



Hydrotec & Engineering Consultants

Develop Design Deliver

Drainage Strategy

144 Bradford Road, Manchester

March 2025

CLIENT:

I Planning Services

Reference: 25/IPS/drainage/Bradford Rd/Manchester

INSTRUCTION:

Hydrotec and Engineering Consultants was commissioned by I Planning Services to carry out a surface water drainage strategy for the proposed commercial development at 144 Bradford Road, Manchester, M40 7AS.

SCHEME:

Erection of a car wash service and erection of a canopy in the existing yard.

REQUIREMENT:

Surface water drainage strategy for the proposed commercial development to assist the planning application's requirement.

DOCUMENT REVIEW & APPROVAL

Prepared by	Dr Mahmud Ahsan BSc MSc PhD MIAHR
Reviewed by	Dr Mahmud Ahsan BSc MSc PhD MIAHR
Approved by	Mr Rashid Mehmood

Executive Summary

A site-specific flood risk assessment (FRA) and surface water drainage strategy were conducted to assist the planning application's requirement for the proposed development on the land at Keen Distribution Ltd, 144 Bradford Road, Manchester, M40 7AS. The national grid reference number of the development site is SJ 86203 98983 ("the Site"). The proposed development is the erection of car wash services and the erection of a canopy in a partial yard.

The present FRA and surface water drainage strategy of the Site were made with the available information including the latest Environment Agency's (EA) flood maps data, FEH hydrological data, topographical elevation data (LiDAR), soil map data, borehole data of the British Geological Survey, recent photographs, and sewer maps data of United Utilities.

The present investigation suggests that the Site is in flood zone 1, and therefore, the Site is considered to be out of fluvial and coastal flood risk.

The Site is at a very low surface water flood risk - according to the EA's flood map; moreover, the hydrological and topographical elevation data suggest that the impact of the overland flow from the Site's surroundings would be minimal. In addition, the Site would not be a flood risk to the groundwater or reservoir flows. The Site is also not considered to be a foul water flood risk.

The proposed development would not increase impervious land surface compared to the existing condition; subsequently, it would not deteriorate the Site itself or its surrounding areas by the excess surface water runoff.

The soil types beneath the Site are slowly permeable, seasonally wet, acid loamy and clayey soils with reference to the Soilsmap map data. Therefore, the infiltration rate beneath the soil would not be good. Thus, it would not be suitable for attenuating excess runoff through infiltration.

There is no watercourse in close proximity to the Site and it would not be feasible to attenuate excess surface water runoff in a detention pond due to the vehicular movements.

There is an existing sewer drainage network beneath Bradford Road and existing private sewer drainage networks at the Site. It should be noted that the land ownership of the proposed car wash services and existing commercial premises would remain the same.

Therefore, in the proposed surface water drainage strategy, the excess surface water runoff from the car wash services would be discharged to the sewer drainage network located under Bradford Road in conjunction with the existing private sewer drainage network, taking into account the reasonable water quality of the outfalls. In addition, there would be water butts for the collection of roof surface water of the existing premises and would utilise it for car washing services, assisting in attenuating excess runoff.

The access and egress from the Site during any flooding incident would be at Bradford Road, located in front of the Site.

The proposed car washing premises would generate the trade effluent wastewater flow. The estimated trade effluent wastewater flow by the proposed car wash services was estimated to be approximately 0.01 litres/sec or approximately 242 litres per day, considering a 10-hour service a day.

In the proposed drainage strategy, an underground storage tank in the car parking area would be developed for a partial treatment of trade effluent flow. The underground storage tank would filter trade effluent flow to remove solid particles and allow heavier particles to settle out of the water. Thus, the outfalls of the trade effluent would be improved quality before discharging into the United Utilities' sewer. The owner of the car wash premises would provide the maintenance of the underground storage tank.

It should, however, be noted that confirmation of consent agreement from United Utilities will be obtained for the wastewater outfalls to the existing sewer drainage network of United Utilities before the construction of the car wash premises.

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Abbreviations

AEP	Annual Exceedance Probability
CCA	Climate Change Allowance
DWF	Dry Weather Flow
DTM	Digital Terrain Model
EA	Environment Agency
FEH	Flood Estimation Handbook
FRA	Flood Risk Assessment
LiDAR	Light Detection and Ranging

LLFA	Lead Local Flood Authority
LPA	Local Planning Authority
mAOD	meter Above Ordnance Datum
NGR	National Grid Reference
OS Map	Ordnance Survey Map
SuDS	Sustainable Drainage Systems

1 Introduction

The flood risk and sustainable drainage are important aspects of any new and existing development sites. The flood, which is being enhanced in the recent time due to the global climate change effects, could make vulnerable the properties, communities, and many aspects of human life. Therefore, it is important nowadays to assess the flood risk of any new developments, and the National Planning Policy Framework¹ (NPPF) guidelines have given the authority to the Environment Agency² (EA) and local planning authority (LPA) to make sure that any developments are considered the flood risk assessment from all potential sources for the planning authorisation. These are not only securing the minimum risk to the proposed development site but also reducing the risk to the other existing developments.

Generally, new development would provide improvements with better facilities for users and communities, but it should also make a satisfaction that the proposed development would not and should not deteriorate to on-site and/or off-site other existing developments in the surrounding areas during its design life. Therefore, it has been a policy of the NPPF, lead local flood authority (LLFA), LPA, water utility companies and other relevant authorities to assess and manage the sustainable surface water drainage systems of all possible sources for a proposed development before granting the planning permission.

Thus, the aim of the present site-specific flood risk assessment and drainage strategy is to assist planners and designers with blue-green sustainable drainage systems design for the proposed commercial development and reduce the flood risk to other existing developments in the surrounding areas.

1.1 Background of the project site

The proposed development (hereafter “the Site”) is the erection of a car wash service and the erection of a canopy in the existing yard. According to the NPPF guidelines, the proposed development would therefore be classified as a less vulnerable category in terms of flood risk

¹ [National Planning Policy Framework - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/279674/NPPF_2012.pdf)

² [Flood risk assessments if you're applying for planning permission - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/279674/NPPF_2012.pdf)

vulnerability classification³. The Site is located on the land at Keen Distribution Ltd, 144 Bradford Road, Manchester, M40 7AS. The national grid reference number (NGR) of the Site is SJ 86203 98983. The geographical boundary of the project site lies within the Manchester Council's remit, who is the lead local flood authority (LLFA), providing advice and guidance for sustainable drainage systems (SuDS) for this development site. The existing conditions of the Site comprise a single-storey fabric commercial building and concrete pavement used for car parking and yard facilities.

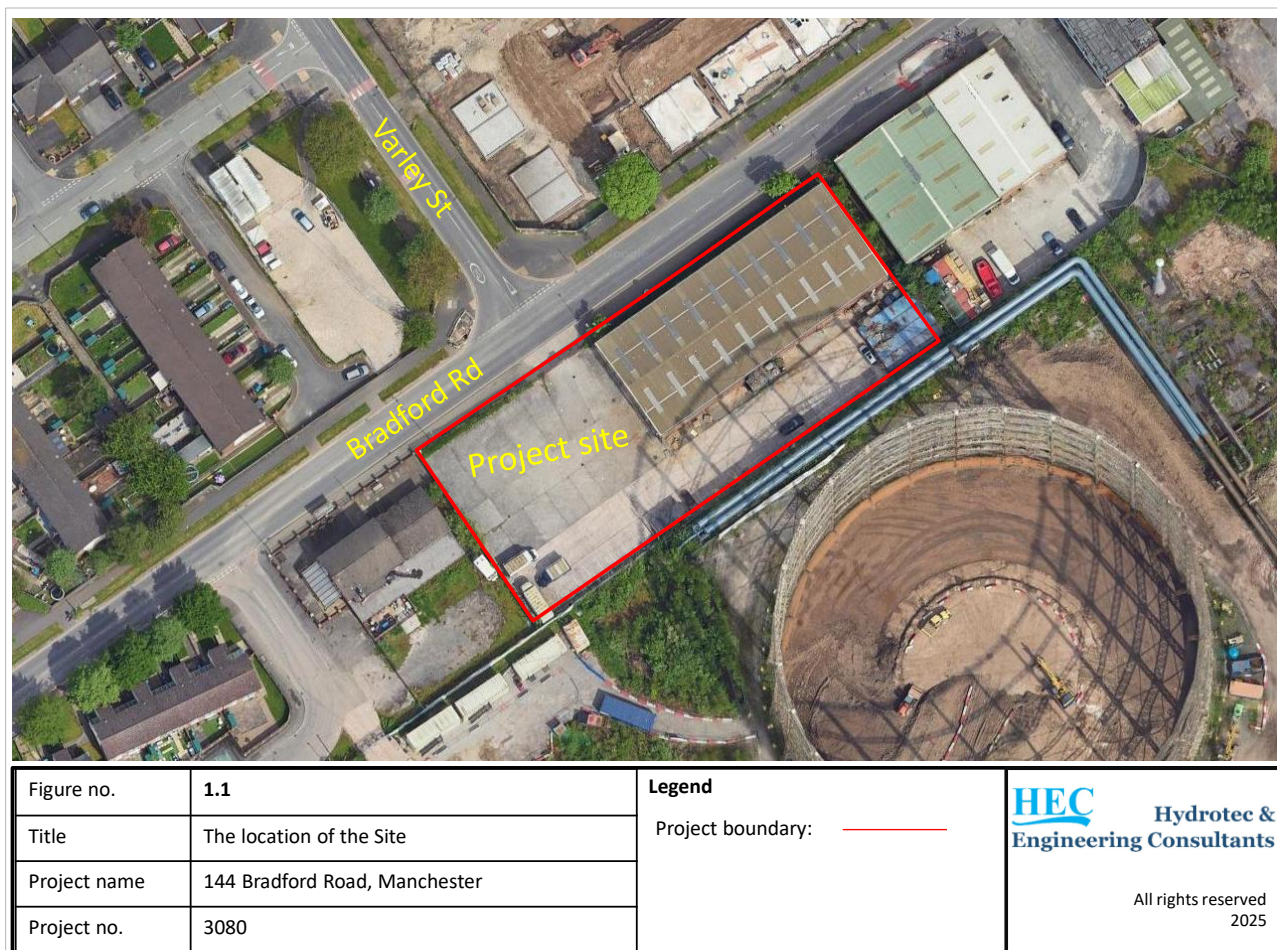


Figure 1.1: The location and existing condition of the proposed development site.

Generally, the adjacent areas consist of predominantly built-up residential houses in the northern area whereas the southern area provides commercial and leisure facilities. Bradford Road, which is the main access road from the Site, is located in front of the Site, e.g. on the north side. Ashton

³ [National Planning Policy Framework - Annex 3: Flood risk vulnerability classification - Guidance - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/policies/national-planning-policy-framework)

Canal is situated in the south, approximately 100m away from the Site and Rochdale Canal is situated in the north, approximately 375m away from the Site. River Medlock is situated in the south, approximately 250m away from the Site and conveys flow southerly.

A satellite photograph of the existing condition of the project site is shown in Figure 1.1, and the layout of the proposed development is given in Figure 1.2 in addition to the detailed layouts of the proposed development in Appendix I. The total land surface of the proposed development site is approximately 3,444m². However, the actual surface area of the car wash premises is approximately 36m² and the actual surface area of the canopy is 60m². Thus, the actual change of the existing yard is less than 250m², and therefore, it would be classified as a minor development⁴ - according to the Environment Agency's Standing Advice.

