Intermodal Logistics Park North Ltd

INTERMODAL LOGISTICS PARK NORTH (ILPN)

Intermodal Logistics Park North (ILPN) Strategic Rail Freight Interchange (SRFI)

Project reference TR510001

Preliminary Environmental Information Report (PEIR)

Appendix 14.2: Sustainable Drainage Strategy

October 2025

Planning Act 2008

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

This document forms a part of a Preliminary Environmental Information Report (PEIR) for the Intermodal Logistics Park North (ILPN) project.

A PEIR presents environmental information to assist consultees to form an informed view of the likely significant environmental effects of a proposed development and provide feedback.

This PEIR has been prepared by the project promoter, Intermodal Logistics Park North Ltd. The Proposed Development is described in Chapter 3 of the PEIR and is the subject of a public consultation.

Details of how to respond to the public consultation are provided at the end of Chapter 1 of the PEIR and on the project website:

https://www.tritaxbigbox.co.uk/our-spaces/intermodal-logistics-park-north/

This feedback will be taken into account by Intermodal Logistics Park North Ltd in the preparation of its application for a Development Consent Order for the project.

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Intermodal Logistics Park North Ltd
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Newton-le-Willows
Sustainable Drainage Statement

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Notice

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1. INTRODUCTION

1.1 A Sustainable Drainage Statement (SDS) sets out the principles of drainage design for a development and summarises the reasoning behind the chosen design. This includes consideration of national and local guidance, justification of specific flow rates, volumes of attenuated storage, as well as the appropriate level of treatment to be provided to surface water runoff.

1.2 This SDS has been produced by BWB Consulting on behalf of Intermodal Logistics Park North Ltd in respect of a site located to the east of Newton-Le-Willows, within the Local Authority boundaries of St. Helens Borough Council, Wigan Metropolitan Borough Council and Warrington Borough Council for the construction of an Intermodal Logistics Park.

1.3 A Flood Risk Assessment has been developed for the site (reference 233398-BWB-ZZ-XX-T-W-0002_FRA) and this Sustainable Drainage Statement accompanies this overarching document.

1.4 The level of detail included is commensurate and subject to the nature of the proposals at the planning stage of the design process.

1.5 Although the Order Limits for the wider scheme are far-reaching, this SDS focusses on the approximately triangular-shaped site (referred to in this report as the "Main Site"), bound to the north by the Manchester to Liverpool Chat Moss Railway Line and Highfield Moss SSSI, the west by the M6 Motorway and third-party land, and the south-east by the A579 Winwick Lane.

1.6 The location of the Main Site is illustrated by the pale orange hatch within **Figure 1.1**.

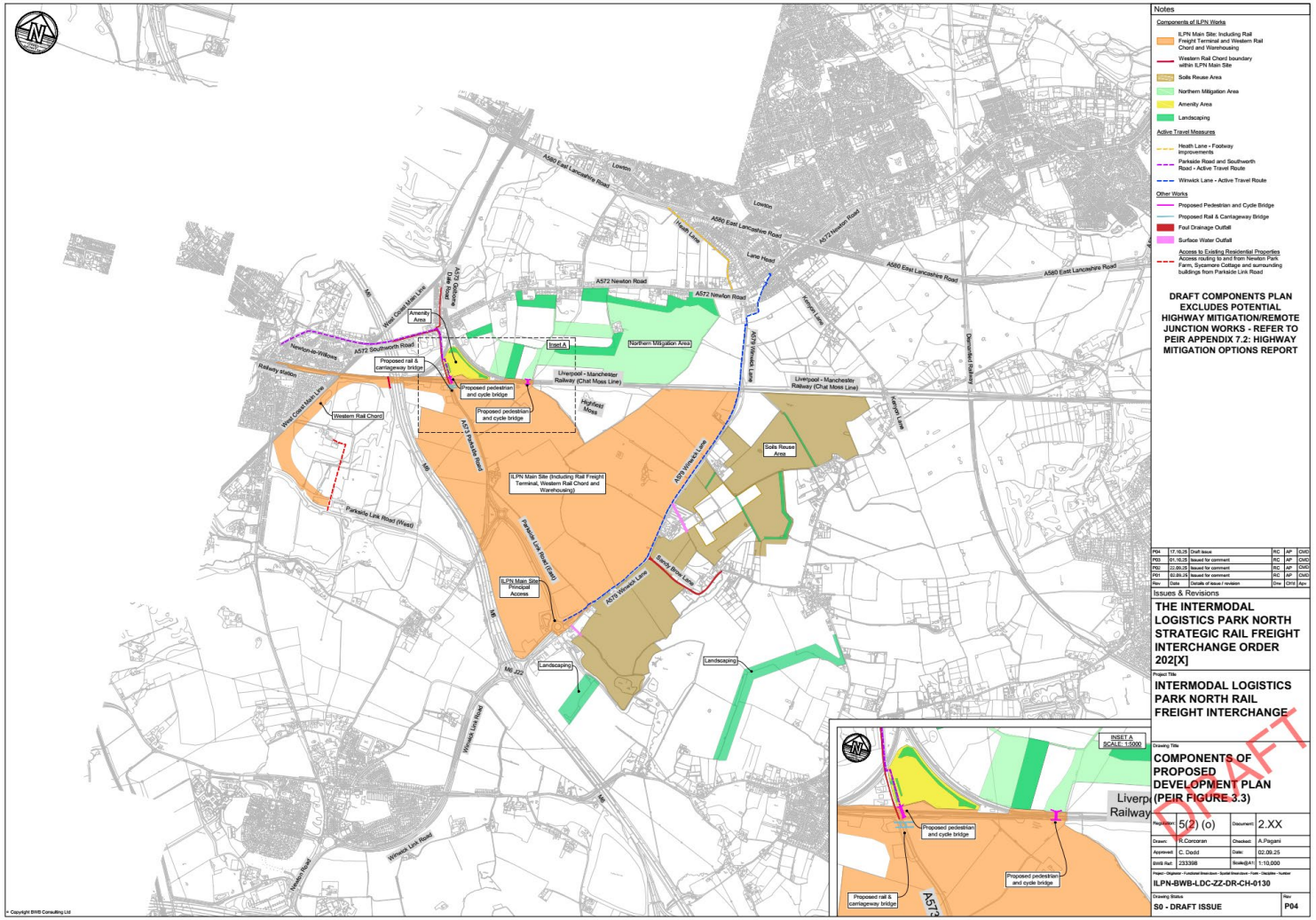

Figure 1.1: Site Location (Components of Proposed Development)

