Proposed Residential Development at

The Water House, Millfield Lane

Construction Management Plan

Prepared for

Mr & Mrs Paul Munford

Revision I

November 2014
Status:- Post Submission Update 3

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1.0 Introduction

Construction Planning Associates and Motion Transport Planning have been instructed by Mr & Mrs Munford to produce a Construction Management Plan (CMP) in relation to the proposed redevelopment of the Water House, Millfield Lane, Highgate, London. The development proposals involve the demolition of the existing house and the construction of a high quality 2 storey family home with basement along with a separate guest bedroom chalet. The location of the site is shown on the ordinance survey plan at Appendix A.

This document has been jointly prepared by Construction Planning Associates (CPA) and Motion Transport Planning (Motion). CPA established for 18 years is a practice specialising in advising clients, designers and contractors on construction methodologies and programme covering the full spectrum of projects from large domestic to neighbourhood redevelopments. Motion is a practice providing specialist transport analysis to a wide range of clients including a number within Fitzroy Park.

The purpose of the CMP is to ensure that the impact of demolition and construction work on the local residents and the immediate highway network is minimised. The CMP provides detail of all measures that are considered appropriate at this time; however, the CMP is a live document that will evolve as necessary to address issues that may be identified through ongoing consultation with local residents as the project progresses.

The Contractor's Project Manager will be responsible for implementing measures contained in the CMP and will be the point of contact for local residents during the construction process. The Contractor's Project Manager's name, telephone number and email address will be added to the CMP once he/she has been appointed and displayed on the site boundary. The Project Manager will ensure that the site is registered under the "Considerate Contractors Scheme" (www.considerateconstructorsscheme.org.uk). It is acknowledged that planning consent will require the developer to enter into a Section 106 legal agreement requiring contractors to follow "Guide for Contractors Working in Camden"

Prior to the appointment of the contractor the implementation of any necessary measures will be managed by Mr & Mrs Munford's Project Architect Mr Stuart McLauchlan. (Contact details StuartM@shh.co.uk Telephone 020 8600 4171, Postal Address:- SHH Architects, Vencourt Place, Ravenscourt Park, Hammersmith, LondonW6 9NU)

This document has been prepared with input from the project architects, planning consultants, structural and civil engineers to ensure that the CMP can comprehensively address all issues that may arise during demolition and construction works.

1.1 Site History

The site is currently occupied by a 2 storey house and swimming pool. The house was previously completely rebuilt after a fire in the 1970's and extensively modified and extended in 1990's. The site forms part of the original estate of Fitzroy Farm which has been subdivided into the current plots during the post war period.

The site only has vehicle access along Millfield Lane. Pedestrians can access the site from Millfield Lane and via a narrow pedestrian access from the rear of the property onto Fitzroy Park.

1.2 Pre-Application Community Engagement

As part of the scheme development, Mr & Mrs Munford and their project team have carried out extensive pre-application community engagement with the following parties in the 10 months up to submission of the planning application, to discuss both the scheme and the construction management:

- Fitzroy Park Residents Association
- Mr Derrick Dale, Wallace House (neighbour)
- Mrs Karen Beare, Dormers, Fitzroy Park (neighbour)
- Mrs Lynne Turner-Stokes, Fitzroy Park (neighbour)
- Occupier of Fitzroy Lodge (Frontage on Millfield Lane)
- Dr Colin Cooper Apex Lodge (Frontage on Millfield Lane)
- Simon Lee of the City of London, Superintendent Hampstead Heath, (City of London manage and maintain Millfield Lane in the vicinity of the site)
- Hampstead Heath Consultative Committee (HHCC)
- Highgate Society,
- The Kenwood Ladies' Pond Association and managers
- London Borough of Camden

In developing the overall building design and the CMP, the views and comments made by the local community have been fully considered and the evolving design and methodologies have been adapted and revised where appropriate.

The consultation with local residents and interested parties has been carried through the planning pre-application process, and the CMP has been be updated to reflect the feedback and the changes made to the scheme arising from this wide ranging and extensive consultation.

In addition to meeting with the neighbouring property owners 2 formal presentations and meetings have been held with the Hampstead Heath Consultative Committee, under the aegis of the City of London Superintendent of Hampstead Heath. Other local interested parties were also invited and attended these presentations.

As a result of these extensive local consultation and dialogue the scheme has been amended to respond to the various issues and concerns raised

- Overall size of the building reduced
- Position of building adjusted on site away from Wallace House boundary
- Volume of building reduced, library basement omitted
- Volume of bulk excavation reduced
- Height of southern building wing reduced
- Hydrology modelled in both temporary and permanent conditions
- Millfield Lane surfacing and improvements aligned with feedback
- Millfield Lane movement control aligned with feedback
- Total vehicle movements along Millfield Lane reduced
- Daily cap of 8 vehicle movements in total for both HGV and LGV for 94 of the total 100 weeks construction period and a cap of 12 daily movements for intermittent peak periods over 6 weeks.

The full engagement and practical response to the various concerns expressed during the consultative process indicates Mr & Mrs Munford's commitment to a real engagement process with the local residents and other interested parties.

2.0 Programme & Construction Methodology

As planning approval has yet to be granted, the programme below provides an indication of the duration of each phase of the works. The programme will be updated with the dates envisaged for each phase of works once planning permission has been granted, a contractor has been appointed and the date for works to start on site has been determined. It is currently anticipated that the overall construction period will be 100 weeks, with a further period of 6 weeks for installation of furnishings, decant and occupation.

Works Phase	Duration	Typical Labour levels (excluding management & supervision)
Site mobilisation & establishment	4 weeks	6
Demolition & site clearance	5 wks	8
Temporary works & excavation	7 wks	14
Piling, GSHP & drainage	6 wks	14
Lower ground floor & pool	9 wks	20
Suspended ground floor slabs	7 wks	20
Superstructure Frame & Roof	10 wks	20
Envelope	14 wks	24
Internal finishes	28 wks	32
Phase 2 Library structure (overlaps with Finishes)	(24 wks)	8
External landscape (overlaps with finishes)	(12 wks)	8
Commissioning final fit out and furnishings	8 wks	10
Overall works	100 wks	

Table 1 – Anticipated Labour levels

2.1 Demolition

The existing building comprises a masonry façade with tiled pitched roofs. The existing foundations are strip footing and a ground bearing floor slab. There is also an existing swimming pool and associated plantroom.

We have reviewed the existing materials within the buildings and have concluded that with the exception of some of crushed floor slab and foundations there are no opportunities for re-use of the existing materials within the new building. The brick and elements of the façade and internal wall bricks together foundation concrete will be crushed on site. The resulting granular material will be used in the new building as granular fill, and as part of the temporary works.

The remaining demolition materials will be separated on site with all recyclable material (timber, metals and glass) being taken for reprocessing, such that the volume of arising to be sent to landfill will be minimized to those material such as plaster which cannot be recycled.

The demolition process will be carried out within a three sided sheeted scaffold enclosure to ensure that there is no migration of dust or debris onto the adjoining properties. The demolition will be carried out from the Millfield Lane elevation using a tracked excavator with appropriate attachment. The on site crushing will be carried out using a compact portable unit with integrated dust and noise suppression. The volume of material involved will not require the crushing machine to run for more that 2-3 hours per day over the 2 week dismantling period. It is therefore expected that the volumes of dust generated by the dismantling of the existing house will be limited.

2.2 Excavation & foundations

The excavation of a building's foundations is a major source of bulk materials and vehicle movements and also a major source of imported materials. As part of the overall environmentally aware design philosophy of the building, it has been decided to maximize the reuse on site of materials arsing from the foundation and basement excavation. This has been integrated into the partial buried aspect of the new building, which utilizes 525m3 (30%) of the total 1054m3 of bulk materials as part of the overall site landscaping scheme. This will reduce the number of material collections by 150 vehicle movements, when compared with traditional off site disposal.

The lower ground floor is part cut into the sloping site and will be constructed in a kingpost wall supported excavation. The kingpost piles will be installed from the existing ground level following demolition of the existing building. The new building is also supported on piles and the contractor will have the option of either installing these piles at the same time as the kingpost piles, or installing the piles from the lower ground floor slab formation level. If the building piles are installed with the kingpost piles then these will need to be cased for the depth from existing ground level to the new formation level, however the piling equipment will only require to be mobilized once. Where the building piles are formed after the general excavation the casing and empty bore will be saved, but the rig will require to be mobilized twice. The final selection of these options will be the discretion of the contractor, however it has been assumed for the purposes of the CMP that the piling will be completed in two distinct operations. The geothermal ground source heating pipework is integrated in to the building and kingpost piles and will this be installed with the relevant piling operation

The piles will be installed using a compact hydraulic mini pile rig. This rig has a separate power pack unit. The rig is 2.9m long and 1.25m wide in its shipping mode with the trailer mounted power unit being a similar size. The installed piles will be between 300 and 350mm in diameter and will vary in length to suit the structural and geothermal requirements of each pile. Concrete for the piles will be delivered in a standard 6m3 ready mix concrete vehicle and will be held in an agitator for distribution to each of the piles as it is formed

The building forms a 'L' shape in plan, and the only access is gained via the existing driveway. In order to access the main block of the building the leg of the 'L' adjacent to the driveway will not be constructed until the structural shell of the main block has been completed. Consequently the foundations and structure of the building will be formed in two phases as illustrated in Appendix B. The area currently occupied by the existing swimming pool and the front lawn will form a working area to access the main block.

The shape of the site will restrict access to the rear of the building. A site access road will be formed between the east gable end and the site boundary with Nr 55 Fitzroy Park. This will incorporate tree route protection where necessary and will allow site dumpers, excavators and similar site plant to access the rear elevation of the building. Access to the rear will not be required once the main superstructure has been completed and the rear basement structures have been backfilled. At this point the temporary access road will be removed to allow completion of the landscaping works.

The lower ground floor and pool excavation for Phase 1 will be formed using a compact hydraulic excavator, with the arisings being loaded directly into dumpers for stockpiling at the rear of the site for later re-use or loaded into 6 wheel tipper lorries for off-site disposal. Drainage runs will be installed on completion of the piling, with the reclaimed granular demolition material being used as backfill and also providing the sub-base for the ground floor slab, making further savings in the use of imported materials.

2.3 Lower Ground floor

The ground floor slab bears directly onto the piles and is formed by a concrete 'flat slab'. This form of construction has been adopted into order to minimise the excavation quantities and material import. The swimming pool slab and pool plantroom slabs will be formed at the same time as the ground floor slab, using a similar construction methodology. The concrete for the slab will be placed using a telescopic handler mounted skip, where direct discharge is not possible.

2.4 Superstructure Frame & Envelope

The structural frame of the new house will be constructed using a mix of concrete and structural steel. The floor slabs will be a mix of insitu concrete on temporary formwork or concrete on permanent steel 'holorib' decking, selected to suit the requirement of each specific element. The roof structure will be formed using a structural steel frame and cold rolled sections to a low pitched timber and insulated decked covered with a single ply membrane.

The superstructure frame will be erected using a rough terrain mobile telescopic crane, which has been selected for its compact size and enhanced manoeuvrability both in accessing the site and in use on site. The crane will be positioned so that the lifting radius remains within the confines of the property boundaries at all times. The steel frame sections will be sized to ensure that these can be contained within the bed length of a 17 tonne 2 axle lorry.

The building envelope utilizes a mix of rendered and timber clad elevations with curtain walling and stone clad feature panels to the main garden facing facades. Mortar for the internal leaf backing blockwork will be supplied using an ultra quiet electric silo plant, so as to minimise waste, avoid open sand and cement storage, and reduce noise and dust nuisance. The curtain walling and window system will be installed following completion of the structural frame and be accessed together with the brick work, from a perimeter standing scaffold.

2.5 Internal finishes

The internal finishes for the building will use a high proportion of pre-fabricated and pre-finished materials, ranging from the main feature staircase, to joinery and stone flooring. The internal partition walls will generally be formed for dry construction to minimize the volumes of material import. The building will also incorporate a rain water harvesting system which will utilize stored rainwater for flushing of toilets and irrigation of the landscape.

The finishes have been chosen to limit the volume of site works and the number of operatives required to complete the installation, as well as limiting the volumes of waste materials generated by the installation.

2.6 Landscaping

The landscape works will take place in to two phases. The initial phase will comprise the re-levelling of the rear elevation of the building to cover over part of the lower ground floor to accommodate some of the excavated material generated during the foundation phase. The second phase will comprise the topsoil and planting to the main lawn and the area adjacent to the new building, and will take place during the later stages of the internal finishes.

3.0 Access

3.1 Access Routes

All demolition, construction and delivery vehicles will approach the site from Highgate West Hill and then Merton Lane before turning right into Millfield Lane. Vehicles leaving the site will use the same route. A plan showing the vehicle route to and from the A1 is attached at Appendix C. The section of Millfield Lane leading to the Water House from Merton Lane, is a single carriageway road with no footways. The road varies in width from some 3.8 metres to 6.4 metres. The following table shows how the lane varies in width between Merton Lane and the Water House.

Width of Millfield Lane	Proportion of Length
Between 6.25 and 6.38 metres	5.5%
Greater than 6.25 metres	9.2%
Greater than 6 metres	12.6%
Greater than 5.75 metres	18.9%
Greater than 5.5 metres	23.8%
Greater than 5.25 metres	37.9%
Greater than 5 metres	59.1%
Greater than 4.75 metres	82.4%
Greater than 4.5 metres	90.3%
Greater than 4.25 metres	98.4%
Greater than 3.8 metres	100%
Note - Typical Construction Vehicle Width up to 2.5 metres	
Table 2 – Millfield Lane Width	

Millfield Lane provides vehicular access to the Water House and is also used by Hempstead Heath maintenance and service vehicles. As such, vehicle movement is relatively infrequent. The lane is also used by pedestrians and cyclists including visitors to the Kenwood Ladies Pond, access to which is located opposite the Water House.

3.2 Vehicle sizes & tracking

The following list provides detail of the type of vehicles that will need to gain access to the site during the demolition and construction process. The vehicles proposed have been selected to ensure that they are of a size that can be accommodated on the highway network given the constraints of the site access route, whilst minimising the potential number of traffic movements to and from the site. For example, during the demolition and excavation phase, 3 axle tipper trucks are proposed rather than larger 4 axle tipper trucks. Images providing a comparison of 3 and 4 axle tipper trucks are provided at Appendix D.

- Skip Lorry 4 Wheel, 17 Tonne, G.V.W
- Piling plant delivery 4 Wheel, 17 Tonne, G.V.W
- Concrete Delivery Vehicle 6 Wheel, 24 Tonne, G.V.W
- Building Panel Deliveries 4 Wheel, 17 Tonne, G.V.W
- Ballast and Loose Materials 6 Wheel, 24 Tonne, G.V.W, Tipper
- General Building Materials 4 Wheel, 17 Tonne, G.V.W, HIAB Flat Bed
- Wheeled 360 Excavator, 23 Tonne GVW
- Mobile All Terrain Crane, 24 Tonne GVW (Terex RT 230 or similar)

All contractors and sub-contractors operating large vehicles over 3.5 tonnes must meet all of the following conditions:-

1) Operators must be a member of TfL's Fleet Operator Recognition Scheme (www.tfl.gov.uk/fors) or similar at the Bronze level.

2) All drivers must have undertake cycle awareness training such as the Safe Urban Driver module through FORS or similar.

3) All vehicles associated with the construction of the Development must:

i. 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 Side Guards are fitted.

ii. Have a close proximity warning system fitted comprising of a front mounted, rear facing CCTV camera (or Fresnel Lens where thisprovides reliable alternative), a Close Proximity Sensor, an in-cab warning device (visual or audible) and an external warning device to make the road user in close proximity aware of the driver's planned manoeuvre.

iii. Have a Class VI Mirror

iv. Bear prominent signage on the rear of the vehicle to warn cyclists of the dangers of passing the vehicle on the inside.

Highgate West Hill and Merton Lane are currently being used by construction vehicles of this size for other construction projects on Fitzroy Park and the use of these roads by vehicles of this type has been considered by the highway authority prior to the grant of planning consent for these development schemes. It should be noted that the use of these routes by construction and demolition vehicles has not resulted in the need for the suspension of any on-street parking bays or any other physical mitigation measures.

Swept path analysis has been undertaken to demonstrate that an 8.7 metre rigid/flat bed construction vehicle can manoeuvre to and from the site via Millfield Lane and leave sufficient space for pedestrians to pass. The vehicle would reverse onto the site where loading and unloading would take place. This type of vehicle has been used for the exercise as it is the longest, and most onerous in terms of manoeuvrability, of the construction and demolition vehicles that will be used on site.

The swept path plots are attached at Appendix E. The plots show that Millfield Lane can accommodate vehicles of this size and that space is available for pedestrians and vehicles to pass. However, given the width of Millfield Lane, measures will need to be implemented to manage the interaction between construction vehicles and other users of the Lane. These measures are considered in detail in Section 5 of this report.

3.3 Vehicle movements

Construction vehicle movements will not be permitted at weekends or during public holidays and will be scheduled to take place between the hours of 08.00 and 14:00 and 16.00 to 18.00. The delivery cessation period from 14.00 – 16.00 has been selected in

conjunction the Planning Authority to coincide with the peak pedestrian movements identified in the Millfield Lane movement survey detailed in Appendix F. The 2 hour delivery free period can be adjusted to align with the peak pedestrian movement period observed as the works proceed.

Heavy goods vehicle movements will also be scheduled so as to avoid more than one movement every 60 minutes and the Project Manager will produce a site management plan detailing how these timings will be managed. This will ensure that no more than one vehicle will be on site, or on the local road network approaching it, at any one time. The following table provides a breakdown of the number of vehicle movements during each phase of the construction process.

A delivery will comprise of two movements, arrival and departure. The movement table will be updated to provide more specific detail of anticipated delivery times once planning permission has been granted and the date for works to start on site has been determined.

Works Phase	Duration	Total HGV movements	Average daily movements	Peak daily movements
Site set up and establishment	4 wks	10	0.5	Max 4 per day
Demolition & site clearance	5 wks	116	4.6	Max 8 per day
King post & bulk excavation	7 wks	146	4.6	Max 8 per day*
Piles & drainage	6 wks	125	4.2	Max 8 per day*
Lwr grd,& pool slab & walls	9 wks	48	1.1	Max 8 per day*
Suspended Grd floor slabs	7 wks	59	1.7	Max 8 per day
Superstructure Frame	10 wks	72	1.4	Max 8 per day
Envelope	14 wks	65	1.0	Max 8 per day
Internal finishes	28 wks	79	0.6	Max 4 per day
Phase 2 structure (overlaps with finishes	(24 wks)	93	0.8	Max 8 per day
Commissioning final fit out & furnishing	8 wks	10	0.25	Max 4 per day
Landscape (phase 2) (overlaps with finishes)	(12 wks)	75	1.2	Max 8 per day
Total	100 wks	898	1.8	
* Peak of 12 movements will occur in no more than 6 intermittent weeks during these phases				

Table 3 - Vehicle Movements

3.4 Phasing and Peak movements

Within the overall project average of 1.8 HGV movements per day (i.e. 1 HGV delivery) there will be some variability and peaks of activity. These will particularly be associated

with the foundation stages when excavations are taking place and the foundation structures are being cast. These variations are noted in Table 2 and peak with the two phases of the foundation construction. The peak periods will be limited to a total of 6 intermittent weeks occurring during bulk excavation, piling and lower ground floor slab construction period. The construction programme for the works is currently aligned such that this peak occurs during the winter months and will coincide with the period of lower pedestrian activity along Millfield Lane. The final alignment of the works programme is however dependent upon the timing of the receipt of a planning consent, and the project programme does allow for the full statutory period for determination of the application.

