Construction Management Plan.

For the proposed conversion and refurbishment of

9-13 Grape Street

London WC2H 8DR

***Contents*:-**

1.0 Introduction.

This Construction Plan has been prepared in relation to the proposed conversion, extension and refurbishment works at 9-13, Grape Street, London, WC2

This Construction Management plan has been prepared in consultation with Charter Construction Plc. in order to incorporate the detailed guidance and input of a construction company experienced in the dealing with the complex site logistics and programming of a project of this nature. They have been asked to give specific guidance on how they would approach this construction scheme as main contractor. Their advice has been used to formulate a practical site specific plan that considers the 'real life' challenges of this site.

It is proposed that the approved Construction Management Plan will be included as a guide within the tender documentation. The tendering contractors will be required to submit a detailed construction management plan with their tender returns. The successful contractor will be required to develop their plan, in connection with the Planning Authority and, as far as practicable, the local businesses and residents. The final approved plan will be incorporated as part of the JCT building works contract.

This plan will be issued at tender stage to specifically ensure that the requirements contained within it are properly priced by the selected contractor and that the procedures set out in this document become part of the contract.

The building owner, Project Met, proposes to convert the existing building to form new residential units.

Grape Street is located in the Bloomsbury Ward of Camden.

The principle front elevation faces Grape Street. The main 'secondary' elevation is visible from West Central Street but set back from the street. The rear of the building can only be accessed by crossing neighbouring land.

The surrounding building uses along Grape Street comprise generally of commercial space at ground floor level, with residential accommodation above.

Grape Street is a narrow period street with tall buildings on both sides. The existing facades are highly decorative with high levels of architectural detailing (see photographs below).

*2.0 **Proposed Programme Dates.***

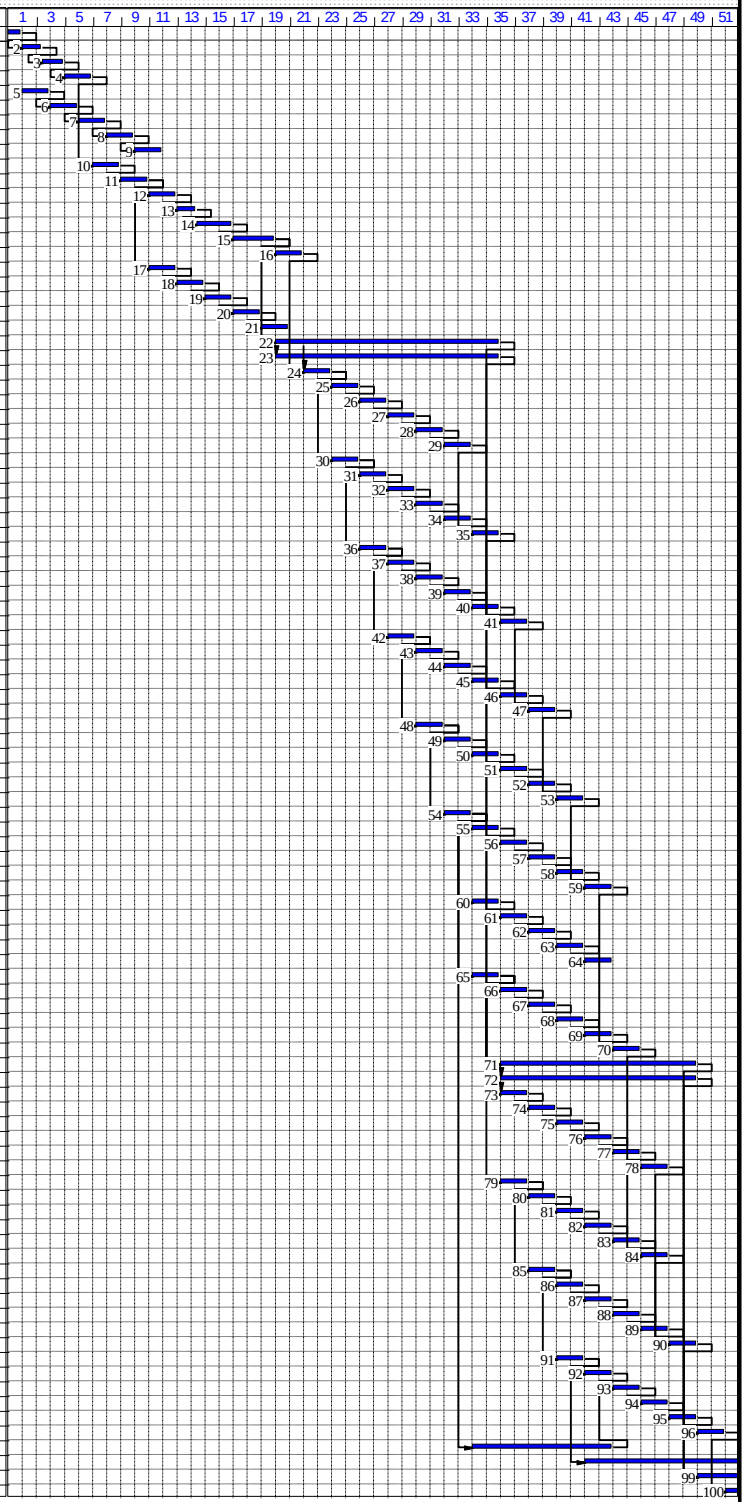
- Commencement: Spring 2015.
- Duration: 52 Weeks.

*2.1 **Outline Programme of Works.***

- (See Overleaf & Appendix ‘A’).

9-11, Grape Street.
London.

ID	Name
1	Erect Scaffold - Front Elevation Incl. Gantry
2	Erect Scaffold - Rear Elevation
3	Erect Temporary Roof
4	Demolition At Roof Level
5	Demolition At 3rd Floor Level
6	Demolition At 2nd Floor Level
7	Demolition At 1st Floor Level
8	Demolition At Ground Floor Level
9	Demolition At Basement Level
10	Re-Construct External Walls Ready For New 4th Floor Joists
11	Install New 4th Floor Joists & Temporary Cover
12	Extend External Masonry Walls Ready For New Roof
13	Install Structural Steel Beams At Roof Level
14	Construct Roof Carcass Ready For New Finishings
15	Lay New Roof Finishings
16	Install New Glasswork At Roof Level
17	Structural Works To 3rd Floor
18	Structural Works To 2nd Floor
19	Structural Works To 1st Floor
20	Structural Works To Ground Floor
21	Structural Works To Basement Floor
22	Mechanical & Electrical 1st Fix Services Installations
23	Plumbing 1st Fix Services Installations
24	Lay Acoustic Floor System - 4th Floor
25	Lay Acoustic Floor System - 3rd Floor
26	Lay Acoustic Floor System - 2nd Floor
27	Lay Acoustic Floor System - 1st Floor
28	Lay Acoustic Floor System - Ground Floor
29	Lay Acoustic Floor System - Basement Floor
30	Erect Partition Walls - 4th Floor
31	Erect Partition Walls - 3rd Floor
32	Erect Partition Walls - 2nd Floor
33	Erect Partition Walls - 1st Floor
34	Erect Partition Walls - Ground Floor
35	Erect Partition Walls - Basement
36	Install MF Suspended Ceiling Gridwork - 4th Floor
37	Install MF Suspended Ceiling Gridwork - 3rd Floor
38	Install MF Suspended Ceiling Gridwork - 2nd Floor
39	Install MF Suspended Ceiling Gridwork - 1st Floor
40	Install MF Suspended Ceiling Gridwork - Ground Floor
41	Install MF Suspended Ceiling Gridwork - Basement
42	Plasterboard All Ceilings & Partition Walls - 4th Floor
43	Plasterboard All Ceilings & Partition Walls - 3rd Floor
44	Plasterboard All Ceilings & Partition Walls - 2nd Floor
45	Plasterboard All Ceilings & Partition Walls - 1st Floor
46	Plasterboard All Ceilings & Partition Walls - Grd Floor
47	Plasterboard All Ceilings & Partition Walls - Basement
48	Fix Door & Window Frames - 4th Floor
49	Fix Door & Window Frames - 3rd Floor
50	Fix Door & Window Frames - 2nd Floor
51	Fix Door & Window Frames - 1st Floor
52	Fix Door & Window Frames - Grd Floor
53	Fix Door & Window Frames - Basement
54	Plaster & Skim - 4th Floor
55	Plaster & Skim - 3rd Floor
56	Plaster & Skim - 2nd Floor
57	Plaster & Skim - 1st Floor
58	Plaster & Skim - Grd Floor
59	Plaster & Skim - Basement
60	Install Staircases - 3rd to 4th Floor
61	Install Staircases - 2nd to 3rd Floor
62	Install Staircases - 1st to 2nd Floor
63	Install Staircases - Grd to 1st Floor
64	Install Staircases - Basement to Grd Floor
65	Ceramic Wall & Floor Tiling - 4th Floor
66	Ceramic Wall & Floor Tiling - 3rd Floor
67	Ceramic Wall & Floor Tiling - 2nd Floor
68	Ceramic Wall & Floor Tiling - 1st Floor
69	Ceramic Wall & Floor Tiling - Grd Floor
70	Ceramic Wall & Floor Tiling - Basement
71	Mechanical & Electrical 2nd Fix Services Installations
72	Plumbing 2nd Fix Services Installations
73	Install Sanitaryware - 4th Floor
74	Install Sanitaryware - 3rd Floor
75	Install Sanitaryware - 2nd Floor
76	Install Sanitaryware - 1st Floor
77	Install Sanitaryware - Grd Floor
78	Install Sanitaryware - Basement
79	Lay Engineered Laminate Flooring - 4th Floor
80	Lay Engineered Laminate Flooring - 3rd Floor
81	Lay Engineered Laminate Flooring - 2nd Floor
82	Lay Engineered Laminate Flooring - 1st Floor
83	Lay Engineered Laminate Flooring - Grd Floor
84	Lay Engineered Laminate Flooring - Basement
85	Carpentry 2nd Fix - 4th Floor
86	Carpentry 2nd Fix - 3rd Floor
87	Carpentry 2nd Fix - 2nd Floor
88	Carpentry 2nd Fix - 1st Floor
89	Carpentry 2nd Fix - Grd Floor
90	Carpentry 2nd Fix - Basement
91	Painting & Decorations - 4th Floor
92	Painting & Decorations - 3rd Floor
93	Painting & Decorations - 2nd Floor
94	Painting & Decorations - 1st Floor
95	Painting & Decorations - Grd Floor
96	Painting & Decorations - Basement
97	Lift Installations
98	Fixtures & Fittings
99	Test & Commission M&E Services Installations
100	Clean & Handover



Outline Programme of Works.

Grape Street.pc	Prog. No: GS.001	Rev:	Date October 2013	By: APC

3.0 Brief Description of the Works.

The proposed works include: -

- Strip out & replacement of mechanical, electrical & plumbing installations.
- Demolition of internal partitions & masonry walls.
- Removal & replacement of floors & ceilings.
- Removal of roof finishes, potentially all of the roof structure.
- Removal & replacement of staircases.
- Removal & replacement of external windows & door frames.
- New pitched roof structures and coverings.
- New residential layouts including floors, ceilings & partition walls etc.
- New internal finishing's.
- New stairs & lift to circulation areas.

9-13 Grape Street is currently unoccupied.

The surrounding buildings and the adjacent properties are occupied and will remain in use throughout.

Where necessary it is anticipated that party wall notices will be served on the adjoining properties owners for any work affecting the party walls as required under the Party Wall etc. Act.

This Construction Management Plan and the stipulations made of the successful contractor are intended to minimise the impact the construction works will have on the existing residents and business as far as is reasonably possible.

The client's project team will work with the Local Authority to review and update the Construction Management Plan during the course of the detailed design process and throughout the construction phase of the project.

Accordingly, the specific provisions of this plan must be considered 'draft' until the detailed scheme design, following planning submission, is finalised. It is anticipated that greater detail will be developed later and a final plan will be submitted for comment at the appropriate time. All future revisions to the plan will be submitted to the Local Authority for comment and approval.

The 'spirit' of this Construction Management Plan will, however, remain, and that is to minimise the impact the works will have on the surrounding buildings.

3.1 Site Facilities.

Canteen and welfare facilities for site operatives will be established internally on the lower floors.

In line with the requirements of the 'Considerate Constructors Scheme', a high standard of site welfare facilities will be a contractual stipulation made of the main contractor. These will be maintained throughout the project.

Toilets will be screened. The site will be cleaned on a regular basis, especially around canteens and toilets.

The use of radios will not be permitted.

All site facilities will be contained within the existing building.

Offices and meeting rooms will be established internally on the lower floor levels.

The site will open 30 minutes before the working day commences to ensure that there are not queues resulting from workmen arriving early and waiting outside in the street. Early arrivals will be directed to the internal welfare areas where they may prepare for work, change clothes etc. but will not be allowed to commence work (including unloading tools etc.) until the start of the working day and within the normal 'working hours' stipulated by the Environmental Health Office.

A suitable onsite smoking area will be provided to prevent workmen using Grape Street as a location for smoking.

Welfare facilities will be housed inside the building and the Main Contractor will be required to ensure all workmen refrain from smoking, eating, sunbathing etc. outside the site boundary or within view of the street.

All deliveries will generally be restricted to the normal construction industry working hours and will be in strict accordance with statutory restrictions for noisy work.

3.2 Demolition.

The appointed demolition contractor will be required to provide all appropriate method statement prior to carrying out any demolition at the site.

The methodology for each operation will be dictated by the type of construction and other influencing factors, such as the location of adjacent buildings, noise and dust generation.

The scope of the demolition works include: -

- Disconnections and removal of all mechanical and electrical services connections.
- Removals of existing roof finishing including the entire roof structure.
- Demolition of internal partitions & masonry walls.
- Removals of floor coverings & ceilings.
- Removals of staircases.
- Removals of external windows & door frames.

All surplus waste material arising from site will be disposed of at the appropriate licensed recycling centre.

Where appropriate all materials capable of being reused should be 'cleaned', injected, and approved before reuse, potentially minimising future traffic movements.

Strict precautions will be taken to prevent dust and nuisance to the adjoining surrounding properties. Daily cleaning regimes will be implemented

3.3 New Roof Structure & Associated Finishes.

It is anticipated that the existing roof structure will likely be removed and replaced with new structural elements and weatherings in accordance with submitted plans and drawings.

Primarily the new roof structure consists of new steel and timber beams, joists and rafters.

The primary form of roof weathering is natural slate.

3.4 Replacements of Mechanical, Electrical & Plumbing Installations.

The original service installations will made safe and isolated before demolition works commence. All such services will be stripped out progressively as works proceed.

New M&E services installations will be installed at the appropriate time within the contract programme, in accordance with the final design and the contract drawings.

3.5 New Internal Partitions & Walls.

Internal partitions primarily consist of metal stud work complete with acoustic resilient bars to which plasterboard is fixed.

Where existing masonry walls remain these are made good to suit the new configurations. New openings will be formed within the existing structure as detailed on the application drawings.

3.6 Replacement of Floors & Ceilings.

The existing floor joists generally remain and are strengthened in readiness to support the partitions.

As part of the detailed design process, specific structural engineering details will be developed, tendered and issued to the construction team. Any temporary works will be designed by an appropriately qualified structural engineer, installed in accordance with these details under the supervision of the engineer to ensure safe working practices are maintained at all times.

Levelling to the floor joists will be carried out before the acoustic flooring system is fixed.

Progress of the mechanical and electrical installation 1st fix items will dictate when new plasterboard ceiling will be installed.

1st fix M&E services will be installed as the work progresses in readiness for plasterboard fixing.

3.7 New Stairs, Lift & Circulation Areas.

Completion of plastering work will allow commencement of the new stair installation.

Lifts installations are expected to begin in conjunction with these works.

3.8 New External Window/Door Frames.

Nearing completion of 1st fix mechanical and electrical services installations, carpentry 1st fix items and plaster boarding, it is anticipated that the existing windows will be removed and new installed. Internal plastering will then follow.

3.9 New Internal Finishing's.

Internal finishes comprise engineering laminate flooring, ceramic tiling, kitchen and fitted furniture installations, carpentry 2nd fix items and decorations.

Works will proceed on a systematic floor by floor basis, commencing at the 4th floor and working down sequentially to ground floor level.