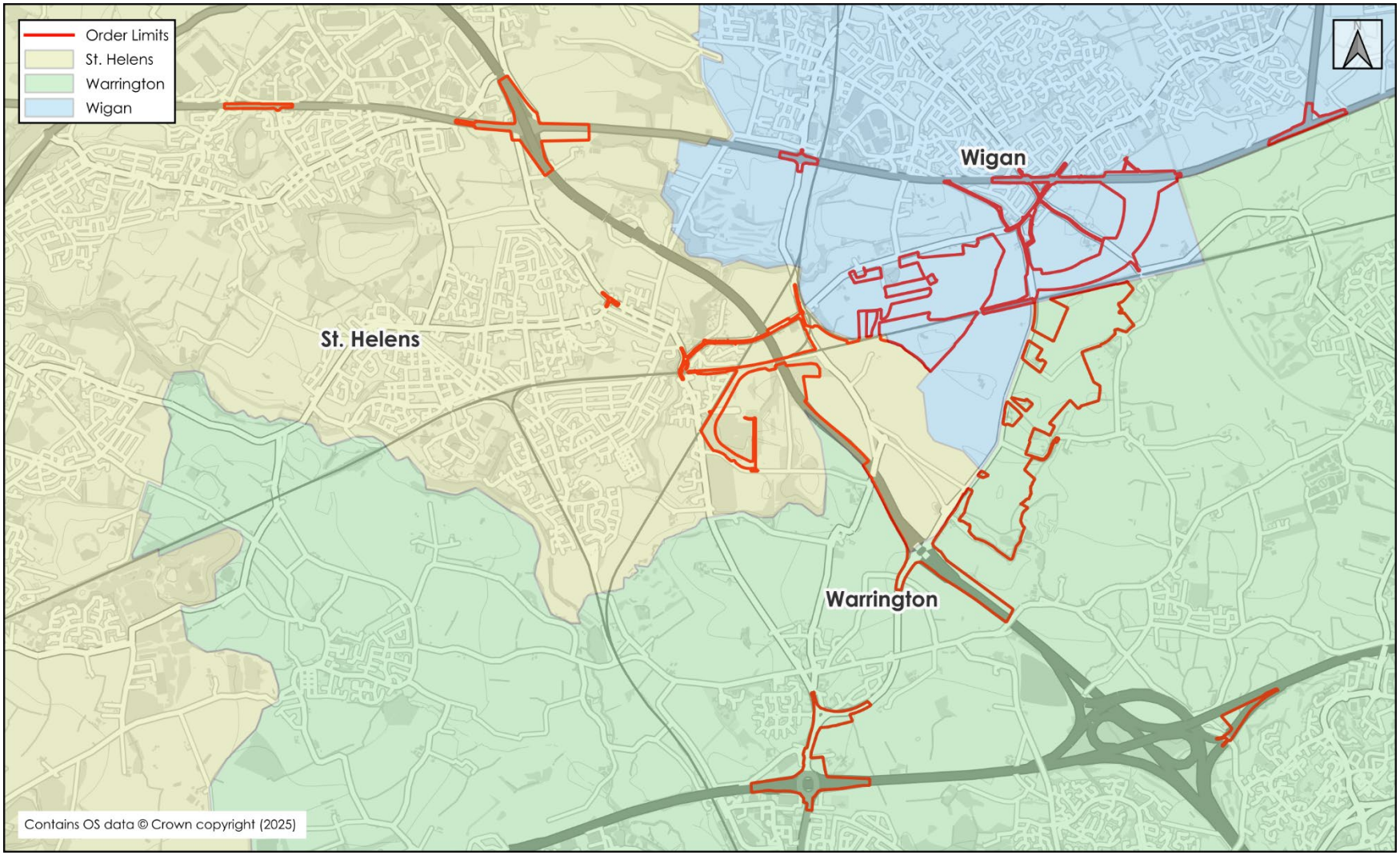

Figure 1.2: Authority Areas

2. EXISTING CONDITIONS

Data Sources

2.1 The relevant information used in the preparation of this report has been collated from several sources. BWB has performed the following actions:

2.1.1 Undertaken and prepared a 3D Topographical Survey in AutoCAD format (August 2024) for the Main Site which includes the location and surface levels of gullies, manhole covers, headwalls and drainage ditches.

2.1.2 Obtained the Ordnance Survey base for the area of works in AutoCAD format, which includes the locations and routes of watercourses.

2.1.3 Obtained LiDAR survey information for the Main Site and surrounding areas (where no topographical survey information is available) in AutoCAD format, which shows the general levels and direction of fall of the land.

2.1.4 Obtained access to the National Highways Geotechnical and Drainage Management Service (GDMS), which includes (indicative) information on the existing drainage present for the M6, Parkside Road and the M6 junction with Winwick Lane. Original design drawings are also available for review.

2.2 Reviewed information available on the St Helens Planning Portal – particularly for Parkside Link Road (Planning Application Ref: P_2018_0249_FUL) to understand the surface water drainage strategy applied, and the relevant Parkside West proposals in respect of the Western Rail Chord.

2.2.1 Undertaken a Phase 1 Geo-Environmental Assessment for the site which contains historical mapping, which has been used to understand the routes of watercourses and the changes to the Main Site over the years.

2.2.2 Undertaken a Phase 2 Geo-Environmental Assessment for the site which has been finalised for issue in October 2025, the findings of which will be incorporated into the design.

2.2.3 Reviewed various publicly available web-mapping services to identify and plot the routes of open watercourses.

2.2.4 Reviewed the information available on the British Geological Survey (BGS) to assess the site's potential for infiltration. A review of the geology of the site shows it is underlain by areas of Clays, Sands & Gravels and Sandstone. The infiltration characteristics of these materials is unknown (pending infiltration test results), but it would appear that parts of the site currently drain via infiltration, this will be confirmed once intrusive survey results are available.

Field Studies

2.3 The Phase 2 Geo-Environmental Report (ref: ILP-BWB-EGT-XX-RP-LE-0002_Ph2) summarises the intrusive ground investigation across the site, including Infiltration Testing.

2.4 BWB has undertaken various site visits and obtained anecdotal information from local individuals on drainage-related aspects.

