES IN CLOSE PROXIMITY TO THE SITE.

THERE AREA EXISITNG HV CABLES WITHIN THE SITE AND IN CLOSE PROXIMITY TO THE SITE.

STANDARD NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS/DOCUMENTS. THIS DRAWING SHOULD ONLY BE USED FOR ITS INTENDED PURPOSE.

2. NO RESPONSIBILITY OR LIABILITY CAN BE TAKEN BY WSP FOR ERRORS OR OMISSIONS IN RECORD INFORMATION SHOWN IN THE DRAWINGS WHICH ARE PROVIDED IN GOOD FAITH. ANY UNRECORDED SERVICES SHALL BE REPORTED SO THAT RETENTION, DIVERSION OR ABANDONMENT CAN BE ARRANGED.

3. CROSS HATCHED LINES REPRESENT EXISTING UTILITIES TO BE DIVERTED/REMOVED FROM SITE.

REV	DATE	BY	DESCRIPTION	CHK	APP
D	04.09.2014	WF	TEXT REALIGNMENTS	WF	AE
C	29.08.2014	WF	UPDATED FOR PLANNING	WF	AE
B	01.08.2014	WF	EXISTING REVIEWED AGAINST FDS 25.07.14 DESIGN FREEZE	WF	AE
A	10.07.2014	WF	ISSUED FOR INFORMATION [WORK IN PROGRESS]	WF	AE

DRAWING STATUS: FOR INFORMATION

WSP
Three White Rose Office Park, Millshaw Park Lane, Leeds, LS11 0DL
Tel: +44 (0)113 395 6200 Fax: +44 (0)113 395 6201
www.wspgroup.com

CLIENT: NHH

ARCHITECT: HTA

PROJECT: AYLESBURY ESTATE REGENERATION

TITLE: FIRST DEVELOPMENT SITE
SITE 1B/1C
OPENREACH DIVERSIONS

SCALE @ A1:	CHECKED:		APPROVED:
1:500	WF		AE
PROJECT No:	DESIGNED:	DRAWN:	DATE:
50600304	N/A	WF	JULY 2014

DRAWING No: NHH-AES-WSP-C_D01-00-M2_OPENREACH DIVERSIONS | REV: D

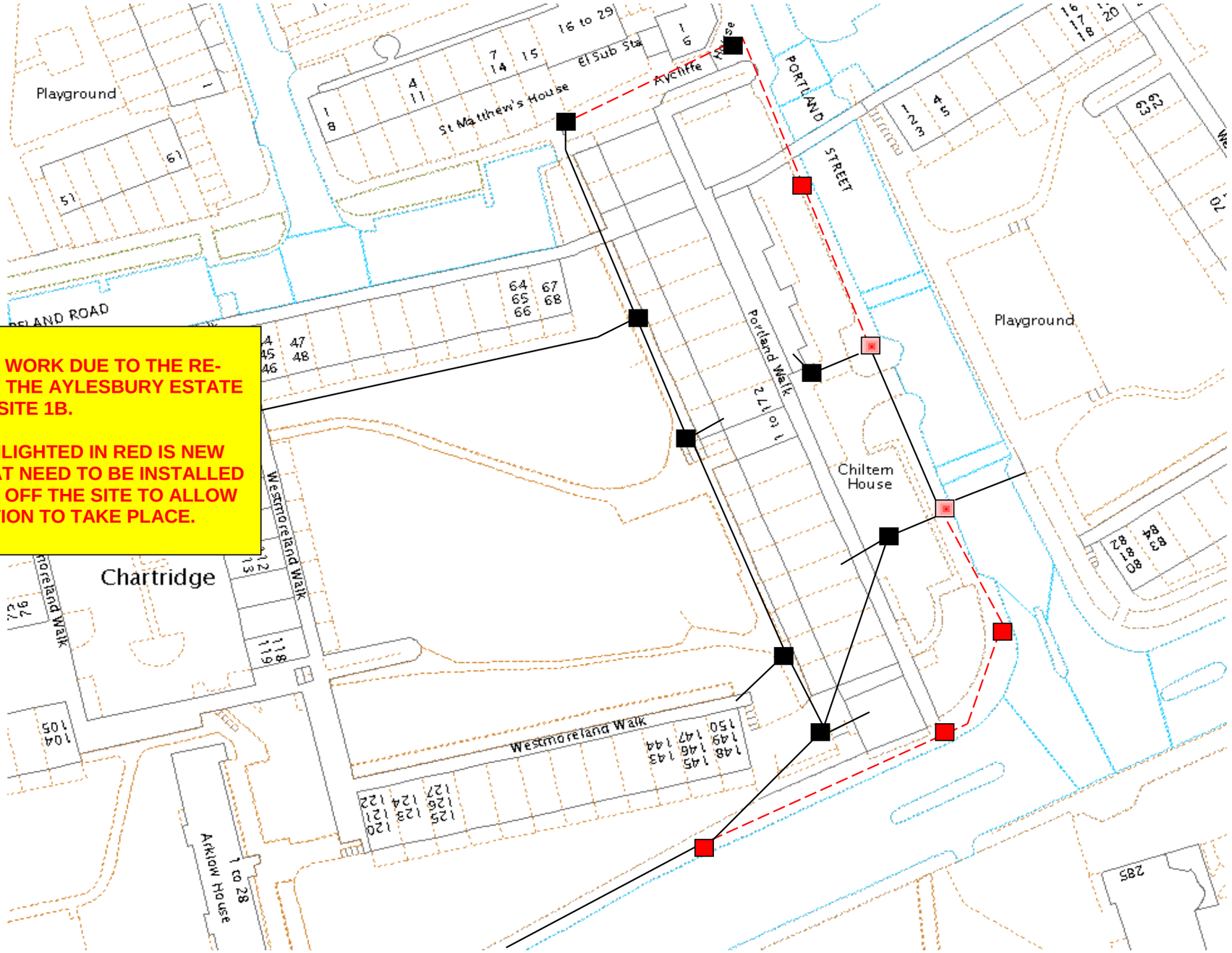
BT PLANNER = DAVID ELSBURY 07743 843287

EXISTING

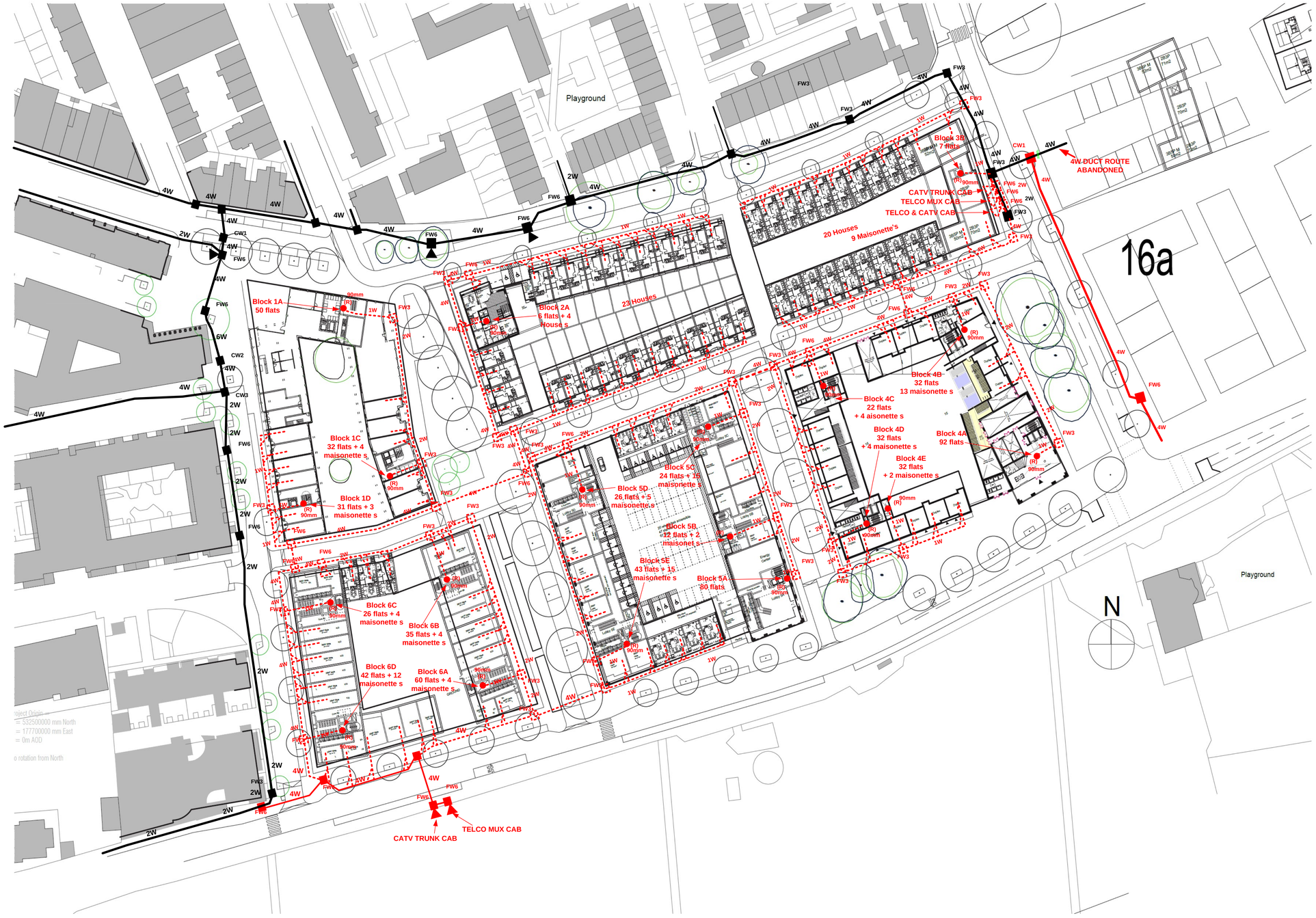
NEW

BT ALTERATION WORK DUE TO THE RE-DEVELOPMENT OF THE AYLESBURY ESTATE SITE 1B.

ALL PLANT HIGHLIGHTED IN RED IS NEW DUCT / BOXES THAT NEED TO BE INSTALLED TO DIVERT PLANT OFF THE SITE TO ALLOW THE DEMOLITION TO TAKE PLACE.



A1



INDICATIVE - FOR REFERENCE ONLY

Aylesbury Estate Regeneration - FDS

Drawing Title: Street Layout Sketch
Drawn by: olc
Job Reference: NHH-AES

NHH-AES-D01-SK-140526-01 Scale: 1:500@A1 Revision: -

0m 10m 20m 30m 40m 50m

Notes:

HTA Design LLP
106-110
Kentish Town Road
London NW1 9PX
020 7485 8555
www.hta.co.uk

ISSUE 1
Notes:

Existing Duct
New Duct
Abandoned Apparatus
Riser
Cabinet

Ducting to be abandoned only after all diversionary works are complete (if applicable).

UNMAINTAINED COPY FOR INFORMATION ONLY
LATEST REVISION HELD BY DRAWING OFFICE

ISSUE	DATE	DEPT	JOB NO.	DRN	CKD
1	02/07/2014	ANP	19887	FS	MH

Access Network Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
Media House, Bartley Wood Business Park, Hook, Hampshire, RG27 9UP
Registered in England and Wales No. 2591237

CATV & Telco Design for
New Development,
Aylesbury Estate, Site 1B & 1C,
Bradenham Close,
Westmoreland Road,
Portland Street, SE17.

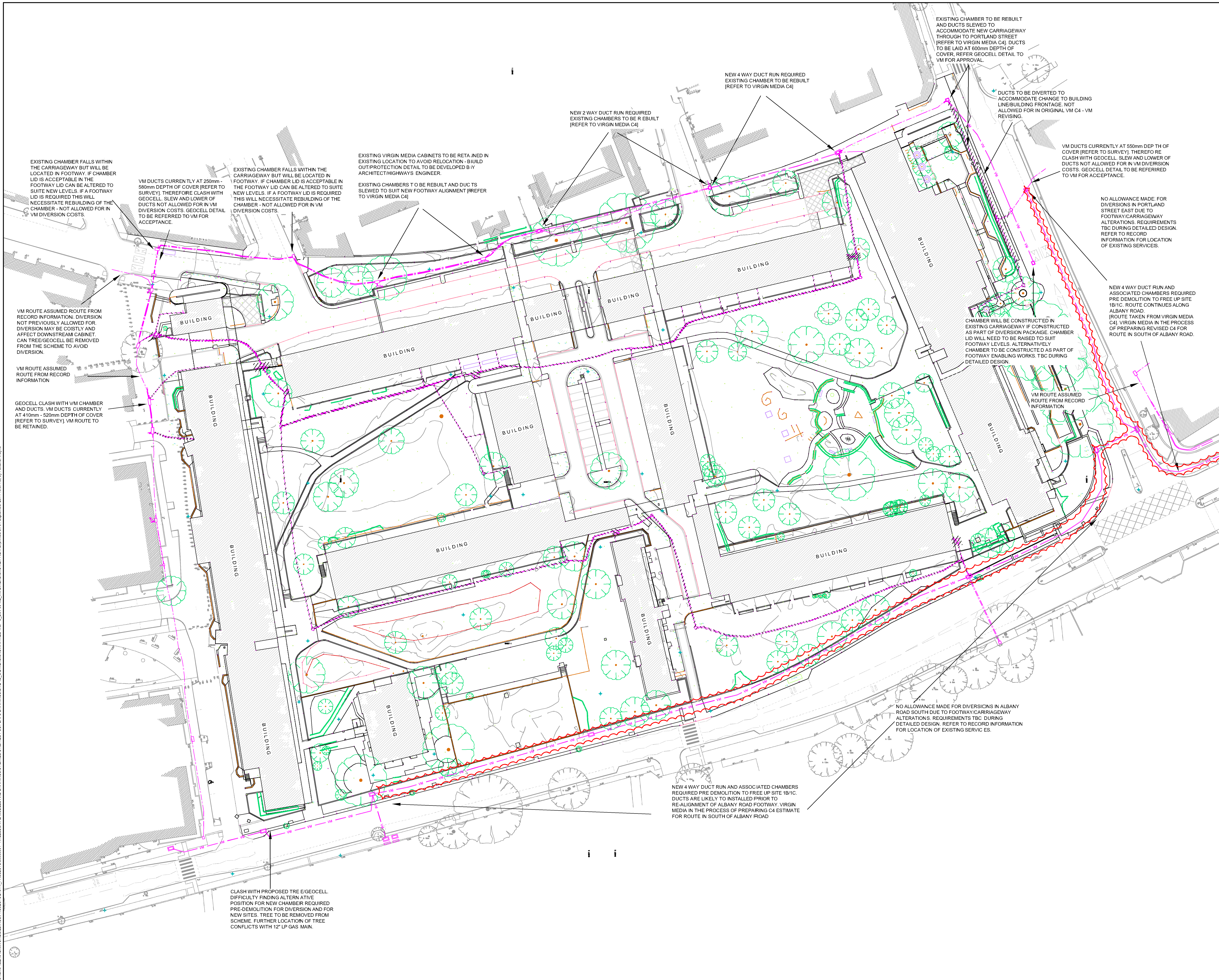
DRAWING NUMBER
NBU – 19887 – Site Plan

SCALE
Not to Scale

SHEET NO.
1 of

DISCLAIMER.

Information shown on the enclosed plan is for Indication only. No Warranty is made to its accuracy. This plan must not be relied upon in the event of excavation or other works carried out in the vicinity of Virgin Media plant. No Liability of any kind whatsoever is accepted by Virgin Media, its servants or agents for any error or omission in respect of information contained on this plan. The actual position of the underground services must be verified and established on site before any Mechanical plant is used.



EXISTING CHAMBER FALLS WITHIN THE CARRIAGEWAY BUT WILL BE LOCATED IN FOOTWAY. IF CHAMBER LID IS ACCEPTABLE IN THE FOOTWAY LID CAN BE ALTERED TO SUITE NEW LEVELS. IF A FOOTWAY LID IS REQUIRED THIS WILL NECESSITATE REBUILDING OF THE CHAMBER - NOT ALLOWED FOR IN VM DIVERSION COSTS.
VM DUCTS CURRENTLY AT 250mm - 580mm DEPTH OF COVER [REFER TO SURVEY]. THEREFORE CLASH WITH GEOCELL. SLEW AND LOWER OF DUCTS NOT ALLOWED FOR IN VM DIVERSION COSTS. GEOCELL DETAIL TO BE REFERRED TO VM FOR ACCEPTANCE.
EXISTING CHAMBER FALLS WITHIN THE CARRIAGEWAY BUT WILL BE LOCATED IN FOOTWAY. IF CHAMBER LID IS ACCEPTABLE IN THE FOOTWAY LID CAN BE ALTERED TO SUITE NEW LEVELS. IF A FOOTWAY LID IS REQUIRED THIS WILL NECESSITATE REBUILDING OF THE CHAMBER - NOT ALLOWED FOR IN VM DIVERSION COSTS.
EXISTING VIRGIN MEDIA CABINETS TO BE RETAINED IN EXISTING LOCATION TO AVOID RELOCATION - BUILD OUT/PROTECTION DETAIL TO BE DEVELOPED BY ARCHITECT/HIGHWAYS ENGINEER.
EXISTING CHAMBERS TO BE REBUILT AND DUCTS SLEWED TO SUIT NEW FOOTWAY ALIGNMENT [REFER TO VIRGIN MEDIA C4]
NEW 2 WAY DUCT RUN REQUIRED EXISTING CHAMBERS TO BE REBUILT [REFER TO VIRGIN MEDIA C4]
NEW 4 WAY DUCT RUN REQUIRED EXISTING CHAMBER TO BE REBUILT [REFER TO VIRGIN MEDIA C4]
EXISTING CHAMBER TO BE REBUILT AND DUCTS SLEWED TO ACCOMMODATE NEW CARRIAGEWAY THROUGH TO PORTLAND STREET [REFER TO VIRGIN MEDIA C4]. DUCTS TO BE LAID AT 600mm DEPTH OF COVER, REFER GEOCELL DETAIL TO VM FOR APPROVAL.
DUCTS TO BE DIVERTED TO ACCOMMODATE CHANGE TO BUILDING LINE/BUILDING FRONTAGE. NOT ALLOWED FOR IN ORIGINAL VM C4 - VM REVISING.
VM DUCTS CURRENTLY AT 550mm DEPTH OF COVER [REFER TO SURVEY]. THEREFORE CLASH WITH GEOCELL. SLEW AND LOWER OF DUCTS NOT ALLOWED FOR IN VM DIVERSION COSTS. GEOCELL DETAIL TO BE REFERRED TO VM FOR ACCEPTANCE.
NO ALLOWANCE MADE FOR DIVERSIONS IN PORTLAND STREET EAST DUE TO FOOTWAY/CARRIAGEWAY ALTERATIONS. REQUIREMENTS TBC DURING DETAILED DESIGN. REFER TO RECORD INFORMATION FOR LOCATION OF EXISTING SERVICES.
NEW 4 WAY DUCT RUN AND ASSOCIATED CHAMBERS REQUIRED PRE DEMOLITION TO FREE UP SITE 1B/1C. ROUTE CONTINUES ALONG ALBANY ROAD. [ROUTE TAKEN FROM VIRGIN MEDIA C4]. VIRGIN MEDIA IN THE PROCESS OF PREPARING REVISED C4 FOR ROUTE IN SOUTH OF ALBANY ROAD.
CHAMBER WILL BE CONSTRUCTED IN EXISTING CARRIAGEWAY IF CONSTRUCTED AS PART OF DIVERSION PACKAGE. CHAMBER LID WILL NEED TO BE RAISED TO SUIT FOOTWAY LEVELS. ALTERNATIVELY CHAMBER TO BE CONSTRUCTED AS PART OF FOOTWAY ENABLING WORKS. TBC DURING DETAILED DESIGN.
VM ROUTE ASSUMED ROUTE FROM RECORD INFORMATION
VM ROUTE ASSUMED ROUTE FROM RECORD INFORMATION. DIVERSION NOT PREVIOUSLY ALLOWED FOR. DIVERSION MAY BE COSTLY AND AFFECT DOWNSTREAM CABINET. CAN TREE/GEOCELL BE REMOVED FROM THE SCHEME TO AVOID DIVERSION.
VM ROUTE ASSUMED ROUTE FROM RECORD INFORMATION
GEOCELL CLASH WITH V/M CHAMBER AND DUCTS. VM DUCTS CURRENTLY AT 410mm - 520mm DEPTH OF COVER [REFER TO SURVEY]. VM ROUTE TO BE RETAINED.
BUILDING
NO ALLOWANCE MADE FOR DIVERSIONS IN ALBANY ROAD SOUTH DUE TO FOOTWAY/CARRIAGEWAY ALTERATIONS. REQUIREMENTS TBC DURING DETAILED DESIGN. REFER TO RECORD INFORMATION FOR LOCATION OF EXISTING SERVICES.
NEW 4 WAY DUCT RUN AND ASSOCIATED CHAMBERS REQUIRED PRE DEMOLITION TO FREE UP SITE 1B/1C. DUCTS ARE LIKELY TO INSTALLED PRIOR TO RE-ALIGNMENT OF ALBANY ROAD FOOTWAY. VIRGIN MEDIA IN THE PROCESS OF PREPARING C4 ESTIMATE FOR ROUTE IN SOUTH OF ALBANY ROAD
CLASH WITH PROPOSED TREE/GEOCELL. DIFFICULTY FINDING ALTERNATIVE POSITION FOR NEW CHAMBER REQUIRED PRE-DEMOLITION FOR DIVERSION AND FOR NEW SITES. TREE TO BE REMOVED FROM SCHEME. FURTHER LOCATION OF TREE CONFLICTS WITH 12" LP GAS MAIN.

File name \\SER01BRM1UK\BUILDINGS\PROJECTS\24641_PROJECTS\50600304 - AYLESBURYE MODELS AND DRAWINGS\UTILITIES\UTILITIES POST BAFO DRAWINGS\SITE 1B_C\DIVERSIONS\NHH-AES-WSP-C_D01-00-M2_VM DIVERSIONS REV A.DWG, printed on 04 September 2014 15:37:48, by Fortune, Wayne

DO NOT SCALE

THE LOCATION OF UTILITY SERVICES SHALL BE CONFIRMED ON SITE PRIOR TO COMMENCING ANY WORKS. IT SHOULD BE NOTED THAT THERE MAY BE UNRECORDED SERVICES IN EXISTENCE ON THE SITE, ON-SITE WORKING PROCEDURES SHALL TAKE THIS INTO ACCOUNT.

EXISTING GROUND CONDITIONS ARE AS YET UNKNOWN.

EXISTING BUILDINGS MAY CONTAIN CONTAMINANTS INCLUDING ASBESTOS.

LBS ARE TO ARRANGE FOR SERVICE DISCONNECTIONS AHEAD OF DIVERSIONS REQUIRED TO PROVIDE CLEAR SITE FOR DEMOLITION AND CONSTRUCTION.

THERE ARE EXISTING EHV CABLES IN CLOSE PROXIMITY TO THE SITE.

THERE AREA EXISTING HV CABLES WITHIN THE SITE AND IN CLOSE PROXIMITY TO THE SITE.

STANDARD NOTES:

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3. CROSS HATCHED LINES REPRESENT EXISTING UTILITIES TO BE DIVERTED/REMOVED FROM SITE.