4.0 Proposed Hours in which Vehicles Arrive & Depart Site.

Generally, site vehicles will arrive and depart during normal building site working hours. These hours are: -

- 08.00hrs to 18.00hrs Mon/Fri.
- 08.00hrs to 13.00hrs Sat.
- No work will be allowed and no deliveries undertaken on Sundays or during public holidays.

4.1 Abnormal Deliveries.

There will however, be occasions when heavy/wide loads need to be delivered and removed from site outside of these hours.

Such deliveries would include: -

- Structural Steelwork at Roof Level.
- New windows.

- Mechanical Roof Plant at Roof Level.

It is envisaged that all such deliveries will be carried out utilising a 'Mobile Tower Crane' (See Appendix 'B') from within Grape Street itself with all 'off-loading' taking place from parked vehicles located nearby.

In these instances, all necessary Permits, Road Closures will be obtained from the appropriate authority and approved before the work proceeds.

Throughout the course of the construction phase local residents and businesses will be notified and kept informed of progress via newsletters. The timing of these newsletters will be such that the details of any specific abnormal or large deliveries, road closures or the commencement of an external works package is identified at least 8-weeks in advance of all such scheduled activities.

The public consultation team commissioned to engage with the local community as part of the planning application submission will be retained to independently coordinate and manage community liasons. This will not be left solely to the contractor to prepare or coordinate.

It is anticipated that regular public consultation events will be arranged during the course of the construction programme, at which members of the design and construction teams, as well as the client, will be available to meet and discuss any concerns that may have arisen.

All works are to be managed in full accordance with approved 'Method Statements & Risk Assessments'.

5.0 Proposed Routes For Vehicles Between Site & TFL Network.

Grape Street is located within TFL's - 'North/Central Area' (See Map No-1).

Vehicles Arriving on Site from the North - (See Map No-2): -

- Vehicles arrive in London on the A1 (Upper Street).
- Right: A501 (Negotiate One-Way System & Forward - Pentonville Road).
- Proceed: One-Way System (Kings Cross).
- Proceed: A501 (Euston Road).
- Left: A4200 (Woburn Place).
- Proceed: A40 (Kingsway).
- Proceed: (Aldwych).
- Right: A4 (Strand).
- Proceed: (Trafalgar Square).
- Right: A4 (Pall Mall).
- Right: (Regent Street).
- Proceed: (Piccadilly Circus).
- Left A401 (Shaftesbury Avenue).
- Right: Grape Street (One-Way).

Vehicles Leaving Site to the North - (See Map No-3).

- Leave Site via Grape Street.
- Right: A40 (High Holborn).
- Proceed: A40 (St, Giles High Street).
- Right: A40 (New Oxford Street).
- Proceed: A40 (Bloomsbury Way).
- Left: A4200 (Southampton Row/Woburn Place).
- Right: A501 (Euston Road).
- Proceed: A501 (Pentonville Road).
- Left: A1 (Upper Street out of London).

Vehicles Arriving on Site from the South - (See Map No-4): -

- Vehicles arrive in London on the A301 (Waterloo Bridge).
- Proceed: A4 (Aldwych).
- Left: A4 (Strand).
- Proceed: (Trafalgar Square).
- Right: A4 (Pall Mall).
- Right: (Regent Street).
- Proceed: (Piccadilly Circus).
- Left A401 (Shaftesbury Avenue).
- Right: Grape Street (One-Way).

Vehicles Leaving Site to the South - (See Map No-5).

- Leave Site via Grape Street.
- Right: A40 (High Holborn).
- Proceed: A40 (St, Giles High Street).
- Right: A40 (New Oxford Street).
- Proceed: A40 (Bloomsbury Way).
- Right: A4200 (Negotiate One-Way System & Forward - Kingsway).
- Proceed: A4 (Aldwych).
- Left: A301 (Waterloo Bridge out of London).

Vehicles Arriving on Site from the East - (See Map No-6): -

- Vehicles arrive in London on the A501 (City Road).
- Proceed: A501 (Euston Road).
- Left: A4200 (Woburn Place).
- Proceed: A40 (Kingsway).
- Proceed: (Aldwych).
- Right: A4 (Strand).
- Proceed: (Trafalgar Square).
- Right: A4 (Pall Mall).
- Right: (Regent Street).
- Proceed: (Piccadilly Circus).
- Left A401 (Shaftesbury Avenue).
- Right: Grape Street (One-Way).

Vehicles Leaving Site to the East - (See Map No-7).

- Leave Site via Grape Street.
- Right: A40 (High Holborn).
- Proceed: A40 (St, Giles High Street).
- Right: A40 (New Oxford Street).
- Proceed: A40 (Bloomsbury Way).
- Left: A4200 (Southampton Row/Woburn Place).
- Right: A501 (Euston Road).
- Proceed: A501 (City Road out of London).

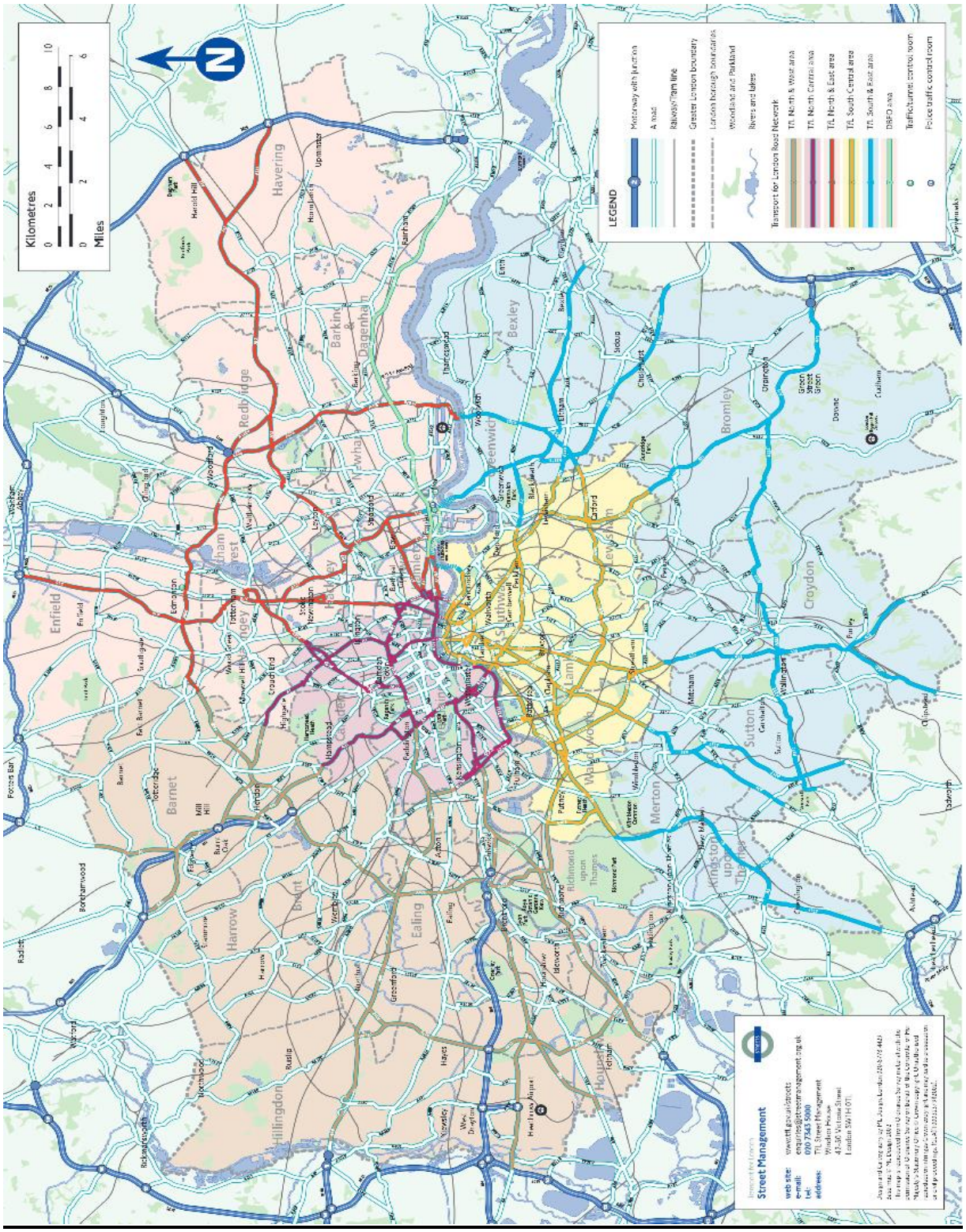
Vehicles Arriving on Site from the West - (See Map No-8): -

- Vehicles arrive in London on the A40 (Marylebone Flyover).
- Proceed: A501 (Euston Road).
- Right: A4200 (Woburn Place).
- Proceed: A40 (Kingsway).
- Proceed: (Aldwych).
- Right: A4 (Strand).
- Proceed: (Trafalgar Square).
- Right: A4 (Pall Mall).
- Right: (Regent Street).
- Proceed: (Piccadilly Circus).
- Left A401 (Shaftesbury Avenue).
- Right: Grape Street (One-Way).

Vehicles Leaving Site to the West - (See Map No-9).

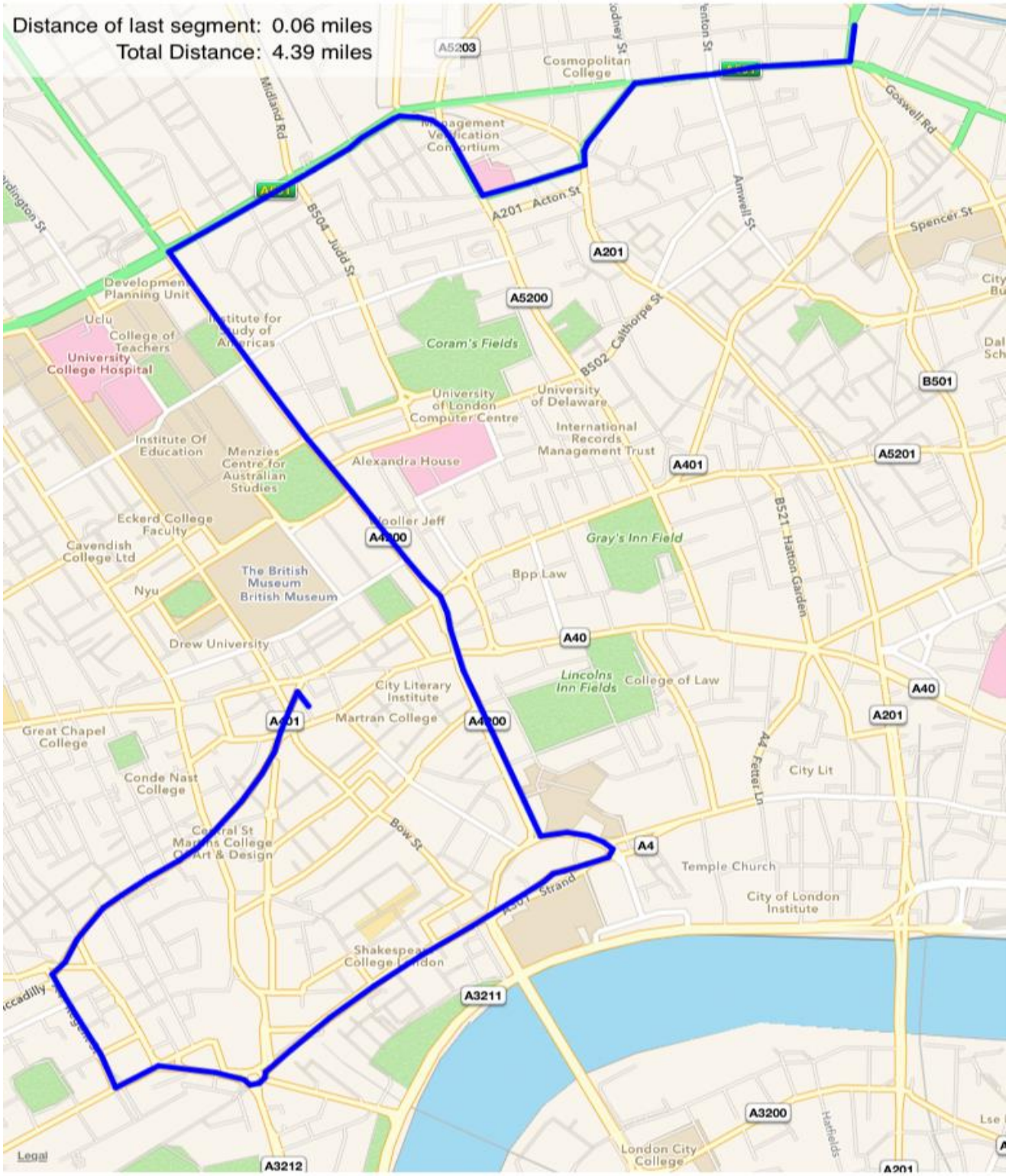
- Leave Site via Grape Street.
- Right: A40 (High Holborn).
- Proceed: A40 (St, Giles High Street).
- Right: A40 (New Oxford Street).
- Proceed: A40 (Bloomsbury Way).
- Left: A4200 (Southampton Row/Woburn Place).
- Left: A501 (Euston Road).
- Proceed: A40 (Marylebone Flyover out of London).

TFL Base Map.



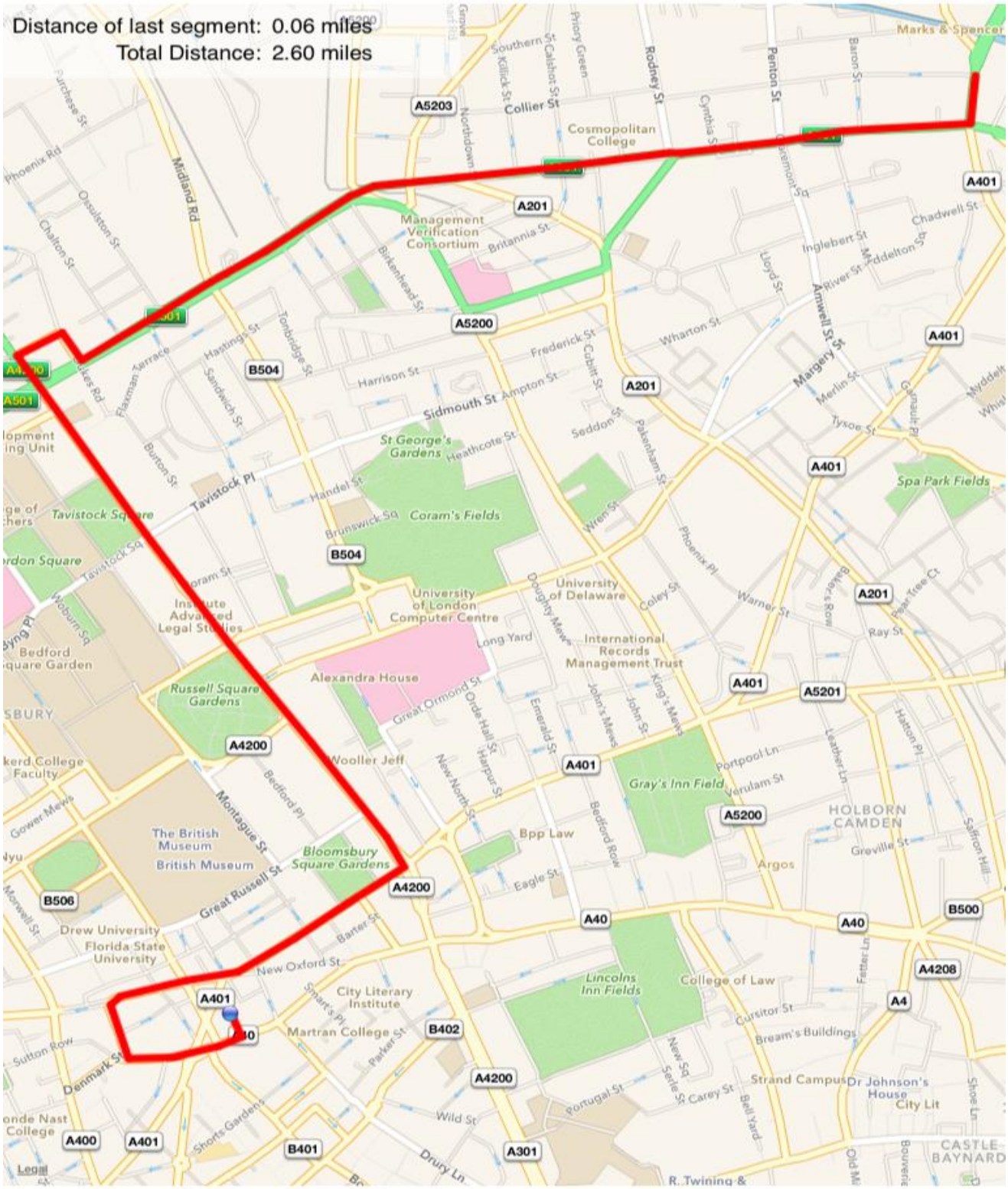
(Map No-1).