2.5 A drainage connectivity and condition survey was undertaken by Solum Surveying Ltd. in August 2025 for a culvert running through the site.

Site Description

2.6 The majority of the site is arable farmland, except for the various buildings and roads present.

2.7 BWB Drawing ref: ILPN-BWB-EWE-ZZ-DR-CD-0510 presents the understanding of the existing drainage for the Main Site which is included as Appendix 1. The site has been split into 11 separate catchments.

2.8 Where a positive outfall has been identified, the rate of discharge to the outfall has been calculated based on the area drained multiplied by 3.6 l/s/ha – which has been calculated as the QMed for the site using FEH-22 data. [QMed is the median annual flood, i.e that is expected to be exceeded, on average, once every two years]

Catchment A:

2.9 From a review of the topographical survey, a ridgeline can be seen to run west to east across the full extent of the Main Site, passing through the highpoint of 38.96m AOD, located in the north-west of the Main Site. Land north of this drains to two main outfalls: The existing ditches present around Highfield Moss SSSI, and a low point within the fields where a pond is present.

2.10 A headwall outfall is present on the ditch around Highfield Moss SSSI. The drainage survey confirmed this to be the head of a culvert which drains in a south-easterly direction across the field, across Winwick Lane and outfalls to a tributary of Cockshot Brook to the east of Kenyon Hall Farm. It is therefore believed that the outfall for this whole catchment is via this culvert to Cockshot Brook.

2.11 The drainage survey shows that the culvert flows as follows:

2.11.1 From the headwall identified on the boundary of the SSSI towards a pond located within the Main Site via a 402m long 525mm diameter culvert. The invert level at the upstream headwall is shown to be 27.70m AOD. The invert level at the downstream headwall is shown to be 27.25m AOD. This results in a gradient of 1:894. Only the initial 100m (approx.) from the upstream and downstream headwalls could be surveyed, due to the surveyors being unable to push the camera further, resulting in the central 200m section being un-surveyed. From the surveys that were undertaken, the culvert appears to be in good condition, with no structural or service items recorded.

2.11.2 From the pond towards the outfall to a tributary of Cockshot Brook via a 387m long 750mm diameter culvert. This culvert has two manholes identified, at

approximately half distance and three-quarter distance. The manhole at half-distance (MH2) was buried and could not be accessed. The manhole at three-quarter distance (MH1) was able to be accessed. The invert level at the upstream headwall is shown to be 27.19m AOD. The invert level at MH1 is shown to be 26.74m AOD. The invert level at the downstream headwall is shown to be 26.65m AOD. This results in a gradient of 1:676 from the upstream headwall to MH1 and 1:919 from MH1 to the downstream headwall. Only the initial 100m (approx.) from the upstream headwall could be surveyed, due to the surveyors being unable to push the camera further. From MH1 the surveyors were able to survey all the way to the downstream headwall, and upstream to the buried MH2 and 37m beyond, due to the surveyors being unable to push the camera further; resulting in the central 70m section being un-surveyed. From the surveys that were undertaken, the culvert appears to be in reasonable condition, with three grade 3 Service items and two Grade 4 Structural items recorded. A plan was prepared by the surveying company to remediate the issues identified.

2.11.3 Downstream of the Main Site culvert, the drainage survey identifies a 300m length of open watercourse, prior to a 29m long 600mm diameter culvert which ultimately outfalls to Cockshot Brook. The invert level at the upstream headwall is 26.02m AOD. The invert level at the downstream headwall is 25.17m AOD. This results in a gradient of 1:34. This culvert has a number of structural defects. A plan was prepared by the surveying company to remediate the issues identified.

2.12 The various mapping sources reviewed appear to show watercourses upstream of the Highfield Moss SSSI ditches. These drain across (beneath) the railway line via an inverted siphon. The exact catchment of these upstream watercourses is not calculated, however it is believed they also drain ultimately to Cockshot Brook via the cross-field culvert.

Catchment B:

2.13 From a review of the topographical survey, this has been identified as an area of land, draining to the eastern boundary of Winwick Lane (and when continued beyond the site, can be seen to lead to a tributary watercourse of Cockshot Brook).

2.14 From a review of the geology on BGS, this part of the site has a clay subgrade and due to there being no identified outfall or specific drainage features present, this area is believed to discharge to Cockshot Brook via culverts beneath the new and old alignments of Winwick Lane.

Catchment C:

2.15 From a review of the information available regarding Parkside Link Road (Planning Application Ref: P_2018_0249_FUL), this has been identified as the adoptable highway drainage catchment which discharges to the attenuation basin adjacent to Parkside Road. Drawings appear to show this is an infiltration basin.

Catchment D:

2.16 From a review of the topographical survey, and the information available on GDMS, this is the extent of adoptable highway drainage for the original alignment of Parkside Road (and land draining towards it) prior to the construction of Parkside Link Road. The

information available on GDMS appears to show a positive connection to the National Highways M6 motorway drainage network near the Parkside Road / M6 bridge.

Catchment E:

2.17 From a review of the topographical survey, an area of land can be seen to fall to the west towards the M6 motorway. From a review of the information available on GDMS, a culvert passes beneath the M6 in this approximate location, which appears to drain land from east to west. There is an area of third-party land between the Main Site and the M6 motorway, so this connectivity cannot be fully confirmed. Furthermore, the ultimate outfall location of this culvert (to the west of the M6) is unknown.

Catchment F:

2.18 From a review of the topographical survey, an area of land can be seen to drain towards Parkside Road. From a review of the geology on BGS, his part of the site can be seen to have a sandstone subgrade. As there is no identified outfall or specific drainage features present and is found to be in close proximity to the infiltration basin on the opposite side of Parkside Road, this catchment is believed to infiltrate.

Catchment G:

2.19 From a review of the topographical survey, an area of land can be seen to drain towards the roundabout on Parkside Road. As there is no identified outfall or specific drainage features present, is in close proximity to the infiltration basin on the opposite side of Parkside Road, and from a review of the geology on BGS has a sandstone subgrade, this is believed to infiltrate.

Catchment H:

2.20 From a review of the information available regarding Parkside Link Road (Planning Application Ref: P_2018_0249_FUL), this has been identified as the adoptable highway drainage catchment which discharges to the attenuation basin adjacent to Winwick Lane. The drawings show this is not an infiltration basin and instead has a positive outfall to Cockshot Brook, via culverts beneath the new and old alignments of Winwick Lane. The information available appears to show a flow control limiting flows to 10 l/s.