REV	DATE	BY	DESCRIPTION	CHK	APP
D	04.09.2014	WF	TEXT REALIGNMENTS	WF	AE
C	29.08.2014	WF	UPDATED FOR PLANNING	WF	AE
B	01.08.2014	WF	EXISTING REVIEWED AGAINST FDS 25.07.14 DESIGN FREEZE	WF	AE
A	10.07.2014	WF	ISSUED FOR INFORMATION [WORK IN PROGRESS]	WF	AE

DRAWING STATUS: FOR INFORMATION

WSP
Three White Rose Office Park, Millshaw Park Lane, Leeds, LS11 0DL
Tel: +44 (0)113 395 6200 Fax: +44 (0)113 395 6201
www.wspgroup.com

CLIENT: NHH

ARCHITECT: HTA

PROJECT: AYLESBURY ESTATE REGENERATION

TITLE: FIRST DEVELOPMENT SITE
SITE 1B/1C
VIRGIN MEDIA DIVERSIONS

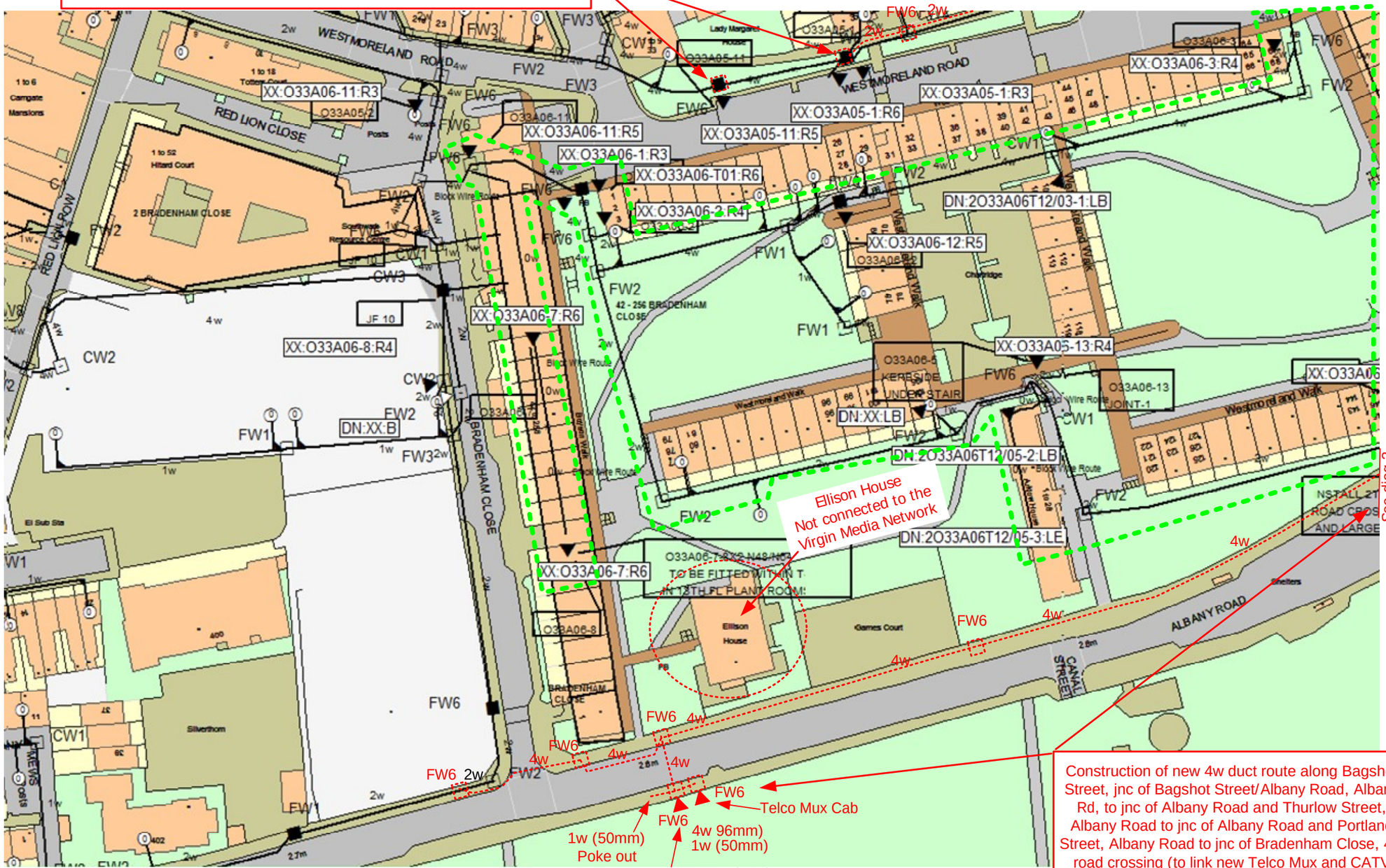
SCALE @ A1: 1:500	CHECKED: WF	APPROVED: AE
PROJECT No: 50600304	DESIGNED: N/A / DRAWN: WF	DATE: JULY 2014

DRAWING No: NHH-AES-WSP-C_D01-00-M2_VM DIVERSIONS REV: D

A3

In grass verge outside Lady Margaret House, Westmoreland Road, demolish & re-build existing FW6 pits in conjunction with Slew/Lower of section of 4w duct located between same pits.

VIRGIN MEDIA IN PROCESS OF UPDATING DRAWINGS TO REFLECT ROUTE IN ALBANY ROAD



Once all cabinet and cables diverted from site 1B & 1C. The cables, equipment and cabinet shells will be recovered and safely removed from site.

The relocation of cabinets to positions shown will be subject to approval from the LB Southwarks Highways department.

Construction of new 4w duct route along Bagshot Street, jnc of Bagshot Street/Albany Road, Albany Rd, to jnc of Albany Road and Thurlow Street, Albany Road to jnc of Albany Road and Portland Street, Albany Road to jnc of Bradenham Close, 4w road crossing (to link new Telco Mux and CATV Trunk cabinets, from a point in Westmoreland Road to a point at jnc of Westmoreland Road and Portland Street, from jnc of Portland Street/ Westmoreland Street to link 4w duct located at a point near to jnc of Albany Road and Portland Street. Required in order to divert existing fibre and Telco cables affected by the proposed regeneration of the Aylesbury Estate.required for

ISSUE 1
Notes:

Existing Duct

New Duct

Abandoned Or Recovered Apparatus

Ducting to be abandoned only after all diversionary works are complete (if applicable).

UNMAINTAINED COPY FOR INFORMATION ONLY LATEST REVISION HELD BY DRAWING OFFICE

ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	15.05.2014	ANP	191738	FS	MH

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

Proposed diversion of VM Plant
From Site 1B & 1C, Bradenham Close
Albany Road and Portland Street
SE17 2EP.

DRAWING NUMBER
C4 VM/CIP/191738 Civils Diag

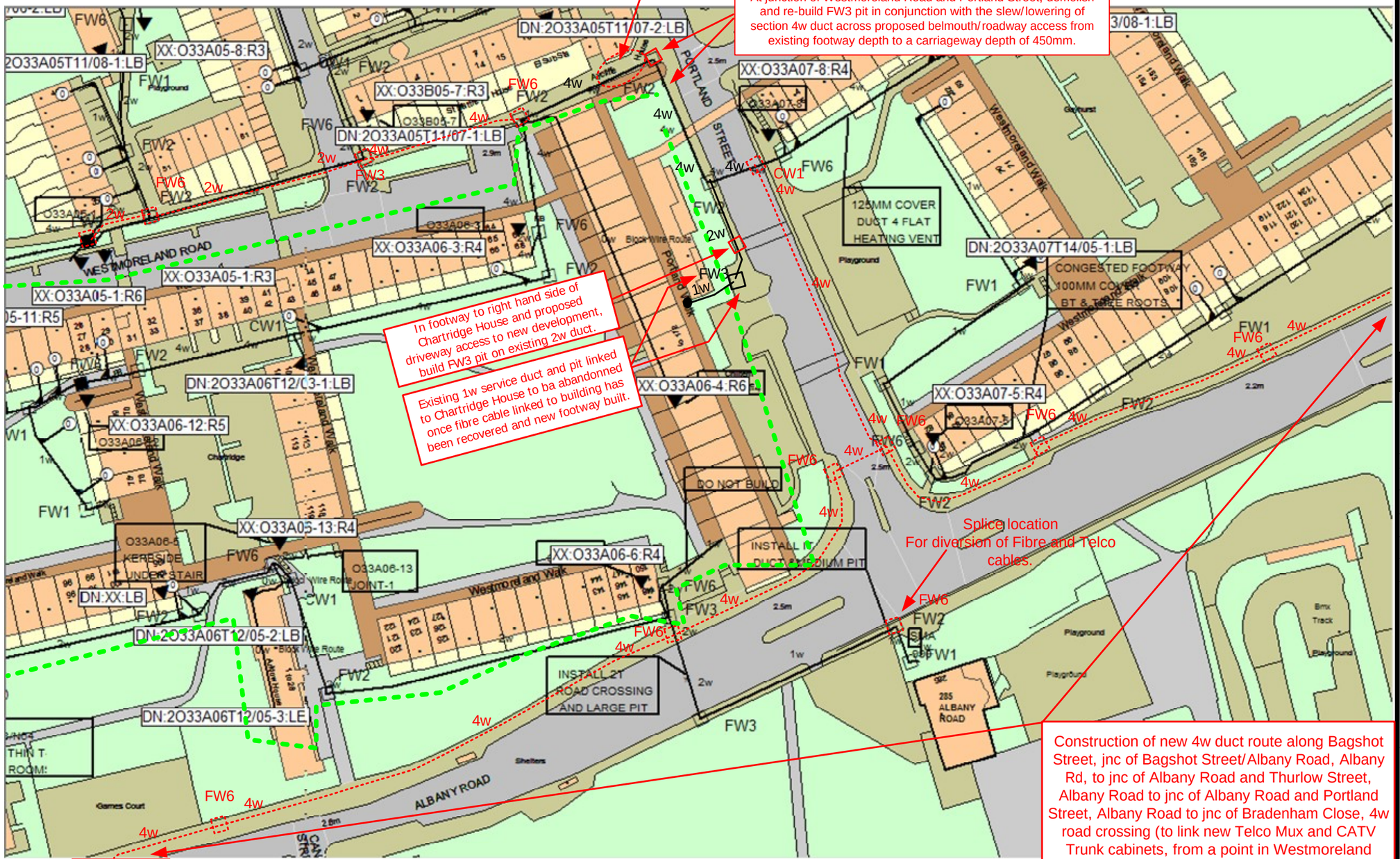
SCALE
Not to Scale

SHEET NO.
4 of

A3

NB: This area will be utilised to locate a Telco and CATV Trunk cabinet, required for the provision of VM services to the proposed new development in site 1B and 1C. The design and cost will be produced in association with the associated new development feasibility that will be completed (separately) in shortly. The design will be of a similar size to the cabinets that will be located in Albany Road, opposite Bradenham Close.

VIRGIN MEDIA IN PROCESS OF UPDATING DRAWINGS TO REFLECT ROUTE IN ALBANY ROAD



See diag 4 of

Construction of new 4w duct route along Bagshot Street, jnc of Bagshot Street/Albany Road, Albany Rd, to jnc of Albany Road and Thurlow Street, Albany Road to jnc of Albany Road and Portland Street, Albany Road to jnc of Bradenham Close, 4w road crossing (to link new Telco Mux and CATV Trunk cabinets, from a point in Westmoreland Road to a point at jnc of Westmoreland Road and Portland Street, from jnc of Portland Street/ Westmoreland Street to link 4w duct located at a point near to jnc of Albany Road and Portland Street. Required in order to divert existing fibre and Telco cables affected by the proposed regeneration of the Aylesbury Estate.required for

ISSUE 1
Notes:

Existing Duct
New Duct
Abandoned Apparatus

Ducting to be abandoned only after all diversionary works are complete (if applicable).

UNMAINTAINED COPY FOR INFORMATION ONLY LATEST REVISION HELD BY DRAWING OFFICE

ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	15.05.2014	ANP	191738	FS	MH

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

Proposed diversion of VM Plant
From Site 1B & 1C, Bradenham Close
Albany Road and Portland Street
SE17 2EP.

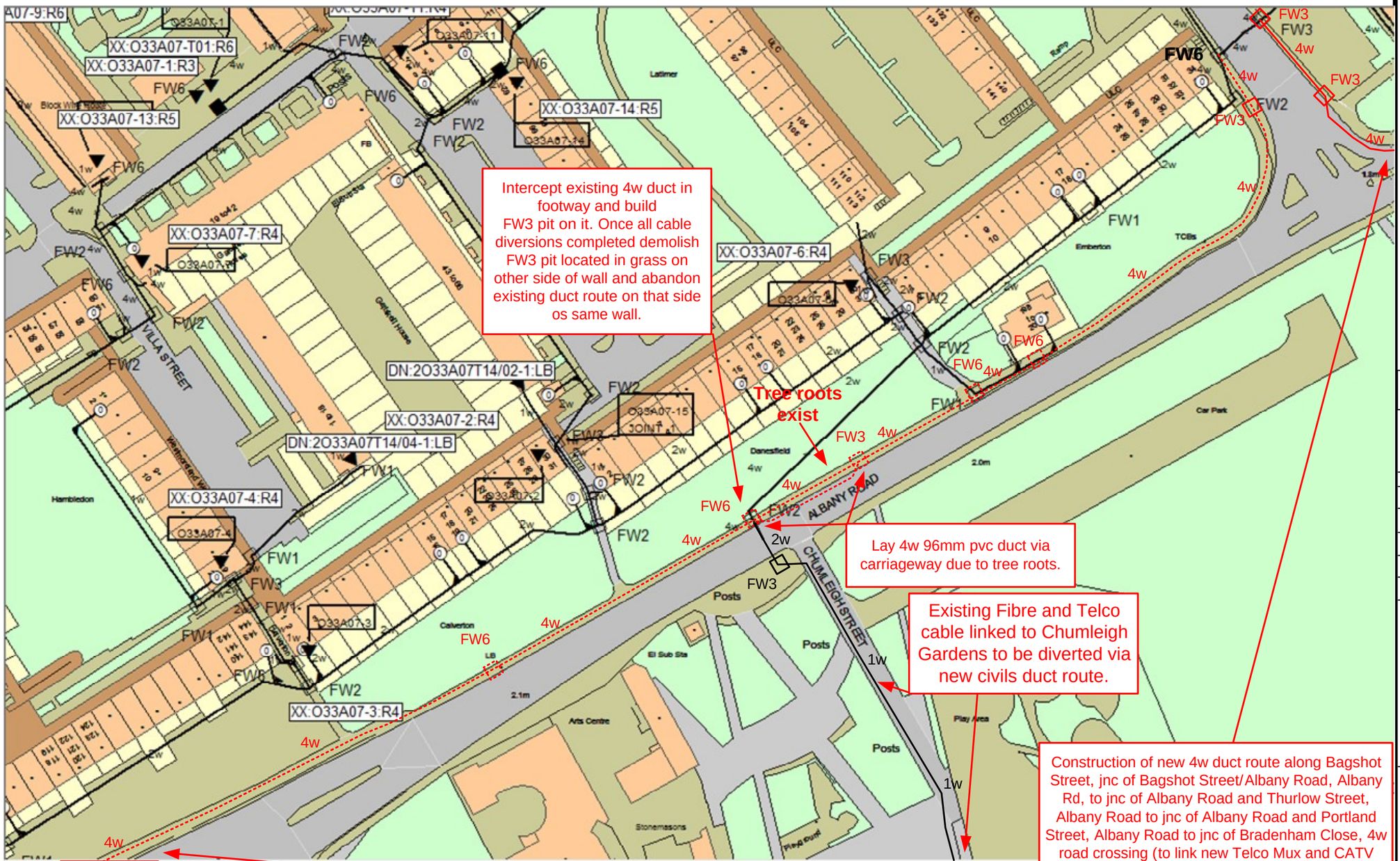
DRAWING NUMBER
C4 VM/CIP/191738 Civils Diag

SCALE
Not to Scale

SHEET NO.
3 of

A3

VIRGIN MEDIA IN PROCESS OF UPDATING DRAWINGS TO REFLECT ROUTE IN ALBANY ROAD



ISSUE 1
Notes:

Existing Duct

New Duct

Abandoned Apparatus

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ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	15.05.2014	ANP	191738	FS	MH

Business Planning & Access Planning
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Lewisham
London
SE13 5AU

Virgin Media Limited
160 Great Portland Street
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Registered in England and Wales No. 2591237

Proposed diversion of VM Plant
From Site 1B & 1C, Bradenham Close
Albany Road and Portland Street
SE17 2EP.

DRAWING NUMBER
C4 VM/CIP/191738 Civils Diag

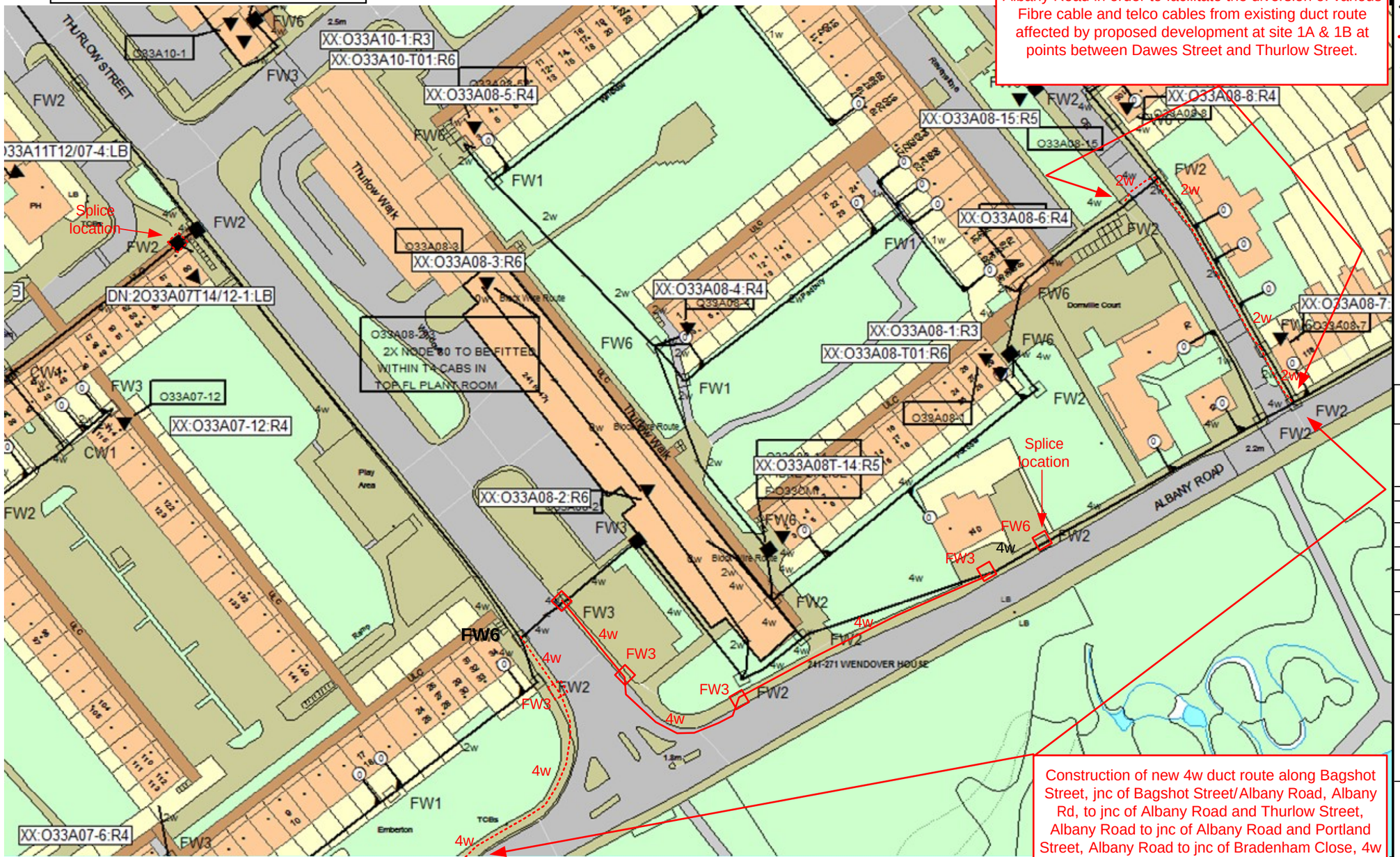
SCALE Not to Scale

SHEET NO. 2 of

A3

VIRGIN MEDIA IN PROCESS OF UPDATING DRAWINGS TO REFLECT ROUTE IN ALBANY ROAD

Lay new 2w duct route along Bagshot Street from jnc of Albany Road in order to facilitate the diversion of various Fibre cable and telco cables from existing duct route affected by proposed development at site 1A & 1B at points between Dawes Street and Thurlow Street.



Construction of new 4w duct route along Bagshot Street, jnc of Bagshot Street/Albany Road, Albany Rd, to jnc of Albany Road and Thurlow Street, Albany Road to jnc of Albany Road and Portland Street, Albany Road to jnc of Bradenham Close, 4w road crossing (to link new Telco Mux and CATV Trunk cabinets, from a point in Westmoreland Road to a point at jnc of Westmoreland Road and Portland Street, from jnc of Portland Street/ Westmoreland Street to link 4w duct located at a point near to jnc of Albany Road and Portland Street. Required in order to divert existing fibre and Telco cables affected by the proposed regeneration of the Aylesbury Estate.required for

ISSUE 1
Notes:

Existing Duct

New Duct

Abandoned Apparatus

Ducting to be abandoned only after all diversionary works are complete (if applicable).

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ISSUE	DATE	DEPT	SR. NO.	DRN	CKD
1	15.05.2014	ANP	191738	FS	MH

Business Planning & Access Planning
11-29 Belmont Hill
Lewisham
London
SE13 5AU

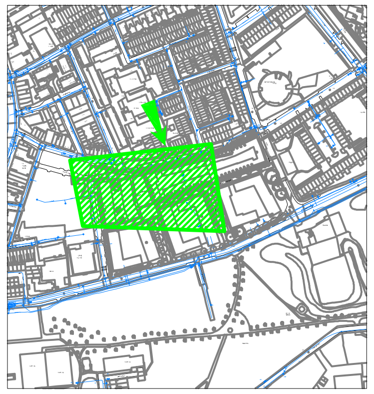
Virgin Media Limited
160 Great Portland Street
London, W1W 5QA
Registered in England and Wales No. 2591237

Proposed diversion of VM Plant
From Site 1B & 1C, Bradenham Close
Albany Road and Portland Street
SE17 2EP.

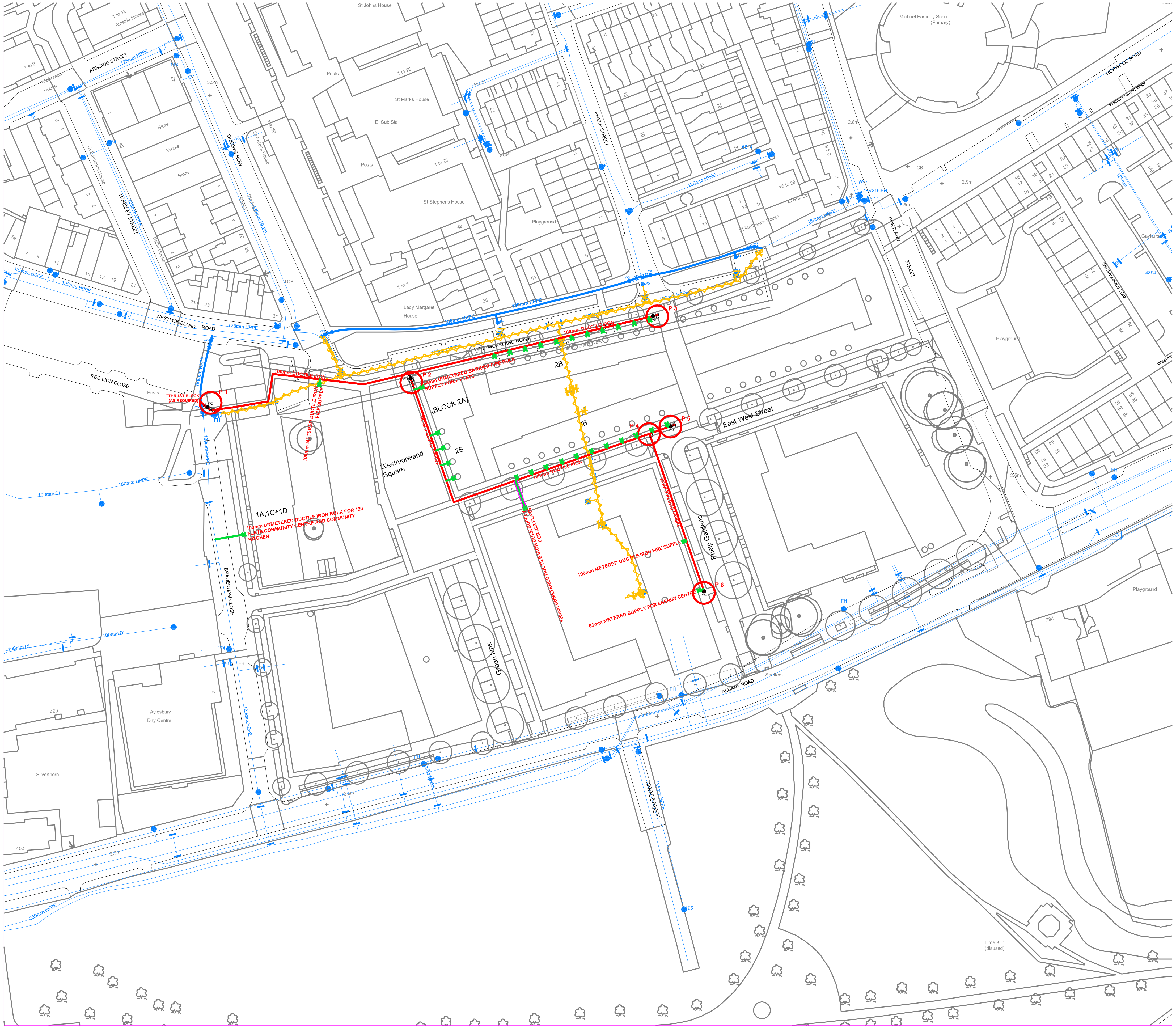
DRAWING NUMBER
C4 VM/CIP/191738 Civils Diag

SCALE Not to Scale

SHEET NO. 1 of



SITE LOCATION PLAN
(NOT TO SCALE)



SCALE 1 : 500
0 10m 40 m

TRAFFIC MANAGEMENT ACT

SERVICE ORDER No:	80155473	GRID REF	TQ3261777858
OPERATION No:		GRID REF	
OPERATION No:		GRID REF	
OPERATION No:		GRID REF	
OPERATION No:		GRID REF	

AS LAID SIGN OFF

(PLEASE TICK TO CONFIRM)

ROUTE OF NEW MAIN & APPARATUS AS INDICATED ☐

DEPTH OF COVER OF NEW MAIN:
0.9 ☐ OTHER (PLEASE STATE) ☐

DEPTH OF COVER AT CONNECTION POINT TO EXISTING MAIN (POINT 1)
0.9 ☐ OTHER (PLEASE STATE) ☐

PART 'AS LAID' S DRAWING ☐ FULL 'AS LAID' DRAWING ☐

F/H's PERMANENTLY REINSTATED YES ☐ NO ☐ N/A ☐

CONTRACTOR SIGN OFF: ____________ DATE ____________

THAMES WATER SIGN OFF: ____________ DATE ____________

PREFERRED LAYOUT FOR MAINS IN A 2 METRES WIDE FOOTWAY:

NOTES:

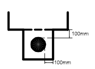
1. THE LAYOUT OF MAINS IS GENERALLY IN ACCORDANCE WITH THE 'REPORT OF JOINT COMMITTEE ON LOCATION OF UNDERGROUND SERVICES' PUBLISHED BY THE INSTITUTION OF CIVIL ENGINEERS.
2. THE DIMENSIONS SHOWN REPRESENT THE PREFERRED ARRANGEMENT IN STRAIGHT ROUTES ON RESIDENTIAL ESTATES. VARIATIONS MAY BE NECESSARY AT CURVES AND CHANGES OF GRADIENT.
3. THE SPACE ALLOCATED IS CONSIDERED TO BE THE ABSOLUTE MINIMUM AND IN CERTAIN CIRCUMSTANCES E.G. WHERE BOTH HV AND LV CABLES ARE LAID - THE LV CABLE WILL BE LAID IN THE ALTERNATIVE POSITION AND ADDITIONAL WIDTH MAY BE REQUIRED.
4. WHERE SERVICES ARE TO BE CONNECTED TO MAINS A MINIMUM DISTANCE OF 2.0M IS REQUIRED BETWEEN THE BUILDING LINE AND THE CENTRE LINE OF THE MAIN.
5. MINIMUM DISTANCE OF ANY WATER SERVICE TO ANY SURFACE/FOUL WATER STRUCTURE IS 300mm.