Vehicles Arriving to Site from the North.



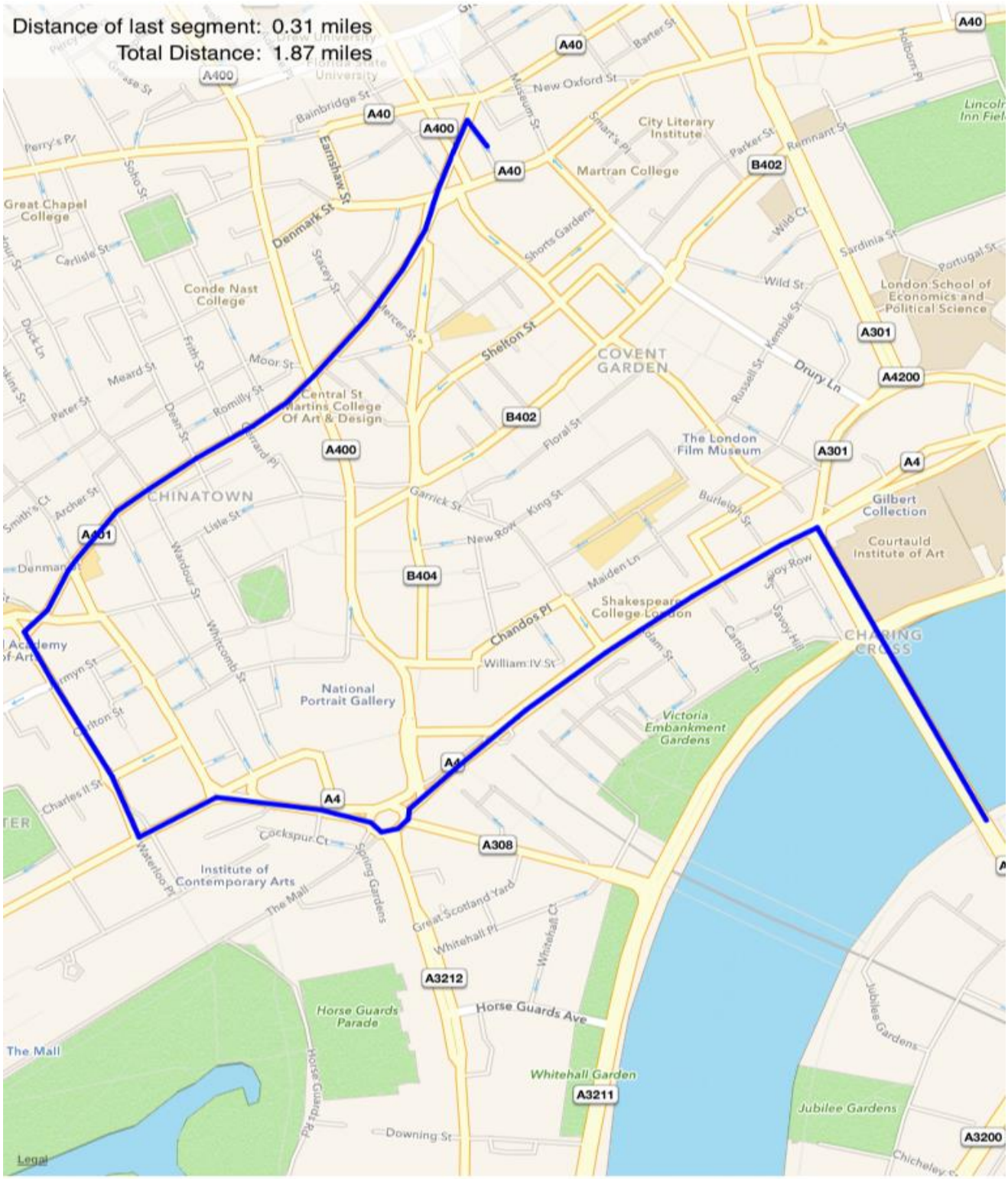
(Map No-2).

Vehicles Leaving Site to the North.



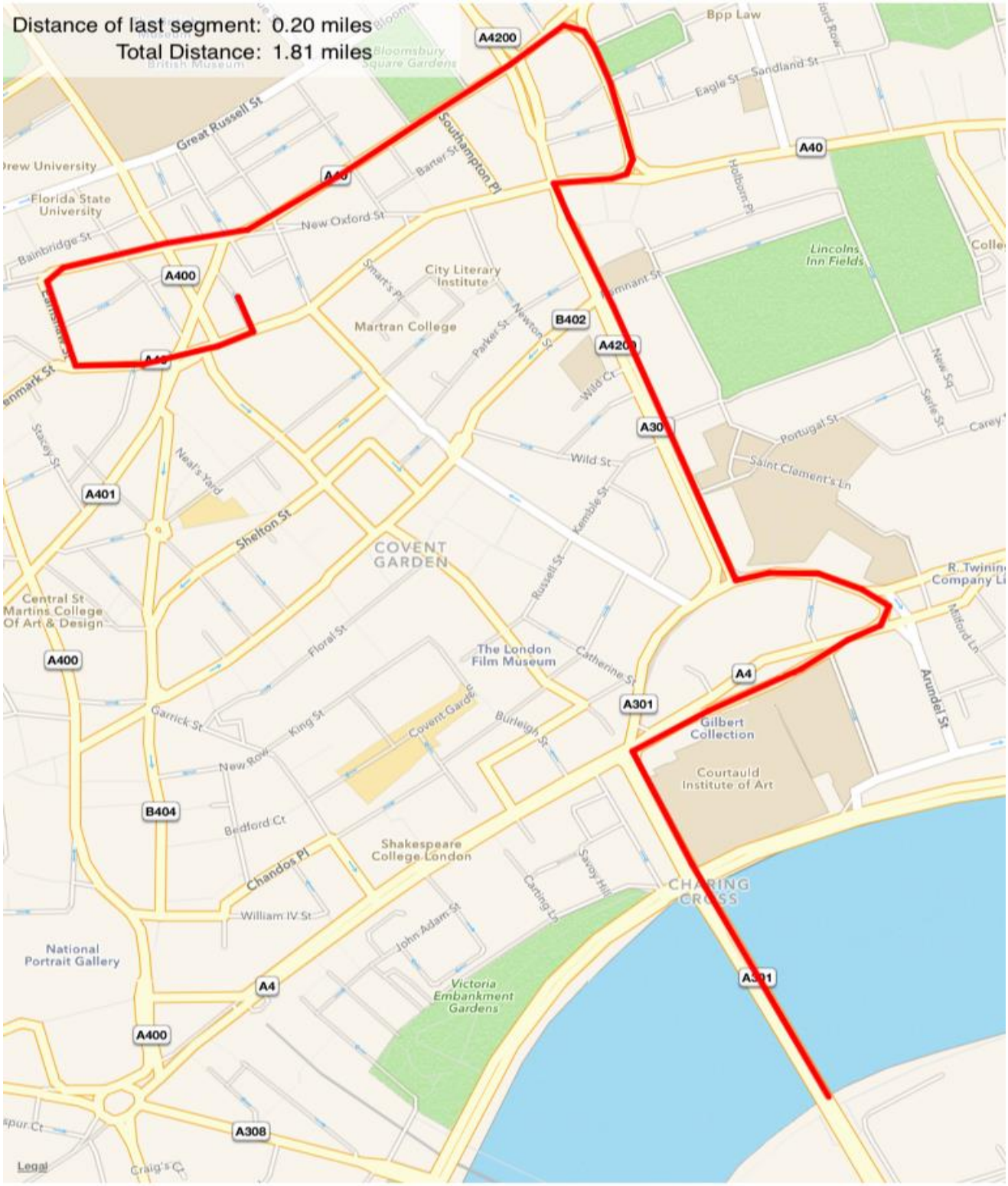
(Map No-3).

Vehicles Arriving To Site from the South.



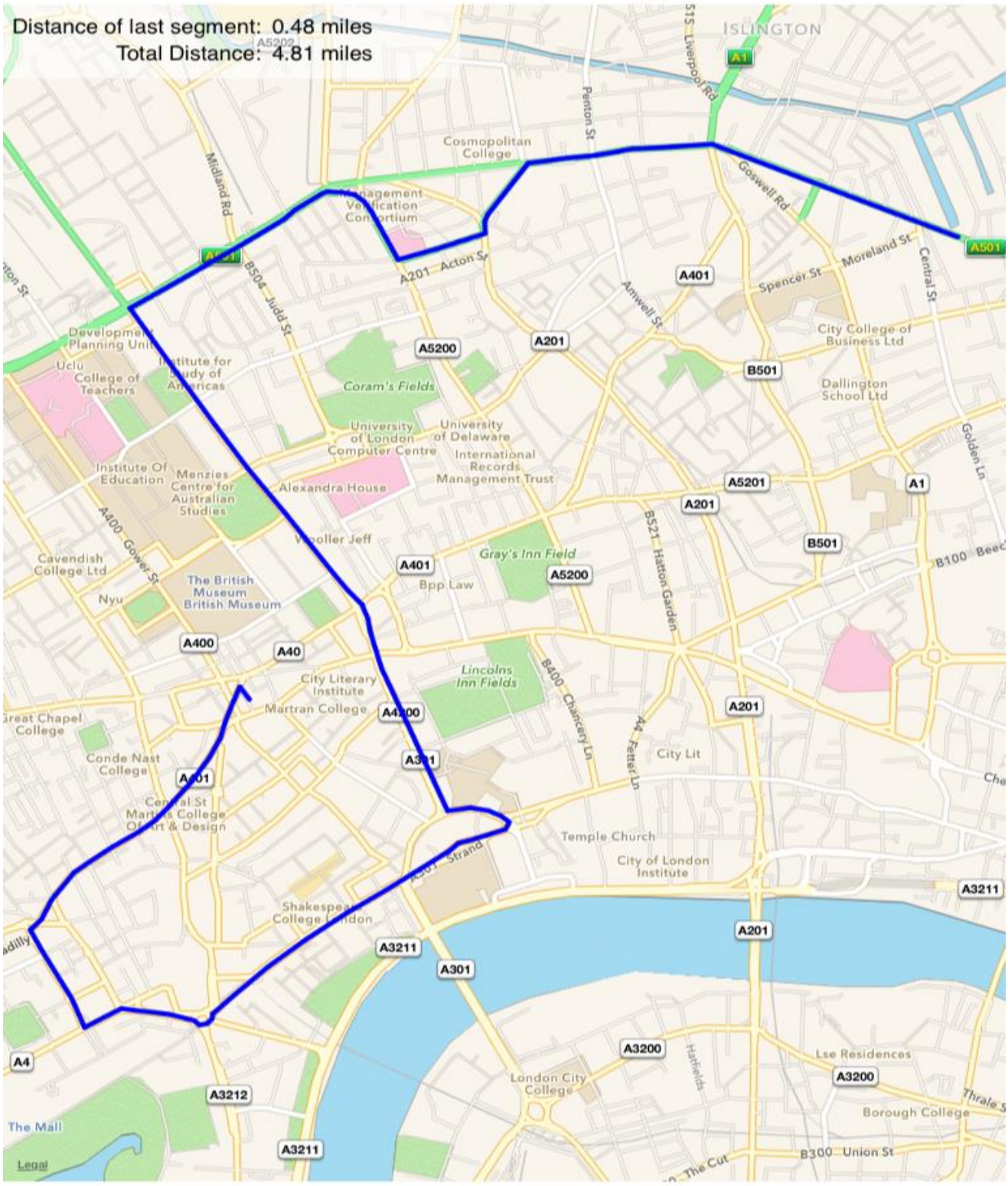
(Map No-4).

Vehicles Leaving Site to the South.



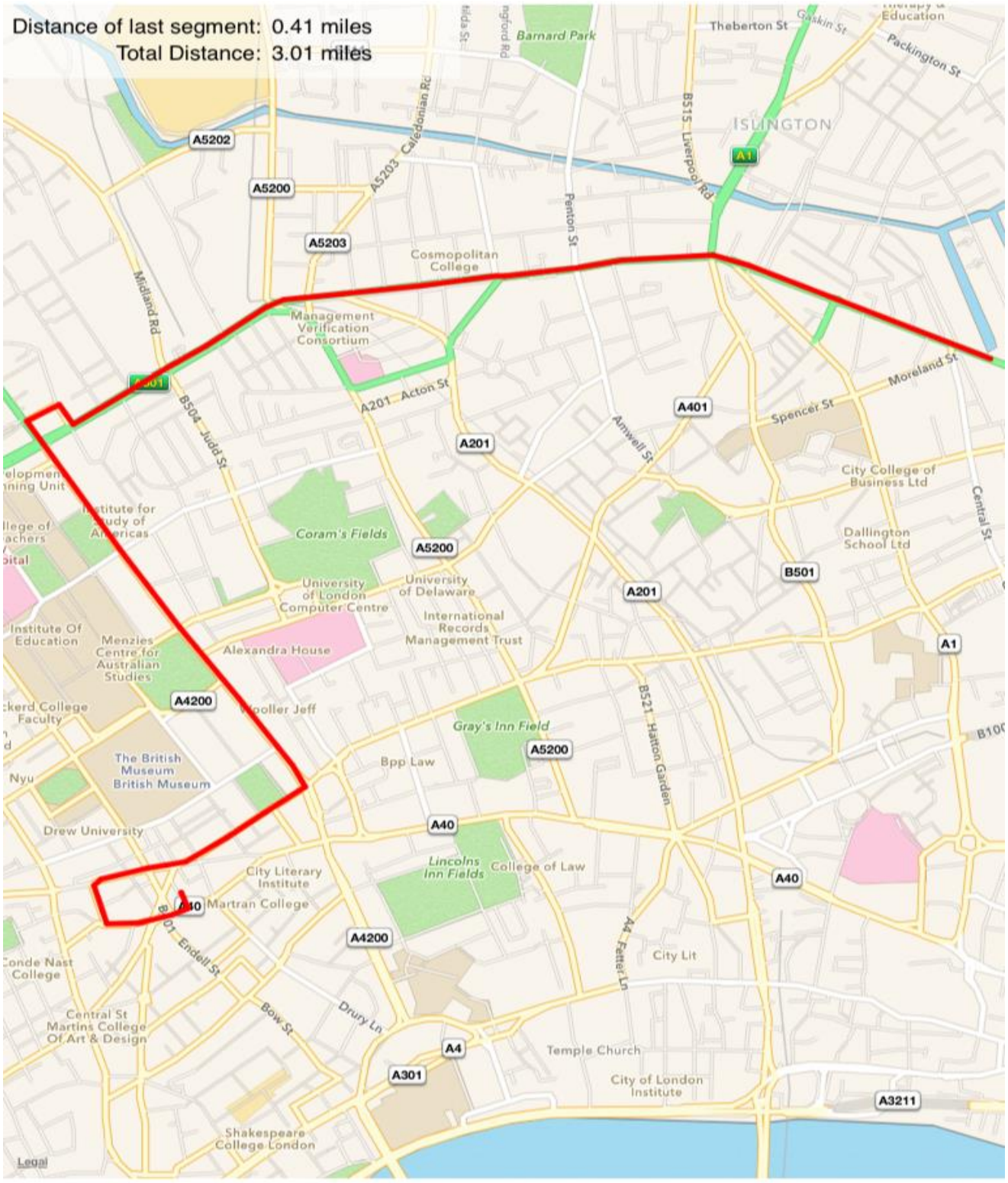
(Map No-5).

Vehicles Arriving To Site from the East.