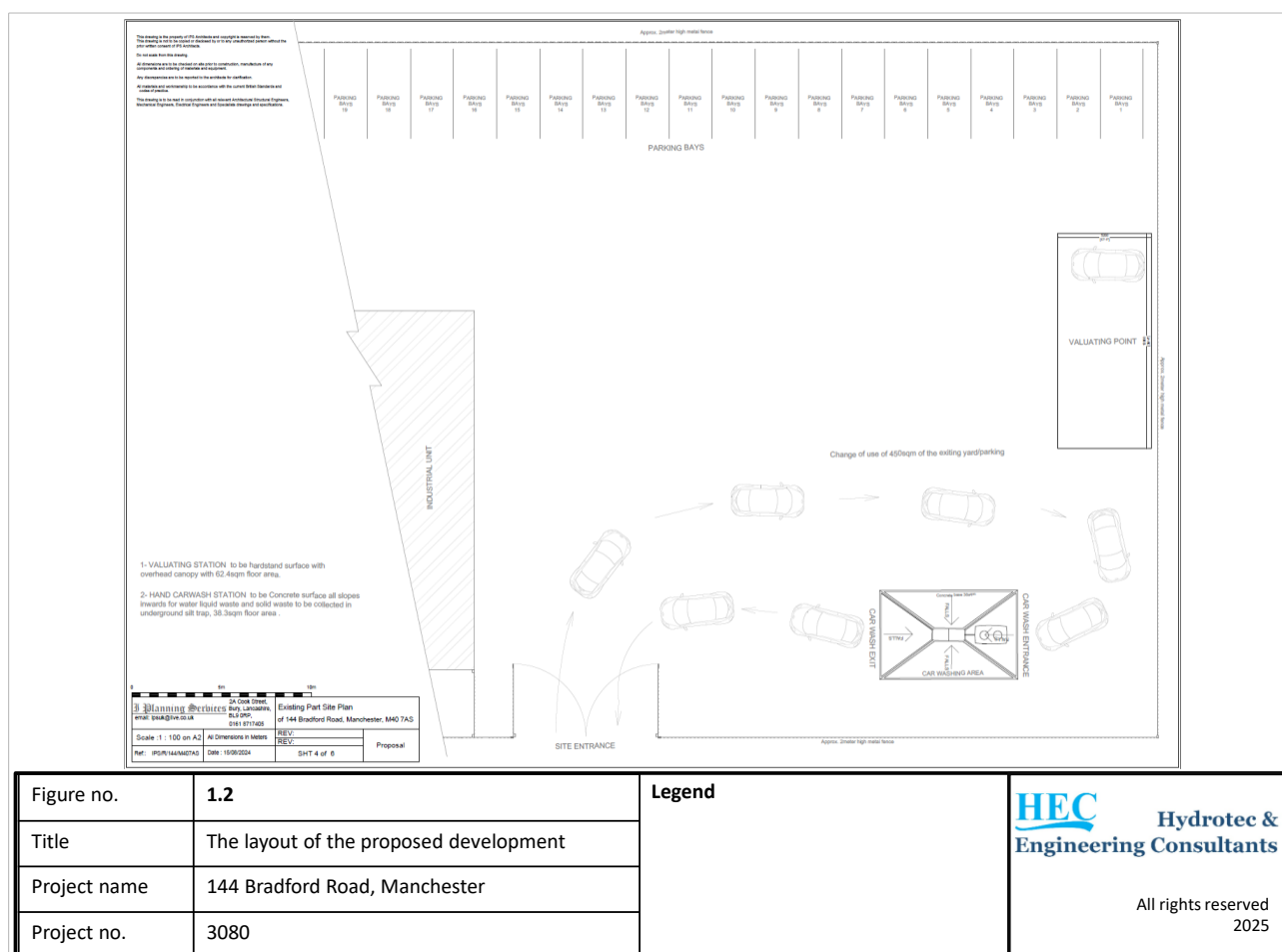


Figure 1.2: The layout of the proposed development.

⁴ <https://www.gov.uk/guidance/flood-risk-and-coastal-change#para51>

2 Potential sources of the flood risk

The proposed development is the erection of a car wash service and the erection of a canopy in a partial yard; thus, it is a requirement by LLFA to ensure the provision of appropriate flood risk assessment and sustainable drainage of the surface water within the development, to promote safe and resilient communities, assisting by Environment Agency⁵ (EA) and LLFA.

2.1 Fluvial and coastal flood risk

The Environment Agency's flood map⁶ indicates that the Site is located in flood zone 1, a risk of flooding less than 0.1% AEP (Annual Exceedance Probability), i.e. less than 1 in 1000-year flood event for the fluvial or coastal flows (Figure 2.1).

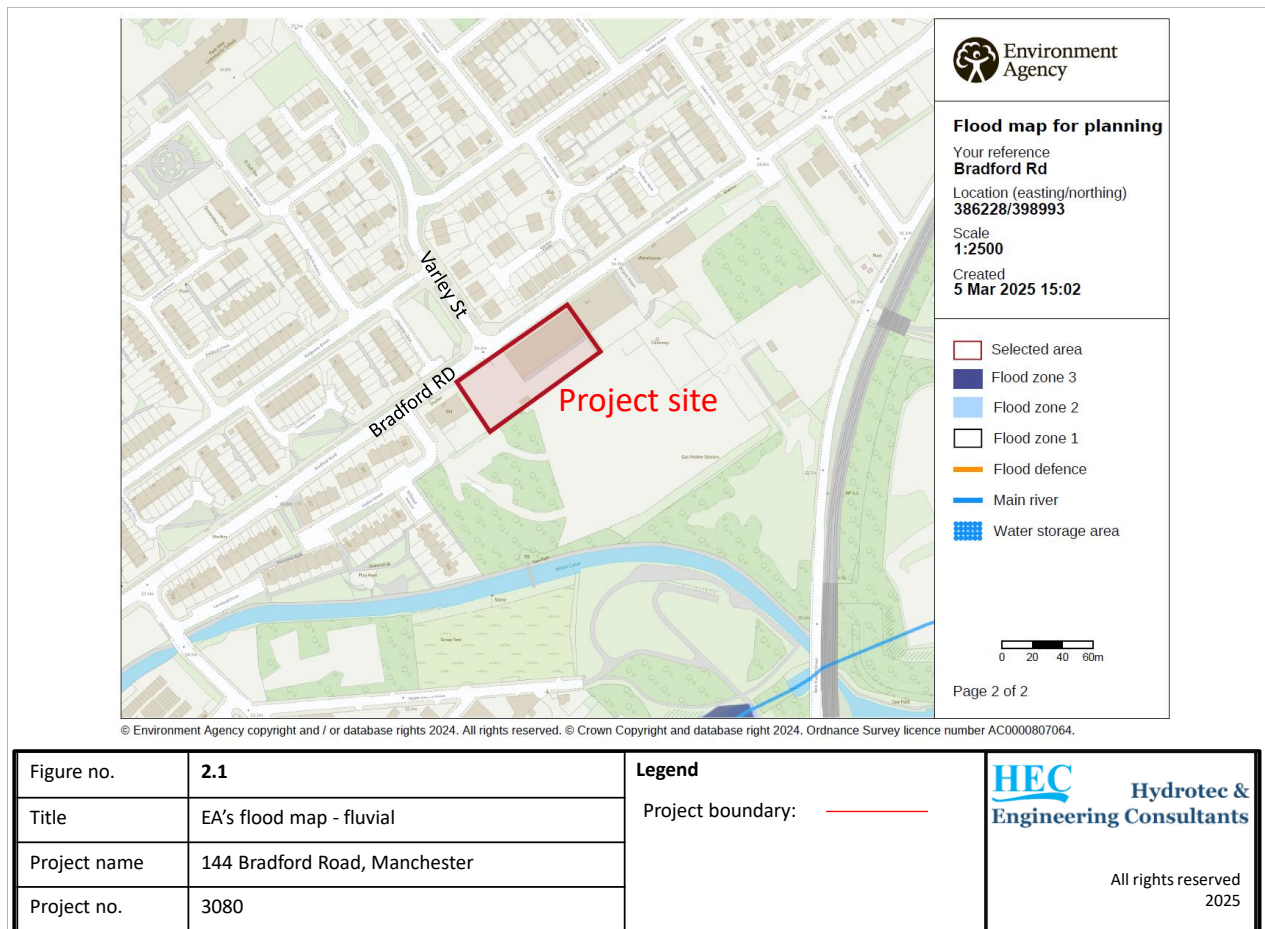


Figure 2.1: The fluvial and coastal flood risk at the Site - flood zone 1, the land having flood risk less than 0.1% AEP fluvial or coastal flows (reference – EA's flood map⁷).

⁵ [Flood risk assessments if you're applying for planning permission - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/flood-risk-assessments-if-youre-applying-for-planning-permission)

⁶ [Flood map for planning - GOV.UK \(flood-map-for-planning.service.gov.uk\)](https://www.gov.uk/government/publications/flood-map-for-planning)

⁷ [Flood map for planning - GOV.UK \(flood-map-for-planning.service.gov.uk\)](https://www.gov.uk/government/publications/flood-map-for-planning)

Therefore, the proposed development site is considered to be out of either fluvial or coastal flows.

2.2 Groundwater or reservoir flood risk

The EA's flood map⁸ suggests that the Site is not at risk of flooding from the groundwater or reservoir flows (Figure 2.2). Therefore, the Site would be considered out of groundwater flow.

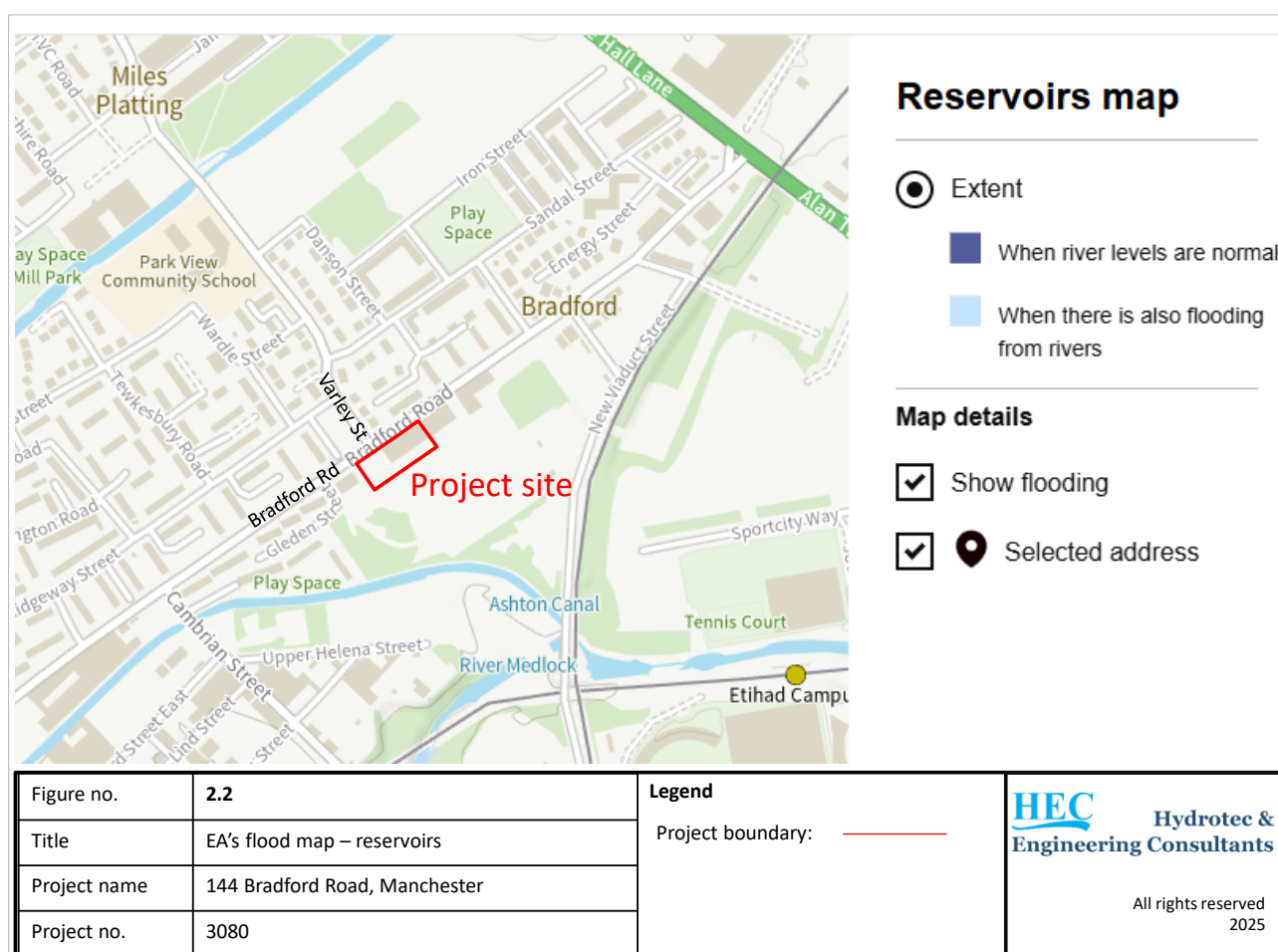


Figure 2.2: Groundwater/reservoir flow at the Site – not a flood risk against the reservoir or groundwater flows (reference – EA's flood map⁹).