COVER OF WATER MAIN

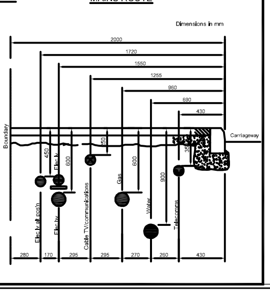
UP TO 12"(300mm)	900mm
12"(300mm) TO 24"(600mm)	1100mm
24"(600mm) AND OVER	1200mm

TRENCH WIDTH

NOMINAL TRENCH WIDTHS TO ALLOW FOR 100mm 'BED AND SURROUND' TO MAIN



MAINS ROUTE



CAD PATH: S:\CAD DRAWINGS-CLEAN WATER 2014\50019974 AYLESBURY ESTATE REGENERATION,SITE IB-IC PHASE 1,WESTMORELAND ROAD,LONDON,SE17 2BT\Drawings\50019974 AYLESBURY ESTATE REGENERATION,SITE IB-IC PHASE 1,WESTMORELAND ROAD,LONDON,SE17 2BT REV 1

SCHEDULE OF FITTINGS

ALL FITTINGS,MATERIALS,PIPES & JOINTS ARE TO BE INSTALLED IN ACCORDANCE WITH "LOT C2 STANDARD NEW MAINS AND CONNECTIONS (APRIL 2010)"

POINT NUMBER	FITTINGS
Point 1	1 x All Flanged Tee(150x100mm) 1 x All Flanged Tee(100x100mm) 4 x Flanged bend(100mm) 1 x Extension piece(100mm) 1 x Valve+Chamber(100mm) 1 x Washout+Chamber(80mm) 2 x Flanged adaptor(150mm) 2 x Flanged adaptor(100mm) 1 x Flanged socket(100mm) 1 x Blanking plate(100mm) 1 x Temporary disinfection fittings
Point 2	1 x All Flanged Tee(100x100mm) 2 x Extension piece(100mm) 2 x Valve+Chamber(100mm) 1 x Washout+Chamber(80mm) 2 x Flanged adaptor(100mm) 3 x Flanged socket(100mm) 1 x Blanking plate(100mm) 1 x Temporary disinfection fittings 1 x All Flanged Tee(100x80mm)
Point 3	1 x All Flanged Tee(100x80mm) 1 x Extension piece(100mm) 1 x Valve+Chamber(100mm) 1 x Washout+Chamber(80mm) 1 x Flanged socket(100mm) 1 x Blanking plate(100mm)
Point 4	1 x All Flanged Tee(100x100mm) 1 x Extension piece(100mm) 2 x Valve+Chamber(100mm) 3 x Flanged socket(100mm)
Point 5	1 x All Flanged Tee(100x80mm) 1 x Extension piece(100mm) 1 x Valve+Chamber(100mm) 1 x Washout+Chamber(80mm) 1 x Flanged socket(100mm) 1 x Blanking plate(100mm)
Point 6	1 x Washout+Chamber(80mm) 1 x Duckfoot bend pushfit(80mm)

MAINS LENGTH:

Point 1.0 - Point 1.1	3	METRES	MP	100	SURFACE C
Point 1.1 - Point 1.2	6	METRES	MP	100	SURFACE B
Point 1.2 - Point 2.0	74	METRES	MP	100	SURFACE PM
Point 2.0 - Point 3.0	90	METRES	MP	100	SURFACE PM
Point 2.0 - Point 4.0	123	METRES	MP	100	SURFACE PM
Point 4.0 - Point 5.0	10	METRES	MP	100	SURFACE PM
Point 4.0 - Point 6.0	60	METRES	MP	100	SURFACE PM

A = UNMADE GROUND
B = EXISTING FOOTPATH
C = EXISTING ROAD
D = DEVELOPMENT SITE
BF = BROWNFIELD
PM = PART MADE FOOTPATH/ROAD
LO = LAY ONLY

CUSTOMER ATTENTION

THIS SITE IS DEEMED 'CONTAMINATED' FOR THE USE OF PLASTIC PIPE.

STANDARD PLASTIC PIPEWORK IS NOT PERMITTED FOR UNDERGROUND WORK. A SUITABLE MATERIAL SUCH AS COPPER PIPE (BSEN1057/1996 STANDARD), OR AN APPROVED 'BARRIER PIPE' MUST BE USED FOR ALL UNDERGROUND PIPE WORK.

NOTES:

1. ALL END WASHOUTS TO BE POSITIONED NO MORE THAN 1m PAST LAST DRAW OFF POINT.
2. ALL FIRE HYDRANTS TO BE INSTALLED TO BS750(COPPER/GUNMETAL OUTLET ONLY)
3. ALL FITTINGS & CHAMBERS WITH IN VERGES/SOFT GROUND MUST BE ADEQUATELY SUPPORTED BY 1sq m LAYER OF CONCRETE WITH A LAYER OF A393 MESH ON SUITABLE COMPACTED MATERIAL TO A DEPTH OF 150mm.
4. ALL 'OPEN ENDED' PIPE WORK FOLLOWING ABANDONMENT OF MAINS,AND REMOVAL OF FITTINGS, (IN OFF-SITE CONDITIONS) MUST BE CAPPED TO ENSURE THERE IS NO INTRUSION OF EARTH ETC,WHICH COULD RESULT IN FUTURE GROUND SUBSIDENCE.
5. ALL THRUST BLOCKS MUST BE DETERMINED ON SITE AND CALCULATIONS SUBJECT TO BEARING CAPACITY OF THE SOIL.
6. THE ACTUAL LINE AND DEPTH OF THE MAIN OR PIPE AS SHOWN IS SUBJECT TO VARIATION DUE TO OBSTRUCTIONS.
7. IT IS THE CUSTOMER'S RESPONSIBILITY FOR INDICATING THE PLANNED BOUNDARY LINES AND LEVELS OF ALL ROADS, PATHS, ETC., IN WHICH MAINS ARE TO BE LAID. SHOULD ANY VARIATION TO THESE LINES OR LEVELS BE MADE WITHOUT THAMES WATER'S CONSENT AFTER THE MAINS HAVE BEEN LAID, THEN THE CUSTOMER WILL BE RESPONSIBLE FOR THE COST OF ANY SUBSEQUENT ALTERATIONS TO OUR APPARATUS.
8. DISTANCES TAKE INTO ACCOUNT ANY TOPOGRAPIC VARIANCES.
9. PLEASE NOTE FITTINGS ARE NOT SHOWN TO SCALE.
10. ALL DUCTILE IRON PIPEWORK IS TO BE WRAPPED UNLESS OTHERWISE SPECIFIED.
11. MAINS WILL BE INSTALLED AT A UNIFORM DEPTH WITH THE MINIMUM NUMBER OF BENDS REQUIRED AND TO BE LAID IN A DIRECT ROUTE AS FAR AS PRA CTICALLY POSSIBLE.
12. THE POSITION OF ANY BOUNDARY OR APPARATUS SHOWN ON THIS PLAN IS GIVEN WITHOUT OBLIGATION AND WARRANTY AND ACCURACY CANNOT BE GUARANTEED. NO LIABILITY OF ANY KIND WHATSOEVER IS ACCEPTED BY THAMES WATER FOR ANY ERROR OR OMISSION.

REV	DESCRIPTION	DRN	CHK	APP	DATE
1	FOR INFORMATION	RA			19 08 14

SITE LOCATION:
AYLESBURY ESTATE REGENERATION,
SITE IB-IC PHASE 1,WESTMORELAND ROAD,
LONDON, SE17 2BT

MATERIAL: DUCTILE IRON	DIA: 100mm	LENGTH: 365m
MATERIAL:	DIA:	LENGTH:
MATERIAL:	DIA:	LENGTH:
MATERIAL:	DIA:	LENGTH:

Proposed main in different phase	Service connection
Existing main	Service connection manifold with No. of ports
Main to be abandoned	Valve
Proposed main	Air valve
Duct to be provided by client (100mm Dia)	Blanking plate
WO Washout	Closed valve
FH Fire Hydrant	Double spade valve
Temporary washout	Meter

THAMES WATER UTILITIES
DEVELOPER SERVICES,
CLEARWATER COURT,
VASTERN ROAD,
READING RG1 8DB
TEL: 0845 850 2777
EMAIL: DEVELOPER.SERVICES@THAMESWATER.CO.UK

SUB CASE No:	50019974	
SERVICE ORDER No:	80155473	
SCHEME No:	TBC	
WPA No:	392	
SELF-LAY No:	-	
GRID REF:	532617, 177858	
SCALE:	1:500 @ A0	
REVISION:	1	
DESIGN BY	R.ALLEN	19/08/2014
DRAWN BY	R.ARNAIZ	19/08/2014

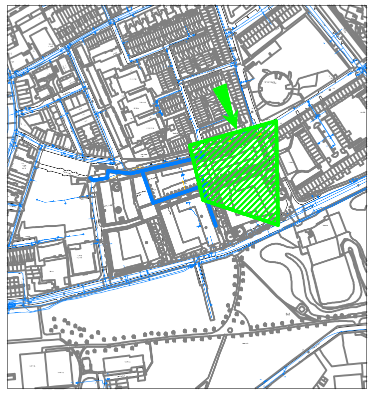
THIS DRAWING IS BASED ON DEVELOPERS DRAWING No: NHH-AES-HTA-L_D001-X-XX-M2

LINES AND LEVELS CONFIRMED DURING SITE MEETING HELD ON:-

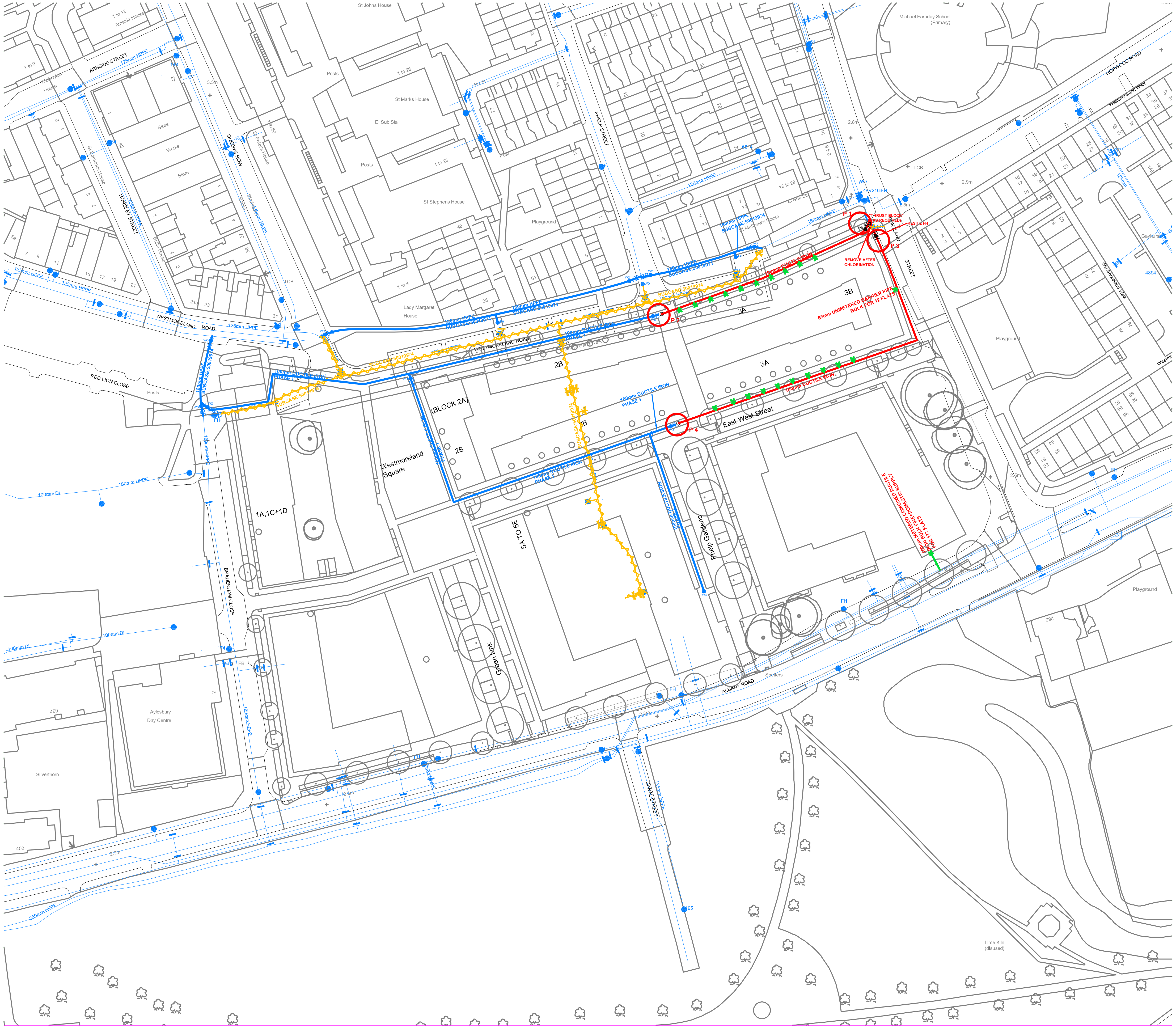
	CONTRACTOR	SURVEYOR	CUSTOMER
NAME			
SIGNATURE			
COMPANY			

CAD DATE: 19/08/2014 CAD : 01

A0



SITE LOCATION PLAN (NOT TO SCALE)



SCALE 1 : 500

0 10m 40 m

TRAFFIC MANAGEMENT ACT

SERVICE ORDER No:	80155594	GRID REF	TQ3280377889
OPERATION No:		GRID REF	
OPERATION No:		GRID REF	
OPERATION No:		GRID REF	
OPERATION No:		GRID REF	

AS LAID SIGN OFF

(PLEASE TICK TO CONFIRM)

ROUTE OF NEW MAIN & APPARATUS AS INDICATED ☐

DEPTH OF COVER OF NEW MAIN:

0.9 ☐ OTHER (PLEASE STATE) ☐

DEPTH OF COVER AT CONNECTION POINT TO EXISTING MAIN (POINT 1)

0.9 ☐ OTHER (PLEASE STATE) ☐

PART ' AS LAID' S DRAWING ☐ FULL 'AS LAID' DRAWING ☐

F/H's PERMANENTLY REINSTATED YES ☐ NO ☐ N/A ☐

CONTRACTOR SIGN OFF: ________ DATE ________

THAMES WATER SIGN OFF: ________ DATE ________

PREFERRED LAYOUT FOR MAINS IN A 2 METRES WIDE FOOTWAY:

NOTES:

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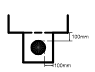
5. MINIMUM DISTANCE OF ANY WATER SERVICE TO ANY SURFACE/FOUL WATER STRUCTURE IS 300mm.

COVER OF WATER MAIN

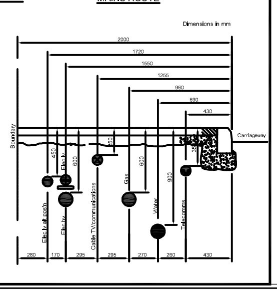
UP TO 12"(300mm)	900mm
12"(300mm) TO 24"(600mm)	1100mm
24"(600mm) AND OVER	1200mm

TRENCH WIDTH

NOMINAL TRENCH WIDTHS TO ALLOW FOR 100mm 'BED AND SURROUND' TO MAIN



MAINS ROUTE



CAD PATH: S:\CAD DRAWINGS-CLEAN WATER 2014\50025210 AYLESBURY ESTATE REGENERATION,SITE IB-IC PHASE 2,PORTLAND STREET,LONDON,SE17 2PE\Drawings\WIP 50025210 AYLESBURY ESTATE REGENERATION,SITE IB-IC PHASE 2,PORTLAND STREET,LONDON,SE17 2PE REV 1

SCHEDULE OF FITTINGS

ALL FITTINGS,MATERIALS,PIPES & JOINTS ARE TO BE INSTALLED IN ACCORDANCE WITH "LOT C2 STANDARD NEW MAINS AND CONNECTIONS (APRIL 2010)"

POINT NUMBER	FITTINGS
Point 1	1 x All Flanged Tee(100x100mm) 1 x All Flanged Tee(100x80mm) 4 x Flanged bend(100mm) 1 x Valve+Chamber(100mm) 1 x Washout+Chamber(80mm) 4 x Flanged adaptor(100mm) 1 x Flanged socket(100mm) 2 x Blanking plate(100mm)
Point 2	2 x Flanged adaptor(100mm) 1 x Flanged socket(100mm) 1 x Temporary disinfection fittings
Point 3	1 x All Flanged Tee(100x80mm) 4 x Flanged bend(100mm) 1 x Extension piece(100mm) 1 x Valve+Chamber(100mm) 1 x Washout+Chamber(80mm) 2 x Flanged adaptor(100mm) 1 x Flanged socket(100mm) 1 x Blanking plate(100mm)
Point 4	2 x Flanged adaptor(100mm) 1 x Flanged socket(100mm) 1 x Temporary disinfection fittings

MAINS LENGTH:

Point 1.0 - Point 1.1	1	METRES	MP	100	SURFACE	B
Point 1.1 - Point 2.0	84	METRES	MP	100	SURFACE	PM
Point 3.0 - Point 3.1	1	METRES	MP	100	SURFACE	B
Point 3.1 - Point 4.0	133	METRES	MP	100	SURFACE	PM

A = UNMADE GROUND
B = EXISTING FOOTPATH
C = EXISTING ROAD
D = DEVELOPMENT SITE
BF = BROWNFIELD
PM = PART MADE FOOTPATH/ROAD
LO = LAY ONLY

CUSTOMER ATTENTION

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NOTES:

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REV	DESCRIPTION	DRN	CHK	APP	DATE
1	FOR INFORMATION	RA			20 08 14

SITE LOCATION:
AYLESBURY ESTATE REGENERATION,
SITE IB-IC PHASE 2,PORTLAND STREET,
LONDON, SE17 2PE

MATERIAL: DUCTILE IRON	**DIA:** 100mm	**LENGTH:** 219m
MATERIAL:	**DIA:**	**LENGTH:**
MATERIAL:	**DIA:**	**LENGTH:**
MATERIAL:	**DIA:**	**LENGTH:**

Proposed main in different phase	Service connection
Existing main	Service connection manifold with No. of ports
Main to be abandoned	Valve
Proposed main	Air valve
100mm Dia — Duct to be provided by client	Blanking plate
WO — Washout	Closed valve
FH — Fire Hydrant	Double spade valve
Temporary washout	Meter

THAMES WATER UTILITIES
DEVELOPER SERVICES,
CLEARWATER COURT,
VASTERN ROAD,
READING RG1 8DB
TEL: 0845 850 2777
EMAIL: DEVELOPER.SERVICES@THAMESWATER.CO.UK

SUB CASE No:	50025210	
SERVICE ORDER No:	80155594	
SCHEME No:	TBC	
WPA No:	392	
SELF-LAY No:	-	
GRID REF:	532803, 177889	
SCALE:	1:500 @ A0	
REVISION:	1	
DESIGN BY	R.ALLEN	20/08/2014
DRAWN BY	R.ARNAIZ	20/08/2014

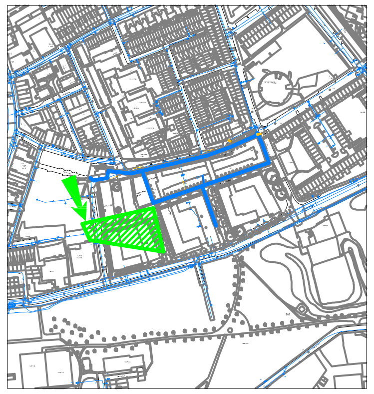
THIS DRAWING IS BASED ON DEVELOPERS DRAWING No: NHH-AES-HTA-L_D001-X-XX-M2

LINES AND LEVELS CONFIRMED DURING SITE MEETING HELD ON:-

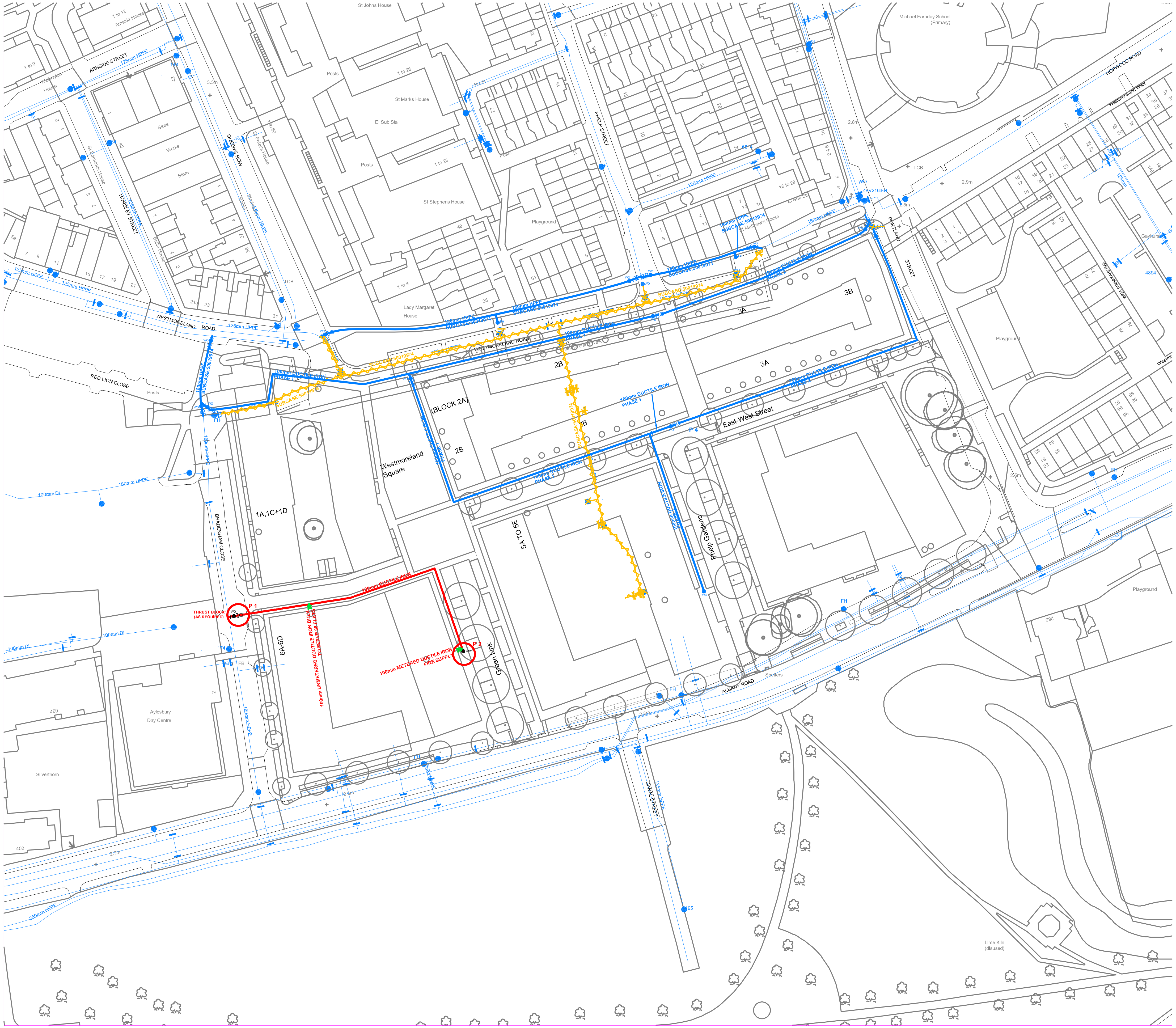
	CONTRACTOR	SURVEYOR	CUSTOMER
NAME			
SIGNATURE			
COMPANY			

CAD DATE: 20/08/2014 CAD : 01

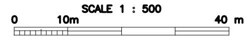
A0



SITE LOCATION PLAN
(NOT TO SCALE)



SCALE 1 : 500



SCHEDULE OF FITTINGS

ALL FITTINGS,MATERIALS,PIPES & JOINTS ARE TO BE INSTALLED IN ACCORDANCE WITH "LOT C2 STANDARD NEW MAINS AND CONNECTIONS (APRIL 2010)"

POINT NUMBER	FITTINGS
Point 1	1 x All Flanged Tee(150x100mm) 1 x All Flanged Tee(100x80mm) 4 x Flanged bend(100mm) 1 x Extension piece(100mm) 1 x Valve+Chamber(80mm) 1 x Washout+Chamber(80mm) 2 x Flanged adaptor(150mm) 2 x Flanged adaptor(100mm) 1 x Flanged socket(100mm) 1 x Blanking plate(100mm) 1 x Temporary disinfection fittings
Point 2	1 x Washout+Chamber(80mm) 1 x Duckfoot bend pushfit(80mm)

MAINS LENGTH:

Point 1.0 - Point 1.1	7	METRES	MP	100	SURFACE C
Point 1.1 - Point 1.2	4	METRES	MP	100	SURFACE B
Point 1.2 - Point 2.0	107	METRES	MP	100	SURFACE PM

A = UNMADE GROUND
B = EXISTING FOOTPATH
C = EXISTING ROAD
D = DEVELOPMENT SITE
BF = BROWNFIELD
PM = PART MADE FOOTPATH/ROAD
LO = LAY ONLY

CUSTOMER ATTENTION

THIS SITE IS DEEMED 'CONTAMINATED' FOR THE USE OF PLASTIC PIPE.