Catchment I:

2.21 From a review of the topographical survey, this has been identified as an area of land, draining to the eastern boundary of Winwick Lane (and when continued beyond the site, can be seen to lead to a tributary watercourse of Cockshot Brook).

2.22 From a review of the geology on BGS, this part of the site has a clay subgrade and due to there being no identified outfall or specific drainage features present, this area is believed to discharge to Cockshot Brook via culverts beneath the new and old alignments of Winwick Lane.

Catchment J:

2.23 From a review of the topographical survey, an area of land can be seen to drain towards Parkside Road Link Road. From a review of the information available regarding Parkside Link Road (Planning Application Ref: P_2018_0249_FUL), there appears to be a

filter drain on the northeastern side of the link road to capture this runoff prior to it draining onto the highway.

2.24 As there is no identified outfall for the filter drains, and from a review of the geology on BGS has a sandstone subgrade, this is believed to infiltrate.

Catchment K:

2.25 From a review of the topographical survey, this area of land can be seen to drain towards Winwick Lane. There is no identified outfall or specific drainage features present, but anecdotal evidence from the land owner suggests a 400mm ceramic culvert exists beneath Winwick Lane in this approximate location. A review of the site levels on the eastern side of Winwick Lane suggests the land continues to fall towards Cockshot Brook.

2.26 From a review of the geology on BGS, this part of the site has some areas of sandstone subgrade and some areas of clay subgrade.

2.27 The various mapping sources reviewed appear to show a well at Oven Back Cottage on the opposite side of Winwick Lane at the lowpoint in the land.

2.28 Without any formal evidence of a culvert, and with the subgrade characteristics, this area is assumed to infiltrate.

Existing Runoff Rates

2.29 The site is found to discharge surface water to four positive connections, and via infiltration.

- Catchment A discharges to Cockshot Brook via an existing culvert beneath Winwick Lane at a QMed calculated rate of 279.2 l/s.
- Catchments B, H & I discharge to Cockshot Brook via an existing culvert beneath Winwick Lane at a QMed calculated rate of 103.9 l/s.
- Catchment D discharges to M6 Motorway Drainage at a QMed calculated rate of 50.8 l/s.
- Catchment E discharges to an existing culvert which passes beneath the M6 Motorway at a QMed calculated rate of 41.5 l/s.
- Catchments C, F, G, J & K infiltrate to the ground.

3. SURFACE WATER DRAINAGE STRATEGY

3.1 BWB Drawing ref: ILPN-BWB-EWE-ZZ-DR-CD-0515 presents the proposed drainage for the Main Site, which is included as Appendix 2.

Drainage Hierarchy

3.2 The Planning Practice Guidance[1] and the SuDS Manual[2] identify that surface water runoff from a development should be disposed of as high up the following hierarchy as reasonably practicable:

i. into the ground (infiltration);
ii. to a surface water body;
iii. to a surface water sewer, highway drain, or another drainage system;
iv. to a combined sewer.

3.3 The aim of this is approach is to manage surface water runoff close to where it falls and mimic natural drainage as closely as possible.

3.4 Note the PPG is referred to in relation to flood risk and drainage but it should be noted that the overarching planning policy is The National Policy Statement for National Networks (NPSNN);

Infiltration

3.5 Infiltration testing has been undertaken at six locations across the site. The results show that the permeability is variable across the site between Low/Moderate and Moderate/High. Therefore, it is concluded that soils have highly variable permeability. Areas of high/moderate permeability are likely to be suitable for soakaway drainage. However, areas of low permeability may not be suitable for soakaway drainage.

3.6 Part of Parkside Link Road is assumed to discharge to an infiltration basin based on a review of construction drawings, however it is understood to also have a positive outfall.

3.7 It is acknowledged that the site is located within a groundwater source protection zone. If infiltration is used a disposal method, a further exercise would be required to establish how and where infiltration can be applied and what measures would be required to mitigate groundwater contamination.

3.8 Furthermore, an extensive cut and fill earthworks operation is required to create the plateaus for the developments. The depth from the finished site levels to the permeable strata will be another factor when considering the viability of infiltration.

[1] Planning Practice Guidance. http://planningguidance.planningportal.gov.uk/.
[2] The SuDS Manual (C753). CIRIA 2015.

3.9 Following the cut and fill earthworks operation, infiltration testing will be required at targeted locations of the site to determine the location-specific viability of infiltration and the infiltration rate to be used in detailed design.

3.10 For the purpose of the Drainage Strategy exercise, the effect of infiltration has not been considered, to show how the whole site could be drained positively. This is a conservative approach, suitable for the current stage of development.

Positive Outfalls

3.11 Of the four positive outfalls identified, one (Catchment E) is to an unknown outfall somewhere to the west of the M6, via third party land and a culvert beneath the M6. For the purpose of the Drainage Strategy exercise, this outfall has been rejected at this stage.

3.12 The outfall for Catchment D can be seen to discharge directly to the National Highways M6 motorway drainage network. For the purpose of the Drainage Strategy exercise, it has not been considered appropriate to continue the use of this connection, as it possible to connect this elsewhere where drainage mitigation can be more effectively demonstrated.

3.13 The two positive outfalls used are therefore the two connections to Cockshot Brook, via existing culverts beneath Winwick Lane. This allows all connections to be made on the plot-side of Winwick Lane.

3.14 BWB Drawing ref: ILPN-BWB-EWE-ZZ-DR-CD-0510 shows approximately 56% of the site currently positively drains to Cockshot Brook via these two outfalls at a rate of 3.6 l/s/ha (41% via to the northern culvert and 15% via the southern culvert). It is proposed to discharge the full site to these two outfalls, but restricted to the existing rates calculated in order to avoid catchment transfer.

3.15 The existing drainage infrastructure associated with Parkside Link Road installed in recent years is proposed to be retained in place and unaffected by the BWB proposals. This includes:

3.15.1 A573 Parkside Road – drainage associated with road alignment east of the M6 overbridge to remain in place (assumed to infiltrate via the existing attenuation basin).

3.15.2 Winwick Lane and Parkside Link Road East – drainage associated with the road alignment to remain in place (assumed to discharge at 10 l/s to the culvert beneath Winwick Lane - Planning Application Ref: P_2018_0249_FUL).