There is no borehole data available on the Site, however, the nearest available borehole data from the British Geological Survey¹⁰ is approximately 280m away to the north. The data were recorded in November 1984. The grid location of the test site is easting 386099 and

⁸ <https://check-long-term-flood-risk.service.gov.uk/ground-water>

⁹ <https://check-long-term-flood-risk.service.gov.uk/ground-water>

¹⁰ <https://www.bgs.ac.uk/datasets/geophysical-borehole-logs/>

northing 399253; see also Appendix IV. The ground level of the test site is approximately 57.67mAOD, whereas the average ground level of the proposed development is approximately 54.60mAOD, i.e. 3.075m below the test site. The borehole data indicate that there is no indication of groundwater level up to 10.0m below the ground surface. This suggests that the proposed development would not have any interaction with the groundwater level, and therefore, it would not deteriorate the groundwater pollution.

2.3 Surface water drainage

The guidance of the Environment Agency and LLFA based on the national planning policy framework¹¹ (NPPF) recommends avoiding the increase in surface water flooding through requirements for sustainable drainage systems (SuDS) and minimising the impervious surface area. Moreover, the NPPF para 167 suggests that “when determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment.” Therefore, the surface water drainage measures should have a neutral or better effect on the risk of flooding both on and off the site, taking into account rain falling on the site and runoff from adjacent areas.

The guidelines of the NPPF, LLFA and EA take a presumption against development in a 1 in 30-year hydrological event to the surface water drainage. Development should only be allowed in an area at risk from a 1 in 100-year (with climate change allowance (CCA)) if surface water drainage is manageable without any major risk to the development itself or other surrounding areas. It should be shown that in such cases, surface water flows can be contained within the development, and any flooding flood volumes do not affect third-party lands, flood the property, or obstruct the key access/egress routes.

Therefore, to achieve the guidance’s requirements for the surface water drainage at the Site, the surface water flooding mechanism at the on-site and off-site was assessed with appropriate consideration.

¹¹ Op. cit.

The EA's surface water flood map¹² (Figure 2.3) indicates that the Site would stay at a very low flood risk to surface water drainage (i.e. a low risk means that each year this area has a chance of flooding of less than 0.1% AEP). Therefore, the Site would be considered a very low hazard to surface water drainage.

Generally, the surface water overland flow is highly affected by the topographical features which define hydrological sub-catchments. For a better understanding of the surface water runoff around the Site, the hydrological sub-catchments were obtained from the Flood Estimation Handbook¹³ (FEH22) and the data are presented in Figure 2.4.

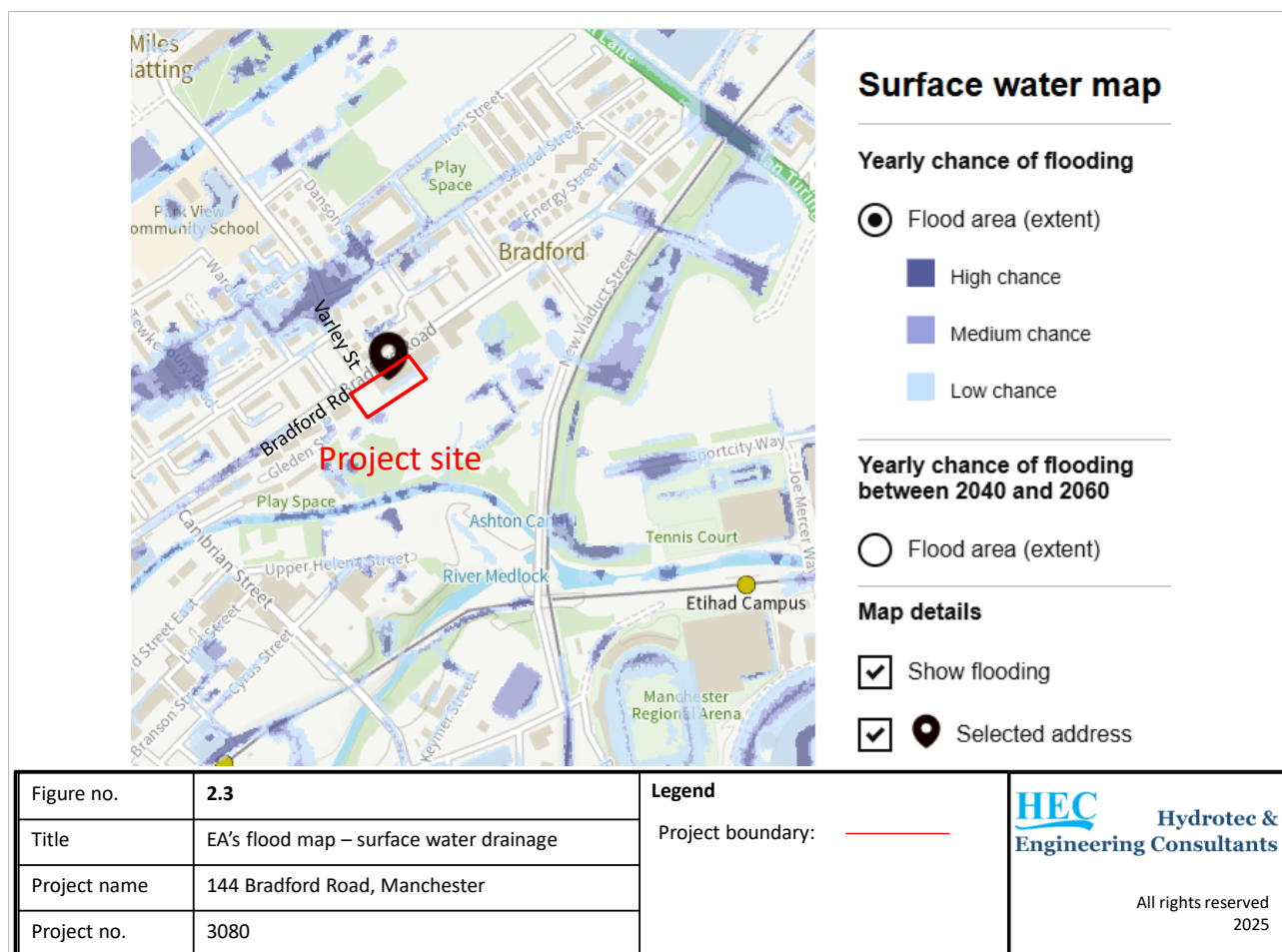


Figure 2.3: Surface water drainage at the Site – a very low flood risk against the surface water flow (reference – EA's flood map¹⁴).

¹² <https://www.gov.uk/check-long-term-flood-risk>

¹³ [Map - FEH Web Service \(ceh.ac.uk\)](http://map-feh.ac.uk/)

¹⁴ <https://www.gov.uk/check-long-term-flood-risk>

The hydrological sub-catchments that could have a possible impact on the Site are presented in Figure 2.4, and the indicative flow paths of the surface water runoff are shown in the blue arrow lines.

The Site is located in a hydrological sub-catchment which conveys the overland flow southerly into Ashton Canal in addition to the River Medlock. The surface area of this sub-catchment that could have a possible impact on the Site is very minimal. Moreover, most of the overland flow in the upstream of this sub-catchment would be intercepted by the existing infrastructures and drainage networks. Thus, a very limited overland flow would reach the Site from the upstream; subsequently, the Site would not be impacted by the off-site surface water runoff.

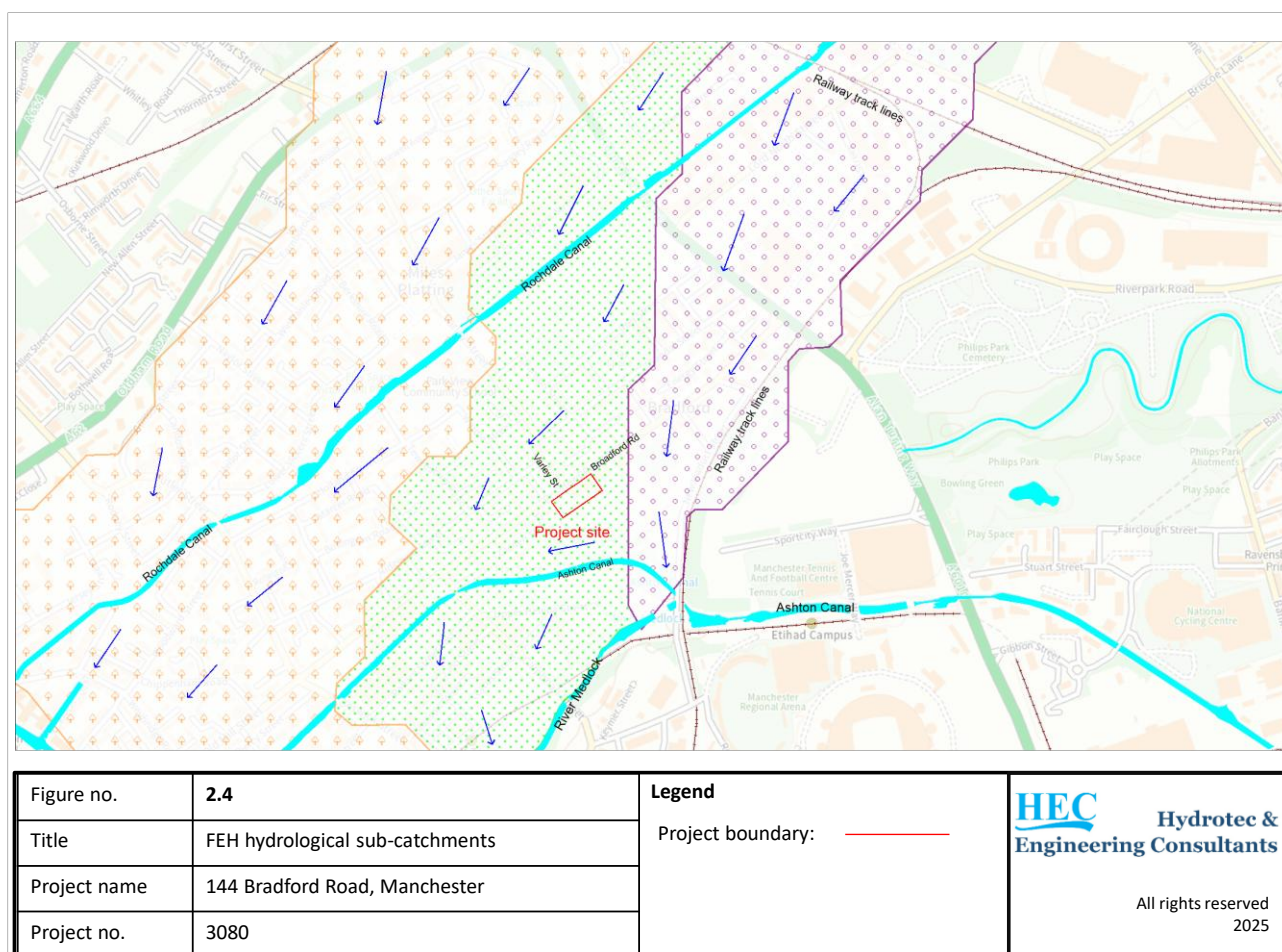


Figure 2.4: The hydrological sub-catchments around the Site (indicative overland flow paths in blue arrow lines); reference of the FEH22¹⁵.

¹⁵ op. cit.

The adjacent sub-catchment on the east side would convey the overland flow southerly through local drains into the River Medlock and would not have overland runoff contribution to the Site. Finally, the far western sub-catchment would also drain the surface water runoff southerly through the local drains and would stay out of the Site.

Thus, the effective overland flow contribution to the Site from the adjacent areas would be minimal.