3.5 Light goods vehicles (LGV)

During the consultation local residents have expressed concerned over the number of light goods vehicles and cars which may access the site in addition to HGV movements. The restricted space on site will prevent the use of the site for any vehicle parking for the contractor's staff or operatives. This will be reinforced by a specific restriction contained within the construction contract documentation. There will be a residual volume of light deliveries by van for smaller elements and for day to day incidental requirements. The number of these is difficult to predict due to their variable and incidental nature. It would be anticipated that the average for these deliveries will be in the order of 2 movements per day. In order to respond to the concerned expressed by the residents, the CMP and construction contract documentation will further restrict the LGV movements such that total number of daily movements of all types will NOT exceed the maximum numbers stated in Table 2.

The imposition of an absolute limit of all vehicles types, covering HGV's LGV and other vehicles using Millfield Lane in connection with the Water House development has been introduced to limit the effect of the works upon the other users of Millfield Lane and to limit the potential impact of the works on the public amenity of the heath users.

The commitment to a daily maximum of this type is in response to the concern expressed during the consultative process and indicates Mr & Mrs Munford's full commitment to meaningful engagement with local residents and other interested parties.

3.6 Interface with adjoining sites

Table 3 indicates typical daily vehicle movements and the maximum number that is predicted would occur. The range between average and maximum number of daily vehicle movements will provide an element of flexibility during each of the building phases. No other properties currently use Millfield Lane for vehicle access, it is however noted that there are some works currently taking place at 51 Fitzroy Park, and at Fitzroy Farm. Consent has also recently been granted to 53 Fitzroy Park with these works anticipated to commence early in 2013. All three sites are located on Fitzroy Park and use Merton Lane as their access route.

The Construction Management Plans for these sites indicate that by Summer 2013 (the earliest start on site date currently anticipated at the Water House) works at 51 Fitzroy Park and Fitzroy Farm will be complete, whilst the more intensive period of construction in terms of vehicle movements at 53 Fitzroy Park will have passed. It is therefore unlikely that any congestion will occur at where the access routes converge at the southern end of Merton Lanes at its junction with Millfield Lane and Fitzroy Park.

In the event that construction works on Fitzroy Park coincide with works at the Water House, there is flexibility within each of the building phases to enable vehicle movements to be scheduled so as to limit the cumulative daily impact of construction vehicles associated with the Water House and other development sites.

4.0 Nuisance Control

A range of measures will be implemented to ensure that the potential impact of the works on local residents and neighbours will be minimised. These measures are discussed in turn below.

4.1 Dust Control

Water dampening measures will be used during the demolition process, which will significantly control dust generation. Dust screens will also be incorporated during this element of the project. The dust screen will be formed using a fully sheeted scaffold around the three sides to the height of the existing building, with the Millfield Lane elevation being left open to access the works. This will form a cocoon within which to carry out the dismantling work of the existing building. This scaffold will be dismantled once the demolition works is completed to allow for access to the new building foundations.

Dust generation during the next phase of the work for the new house basement and substructure will be limited, as it is currently envisaged that this works will take place during the winter. Any dust generated by vehicles moving along Millfield Lane removing surplus materials will be very limited due to the time of year, the limited number of daily movements and restriction of speed to walking pace behind vehicle banksmen.

It should be also noted that concrete is delivered wet, and that the superstructure steel frame is delivered as fabricated elements with the cladding and glazing panels pre-cut to size so that the potential for dust generation has been limited by the selection of materials and methods.

4.2 Wheel Wash

Site vehicles will have wheels washed down prior to leaving the site so as to reduce unwanted debris spreading onto Millfield Lane. A temporary concrete slab will be installed at the entrance to the site to form an impervious surface that can be used as a wheel wash area.

Waste water from the wheel wash, and also from general site operations such as damping down and concrete delivery washout, will be stored in temporary 'silt buster' holding and separation tank on site the level of which will be monitored by the Principle Contractor. When full, the tank will be emptied by a registered waste disposal contractor using a vacuum tanker and transported to a local depot for processing prior to disposal. The total volume of concrete used on the site is limited and we anticipate that the tank will require to be emptied 3 -4 times during the execution of the works. This operation will be controlled by a consignment note to allow full traceability of all material removed from site.

4.3 Noise Control

Trees and walls that surround the Water House will assist in acting as a noise barrier. The noise levels associated with particular materials has, and will continue to be taken in consideration as part of the design specification process. The building contract will require the use of noise suppression equipment which complies with or exceeds the current codes of practice. Building work will be limited to the hours of 08.00 to 18.00, with no works taking place at weekends or on public holidays.

4.4. Site Security

All construction materials and spoil will be stored within the site outside of root protection areas or in areas that have been protected to enable storage. It is proposed that solid boarded 2.4 m hoardings will be erected along the site boundary with Millfield Lane. Access gates will be formed in the fence to main entrances to the site on to Millfield Lane. The site will be locked outside of working hours to ensure that all materials and equipment are stored securely

4.6. Consultation with Local Residents

It is proposed that a Construction Working Group will be formed by the Contractor's Project Manager to ensure that local residents and other interested parties are aware of how the construction works are progressing and to provide them with the opportunity to raise any issues that may arise as they occur. A direct dial number of the client's on-site agent will also be provided so that any issues can be reported.

Representatives of the Heath Consultative Committee, the City of London and the Kenwood Ladies Pond Association will be invited to join the Construction Working Group as well as any other parties affected by the works and Council Officers. Council officers will be advised when meetings take place and be informed of any issues discussed,

The Contractor's Project Manager will keep in regular contact with local residents, affected parties and the Council by sending a fortnightly update by email, and post if necessary. It is also proposed that monthly Construction Working Group meetings will be held if all parties agree that they are required.

The Contractor's Project Manager will liaise with any other contractors carrying out construction works in the vicinity of the site to ensure that the combined impact of development is kept to an absolute minimum.

4.7 Travel Plan

There will typically be a total of up to 20 construction workers on site, although this may increase to 32 during the later stages of the project when the internal finishes and landscaping phases are being undertaken. It will be a condition of the building contract that no workers vehicles will be allowed on to the site and construction works must access the site on foot along Millfield Lane.

To minimise the potential impact of construction workers travelling to the area, a Travel Plan will be implemented to promote and encourage the use of sustainable mode of travel to and from the site and minimise the use private cars. Construction workers will be instructed not to park private vehicles on Fitzroy Park.

The Travel Plan will take the form of a leaflet that will include details of local public transport services, promote walking and cycling and encourage car sharing. Consideration will be given to the operation of a shuttle bus service to and from the junction of Millfield Lane with Merton Lane from nearby public transport nodes. A draft of the Travel Plan will be provided to potential contractors prior to appointment.

4.8 Groundwater & Surface water run-off

The existing land drainage network will be located prior to the demolition of the existing building, and any necessary temporary or permanent diversions will be install in order to maintain continuity of sub-surface groundwater flows as recommended in the Hydrogeology report.

New land drains will be installed as part of the bulk fill and re-grading of the site, and these will be designed to maintain the current groundwater flows across the site. Surface run-off from the temporary hardstanding areas will be directed via a temporary settlement tank prior to discharge into the existing land drainage system. Surface water flow from potential sources of contamination such a concrete delivery washout points, mortar silos

and plaster mixing baths will be separately contained and will not be discharged into the land drainage system.

5.0 Pedestrian and Road User Safety

As discussed in Section 3, Millfield Lane between the site and Merton Lane is a narrow single carriageway road that is used by very few vehicles but is a commonly used pedestrian route. It is proposed that a number of measures be implemented during the proposed demolition and construction works at the Water House so as to mitigate against any safety issues that could arise as a result of the use of the route by construction traffic and to maintain the visual and recreational amenity of the lane.

5.1 Current Utilization of Millfield Lane

Data provided by the City of London shows that on average, between 7am and 7pm on a weekday, pedestrian flows on Millfield Lane are in the order of 1000 movements. The number varies throughout the year, with winter months being quieter and summer months being busier.

Further movement surveys were undertaken on Thursday 7th April 2011 between the hours of 0800 and 1800. The counts took place on Millfield Lane to the north west of the public toilets on Hampstead Heath so as to record pedestrian and vehicle movement between Millfield Lane and the heath as well as from Merton Lane.

The results of this survey are presented in Appendix F. In addition to the raw survey data, the appendix also contains figures 1, 2 and 3, which show the total pedestrian and vehicular movement recorded during the survey period, during the busiest hour (1400 – 1500) and during the busiest 15 minute interval (1445 – 1500) as well as a chart showing the profile of movement on the busiest section of Millfield Lane throughout the day.

The results of this survey show that the majority of pedestrians enter and exit Millfield Lane via the heath as opposed to from the junction of Millfield Lane with Merton Lane and Fitzroy Park. This results in pedestrian movement on the southern end of Millfield Lane being considerable lower than that on the northern section that leads to the Water House and the Kenwood Ladies Pond, 257 movements compared to 703 on the day of the survey.

5.2 Proposed Mitigation Measures

- Dress back verges, remove mud, prune vegetation and improve drainage at the pedestrian passing points along Millfield Lane.
- If necessary, prune overhanging trees to provide sufficient height clearance on Millfield Lane for heavy goods vehicles. The extent and nature of any works will be based upon the recommendation of an Arboriculturalist, discussed and agreed with the relevant landowner and subject to permission. necessary from the City of London or Camden Borough Council.
- Banksmen will be required to walk in front of and to the rear of all construction traffic on Millfield Lane including light goods vehicles to restrict speed to walking pace (3mph)
- The banksmen will all hold Construction Skills Certification Scheme (CSCS) cards have successfully completed an accredited vehicle marshalling training course such as provided by the National Construction College (See Appendix G).
- The banksman team will have four members, who will all be on site from Monday to Friday between 08:00 and 18:00 when construction traffic movements will take place. The banksmen will have radios in order to contact each other whilst working.
- The banksmen will instruct drivers to manoeuvre their vehicles along the edge of the carriageway that borders the heath leaving room for pedestrians to pass on the opposite side of the carriageway. The banksmen will stop the vehicle to enable oncoming pedestrians and cyclists to pass.
- One banksman will be stationed at the junction of Merton Lane with Millfield Lane. The role of this Banksman is to help the construction vehicles negotiate the turn from Merton Lane into Millfield Lane and to liaise with the other banksmen via radio to alert should another vehicle need to use Millfield Lane. This banksman would then liaise with the other banksmen to ensure that the lane is clear.
- A fourth banksman will be positioned on Millfield Lane at the entrance from the heath, to the west of the toilet block on the heath. This banksman will liaise with the bankmen accompanying a construction vehicle along the lane, to ensure that the approaches to this junction are clear before the vehicle enters this area. The banksmen accompanying the vehicle will not proceed towards this junction until instructed by fourth banksman located at this point.

- The swept path analysis at Appendix E demonstrates that there are areas where the width of the lane is not be sufficient for pedestrians to comfortably pass a stationary heavy goods vehicle. These areas are distinguishable on the ground by natural features. The banksman at the front of the vehicle will instruct the driver to stop as soon as he sees an oncoming pedestrian or cyclist that would otherwise meet the vehicle within the areas of restricted width. The Banksman will advise the pedestrian/cyclist that the vehicle will remain stationary until they have passed.
- If, when the vehicle is stationary, a pedestrian/cyclist approaches the rear of the vehicle, the banksman at the rear of the vehicle will contact the front banksman by radio to advise him that a person is passing the vehicle and not to allow the vehicle to move again until clearance is given. The Banksman will advise the pedestrian/cyclist that the vehicle will remain stationary until they have passed.
- Upon arrival at the site the Banksmen will ensure that the area is clear of pedestrians and other users before the vehicle reverses into the site.
- A Banksman Co-ordinator will keep a log of all construction vehicle movement.
- Temporary road signage will be positioned on Millfield Lane at either end of the construction vehicle route warning road users of the presence of construction traffic.

5.3 Millfield Lane Emergency Access Strategy

As discussed, Millfield Lane provides access to Kenwood Ladies Pond. In the event of an emergency, the Ladies Pond will be asked to alert the Construction Project Manager should an ambulance be called. The Construction Project Manager will then stop all vehicular activity to and from the site to ensure that the ambulance can pass along Millfield Lane without meeting a construction vehicle. In the event that an ambulance arrives at the site without notice, and a construction vehicle is using Millfield Lane, a strategy to manage the interaction between vehicles will be in place. This strategy is detailed on the Emergency Access Plan shown at Appendix H.

- **6.0 Millfield Lane Road Surface**

Millfield Lane is managed and maintained by the City of London. The surface of the road has been allowed to wear so as to blend in with the rural surroundings, whilst providing a suitable road surface for all users of the lane. It is proposed that any damage to the road surface that occurs during the demolition and construction process would be repaired as required following daily inspection by the building contractor.

In order to minimise the potential for damage during the demolition and construction process, consideration is being given the implementation of road strengthening works adjacent to the heath side of the lane. Two options were proposed during the pre application consultation process, and as a result a minimum intervention solution is now proposed.

It is proposed to carry out a reactive maintenance regime to lane surface with daily inspection being carried out and the surface made good with granular material whenever ruts or potholes begin to be formed. Tree root protection works would also be carried out as appropriate, subject to guidance of an Arboriculturalist.

A sewer runs along Millfield Lane at a depth of some 4 metres beneath the surface. Survey work undertaken to determine the construction of Millfield Lane showed that the road substructure has a CBR of 30%, indicating a very substantial resistance to rutting and excellent load bearing capabilities. A copy of this survey is attached at Appendix I. The nature of the underlying subgrade material indicates that the sewer is unlikely to be damaged as a result of the use of the lane by construction traffic.

7.0 Summary

This Construction Management Plan relates to the proposed redevelopment of the Water House. The purpose of the CMP is to ensure that the impact of demolition and construction works on the local residents and the immediate highway network is kept to an absolute minimum.

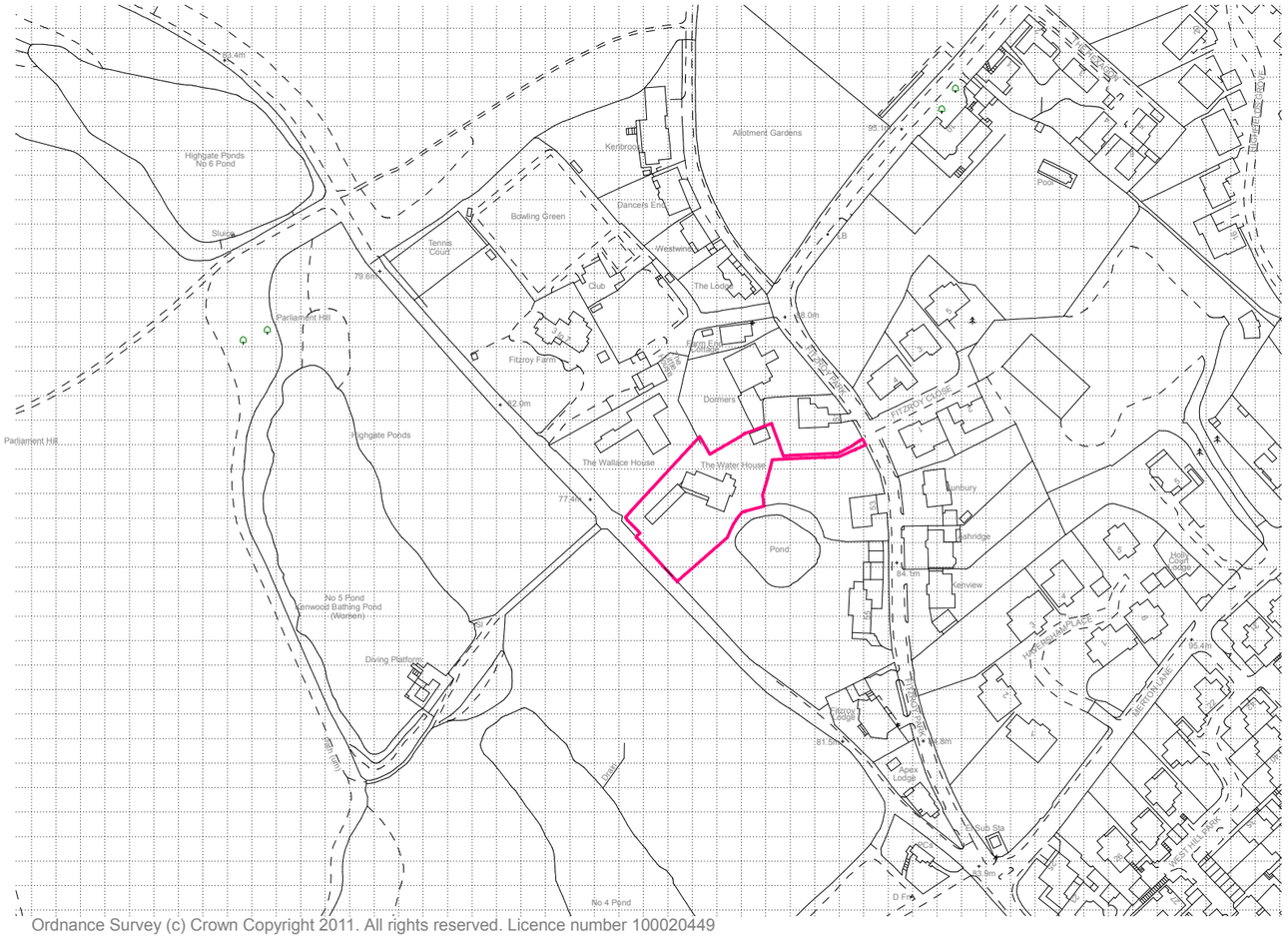
This plan seeks to address the concerns expressed by the users of Millfield Lane, local residents and other interested parties.

This scheme developed by the owners Mr & Mrs Munford represents an inclusive and open approach to the site and the manner in which it is developed, the materials selected and the techniques used.

The table below summarises the main issues associated with demolition and construction works on this site and identifies how the CMP addresses them.

Issue	Response
Pedestrian and road user safety on Millfield Lane	Banksman strategy to control vehicle speed and the interaction between pedestrians and other road users.
Volume of traffic movements along Millfield Lane	Size of building and volume of basement reduced to limit vehicle movements, absolute daily maximum limit set for both HGV's and all other vehicles to limit impact upon other lane user and public amenity. Daily cap introduced to limit all vehicle movements covering both HGV and LGV.
Public amenity on Millfield Lane	Construction methodology and vehicle selection chosen to minimise the level of vehicle movement on Millfield Lane and any physical works have been designed to maintain the rural nature of the lane.
Ground Water and Surface Water run off	Temporary and permanent works will be implemented in accordance with the Hydrology report recommendations so as to maintain current groundwater and sub-surface water flows across the site. Additional measures are proposed to contain contaminated surface water run off during the construction process.
Impact on Millfield Lane sewer	Substantial substructure to existing road (CBR 30%) indicated sufficient load bearing capacity in road to protect sewer.
Interface with other construction sites	The Contractor's Project Manager will liaise with contractors of construction projects in the area so as to minimise the cumulative effect of the developments. The construction programme provides flexibility to enable vehicle movements to be scheduled so as achieve this objective.
Table 4 – Summary of Response to Key Issues	

Appendix A



N

1 SCALE 1 : 2500 at A3

ORDINANCE SURVEY MAP

Figured dimensions only are to be taken from this drawing. All dimensions are to be checked on site before any work is put in hand.