3.16 The above areas are therefore removed from the proposed design. The existing 10 l/s discharge rate has been subtracted from the calculated discharge to the Winwick Lane culvert, leaving 94 l/s allowable for the development flows.

Incoming Flows & Highfield Moss SSSI

3.17 Existing watercourses pass through the site via the drainage ditches around Highfield Moss SSSI and a culvert to Cockshot Brook. This connection is therefore required to be maintained to ensure the continued connectivity of these watercourses.

3.18 Furthermore, Highfield Moss SSSI is considered to be a sensitive area in terms of drainage and any alteration to the outflow from this area could impact on the area. It is therefore considered appropriate to maintain the characteristics of the outfall culvert.

3.19 The alignment of the culvert is shown to pass through one of the development plots. To limit the impact on the proposed structures, it is proposed to divert the culvert through the external areas of development plots. To limit the hydraulic impact on any upstream sensitivities, the initial section of culvert flowing from the SSSI has been shown to be the same diameter and gradient (and therefore the same hydraulic capacity) as that of the existing. The culvert is then shown to be a constant gradient to the point of reconnection (which has an assumed invert level). The alignment, diameter and gradient of this diversion will be refined at detailed design to ensure flows will not be increased downstream of the site, and in combination with a hydraulic modelling exercise.

Peak Flow Control

3.20 It is proposed to restrict the discharge rate from the development to the receiving Watercourses to the equivalent Q_{MED} rate (3.6 l/s/ha) for all events up to the 1 in 100-year plus climate change event.

3.21 This approach fulfils the necessary peak runoff control criteria.

Attenuated Storage

3.22 As the development proposals require a restricted runoff rate, it will be necessary to provide attenuated storage to balance the excess volume in a safe manner within the site.

3.23 The surface water storage should be located within the site in a position where it can receive runoff from the development and discharge from the site by gravity, and also in a position where it is hydraulically isolated from any fluvial floodplain or external surface water floodplain/ overland flow route that may be present in the site.

3.24 Sufficient storage for events up to the 1 in 100-year storm with an allowance for climate change should be provided.

3.25 After considering the site constraints and development aspirations it is suggested that the necessary surface water attenuation volume is provided on a plot-by-plot basis, restricted to a rate respective to its area, and discharging to a site-wide surface water system to ensure no increase in run off at the outfalls from the site.

3.26 The existing site is calculated tp positively discharge at Q_{MED} to two outfalls on the eastern boundary: 279 l/s to the northern culvert and 94 l/s to the southern culvert. To provide an equal proportion of attenuation, and in the absence of any other outfalls, the distribution of the drainage should therefore be split to drain approximately 75% of the site to the northern culvert and 25% of the site to the southern culvert. However due to proposed site finished levels, existing culvert invert levels and plot areas, this split is not feasible. Therefore BWB Drawing ref: ILPN-BWB-EWE-ZZ-DR-CD-0515 shows the split to be approximately 65% of the site to the northern culvert and 35% of the site to the southern culvert. This results in the plots draining to the southern culvert having a marginally lower discharge rate (and higher attenuation volume) per m^2 than those draining to the northern culvert.

3.27 For the northern catchment, the total area of 118.619ha is to be restricted to 279 l/s, which equates to 2.352 l/s/ha. For the southern catchment, the total area of 63.554ha is to be restricted to 94 l/s, which equates to 1.479 l/s/ha. It is acknowledged that these values are below the site's Q_{MED} value of 3.6 l/s/ha due to parts of the existing site draining to outfalls which are no longer proposed to be used, and instead draining the whole site to these two identified outfalls, therefore increasing their catchments, whilst not increasing discharge rates.

3.28 For each plot, the volume of attenuation required has been calculated, based on its area (assuming 90% of it as contributing) and its calculated discharge rate (area x rate l/s/ha). Upper-bound Quick Storage Estimates have been undertaken using Causeway Flow for 1 in 100 year + 45% Climate Change event – and storage volumes in excess of these values have been used in the preliminary design.

3.29 For land outside the plots, contributing areas have been assumed based on their land-use:

- Where new highways are proposed, a contributing strip of 15m width has been assumed. This allows for impermeable areas such as the carriageways, footways, energy centre, roundabouts as well as a degree of green field run off.

- Landscaping areas around the perimeter of the site have no hardstanding, but a degree of green-field runoff if anticipated to contribute to the drainage.

3.30 FEH-22 rainfall data has been used for all attenuation calculations.

3.31 The site masterplan indicates attenuation basins provided per plot. These have been utilised in the design with volumes calculated on the dimensions of each basin. The remainder of the volume required has been shown to be provided in on-plot cellular attenuation.

3.32 For the rail terminal, attenuation volumes are provided in an off-plot attenuation basin adjacent to the plot, due to the anticipated likelihood that below-slab attenuation is unfeasible.

3.33 For the purpose of this outline assessment, it has been assumed that the basin and cellular storage will accommodate all of the necessary attenuation, but it may be possible to redistribute a portion of the storage within other drainage components

during the detailed design of the development (e.g.: in the pipe network, swales, filter drains, etc).

3.34 Attenuation for the non-plot areas has been accounted for within their respective conveyance systems, whether that is a swale for the landscaped areas, or a filter drain for the highway systems. This shows how the attenuation required can be provided throughout the system, negating the need for a single, large-scale attenuation feature at the downstream end of the networks.

3.35 Appropriate flow controls/pipe throttles will be required per plot and per section of new highway to control the discharge rates and ensure the attenuation is utilised appropriately.

3.36 It is envisaged that the final required discharge rates and attenuated storage volumes will be determined during the detailed design stage, once the development layout and drainage areas are fixed.

Sustainable Drainage Systems

3.37 Infiltration viability is thought to vary across the site. Where infiltration is found to be viable, it should be used as the primary means of discharge from the site.

3.38 It is envisaged that SuDS are to be utilised, where viable, within the main plot developments and this is encouraged. However their benefit in terms of volume at this stage of the development has been discounted, to reflect the nature of the proposals and the parameters led approach.

Residual Risk and Designing for Exceedance

3.39 Exceedance should be reviewed for the 1 in 100 year and +40% climate change events.

3.40 Although localised flooding is acceptable for such events, it is recommended that the site levels are set such that overland flood flow routes are directed away from buildings and pool within the external paved areas within the respective development plots.