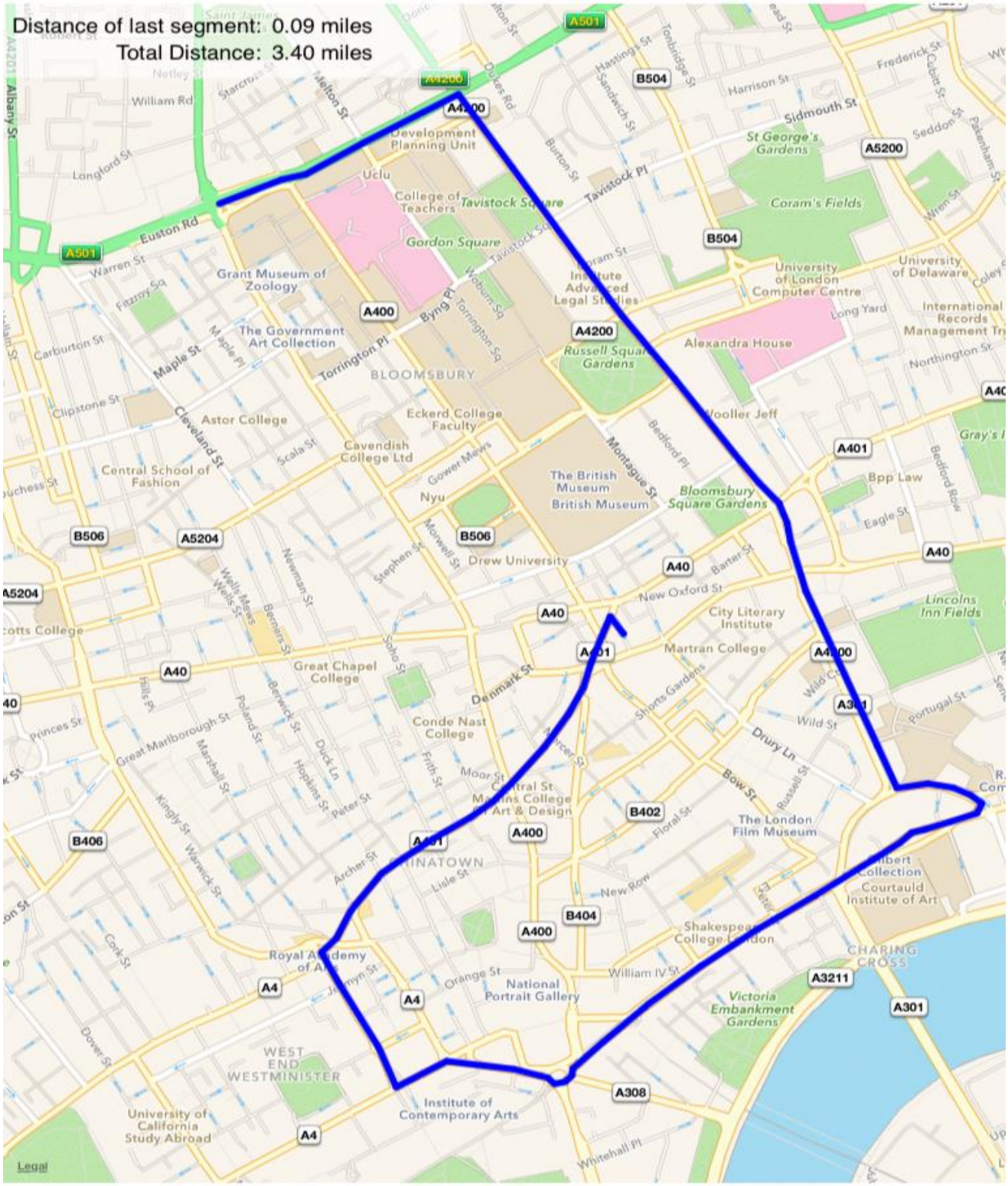
(Map No-6).

Vehicles Leaving Site to the East.



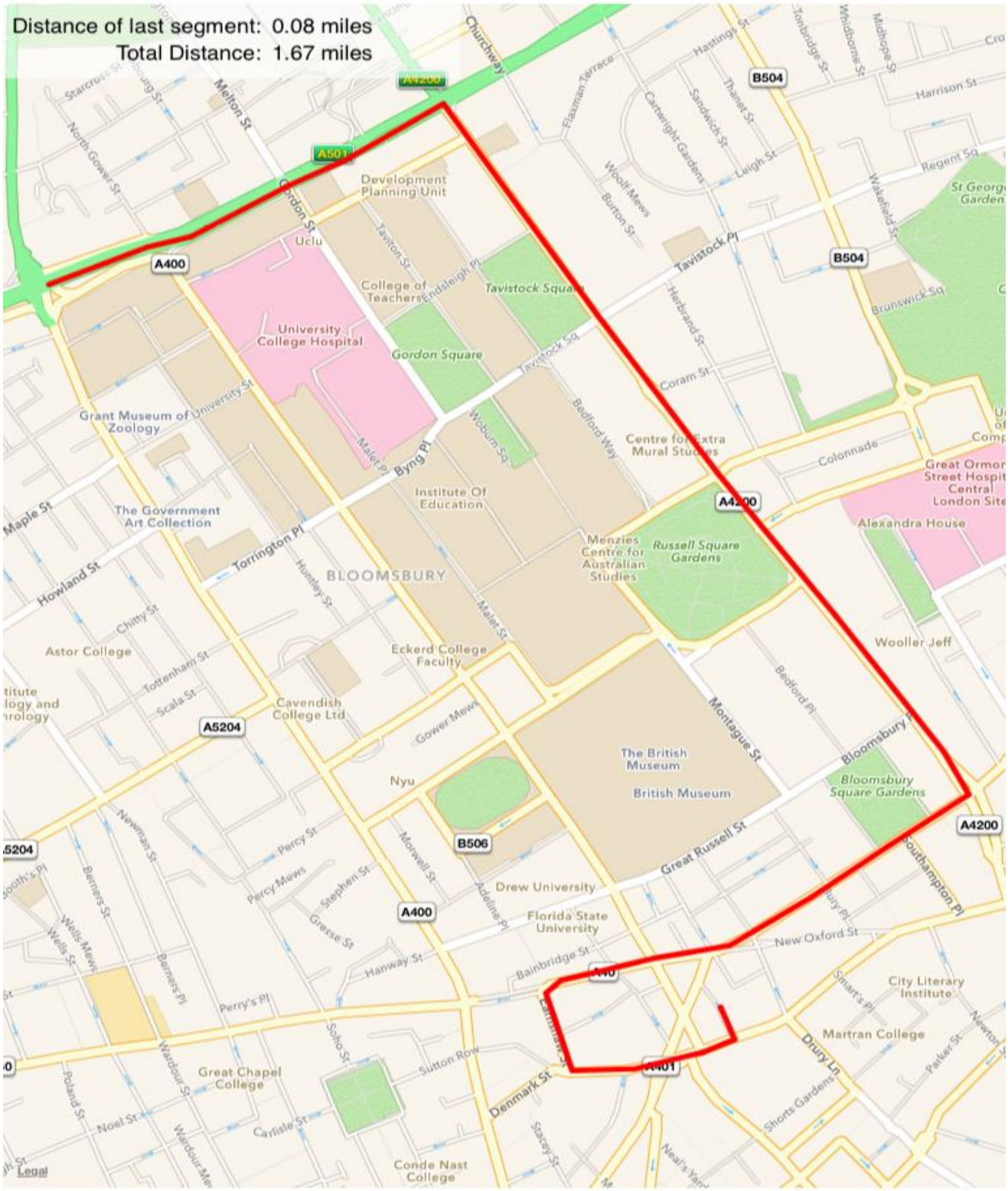
(Map No-7).

Vehicles Arriving To Site from the West.



(Map No-8).

Vehicles Leaving Site to the West.



(Map No-9).

6.0 Traffic Management Strategy.

The 'Traffic Management Strategy' for this project will be one of minimising the interface wherever possible between public vehicles and site traffic by reducing the numbers of deliveries.

This will include carefully scheduling of and combining deliveries as far as possible so that vehicles numbers are kept to an absolute minimum, avoiding local congestion.

Avoiding accidents and controlling the risks arising from the use of vehicles in construction is essential.

It will therefore be a requirement of the contract that the Main Contractor submit for approval a Traffic Management Plan. It will be a requirement that this plan address the following:-

- Planning and managing vehicles, cyclists and pedestrians.
- Elimination of reversing where possible.
- Safe driving and working practices.
- Protection of the public.
- Provisions of signs & barriers.
- Supervisory person co-ordinating movements at all times.

Contractor's delivery vehicles will be issued with access/egress routes when purchase orders are issued and instructions raised.

All vehicles will be directed along specific routes in accordance with routes (Section 5).

Drivers will be required to follow these routes when leaving site.

This information will be communicated to all contractors and suppliers immediately upon placement of orders.

The requirements to be included within the Traffic Management Plans will be stipulated in the tender documentation and will remain a strict requirement that it is to be included in all trade tender enquiries.

Delivery hours should be limited to working hours. This condition will also form part of sub-contract documentation and sub-contractors will be reminded of this at pre-start meetings by the Main Contractor. The plan will be monitored and reviewed at Construction Working Group (CWG) meetings to ensure that the procedures are adequate and working successfully.

Deliveries are to be scheduled by the manger in-charge who will ensure all details are logged into a delivery register.

The Banksmen/Road Marshalls will be in position 1 hour before any work starts and in advance of the earliest delivery and remain in place following the final delivery until the site is cleared and closed at the end of the working day.

The Banksmen/Road Marshalls will be instructed to 'move on' all vehicles arriving 15 minutes in advance of their delivery slot. Delivery vehicles will not, under any circumstances, be allowed to wait for their slot within Grape Street or the adjacent roads.

The delivery register shall be planned and maintained to ensure that each delivery event has sufficient 'float' as contingency to allow for the possible overrun of a particular unloading operation. This is to ensure that any delay will not affect the next delivery and cause traffic to 'back-up'.

The effectiveness of the proposed contingency allowed will be reviewed on a daily basis, recorded in the delivery record and reported at the CWG meetings.

Accordingly, adjustments to the delivery methodology will be made as necessary as the contract progresses. Prior to commencement of the project, the Main Contractor and the Client's project team will discuss with LBC the identification of a suitable local 'holding' area where delivery vehicles may be directed should there be an unforeseen incident on site that disrupts the delivery programme. This additional contingency will be used to prevent Grape Street from having move then one delivery on site at any one time. However, if this facility is consistently being used on a regular basis then this will clearly indicate inadequacy of the delivery programme to provide sufficient time between deliveries (or drivers are arriving outside their designated delivery windows) and fundamental changes will need to be made to address these failings.

Site managers will take control of all construction traffic movement and together with his/her team ensure that all sub-contractors and suppliers adhere to procedures set out in the pre-site conditions by booking in deliveries giving the required notices (min-48 hours).

The site manager will be responsible for preventing unauthorised parking and congestion of site traffic.

All personnel within the team will be in direct contact with each other by either mobile phone or two-way radio.

Road maintenance will be carried out ensuring all surfaces remain in a clean, safe condition during and at the end of each working day.

6.1 Size & Number of Delivery Vehicles.

Numerous types of delivery vehicles will be used during the reconstruction works.

These include: -

- Skip & general rubbish Lorries (these include roll on/roll off including hydraulic waste-eaters) – approx sizes for these = 7.00M X 2.40M and 7.50M X 2.40M respectively.

- Ready mix concrete Lorries – approx size for these = 8.25M X 2.45M.

- Flat bed Lorries for general deliveries of bricks, blocks, timber, scaffold, steel etc – approx size for these = 14.00M X 2.50M.

- Articulated Lorries will be discouraged owing to width restrictions and turning circles?

Projected vehicle movements should not exceed **6No per day**

6.2 Site Logistics.

Grape Street is a narrow 'One-Way' street accessed only from Shaftesbury Avenue at the North end of the road.

Shaftesbury Avenue itself is also 'One-Way' running diagonally in a Southwest to Northeast direction across London.

Access is therefore limited for larger vehicles; hence the restriction within the 'Traffic Management Strategy' for articulated Lorries?

Lorries, when entering Grape Street, are to do so under the guidance of the Banksman/Road Marshall.

Strict delivery procedures are to be implemented ensuring Grape Street is not overrun with site delivery vehicles.

Vehicles are to stop momentarily beneath the gantry spanning the road (see Drawing No's GS.03 & 04 in Section-7.0).
From this point, all material will be unloaded and either stored within the building or on the gantry above

During the course of unloading and loading operations, signs and temporary barriers will be positioned by the Banksman/Road Marshall at the streets entrance to ensure no other vehicles enter Grape Street.

Grape Street has double 'yellow lines' throughout its length and as a consequence, no parking provisions are catered for.

All contractors will be encouraged to use public transport.

Applications to the Council's Highways department for 'Road Closures', were necessary, will to be made giving the appropriate notice.

Mobile tower cranes (as shown in Appendix 'B') could be employed to erect steelwork, glass and mechanical plant at roof level under the above 'Road Closure Permit'.

This type of crane can operate with a 'Steep Angle of Jib' thereby, eliminating the need for over-sailing.

Also, with additional ballast, it's able to be set up within a 5.75M wide street

Reversing of vehicles under the above conditions is not therefore considered an issue

6.3 Driver & Vehicles Requirements.

All contractors and sub-contractors operating large vehicles over 3.5 tonnes will be required to meet all of the following conditions: -

- Operators must be a member of TFL's Fleet Operator Recognition Scheme or similar at bronze level.
- All drivers must have undertaken a 'Cycle Awareness Training Scheme' such as the 'Safe Urban Driver Module' through FORS or similar.

All vehicles associated with the construction of the development must: -

- Have side guards fitted, unless it can be demonstrated to the reasonable satisfaction of the employer, that the Lorry will not perform the function, for which it was built, if sides are fitted.
- Have a 'Close Proximity Warning System' fitted comprising of a front mounted, rear facing CCTV camera, a Close Proximity Sensor, an in-cab 'Warning Device' and an 'External Warning Device' to make the road user in close proximity aware of the drivers manoeuvre.
- Have a Class VI Mirror.
- Bear prominent signage to the rear of the vehicle to warn cyclists of the dangers of passing the vehicle on the inside.

The general public will have 'Right of Way' along Grape Street.

When vehicles are being off-loaded/loaded, works will cease momentarily enabling pedestrians to pass unhindered.

The Banksman will supervise and control all vehicle and pedestrian movements.

The hoarding gate attaching to the scaffold at street level will be closed at all times except during delivery times.

Temporary barriers will be placed across the pavement to prevent access by pedestrians.

Where hoarding panels encapsulate the pavement, pedestrians will be directed to the other side of the street.

Scaffold standards at this side of the road supporting the gantry above, are wrapped in dense hi-viz polystyrene sleeves.

All hoardings and scaffold tubes erected from the pavement are to be lit during hours of darkness.

Lit warning signs should also be prominently displayed warning vehicle drivers and pedestrians alike of any obstructions/hazard?

Cyclists, as well as pedestrian's movements, are to be monitored by the Banksman/Road Marshall. They will be given clear instructions and guided around any obstructions by erecting barriers as necessary.

Signs, cones and barriers are to convey clear and precise warnings.

Vehicles arriving unexpectedly will be turned away.

In order to reduce traffic congestion, deliveries shall be arranged as such that, Grape Street is closed for the absolute minimum period. This means loading the vehicle sufficient to ensure a quick 'turn-around'.

Vehicles delayed for any reason, should be encouraged to 'go-around'?