If in doubt, ask.

NOTES

Rev	Description	Drawn	Date	Checked
B	Updated	hp	10.01.11	sm
A	Preliminary	hp	26.11.10	sm

Spence Harris Hogan associates
architects + interiors + design consultants

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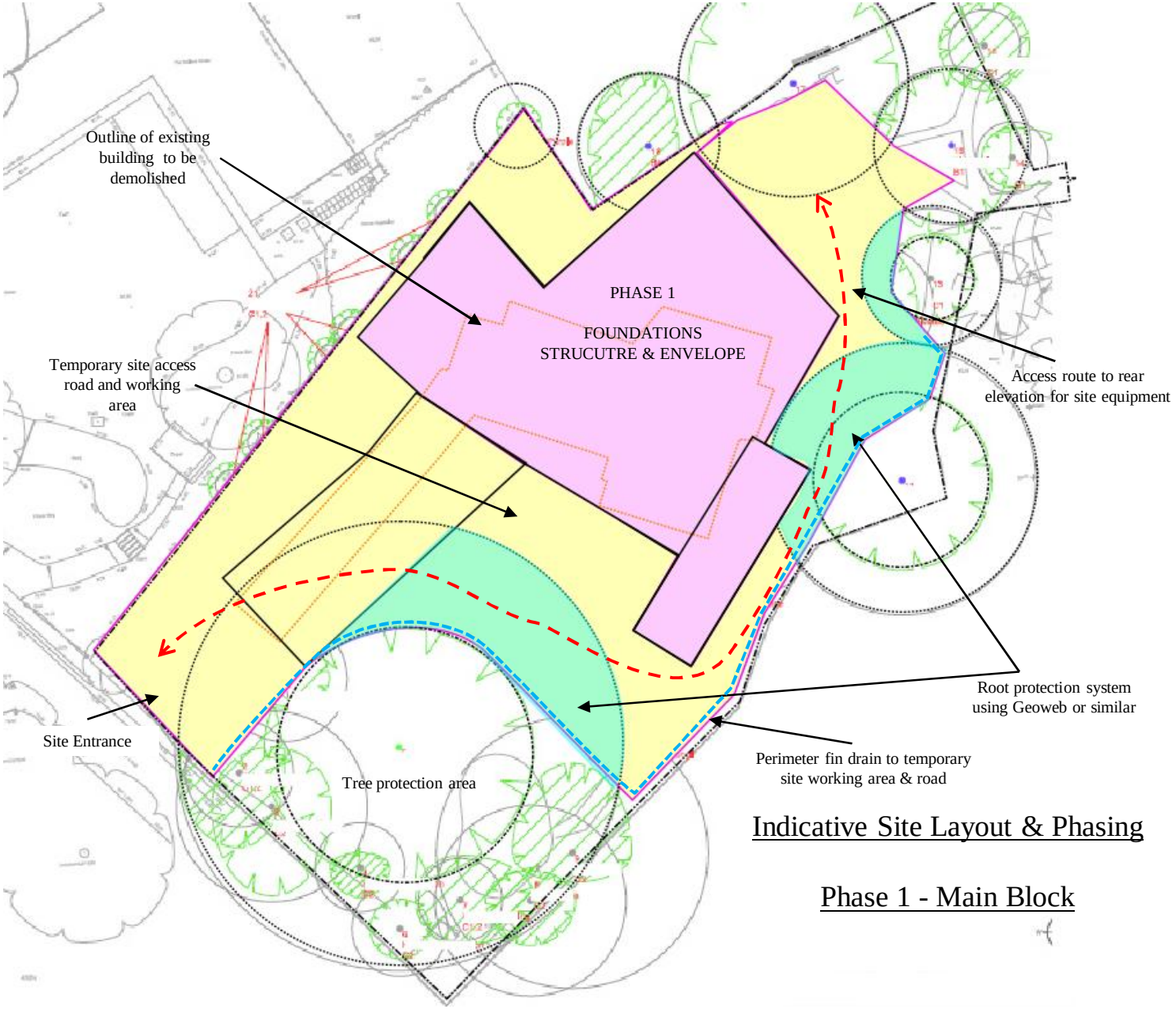
Hammersmith London
w6 9nu

tel : 020 8600 4171
fax : 020 8600 4181
mail : shh@shh.co.uk
web : ww.shh.co.uk

Project No:	Project:
633	**The Water House**
Author: JSM	Site Address: Millfield Lane Highgate
Checked: TW	Client: Corp. City Dev. No. 2 Ltd
	Title: 000 Site Plans Ordinance Site Plan

Status:	Scale A1:	Scale A3:
Preliminary	1:1250	1:2500
Project no. / Stage / Drawing no.	Date:	Revision:
633(SK)003	JAN.11	B

Appendix B



Indicative Site Layout & Phasing

Phase 1 - Main Block

Construction Planning Associates

The Water House
Site Phasing

Scales N/A Original Size NTS	Drawn CBFW Date 4/11
C400	Drawing No SL01 A

Indicative Site Layout & Phasing

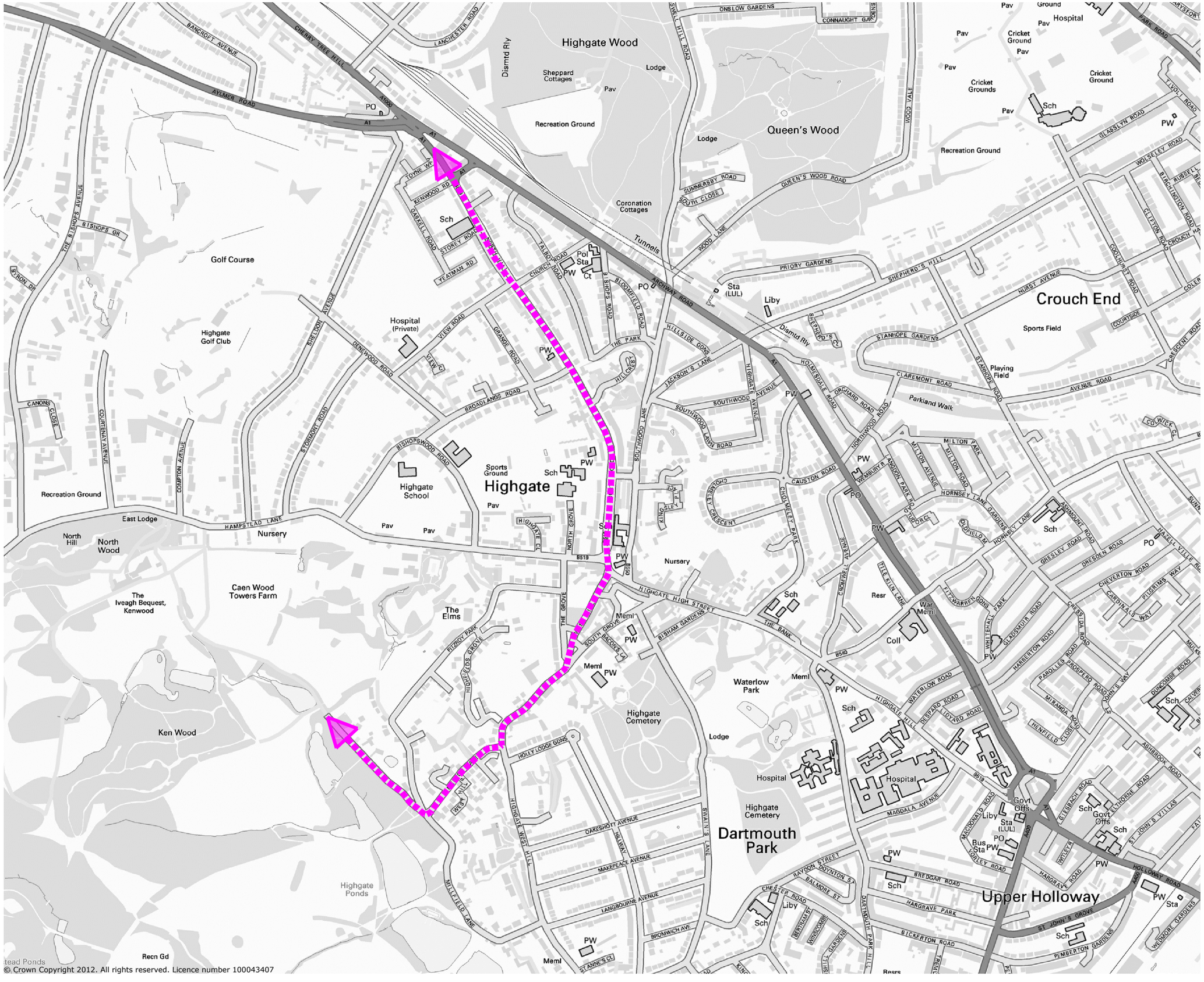
Phase 2- Library Wing

Construction Planning Associates

The Water House
Site Phasing

Scales N/A Original Size NTS	Drawn CBFW Date 4/11
C400	Drawing No SL02

Appendix C



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motion

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www.motion-uk.co.uk

Project:
The Water House, Millfield Lane

Title:
Construction Vehicle Routeing

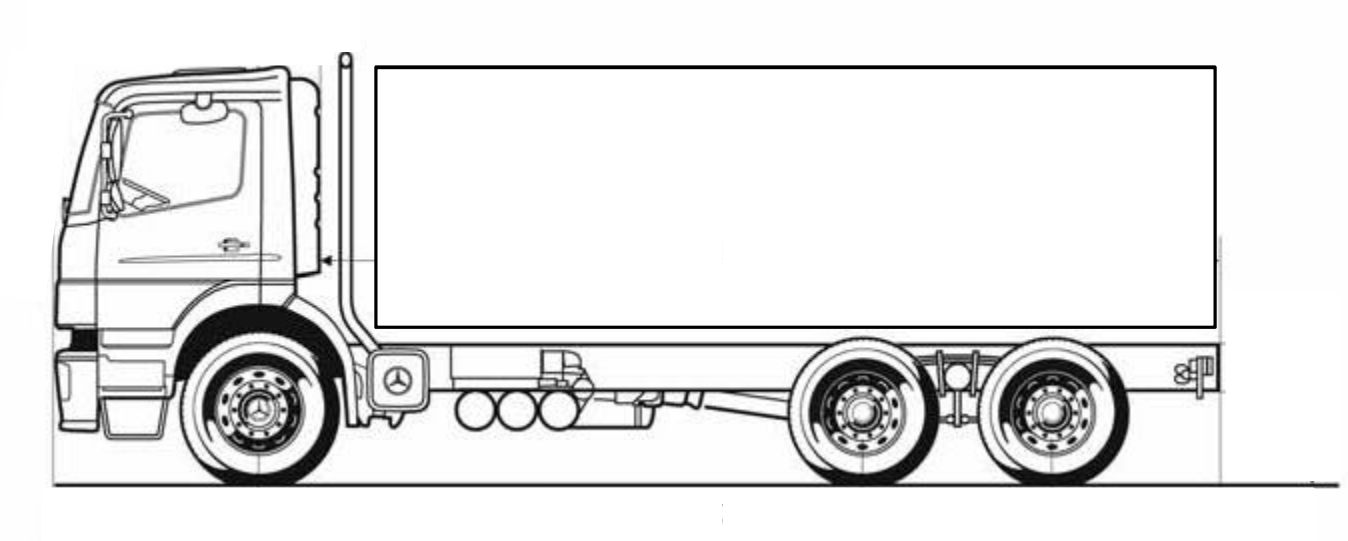
Scale: NTS (@ A3)

Drawing: 100702-02

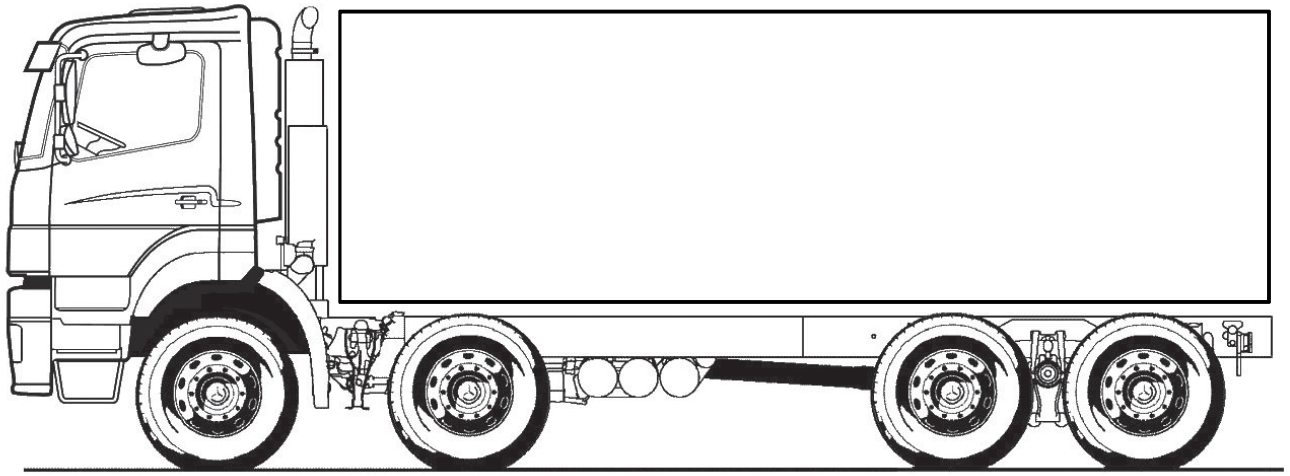
Revision: -

Appendix D

Three Axle Tipper Lorry Approx length 8 metres



Four Axle Tipper Lorry Approx Length 9 metres



Appendix E

100702-TK15C
100702-TK16C
100702-TK17C
100702-TK18C
100702-TK25C
100702-TK24C
100702-TK23A
100702-TK19A
100702-TK22C
100702-TK20B
100702-TK21B

Millfield Lane Access Strategy

All vehicle movements guided by banksman at walking pace. All vehicles to stop to allow pedestrians to pass.

Provide segregation between vehicle path (maximum of 3.56 metres wide) and pedestrian zone of a minimum of 1.2 wide.

Before areas of restricted width, banksman will hold vehicles until forward section is clear of pedestrians.

Vehicle swept paths have been undertaken to demonstrate the practicality of this solution for 2 and 3 axle lorries – no 4 axle 'tippers' will be used.

Minimum width 1.2 metre pedestrian zone

Restricted width. Vehicles held by banksmen and pass through this area only when no pedestrians are present. Refer to plans 100702 - TK20b & TK21b for detail.

Minimum width 1.2 metre pedestrian zone

Restricted width. Vehicles held by banksmen and pass through this area only when no pedestrians are present. Refer to plans 100702 - TK22c & TK19a for detail

Minimum width 1.2 metre pedestrian zone

Restricted width. Vehicles held by banksmen and pass through this area only when no pedestrians are present. Refer to plans 100702 - TK23a and TC24c for detail.

Minimum width 1.2 metre pedestrian zone

Restricted width. Vehicles held by banksmen and pass through this area only when no pedestrians are present. Refer to plans 100702 - TK18c & TK25c for detail.

motion
transport planning

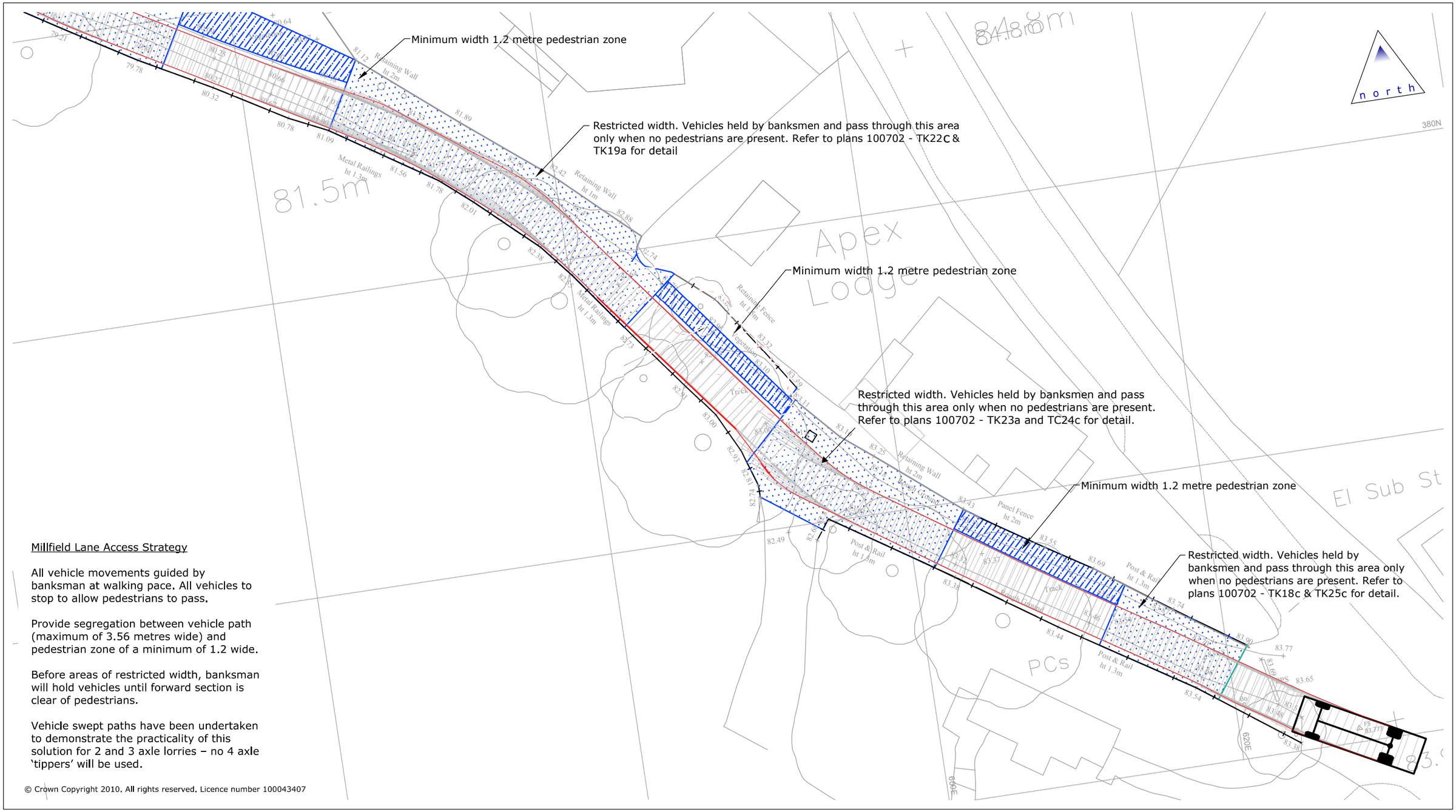
Legend

- Pedestrian zone
- Pedestrian pinch point

"The Water House", Millfield Lane
Swept Path Analysis
8.7m Rigid Vehicle Accessing Site