STANDARD PLASTIC PIPEWORK IS NOT PERMITTED FOR UNDERGROUND WORK. A SUITABLE MATERIAL SUCH AS COPPER PIPE (BSEN1057/1996 STANDARD), OR AN APPROVED 'BARRIER PIPE' MUST BE USED FOR ALL UNDERGROUND PIPE WORK.

NOTES:

1. ALL END WASHOUTS TO BE POSITIONED NO MORE THAN 1m PAST LAST DRAW OFF POINT.
2. ALL FIRE HYDRANTS TO BE INSTALLED TO BS750(COPPER/GUNMETAL OUTLET ONLY)
3. ALL FITTINGS & CHAMBERS WITH IN VERGES/SOFT GROUND MUST BE ADEQUATELY SUPPORTED BY 1sq m LAYER OF CONCRETE WITH A LAYER OF A393 MESH ON SUITABLE COMPACTED MATERIAL TO A DEPTH OF 150mm.
4. ALL 'OPEN ENDED' PIPE WORK FOLLOWING ABANDONMENT OF MAINS,AND REMOVAL OF FITTINGS, (IN OFF-SITE CONDITIONS) MUST BE CAPPED TO ENSURE THERE IS NO INTRUSION OF EARTH ETC,WHICH COULD RESULT IN FUTURE GROUND SUBSIDENCE.
5. ALL THRUST BLOCKS MUST BE DETERMINED ON SITE AND CALCULATIONS SUBJECT TO BEARING CAPACITY OF THE SOIL.
6. THE ACTUAL LINE AND DEPTH OF THE MAIN OR PIPE AS SHOWN IS SUBJECT TO VARIATION DUE TO OBSTRUCTIONS.
7. IT IS THE CUSTOMER'S RESPONSIBILITY FOR INDICATING THE PLANNED BOUNDARY LINES AND LEVELS OF ALL ROADS, PATHS, ETC., IN WHICH MAINS ARE TO BE LAID. SHOULD ANY VARIATION TO THESE LINES OR LEVELS BE MADE WITHOUT THAMES WATER'S CONSENT AFTER THE MAINS HAVE BEEN LAID, THEN THE CUSTOMER WILL BE RESPONSIBLE FOR THE COST OF ANY SUBSEQUENT ALTERATIONS TO OUR APPARATUS.
8. DISTANCES TAKE INTO ACCOUNT ANY TOPOGRAPIC VARIANCES.
9. PLEASE NOTE FITTINGS ARE NOT SHOWN TO SCALE.
10. ALL DUCTILE IRON PIPEWORK IS TO BE WRAPPED UNLESS OTHERWISE SPECIFIED.
11. MAINS WILL BE INSTALLED AT A UNIFORM DEPTH WITH THE MINIMUM NUMBER OF BENDS REQUIRED AND TO BE LAID IN A DIRECT ROUTE AS FAR AS PRA CTICALLY POSSIBLE.
12. THE POSITION OF ANY BOUNDARY OR APPARATUS SHOWN ON THIS PLAN IS GIVEN WITHOUT OBLIGATION AND WARRANTY AND ACCURACY CANNOT BE GUARANTEED. NO LIABILITY OF ANY KIND WHATSOEVER IS ACCEPTED BY THAMES WATER FOR ANY ERROR OR OMISSION.

REV	DESCRIPTION	DRN	CHK	APP	DATE
1	FOR INFORMATION	RA			20 08 14

SITE LOCATION:
AYLESBURY ESTATE REGENERATION,
SITE IB-IC PHASE 3,BRADENHAM CLOSE,
LONDON, SE17 2BB

MATERIAL: DUCTILE IRON	**DIA:** 100mm	**LENGTH:** 118m
MATERIAL:	**DIA:**	**LENGTH:**
MATERIAL:	**DIA:**	**LENGTH:**
MATERIAL:	**DIA:**	**LENGTH:**

Proposed main in different phase
Existing main
Main to be abandoned
Proposed main
100mm Dia — Duct to be provided by client
WO — Washout
FH — Fire Hydrant
Temporary washout
Service connection
2 — Service connection manifold with No. of ports
Valve
Air valve
Blanking plate
Closed valve
Double spade valve
Meter

THAMES WATER UTILITIES
DEVELOPER SERVICES,
CLEARWATER COURT,
VASTERN ROAD,
READING RG1 8DB
TEL: 0845 850 2777
EMAIL: DEVELOPER.SERVICES@THAMESWATER.CO.UK

SUB CASE No:	50025326	
SERVICE ORDER No:	80155689	
SCHEME No:	TBC	
WPA No:	392	
SELF-LAY No:	-	
GRID REF:	532577, 177750	
SCALE:	1:500 @ A0	
REVISION:	1	
DESIGN BY	R.ALLEN	20/08/2014
DRAWN BY	R.ARNAIZ	20/08/2014

THIS DRAWING IS BASED ON DEVELOPERS DRAWING No: NHH-AES-HTA-L_D001-X-XX-M2

LINES AND LEVELS CONFIRMED DURING SITE MEETING HELD ON:-

	CONTRACTOR	SURVEYOR	CUSTOMER
NAME			
SIGNATURE			
COMPANY			

CAD DATE: 20/08/2014 **CAD :** 01

A0

TRAFFIC MANAGEMENT ACT

SERVICE ORDER No:	80155689	GRID REF	TQ3257777750
OPERATION No:		GRID REF	
OPERATION No:		GRID REF	
OPERATION No:		GRID REF	
OPERATION No:		GRID REF	

AS LAID SIGN OFF

(PLEASE TICK TO CONFIRM)

ROUTE OF NEW MAIN & APPARATUS AS INDICATED ☐

DEPTH OF COVER OF NEW MAIN:

0.9 ☐ OTHER (PLEASE STATE) ☐

DEPTH OF COVER AT CONNECTION POINT TO EXISTING MAIN (POINT 1)

0.9 ☐ OTHER (PLEASE STATE) ☐

PART ' AS LAID' S DRAWING ☐ FULL 'AS LAID' DRAWING ☐

F/H's PERMANENTLY REINSTATED YES ☐ NO ☐ N/A ☐

CONTRACTOR SIGN OFF: ____________ DATE ____________

THAMES WATER SIGN OFF: ____________ DATE ____________

PREFERRED LAYOUT FOR MAINS IN A 2 METRES WIDE FOOTWAY:

NOTES:

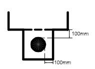
1. THE LAYOUT OF MAINS IS GENERALLY IN ACCORDANCE WITH THE 'REPORT OF JOINT COMMITTEE ON LOCATION OF UNDERGROUND SERVICES' PUBLISHED BY THE INSTITUTION OF CIVIL ENGINEERS.
2. THE DIMENSIONS SHOWN REPRESENT THE PREFERRED ARRANGEMENT IN STRAIGHT ROUTES ON RESIDENTIAL ESTATES. VARIATIONS MAY BE NECESSARY AT CURVES AND CHANGES OF GRADIENT.
3. THE SPACE ALLOCATED IS CONSIDERED TO BE THE ABSOLUTE MINIMUM AND IN CERTAIN CIRCUMSTANCES E.G. WHERE BOTH HV AND LV CABLES ARE LAID - THE LV CABLE WILL BE LAID IN THE ALTERNATIVE POSITION AND ADDITIONAL WIDTH MAY BE REQUIRED.
4. WHERE SERVICES ARE TO BE CONNECTED TO MAINS A MINIMUM DISTANCE OF 2.0M IS REQUIRED BETWEEN THE BUILDING LINE AND THE CENTRE LINE OF THE MAIN.
5. MINIMUM DISTANCE OF ANY WATER SERVICE TO ANY SURFACE/FOUL WATER STRUCTURE IS 300mm.

COVER OF WATER MAIN

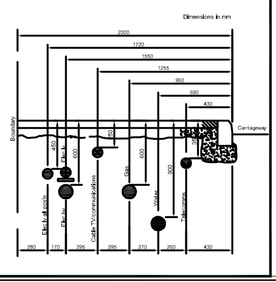
UP TO 12"(300mm)	900mm
12"(300mm) TO 24"(600mm)	1100mm
24"(600mm) AND OVER	1200mm

TRENCH WIDTH

NOMINAL TRENCH WIDTHS TO ALLOW FOR 100mm 'BED AND SURROUND' TO MAIN



MAINS ROUTE



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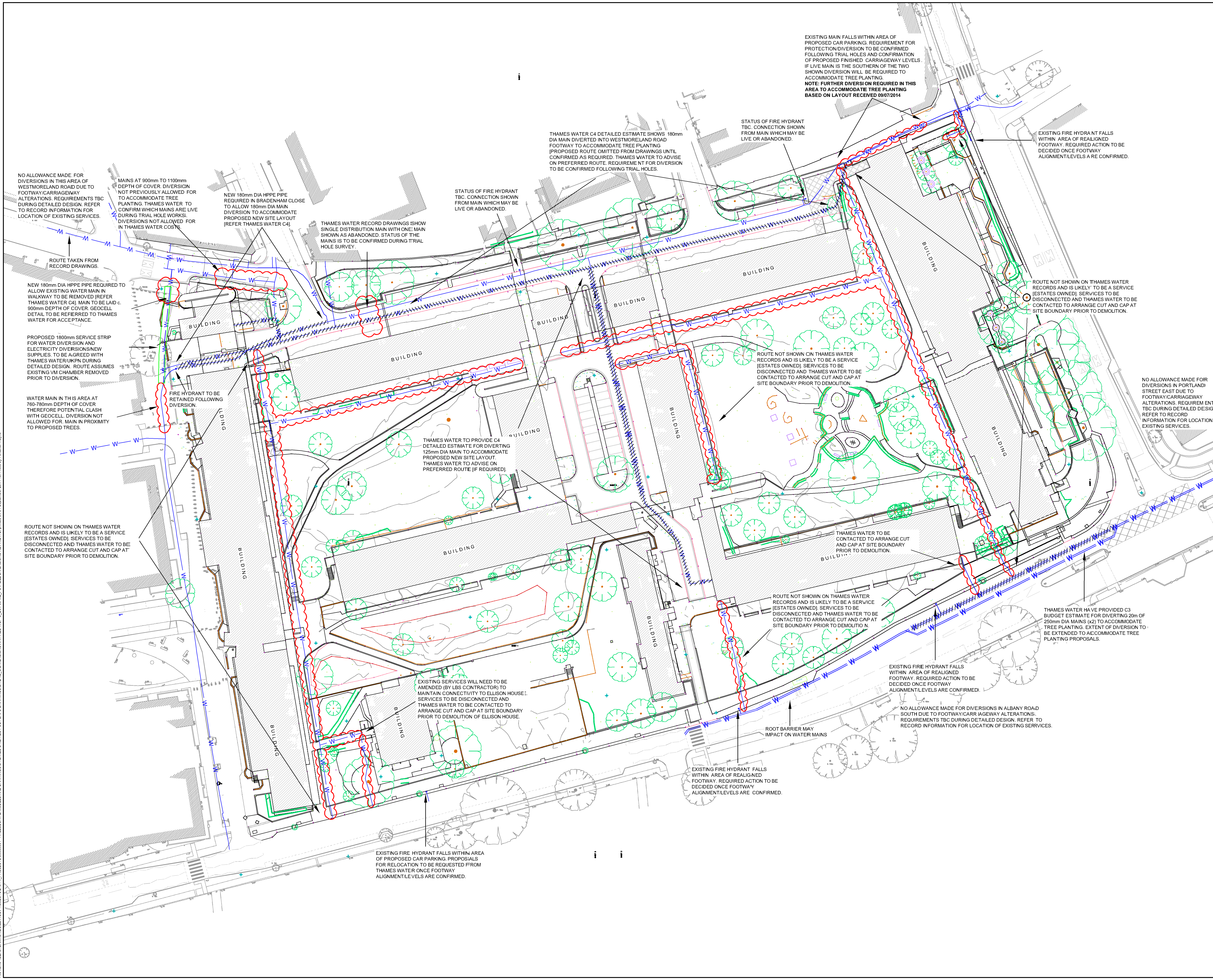


DO NOT SCALE

THE LOCATION OF UTILITY SERVICES SHALL BE CONFIRMED ON SITE PRIOR TO COMMENCING ANY WORKS. IT SHOULD BE NOTED THAT THERE MAY BE UNRECORDED SERVICES IN EXISTENCE ON THE SITE, ON-SITE WORKING PROCEDURES SHALL TAKE THIS INTO ACCOUNT.

EXISTING GROUND CONDITIONS ARE AS YET UNKNOWN.

EXISTING BUILDINGS MAY CONTAIN CONTAMINANTS INCLUDING ASBESTOS.

LBS ARE TO ARRANGE FOR SERVICE DISCONNECTIONS AHEAD OF DIVERSIONS REQUIRED TO PROVIDE CLEAR SITE FOR DEMOLITION AND CONSTRUCTION.

THERE ARE EXISTING EHV CABLES IN CLOSE PROXIMITY TO THE SITE.

THERE AREA EXISTING HV CABLES WITHIN THE SITE AND IN CLOSE PROXIMITY TO THE SITE.

STANDARD NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS/DOCUMENTS. THIS DRAWING SHOULD ONLY BE USED FOR ITS INTENDED PURPOSE.

2. NO RESPONSIBILITY OR LIABILITY CAN BE TAKEN BY WSP FOR ERRORS OR OMISSIONS IN RECORD INFORMATION SHOWN IN THE DRAWINGS WHICH ARE PROVIDED IN GOOD FAITH. ANY UNRECORDED SERVICES SHALL BE REPORTED SO THAT RETENTION, DIVERSION OR ABANDONMENT CAN BE ARRANGED.

3. CROSS HATCHED LINES REPRESENT EXISTING UTILITIES TO BE DIVERTED/REMOVED FROM SITE.

REV	DATE	BY	DESCRIPTION	CHK	APP
D	04.09.2014	WF	TEXT REALIGNMENTS	WF	AE
C	29.08.2014	WF	UPDATED FOR PLANNING	WF	AE
B	01.08.2014	WF	EXISTING REVIEWED AGAINST FDS 25.07.2014 DESIGN FREEZE	WF	AE
A	10.07.2014	WF	ISSUED FOR INFORMATION [WORK IN PROGRESS]	WF	AE

DRAWING STATUS: FOR INFORMATION

WSP
Three White Rose Office Park, Millshaw Park Lane, Leeds, LS11 0DL
Tel: +44 (0)113 395 6200 Fax: +44 (0)113 395 6201
www.wspgroup.com

CLIENT: NHH

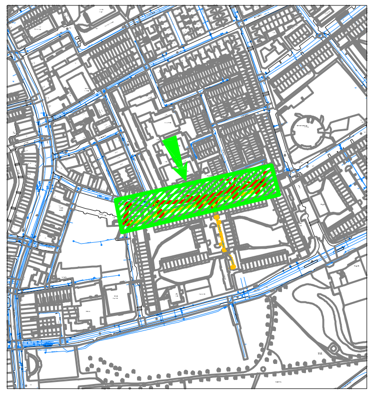
ARCHITECT: HTA

PROJECT: AYLESBURY ESTATE REGENERATION

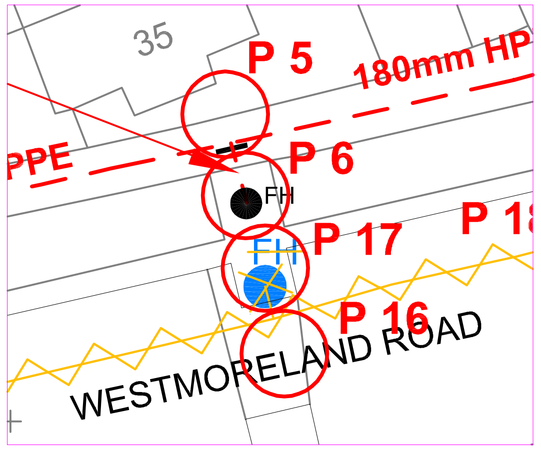
TITLE: FIRST DEVELOPMENT SITE
SITE 1B/1C
POTABLE WATER DIVERSIONS

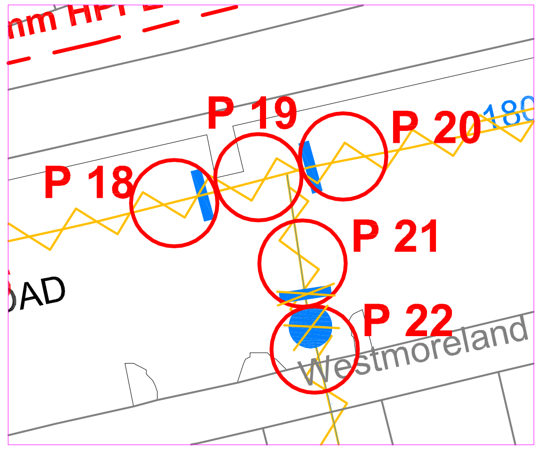
SCALE @ A1: 1:500	CHECKED: WF	APPROVED: AE
PROJECT No: 50600304	DESIGNED: N/A / DRAWN: WF	DATE: JULY 2014

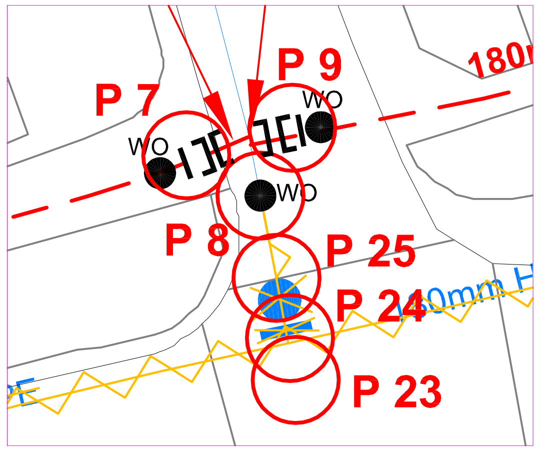
DRAWING No: NHH-AES-WSP-C_D01-00-M2_POTABLE DIVERSIONS
REV: D

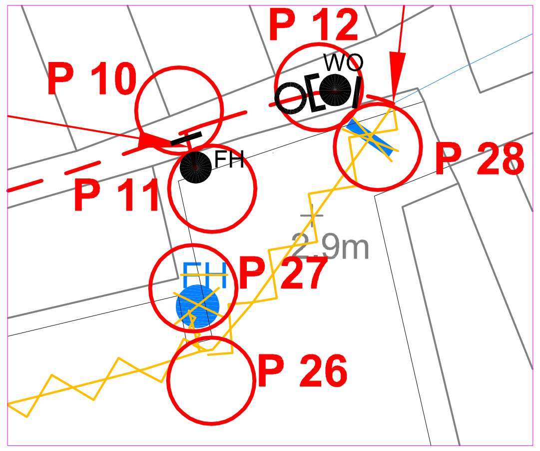


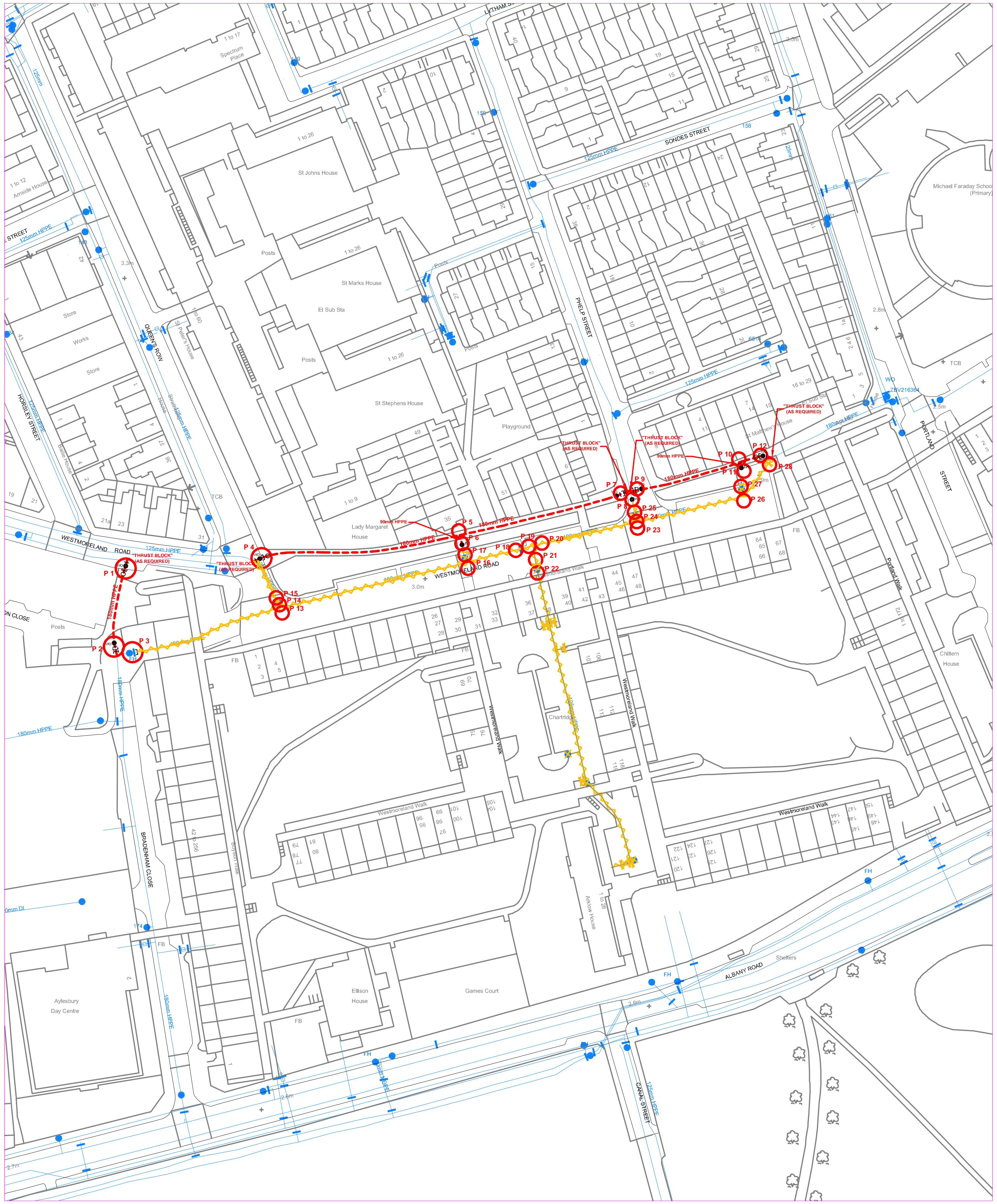
SITE LOCATION PLAN
(NOT TO SCALE)