Mitigation measures will include: -

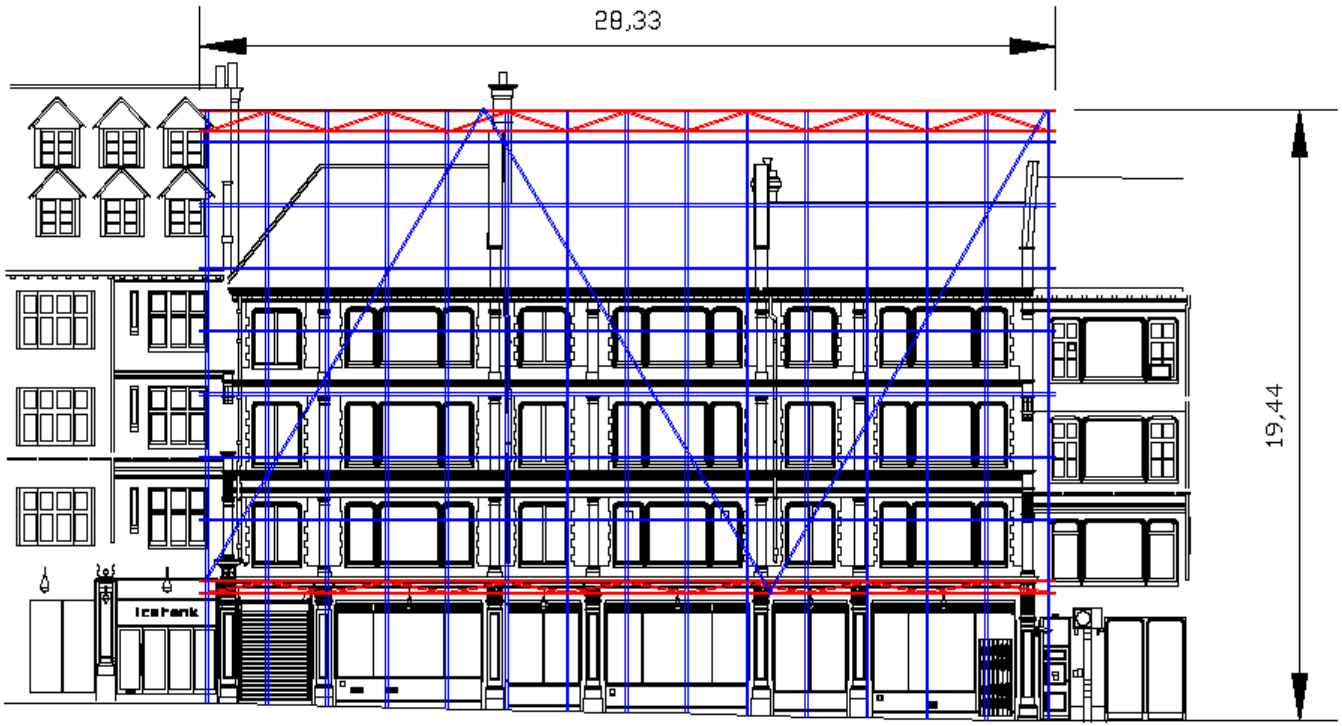
- Signposting access to the development from the major trunk roads by directing vehicles along designated routes.
- Managing deliveries to avoid periods during "the school run".
- Employing a Banksman/Road Marshall to operate site access/egress movements with responsibility for monitoring the public highway.
- Aggregate loads from different suppliers where possible to improve effectiveness.

Construction workers parking on neighbouring streets will not be permitted.

Provision should be made for secure bicycle parking if possible, to encourage use by the construction workforce.

7.0 Indicative Scaffold Proposals.

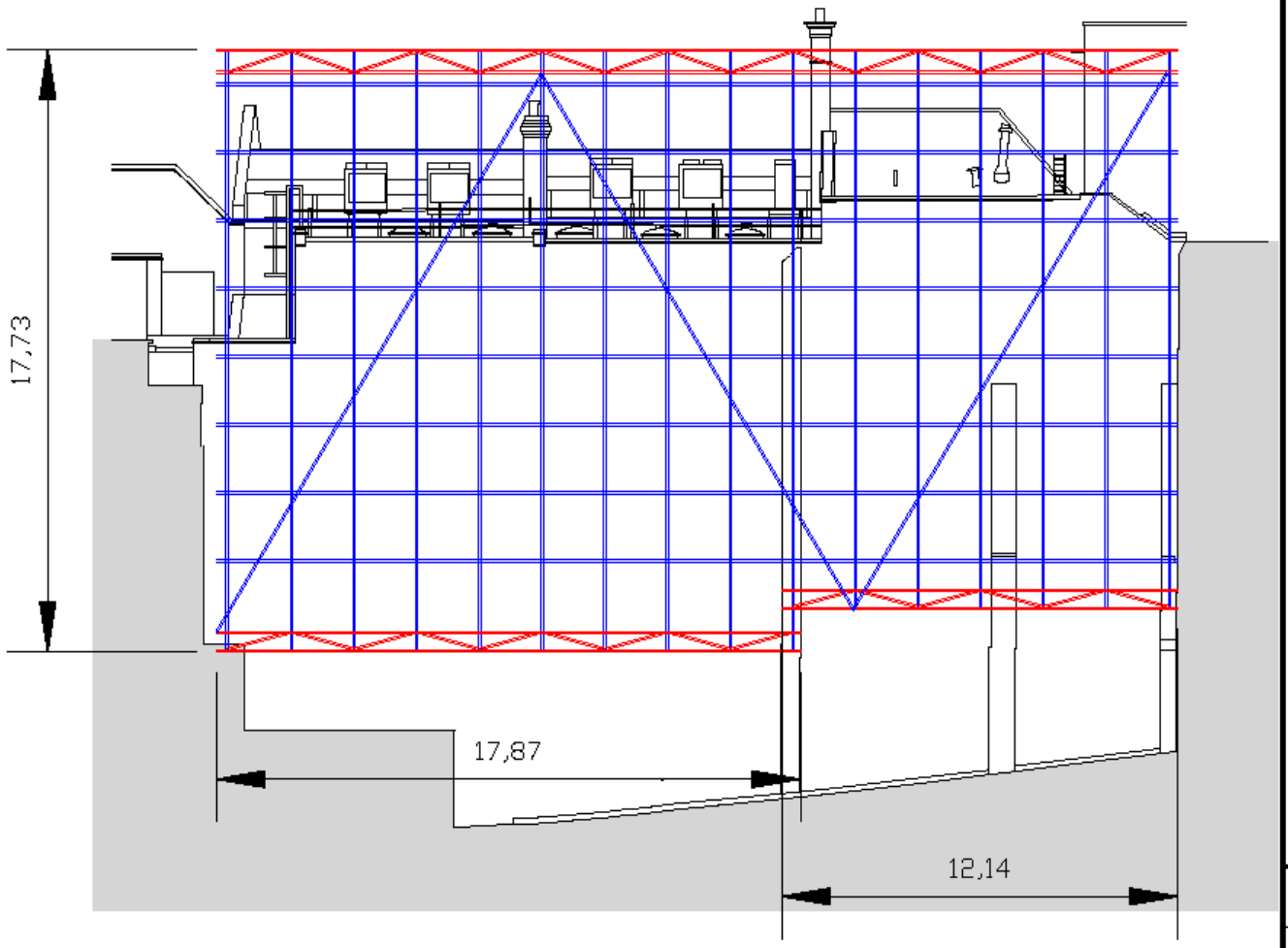
The 'Indicative Scaffold Layouts' are shown on drawings GS.01 to GS.07



Front Elevation.

General Notes.

Contract: - 9-11, Grape Street.	
Title: - Scaffold Arrangement.	
Dwg No: - G5.01	Scale: - NTS
Date: - Oct 13"	Drawn By: - APC



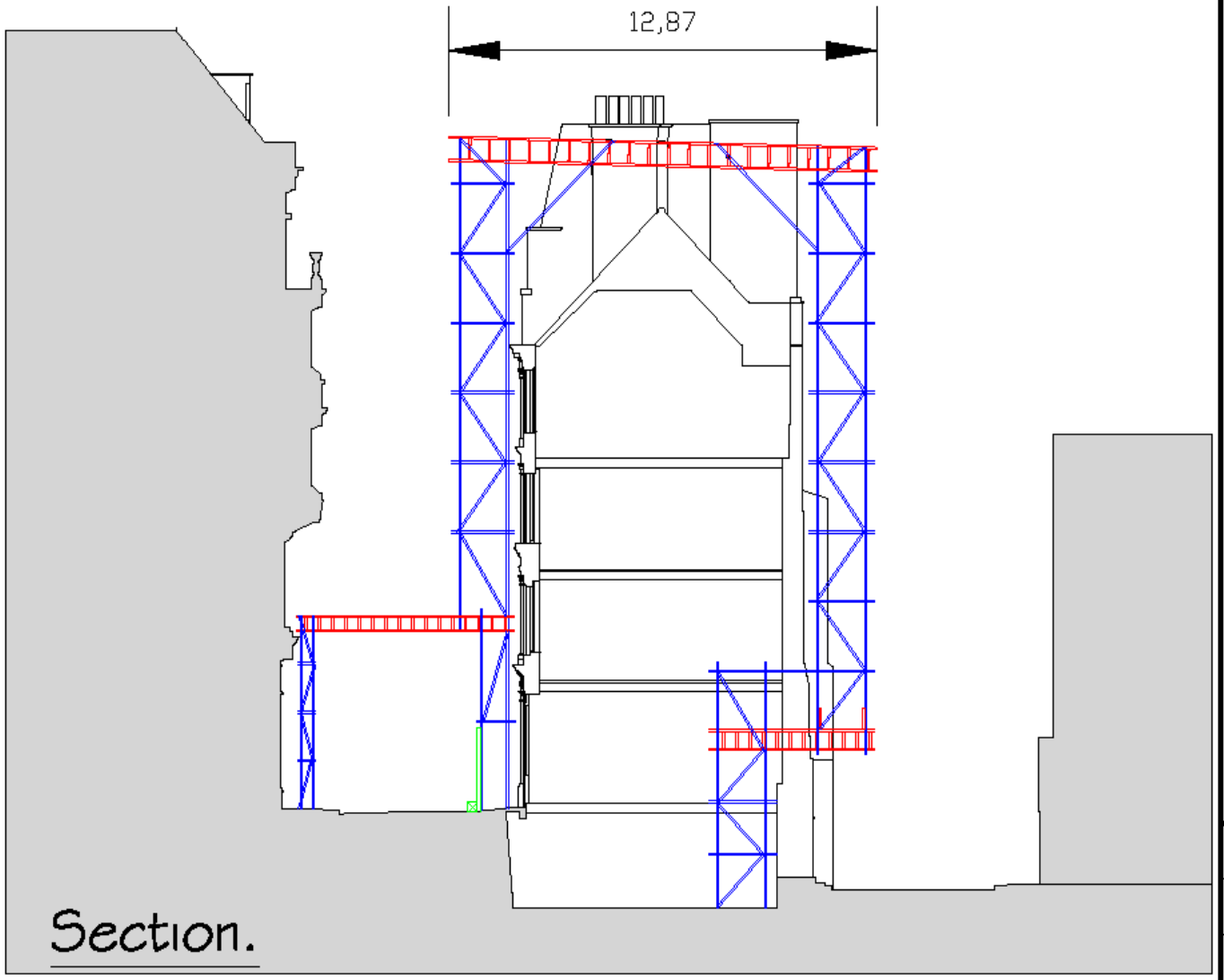
Rear Elevation.

General Notes.

Contract :-
9-11, Grape Street.

Title :-
Scaffold Arrangement.

Dwg No :-	Scale :-
GS.02	NTS
Date :-	Drawn By :-
Oct 13"	APC

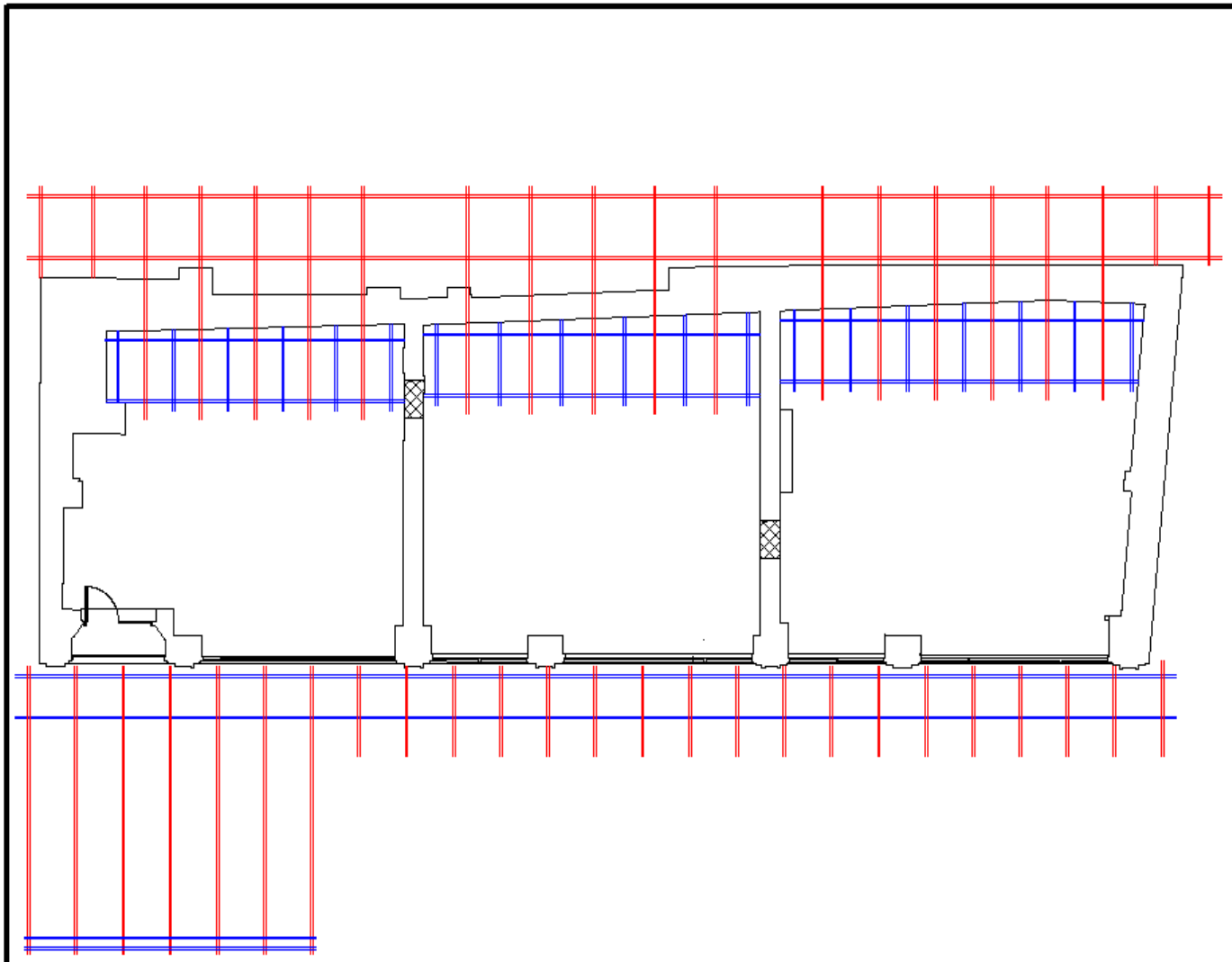


General Notes.

Contract: -
9-11, Grape Street.

Title: -
Scaffold Arrangement.