Scale (@A3) 1:500

100702-TK15 Rev C



Millfield Lane Access Strategy

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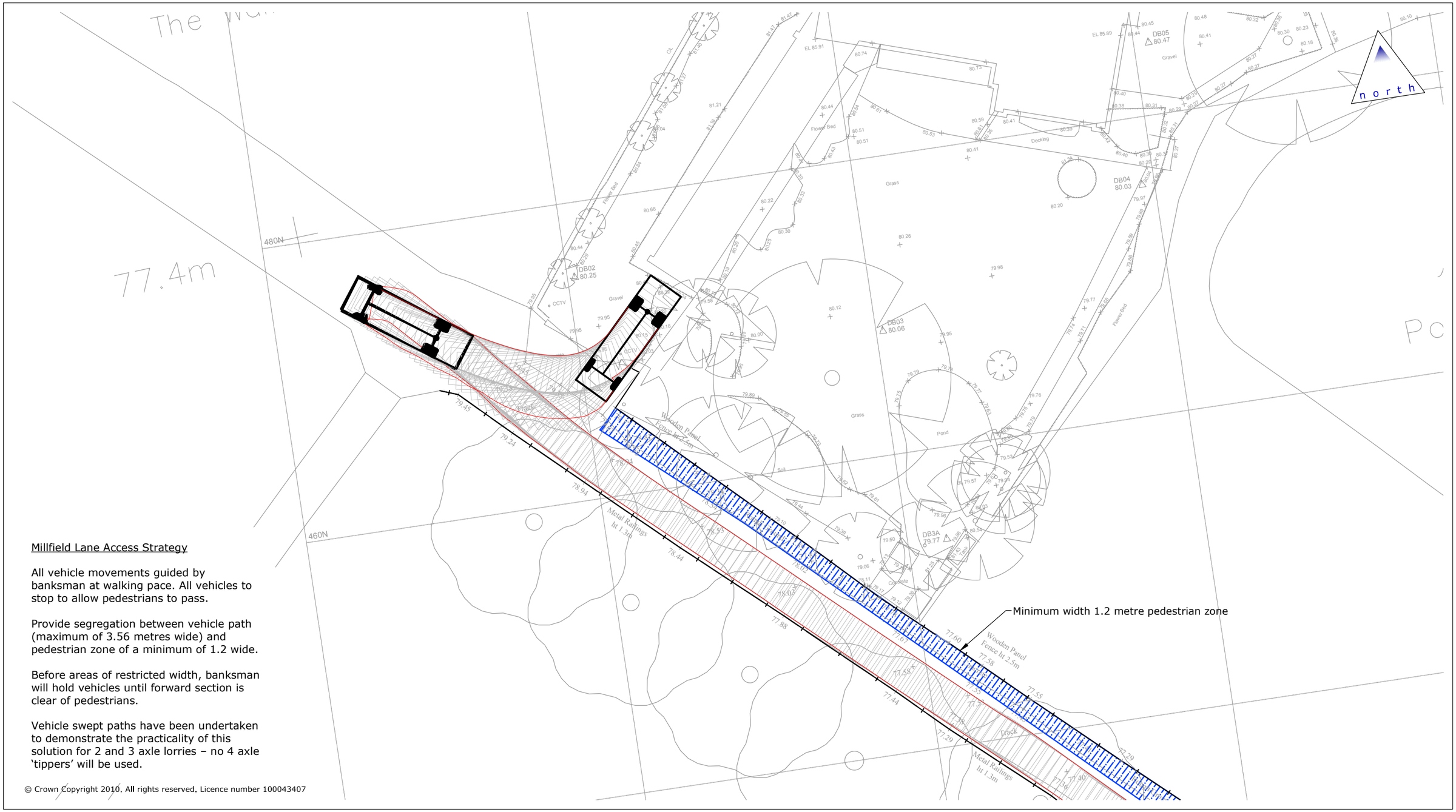
motion
transport planning

"The Water House", Millfield Lane
Swept Path Analysis
8.7m Rigid Vehicle Accessing Site

Scale (@A3) 1:250

100702-TK16 Rev C



Millfield Lane Access Strategy

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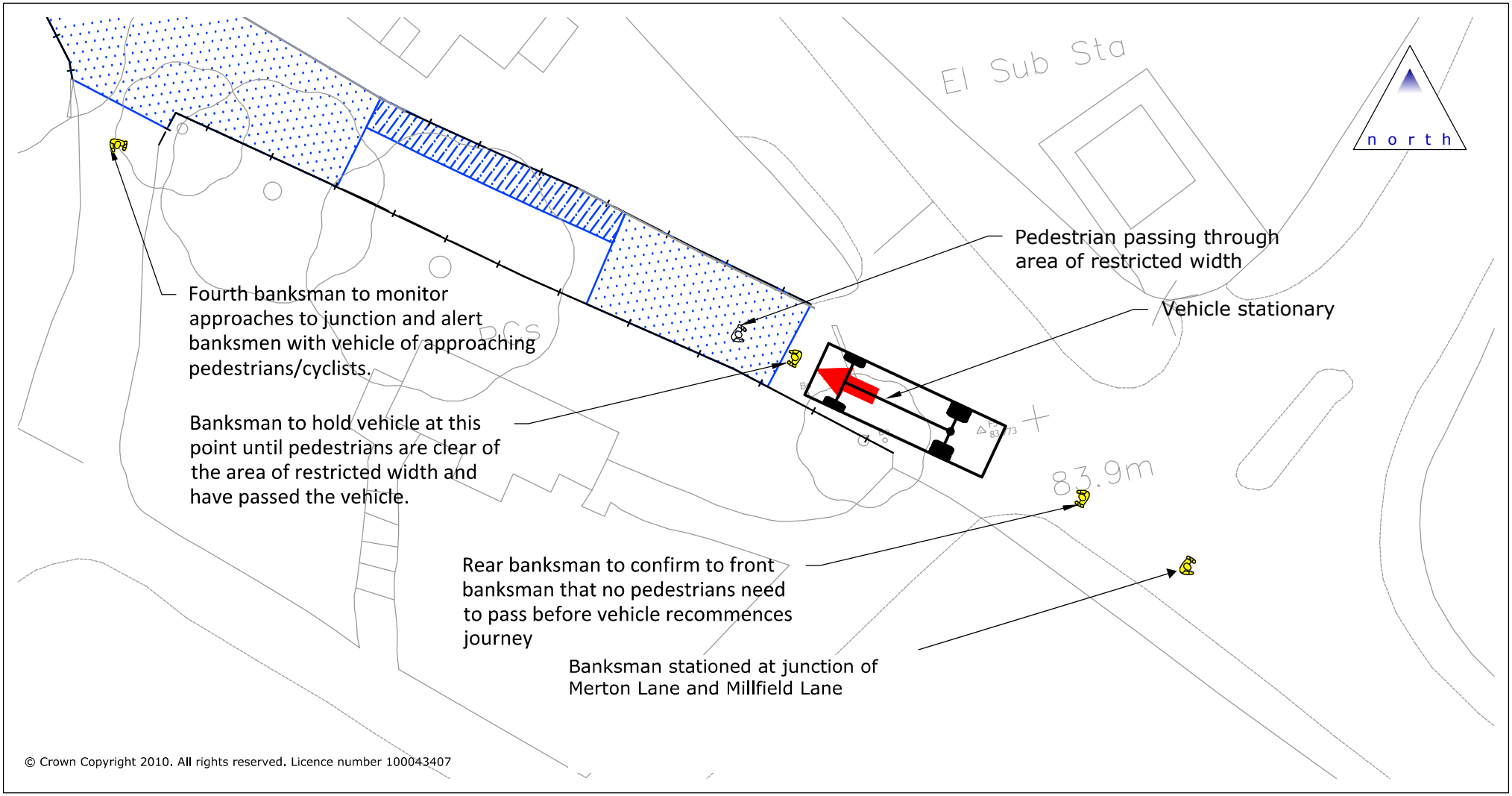
motion
transport planning

"The Water House", Millfield Lane
Swept Path Analysis
8.7m Rigid Vehicle Accessing Site