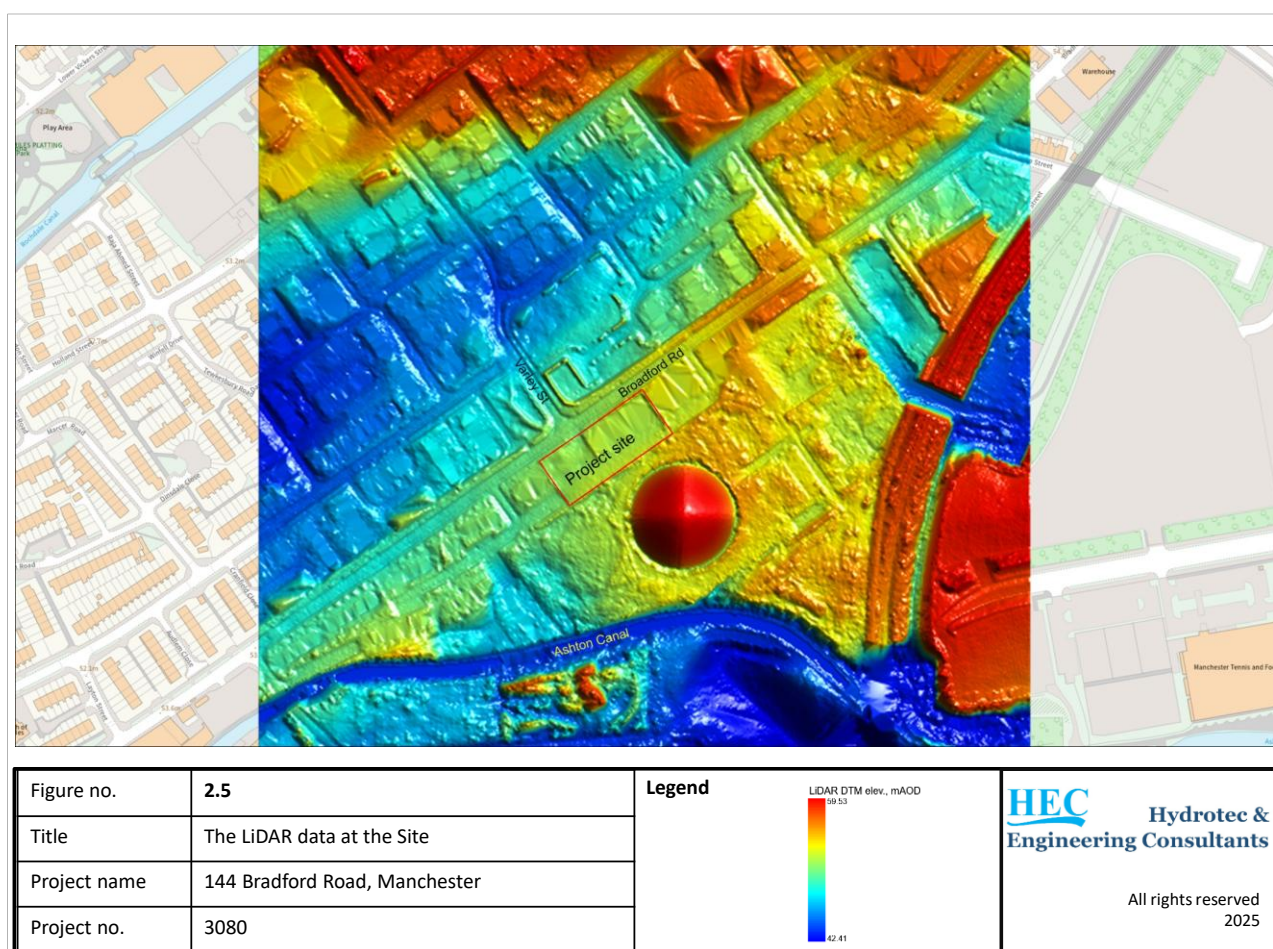


Figure 2.5: The LiDAR topographical elevation at the Site.

The intensity and magnitude of the overland flow and path on the ground surface would have a significant effect due to the ground elevation. Therefore, for an understanding of the complexity of the overland flow mechanisms, the topographical elevation around the Site was assessed based

on the recent LiDAR¹⁶ (Light Detection and Ranging) DTM (Digital Terrain Model) data (Figure 2.5).

The LiDAR elevation data suggest that the ground level in the adjacent eastern area is relatively higher. However, the ground levels around the Site decline to the south. Thus, the eastern surface water runoff would not reach the Site and would rather be drained through the lower ground level southerly. Subsequently, there would be less surface water hazard to the Site.

Therefore, the contributing surface water runoff from the off-site to the Site would be relatively low. Subsequently, the Site would not be considered an off-site surface water flood risk. Thus, the surface water runoff generated at the proposed development would mainly be from the rainfall on the Site. Subsequently, a drainage strategy for this excess-generated surface water runoff is required and is to be managed by sustainable drainage systems (SuDS), according to the LLFA guidance.

2.4 Sewer flood risk

The proposed development is the erection of car wash services and the erection of a canopy in the existing yard. The proposed premises would therefore generate domestic wastewater flow by the staff. In addition, the proposed car wash services would generate trade effluent wastewater flow.

The sewer drainage network data (see also in Appendix III) obtained from United Utilities indicate that the existing sewer drainage network systems around the Site are combined, i.e. conveying surface and foul water flow through the same pipe. There is an existing 375 mm x 500 mm combined sewer located underneath Bradford Road, conveying flow westerly.

The existing commercial premises located on the north side of the Site have already been generating foul water flow and discharge to the sewer under Bradford Road. There are existing private sewer drainage networks on the Site to facilitate the current sewer drainage services.

¹⁶ [Defra Data Services Platform](#)

The proposed drainage network for the car wash premises would be developed in conjunction with the existing private drainage network. It should, however, be noted that the ownership of the proposed development and existing commercial premises on the Site would remain the same.

Therefore, a CCTV sewer drainage survey would be carried out in order to get the details of the existing sewers' location, size, condition and connectivity before implementation of the proposed drainage network.

The proposed drainage networks would be separate, i.e. separate surface and foul water drainage sewers. Subsequently, there would be less wastewater flow into the United Utilities drainage networks, benefiting from less wastewater treatment by the sewage treatment works. Therefore, it would be suitable to discharge the excess wastewater flow from the proposed car wash premises into the existing sewer drainage network.

The proposed car wash services would generate wastewater flow containing pollutants like detergents, dirt, oil, and grease, and potentially heavy metals from brake linings and other parts of the vehicles. Therefore, the proper management and disposal of wastewater flow would be maintained in addition to consent from United Utilities to discharge trade effluent flow into the United Utilities' sewer drainage network.

For the estimation of the generated foul water flow by the proposed premises, the standard guidelines of foul water design were followed. The foul water generation would be highly variable during the days or nights and throughout the year.

Considering the standard guidelines from the Sewer for Adoption¹⁷, the typical domestic wastewater flow for this type of catchment is considered to be 0.6 litres per sec per hectare, and the typical trade effluent wastewater flow by the proposed car wash services is considered to be 0.70 litres per sec per hectare.

¹⁷ [Sewerage Sector Guidance-approved documents | Water UK](#)

The total floor area of the proposed premises is approximately 96m². Subsequently, the generated domestic wastewater flow by the proposed premises would become approximately 0.01 litres/sec.

The generated trade effluent wastewater flow by the proposed car wash services would become approximately 0.01 litres/sec or 242 litres per day, considering a 10-hour service in a day.

The general observation of the sewer drainage networks in the surrounding areas suggests that the proposed development would not significantly impact the existing sewer drainage network systems. However, a confirmation of consent agreement from United Utilities will be obtained to discharge the domestic and trade effluent wastewater flow before the construction of the proposed development.

3 Drainage strategy and flood attenuation storage requirements

The proposed development is the erection of car wash services and the erection of a canopy in the existing yard. The proposed development is therefore classified as a less vulnerable category - according to the NPPF flood risk vulnerability classification¹⁸.

¹⁸ [National Planning Policy Framework - Annex 3: Flood risk vulnerability classification - Guidance - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/61271/nppf-annex-3.pdf)



Figure 3.1: The photograph of the existing ground surface condition at the front side.

The existing ground surface on the Site is mostly concrete pavement and is utilised for car parking yards for the existing commercial premises; see also recent photographs in Figure 3.1 and 3.2. The total surface area of the proposed development site is approximately 3,444m², whereas the total surface area of the proposed car wash premises is approximately 96m². Therefore, it would be classified as a minor development¹⁹ - according to the Environment Agency's Standing Advice.

¹⁹ <https://www.gov.uk/guidance/flood-risk-and-coastal-change#para51>



Figure no.	3.2	Legend	 All rights reserved 2025
Title	Existing ground surface at the service area		
Project name	144 Bradford Road, Manchester		
Project no.	3080		

Figure 3.2: The photograph of the existing ground surface condition at the proposed service area.

The proposed development would be on existing concrete pavement, and therefore, it would not increase impermeable land surfaces.

One of the main objectives of the surface water attenuation storage is that during the storm event, the generated surface water runoff within the Site would be retained on-site for some time. Therefore, the peak flow in the watercourses and/or drainage networks would not be increased substantially to ease the flood risk in the downstream. However, it is an acceptable policy of the LLFA with regard to the greenfield runoff rate to allow some discharge from the development site into the nearby watercourses and/or drainage network systems to reduce the cost and land space for the attenuation storage within the development site.

The proposed development would not increase the excess generated surface water runoff due to the proposed car wash premises. However, to comply with the NPPF's local plan policy and LLFA guidelines, the development proposal should aim to achieve greenfield runoff rates and

ensure that surface water runoff is managed as close to its source as possible. Subsequently, a proportionate reduction of the generated runoff would be managed on-site.



Figure 3.3: The soil types beneath the Site – slowly permeable, seasonally wet, acid-loamy and clayey soils (reference - Soilsclapes map data of Cranfield University²⁰).

To assess the feasibility of the attenuation for the generated surface water runoff through underground infiltration, the soil types beneath the Site were assessed based on the Soilsclapes map data of Cranfield University²¹. Generally, soil types beneath the Site are slowly permeable, seasonally wet, acid loamy and clayey soils (Figure 3.3).

Therefore, the infiltration rate of the soils beneath the Site would not be good, and therefore, it would not be suitable for attenuating excess surface water through infiltration. It should,

²⁰ [Soilsclapes soil types viewer - National Soil Resources Institute. Cranfield University \(landis.org.uk\)](https://www.landis.org.uk/)

²¹ <https://www.landis.org.uk/>

however, be noted that there is no in-situ soil percolation data available at the project site during the publication of the report.

There is no watercourse near the Site and it would not be feasible to attenuate excess surface water in a detention pond on the Site due to the vehicular movement.

There is an existing 375mm x 500mm sewer drainage network in close proximity to the Site, e.g. combined sewer beneath Bradford Road.

At present, all the on-site surface water runoff is discharged to nearby overground and/or existing sewer drainage networks. The proposed development would not increase the impervious surface area compared to the existing condition. Consequently, there would not be any deterioration of the excess surface water hazard due to the proposed development at the Site itself or its adjacent areas.

Therefore, in the proposed surface water drainage strategy, the excess surface water runoff on the car wash premises would be discharged to the existing sewer beneath Bradford Road, taking into account reasonable water quality measures.

In addition, the proposed development would be used for car washing services, which would require a large quantity of water. Therefore, in the proposed surface water drainage strategy, runoff from the roof surface of the existing premises (e.g. Keen Distribution Ltd) would be stored in water butts (approximately 2,500 litres, see also a sample in Appendix VII) and would be utilised for general car washing services, attenuating excess surface water runoff.

Furthermore, there would be an underground storage tank in the car parking area for a partial treatment of the trade effluent flow from the car washing services. This underground storage tank would filter trade effluent flow to remove solid particles and allow heavier particles to settle out of the water. Thus, the outfalls of the trade effluent flow would be improved before discharging to the United Utilities' sewer drainage network.