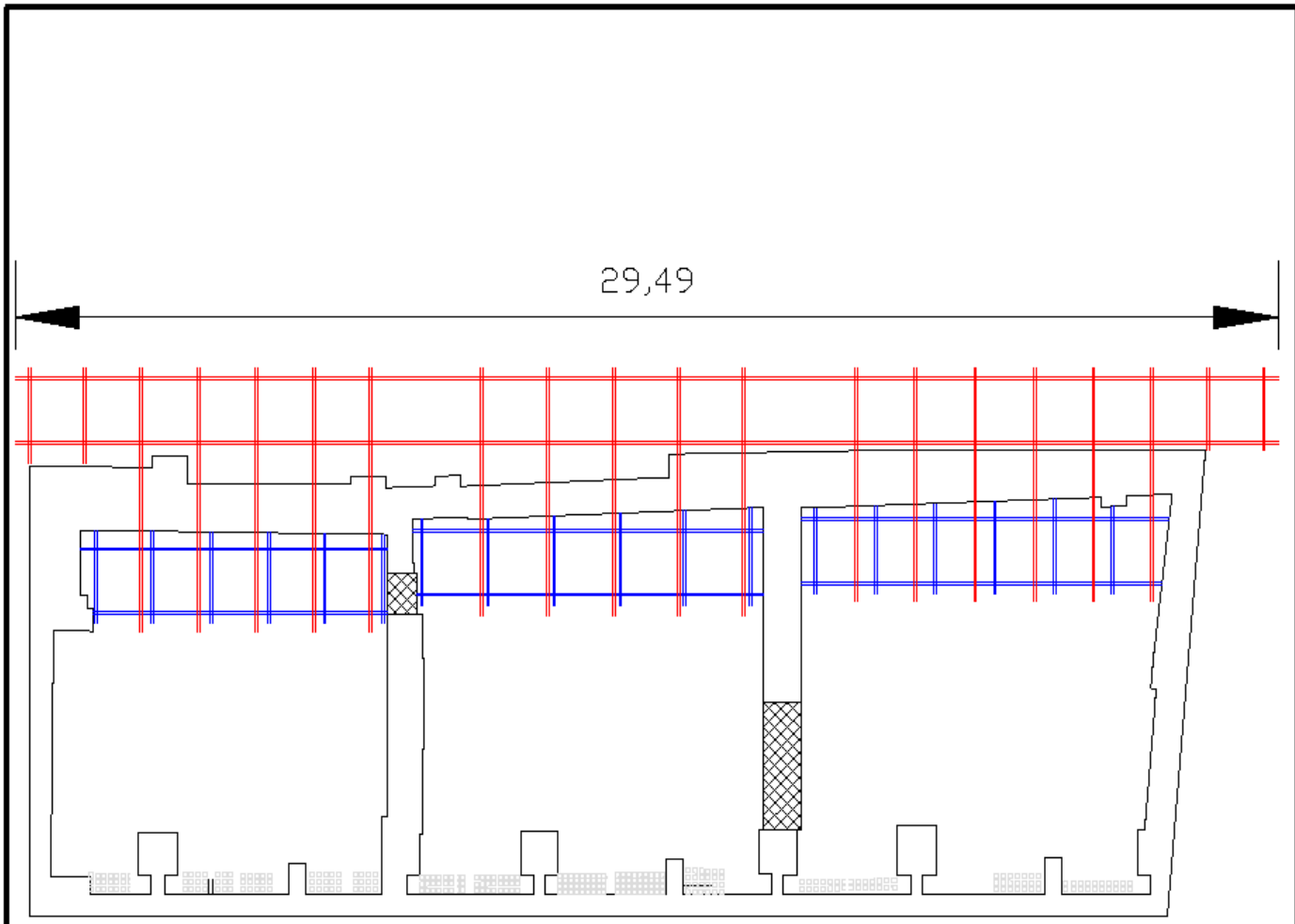
Dwg No: -	Scale: -
G5.03	NTS
Date: -	Drawn By: -
Oct 13th	APC



Ground Floor Level.

General Notes.

Contract: - 9-11, Grape Street.	
Title: - Scaffold Arrangement.	
Dwg No: - GS.04	Scale: - NTS
Date: - Oct 13"	Drawn By: - APC



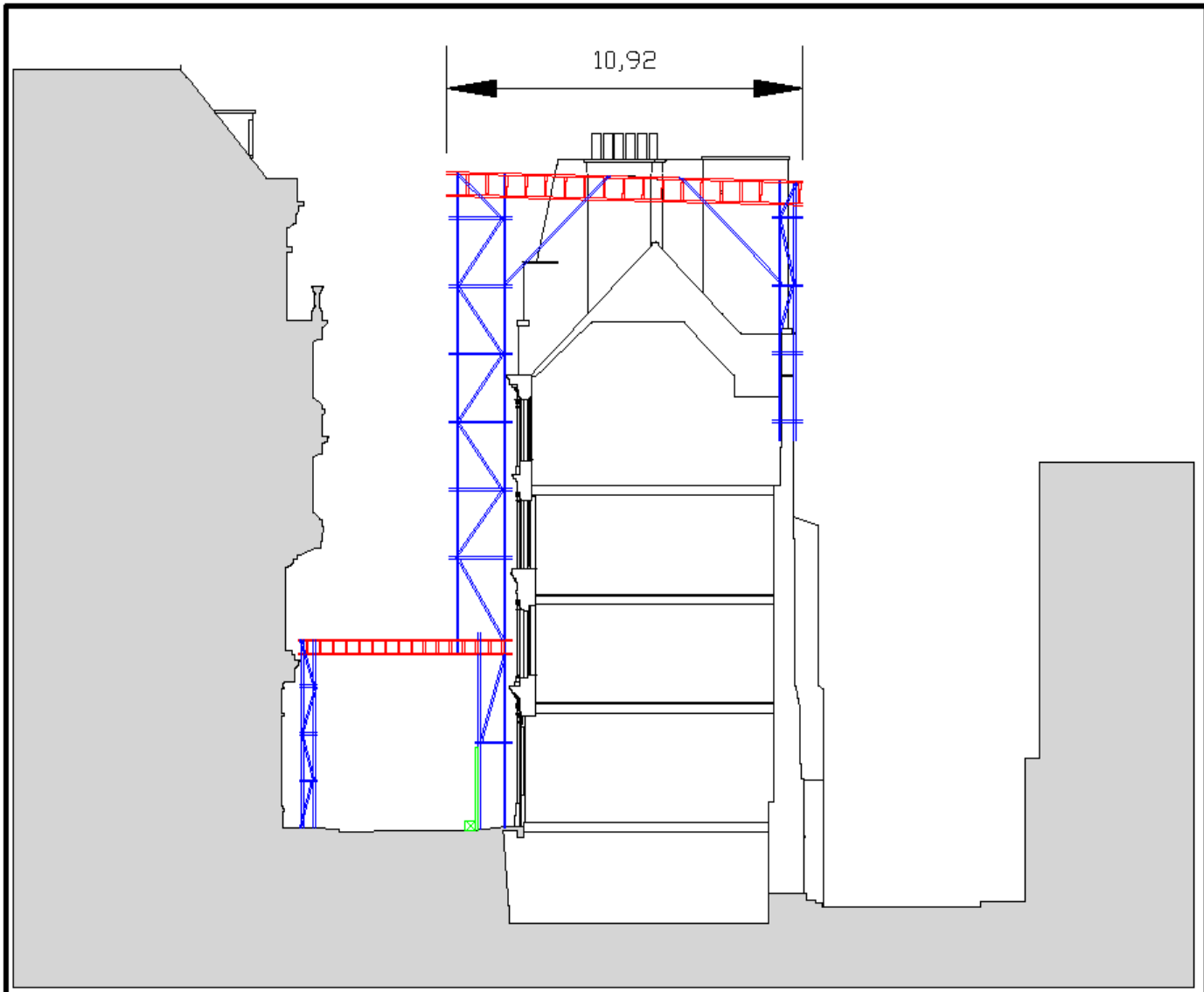
Basement Level.

General Notes.

Contract: -
9-11, Grape Street.

Title: -
Scaffold Arrangement.

Dwg No: -	Scale: -
G5.05	NTS
Date: -	Drawn By: -
Oct 13th	APC



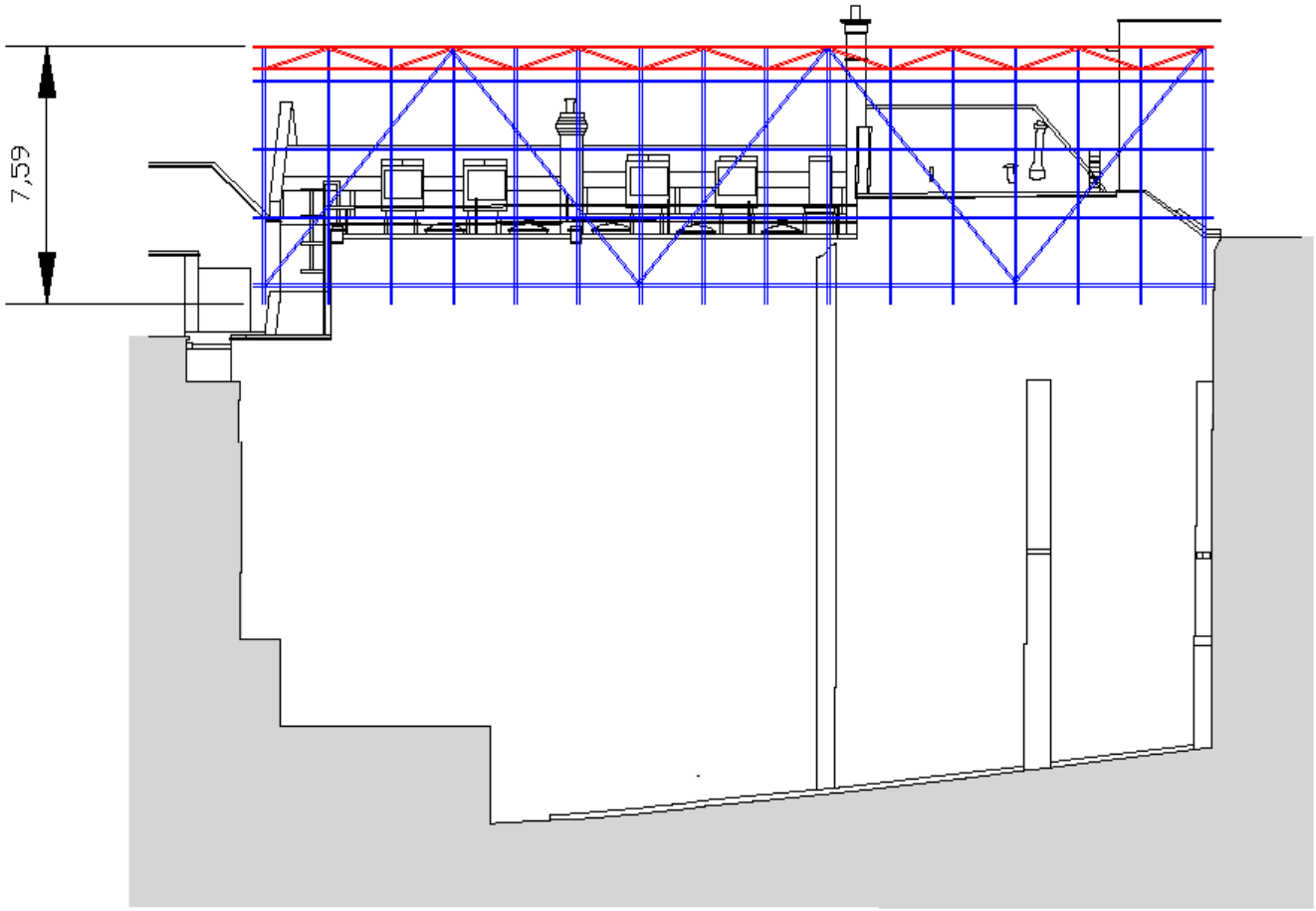
Optional Section.

General Notes.

Contract -
9-11, Grape Street.

Title -
Scaffold Arrangement.

Dwg Nos -	Scale -
GS.06	NTS
Date: -	Drawn By -
Oct 13th	APC



Optional Rear Elevation.

General Notes.

Contracts -
9-11, Grape Street.

Title -
Scaffold Arrangement.

Dwg No: -	Scale: -
G3.07	NTS
Date: -	Drawn By: -
Oct 13'	APC

Scaffold Drawing GS.01 shows an indicative layout for scaffold along the Grape Street facade (front elevation).

Erected in accordance with current regulations, the scaffold shown is approx 28.00M long and 20.00M high.

All scaffolds will be fully covered with plastic mona-flex throughout its entire height including return ends.

All scaffolding will be alarmed and monitored, preventing unwanted intruders.

Due to the narrowness of the pavement along Grape Street, it will be necessary to set the outside standards down on the pavement directly behind timber hoarding panels and 'baulk timber' protection pieces as shown on Sectional Drawings GS.03 & 06.

Scaffold standards above level-one then project out in accordance with a traditional scaffold width scaffold i.e. 1.50M.

Between the interfaces of these levels a ladder beam is shown. It should be noted the bottom of this beam is to be a minimum of 5.20M above the roadway allowing clearance for emergency vehicles.

The bottom scaffold lift will be encapsulated with timber hoarding panels 2.40M high incorporating doors and appropriate secure locking mechanisms as necessary.

A temporary roof will be erected over the existing providing protection from the elements when the existing roof structure is removed.

Scaffold Drawing GS.02 shows an indicative layout for scaffold at the rear elevation.

Again all scaffolding will be fully covered with plastic mona-flex to its entire height, including return ends.

This scaffold is cantilevered out from the existing facade as shown on Sectional Drawings GS.03, 04 & 05.

It should be noted the bottom of these beams are a minimum of 4.00M above the ramp leading into the rear car park.

Two options are shown for scaffold at the rear: -

1. Entire scaffold as shown on GS.02.
2. Part scaffold as shown on GS.07.

Which option is selected will depend on access arrangements and a more detailed assessment of the load bearing capacity of the existing structure.

The rear elevation borders a ramp serving the underground car park opposite. Negotiating access to this ramp may be a future issue. Therefore, if the existing parapet walls are of

sufficient standard, scaffold could be erected and tied to the structure as detailed on Sectional Drawing GS.06.

It should be noted, access to the adjoining property will be required to initially bore holes for cantilever beams and for the fixing of ties etc., this may be carried out during 'Out of Hours' periods if this is deemed appropriate following consultation with the local residents

Access to the neighbouring property will be obtained via negotiation and initial contact has been made with the owners of the property. If necessary the provisions set out in the Access to Neighbouring Land Act 1992 may be required but from initial dialogue with the adjoining owner this is likely to be unnecessary.

Scaffold drawing GS.03 shows an indicative section through the building. It should be noted, the scaffold erected internally between basement and ground floors will be designed ready to receive 'Kentledge' which will stabilise the external scaffold when erected.

The 'Gantry' shown on the front elevation will be constructed in the first phase of the scaffolding work and will be built ready to receive the remaining scaffold materials in phases, enabling the erection of the scaffolding to the rest of the building to take place without blocking the street.

The Main Contractor may want to extend its size and make use of the external space offered for positioning his temporary site set-up. These future detailed proposals will be reviewed and if appropriate an amendment to this plan will be submitted.

All other Scaffold Drawings show indicative plan layouts for the respective system being used.

7.1 Site Floodlighting.

Flood-lighting in areas adjacent to nearby residential properties and offices will generally be limited to the working hours.

Where light glare may cause a nuisance, light shielding will be considered and provided as appropriate.

Site lighting will be kept to a minimum, whenever possible, taking into account the needs for site health, safety and security.

Hoardings will be lit from half an hour after sunset to half an hour before sunrise

8.0 Noise, Vibration, Dust and Emissions.

During construction, full assessments of the potential impacts of the construction works on air quality and noise and vibration will be prepared.

The measures that could be adopted to mitigate the nuisances are: -

- Choice of methodologies to minimise generation of noise, vibration and dust i.e. the use of diamond cutting rather than breaking in order to reduce the transfer of vibration.
- Setting of 'Action Levels' for noise and vibration.
- Routine monitoring of noise, vibration and dust at the site boundary.
- Use of hoardings to provide acoustic screening.
- Requirement for engines to be switched off when not in use.
- Utilise quieter plant, carry regular plant maintenance etc.
- Spraying areas with water to dampen down dust when suitable.
- Use of road sweepers whenever the need for road cleaning arises.
- Sheeting of vehicles carrying waste material off-site.

9.0 Waste Minimisation and Management.

Procedures will be developed to ensure compliance with statutory obligations and good practice requirements for waste management.

The Main Contractor will be responsible for managing all waste.

Re-cycling and segregation of waste material on site will be encouraged and enforced in accordance with the sustainability plan submitted with the planning application. All such requirements will be stipulated at tender stage so that the main contractor prices the work accordingly and includes these provisions within their programme.

The Main Contractor will be required to employ a specialist waste management contractor for all waste removal.

This contractor will be responsible for: -

- The collection of waste from site to a re-cycling centre.
- Segregation of waste.

The main contractor will ensure all access routes, fire escapes and staircases are swept and kept clear of debris on a regular basis to maintain high standards of Health & Safety on the project.

All general areas of the project will be swept clean on a weekly basis.

The Main and Sub-contractors will be responsible under the terms of the contract for removing waste emanating from their works to a central point on site.

The Main Contractor should be registered with the ‘Considerate Constructors Scheme’.

They, and all sub-contractors involved, will be required to comply with the requirements of the Scheme.

The code commits those contractors in the Scheme to be considerate and good neighbours, as well as clean, respectful, safe, environmentally conscious, responsible and accountable.

The Scheme is independently audited by the 'Considerate Constructors Scheme' and points are awarded depending upon the level of compliance.

10.0 Consolidation Centres.

The use of consolidation centres will be explored with the appointed Contractor.