Scale (@A3) 1:250

100702-TK17 Rev C



motion
transport planning

Legend

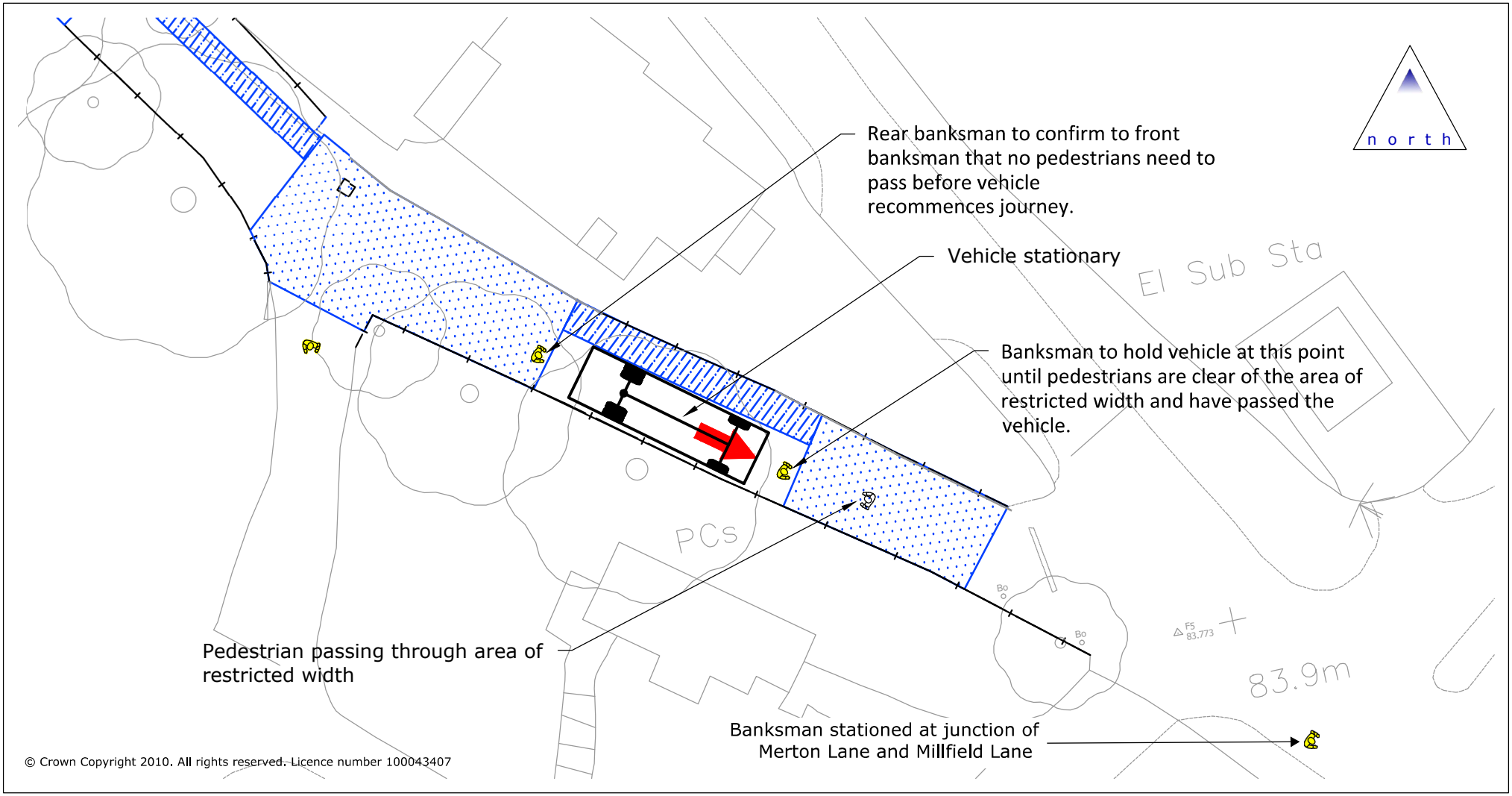
Minimum 1.2 metre pedestrian zone

Area of restricted width

"The Water House", Millfield Lane
Swept Path Analysis
Pedestrian passing vehicle

Scale (@A4) 1:250

100702-TK18 Rev C



motion
transport planning

Legend

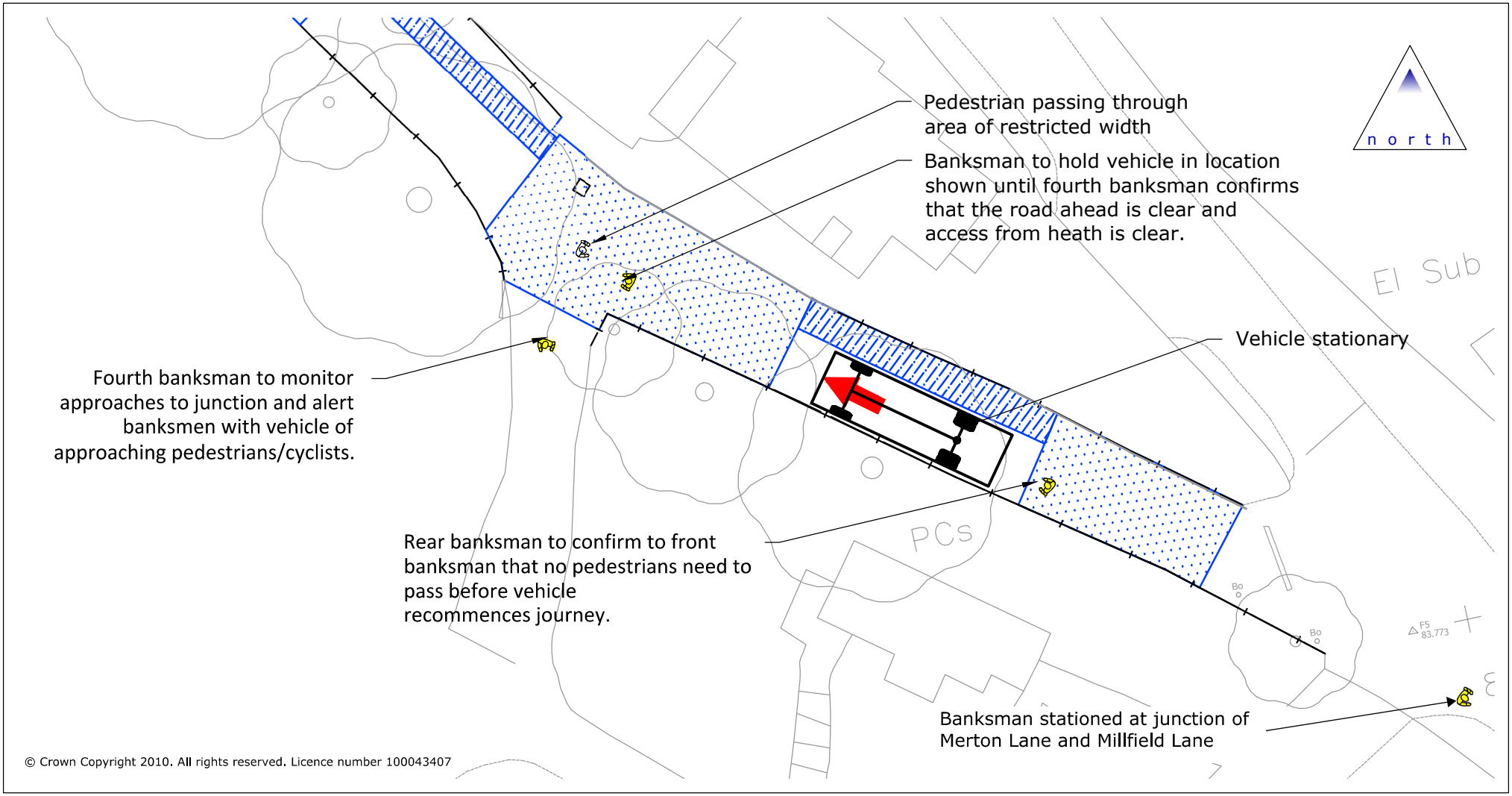
Minimum 1.2 metre pedestrian zone

Area of restricted width

"The Water House", Millfield Lane
Swept Path Analysis
Pedestrian passing vehicle

Scale (@A4) 1:250

100702-TK25 rev C



motion
transport planning

Legend

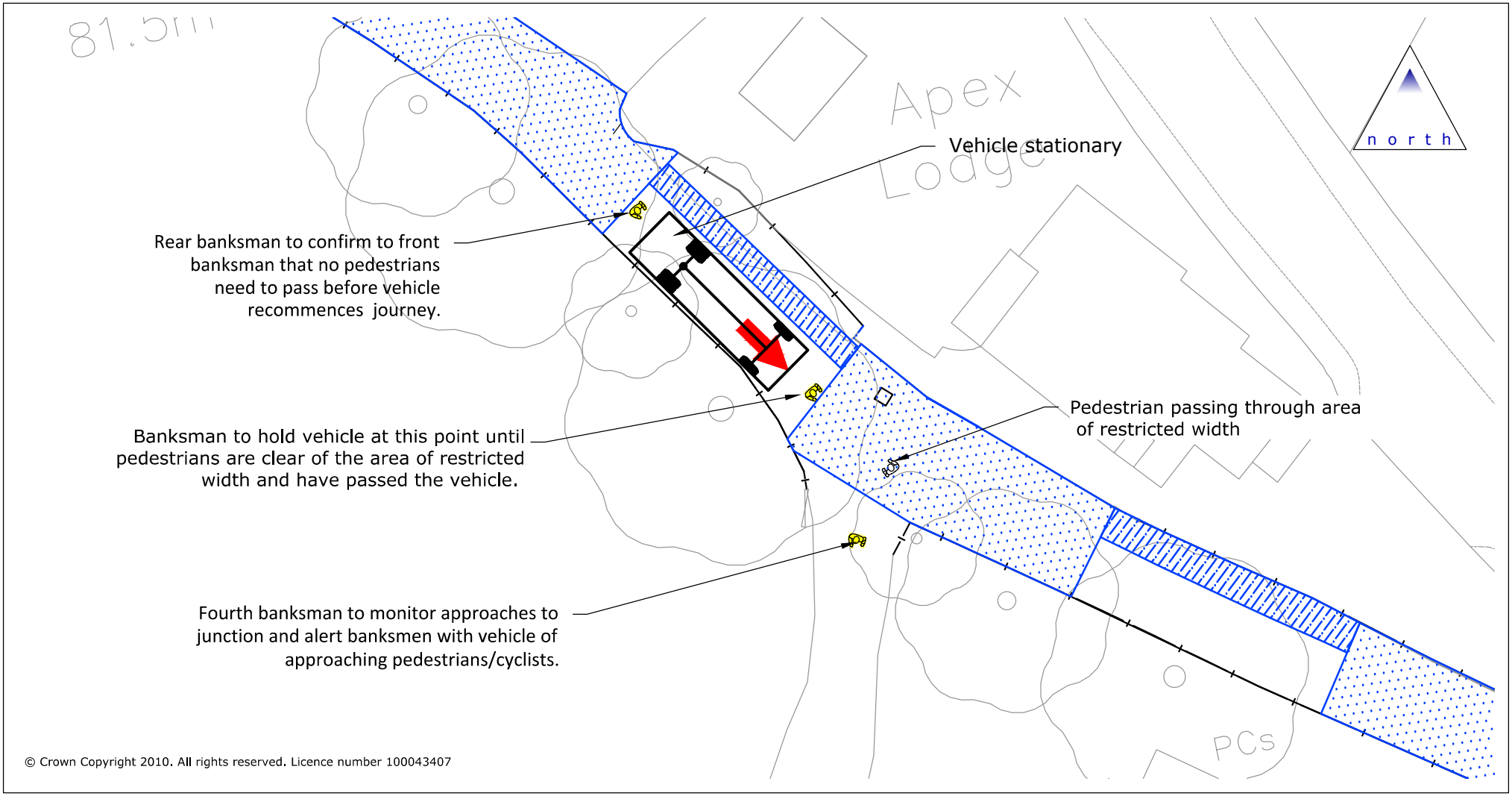
Minimum 1.2 metre pedestrian zone

Area of restricted width

"The Water House", Millfield Lane
Swept Path Analysis
Pedestrian passing vehicle

Scale (@A4) 1:250

100702-TK24 rev C



motion
transport planning

Legend

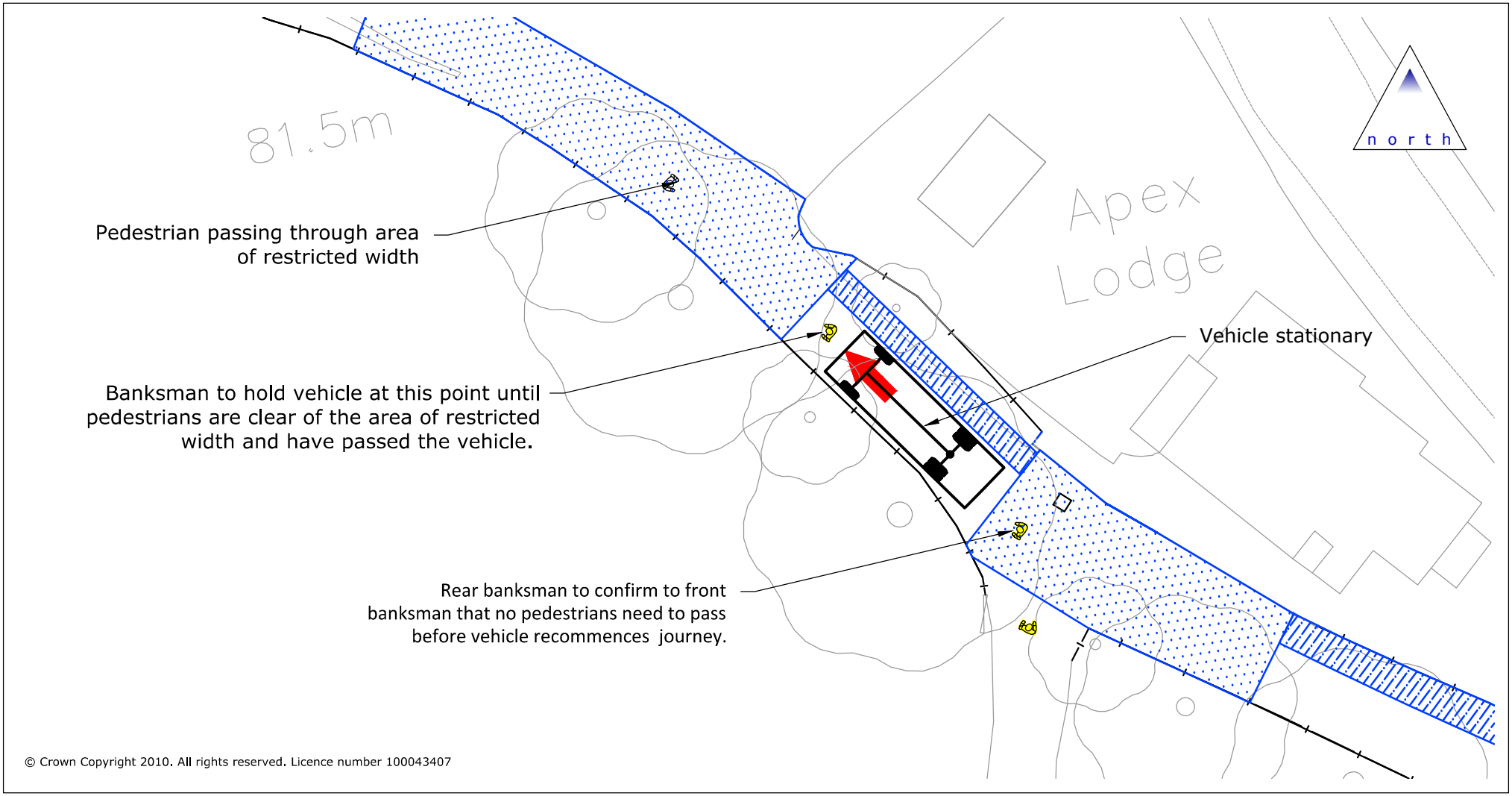
Minimum 1.2 metre pedestrian zone

Area of restricted width

"The Water House", Millfield Lane
Swept Path Analysis
Pedestrian passing vehicle

Scale (@A4) 1:250

100702-TK23 A



motion
transport planning

Legend

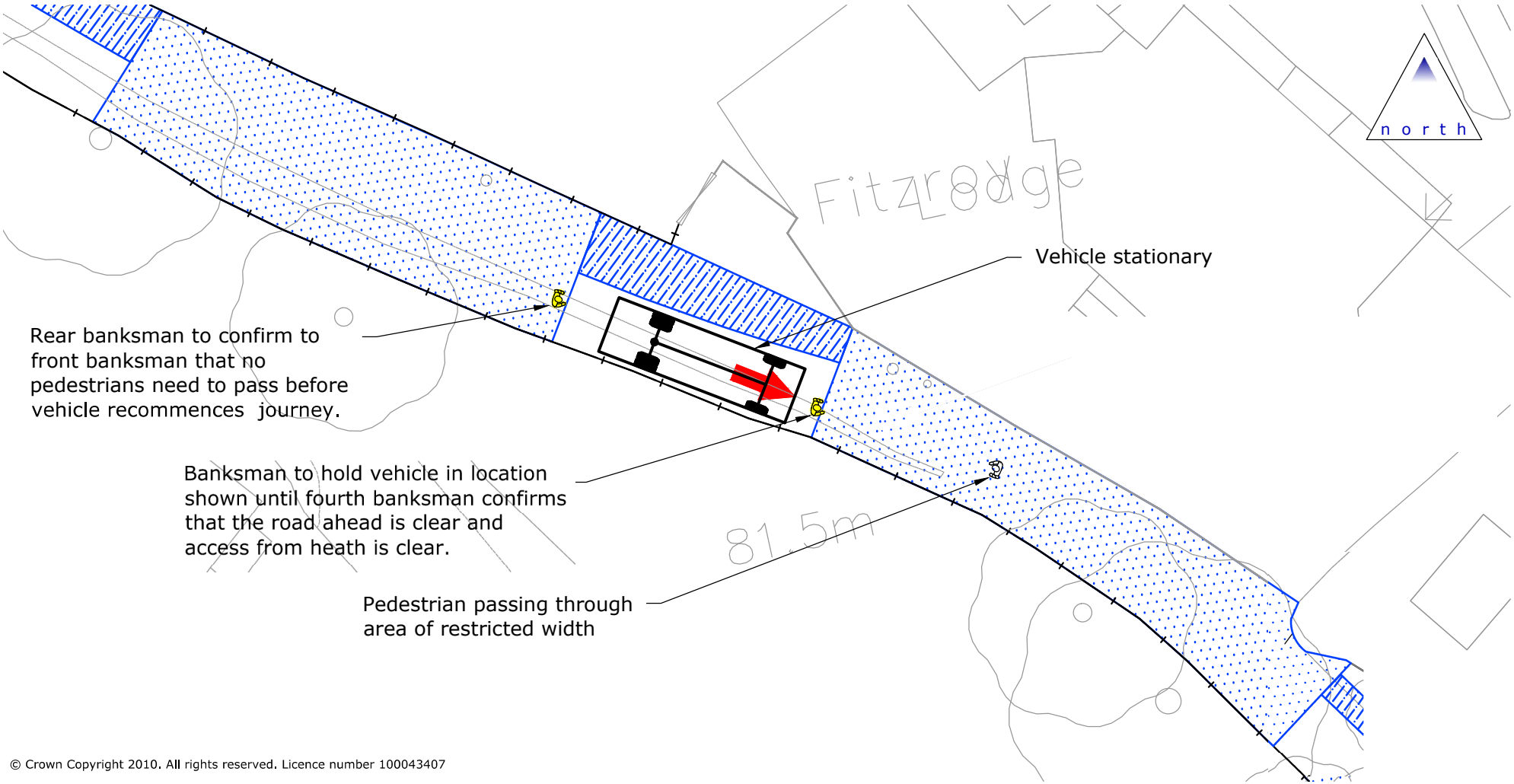
Minimum 1.2 metre pedestrian zone

Area of restricted width

"The Water House", Millfield Lane
Swept Path Analysis
Pedestrian passing vehicle

Scale (@A4) 1:250

100702-TK19 A



motion
transport planning

Legend

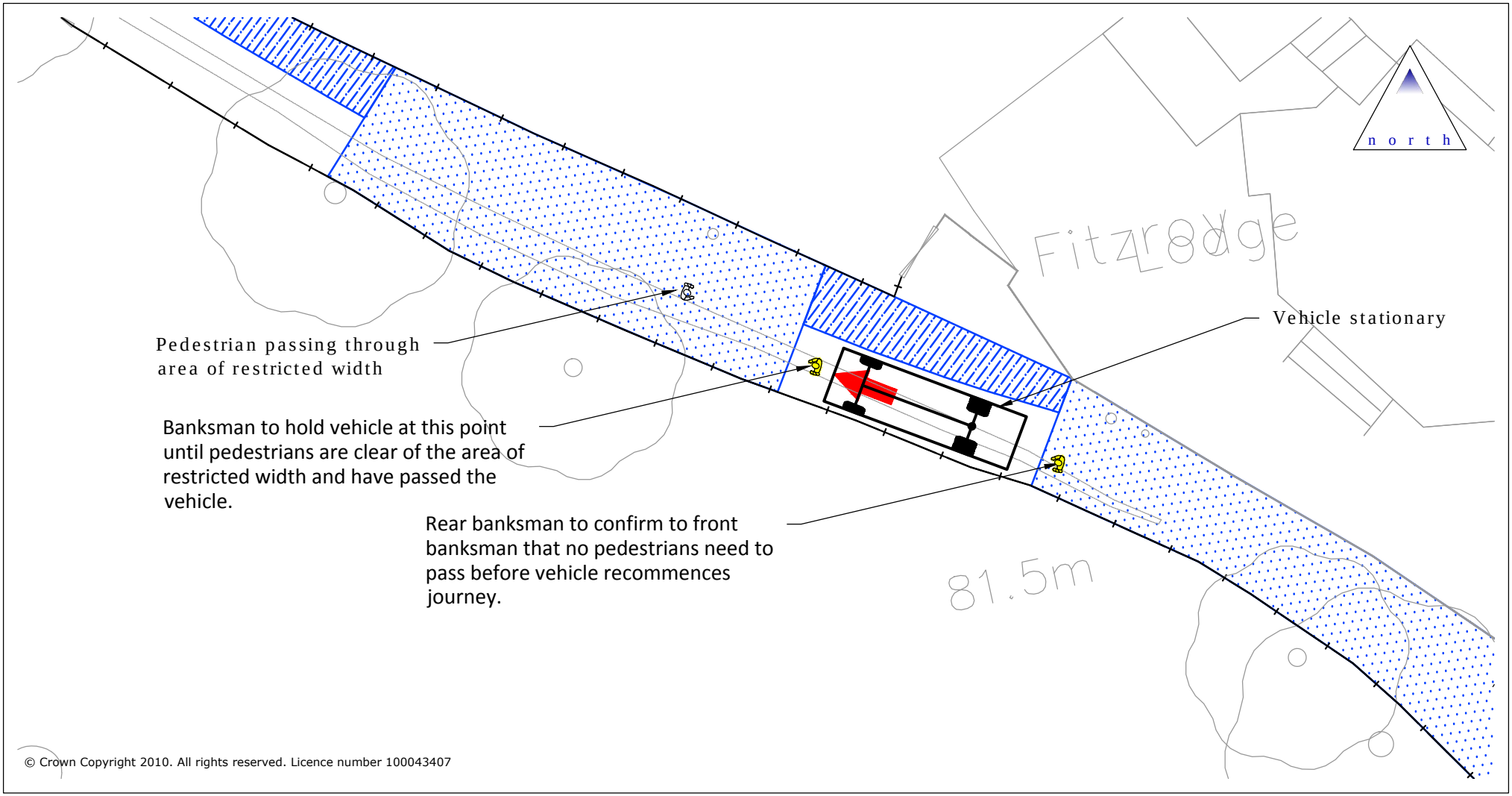
Minimum 1.2 metre pedestrian zone

Area of restricted width

"The Water House", Millfield Lane
Swept Path Analysis
Pedestrian passing vehicle

Scale (@A4) 1:250

100702-TK22 rev C



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motion
transport planning

Legend

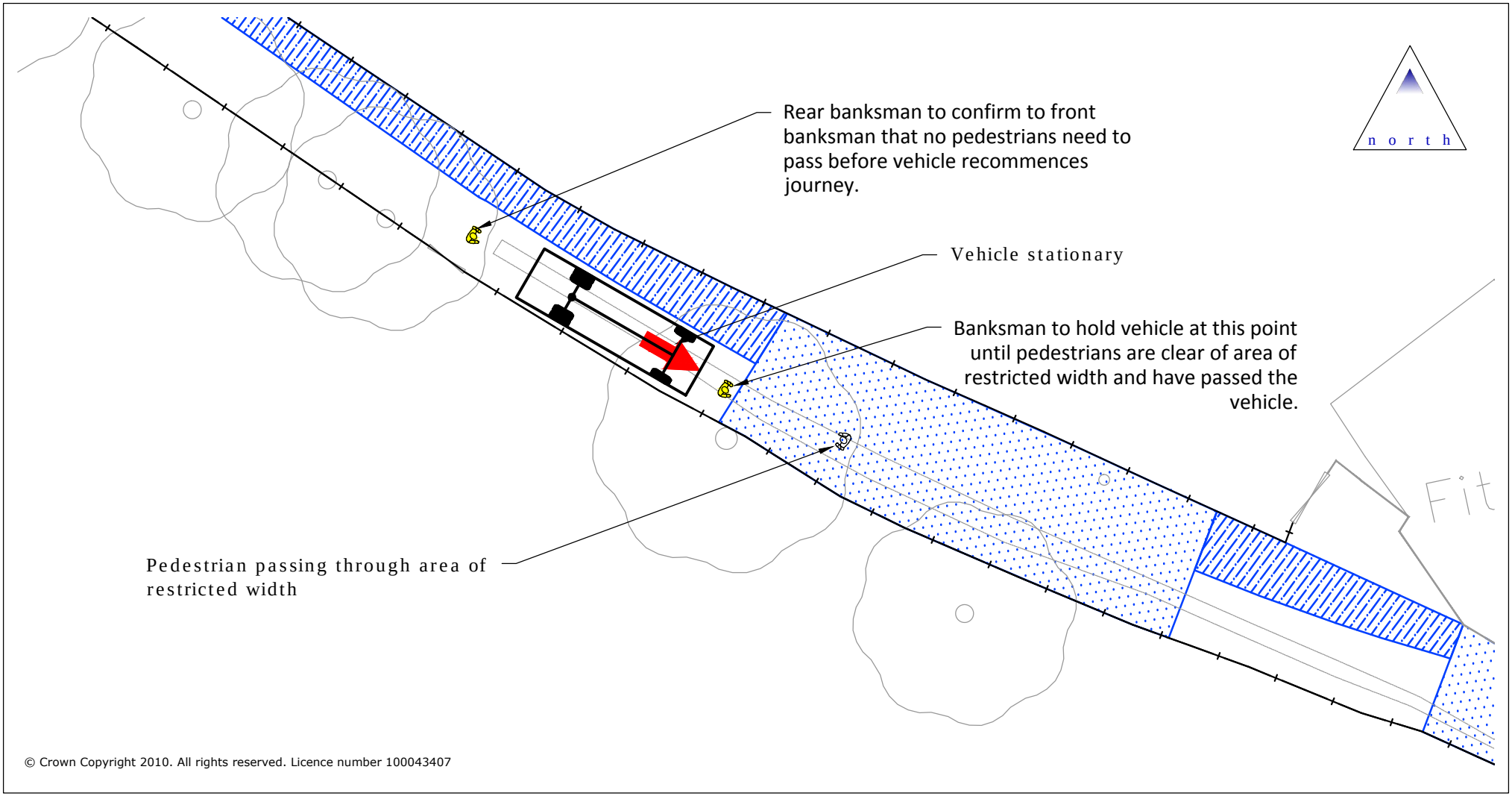
Minimum 1.2 metre pedestrian zone

Area of restricted width

"The Water House", Millfield Lane
Swept Path Analysis
Pedestrian passing vehicle

Scale (@A4) 1:250

100702-TK20 rev B



motion
transport planning

Legend

Minimum 1.2 metre pedestrian zone

Area of restricted width

"The Water House", Millfield Lane
Swept Path Analysis
Pedestrian passing vehicle

Scale (@A4) 1:250

100702-TK21 rev B

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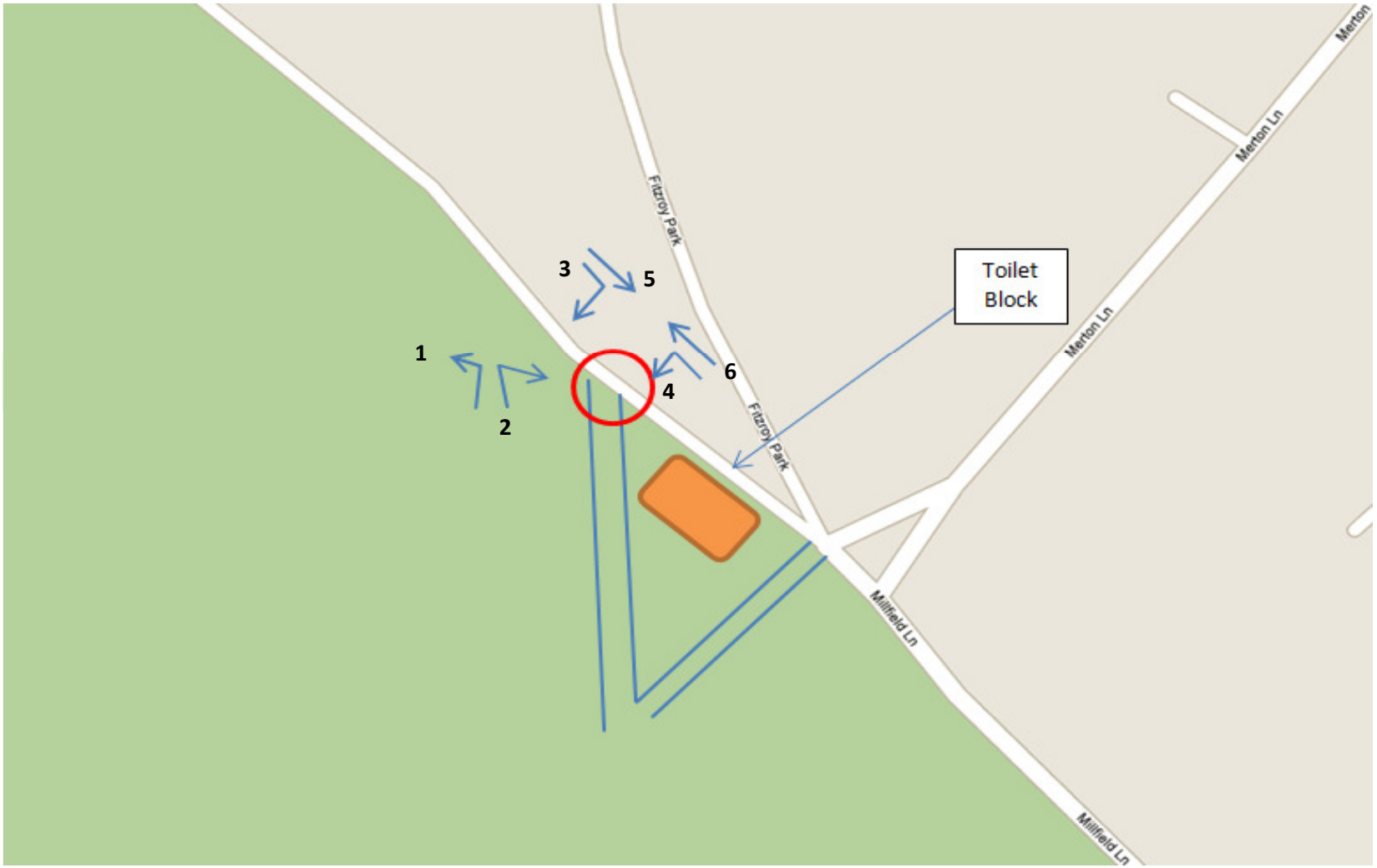
Appendix F