SCALE 1 : 500

0 10m 40 m

TRAFFIC MANAGEMENT ACT

SERVICE ORDER No: 80138553 GRID REF TQ3257477854

OPERATION No: ______ GRID REF ______

OPERATION No: ______ GRID REF ______

OPERATION No: ______ GRID REF ______

OPERATION No: ______ GRID REF ______

AS LAID SIGN OFF

(PLEASE TICK TO CONFIRM)

ROUTE OF NEW MAIN & APPARATUS AS INDICATED ☐

DEPTH OF COVER OF NEW MAIN:

0.9 ☐ OTHER (PLEASE STATE) ☐

DEPTH OF COVER AT CONNECTION POINT TO EXISTING MAIN (POINT 1)

0.9 ☐ OTHER (PLEASE STATE) ☐

PART ' AS LAID' S DRAWING ☐ FULL 'AS LAID' DRAWING ☐

F/H's PERMANENTLY REINSTATED YES ☐ NO ☐ N/A ☐

CONTRACTOR SIGN OFF: ______ DATE ______

THAMES WATER SIGN OFF: ______ DATE ______

PREFERRED LAYOUT FOR MAINS IN A 2 METRES WIDE FOOTWAY:

NOTES:

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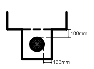
UP TO 12"(300mm) 900mm

12"(300mm) TO 24"(600mm) 1100mm

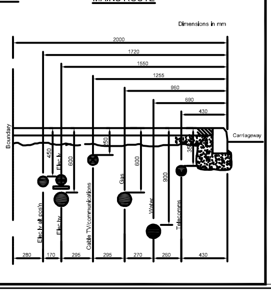
24"(600mm) AND OVER 1200mm

TRENCH WIDTH

NOMINAL TRENCH WIDTHS TO ALLOW FOR 100mm 'BED AND SURROUND' TO MAIN



MAINS ROUTE



CAD PATH: S:\CAD DRAWINGS-CLEAN WATER 2014\50012516 AYLESBURY ESTATE REGEN SITE IB-IC,WESTMORELAND ROAD,LONDON,SE17 2BY\Drawings

SCHEDULE OF FITTINGS

ALL FITTINGS,MATERIALS,PIPES & JOINTS ARE TO BE INSTALLED IN ACCORDANCE WITH "LOT C2 STANDARD NEW MAINS AND CONNECTIONS (APRIL 2010)"

POINT NUMBER	FITTINGS
Point 1	1 x All Flanged Tee(150x80mm) 1 x All Flanged Tee(100x100mm) 4 x Flanged bend(150mm) 1 x Flanged reducer(150mm) 1 x Extension piece(150mm) 1 x Valve+Chamber(150mm) 1 x Washout+Chamber(80mm) 2 x Flanged adaptor(150mm) 1 x Flanged fused stub(150mm) 1 x Blanking plate(150mm) 2 x Flanged adaptor(100mm) 1 x Temporary disinfection fittings
Point 2	1 x All Flanged Tee(150x150mm) 1 x All Flanged Tee(150x80mm) 4 x Flanged bend(150mm) 1 x Extension piece(150mm) 1 x Valve+Chamber(150mm) 1 x Washout+Chamber(80mm) 4 x Flanged adaptor(150mm) 1 x Flanged fused stub(150mm) 2 x Blanking plate(150mm)
Point 3	1 x Blanking plate(150mm)
Point 4	1 x All Flanged Tee(150x80mm) 4 x Flanged bend(150mm) 1 x Flanged reducer(150mm) 1 x Extension piece(150mm) 1 x Valve+Chamber(150mm) 1 x Washout+Chamber(80mm) 2 x Flanged adaptor(150mm) 1 x Flanged adaptor(100mm) 1 x Flanged fused stub(150mm) 1 x Blanking plate(150mm) 1 x Temporary disinfection fittings
Point 5	1 x All Flanged Tee(150x80mm) 1 x Valve+Chamber(80mm) 2 x Flanged fused stub(150mm) 1 x Flanged fused stub(80mm)
Point 6	1 x Washout+Chamber(80mm) 1 x Duckfoot bend flanged(80mm) 1 x Flanged fused stub(80mm)
Point 7	1 x All Flanged Tee(150x80mm) 1 x All Flanged Tee(100x100mm) 4 x Flanged bend(150mm) 1 x Flanged reducer(150x100mm) 1 x Extension piece(150mm) 1 x Valve+Chamber(150mm) 1 x Washout+Chamber(80mm) 2 x Flanged adaptor(150mm) 2 x Flanged adaptor(100mm) 1 x Flanged fused stub(150mm) 2 x Blanking plate(150mm)
Point 8	1 x Washout+Chamber(80mm) 1 x Duckfoot bend flanged(100mm) 1 x Flanged adaptor(100mm)
Point 9	1 x All Flanged Tee(150x80mm) 1 x All Flanged Tee(100x100mm) 4 x Flanged bend(150mm) 1 x Flanged reducer(150x100mm) 1 x Extension piece(150mm) 1 x Valve+Chamber(150mm) 1 x Washout+Chamber(80mm) 2 x Flanged adaptor(150mm) 2 x Flanged adaptor(100mm) 1 x Flanged fused stub(150mm) 2 x Blanking plate(150mm)
Point 10	1 x All Flanged Tee(150x80mm) 1 x Valve+Chamber(80mm) 1 x Flanged fused stub(80mm) 2 x Flanged fused stub(150mm)
Point 11	1 x Washout+Chamber(80mm) 1 x Flanged fused stub(150mm) 1 x Duckfoot bend flanged(80mm)
Point 12	1 x All Flanged Tee(150x80mm) 4 x Flanged bend(150mm) 1 x Extension piece(150mm) 1 x Valve+Chamber(150mm) 1 x Washout+Chamber(80mm) 3 x Flanged adaptor(150mm) 1 x Flanged fused stub(150mm) 1 x Blanking plate(150mm) 1 x Temporary disinfection fittings
Point 99	4 x Flanged adaptor(80mm) 4 x Blanking plate(80mm) 7 x Flanged adaptor(100mm) 7 x Blanking plate(100mm) 16 x Flanged adaptor(150mm) 16 x Blanking plate(150mm)

MAINS LENGTH:

Point 1.0 - Point 1.1	7	METRES	MP	180	SURFACE	C
Point 1.1 - Point 1.2	18	METRES	MP	180	SURFACE	B
Point 1.2 - Point 2.0	8	METRES	MP	180	SURFACE	C
Point 4.0 - Point 4.1	2	METRES	MP	180	SURFACE	C
Point 4.1 - Point 5.0	60	METRES	MP	180	SURFACE	B
Point 5.0 - Point 6.0	2	METRES	MP	90	SURFACE	B
Point 5.0 - Point 5.1	52	METRES	MP	180	SURFACE	B
Point 5.1 - Point 7.0	2	METRES	MP	180	SURFACE	C
Point 9.0 - Point 9.1	6	METRES	MP	180	SURFACE	C
Point 9.1 - Point10.0	27	METRES	MP	180	SURFACE	B
Point10.0 - Point11.0	2	METRES	MP	90	SURFACE	B
Point10.0 - Point12.0	10	METRES	MP	180	SURFACE	B

A = UNMADE GROUND
B = EXISTING FOOTPATH
C = EXISTING ROAD
D = DEVELOPMENT SITE
BF = BROWNFIELD
PM = PART MADE FOOTPATH/ROAD
LO = LAY ONLY

NOTES:

1. ALL END WASHOUTS TO BE POSITIONED NO MORE THAN 1m PAST LAST DRAW OFF POINT.
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REV	DESCRIPTION	DRN	CHK	APP	DATE
1	FOR INFORMATION	RA			11 07 14

SITE LOCATION:
AYLESBURY ESTATE REGEN SITE IB-IC,
WESTMORELAND ROAD,
LONDON,SE17 2BY

MATERIAL: HPPE	DIA: 180mm	LENGTH: 192m
MATERIAL: HPPE	DIA: 90mm	LENGTH: 4m
MATERIAL:	DIA:	LENGTH:
MATERIAL:	DIA:	LENGTH:

Proposed main in different phase — Existing main — Main to be abandoned — Proposed main — Duct to be provided by client (100mm Dia) — WO Washout — FH Fire Hydrant — Temporary washout — Service connection — Service connection manifold with No. of ports — Valve — Air valve — Blanking plate — Closed valve — Double spade valve — Meter

THAMES WATER UTILITIES
DEVELOPER SERVICES,
CLEARWATER COURT,
VASTERN ROAD,
READING RG1 8DB
TEL: 0845 850 2777
EMAIL: DEVELOPER.SERVICES@THAMESWATER.CO.UK

SUB CASE No:	50012516	
SERVICE ORDER No:	80138553	
SCHEME No:	-	
WPA No:	387	
SELF-LAY No:	-	
GRID REF:	532574, 177854	
SCALE:	1:500 @ A0	
REVISION:	1	
DESIGN BY	R.ALLEN	11/07/2014
DRAWN BY	R.ARNAIZ	11/07/2014

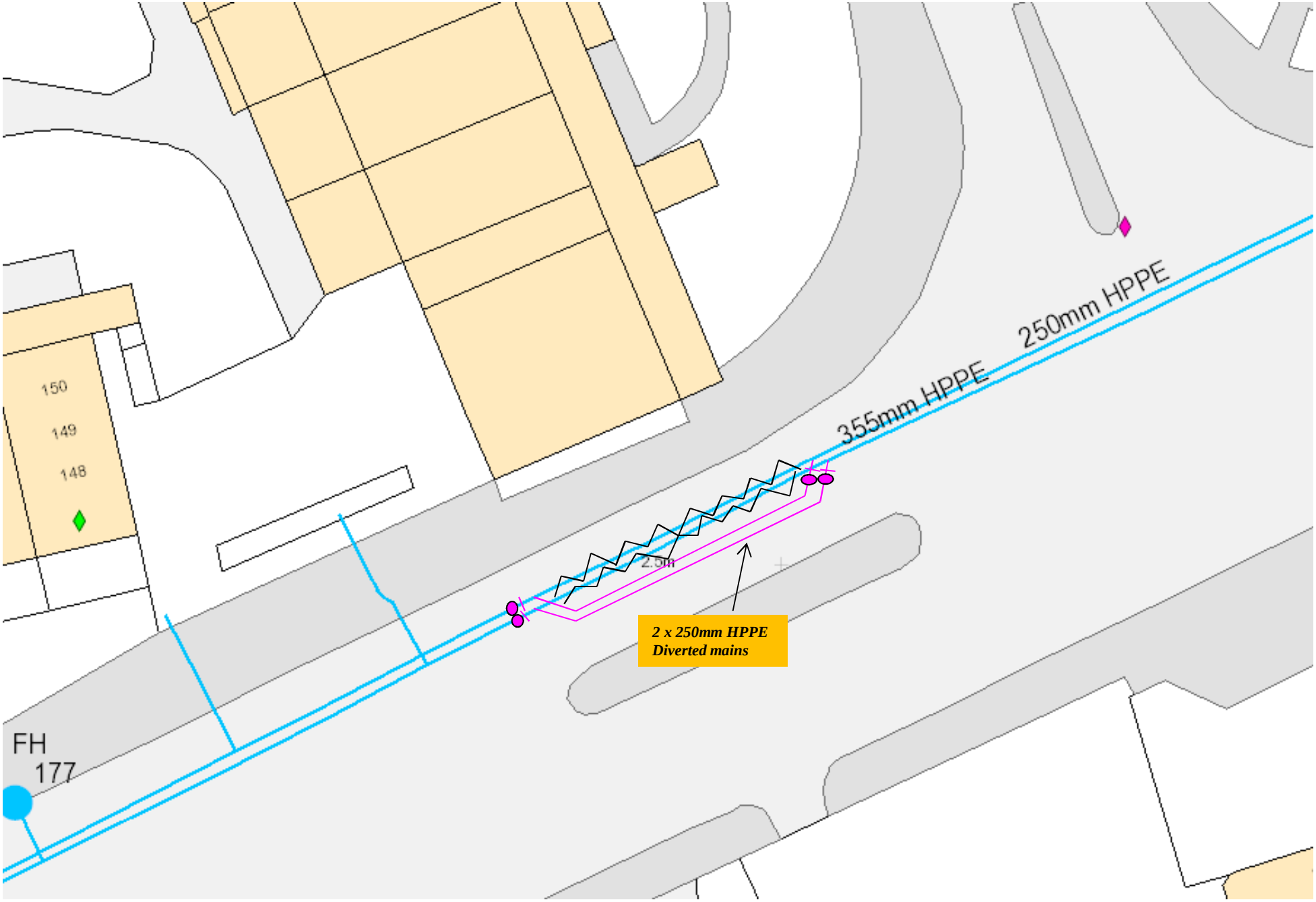
THIS DRAWING IS BASED ON DEVELOPERS DRAWING No: -

LINES AND LEVELS CONFIRMED DURING SITE MEETING HELD ON:-

	CONTRACTOR	SURVEYOR	CUSTOMER
NAME			
SIGNATURE			
COMPANY			

CAD DATE: 11/07/2014 CAD : 01

A0


150
149
148
355mm HPPE
250mm HPPE
2.5m
2 x 250mm HPPE
Diverted mains
FH
177

WSP UK Limited
WSP House
London
WC2A 1AF
UK
Tel: +44 020 7314 5000
Fax: +44 20 7314 5111
www.wspgroup.co.uk

PRICE & MYERS

Aylesbury Estate

Structural Engineer's Planning Report

Prepared by: Eleanor Ball
Job Number: 22877

Date	Version	Notes / Amendments / Issue Purpose
August 2014	A	Draft

Contents

1 Introduction

Price and Myers have been appointed to provide structural guidance for the planning design of the First Development Site (FDS) of the Aylesbury Estate Masterplan.

The following report provides a discussion of the proposed structural design for the six new plots of residential accommodation and community facilities. The report will also discuss the existing site and the nature of the current buildings and ground conditions, and our expectations for the demolition and site clearance.

The structural scheme designs included in Section 7 are preliminary, with the purpose of defining the structural intent for architectural coordination and budget costing purposes. Fully designed structural designs will be developed for each of the buildings, as part of the tender design process.

2 Existing Development

2.1 Location & Surroundings

Aylesbury Estate is located to the south of Elephant and Castle in South East London. The masterplan area is shown by the red dashed line in Figure 1 with the First Development Site (FDS) located on the edge of Burgess Park.

Figure 1: Extent of Aylesbury Masterplan

2.2 Existing Buildings

In the FDS, there are ten buildings which vary in size and construction type. Eight of the buildings date from the 1970s and are of precast concrete large-panel construction using the Jespersen System. The existing buildings can be grouped into types as follows:

1. 4 storey Jespersen System
2. 5 storey Jespersen System 'court block'
3. 5 storey Jespersen System 'route block'
4. 13 storey Jespersen System
5. Arklow House
6. Ellison House

The location of these existing building types are shown on the site plan in Figure 2.

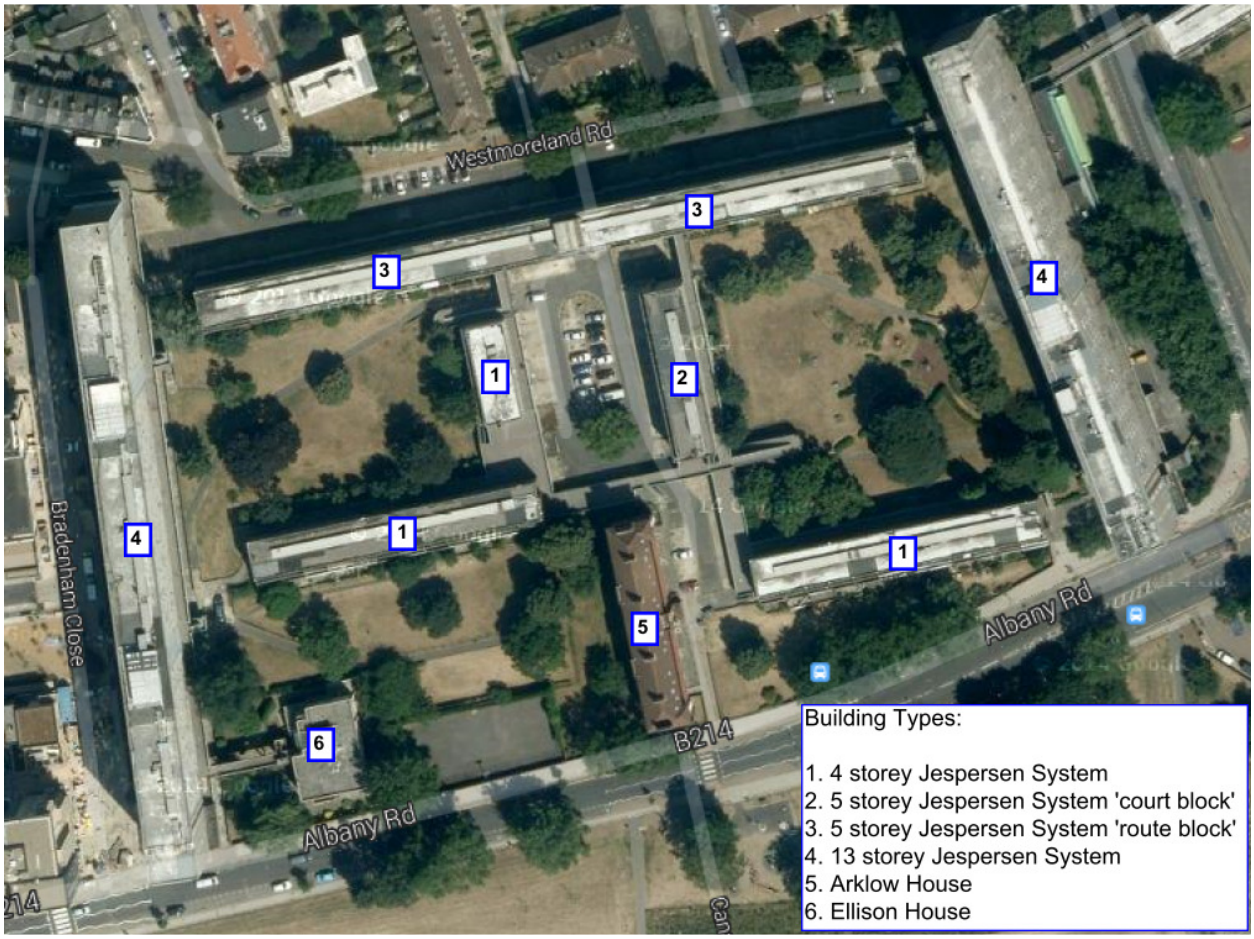


Figure 2: First Development Type building types.

The Jespersen System comprises precast concrete floor and roof panels spanning onto loadbearing, precast concrete cross-walls. The end walls to the blocks are storey high precast panels of sandwich construction. The long elevations are continuous window strips over single leaf precast concrete panels which span between the cross-walls.

In the low rise blocks (Types 1-3), ground to first floor is constructed from in-situ concrete with the precast concrete panel system starting at first floor. Access is provided by external walkways at second floor level which have precast concrete panels acting as the balustrading. These walkways connect to in-situ concrete bridges which allow access at second floor level to other blocks across the development.

In the 13 storey blocks (Type 4) ground to fourth floor is built using in-situ concrete and contains amenities, car parking and external walkways. Above fourth, residential accommodation is provided in the Jespersen System. Above the fourth storey, internal walkways are provided at every other level enclosed by ribbon glazing above the precast balustrade. The blocks are serviced by cores with lifts and precast concrete stairs. More detail of the Jespersen System building types can be found in Appendix A.

It is unknown what the foundations of the existing Jespersen buildings are, however, one drawing has been found which shows large concrete pads, Appendix B. We anticipate that this foundation solution will have been adopted for the low rise blocks (Types 1-3), however, it is likely that the Type 4 buildings will have piles. See Section 2.4.4 for a discussion of the ground works required.

Building Type 5 is Arklow House which is a pre-war, 5 storey masonry building providing residential accommodation only. It is expected that the construction is load bearing masonry walls with filler joist floors, however, due to restricted access we have been unable confirm this. A photo of Arklow House is shown in Figure 3.

Figure 3: The exterior façade of Arklow House.

Building Type 6 is Ellison House which is currently used as offices and a community building. The construction type is expected to be panellised precast concrete construction with ribbon windows however, due to restricted access we have been unable confirm this. Ellison House is connected to one of the 13-storey blocks via a concrete walkway at second floor level as shown in Figure 4.

Figure 4: Ellison House and connecting in situ walkway.

2.3 Ground Conditions

2.3.1 Summary

A preliminary ground investigation report has been produced by Soils Ltd in February 2013 (Report Number 13397/GIR). A number of intrusive investigations, testing and monitoring was carried out by Soils Ltd. The main soil types are as follows:

Topsoil/Made Ground (TS/MG)
Langley Silt Member (LASI)
Kempton Park Gravel Formation (KPGR)
Lambeth Group (LMB)
Thanet Sand Formation (TS)
White Chalk Subgroup (WHCK)

Ground water was found in the gravels in a number of locations across site. The site wide ground conditions encountered in the boreholes are summarised in Figure 5.

Table 2.2
Ground Conditions

Strata	Age	Depth Encountered (m bgl)		Typical Thickness (m)	Description
		Top	Bottom		
TS/MG	Recent	GL	0.75* - 3.70	1.82	Concrete/Tarmac/Grass and silty clay with gravel overlying dark brown to brown, grey gravelly sandy silty clay and clayey sand and sandy gravel with brick/brick rubble, cement, ash, wood, shell, ceramic, glass and roots.
LASI	Pleistocene	0.80 – 2.65	1.90 – 4.5	1.34	Firm light to dark, orange brown, yellow brown, grey slightly gravelly slightly sandy clay with occasional ferruginous dark brown pockets. Gravel fine to medium angular to rounded.
KPGR	Pleistocene	1.90 – 4.50	5.50 – 7.30	4.04	Brown, orange brown gravelly sand and sandy clayey fine to coarse angular to rounded gravel with occasional sandy silty clay layers.
LMB	Palaeocene	5.5 – 7.30	9.80 – 11.00	3.76	Firm to stiff red grey brown mottled slightly gravelly slightly sandy silty clay and slightly gravelly clayey sand.
TS	Palaeocene	9.80 – 11.00	22.50 – 22.80	12.37	Dense grey and green grey silty sand.
WHCK	Upper Cretaceous	22.50 – 22.80	25.00*	Not Proven	The White Chalk Subgroup comprised structureless chalk, which was composed of off-white sandy gravelly clayey silt with occasional flint gravel. The chalk gravel was off-white, weak and of low to medium density.

Note - *Full depth of borehole

Figure 5: Extract of ground conditions table from Soils Ltd Report 13397/GIR.

2.3.2 Foundations

The ground investigation report suggests that if a strip footing foundation solution is implemented then they must bear into the Kempton Park Gravels (KPGR) which are at a varying depth of 1.9-4.5m below ground level. In addition, the proximity of trees should be checked and the foundations designed to comply with NHBC Standards Chapter 4.2 and BRE Digest 240.

In reality, the proposed buildings in the development will not be suitable for strip footings due to the high foundation loads so instead it is suggested a pile solution is implemented. The ground investigation report recommends that a bored pile solution is adopted using temporary casing through the Made Ground (TS/MG) and Langley Silt Member (LASI). Preliminary bearing capacities

have been provided for 450, 600 and 750 diameter bored piles down to a depth of 21m. These capacities have been used in the preliminary foundation design of the new buildings (refer to Section 4).

It is recommended that the ACEC (Aggressive Chemical Environment for Concrete Class) AC-1 should be adopted for concrete in the ground.

2.3.2 Ground Slabs

Due to the presence of Made Ground (TS/MG) across the site, it is suggested in the site investigation that suspended ground floor slabs are implemented. In our scheme design, we have provided suspended ground slabs to all blocks except for basement areas. We have assumed that in basements the excavation is deep enough to remove the Made Ground (MG/TS) and Langley Silt Member (LASI) and so a ground bearing slab will be acceptable.

The ground investigation report highlights the potential risk of shrinkable soils in the Lambeth Group (LMB). We do not predict that any structure, except piles, will be deep enough to be within the Lambeth Group (LMB) and so we have not specified heave protection in the scheme design. However, there is a risk that surface excavation may result in unloading of the Lambeth Group (LMB) resulting in heave and thus a requirement for heave protection on the structure above.

A specialist geotechnical consultant, such as Soils Ltd, needs to advise on the assumption that ground bearing slabs can be used below the Langley Silt Member (LASI) and also, confirm whether heave due to unloading should be protected against. This work can may require further testing of the clays.

2.3.2 Ground Water

Ground water was found during the intrusive investigation in a number of locations across site at depths varying between 4.7 and 8.2m below ground level. This generally falls in the Kempton Park Gravel Formation (KPGR) and Lambeth Group (LMB).

The 'lost rivers of London' map, Figure 6, shows that a historical river runs along Albany Road which is immediately south of the site. It is not anticipated that ground water level will be within the excavation depths, however, levels are subject to vary due to seasons so may be found at higher levels than anticipated.