This will address, among other matters, the following: -

- What proportion of the materials for delivery to site could be handled via a 'Consolidation Centre?
- Of the materials that could be consolidated, what efficiencies might be achieved, e.g. how many vehicle deliveries to site would be saved?
- How is the cost of a 'Consolidation Centre' funded?
- There are currently two 'Consolidation Centres' operation; one in Silvertown, East London and the other at Heathrow. The location of a 'Consolidation Centre' is an important consideration, not least of which because of the increased traffic volumes it creates.
- Evidence that there is a viable business case for consolidation.

11.0 Control of dirt and dust on the public highway.

Debris on the road is one of the main environmental nuisances and safety problems arising from construction sites.

In the early stages of the project, when demolition works are being carried out, the Main contractor will be required under the terms of the contract to make provision for cleaning the road using an approved road sweeper.

All Lorries will be fully sheeted to minimise the risk of anything over-spilling onto the highway.

There contractor will be required to consider and implement as necessary the spraying a fine water spray to suppress dust on the following: -

- Structures and building during demolition.
- Unpaved areas that are subject to traffic or wind.
- Sand, spoil and aggregate stockpiles.
- During loading/unloading of dust generating materials.

12.0 Neighbour and Community Liaison.

A member of the Main Contractor's site management team will be formally appointed and take responsibility for dealing with any complaints arising from the works. This person will adopt the title of 'Community Liaison Manager' (CLM).

Any complaints can be made in person to the CLM by reporting to the site office or by telephone or by letter/email.

The CLM will be made available to deal with any comments or complaints from the public and neighbours and will be identified to and introduced to neighbouring houses or residents.

The 'Considerate Constructors Scheme' highlights the importance of considering the needs of local people, businesses and visitors.

Consultation will be carried out regularly, to ensure this is being achieved.

Prior to commencement of each phase of work, where possible, all neighbouring occupiers will be contacted by the CLM to explain the activities being undertaken, the duration of the works and the working hours.

Communication with the neighbours will be enhanced by the use of newsletters, notice boards and websites as detailed previously in this plan.

The Main Contractor will need to address the codes of conduct required from operatives and staff during the site induction.

The Main Contractorw ensure that these standards are being adhered to.

Where relevant, neighbours will also be specifically informed about any abnormal work or road closures proposed as detailed previously in this plan.

A complaints procedure will be implemented to log and respond to issues raised by neighbours or the public and where reasonable and practicable, measures will be put in place to avoid recurrence of the complaint.

13.0 Details of consultation with local businesses or neighbours.

The selected Main Contractor will be required, and it will be a stipulation of the contract, to work in partnership with London Borough of Camden to take due care of the community and environment within which the works are being carried out.

The site team will have direct responsibility for fostering good community relations with all neighbouring residents and businesses but will be assisted and directed in this process by the client and his specialist advisers

From the start of this project all individuals directly involved in the management of the site will be identified as being specifically responsible for community relations (Community Liaison Representatives) and their roles and duties clearly set out.

The construction team, the client and the client's representatives will ensure that any particularly sensitive work is planned and implemented with all due consideration to the neighbouring residents and businesses and that the public and local community are kept informed at all times.

This may include: -

- 'Out of Hours' delivery of large items such as steelwork, glass & mechanical plant etc.
- Information boards on the site hoarding displaying names and contact details of key personnel.
- Regular newsletters highlighting the key personnel and their contact details.

Prior to any person being allowed on site they have to go through a Health, Safety and Environment Project Induction which, amongst other things, will highlight the requirements set out in the 'Considerate Constructors Scheme' and the contractors own procedures.

14.0 Working Group and other Measures to Reduce the Impact of the Site.

The communication process with the local community will start well before the physical work commences on site.

A Construction Working Group (CWG) will be established and will meet prior to commencement of the construction phase, soon after the Main Contractor approves. It is proposed to invite representatives from the local community, including resident committees within Grape Street and the local businesses to attend.

It is proposed that the CWG will meet fortnightly at least a month in advance of the site work commencing and monthly after the project has been on site for 2 months, continuing for the duration of the project.

A suitable location for these meetings will be established on site and clean and welcoming facilities provided (site heating as necessary, clean chairs, tables, refreshments etc.)

The CLM will host these meetings. An agenda will be prepared covering topics such as, the overall progress, working arrangements and future operations, the Delivery Plan and any issues associated with deliveries or removal of debris from the site, noise and disturbance, behaviour of site operatives etc.

Minutes will be taken and circulated to all members of the CWG. Action points will be agreed and performance against these action points measured.

Before work commences, letters will be sent to the neighbours informing them of what will be happening giving them contact names and telephone numbers.

A 24hr emergency hotline will be in place throughout the construction phase. This will also be published on the Councils website.

It remains the client's intention to maintain full and regular communications with all of their neighbours regarding site activities, deliveries and traffic.

Other points to action will be: -

- Ensure site lighting does not affect neighbours.

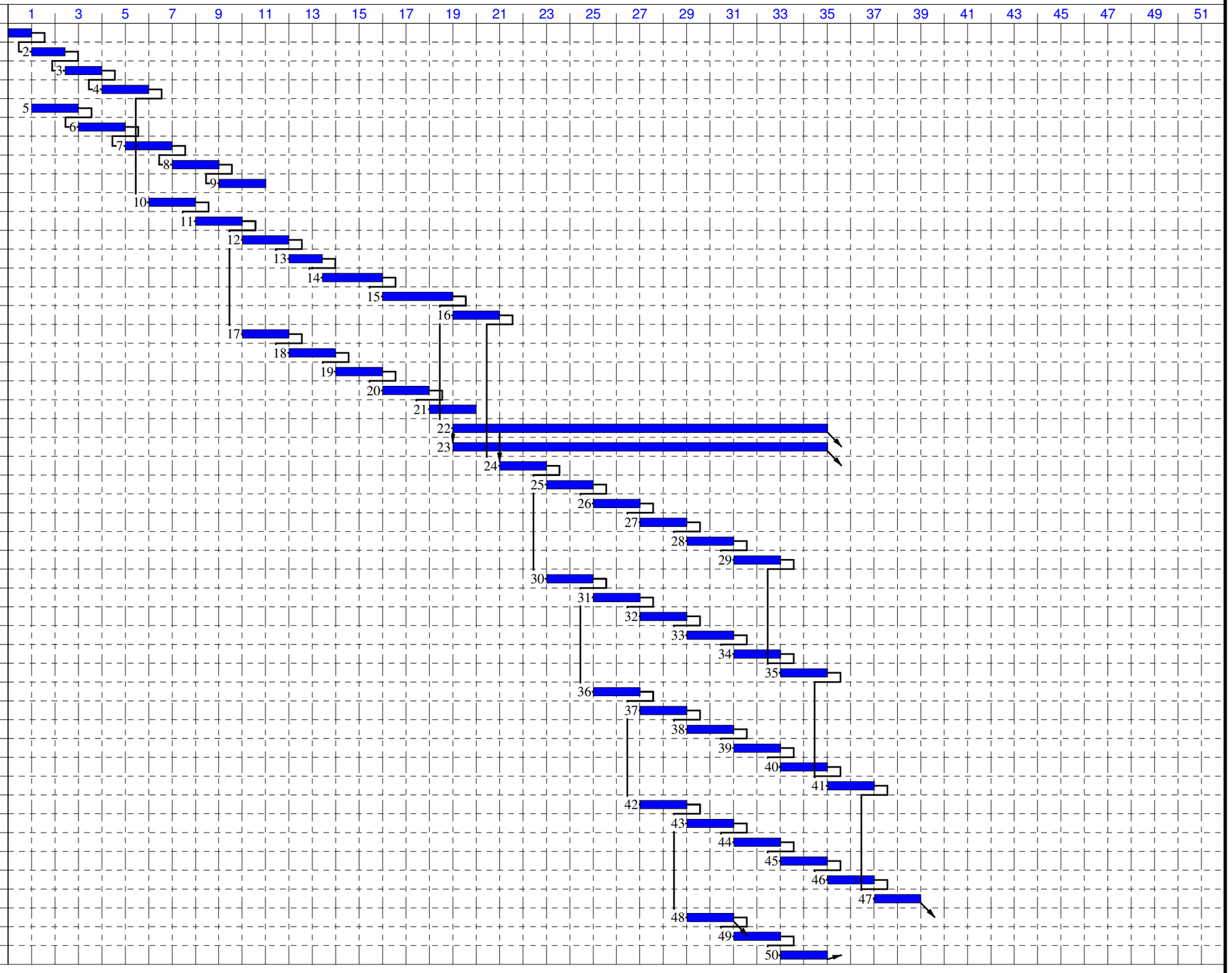
- Provide viewing apertures in the hoardings.
- Ensure the workforce maintain a respectable standard of dress code.
- Encourage operatives not to leave site in their dirty work clothes.
- Register the project with the ‘Considerate Constructors Scheme’.
- Provide ID cards/badges for all operatives.

APPENDICES.

APPENDIX ‘A’.

9-11, Grape Street.
London.

ID	Name
1	*Erect Scaffold - Front Elevation Incl. Gantry*
2	*Erect Scaffold - Rear Elevation*
3	*Erect Temporary Roof*
4	*Demolition At Roof Level*
5	*Demolition At 3rd Floor Level*
6	*Demolition At 2nd Floor Level*
7	*Demolition At 1st Floor Level*
8	*Demolition At Ground Floor Level*
9	*Demolition At Basement Level*
10	*Re-Construct External Walls Ready For New 4th Floor Joists*
11	*Install New 4th Floor Joists & Temporary Cover*
12	*Extend External Masonry Walls Ready For New Roof*
13	*Install Structural Steel Beams At Roof Level*
14	*Construct Roof Carcass Ready For New Finishings*
15	*Lay New Roof Finishings*
16	*Install New Glasswork At Roof Level*
17	*Structural Works To 3rd Floor*
18	*Structural Works To 2nd Floor*
19	*Structural Works To 1st Floor*
20	*Structural Works To Ground Floor*
21	*Structural Works To Basement Floor*
22	*Mechanical & Electrical 1st Fix Services Installations*
23	*Plumbing 1st Fix Services Installations*
24	*Lay Acoustic Floor System - 4th Floor*
25	*Lay Acoustic Floor System - 3rd Floor*
26	*Lay Acoustic Floor System - 2nd Floor*
27	*Lay Acoustic Floor System - 1st Floor*
28	*Lay Acoustic Floor System - Ground Floor*
29	*Lay Acoustic Floor System - Basement Floor*
30	*Erect Partition Walls - 4th Floor*
31	*Erect Partition Walls - 3rd Floor*
32	*Erect Partition Walls - 2nd Floor*
33	*Erect Partition Walls - 1st Floor*
34	*Erect Partition Walls - Ground Floor*
35	*Erect Partition Walls - Basement*
36	*Install MF Suspended Ceiling Gridwork - 4th Floor*
37	*Install MF Suspended Ceiling Gridwork - 3rd Floor*
38	*Install MF Suspended Ceiling Gridwork - 2nd Floor*
39	*Install MF Suspended Ceiling Gridwork - 1st Floor*
40	*Install MF Suspended Ceiling Gridwork - Ground Floor*
41	*Install MF Suspended Ceiling Gridwork - Basement*
42	*Plasterboard All Ceilings & Partition Walls - 4th Floor*
43	*Plasterboard All Ceilings & Partition Walls - 3rd Floor*
44	*Plasterboard All Ceilings & Partition Walls - 2nd Floor*
45	*Plasterboard All Ceilings & Partition Walls - 1st Floor*
46	*Plasterboard All Ceilings & Partition Walls - Grd Floor*
47	*Plasterboard All Ceilings & Partition Walls - Basement*
48	*Fix Door & Window Frames - 4th Floor*
49	*Fix Door & Window Frames - 3rd Floor*
50	*Fix Door & Window Frames - 2nd Floor*



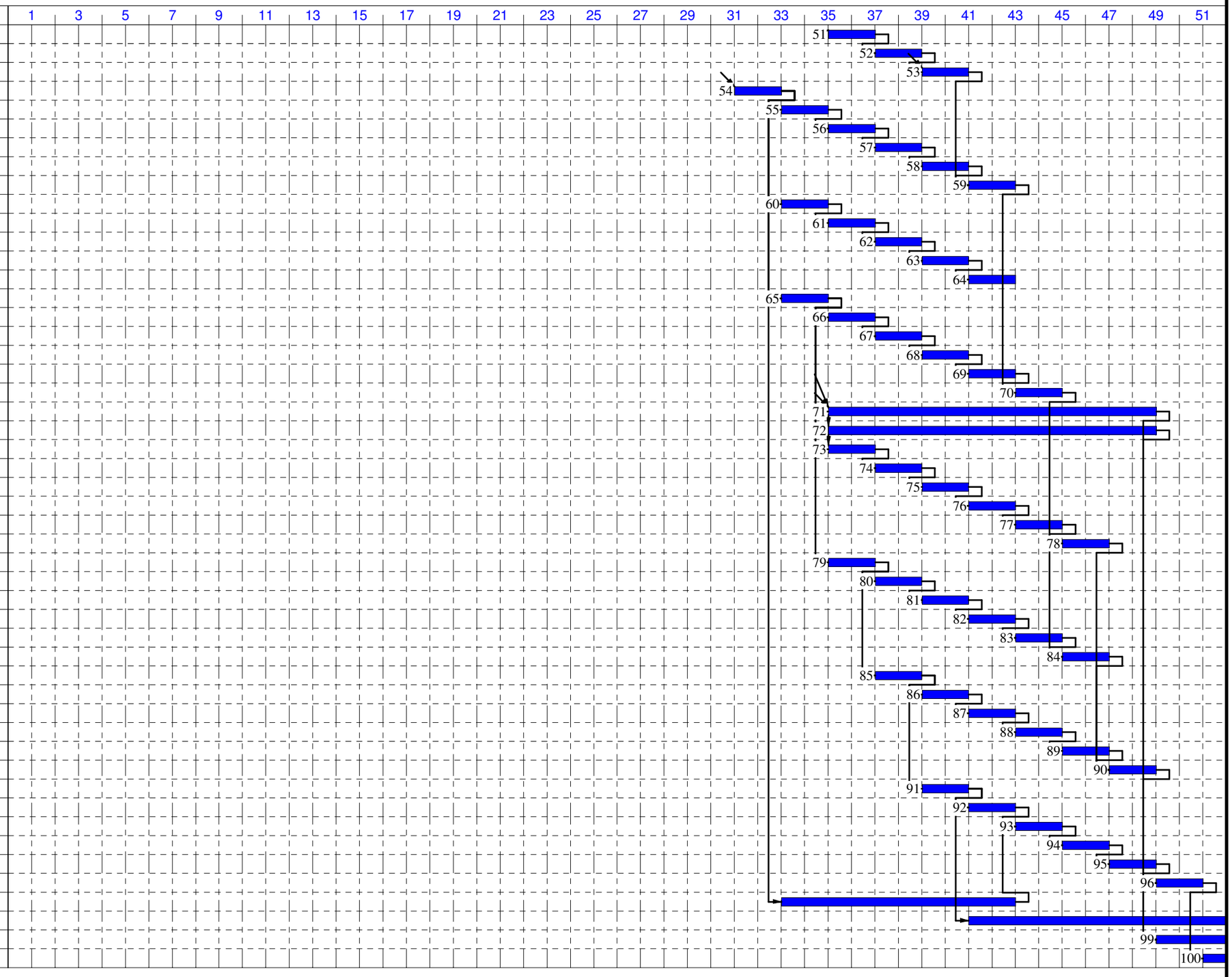
Outline Programme of Works.

Grape Street.pc

Prog. No: GS.001 | Rev: | Date October 2013 | By: APC

9-11, Grape Street.
London.