3.41 None-plot flood routes should be directed to appropriate locations to ensure the access roads remain operational. These could be low-points in the alignment, where a degree of ponding against the kerbs can be acceptable, but maximum depths should be limited (potentially by increasing the volume of attenuation provided, or introducing depressions adjacent to the roads) to ensure they remain operational.

3.42 In addition to the volume of storage provided within the main attenuation provided, there will be capacity within upstream pipes and manholes which has not been accounted for at this stage and a further level of redundancy to the network will therefore be provided.

4. MAINTENANCE

4.1 Unless adopted, a management company should be appointed to maintain the SuDS features, including vegetation maintenance, trash screen clearing and regular outfall inspections.

4.2 Requirements for ongoing maintenance of the drainage network should form part of the Operation and Maintenance manual for the site and should be undertaken by the site management. Any specialist or proprietary products that are specified at detailed design should have a manufacturer specific maintenance regime which should be included within the document.

4.3 It is envisaged that the Operation and Maintenance manual will be developed at the detailed design stage, but some examples are included below.

i. All drainage features should be located in open areas which are readily accessible.
ii. Gullies should be inspected and de-silted at least once a year, where necessary.
iii. Pipes, manholes and silt traps should be inspected and de-silted at least once a year, where necessary.
iv. If permeable paving is incorporated within the layout, it should be swept a minimum of every 6 months to maintain flow capacity of the joints between blocks.
v. The surface water attenuation areas will be predominantly dry and the base will be seeded with a wildflower grass seed mix that can tolerate wet ground conditions.
vi. Regular inspections of the attenuation basins should be undertaken to remove litter/debris, invasive/colonising vegetation and silt build up as necessary. Inlet and outlet structures to be regularly inspected, with remedial work as required to maintain water flows and prevent silt/vegetation build up.
vii. Vegetation/grass with the attenuation basin should be maintained appropriately to allow establishment and promote habitat formation, without impeding the operation of the inlet and outlet structure.
viii. Flow controls should be inspected every 6 months, litter/debris and silt build up should be removed as necessary.

5. FOUL WATER DRAINAGE

5.1 The site currently has no connection to the public sewer network.

5.2 Initial discussions with United Utilities has identified three potential connection points for the discharge of foul water from the site into the public sewer network;.

- A573 Golborne Dale Road, just north of its road junction with the A572 Newton Road.
- Stone Pit Lane, just west of its junction with Kenyon Lane
- A572 Southworth Road, at its junction with Waterworks Drive.

5.3 It is proposed to discharge foul water from the site via pumping stations and rising mains. Three pumping stations have been shown indicatively, located centrally to their catchments to limit the depth of the gravity drainage flowing into them from the individual plots (to approximately 8m deep).

5.4 Foul inflows have been calculated in Causeway Flow with the l/s/ha values suggested in Sewerage Sector Guidance[3] (SSG).

5.5 As the development is for distribution and not industrial use, the trade effluent flows have been reduced from the 0.6 l/s/ha suggested to a more appropriate 0.3 l/s/ha.

5.6 The values in SSG are considered to be 6DWF but as distribution uses tend to have a more consistent foul water production than typical domestic use due to shift working, these flows have been reduced to 3DWF to be more reflective of that generated by the type of development.

5.7 Therefore; (0.6 + 0.3)/2 = 0.45l/s/ha has been applied to all manholes, with areas distributed according to the length of the downstream link compared to the total length of links within the same pumping station network.

5.8 The foul event has not been analysed as it is not always a requirement in SSG and this is a preliminary design, subject to change.

5.9 An indicative surface water layout for the development is shown on BWB Dwg No. ILPN-BWB-EWE-ZZ-DR-CD-0520 which is included as Appendix 3.

[3] Sewerage Sector Guidance – V2.2 Edition – Water UK, 2022

6. SUMMARY

6.1 This statement and supporting appendices demonstrate that the drainage design for the development will comply with the relevant local and national standards, specifically the hierarchy of discharge, runoff rate and volume criterion.

6.2 The level of detail included is commensurate and subject to the nature of the proposals at the current stage of the design process.

6.3 It demonstrates how the whole site can be drained positively to the two identified outfalls (culverts) on the eastern boundary of the site, at rates which don't increase the current discharge to these identified outfalls.

6.4 As the continued use of other positive outfalls has been discounted (on the western boundary of the site), the overall discharge rate from the site, to positive outfalls, is reduced.

6.5 Parts of the site are currently assumed to infiltrate, and therefore don't contribute to the existing discharge rates. As the future viability of infiltration cannot be confirmed at this stage, for the purpose of the proposed site drainage strategy infiltration has been discounted, to demonstrate how the required volume of attenuation can be provided to positively drain by gravity to the identified outfalls. If infiltration is found to be viable following confirmation of final formation levels, the use if infiltration should be considered as the primary means of discharge. However the current strategy is conservative and appropriate.

6.6 Foul water is to be drained from the plots via gravity to strategically located pumping stations, and then pumped to the public sewer network via rising mains. The number of, and location of pumping stations is to be confirmed, as is the point of connection into the public sewer network.

6.7 It is envisaged that the final drainage strategy will be determined during the detailed design stage, as the development layout is finalised.

APPENDICES

Appendix 1: Existing Drainage

Datum Notes :

- GRID AND LEVELS BASED ON OSGB36 OS NATIONAL DATUM, DERIVED FROM THE NATIONAL GPS NETWORK.
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UTILITY LINE TYPE KEY