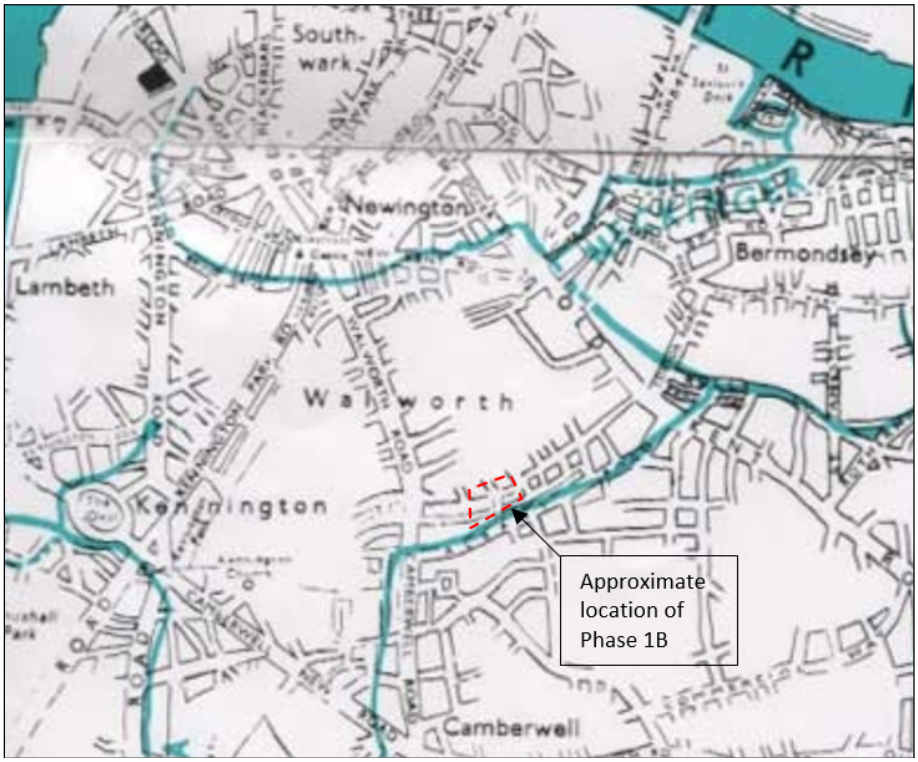


Figure 6: Extract from 'lost rivers of London' map

2.3.2 Contamination

In Section 5 of the Soils Ltd report, extensive testing and sampling of the ground and ground water is summarised. A variety of contaminants are found in the samples and so ground remediation and capping strategies are recommended as well as further testing and sampling following site strip.

The results for gas monitoring are to be issued as an addendum to the report which we have not yet received. At the time of writing, it is unknown if requirements for gas ventilation is required and so, this has not been allowed for in our scheme design. Should gas be present then it is likely that a gas membrane and ventilation of the void below ground would be required under all the ground floor slabs. This would mean that the basement slabs, currently considered ground bearing, would have to become suspended.

2.4 Demolition Statement

A detailed method statement and phasing plan from a specialist demolition contractor who will be carrying out the works will be required. It is expected that this report will cover in detail the Health, Safety and Environmental considerations associated with the demolition of the FDS as well as demonstrating compliance with any Demolition Planning Permission Conditions in place.

The following statement is an indicative methodology for the building's demolition only and shall not replace the specialist sub-contractors method statement.

2.4.1 Existing Documentation

There are four reports which provide information about the buildings constructed using the Jespersen System, three are structural reports commissioned by the London Borough of Southwark. The reports available are as follows:

1. 1965: Original design proposal and approval.
2. 1997: Jenkins & Potter Consulting Engineers; Structural appraisal of current degradation of large panel buildings and advise on future maintanence and repair.
3. 2002: Frederick Snow & Partners; Structural appraisal of existing large panel buildings including testing and structural review of propsed alterations.
4. 2005: Conisbee Consulting Engineers; Large panel buildings robustness and disproportionate collape review.

We have not been able to source any existing drawings except those in the aforementioned reports. One drawing is of particular interest as it shows a foundation scheme for one of the long blocks, probably the 5-story 'route block' or similar. This drawing is in Appendix B.

2.4.2 Pre-Demolition

A period of pre-demolition works will be required including enabling works, soft-strip, asbestos removal and post-strip works.

Enabling works are expected to include the erection of site hoarding; set up of site welfare facilities and supply of temporary building services; environmental clean of the properties and site; removal of landscaping items such as bollards, fencing, garden walls and the like and; removal of trees and installation of tree protection measures.

Pre-strip works are expected to include removal of loose furniture and fittings from the properties; strip of built in kitchens and heating systems; removal of remaining building services such as water tanks and electricity and gas meters.

It is expected that a site wide asbestos survey will be carried out and that specific method statements will be written for the removal of asbestos by a specialist sub-contractor. Approval of these method statements will be required by the Health and Safety Executive prior to commencement. It is expected that exclusion zones, air testing and specialist waste disposal will be explained in detail in the method statements.

Post-strip works are anticipated to comprise window and glazing removal; non-structural elements and remaining floor finishes.

2.4.3 Demolition Works

From the Conisbee Report (2005) it can be concluded that buildings above six storeys are expected to have been constructed with suitable robustness detailing to prevent progressive collapse. Buildings below six stories (Building Type 1, 2, 3, 5 and 6 from Figure 2) are anticipated not to have been constructed with any vertical or horizontal ties and thus will be susceptible to the "stack of cards" effect during demolition. It is therefore expected that a combination of techniques will be implemented including local dismantling/deconstruction and the use of high reach demolition equipment.

Dismantling/deconstruction is the controlled removal of small sections of structure whilst employing protection and temporary support of the remaining building. Demolition is the tearing down of structure.

A number of the existing buildings including both 13 storey blocks and Ellison House are located very close to site boundary and so full height scaffolding will be required to protect the public. It is recommended that this scaffold will be tied back to the structure and fully sheeted.

Dismantling/deconstruction works may include:

- Installation of temporary back propping of precast floor panels and bracing of precast cross-walls.
- Gradual removal of floor and walls by mini-excavators supported on back propped floors.
- Removal of debris to ground level via mobile crane where it can be safely crushed as required for waste disposal or recycling.

It is suggested that the dismantling will occur in a sequence similar to that of construction and will take the form of a pyramid, stepped down on a floor by floor basis. The dismantling technique could be used for the upper storeys of the 13 storey blocks to bring them down to an acceptable height for the use of the demolition equipment.

Demolition works may include:

- Use of a high reach demolition rig equipped with a hydraulic crusher on the machine arm.
- Noise and dust levels will require control and monitoring. Potentially the use of a water jet on the end of the machine arm could be implemented.

We anticipate that this demolition technique will be used for all buildings under 6 storeys as these structures are expected to have no inherent robustness and will create an unsafe, working environment for operatives once demolition has commenced. It can also be used for the large 13 storey blocks once they have been dismantled to a height within the reach of the demolition rig.

2.4.4 Ground Works

From the drawing in Appendix B it can be seen that the existing buildings up to 5 stories are likely to be founded on large mass concrete pad foundations, however, the depth is unknown. The foundation scheme for the taller 13 storey blocks is unknown but anticipated to be piled foundations.

Due to the extensive coverage of existing buildings and services across the development, we expect that site clearance will require the breaking out and excavation of all existing foundations down to a level equal to the base of the existing pad foundations or to the underside of new pile caps, whichever is greater. It is likely that pile probing will be required site wide, particularly under the 13 storey blocks, however this should be reviewed following excavation.

3 Proposed Development

3.1 Summary

The proposed development covered in the FDS has been split into six units with different building uses and massing in each. The development is connected by new infrastructure between the units and break-out spaces within the units.

A description of each block is provided in Section 3.2. Figure 7 provides a layout plan for the new blocks.

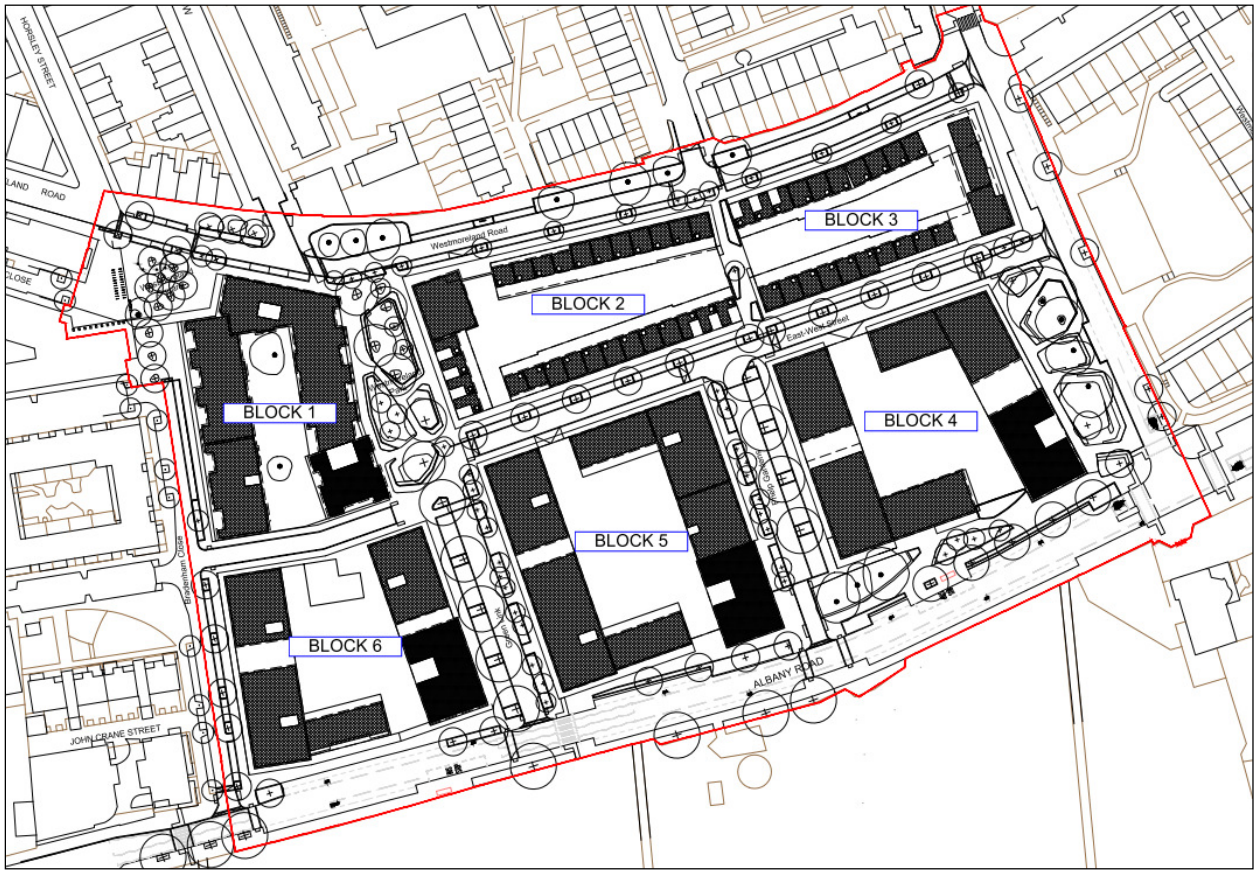


Figure 7: Layout of the proposed buildings in the FDS.

3.2 Proposed Buildings

3.2.1 Block 1

Block 1 provides a mixture of accommodation including a community centre, an extra care facility for the elderly, a number of residential flats and maisonettes. The ground floor accommodation is predominantly extra care facilities such as living and dining space; the community centre, which occupies a double height space, and the maisonettes. The majority of the building is seven storeys high and occupied by the extra care facility. The block is a U-shape with a tower located on each end. The towers accommodate the residential flats and do not exceed 10 storeys.

A key design feature of Block 1 is the façade which incorporates 1 and 2 storey arches. It is proposed that these elements are formed in pre-cast concrete to obtain a high quality finish.

3.2.2 Block 2 and 3

Block 2 and 3 predominantly comprise four storey terrace housing with private gardens in the centre. On the end of each terrace a 4-6 storey building provides accommodation for offices and community services.

3.2.3 Block 4

Block 4 provides high density residential accommodation with car parking at ground floor level and a first floor podium slab supporting a community open space. The tallest tower reaches 20 storeys with the lowest section being 6 storeys. A basement is provided under the tower which provides plant space. Space for surface water attenuation is provided in the form of a shallow basement under the car parking.

There is a double height entrance area provided a ground floor level underneath the 20 storey tower. To provide a column free space in the entrance atrium, large transfer structures are required below the second floor slab.

3.2.4 Block 5

Block 5 is very similar to Block 4 but with an 18 storey tower.

3.2.5 Block 6

Block 6 is similar to Blocks 4 and 5, however, it does not include car parking at ground floor level and therefore no podium slab is provided. The ground floor accommodation is predominantly two storey maisonettes over which the accommodation changes to flats. The tallest tower reaches 16 storeys with the lowest section being 7 storeys. A basement may be provided under the tower to provide plant space, however, no attenuation storage is required. The gas pressure reduction system will be housed in a separate, single storey building on the plot of Block 6.

3.3 Building Types

For the purpose of Section 4 and 5 of this report, it will be considered that there are two types of building on the proposed development.

Type A: High density residential accommodation and community facilities of 4 or more storeys.

Type B: Terraced housing of 4 or less storeys.

4 Substructure

4.1 Foundation Scheme

In section 2.3.2, the foundation options are discussed and it is concluded that for the proposed development a piled solution is most suitable. In the ground investigation report by Soils Ltd it is suggested that a bored pile solution is adopted using temporary casing through the Made Ground and Langley Silt Member. Preliminary bearing capacities have been provided for 450, 600 and 750 diameter bored piles down to a depth of 21m. These capacities have been used in the preliminary foundation design of the new buildings.

For the Type A buildings, the majority will be supported on 3-pile caps using 750 diameter piles. Under cores and the towers, it is likely that a piled raft solution will be required due to the large loading requirements. These piles will be designed to resist both the vertical and lateral loading induced from winds.

For the most part, we have suggested the pile caps sit below a suspended reinforced concrete ground floor slab. In the attenuation tanks, we propose that the pile caps are cast above ground with a reinforced concrete ground bearing slab between pile caps, however, this is subject to confirmation that gas protection is not required.

For the Type B buildings, a bored pile solution is also proposed, supporting reinforced concrete ground beams. It is expected that the ground beams will support either a suspended reinforced concrete slab or a beam and block floor at ground level.

4.2 Basements

We have allowed for basements under the towers on Block 4, 5 and 6 to house a plant room and under Blocks 4 and 5 podiums to house attenuation tanks. The site is large enough to permit open excavation, however, due to the expected instability of the Made Ground and Langley Silt Member, we anticipate the excavation for these basements will require battering back to a minimum 45° angle or cut in 1,2m high steps. This will need to be assessed by the ground works contractor as part of their risk and method statement.

4.3 Trees

There are a number of trees on the current development which will be removed during the enabling works and replaced by new trees following construction. An analysis of the new structures in relation to new and removed trees will be carried out pre-tender. As a piled solution is to be adopted, it is not expected that protection or deepening of foundations will be required, but this must be confirmed by a geotechnical specialist consultant.

5 Superstructure

5.1 Summary

The following section will discuss the superstructure options for both building types separately.

5.1.1 Type 1

Large buildings such as these lend themselves to either a steel or concrete frame construction. Both timber and load bearing masonry may also be considered, however, above six storeys the wall build-up for a load bearing masonry frame becomes very thick, whereas the stability and global movement of a timber building becomes critical.

Through scheme design it has become apparent that the proposed buildings do not lend themselves to a regular grid due to the mixture of uses and accommodation types throughout their height. In addition, the client is keen to minimise floor to floor heights which have a significant impact when the blocks rise up 20 storeys. For these reasons we have provided scheme design using a reinforced concrete solution with flat slabs. The flats slabs allow for minimum floor depths, flexibility for building services distribution and a degree of flexibility in column locations.

The initial scheme design, which is discussed in more detail in Section 5.2, is based on the use of traditional reinforced concrete cast in-situ. Alternatively, a post-tensioned concrete solution would be suitable and may offer a small saving in slab thickness. There is also the option of a hybrid construction where some or all of the vertical elements become precast concrete. If in-situ concrete is maintained, then there is the option to use pre-rolled, fabric reinforcement which has been found to provide large programme savings during construction. These decisions would be led by the main contractor in discussion with the design team at a later stage in the project.

5.1.2 Type 2

For the terrace houses, three construction methods have been explored which are: concrete frame, cross laminated timber and traditional load bearing masonry. Whilst all options are feasible, the traditional build has been chosen as the preferred option.

5.2 Type A: Concrete Frame

5.2.1 Frame

<u>Slabs:</u>

There are a number of aspects affecting slab design which need to be considered:

- Loadings
- Span (distance between columns and walls)
- Thickness
- Quantity of reinforcement
- Size of columns

Assuming a consistent loading and column size, the distance that the slab can span is dependent on both the quantity of reinforcement and the overall thickness of the slab. In buildings of complex

shape, such as those in the new development, it is an iterative process to find the optimum slab thickness and column layout.

For the purpose of scheme design, we have carried out the analysis of a typical floor plate from Block 4. It can be concluded that, to limit overall slab deflection to the values set in Eurocode 2 for concrete design (which recommends span/250), a 250mm thick slab is able to span up to 6.5m and a 300mm slab is able to span up to 7.5m.

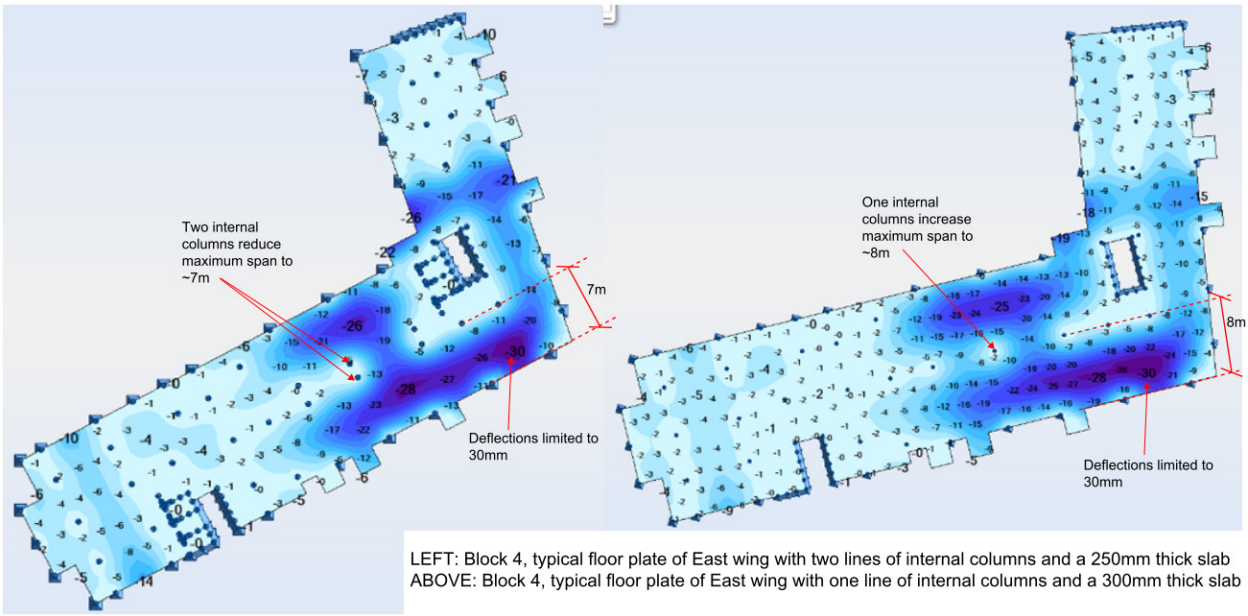


Figure 8: Slab anaylsis of Block 4

In our scheme design drawings provided in Section 7, a 250mm slab depth has been adopted for all Type A buildings and so the column layout has been arranged to reduce spans to 6.5m or less. Should a 300mm slab be adopted at a later stage of the design, the column layouts could be reconfigured, however, the overall height of the building would increase by 50mm per floor. For the 20-storey towers this is equivalent to 1m increase in building height and so the costs associated with the additional cladding will need to be considered.

Columns:

As a concrete solution has been adopted, there is a degree of flexibility in the section shape which can be used for the columns, however, the minimum dimension of a column is limited by the design code for protection against fire. Typically, the minimum thickness that can be achieved for 60 minute fire rating is 200mm, however, this requires the column to be 800 long.

In the FDS, the majority of blocks are 6/7 storeys high, however, there are towers up to 20 storeys in Blocks 4 and 5. Taller blocks require larger columns at lower levels but it is possible to reduce the section size up the building.

As part of our scheme design, we have provided a preliminary column layout for each block to allow sufficient space in the Architectural layouts for the structure. A combination of rectangular and square columns have been used which will be refined in later stages of the design process.

In Block 1, the majority of edge columns at ground and first make up the feature arched façade. In order to achieve the high quality finish desired, it is proposed that these columns will be precast concrete. It is possible that not all of these columns will be required structurally and thus some may

be “dummy” columns for aesthetic use only. If the columns are incorporated into the structure to make it a hybrid construction, then there will need to be a thermal break between the internal and external structure to prevent cold bridging.

Roof:

Generally, green roofs have been specified throughout the development, however, these will only be accessible at the top of the towers. To allow for the higher loading caused by a green roof a 350mm slab has been provided.

Where the roof is accessible, the architectural scheme provides storey high, cantilevered walls around the building perimeter. A hot rolled steel frame will be required to provide lateral restraint to this wall. In some locations, for example in Block 1, this steel frame extends across the roof garden to act as a pergola. The steel frame will be connected back to the roof slab using a thermal break to prevent cold bridging.

It is assumed that plant will not be stored at roof levels, but instead will be placed internally in the basement or ground floor areas provided.

Podium Slabs:

In Blocks 4 and 5, the first floor slab acts as a podium over the car park and will support communal landscaping. The location of columns supporting the podium slab will be dictated by the car park layout which means the slab must be capable of spanning long distances (currently expected to be up to 9m). The slab will need to incorporate voids for the ventilation of the car park space and support areas of deep planters for trees in the landscaping scheme. For these reasons, the podium slab will be in the order of 450mm deep.

It is important to consider the impact the slab thickness and landscaping build up will have on the floor to floor heights at ground floor level of Block 4 and 5. Figure 9 shows an indicative section through the transition from external podium level and the internal residential areas. It can been seen that the internal slab needs to be set at a higher level than the podium slab, in order to allow for flush finishes at thresholds. We expect that the car parking will be unheated space and so the thermal line of the structure at this interface will need to be considered carefully.

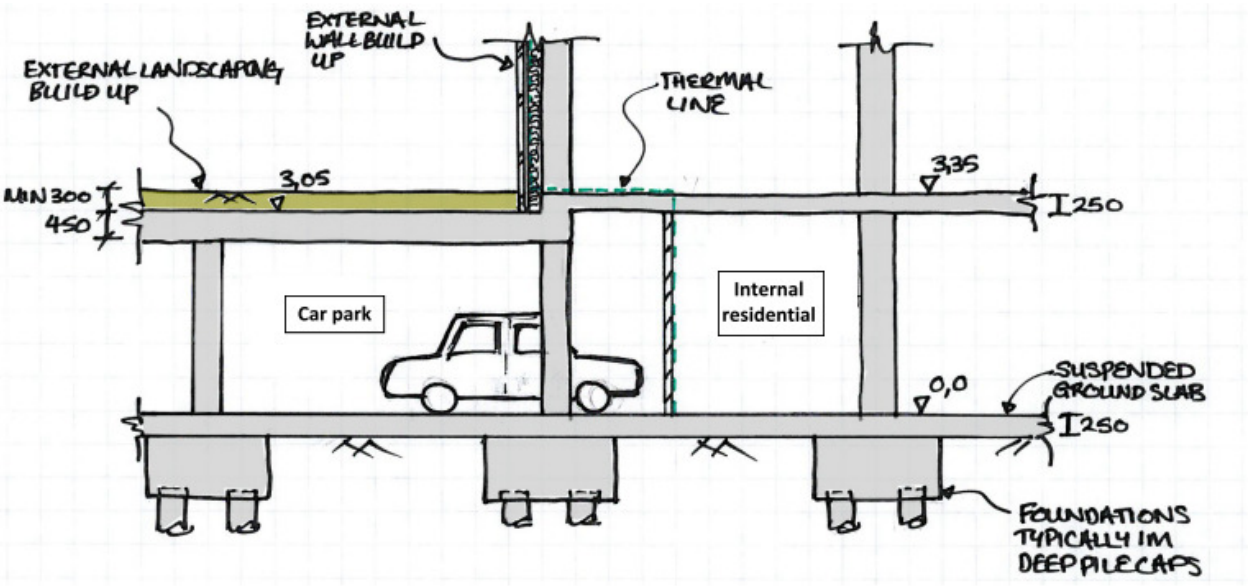


Figure 9: Section through the podium slab showing interface between external and internal.