K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE



K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE

	MOVEMENT 1							
				DOG WALKERS		VEHICLES		
	PED	PED & PRAM	PCYCLE	PED	DOGS	TYPE OF VEH	TOTAL VEHS	**TOTAL MVTS**
0800-0815	10	0	0	0	0			**10**
0815-0830	2	0	0	5	4			**11**
0830-0845	5	0	0	2	1			**8**
0845-0900	4	0	0	1	2			**7**
0900-0915	5	0	0	3	3			**11**
0915-0930	8	0	0	3	3			**14**
0930-0945	3	0	0	1	1			**5**
0945-1000	7	1	0	0	0			**8**
1000-1015	2	0	0	4	4			**10**
1015-1030	4	0	0	4	3			**11**
1030-1045	2	0	0	5	3			**10**
1045-1100	1	0	0	2	1			**4**
1100-1115	4	0	0	0	0			**4**
1115-1130	3	1	0	1	1			**6**
1130-1145	6	0	0	0	0			**6**
1145-1200	6	0	0	0	0			**6**
1200-1215	3	0	0	0	0			**3**
1215-1230	1	0	0	0	0			**1**
1230-1245	5	1	1	0	0			**7**
1245-1300	1	0	0	3	4			**8**
1300-1315	6	0	0	0	0			**6**
1315-1330	11	0	0	1	1			**13**
1330-1345	4	0	0	0	0			**4**
1345-1400	7	0	0	0	0			**7**
1400-1415	7	0	1	3	1			**12**
1415-1430	0	0	0	0	0			**0**
1430-1445	4	0	0	2	1			**7**
1445-1500	21	0	1	0	0			**22**
1500-1515	3	0	0	0	0			**3**
1515-1530	4	0	0	0	0			**4**
1530-1545	5	0	0	0	0			**5**
1545-1600	4	0	0	0	0			**4**
1600-1615	6	0	0	0	0			**6**
1615-1630	5	0	0	5	5			**15**
1630-1645	12	1	0	0	0			**13**
1645-1700	8	0	1	0	0			**9**
1700-1715	5	0	0	0	0			**5**
1715-1730	8	0	0	0	0			**8**
1730-1745	6	0	3	0	0			**9**
1745-1800	2	0	0	0	0			**2**
0800-1800	**210**	**4**	**7**	**45**	**38**		**0**	**304**

K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE

	MOVEMENT 1							
				DOG WALKERS		VEHICLES		
	PED	PED & PRAM	PCYCLE	PED	DOGS	TYPE OF VEH	TOTAL VEHS	**TOTAL MVTS**
0800-0900	21	0	0	8	7		0	**36**
0815-0915	16	0	0	11	10		0	**37**
0830-0930	22	0	0	9	9		0	**40**
0845-0945	20	0	0	8	9		0	**37**
0900-1000	23	1	0	7	7		0	**38**
0915-1015	20	1	0	8	8		0	**37**
0930-1030	16	1	0	9	8		0	**34**
0945-1045	15	1	0	13	10		0	**39**
1000-1100	9	0	0	15	11		0	**35**
1015-1115	11	0	0	11	7		0	**29**
1030-1130	10	1	0	8	5		0	**24**
1045-1145	14	1	0	3	2		0	**20**
1100-1200	19	1	0	1	1		0	**22**
1115-1215	18	1	0	1	1		0	**21**
1130-1230	16	0	0	0	0		0	**16**
1145-1245	15	1	1	0	0		0	**17**
1200-1300	10	1	1	3	4		0	**19**
1215-1315	13	1	1	3	4		0	**22**
1230-1330	23	1	1	4	5		0	**34**
1245-1345	22	0	0	4	5		0	**31**
1300-1400	28	0	0	1	1		0	**30**
1315-1415	29	0	1	4	2		0	**36**
1330-1430	18	0	1	3	1		0	**23**
1345-1445	18	0	1	5	2		0	**26**
1400-1500	32	0	2	5	2		0	**41**
1415-1515	28	0	1	2	1		0	**32**
1430-1530	32	0	1	2	1		0	**36**
1445-1545	33	0	1	0	0		0	**34**
1500-1600	16	0	0	0	0		0	**16**
1515-1615	19	0	0	0	0		0	**19**
1530-1630	20	0	0	5	5		0	**30**
1545-1645	27	1	0	5	5		0	**38**
1600-1700	31	1	1	5	5		0	**43**
1615-1715	30	1	1	5	5		0	**42**
1630-1730	33	1	1	0	0		0	**35**
1645-1745	27	0	4	0	0		0	**31**
1700-1800	21	0	3	0	0		0	**24**

K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE

	MOVEMENT 2							
				DOG WALKERS		VEHICLES		
	PED	PED & PRAM	PCYCLE	PED	DOGS	TYPE OF VEH	TOTAL VEHS	**TOTAL MVTS**
0800-0815	0	0	0	0	0			**0**
0815-0830	0	0	0	0	0			**0**
0830-0845	0	0	0	0	0			**0**
0845-0900	0	0	0	0	0			**0**
0900-0915	0	0	0	0	0			**0**
0915-0930	0	0	0	0	0			**0**
0930-0945	0	0	0	0	0			**0**
0945-1000	0	0	0	0	0			**0**
1000-1015	0	0	0	0	0			**0**
1015-1030	0	0	0	0	0			**0**
1030-1045	0	0	0	0	0			**0**
1045-1100	0	0	0	0	0			**0**
1100-1115	0	0	0	0	0			**0**
1115-1130	0	0	0	0	0			**0**
1130-1145	0	0	0	0	0			**0**
1145-1200	0	0	0	0	0			**0**
1200-1215	0	0	0	0	0			**0**
1215-1230	0	0	0	0	0			**0**
1230-1245	0	0	0	0	0			**0**
1245-1300	0	0	0	0	0			**0**
1300-1315	0	0	0	0	0			**0**
1315-1330	0	0	0	0	0			**0**
1330-1345	0	0	0	0	0			**0**
1345-1400	0	0	0	0	0			**0**
1400-1415	0	0	0	0	0			**0**
1415-1430	1	0	0	0	0			**1**
1430-1445	0	0	0	0	0			**0**
1445-1500	0	0	0	0	0			**0**
1500-1515	0	0	0	1	4			**5**
1515-1530	0	0	0	0	0			**0**
1530-1545	0	0	0	0	0			**0**
1545-1600	0	0	0	0	0			**0**
1600-1615	0	0	0	0	0			**0**
1615-1630	0	0	0	0	0			**0**
1630-1645	0	0	0	0	0			**0**
1645-1700	0	0	0	0	0			**0**
1700-1715	0	0	0	0	0			**0**
1715-1730	0	0	0	0	0			**0**
1730-1745	0	0	0	0	0			**0**
1745-1800	0	0	0	0	0			**0**
0800-1800	**1**	**0**	**0**	**1**	**4**		**0**	**6**

K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE

	MOVEMENT 2							
				DOG WALKERS		VEHICLES		
	PED	PED & PRAM	PCYCLE	PED	DOGS	TYPE OF VEH	TOTAL VEHS	**TOTAL MVTS**
0800-0900	0	0	0	0	0		0	**0**
0815-0915	0	0	0	0	0		0	**0**
0830-0930	0	0	0	0	0		0	**0**
0845-0945	0	0	0	0	0		0	**0**
0900-1000	0	0	0	0	0		0	**0**
0915-1015	0	0	0	0	0		0	**0**
0930-1030	0	0	0	0	0		0	**0**
0945-1045	0	0	0	0	0		0	**0**
1000-1100	0	0	0	0	0		0	**0**
1015-1115	0	0	0	0	0		0	**0**
1030-1130	0	0	0	0	0		0	**0**
1045-1145	0	0	0	0	0		0	**0**
1100-1200	0	0	0	0	0		0	**0**
1115-1215	0	0	0	0	0		0	**0**
1130-1230	0	0	0	0	0		0	**0**
1145-1245	0	0	0	0	0		0	**0**
1200-1300	0	0	0	0	0		0	**0**
1215-1315	0	0	0	0	0		0	**0**
1230-1330	0	0	0	0	0		0	**0**
1245-1345	0	0	0	0	0		0	**0**
1300-1400	0	0	0	0	0		0	**0**
1315-1415	0	0	0	0	0		0	**0**
1330-1430	1	0	0	0	0		0	**1**
1345-1445	1	0	0	0	0		0	**1**
1400-1500	1	0	0	0	0		0	**1**
1415-1515	1	0	0	1	4		0	**6**
1430-1530	0	0	0	1	4		0	**5**
1445-1545	0	0	0	1	4		0	**5**
1500-1600	0	0	0	1	4		0	**5**
1515-1615	0	0	0	0	0		0	**0**
1530-1630	0	0	0	0	0		0	**0**
1545-1645	0	0	0	0	0		0	**0**
1600-1700	0	0	0	0	0		0	**0**
1615-1715	0	0	0	0	0		0	**0**
1630-1730	0	0	0	0	0		0	**0**
1645-1745	0	0	0	0	0		0	**0**
1700-1800	0	0	0	0	0		0	**0**

K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE

	MOVEMENT 3							
				DOG WALKERS		VEHICLES		
	PED	PED & PRAM	PCYCLE	PED	DOGS	TYPE OF VEH	TOTAL VEHS	**TOTAL MVTS**
0800-0815	2	0	0	0	0			**2**
0815-0830	5	0	0	0	0			**5**
0830-0845	3	0	0	1	2			**6**
0845-0900	3	0	1	0	0			**4**
0900-0915	6	0	0	0	0			**6**
0915-0930	4	0	0	1	1			**6**
0930-0945	2	0	0	2	2			**6**
0945-1000	1	0	0	0	0			**1**
1000-1015	3	0	0	0	0			**3**
1015-1030	5	0	0	0	0			**5**
1030-1045	1	0	0	0	0			**1**
1045-1100	5	0	0	1	2			**8**
1100-1115	5	0	0	0	0			**5**
1115-1130	2	1	0	0	0			**3**
1130-1145	1	1	1	0	0			**3**
1145-1200	3	0	0	0	0			**3**
1200-1215	2	0	0	2	1			**5**
1215-1230	1	0	0	2	2			**5**
1230-1245	3	0	0	0	0			**3**
1245-1300	3	0	0	0	0			**3**
1300-1315	3	0	0	0	0			**3**
1315-1330	4	0	0	1	3			**8**
1330-1345	4	2	0	2	3			**11**
1345-1400	1	1	0	0	0			**2**
1400-1415	6	0	0	0	0			**6**
1415-1430	3	0	0	0	0			**3**
1430-1445	5	0	0	0	0			**5**
1445-1500	4	0	0	1	1			**6**
1500-1515	5	0	0	0	0			**5**
1515-1530	5	0	0	0	0			**5**
1530-1545	7	0	0	0	0			**7**
1545-1600	20	1	0	0	0			**21**
1600-1615	11	1	1	1	1			**15**
1615-1630	7	0	0	0	0			**7**
1630-1645	5	0	0	0	0			**5**
1645-1700	9	0	0	0	0			**9**
1700-1715	0	0	0	0	0			**0**
1715-1730	0	0	0	0	0			**0**
1730-1745	6	0	1	0	0			**7**
1745-1800	3	0	0	0	0			**3**
0800-1800	**168**	**7**	**4**	**14**	**18**		**0**	**211**

K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE

	MOVEMENT 3							
				DOG WALKERS		VEHICLES		
	PED	PED & PRAM	PCYCLE	PED	DOGS	TYPE OF VEH	TOTAL VEHS	**TOTAL MVTS**
0800-0900	13	0	1	1	2		0	**17**
0815-0915	17	0	1	1	2		0	**21**
0830-0930	16	0	1	2	3		0	**22**
0845-0945	15	0	1	3	3		0	**22**
0900-1000	13	0	0	3	3		0	**19**
0915-1015	10	0	0	3	3		0	**16**
0930-1030	11	0	0	2	2		0	**15**
0945-1045	10	0	0	0	0		0	**10**
1000-1100	14	0	0	1	2		0	**17**
1015-1115	16	0	0	1	2		0	**19**
1030-1130	13	1	0	1	2		0	**17**
1045-1145	13	2	1	1	2		0	**19**
1100-1200	11	2	1	0	0		0	**14**
1115-1215	8	2	1	2	1		0	**14**
1130-1230	7	1	1	4	3		0	**16**
1145-1245	9	0	0	4	3		0	**16**
1200-1300	9	0	0	4	3		0	**16**
1215-1315	10	0	0	2	2		0	**14**
1230-1330	13	0	0	1	3		0	**17**
1245-1345	14	2	0	3	6		0	**25**
1300-1400	12	3	0	3	6		0	**24**
1315-1415	15	3	0	3	6		0	**27**
1330-1430	14	3	0	2	3		0	**22**
1345-1445	15	1	0	0	0		0	**16**
1400-1500	18	0	0	1	1		0	**20**
1415-1515	17	0	0	1	1		0	**19**
1430-1530	19	0	0	1	1		0	**21**
1445-1545	21	0	0	1	1		0	**23**
1500-1600	37	1	0	0	0		0	**38**
1515-1615	43	2	1	1	1		0	**48**
1530-1630	45	2	1	1	1		0	**50**
1545-1645	43	2	1	1	1		0	**48**
1600-1700	32	1	1	1	1		0	**36**
1615-1715	21	0	0	0	0		0	**21**
1630-1730	14	0	0	0	0		0	**14**
1645-1745	15	0	1	0	0		0	**16**
1700-1800	9	0	1	0	0		0	**10**

K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE

	MOVEMENT 4							
				DOG WALKERS		VEHICLES		
	PED	PED & PRAM	PCYCLE	PED	DOGS	TYPE OF VEH	TOTAL VEHS	**TOTAL MVTS**
0800-0815	0	0	0	0	0			**0**
0815-0830	0	0	0	0	0			**0**
0830-0845	0	0	0	0	0			**0**
0845-0900	0	0	0	0	0			**0**
0900-0915	0	0	0	0	0			**0**
0915-0930	0	0	0	0	0			**0**
0930-0945	0	0	0	0	0			**0**
0945-1000	0	0	0	0	0			**0**
1000-1015	0	0	0	0	0			**0**
1015-1030	0	0	0	0	0			**0**
1030-1045	0	0	0	0	0			**0**
1045-1100	0	0	0	0	0			**0**
1100-1115	0	0	0	0	0			**0**
1115-1130	0	0	0	0	0			**0**
1130-1145	0	0	0	0	0			**0**
1145-1200	0	0	0	0	0			**0**
1200-1215	0	0	0	0	0			**0**
1215-1230	0	0	0	0	0			**0**
1230-1245	0	0	0	0	0			**0**
1245-1300	0	0	0	0	0			**0**
1300-1315	0	0	0	0	0			**0**
1315-1330	0	0	0	0	0			**0**
1330-1345	0	0	0	0	0			**0**
1345-1400	0	0	0	0	0			**0**
1400-1415	0	0	0	0	0			**0**
1415-1430	0	0	0	0	0			**0**
1430-1445	0	0	0	0	0			**0**
1445-1500	0	0	0	0	0			**0**
1500-1515	0	0	0	0	0			**0**
1515-1530	0	0	0	0	0			**0**
1530-1545	0	0	0	0	0			**0**
1545-1600	0	0	0	0	0			**0**
1600-1615	0	0	0	0	0			**0**
1615-1630	0	0	0	0	0			**0**
1630-1645	0	0	0	0	0			**0**
1645-1700	0	0	0	0	0			**0**
1700-1715	0	0	0	0	0			**0**
1715-1730	0	0	0	0	0			**0**
1730-1745	0	0	0	0	0			**0**
1745-1800	0	0	0	0	0			**0**
0800-1800	**0**	**0**	**0**	**0**	**0**		**0**	**0**