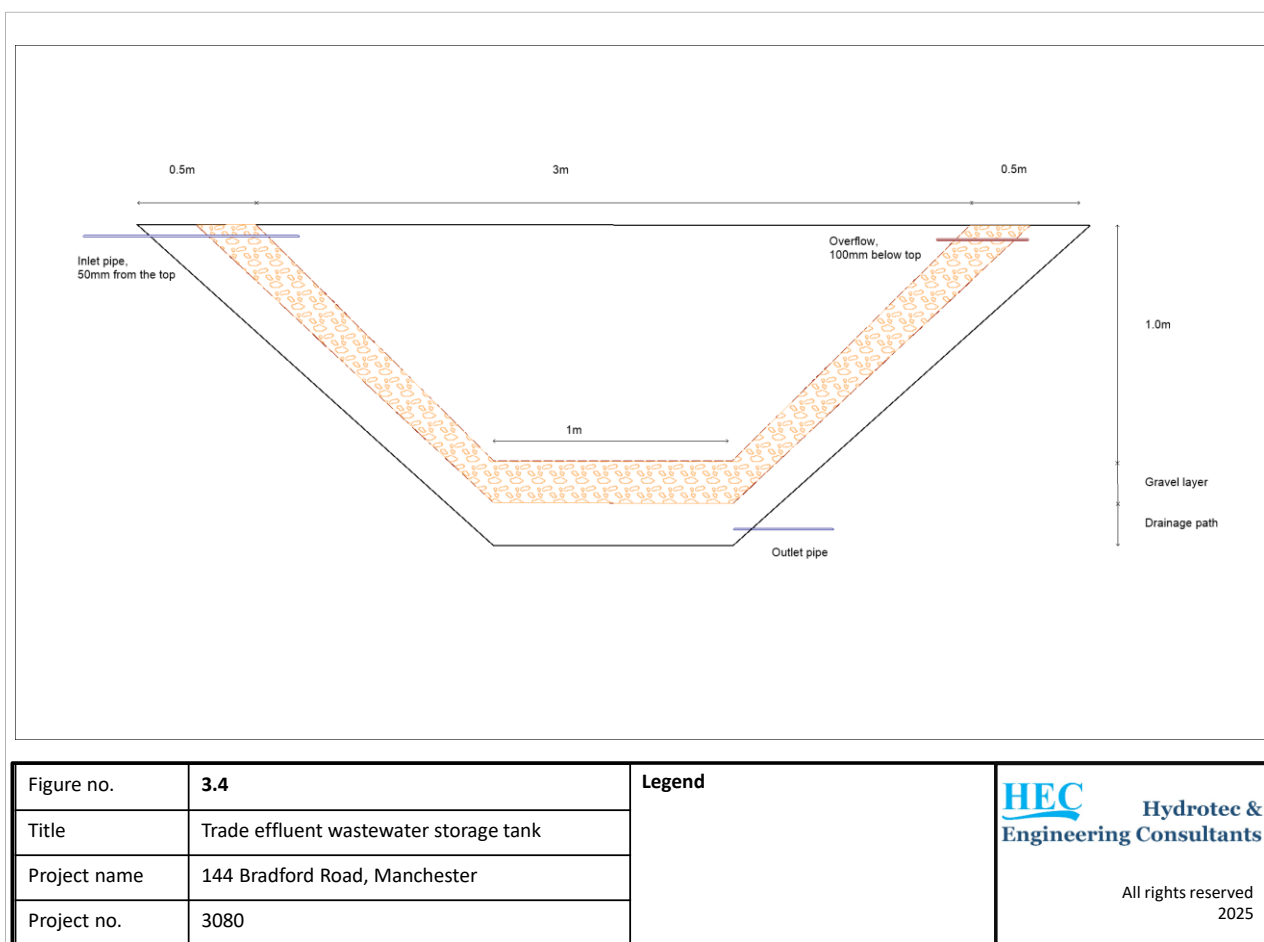


Figure 3.4: The proposed underground storage tank for trade effluent treatment at the Site.

The trade effluent flow rate from the car wash services was estimated to be 0.01 litres/sec. Considering effective services for 10 hours a day, the size of the storage tank would therefore be approximately 1,693 litres for 7 days. The cross-section of the trade effluent storage tank for a 7-day capacity is shown in Figure 3.4 (see also in Appendix VI for details) and the length would be approximately 1.0m.

Furthermore, there would be surface water drainage pipes collecting the excess runoff by gravity flow in addition to ACO drains to intercept the runoff in the car park (see an example of an ACO drain in Appendix VIII). Therefore, the proposed surface water drainage strategy would be sustainable during the design life of the development without deteriorating the Site itself or other existing developments in surrounding areas.

The landowner of the premises would be legally responsible for the management of the proposed on-site drainage system, including periodic inspection and maintenance of the SuDS features and

drainage infrastructures within the Site for effective and efficient performance during the design life of the development.

It should, however, be noted that a confirmation of consent agreement will be obtained to discharge the excess outfalls into the United Utilities sewer drainage network located beneath Bradford Road.

4 Finished floor level and access/egress from the Site

The proposed development, which is the erection of car wash services and the erection of a canopy in a partial yard, is classified as a less vulnerable category, according to the NPPF flood risk vulnerability classification²². In addition, the surface area of the proposed premises is less than 250m², and therefore, it would be classified as a minor development²³ - according to the Environment Agency's Standing Advice.

The Site would not have a flood risk from fluvial flow. Moreover, the surface water drainage would have a very low risk and would have a minimal impact on the Site, taking into account the proposed drainage strategy.

Therefore, the finished ground floor level of the proposed car wash premises would be at the ground floor level.

There would not be any issues with access and egress from the proposed development site during evacuation and emergency vehicles' movement. Bradford Road, which is located in front of the Site, would be used as an access and egress during any unexpected flooding incident.

²² [National Planning Policy Framework - Annex 3: Flood risk vulnerability classification - Guidance - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/flood-risk-and-coastal-change#para51)

²³ <https://www.gov.uk/guidance/flood-risk-and-coastal-change#para51>

5 Conclusions

A site-specific flood risk assessment and surface water drainage strategy were conducted to assist the sustainable drainage systems (SuDS) design for the proposed development on the land at Keen Distribution Ltd, 144 Bradford Road, Manchester, M40 7AS. The proposed development is the erection of car wash services and the erection of a canopy in the existing yard. The Site lies within the Manchester City Council's remit, who is the LLFA, providing advice and guidance for sustainable drainage systems for this development site.

The present flood risk assessment and drainage strategy for SuDS, which are the requirements for the planning application, were made with available information including the latest EA's flood maps data, FEH hydrological data, topographical elevation data (LiDAR), soil map data, borehole data of the British Geological Survey, recent photographs and sewer network data of the United Utilities.

The present investigation suggests that the Site is in flood zone 1, and therefore, the Site is considered to be out of fluvial and coastal flood risk.

The proposed development site is a very low risk from the surface water flow - according to the EA's flood map²⁴. Moreover, the hydrological and topographical elevation data around the Site indicate that the impact of the surface water runoff from the Site's surrounding areas would be minimal. Thus, the surface water attenuation storage requirement for the Site would only be the generated overland flow by the surface area of the proposed development, and the overland flow from the surrounding areas was not considered. In addition, the Site is not at risk to the groundwater or reservoir flows.

The soil types beneath the Site are slowly permeable, seasonally wet, acid-loamy and clayey soils with reference to the Soilsmap data²⁵. Therefore, the infiltration rate beneath the soil would not be good. Thus, it would not be suitable to attenuate the excess surface water runoff through underground soakaways.

²⁴ Op.cit.

²⁵ Op.cit.

There is no watercourse in close proximity to the Site and it would not be feasible to attenuate surface water runoff in a detention pond due to the vehicular movements.

It should, however, be noted that there is an existing sewer under Bradford Road and currently, the existing commercial premises at the Site discharge to this sewer. It should, however, be noted that the land ownership of the proposed car wash services would remain the same as the existing commercial premises. Therefore, in the proposed surface water drainage strategy, excess surface water runoff would be discharged to the existing sewer drainage network under Bradford Road in conjunction with the existing private drainage network on the Site.

In addition, there would be water butts (approximately 2,500 litres) to store roof surface water from the existing premises to utilise for car wash services, attenuating surface water runoff at the Site.

The proposed car wash service premises would generate trade effluent flow. Therefore, in the proposed drainage strategy, an underground storage tank in the car parking area would be developed to store the trade effluent flow for partial treatment. For example, the underground storage tank would filter trade effluent flow to remove solid particles and allow heavier particles to settle out of the water. Thus, the outfalls of the trade effluent flow would be improved before discharging into the United Utilities' sewer.

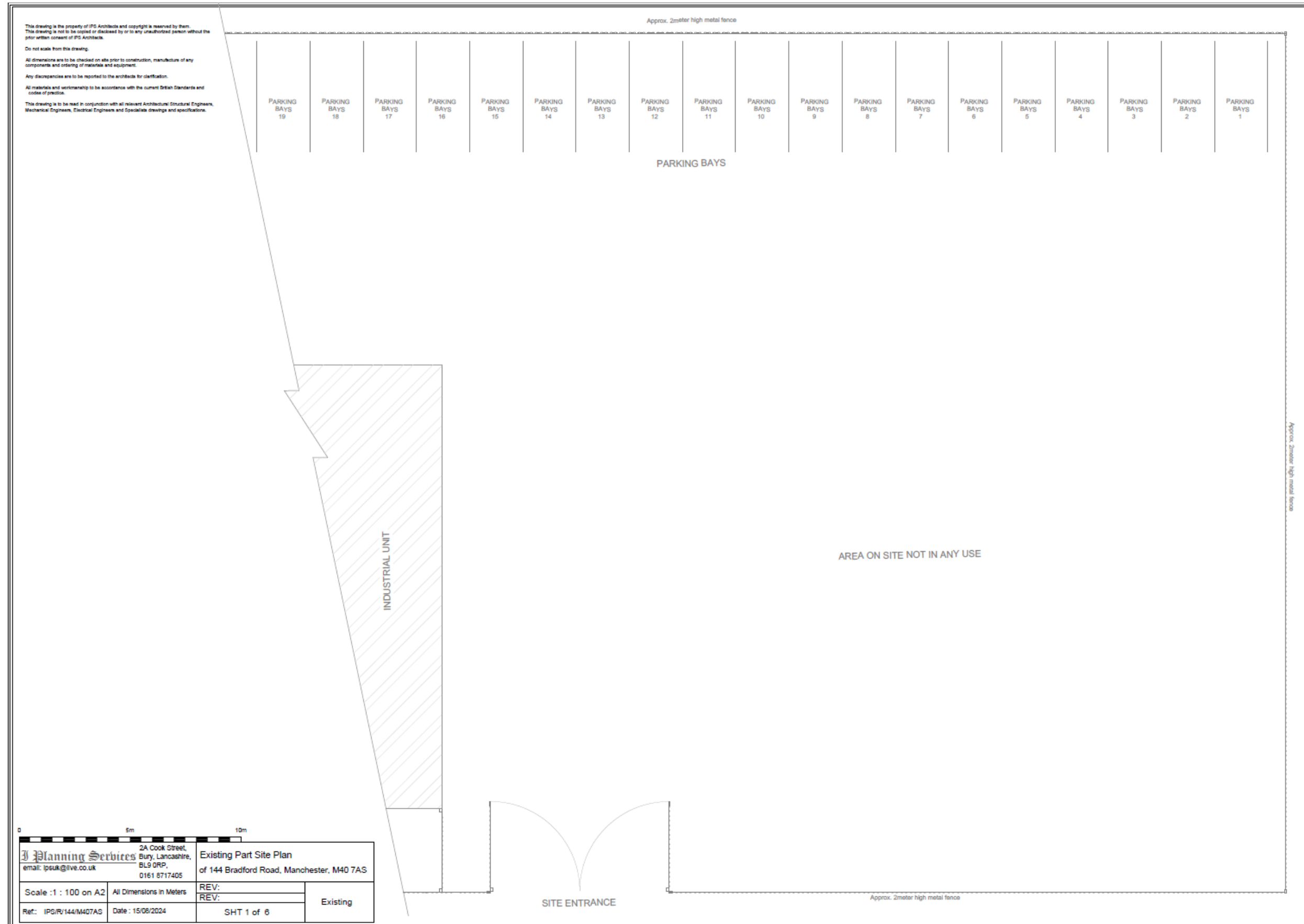
The Site is not considered to be a surface water flood risk, taking into account the proposed surface water drainage strategy. Therefore, the finished ground floor level of the proposed car wash premises would be at ground level.