Transfer structures:

In Blocks 4 and 5, there is a double height entrance at ground floor level. The columns in the residential layouts above second floor do not align with the columns in the entrance below. It is proposed that transfer beams in the order of 1.5m deep are provided at second floor level to support the residential columns above. Figure 10 indicatively shows the proposal.

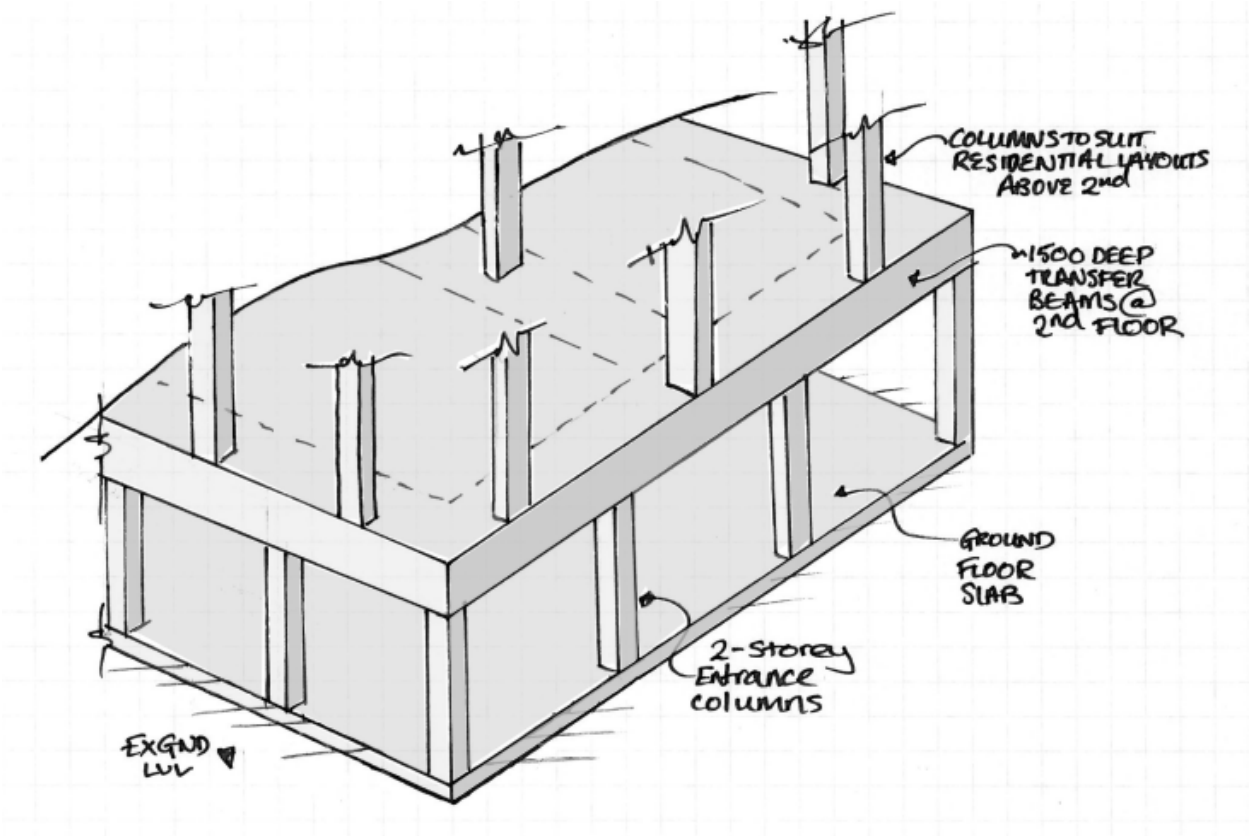


Figure 10: Indicative structural scheme for double height entrances in the towers of Blocks 4 and 5

During scheme design, it has been recommended that the floor to ceiling heights remain consistent between blocks and so, columns layouts which avoid transfer structure have been assumed. It is likely that during the next stage of design, areas will be identified where transfer structure is unavoidable in order to work with the architectural layouts. We expect that transfer beams will be required and will be in the order of 750-1200 deep depending on their location. The effect of this would be a difference in floor to floor heights between blocks, increased building heights and the associated costs. It is preferable to avoid transfer structure, if possible.

5.2.2 Stability and Movements

In the structural proposals, the stability of the buildings is provided by reinforced concrete walls around stair and lift cores. Where required, discrete concrete shear walls have been provided to provide additional restraint, for example, at the end of wings. These walls, typically expected to be 250mm thick, run continuously from ground level to roof and transfer the horizontal loads to the foundations.

In some blocks a movement joint has been provided to split the structure to a suitable size to allow for movements due to the thermal effects in the concrete. Figure 11 shows the typical layout of the shear walls and the indicative location of a movement joint in the podium slab.

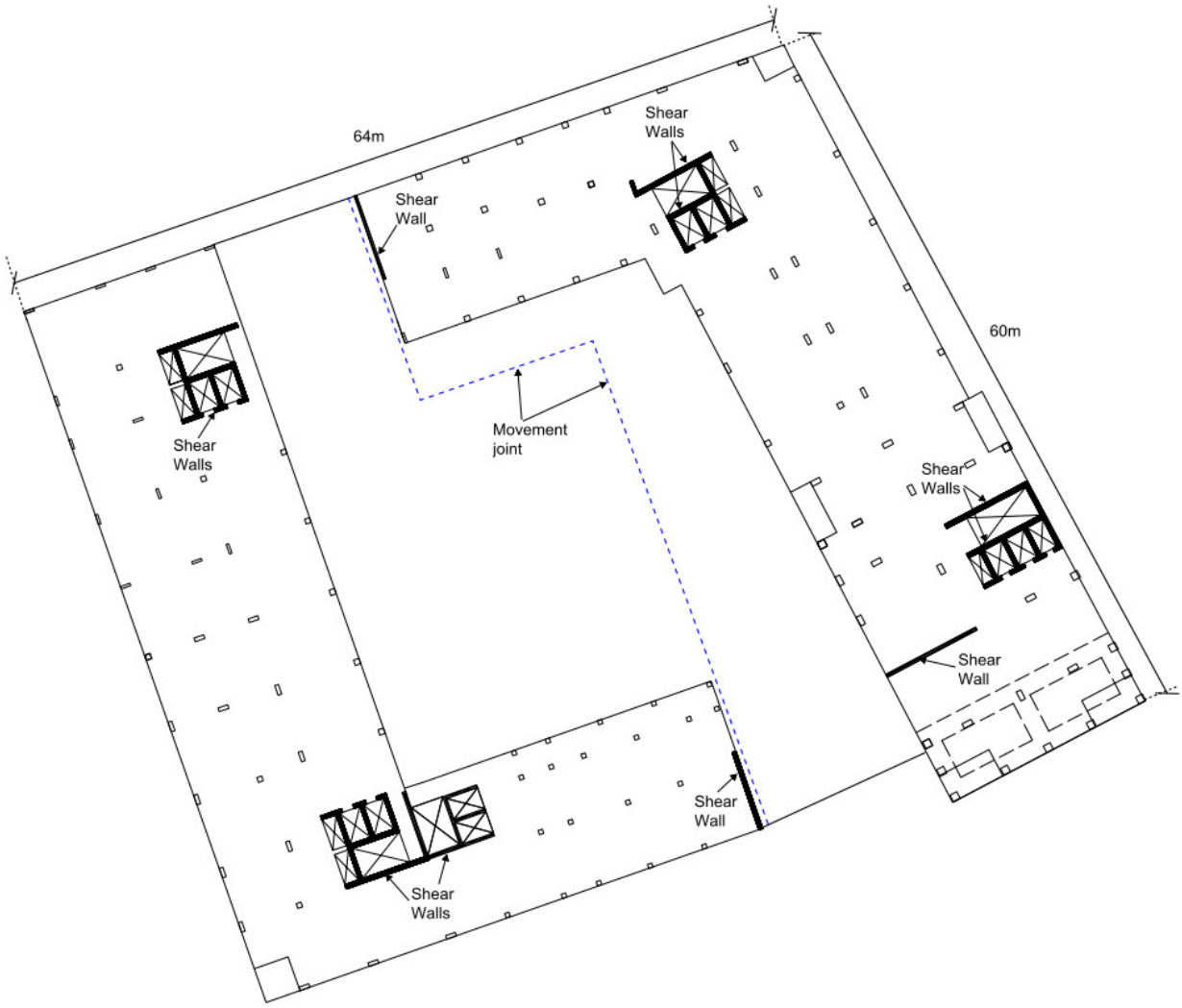


Figure 11: Typical Block stability and movement system.

In the tower blocks, stability is critical and so we have carried out preliminary structural analysis to estimate the twist and deflection due to wind loads. We have provided a concrete wall in addition to the lift and stair core which reduced the deflections to an acceptable limit in accordance with Eurocode 2 for concrete design. Figure 12 shows the predicted deflected shape of the tower due to the wind loads. Further detailed anaylsis will be required in future design stages.

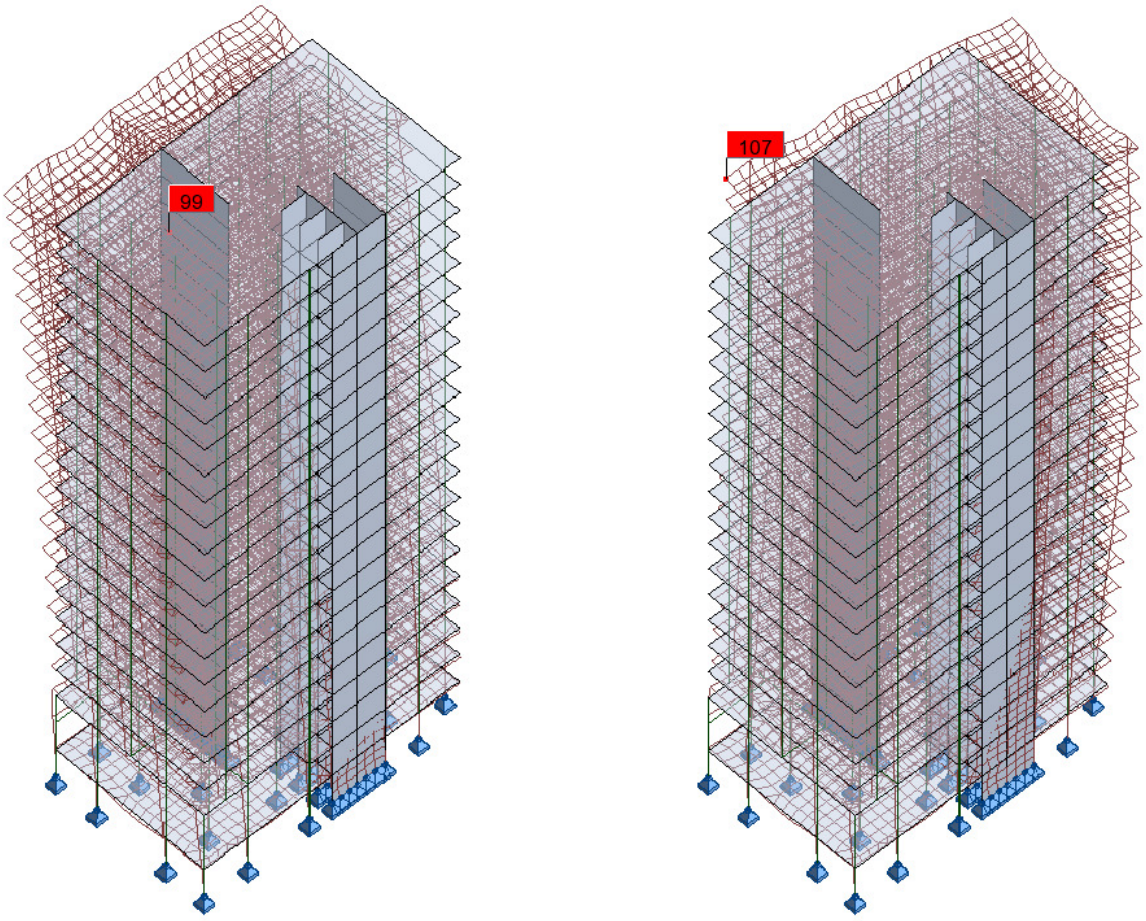


Figure 12: Preliminary structural deflection analysis of tower blocks

5.2.3 Balconies

All Type 1 blocks incorporate balconies and terraces which are either inset to the building footprint or pop-outs from the façade. Typically, we have suggested that the balconies will be constructed from in situ concrete with a thermal break along the building edge. However, we have assumed that the balconies will support only a light weight balustrade on the end of the cantilever and will be 2m or less in length. Within these constraints, the design intent is for the balcony slab to be 200 thick allowing a step down from the internal 250mm slab to incorporate the external finishes.

A similar philosophy could be adopted for terraces (external areas over inhabitable space), however, because the external build-up requires insulation, a greater external build up is required. This can be accommodated by stepping the soffit of the slab under terraces, however, this reduces the floor to ceiling height below. Figure 13 shows a section though a typical balcony and terrace.

Alternative options to explore are bolt-on steel frame or precast concrete balconies. In both instances, a thermal break will be required where fixing back to the concrete frame.

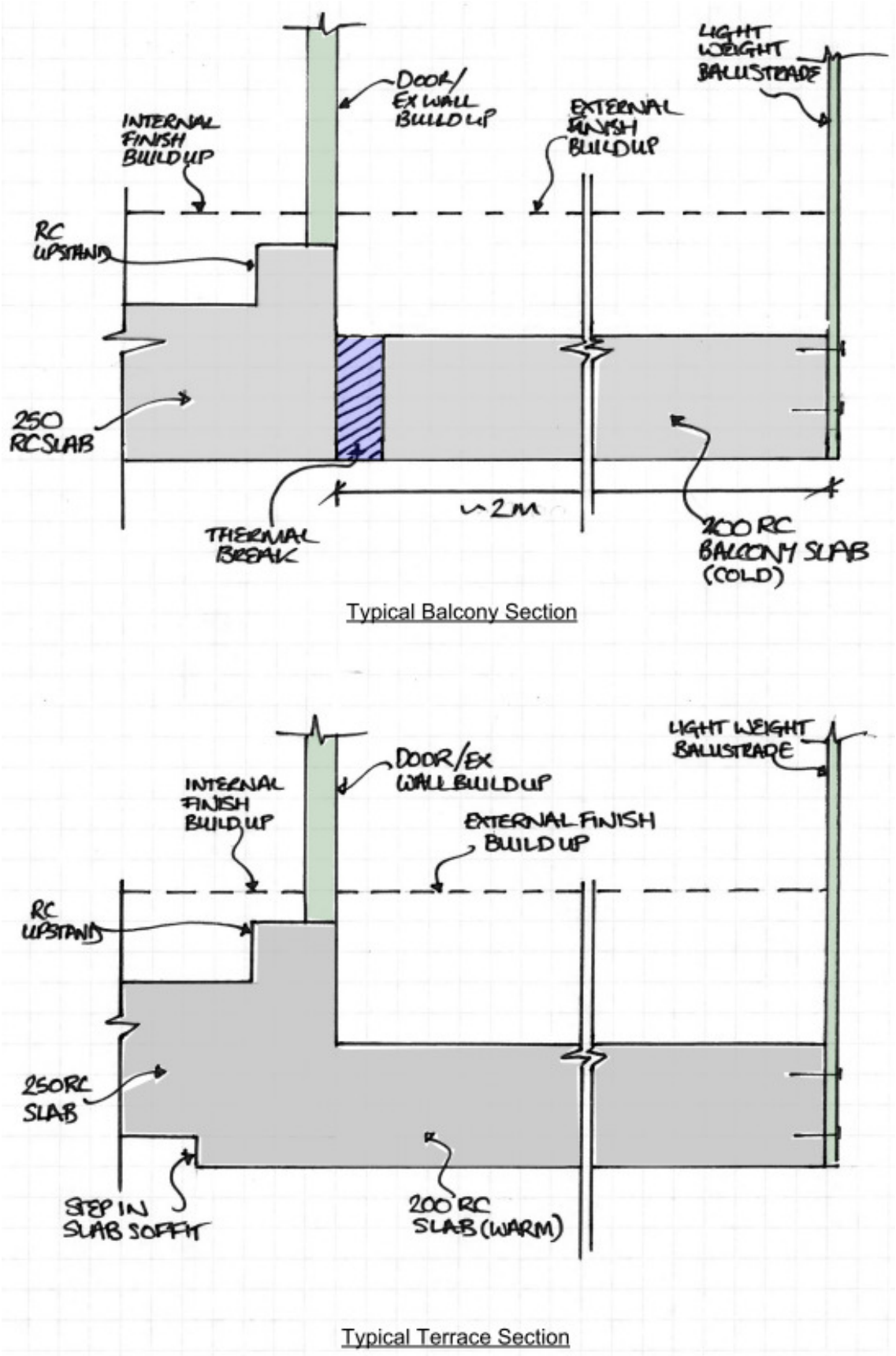


Figure 13: Typical sections through balcony and terrace slabs.

5.2.4 Stairs

Generally, it is assumed that the main communal stairs will be constructed in precast concrete which will be supported back to the structural frame on steel angles.

We have assumed that private staircases within units are of lightweight steel or timber construction.

5.2.5 Walls

For the purpose of preliminary structural design, we have assumed that all internal partitions are of light weight construction, for example, 'Metsec' or the like. If blockwork walls were chosen then we would need to review the slab thickness to allow for the additional loading.

We have been advised that the external walls will comprise a single skin masonry outer leaf, 50mm cavity, 140 Kingspan insulation, 100 Metsec or other lightweight internal leaf and plasterboard. We expect that the external skin will be supported by a masonry hanger off the slab at every other level. An alternative option would be to provide brick slips instead of a full outer brick. Similarly, if a heavier build up was adopted, the slab thickness would require review.

5.3 Type B: Traditional Build

5.3.1 Frame

Floors:

The partitions within the terrace houses do not stack up between levels and so vertical support has to be taken from the party walls only. The width of one house is approximately 5.5m which is too far for a traditional timber joist. For this reason, it is suggested that engineered timber joists are used for the floor construction of the upper levels of the houses. Generally, the timber joists will span between party walls, however in some instances, for example around stair voids, steel beams may be required. The steel beam will be within the depth of the joists which are expected to be 300mm deep.

Building services will be able to run with the joist depths either alongside the joists or through slots in the joist web. These openings will require coordination at a later stage in the design process.

Walls:

External walls are expected to comprise a minimum 100mm internal blockwork skin, 100mm cavity and insulation to architects requirements and a single brick outer skin. Party walls between the houses are assumed to be two skins of 100mm blockwork with a cavity between them for acoustic separation. These build ups are shown in Figure 14. Internal partitions are expected to be timber stud.

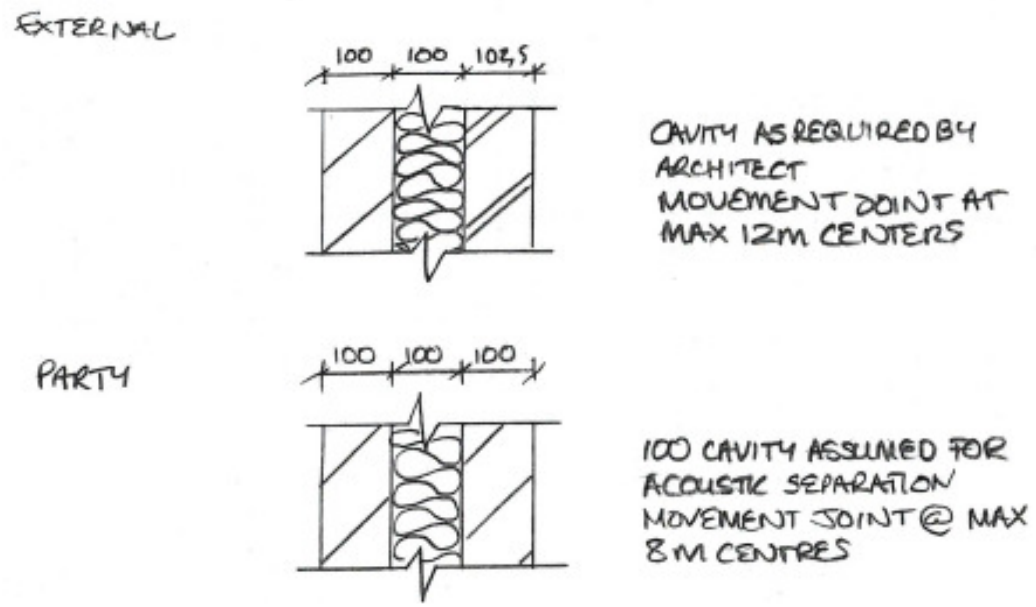


Figure 14: Typical wall build ups for terrace house.

5.2.2 Stability and Movements

Stability for each house will be provided by the blockwork party walls and a dedicated bracing wall at each level. The timber floors will be designed to act as diaphragms to transfer the lateral loading. The bracing wall could be constructed from 100mm blockwork if it continually aligns at every floor, or it could be timber stud as shown in Figure 15.

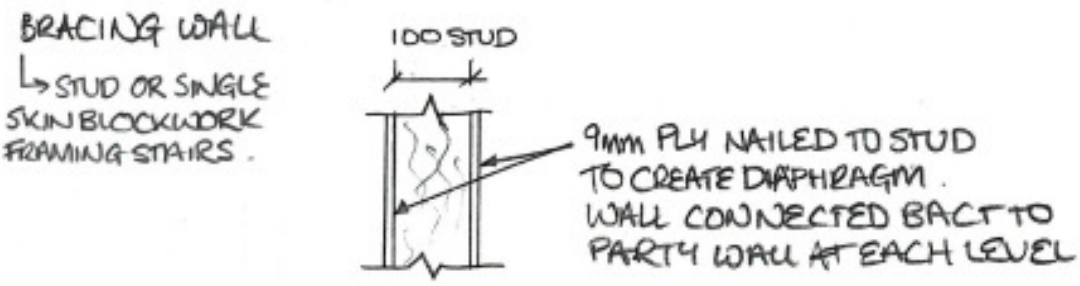


Figure 15: Typical bracing wall build up for terrace house.

The masonry and blockwork walls will need to be detailed to allow for building movements as noted in Figure 14. Around windows and door openings, it is likely that steel wind posts will be required to resist lateral loading. A typical wind post detail is shown in Figure 16.

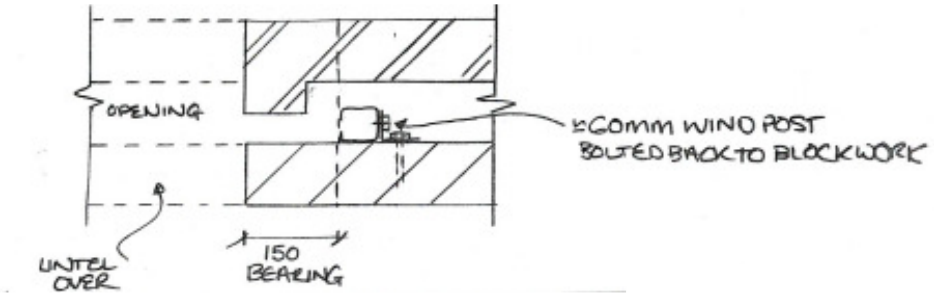


Figure 16: Typical bracing wall build up for terrace house.

6 Design Criteria

6.1 Codes and Standards

Loadings to be assessed in accordance with:	BS EN 1991-1-1:2002
	BS EN 1991-1-3:2003
	BS EN 1991-1-4:2003
Structural design in accordance with:	BS EN 1992-1-1:2003
	BS8500
	BS EN 1993-1-1:2005
	BS EN1996-1-1:2005
	BS EN1995-1-1:2004

6.2 Design Life

50 years

6.3 Loadings

In scheme design, we have assumed the following loadings (all in kN/m^2):

Residential	Permanent	Variable
Floor finishes	0.25	
75mm screed	1.8	
Kingspan K3 insulation	0.05	
Ceiling & services	0.3	
Imposed load		1.5
Partitions		1.0
Total superimposed	2.4	2.5

Podium slab - planted areas	Permanent	Variable
Sedum mat	0.3	
800mm soil	16.0	
Ceiling & services	0.5	
Drainage	0.5	
Void former	0.1	
Imposed load		3.0
Trees		2.5
Total superimposed	17.4	5.5

Roof Garden - planted areas	Permanent	Variable
Sedum mat	0.3	
800mm soil	16	
Ceiling & services	0.5	
Drainage	0.5	
Void former	0.1	
Imposed load		3.0
Trees		3.0
Total superimposed	18.3	6.0

6.4 Design Fire Periods

Typically the fire rating is to be one hour. Concrete slabs, walls and columns minimum cover and dimensions to BS EN 1992-1-1:2004 will be specified. Higher fire resistance may be required to plant and substation areas.

6.5 Disproportionate Collapse

Type A buildings are class 2B structures as required by the building regulations.
Effective horizontal and vertical ties will be provided in all supporting columns and walls.