BT B1 (PAS128)	HEATING PIPES B1 (PAS128)	HV B1 (PAS128)	POWER B1 (PAS128)
BT B2 (PAS128)	HEATING PIPES B2 (PAS128)	HV B2 (PAS128)	POWER B2 (PAS128)
BT B3 (PAS128)	HEATING PIPES B3 (PAS128)	HV B3 (PAS128)	POWER B3 (PAS128)
BT B4 (PAS128)	HEATING PIPES B4 (PAS128)	HV B4 (PAS128)	POWER B4 (PAS128)
CATV B1 (PAS128)	SERVICE DUCT B1 (PAS128)	STORM SEWER	
CATV B2 (PAS128)	SERVICE DUCT B2 (PAS128)	TRAFFIC B1 (PAS128)	
CATV B3 (PAS128)	SERVICE DUCT B3 (PAS128)	TRAFFIC B2 (PAS128)	
CATV B4 (PAS128)	SERVICE DUCT B4 (PAS128)	TRAFFIC B3 (PAS128)	
CCTV B1 (PAS128)	TRAFFIC B4 (PAS128)	TRAFFIC B4 (PAS128)	
CCTV B2 (PAS128)	UNKNOWN B1 (PAS128)		
CCTV B3 (PAS128)	UNKNOWN B2 (PAS128)		
CCTV B4 (PAS128)	UNKNOWN B3 (PAS128)		
COMMS B1 (PAS128)	UNKNOWN B4 (PAS128)		
COMMS B2 (PAS128)	VENT PIPE B1 (PAS128)		
COMMS B3 (PAS128)	VENT PIPE B2 (PAS128)		
COMMS B4 (PAS128)	VENT PIPE B3 (PAS128)		
FUELOIL B1 (PAS128)	VENT PIPE B4 (PAS128)		
FUELOIL B2 (PAS128)	WATER B1 (PAS128)		
FUELOIL B3 (PAS128)	WATER B2 (PAS128)		
FUELOIL B4 (PAS128)	WATER B3 (PAS128)		
GAS B1 (PAS128)	WATER B4 (PAS128)		
GAS B2 (PAS128)	GPR B1 (PAS128)		
GAS B3 (PAS128)	GPR B2 (PAS128)		
GAS B4 (PAS128)	GPR B3 (PAS128)		
GAUGE LINES B1 (PAS128)	GPR B4 (PAS128)		
GAUGE LINES B2 (PAS128)			
GAUGE LINES B3 (PAS128)			
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DRAINAGE CCTV REFERENCE

(x) Indicates Pipe Reference
(1) CCTV Report Item Number

ABBREVIATIONS

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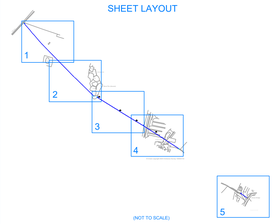
SHEET LAYOUT



Drawing Revision

No	Date	Description
R0	12/08/25	SITE SURVEY COMPLETE - JA JM
R1		
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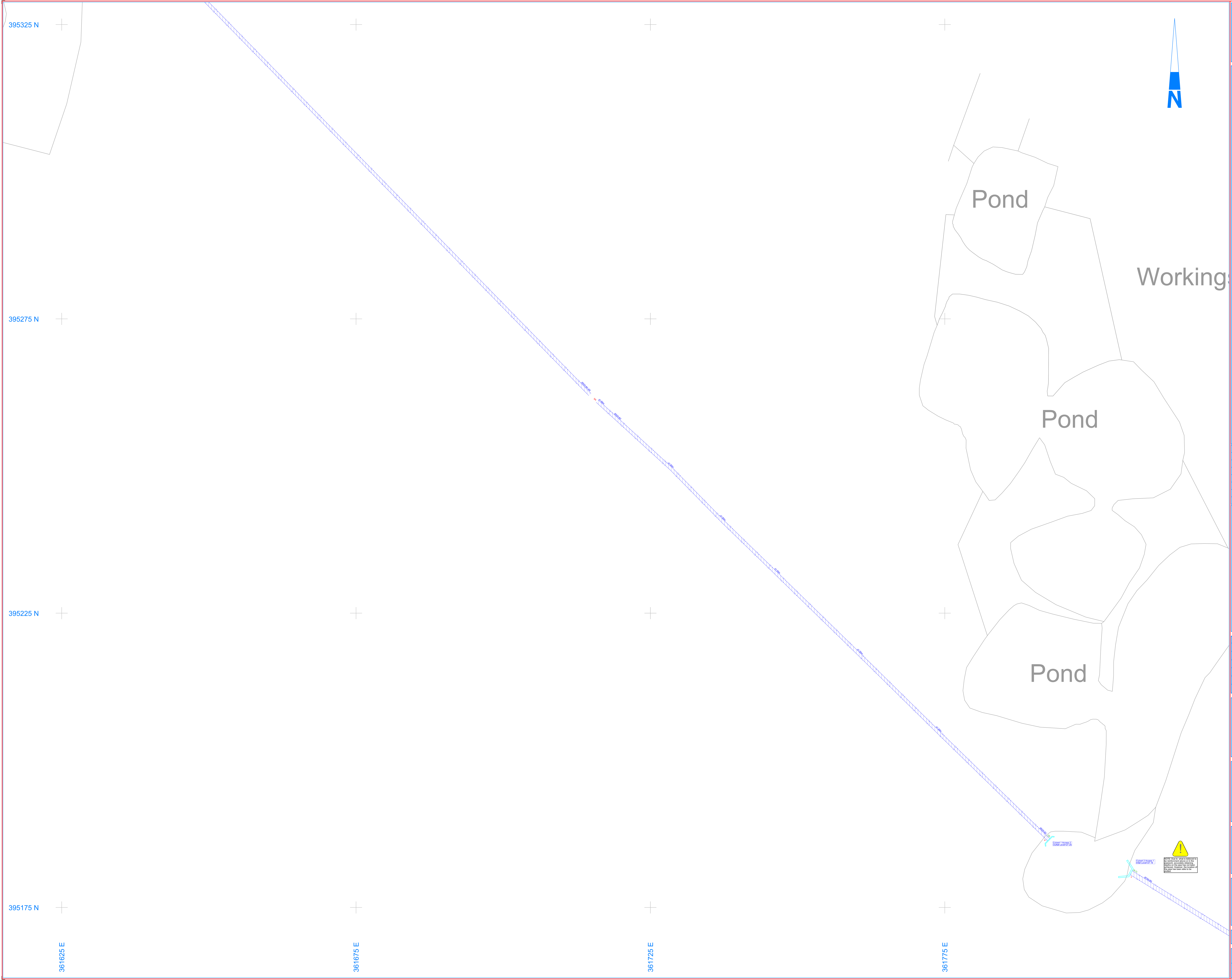
Drainage CCTV

Scale: 1:200	Sheet Size: A0	1 of 5		ALSO SEE DRAWING: NA	
Project Number: 14514	Rev: R0	Drawing Date: 15/08/25	Surveyed By: JA JM	Drawn By: JA	CHECKED BY: ST