ID	Name
51	*Fix Door & Window Frames - 1st Floor*
52	*Fix Door & Window Frames - Grd Floor*
53	*Fix Door & Window Frames - Basement*
54	*Plaster & Skim - 4th Floor*
55	*Plaster & Skim - 3rd Floor*
56	*Plaster & Skim - 2nd Floor*
57	*Plaster & Skim - 1st Floor*
58	*Plaster & Skim - Grd Floor*
59	*Plaster & Skim - Basement*
60	*Install Staircases - 3rd to 4th Floor*
61	*Install Staircases - 2nd to 3rd Floor*
62	*Install Staircases - 1st to 2nd Floor*
63	*Install Staircases - Grd to 1st Floor*
64	*Install Staircases - Basement to Grd Floor*
65	*Ceramic Wall & Floor Tiling - 4th Floor*
66	*Ceramic Wall & Floor Tiling - 3rd Floor*
67	*Ceramic Wall & Floor Tiling - 2nd Floor*
68	*Ceramic Wall & Floor Tiling - 1st Floor*
69	*Ceramic Wall & Floor Tiling - Grd Floor*
70	*Ceramic Wall & Floor Tiling - Basement*
71	*Mechanical & Electrical 2nd Fix Services Installations*
72	*Plumbing 2nd Fix Services Installations*
73	*Install Sanitaryware - 4th Floor*
74	*Install Sanitaryware - 3rd Floor*
75	*Install Sanitaryware - 2nd Floor*
76	*Install Sanitaryware - 1st Floor*
77	*Install Sanitaryware - Grd Floor*
78	*Install Sanitaryware - Basement*
79	*Lay Engineered Laminate Flooring - 4th Floor*
80	*Lay Engineered Laminate Flooring - 3rd Floor*
81	*Lay Engineered Laminate Flooring - 2nd Floor*
82	*Lay Engineered Laminate Flooring - 1st Floor*
83	*Lay Engineered Laminate Flooring - Grd Floor*
84	*Lay Engineered Laminate Flooring - Basement*
85	*Carpentry 2nd Fix - 4th Floor*
86	*Carpentry 2nd Fix - 3rd Floor*
87	*Carpentry 2nd Fix - 2nd Floor*
88	*Carpentry 2nd Fix - 1st Floor*
89	*Carpentry 2nd Fix - Grd Floor*
90	*Carpentry 2nd Fix - Basement*
91	*Painting & Decorations - 4th Floor*
92	*Painting & Decorations - 3rd Floor*
93	*Painting & Decorations - 2nd Floor*
94	*Painting & Decorations - 1st Floor*
95	*Painting & Decorations - Grd Floor*
96	*Painting & Decorations - Basement*
97	*Lift Installations*
98	*Fixtures & Fittings*
99	*Test & Commission M&E Services Installations*
100	*Clean & Handover*



Outline Programme of Works.

Grape Street.pc

Prog. No: GS.001

Rev:

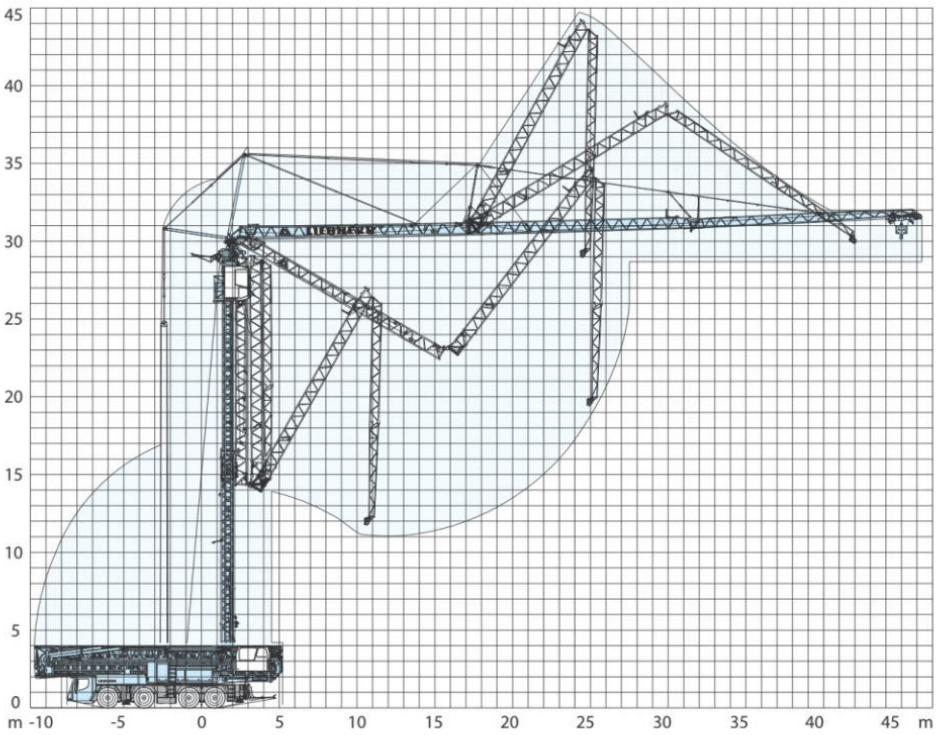
Date October 2013

By: APC

APPENDIX ‘B’.

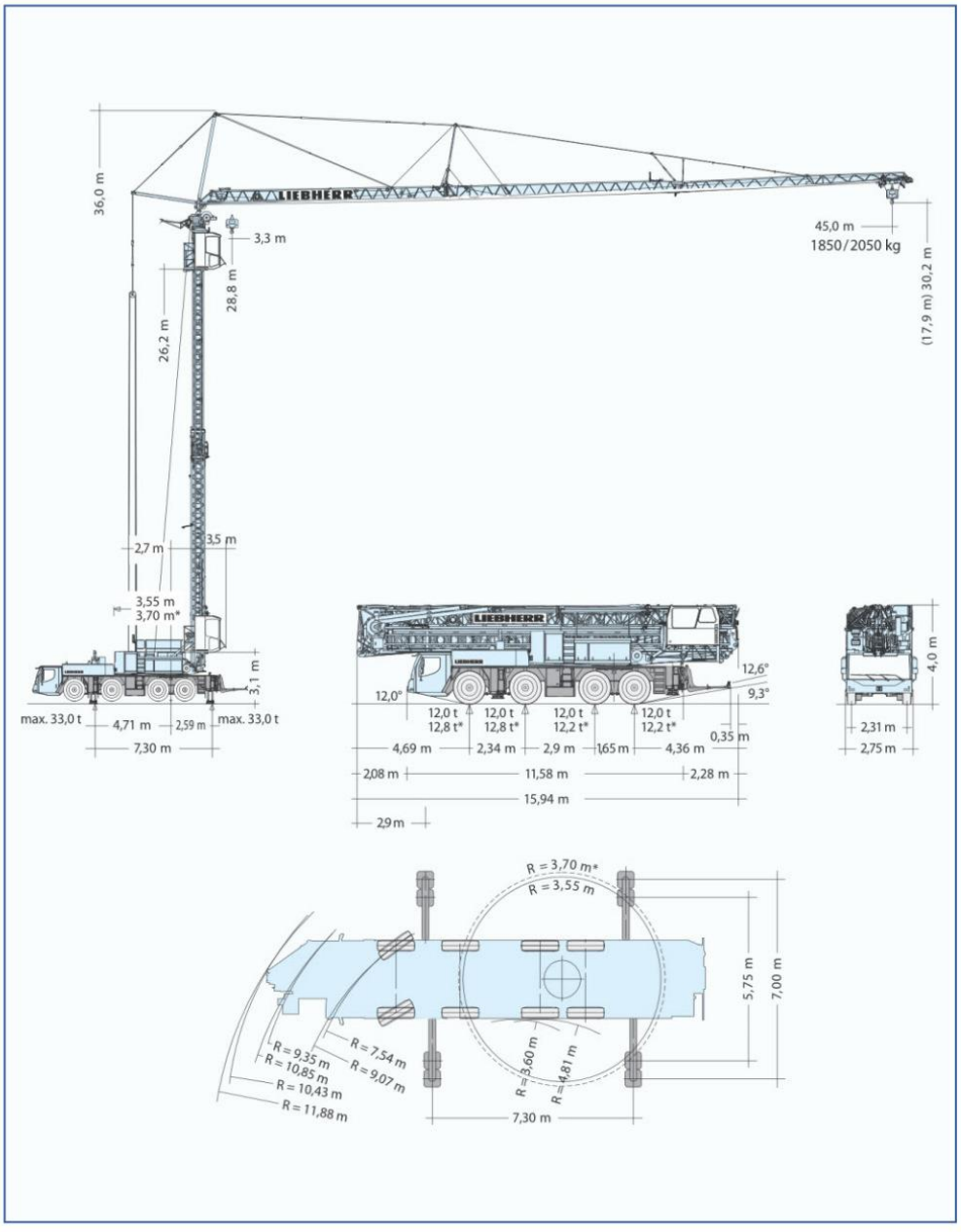
MK-88

ERECTION PROCEDURE



MK-88

DIMENSIONS



WEST SUSSEX DEPOT
TEL: 01798 875988 FAX: 01798 875989
sales@southerncranes.co.uk

MK-88

LIFTING CAPACITIES

Jib horizontal with 2.0 t additional ballast

7,30 m x 7,00 m	m	m / kg	m / kg	12,0	14,0	16,0	18,0	20,0	22,0	24,0	26,0	28,0	30,0	32,0	34,0	36,0	38,0	40,0	42,0	44,0	**45,0**
max. 6,5 Bft (14 m/sec.)	**45,0**	3,3 – 12,0 **8000**		8000	6900	6070	5410	4870	4420	4050	3730	3450	3210	2990	2800	2630	2480	2340	2220	2100	**2050**
max. 8,0 Bft (20 m/sec.)	**45,0**	3,3 – 11,0 **8000**		7370	6360	5580	4960	4460	4050	3700	3400	3140	2920	2720	2540	2390	2250	2120	2000	1900	**1850**

7,30 m x 5,75 m	m	m / kg		m / kg	12,0	14,0	16,0	18,0	20,0	22,0	24,0	26,0	28,0	30,0	32,0	34,0	36,0	38,0	40,0	42,0	44,0	**45,0**
max. 6,5 Bft (14 m/sec.)	**45,0**	3,3 – 10,5 **8000**	*	6930	5870	5080	4470	3980	3580	3250	2970	2730	2520	2340	2180	2030	1910	1790	1690	1590	**1550**
max. 8,0 Bft (20 m/sec.)	**45,0**	3,3 – 9,5 **8000**	*	6310	5380	4680	4130	3690	3320	3020	2760	2540	2350	2180	2030	1900	1780	1680	1580	1490	**1450**

Crane does not need to be disassembled when it is not in operation

Steep angle positions with 2.0 t additional ballast

7,30 m x 7,00 m	m	15° m	15° kg	45° m	45° kg
max. 6,5 Bft (14 m/sec.)	**45,0**	3,2 – 40,0 40,0 – 43,3	1850 1850 - 1700*	2,7 – 31,9	1850
max. 8,0 Bft (20 m/sec.)	**45,0**	3,2 – 35,0 35,0 – 43,3	1850 1850 - 1400*	2,7 – 31,9	1850

7,30 m x 7,00 m	m	m / kg		m / kg 30°	8,0	10,0	12,0	14,0	16,0	18,0	20,0	22,0	24,0	26,0	28,0	30,0	32,0	34,0	36,0	**38,9**
max. 6,5 Bft (14 m/sec.)	**45,0**	3,0 – 11,0 **6000**		6000	6000	5650	5050	4560	4150	3810	3510	3250	3030	2830	2650	2490	2350	2220	**2050**
max. 8,0 Bft (20 m/sec.)	**45,0**	3,0 – 9,0 **6000**	*	6000	5620	4970	4450	4020	3660	3360	3100	2870	2670	2490	2340	2200	2070	1950	**1800**

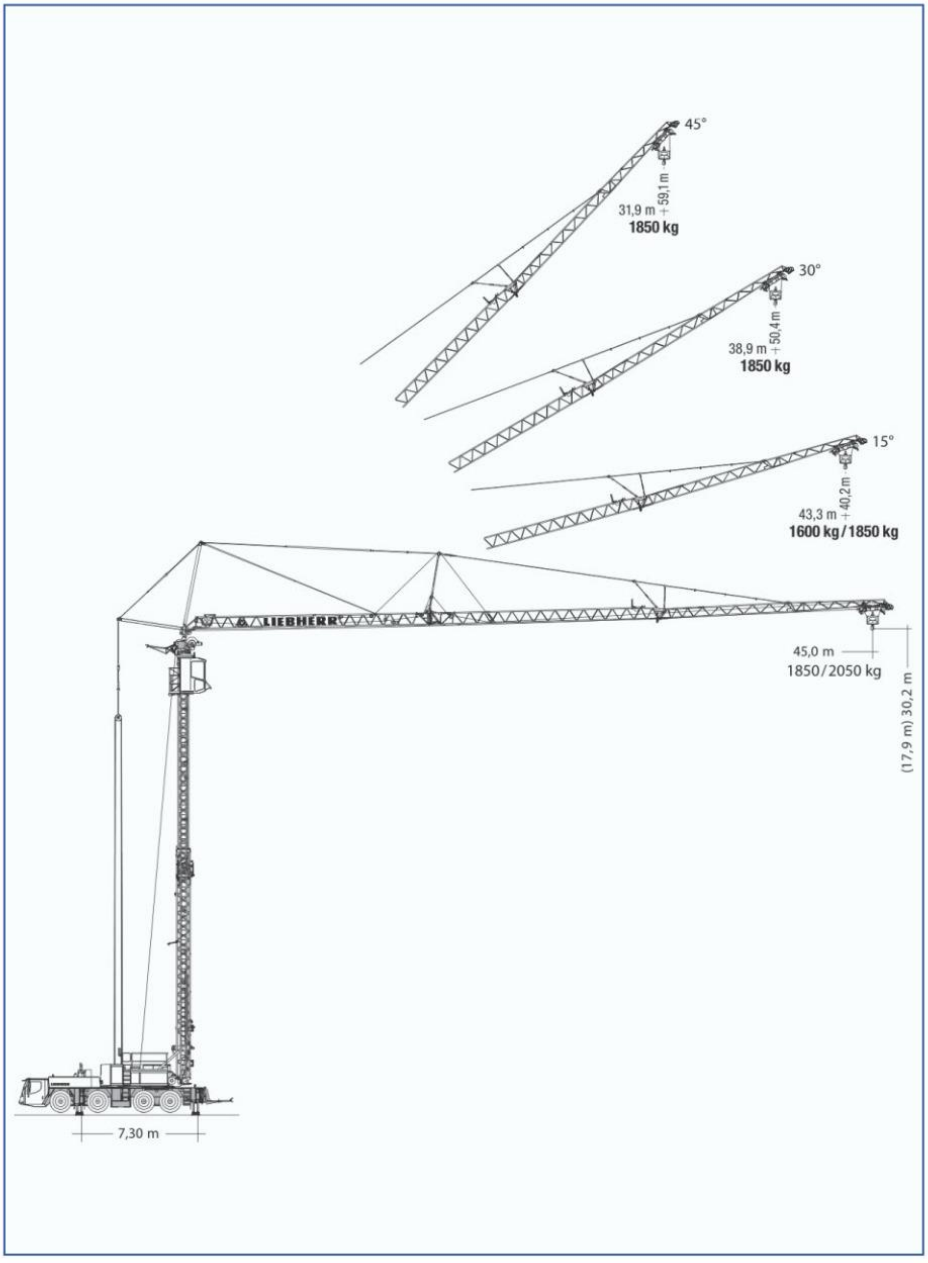
7,30 m x 5,75 m	m	15° m	15° kg	45° m	45° kg
max. 6,5 Bft (14 m/sec.)	**45,0**	3,2 – 34,0 34,0 – 43,3	1850 1850 - 1450*	2,7 – 31,9	1850
max. 8,0 Bft (20 m/sec.)	**45,0**	3,2 – 29,0 29,0 – 43,3	1850 1850 - 1150*	2,7 – 24,0 24,0 – 31,9	1850 1850 - 1350*

7,30 m x 5,75 m	m	m / kg		m / kg 30°	8,0	10,0	12,0	14,0	16,0	18,0	20,0	22,0	24,0	26,0	28,0	30,0	32,0	34,0	36,0	**38,9**
max. 6,5 Bft (14 m/sec.)	**45,0**	3,0 – 11,0 **6000**	*	6000	6000	5580	4880	4320	3880	3510	3200	2930	2700	2500	2330	2180	2040	1910	**1750**
max. 8,0 Bft (20 m/sec.)	**45,0**	3,0 – 9,0 **6000**	*	6000	5480	4650	4030	3540	3150	2830	2570	2340	2150	1980	1830	1700	1590	1490	**1350**

Lifting capacities for maximum erection height. In case of lower erection heights, higher lifting capacities are achieved

MK-88

Boom angles



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