Type B buildings are class 2A structures as required by the building regulations.
Effective horizontal ties, or effective anchorage of suspended floors to walls will be provided.

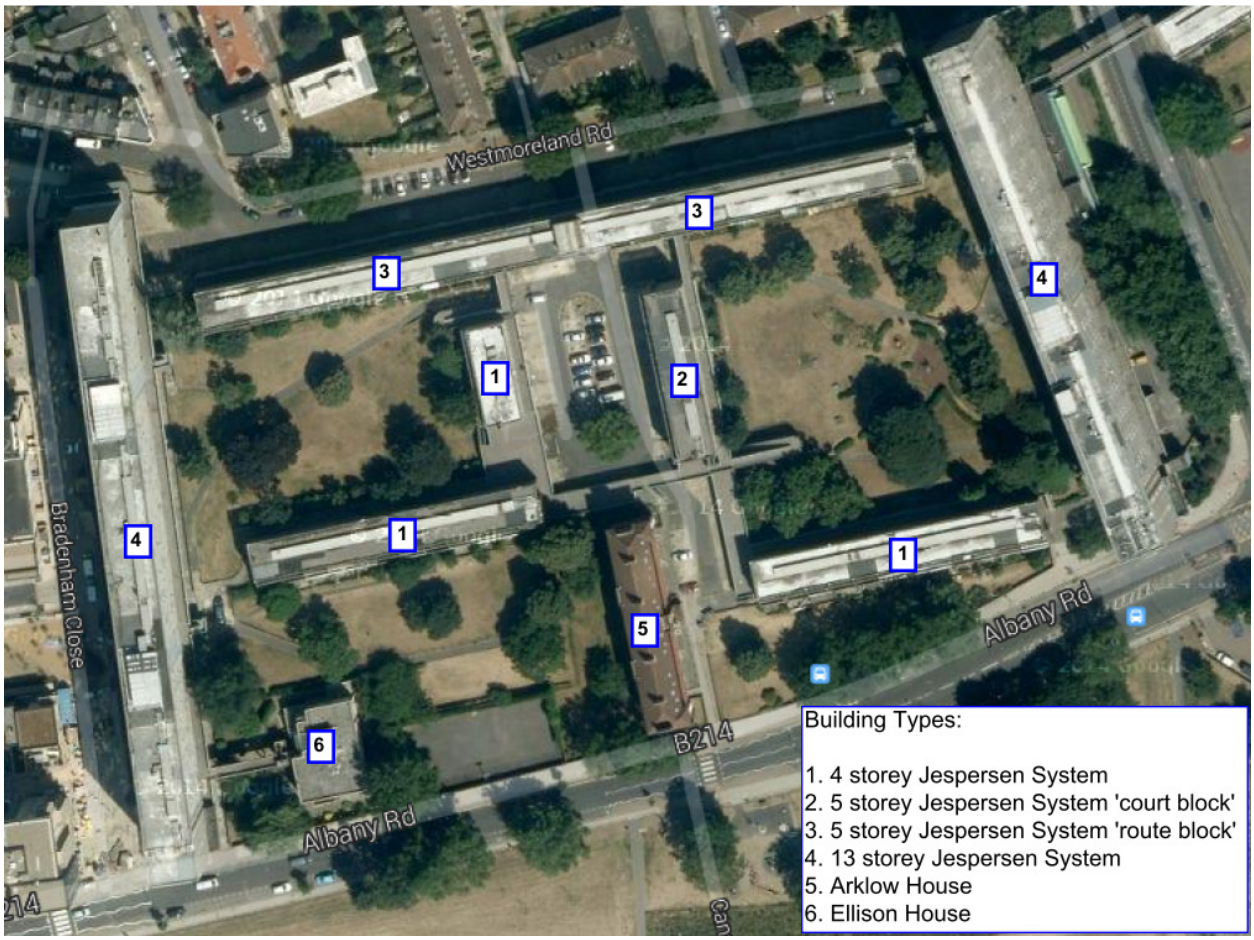
5 Design Drawings

[TO BE ADDED]

Appendix A

Existing Buildings: Jespersen System

There are four types of large panel construction buildings on the existing site which were constructed using the Jespersen System. These are labelled in the following figure:

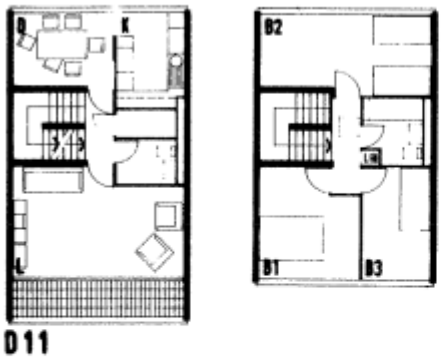


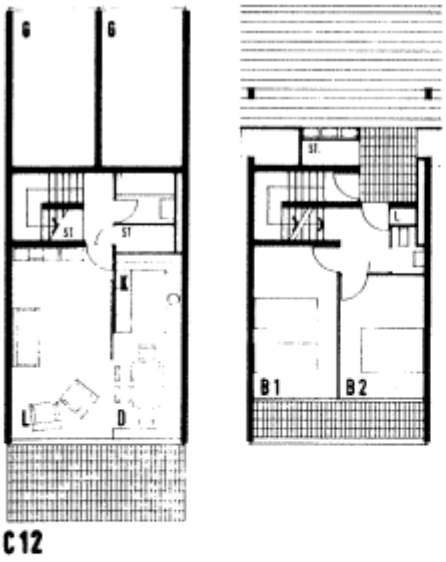
There are four reports which provide information about these structures, three are structural reports which have commissioned by the London Bourough of Southwark. The reports available are as follows:

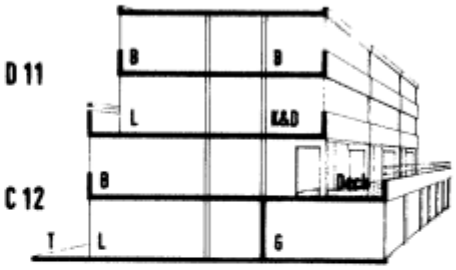
5. 1965: Original design proposal and approval.
6. 1997: Jenkins & Potter Consulting Engineers; Structural appraisal of current degradation of large panel buildings and advise on future maintanence and repair.
7. 2002: Frederick Snow & Partners; Structural appraisal of existing large panel buildings including testing and structural review of propsed alterations.
8. 2005: Conisbee Consulting Engineers; Large panel buildings robustness and disproportionate collape review.

Type 1: 4 storey

There are two types of 4 storey buildings: with and without garages at ground level. The following pages give typical layouts of the 4-storey blocks extracted from the original design proposals and approval report.

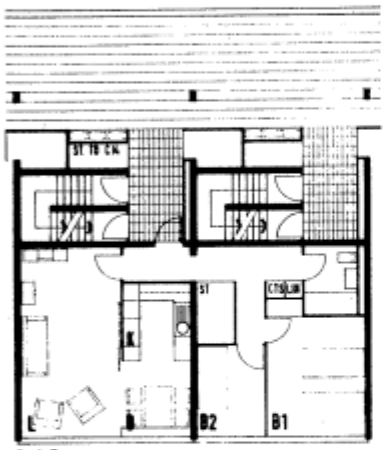




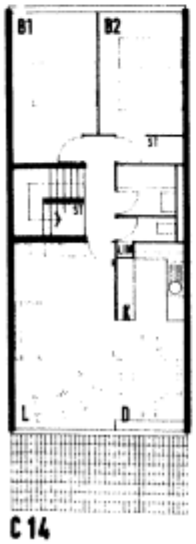


4 STOREY + GARAGE

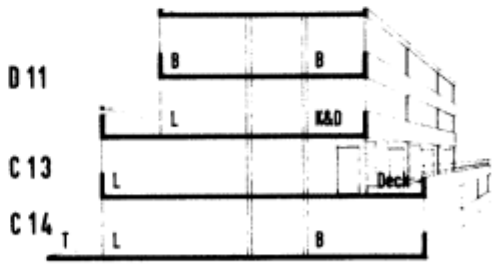
D 11



C 13



C 14

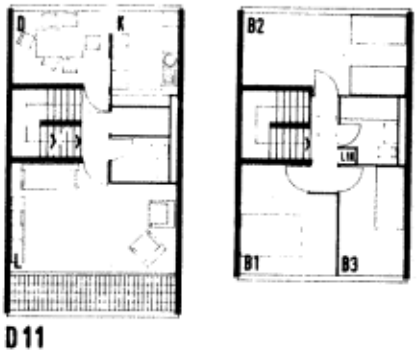


4 STOREY - GARAGE

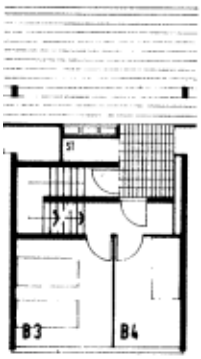
Type 2: 5 storey Court Block

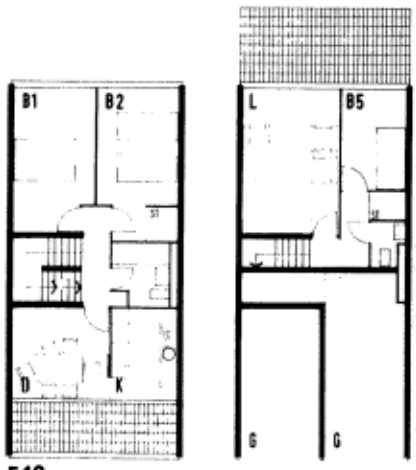
The following photograph shows a typical 5 storey court block. The storey high precast concrete panels which make up the end wall can clearly be seen as well as the precast concrete cross-walls, slabs, balustrades and external walkways. In the background, there in an example of an in-situ concrete walkway which links the buildings at second floor level.

The following figure gives the typical layout of the 5-storey court blocks extracted from the original design proposals and approval report.



D 11

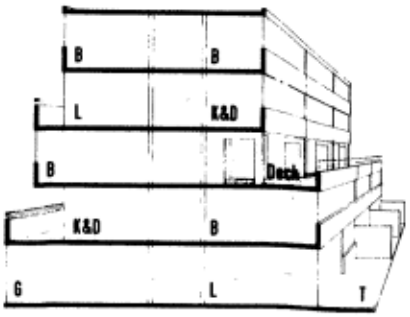




F 10

D 11

F 10

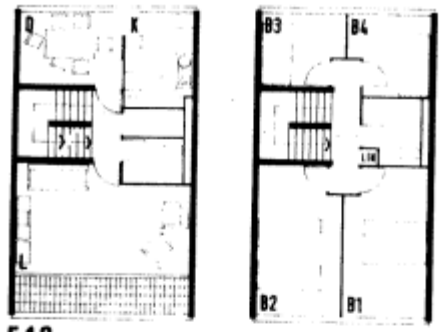


5 STOREY COURT BLOCKS

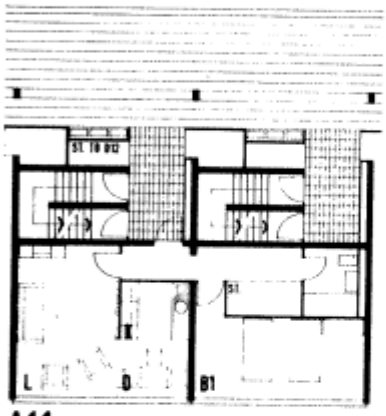
Type 3: 5 storey Route Block

The following photograph shows a typical 5 storey route block. The second floor external walkway can be clearly seen with the precast balustrade. At ground level, the in-situ concrete garages can be seen. In the foreground, there in an example of an in-situ concrete walkway which links the buildings at second floor level.

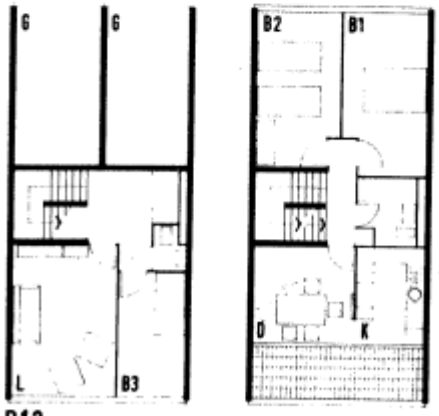
The following figures give typical layout of the 5-storey route block extracted from the original design proposals and approval report.



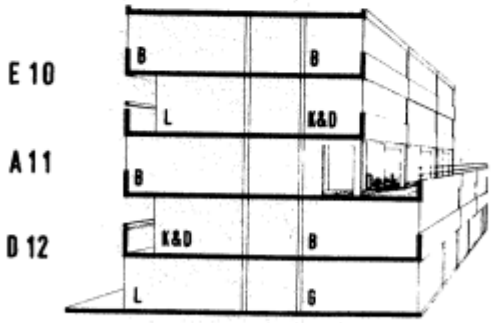
E10



A11



D12

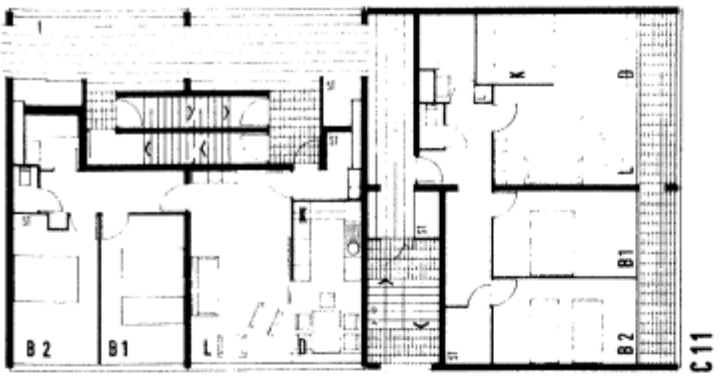


5 STOREY ROUTE BLOCKS

Type 4: 13 Storey Block

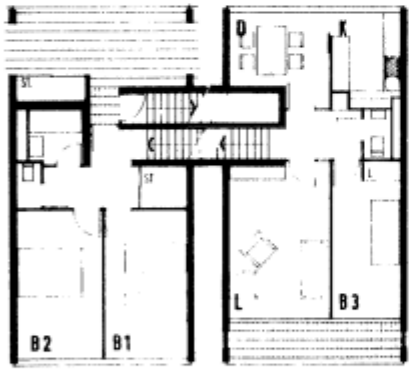
The following photograph shows a typical 13 storey block. It can be seen that the first four storeys which contain car parking and amenities are constructed in in-situ concrete. Above fourth floor the Jespersen System begins and the walkways become internal. The photo shows two cores, however, there are three in total on this block.

The following figures give typical layout of the 13-storey blocks extracted from the original design proposals and approval report.



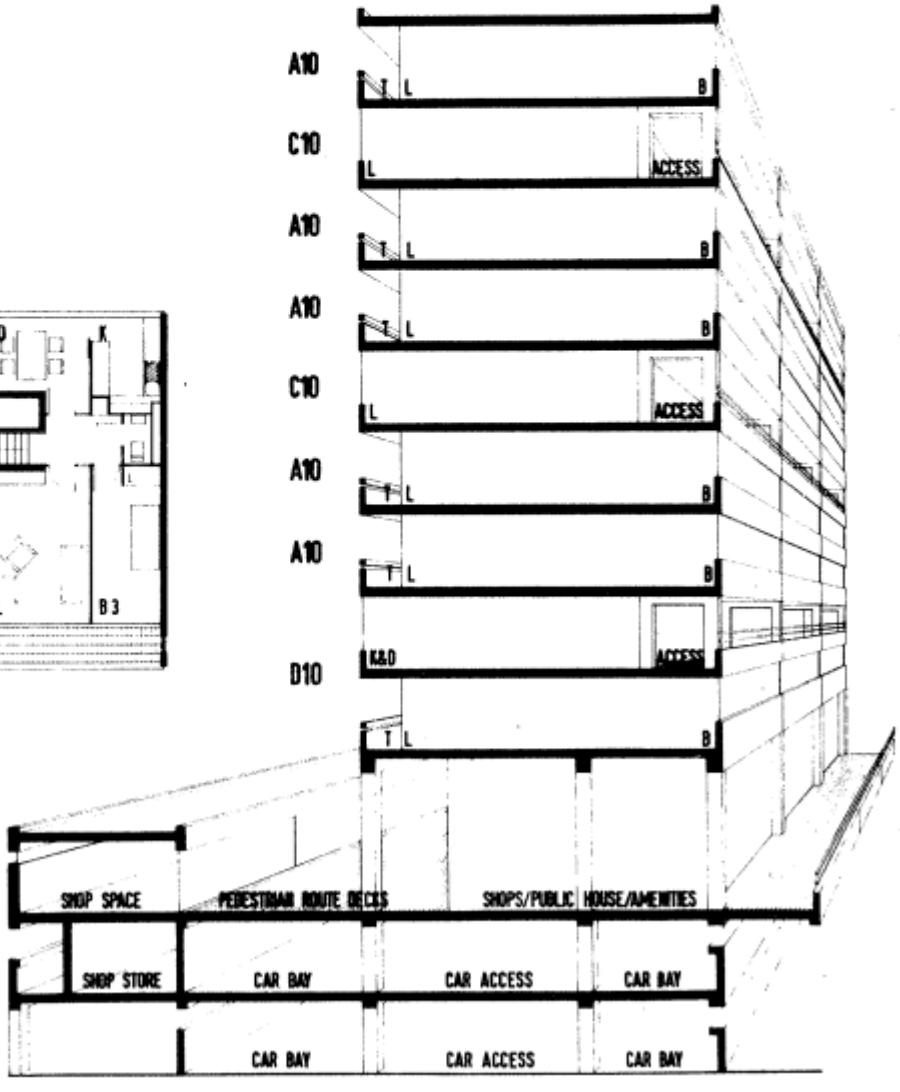
C10

A10



D10

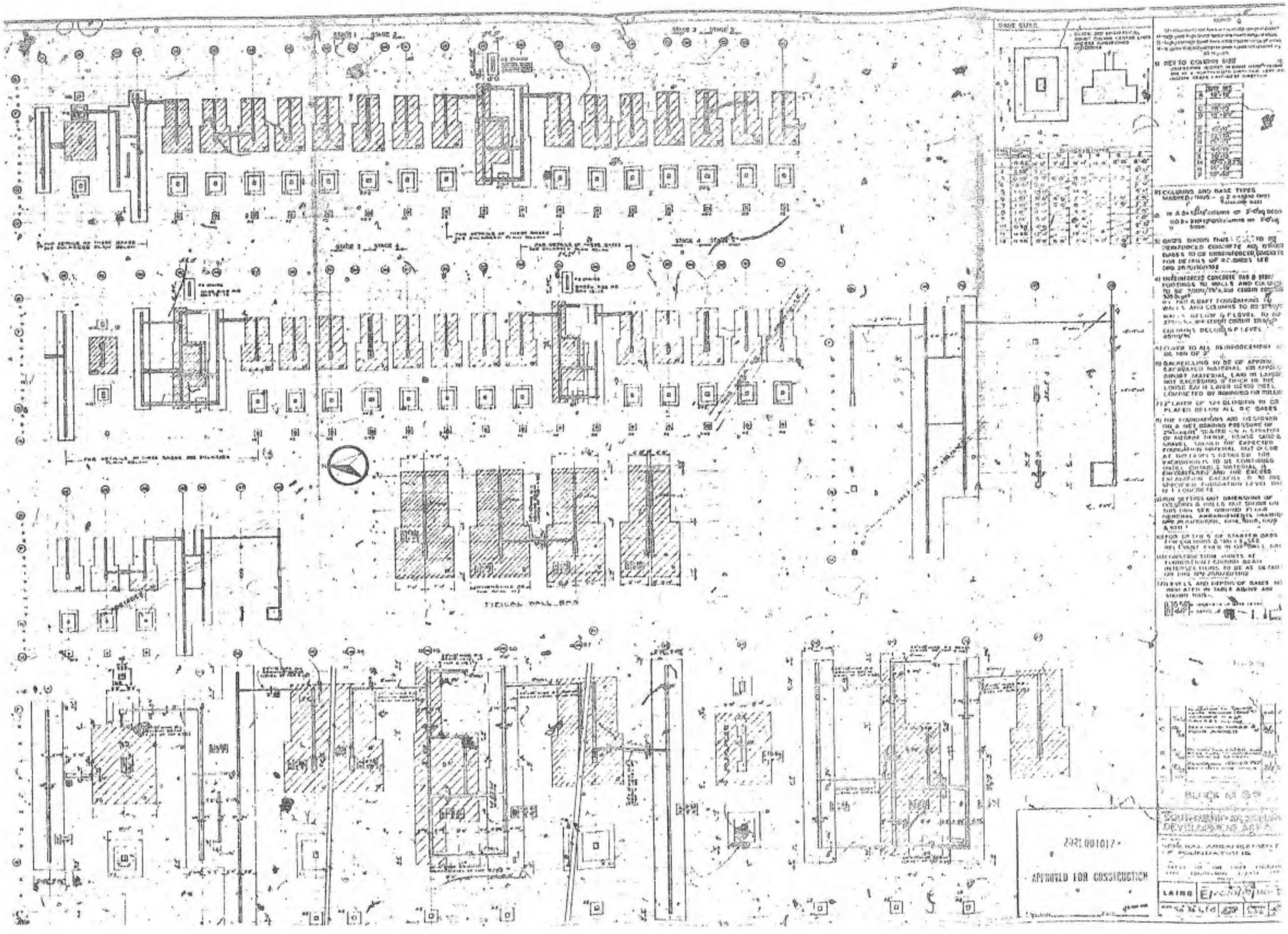
A12



13 STOREY BLOCKS

Appendix B

Existing Foundation Drawing


APPROVED FOR CONSTRUCTION

AYLESBURY ESTATE — FIRST DEVELOPMENT SITE - PHASE 1B / 1C

BACK UP INFORMATION FOR EIA — OVERVIEW SCHEDULE of CONSTRUCTION VEHICLE MOVEMENTS AND OPERATIVES ON SITE (EXCLUDES DEMOLITION)

2016 to 2021

Year	2016					2017											2018											2019											2020											2021						
Month	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Month No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19																																										
Phase 1B/C : Plot 1																																																									
Vehicle movements	150	250	250	275	275	275	300	300	325	400	400	500	500	450	450	400	400	400	150																																									6450
Average number of operatives on site	50	60	60	60	70	70	70	100	100	100	120	130	130	110	100	90	80	70	60																																									88av
Phase 1B/C : Plot 2																																																								
Vehicle movements						50	60	70	100	100	100	100	100	100	110	120	120	100	80	80	60	50																																								1500
Average number of operatives on site						20	25	25	25	25	25	25	25	25	40	25	25	25	25	25	25	20																																								25av
Phase 1B/C : Plot 5																																																								
Vehicle movements							200	300	300	400	400	400	400	450	450	490	500	500	500	550	550	600	550	580	550	500	480	450	450	400	300	200																													11450
Average number of operatives on site							50	60	70	80	90	100	110	120	120	120	120	120	130	130	140	160	160	160	160	160	130	130	130	120	120	100																													119av
Phase 1B/C : Plot 6																																																							
Vehicle movements																																																								9750
Average number of operatives on site																																																									102av
Phase 1B/C : Plot 3																																																							
Vehicle movements																																																								1950
Average number of operatives on site																																																								31av
Phase 1B/C : Plot 4																																																							
Vehicle movements																																																								10800
Average number of operatives on site																																																								112av
Phase 1B/C : Residual woks																																																							
Vehicle movements																																																								100
Average number of operatives on site																																																								20av

Based upon a total of 50 vehicle movements per apartment (or equivalent).

Based upon a total of 55 man weeks per apartment (or equivalent).

Calculation for Plot 1 ~	
42 + 29 + 50 + 8 (allowance for community) = 129 units equiv.	
50 x 129 = 6450 vehicles.	6450 / 81 = av 80 per week / 347 per month
55 x 129 = 7095 man weeks.	7095 / 81 = av 88 operatives on site.

Calculation for Plot 2 ~	
30 units	
50x30=1500 vehicles	1500/66weeks = 98 / month av.
55x30=1650 man weeks	1650/66 = av 25 operatives on site.

Calculation for Plot 5 ~	
Energy Centre (10 equiv) + 96 + 1 + 122 = 229	
50x229=11,450 vehicles	11450 / 106 weeks = 467 / month av.
55x229=12,595 man weeks	12595 / 106 = av 119 operatives on site.

Calculation for Plot 6 ~	
80 + 2 + 113 = 195 units	
50 x 195 = 9750 vehicles	9750 / 105 weeks = 402 / month av.
55 x 195 = 10725 man weeks	10725 / 105 = av 102 operatives on site.

Calculation for Plot 3 ~	
10 + 23 + 6 = 39 units	
50 x 39 = 1950 vehicles	1950 / 70 weeks = 121 / month av.
55 x 39 = 2145 man weeks	2145 / 70 = av 31 operatives on site.

Calculation for Plot 4 ~	
49 + 48 + 119 = 216	
50 x 216 = 10800 vehicles	10800 / 106 weeks = 441 / month av.
55 x 216 = 11880 man weeks	11880 / 106 = av 112 operatives on site.