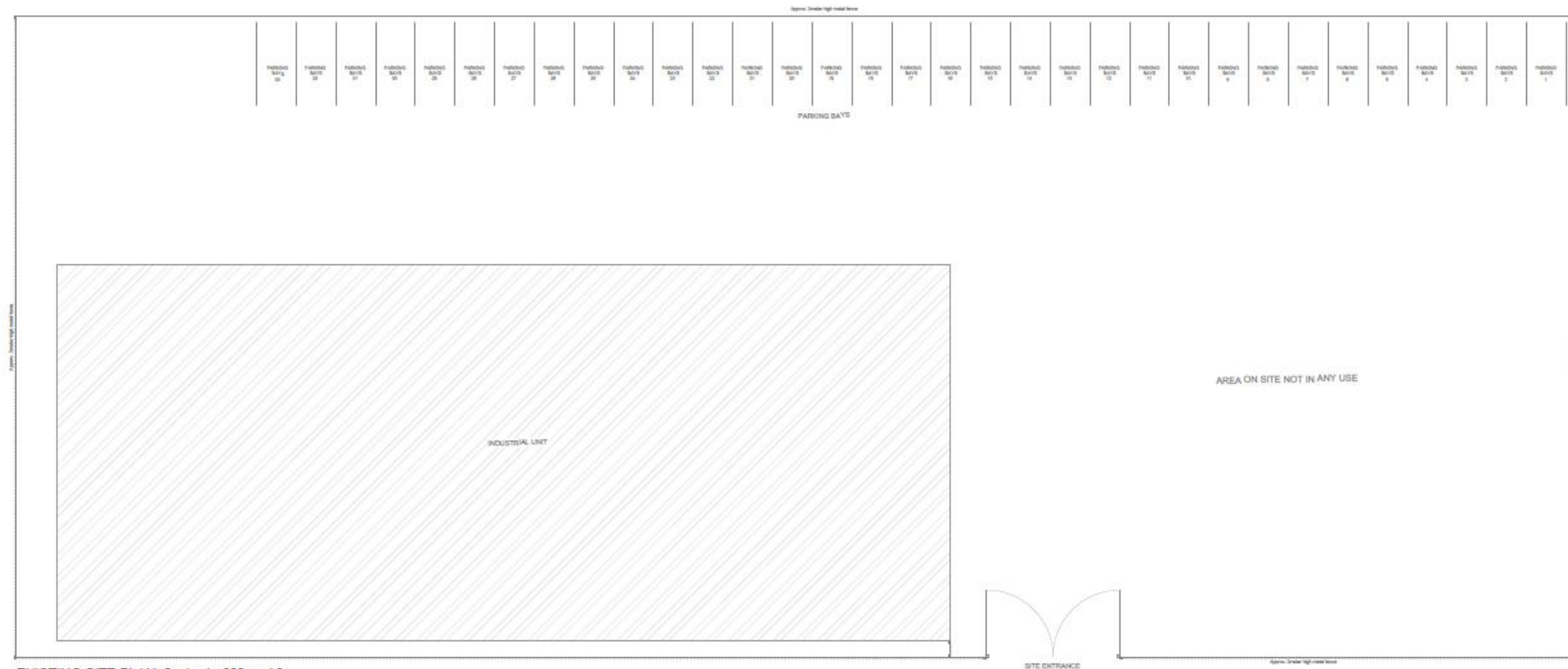
The access and egress from the Site during any flooding incident would be at Bradford Road, located in front of the Site.

Considering the general observation in the surrounding area, the proposed development would not have a significant impact on the existing sewer drainage network, and therefore, the existing sewer drainage would be utilised for the proposed development. The estimated trade effluent wastewater flow by the proposed car wash services was estimated to be approximately 0.01 litres/sec or 242 litres per day, considering 10-hour services a day.

However, a confirmation of consent agreement from United Utilities will be obtained before the construction of the proposed car wash premises.

Appendix I: The layout of the proposed development.





EXISTING SITE PLAN Scale :1 : 200 on A2



LOCATION PLAN @ Scale: 1:1250



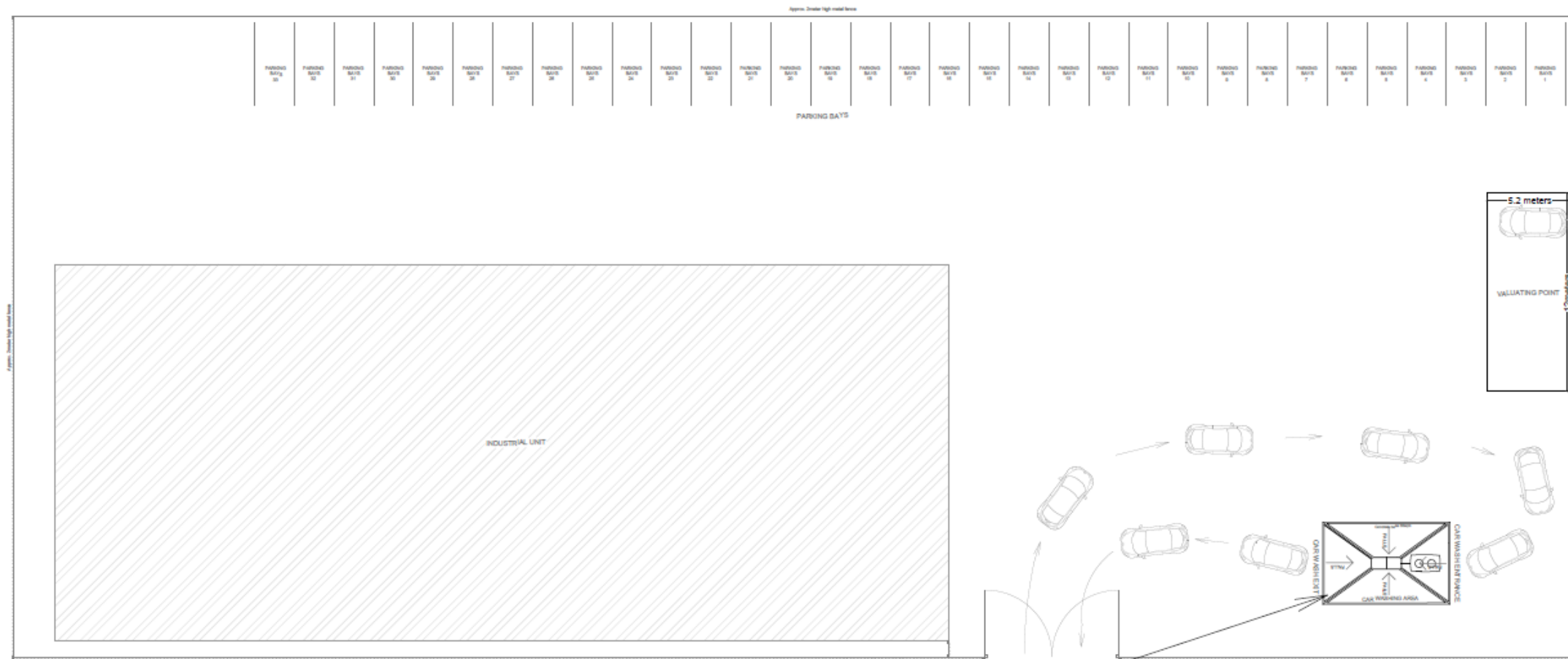
SITE PLAN @ Scale: 1:1250

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Any discrepancies are to be reported to the architect for clarification.
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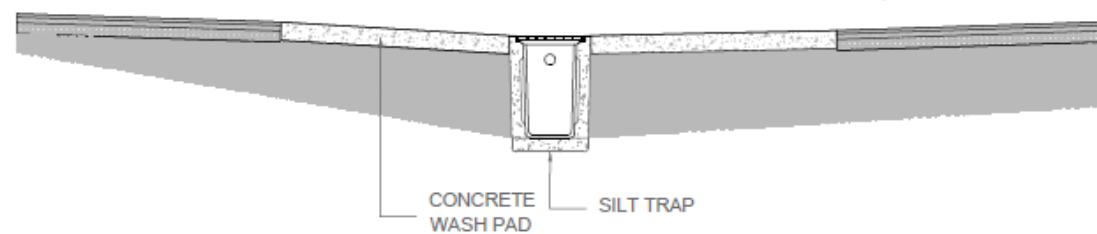
Manning Services
2A Cook Street,
Bury, Lancashire,
BL9 0RP,
email: ipsuk@live.co.uk
0161 8717405

Proposed Floor plans
of 144 Bradford Road, Manchester, M40 7AS

Scale :1 : 200 on A2	All Dimensions in Meters	REV:	Existing
Ref: IPS/R/144/M407AS	Date: 15/09/2024	REV:	
		SHT 2 of 6	



EXISTING SITE PLAN Scale : 1 : 200 on A2
Change of use to 402sqm area



UNDERGROUND SECTION OF HAND CARWASH AREA
Scale @ 1:50

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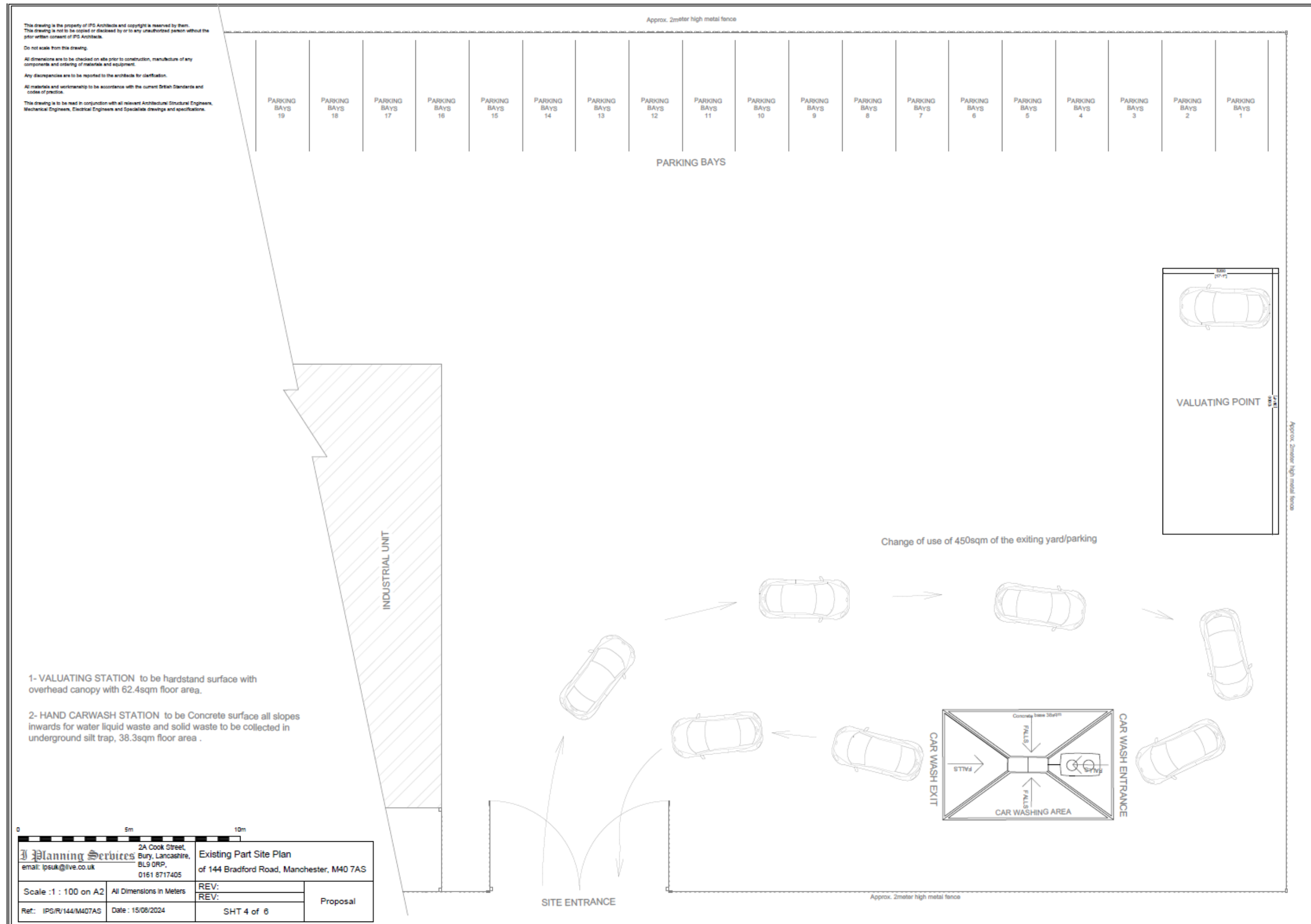
0 5m 10m

Planning Services 2A Cook Street, Bury, Lancashire, BL9 0RP, email: ipsuk@live.co.uk 0161 8717405	Proposed Floor plans of 144 Bradford Road, Manchester, M40 7AS	Scale : 1 : 200 on A2	All Dimensions in Meters	REV:	Proposal
		Ref: IPS/R/144/M407AS	Date : 15/08/2024	REV: SHT 3 of 6	