K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE

	MOVEMENT 4							
				DOG WALKERS		VEHICLES		
	PED	PED & PRAM	PCYCLE	PED	DOGS	TYPE OF VEH	TOTAL VEHS	**TOTAL MVTS**
0800-0900	0	0	0	0	0		0	**0**
0815-0915	0	0	0	0	0		0	**0**
0830-0930	0	0	0	0	0		0	**0**
0845-0945	0	0	0	0	0		0	**0**
0900-1000	0	0	0	0	0		0	**0**
0915-1015	0	0	0	0	0		0	**0**
0930-1030	0	0	0	0	0		0	**0**
0945-1045	0	0	0	0	0		0	**0**
1000-1100	0	0	0	0	0		0	**0**
1015-1115	0	0	0	0	0		0	**0**
1030-1130	0	0	0	0	0		0	**0**
1045-1145	0	0	0	0	0		0	**0**
1100-1200	0	0	0	0	0		0	**0**
1115-1215	0	0	0	0	0		0	**0**
1130-1230	0	0	0	0	0		0	**0**
1145-1245	0	0	0	0	0		0	**0**
1200-1300	0	0	0	0	0		0	**0**
1215-1315	0	0	0	0	0		0	**0**
1230-1330	0	0	0	0	0		0	**0**
1245-1345	0	0	0	0	0		0	**0**
1300-1400	0	0	0	0	0		0	**0**
1315-1415	0	0	0	0	0		0	**0**
1330-1430	0	0	0	0	0		0	**0**
1345-1445	0	0	0	0	0		0	**0**
1400-1500	0	0	0	0	0		0	**0**
1415-1515	0	0	0	0	0		0	**0**
1430-1530	0	0	0	0	0		0	**0**
1445-1545	0	0	0	0	0		0	**0**
1500-1600	0	0	0	0	0		0	**0**
1515-1615	0	0	0	0	0		0	**0**
1530-1630	0	0	0	0	0		0	**0**
1545-1645	0	0	0	0	0		0	**0**
1600-1700	0	0	0	0	0		0	**0**
1615-1715	0	0	0	0	0		0	**0**
1630-1730	0	0	0	0	0		0	**0**
1645-1745	0	0	0	0	0		0	**0**
1700-1800	0	0	0	0	0		0	**0**

K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE

	MOVEMENT 5							
				DOG WALKERS		VEHICLES		
	PED	PED & PRAM	PCYCLE	PED	DOGS	TYPE OF VEH	TOTAL VEHS	**TOTAL MVTS**
0800-0815	1	0	0	0	0			**1**
0815-0830	1	0	1	0	0			**2**
0830-0845	1	0	1	2	2			**6**
0845-0900	0	0	3	0	0			**3**
0900-0915	1	0	2	0	0			**3**
0915-0930	3	0	1	1	1			**6**
0930-0945	5	0	0	0	0			**5**
0945-1000	3	0	1	0	0			**4**
1000-1015	2	0	0	0	0			**2**
1015-1030	0	0	1	1	1			**3**
1030-1045	2	0	0	0	0	lgv	1	**3**
1045-1100	1	0	1	2	1	lgv	1	**6**
1100-1115	1	0	0	1	1			**3**
1115-1130	1	0	1	0	0			**2**
1130-1145	1	0	0	1	1			**3**
1145-1200	3	0	1	0	0			**4**
1200-1215	0	0	1	0	0	lgv	1	**2**
1215-1230	1	0	3	2	2	car	1	**9**
1230-1245	10	0	1	0	0			**11**
1245-1300	2	0	1	0	0			**3**
1300-1315	1	0	0	0	0			**1**
1315-1330	2	0	2	0	0			**4**
1330-1345	2	0	2	1	1			**6**
1345-1400	3	0	1	2	2			**8**
1400-1415	1	0	3	0	0			**4**
1415-1430	2	0	0	3	12			**17**
1430-1445	5	0	1	3	12	lgv	1	**22**
1445-1500	10	0	1	0	0			**11**
1500-1515	6	0	1	0	0	motorcycle	1	**8**
1515-1530	6	0	5	3	2			**16**
1530-1545	7	0	2	0	0	car	1	**10**
1545-1600	4	1	1	0	0			**6**
1600-1615	3	0	1	0	0			**4**
1615-1630	0	0	1	0	0			**1**
1630-1645	0	0	0	0	0			**0**
1645-1700	1	1	3	0	0			**5**
1700-1715	5	0	0	0	0			**5**
1715-1730	0	0	3	0	0			**3**
1730-1745	2	0	2	1	2			**7**
1745-1800	0	0	1	0	0			**1**
0800-1800	**99**	**2**	**49**	**23**	**40**		**7**	**220**

K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE

	MOVEMENT 5							
				DOG WALKERS		VEHICLES		
	PED	PED & PRAM	PCYCLE	PED	DOGS	TYPE OF VEH	TOTAL VEHS	**TOTAL MVTS**
0800-0900	3	0	5	2	2		0	**12**
0815-0915	3	0	7	2	2		0	**14**
0830-0930	5	0	7	3	3		0	**18**
0845-0945	9	0	6	1	1		0	**17**
0900-1000	12	0	4	1	1		0	**18**
0915-1015	13	0	2	1	1		0	**17**
0930-1030	10	0	2	1	1		0	**14**
0945-1045	7	0	2	1	1		1	**12**
1000-1100	5	0	2	3	2		2	**14**
1015-1115	4	0	2	4	3		2	**15**
1030-1130	5	0	2	3	2		2	**14**
1045-1145	4	0	2	4	3		1	**14**
1100-1200	6	0	2	2	2		0	**12**
1115-1215	5	0	3	1	1		1	**11**
1130-1230	5	0	5	3	3		2	**18**
1145-1245	14	0	6	2	2		2	**26**
1200-1300	13	0	6	2	2		2	**25**
1215-1315	14	0	5	2	2		1	**24**
1230-1330	15	0	4	0	0		0	**19**
1245-1345	7	0	5	1	1		0	**14**
1300-1400	8	0	5	3	3		0	**19**
1315-1415	8	0	8	3	3		0	**22**
1330-1430	8	0	6	6	15		0	**35**
1345-1445	11	0	5	8	26		1	**51**
1400-1500	18	0	5	6	24		1	**54**
1415-1515	23	0	3	6	24		2	**58**
1430-1530	27	0	8	6	14		2	**57**
1445-1545	29	0	9	3	2		2	**45**
1500-1600	23	1	9	3	2		2	**40**
1515-1615	20	1	9	3	2		1	**36**
1530-1630	14	1	5	0	0		1	**21**
1545-1645	7	1	3	0	0		0	**11**
1600-1700	4	1	5	0	0		0	**10**
1615-1715	6	1	4	0	0		0	**11**
1630-1730	6	1	6	0	0		0	**13**
1645-1745	8	1	8	1	2		0	**20**
1700-1800	7	0	6	1	2		0	**16**

K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE

	MOVEMENT 6							
				DOG WALKERS		VEHICLES		
	PED	PED & PRAM	PCYCLE	PED	DOGS	TYPE OF VEH	TOTAL VEHS	**TOTAL MVTS**
0800-0815	1	0	0	0	0			**1**
0815-0830	0	0	0	0	0	lgv	1	**1**
0830-0845	1	0	1	1	1			**4**
0845-0900	7	0	1	0	0			**8**
0900-0915	2	0	2	0	0			**4**
0915-0930	1	0	1	2	3	car / lgv	2	**9**
0930-0945	3	0	0	4	5			**12**
0945-1000	1	0	0	0	0			**1**
1000-1015	5	0	1	0	0			**6**
1015-1030	3	0	1	2	9			**15**
1030-1045	1	0	0	3	4	lgv	1	**9**
1045-1100	1	0	0	0	0			**1**
1100-1115	5	0	0	0	0			**5**
1115-1130	0	0	1	0	0			**1**
1130-1145	5	0	2	0	0			**7**
1145-1200	2	0	0	0	0	lgv	1	**3**
1200-1215	4	0	0	0	0	car	1	**5**
1215-1230	7	0	2	1	4			**14**
1230-1245	4	0	3	0	0			**7**
1245-1300	3	0	0	0	0			**3**
1300-1315	2	0	0	0	0			**2**
1315-1330	2	0	3	0	0			**5**
1330-1345	3	0	2	2	7	motorcycle	1	**15**
1345-1400	3	0	1	1	7			**12**
1400-1415	9	1	3	0	0			**13**
1415-1430	4	0	1	0	0	lgv	1	**6**
1430-1445	2	0	4	0	0			**6**
1445-1500	2	0	1	0	0			**3**
1500-1515	3	0	0	0	0			**3**
1515-1530	0	0	1	0	0			**1**
1530-1545	3	0	2	0	0			**5**
1545-1600	2	0	2	1	4			**9**
1600-1615	1	0	0	0	0			**1**
1615-1630	11	0	1	1	2			**15**
1630-1645	1	0	1	0	0			**2**
1645-1700	0	0	2	0	0			**2**
1700-1715	5	0	1	0	0			**6**
1715-1730	1	0	0	0	0			**1**
1730-1745	0	0	4	0	0	car	1	**5**
1745-1800	2	0	0	0	0	car / police car	1	**3**
0800-1800	**112**	**1**	**44**	**18**	**46**		**10**	**231**

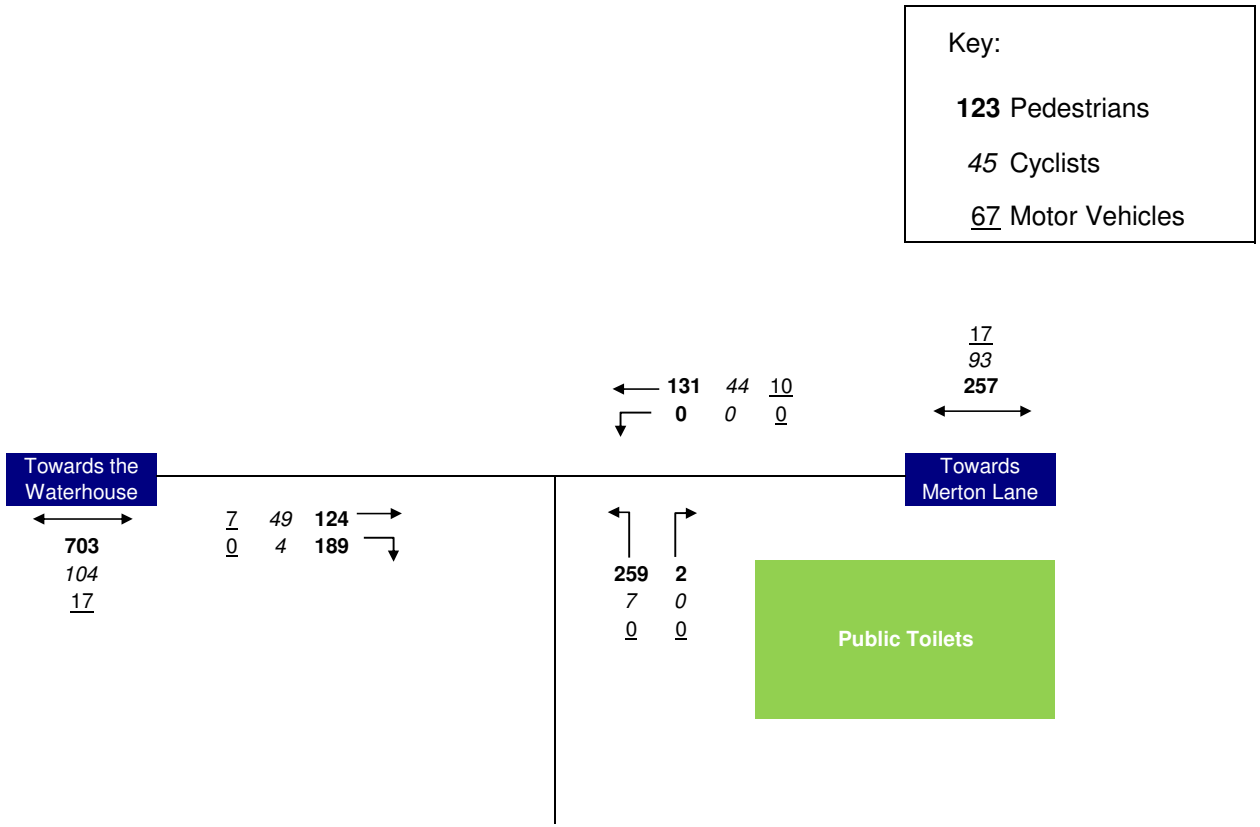
K&M TRAFFIC SURVEYS

DATE : 7th APRIL 2011

DAY : THURSDAY

LOCATION : HIGHGATE PONDS, MILLFIELD LANE

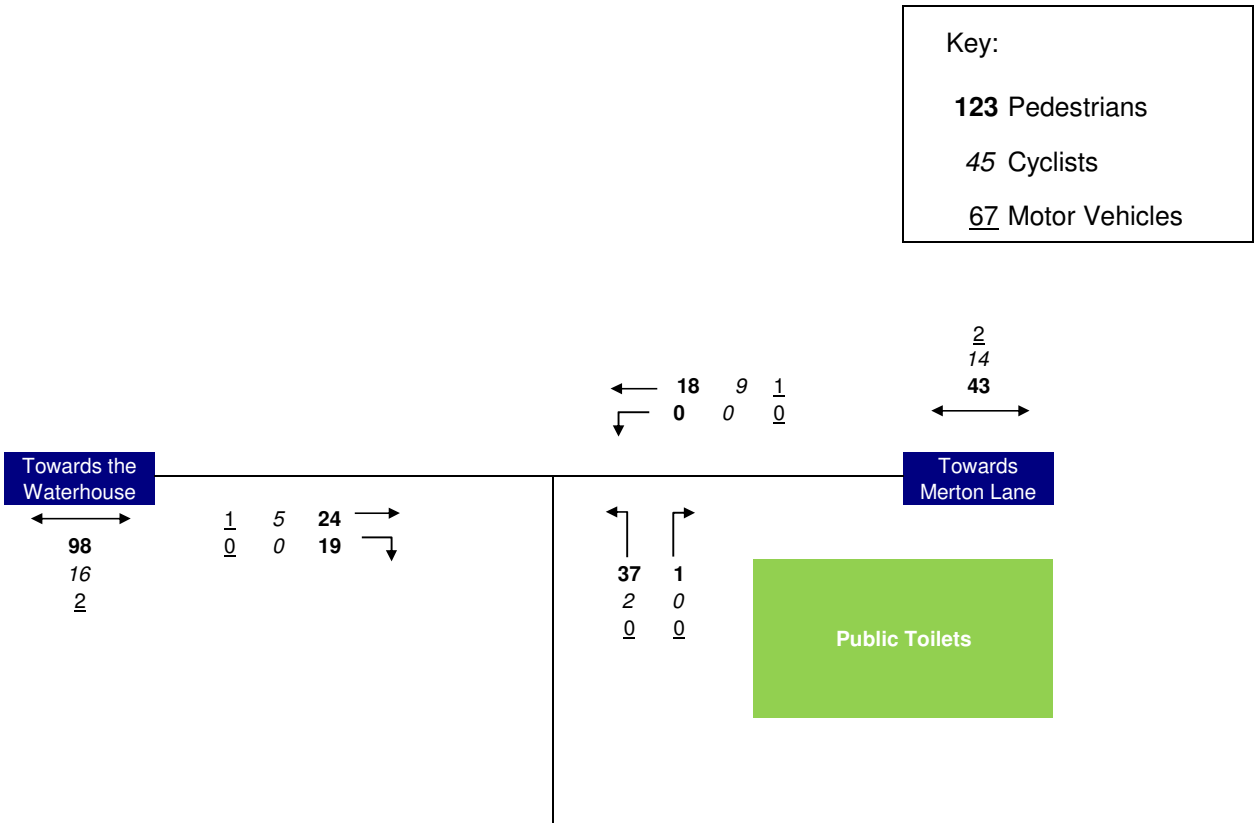
	MOVEMENT 6							
				DOG WALKERS		VEHICLES		
	PED	PED & PRAM	PCYCLE	PED	DOGS	TYPE OF VEH	TOTAL VEHS	**TOTAL MVTS**
0800-0900	9	0	2	1	1		1	**14**
0815-0915	10	0	4	1	1		1	**17**
0830-0930	11	0	5	3	4		2	**25**
0845-0945	13	0	4	6	8		2	**33**
0900-1000	7	0	3	6	8		2	**26**
0915-1015	10	0	2	6	8		2	**28**
0930-1030	12	0	2	6	14		0	**34**
0945-1045	10	0	2	5	13		1	**31**
1000-1100	10	0	2	5	13		1	**31**
1015-1115	10	0	1	5	13		1	**30**
1030-1130	7	0	1	3	4		1	**16**
1045-1145	11	0	3	0	0		0	**14**
1100-1200	12	0	3	0	0		1	**16**
1115-1215	11	0	3	0	0		2	**16**
1130-1230	18	0	4	1	4		2	**29**
1145-1245	17	0	5	1	4		2	**29**
1200-1300	18	0	5	1	4		1	**29**
1215-1315	16	0	5	1	4		0	**26**
1230-1330	11	0	6	0	0		0	**17**
1245-1345	10	0	5	2	7		1	**25**
1300-1400	10	0	6	3	14		1	**34**
1315-1415	17	1	9	3	14		1	**45**
1330-1430	19	1	7	3	14		2	**46**
1345-1445	18	1	9	1	7		1	**37**
1400-1500	17	1	9	0	0		1	**28**
1415-1515	11	0	6	0	0		1	**18**
1430-1530	7	0	6	0	0		0	**13**
1445-1545	8	0	4	0	0		0	**12**
1500-1600	8	0	5	1	4		0	**18**
1515-1615	6	0	5	1	4		0	**16**
1530-1630	17	0	5	2	6		0	**30**
1545-1645	15	0	4	2	6		0	**27**
1600-1700	13	0	4	1	2		0	**20**
1615-1715	17	0	5	1	2		0	**25**
1630-1730	7	0	4	0	0		0	**11**
1645-1745	6	0	7	0	0		1	**14**
1700-1800	8	0	5	0	0		2	**15**



Thursday 7 April 2011 - Millfield Lane Pedestrian Counts

Total Count 0800 - 1800

Figure No. 1



Thursday 7 April 2011 - Millfield Lane Pedestrian Counts

Peak Hour Count 1400 - 1500

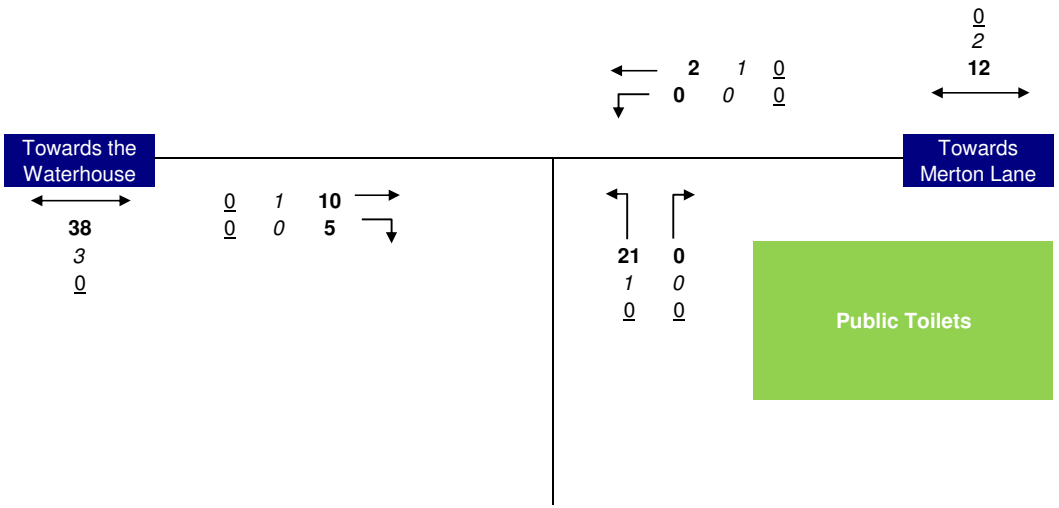
Figure No. 2

Key:

123 Pedestrians

45 Cyclists

67 Motor Vehicles



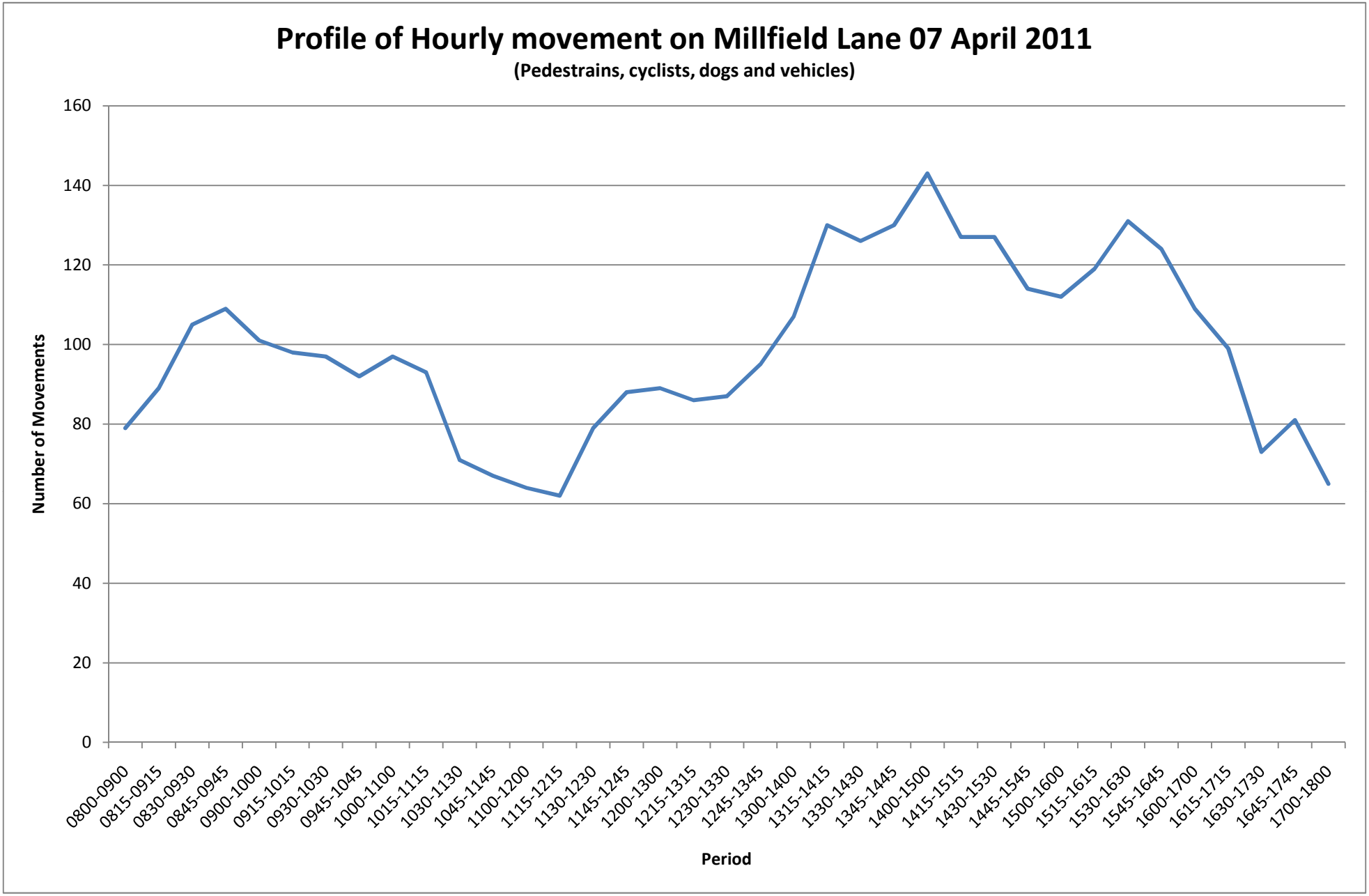
Thursday 7 April 2011 - Millfield Lane Pedestrian Counts

Peak 15 Minute Count 1445 - 1500

Figure No. 3

Profile of Hourly movement on Millfield Lane 07 April 2011

(Pedestrains, cyclists, dogs and vehicles)



Appendix G

Copy of training prospectus for Banksman training provided by CITB National Construction College

Plant Maintenance

Take Control – Vehicle Marshalling

Who?

Those who will have responsibility for manoeuvring vehicles on, off and within busy construction sites or premises.

Why?

This course will prepare candidates to recognise the importance of accepting and dispersing vehicles in a safe and efficient manner, recognise the significant risks and be able to give clear and precise signals to vehicles.

What?

Successful candidates will gain knowledge and skills in:

- Accident statistics
- Legislation
- Vehicle/pedestrian management

Candidates will gain a qualification/certification in:

- National Construction College certificate

How?

This course is delivered through classroom-based tutorials and candidates are assessed via a practical test.

Entry requirements

The minimum requirement is a good understanding of spoken and written English. If you have any concerns in this area, please call us on 0344 994 4433.

CODE **DML91**	COST **Contact us on 0344 994 4433**
Duration	1 day
Locations	NCC East
Dates	For course dates please call 0344 994 4433
Book now	Please call 0344 994 4433, as we need to confirm some details with you to complete your booking

Did you know?

The second highest rate of fatalities on construction sites is due to vehicle movement.

GRANT AVAILABLE
SAVE £s

Our Take Control – Vehicle Marshalling course can be:

- tailored for your company
- delivered at your premises, using your equipment
- or delivered at one of our training locations

The hire of a lorry/driver is also available

Please call **0344 994 4433** for details

Course now available in Scotland – call **0344 994 4433** for details

Appendix H

Millfield Lane Emergency Access Strategy

1. The Kenwood Ladies Pond will be asked to alert the Construction Project Manager if an ambulance is called.

2. If an ambulance needs to access the Kenwood Ladies Pond, all vehicular activity to and from the Water House will stop until the ambulance has left the area.

3. If the Construction Project Manager is not informed that an ambulance has been called and an ambulance arrives at Millfield Lane when a construction vehicle is on route from the Water House, the banksman at the junction of Millfield Lane with Merton Lane will contact the banksman accompanying the construction vehicle. If the construction vehicle has passed Point A, it will continue out to Merton Lane after which access will be clear for the ambulance. If it has not reached Point A, it will reverse back to the Water House. If a construction vehicle is approaching the Water House when an ambulance arrives, it will continue to the Water House.

4. The banksman at the junction of Merton Lane with Millfield Lane will alert drivers of any other vehicles that wish to use Millfield Lane than an emergency vehicle is at the Kenwood Ladies Pond and that they shouldn't use the lane until the ambulance has left the area.

Point A

Point B

motion
transport planning

Legend

- Pedestrian zone
- Area of restricted width

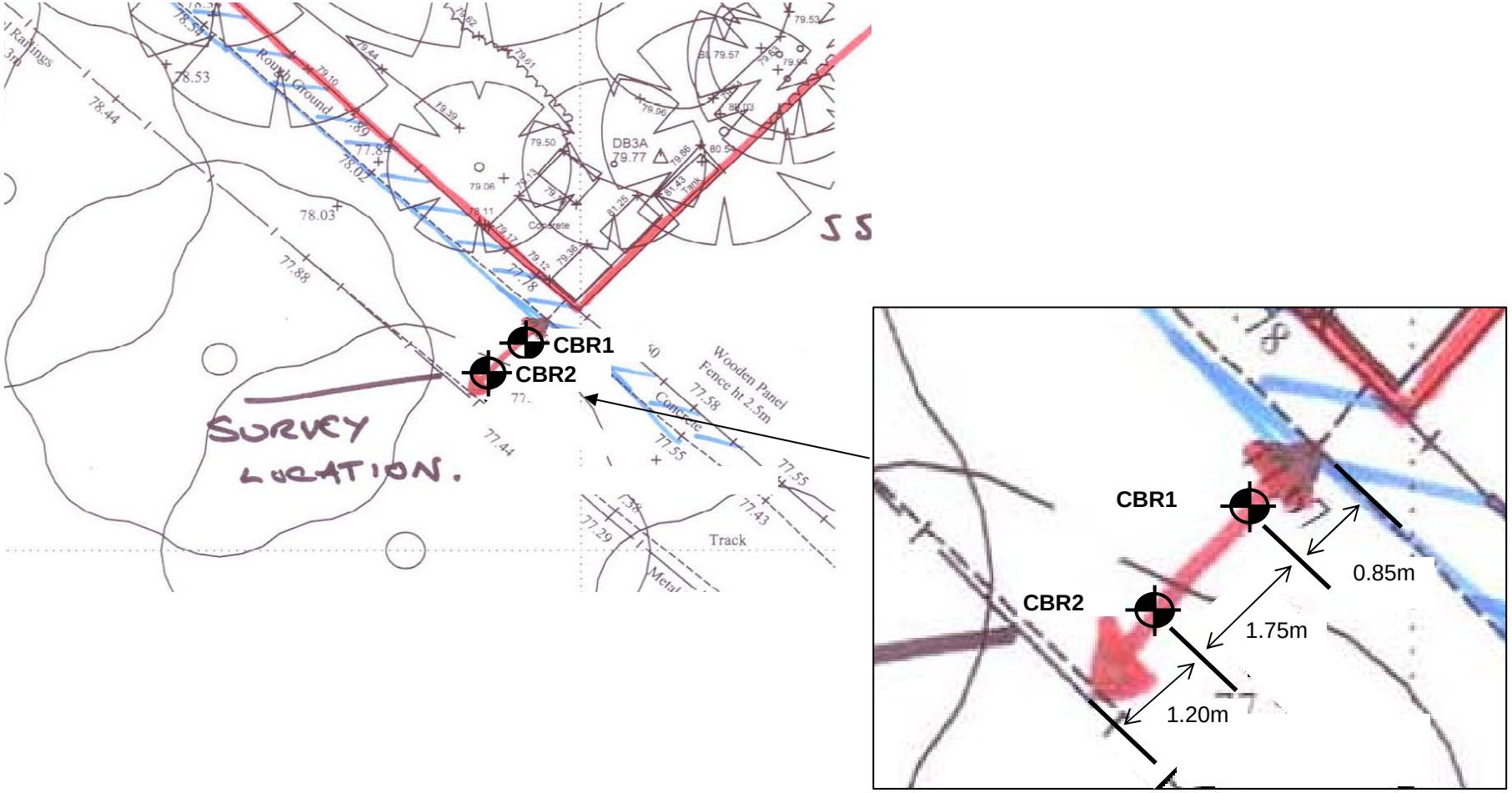
"The Water House", Millfield Lane
Emergency Access Plan

Scale (@A3) 1:500

100702-01 Rev A

N:\London_CAD\shwate 100702\100702-01a.dwg

Appendix I



Project:	Waterhouse, Millfield Lane			**Title**	CBR Test Location Plan
Client:	Motion			**Geo-Environmental Services Ltd**	
Ref No:	GE8027	**Revision:**	0	**28 Crescent Road, Brighton, BN2 3RP**	
Drawn:	GR	**Date:**	04/05/2011	**T: 01273 699 399 F: 01273 699 388**	
Figure:	1	**Scale:**	Not To Scale	**E: mail@gesl.net W: www.gesl.net**	Geo-Environmental

Project Name:	Waterhouse, Mill Lane, Camden		**Project Started:**	21/04/2011	K4 SOILS
			Testing Started:	21/04/2011	
Client Name:	Geo-Environmental Services Ltd		**Date reported:**	26/04/2011	
Project No:	GE8027	**Our Job / report no:** 10943	**Sample no/ type:**	-	
Sample description:	Grey and black gravelly SAND with ash (gravel is fmc and sub rounded to angular)				**TP No:** CBR1
					Depth (m): 0.30
					Test No: -

Note: Test applicable only when maximum particle size beneath plunger does not exceed 20mm

Note: Penetration and force readings after seating load zeroed.

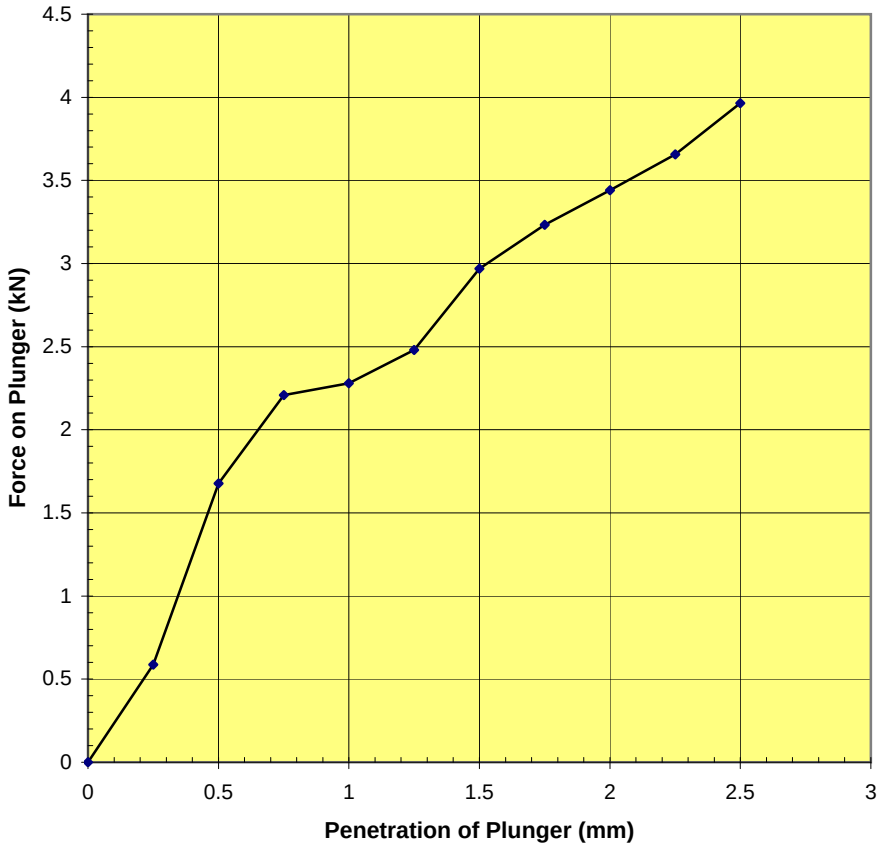
Rate of Strain :1.00mm/min

Mass of Surcharge **8.5** **kg**

Proving Ring factor: **7.17**

RECORDINGS

Penetration of Plunger	Force on Plunger	
	Dial Reading	Load
mm		kN
0	0	0
0.25	82	0.59
0.50	234	1.68
0.75	308	2.21
1.00	318	2.28
1.25	346	2.48
1.50	414	2.97
1.75	451	3.23
2.00	480	3.44
2.25	510	3.66
2.50	553	3.97



RESULTS:

Moisture content (%) 25

Penetration mm	Force kN	Standard Force kN	**CBR %**
2.5	3.97	13.2	30.04
5	-	20	-

In-situ CBR value % **30**

In-situ CBR Test

BS1377 Part 9 : 1990 : 4.3

Determination of In-situ CBR values

Approved by

Initials : kp

Date : 26/04/2011

UKAS TESTING 2519

Remarks:

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford WD18 9RU

Test Results relate only to the sample numbers shown above. Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

Project Name:	Waterhouse, Mill Lane, Camden		**Project Started:**	21/04/2011	K4 SOILS
			Testing Started:	21/04/2011	
Client Name:	Geo-Environmental Services Ltd		**Date reported:**	26/04/2011	
Project No:	GE8027	**Our Job / report no:** 10943	**Sample no/ type:**	-	
Sample description:	Grey and black gravelly SAND with ash (gravel is fmc and sub rounded to angular)				**TP No:** CBR2
					Depth (m): 0.30
					Test No: -

Note: Test applicable only when maximum particle size beneath plunger does not exceed 20mm

Note: Penetration and force readings after seating load zeroed.

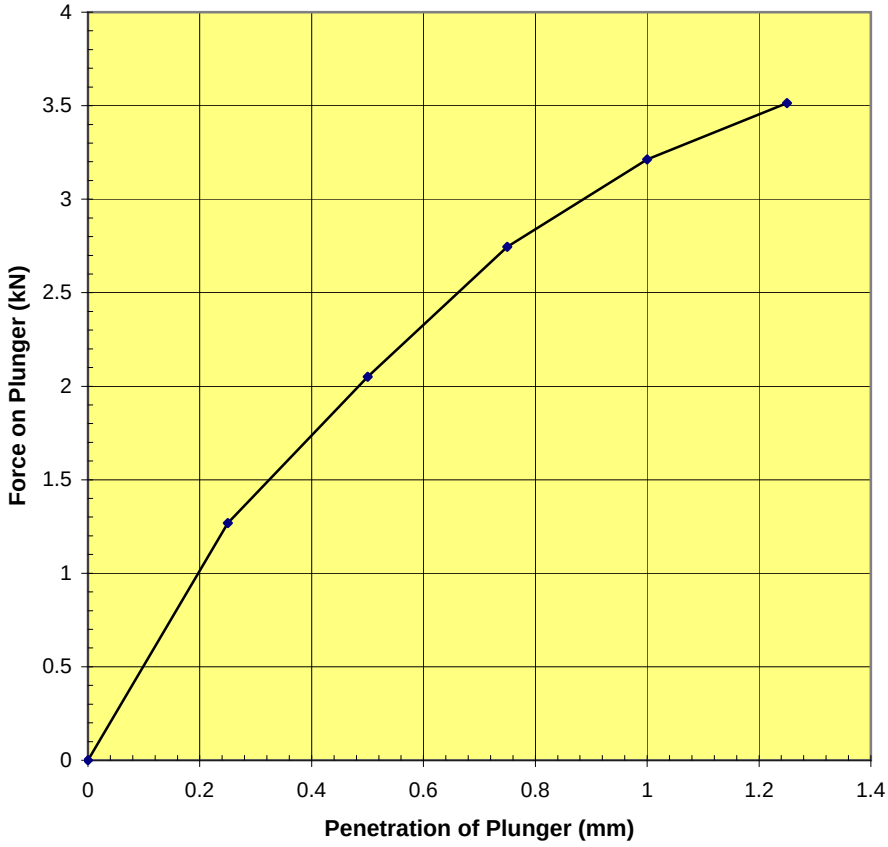
Rate of Strain :1.00mm/min

Mass of Surcharge **8.5** **kg**

Proving Ring factor: **7.17**

RECORDINGS

Penetration of Plunger	Force on Plunger	
	Dial Reading	Load
mm		kN
0	0	0
0.25	177	1.27
0.50	286	2.05
0.75	383	2.75
1.00	448	3.21
1.25	490	3.51



RESULTS:

Moisture content (%) 26

In-situ CBR value % **>30**

Penetration mm	Force kN	Standard Force kN	**CBR %**
2.5	-	13.2	-
5	-	20	-

In-situ CBR Test

BS1377 Part 9 : 1990 : 4.3

Determination of In-situ CBR values

Approved by

Initials : kp

Date : 26/04/2011

UKAS TESTING 2519

Remarks: Maximum kentledge reached