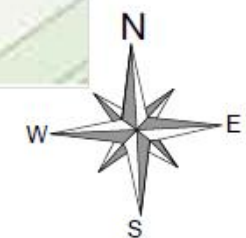
PROPOSED SITE PLAN @ Scale: 1:1250







PROPOSEDSITE PLAN @ Scale: 1:500 0 10m 20m

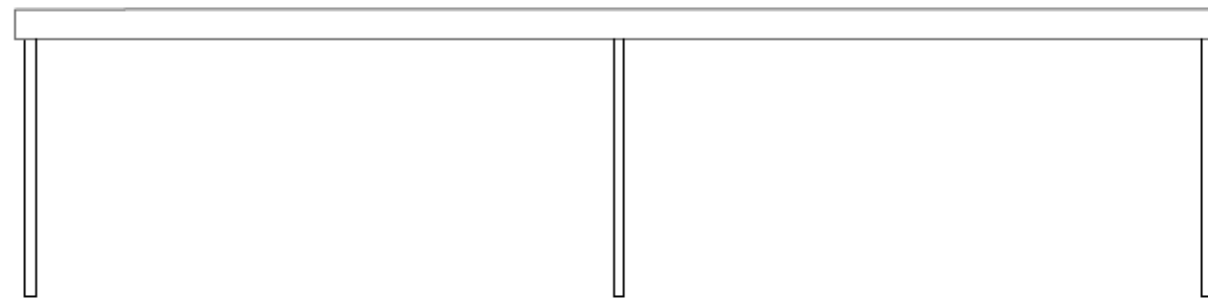


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Proposed Site plans
of 144 Bradford Road, Manchester, M40 7AS

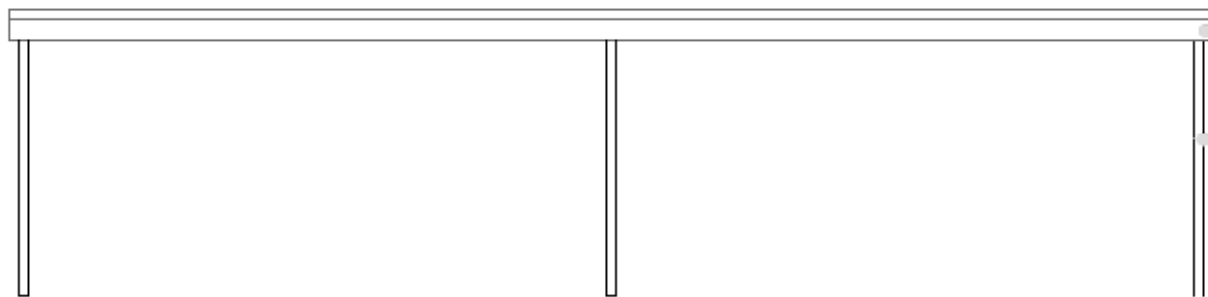
Scale : 1 : 500 on A2	All Dimensions in Meters	REV:	Existing
Ref: IPS/R/144/M407AS	Date: 15/08/2024	REV:	
		SHT 5 of 6	

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This drawing is to be read in conjunction with all relevant Architectural, Structural, Mechanical, Electrical, and Specialist drawings and specifications.



VAULTING STATION ELEVATION (NORTH EAST)

1- VALUATING STATION to be hardstand surface with overhead canopy with 62.4sqm floor area.
Structure to be built as timber frame,
Timber pillars finish with black paint,
Roof sides to be finish with black pvc Fascia Capping Board
on all four sides and black pvc rain water goods to the
South West elevation



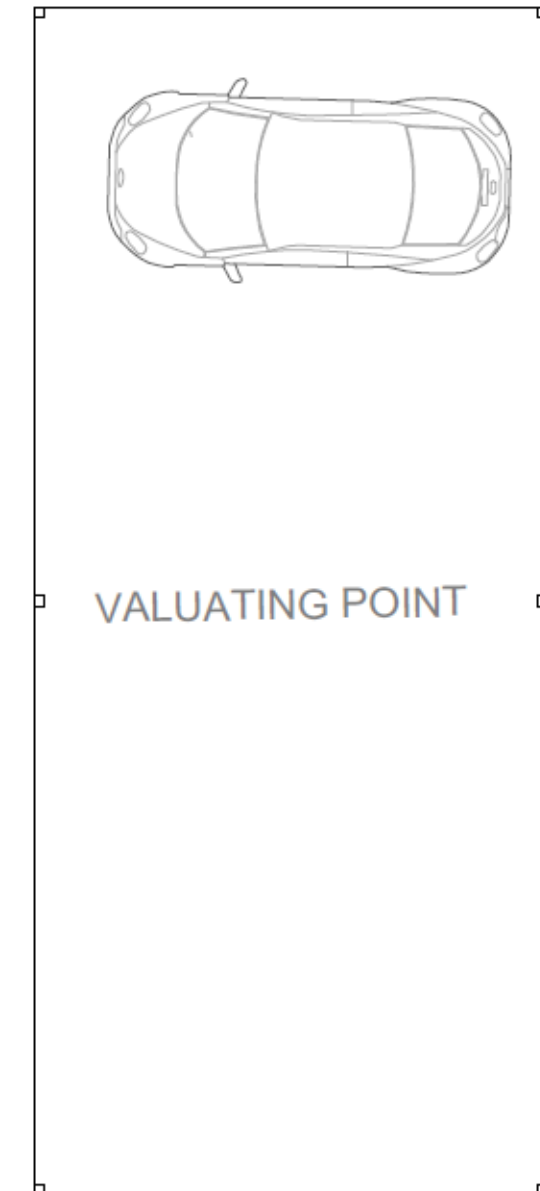
VAULTING STATION ELEVATION (SOUTH WEST)



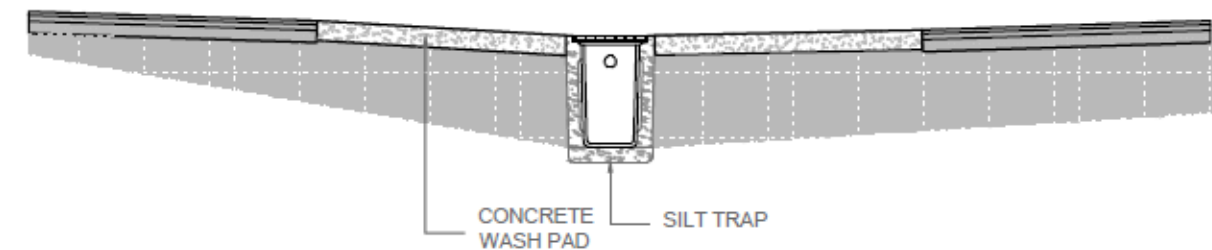
VAULTING STATION ELEVATION (SOUTH EAST)



VAULTING STATION ELEVATION (NORTH WEST)



VAULTING STATION FLOOR PLAN



UNDERGROUND SECTION OF HAND CARWASH AREA

2- HAND CARWASH STATION to be Concrete surface all slopes inwards for water liquid waste and solid waste to be collected in underground silt trap, 38.3sqm floor area .

0 5m 10m

Planning Services 2A Cook Street, Bury, Lancashire, BL9 0RP, email: ipsuk@live.co.uk 0161 8717405	Proposed Floor plans & Elevations of 144 Bradford Road, Manchester, M40 7AS	Scale : 1 : 50 on A3	All Dimensions in Meters	REV: _____	Proposal
		Ref: IPS/R/144/M407AS	Date: 15/08/2024	REV: _____	
		SHT 3 of 5			

Appendix II: Borehole data, reference to British Geological Survey.

British Geological Survey

BGS ID: 15637522 : BGS Reference: SJ89NE1944
British National Grid (27700) : 386099,399253

386099
399253

BOREHOLE RECORD SHEET

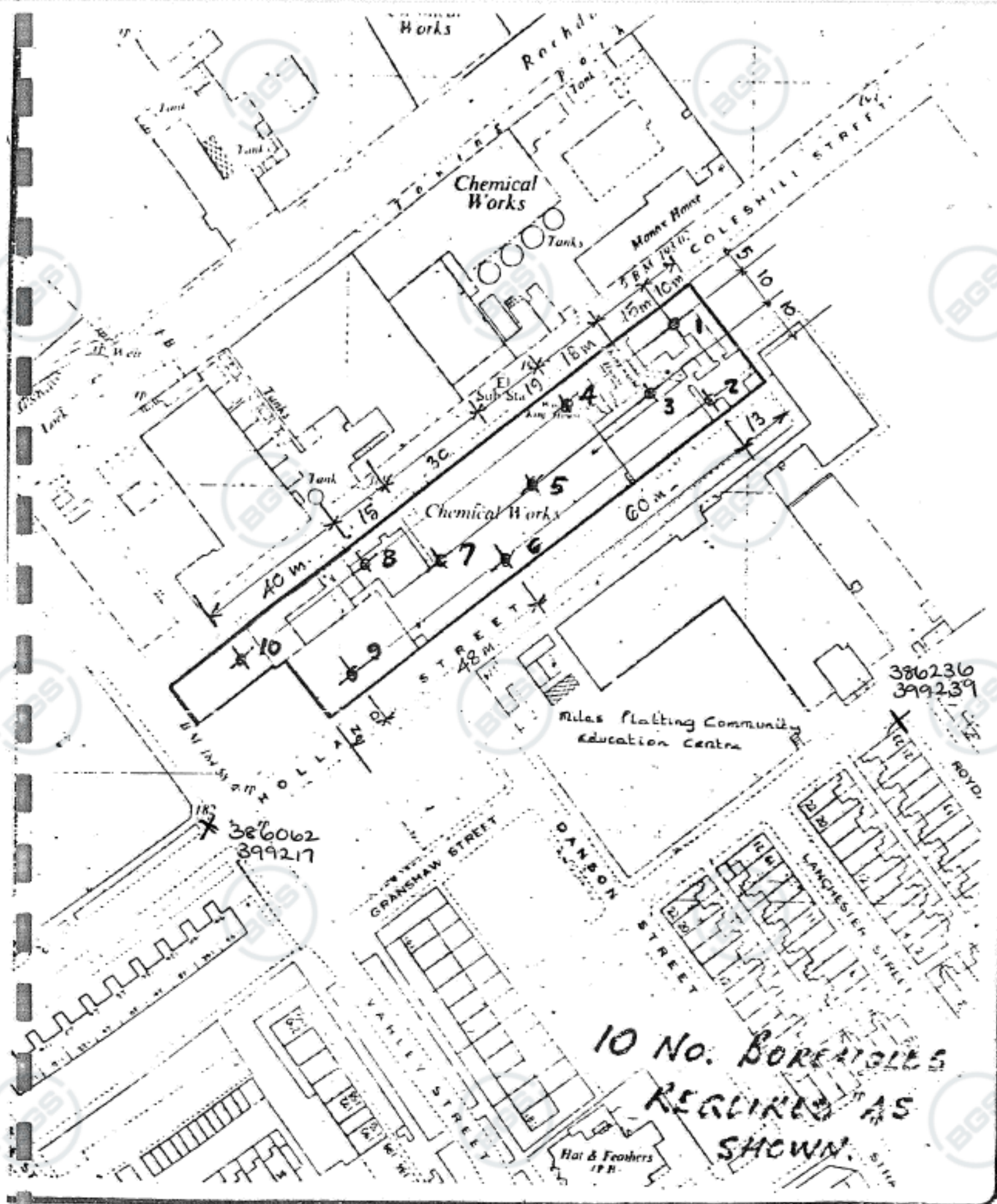
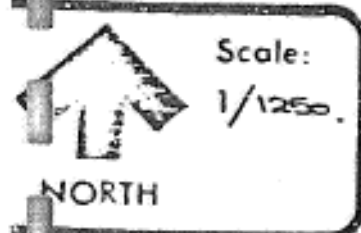
STRATA SURVEYS LTD., HOLMES CHAPEL ROAD, MIDDLEWICH, CHESHIRE. Telephone: Middleswich (STD 0606 84) 4637							BOREHOLE No. 9		
Job No.: <u>2676/4</u> Location: <u>COLESHILL STREET</u> Client: <u>MANCHESTER CITY COUNCIL</u>							Sheet 1 of 1 Scale: 1:50 Diam. & Boring Type <u>150mm S+A</u>		
Description of Strata	Reduced Level	Legend	Thick-ness (m)	Depth (m)	Samples from to	Type	N Value	Apparent Cohesion kN/m ²	Daily Progress Water Levels Remarks
Ground Level	57.65								
loose, ash and brick FILL		X	2.40		0.50	D ₁			8-11-84
					1.00	D ₂			3/4 hr to dig trial pit
					1.50	P ₁ 7			
					2.00	D ₃			
	55.25		2.40		2.60	P ₂ 8			
firm, clay and brick FILL		X	0.70		3.30	U ₁		110	
	54.55			3.10	4.20	D ₄			
stiff, brown, with a little grey, laminated, silty, slightly sandy, slightly gravelly CLAY (boulder clay)		X			4.50	U ₂			
					5.60	D ₅			
					6.00	U ₃		95	
					7.10	D ₆			
					7.50	U ₄			
					8.50	D ₇			
					9.00	U ₅		93	
					10.00	D ₈			DRY
Borehole Complete at 10.0m	47.65			10.00					

U - undisturbed D - disturbed B - bulk W - groundwater P - standard penetration CP - cone penetration V - vane test



British
Geological
Survey

BGS ID: 15637522 : BGS Reference: SJ89NE1944
British National Grid (27700) : 386099,399253



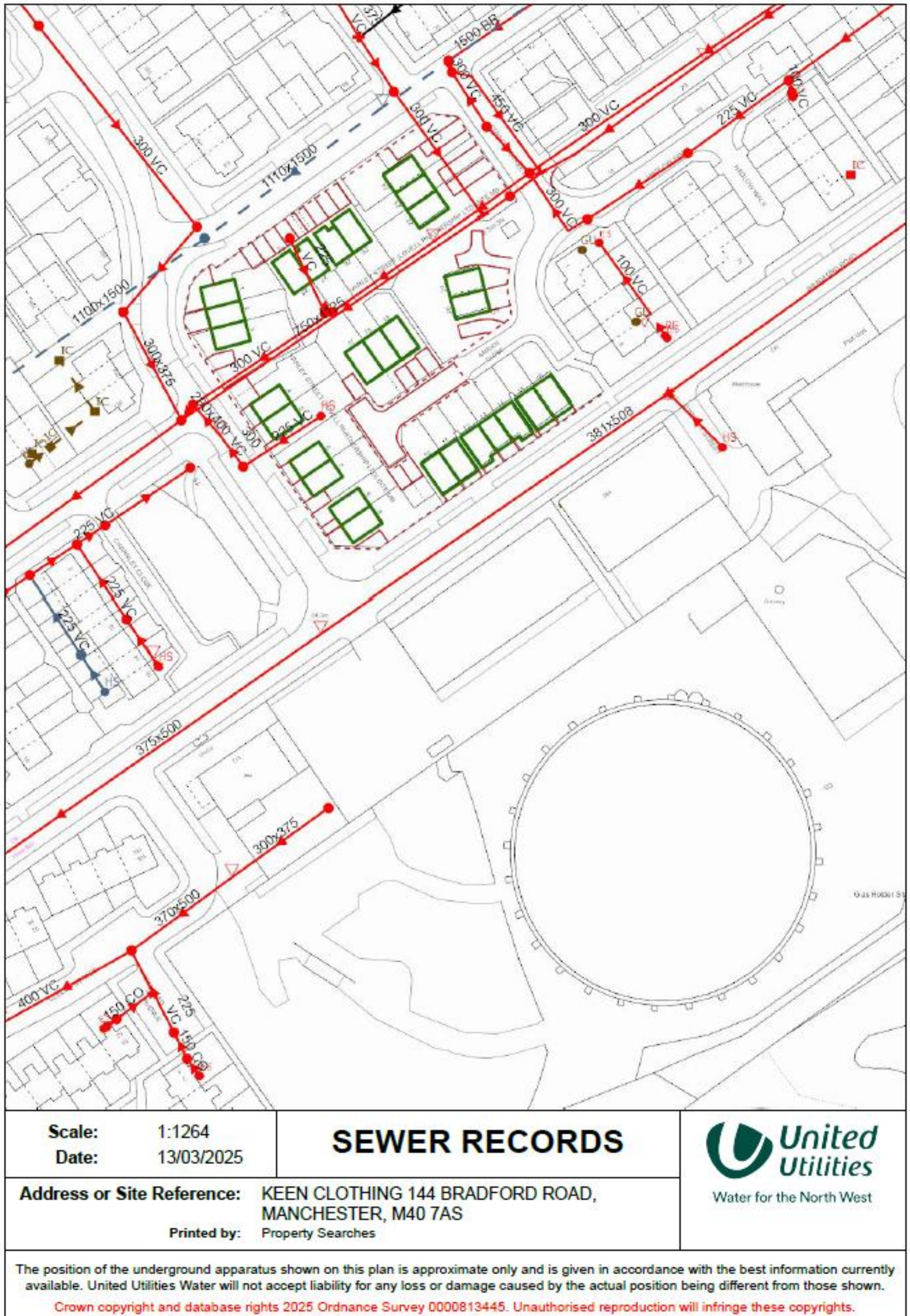
Location	COLFSHILL STREET MILES PLATTING
Subject	BRISTOL MANCHESTER 100+ATIVE
Ref.	Date

LD 543
234

City of Manchester Planning Department

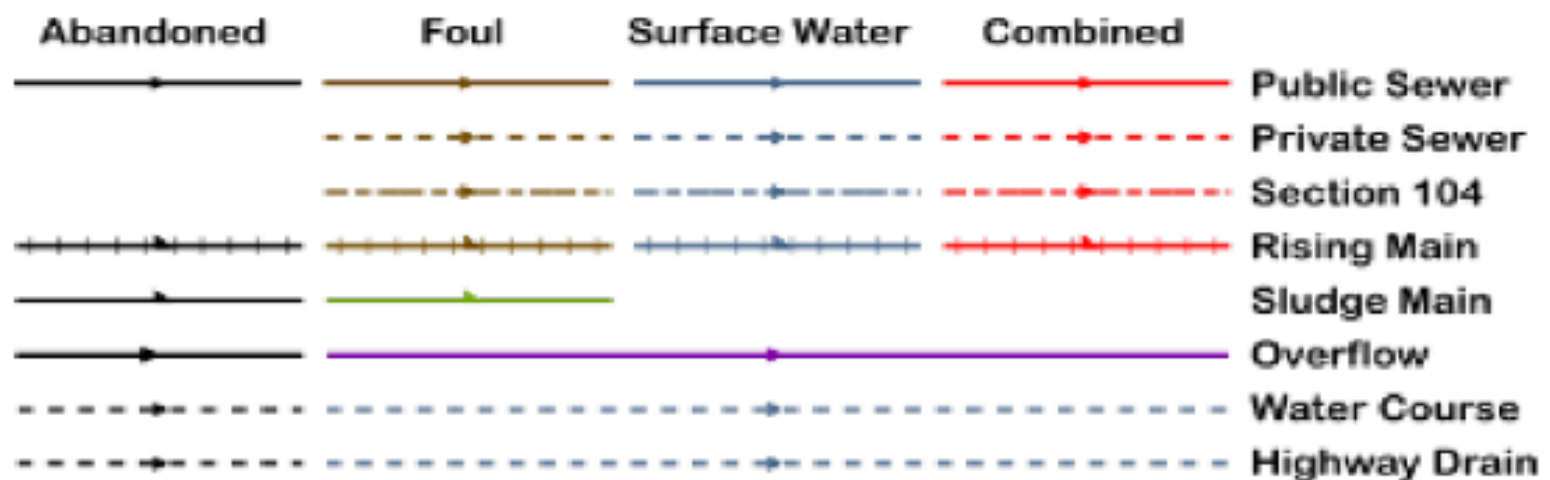
Brian Farnell
City Planning Office

Appendix III: Sewer drainage network data at the Site, reference to United Utilities.





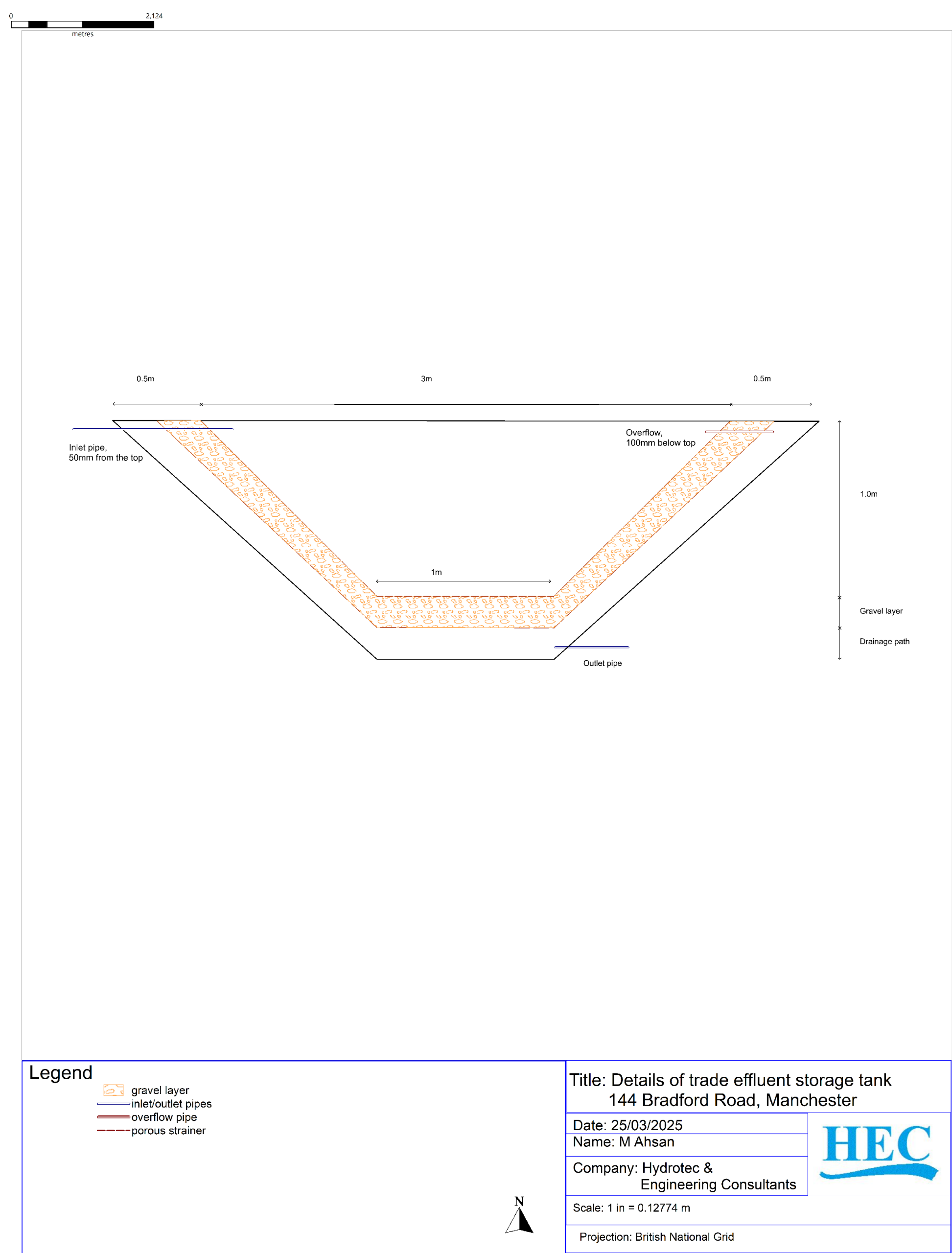
Wastewater Symbolology



All point assets follow the standard colour convention: red – combined brown - foul
blue – surface water purple - overflow

Manhole	Side Entry Manhole
Head of System	Outfall
Extent of Survey	Screen Chamber
Rodding Eye	Inspection Chamber
Inlet	Bifurcation Chamber
Discharge Point	Lamp Hole
Vortex	T Junction / Saddle
Penstock	Catchpit
Washout Chamber	Valve Chamber
Valve	Vent Column
Air Valve	Vortex Chamber
Non Return Valve	Penstock Chamber
Soakaway	Network Storage Tank
Gully	Sewer Overflow
Cascade	Ww Treatment Works
Flow Meter	Ww Pumping Station
Hatch Box	Septic Tank
Oil Interceptor	Control Kiosk
Summit	DNM Network Monitoring Point
Drop Shaft	Change of Characteristic
Orifice Plate	

Appendix IV: Details of the cross-section of the trade effluent storage design at the Site.



Appendix V: A typical vertical water tank for rainwater harvesting (capacity 250 litres).



Appendix VI: A typical ACO drain (channel drainage).