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BT B2	BT B2 (PAS128)	HP B2	HEATING PIPES B2 (PAS128)
BT B3	BT B3 (PAS128)	HP B3	HEATING PIPES B3 (PAS128)
BT B4	BT B4 (PAS128)	HP B4	HEATING PIPES B4 (PAS128)
CATV B1	CATV B1 (PAS128)	HV B1	HV B1 (PAS128)
CATV B2	CATV B2 (PAS128)	HV B2	HV B2 (PAS128)
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CATV B4	CATV B4 (PAS128)	HV B4	HV B4 (PAS128)
CCTV B1	CCTV B1 (PAS128)	PWR B1	POWER B1 (PAS128)
CCTV B2	CCTV B2 (PAS128)	PWR B2	POWER B2 (PAS128)
CCTV B3	CCTV B3 (PAS128)	PWR B3	POWER B3 (PAS128)
CCTV B4	CCTV B4 (PAS128)	PWR B4	POWER B4 (PAS128)
COMS B1	COMMS B1 (PAS128)	SD B1	SERVICE DUCT B1 (PAS128)
COMS B2	COMMS B2 (PAS128)	SD B2	SERVICE DUCT B2 (PAS128)
COMS B3	COMMS B3 (PAS128)	SD B3	SERVICE DUCT B3 (PAS128)
COMS B4	COMMS B4 (PAS128)	SD B4	SERVICE DUCT B4 (PAS128)
OIL B1	FUEL/OIL B1 (PAS128)	SW	STORM SEWER
OIL B2	FUEL/OIL B2 (PAS128)	TM B1	TRAFFIC B1 (PAS128)
OIL B3	FUEL/OIL B3 (PAS128)	TM B2	TRAFFIC B2 (PAS128)
OIL B4	FUEL/OIL B4 (PAS128)	TM B3	TRAFFIC B3 (PAS128)
FW	FOUL SEWER	TM B4	TRAFFIC B4 (PAS128)
GL B1	GAUGE LINES B1 (PAS128)	UKN B1	UNKNOWN B1 (PAS128)
GL B2	GAUGE LINES B2 (PAS128)	UKN B2	UNKNOWN B2 (PAS128)
GL B3	GAUGE LINES B3 (PAS128)	UKN B3	UNKNOWN B3 (PAS128)
GL B4	GAUGE LINES B4 (PAS128)	UKN B4	UNKNOWN B4 (PAS128)
GAS B1	GAS B1 (PAS128)	V B1	VENT PIPE B1 (PAS128)
GAS B2	GAS B2 (PAS128)	V B2	VENT PIPE B2 (PAS128)
GAS B3	GAS B3 (PAS128)	V B3	VENT PIPE B3 (PAS128)
GAS B4	GAS B4 (PAS128)	V B4	VENT PIPE B4 (PAS128)
GP B1	GENERIC PIPE B1 (PAS128)	WTR B1	WATER B1 (PAS128)
GP B2	GENERIC PIPE B2 (PAS128)	WTR B2	WATER B2 (PAS128)
GP B3	GENERIC PIPE B3 (PAS128)	WTR B3	WATER B3 (PAS128)
GP B4	GENERIC PIPE B4 (PAS128)	WTR B4	WATER B4 (PAS128)
OF B2	OFFSET FUEL B2 (PAS128)	GPR B1	GPR B1 (PAS128)
OF B4	OFFSET FUEL B4 (PAS128)	GPR B2	GPR B2 (PAS128)
		GPR B3	GPR B3 (PAS128)
		GPR B4	GPR B4 (PAS128)

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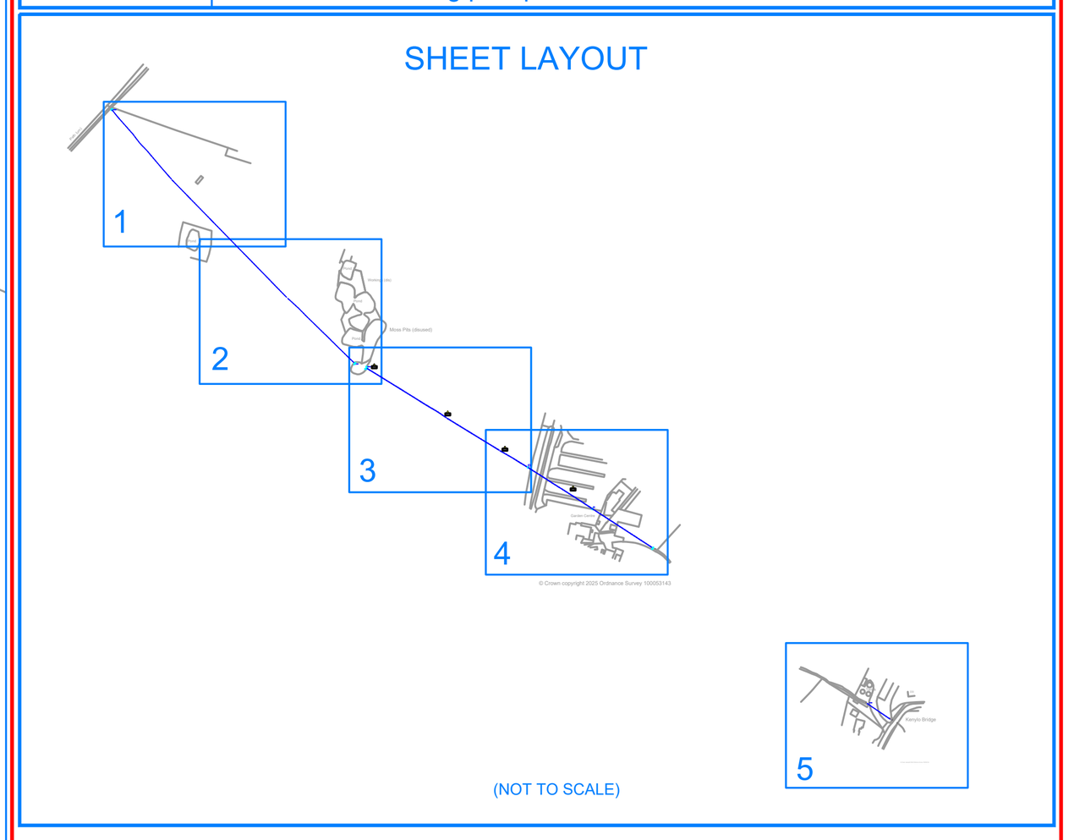

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Drainage CCTV

Scale	Sheet Size:	2 of 5	ALSO SEE DRAWING:
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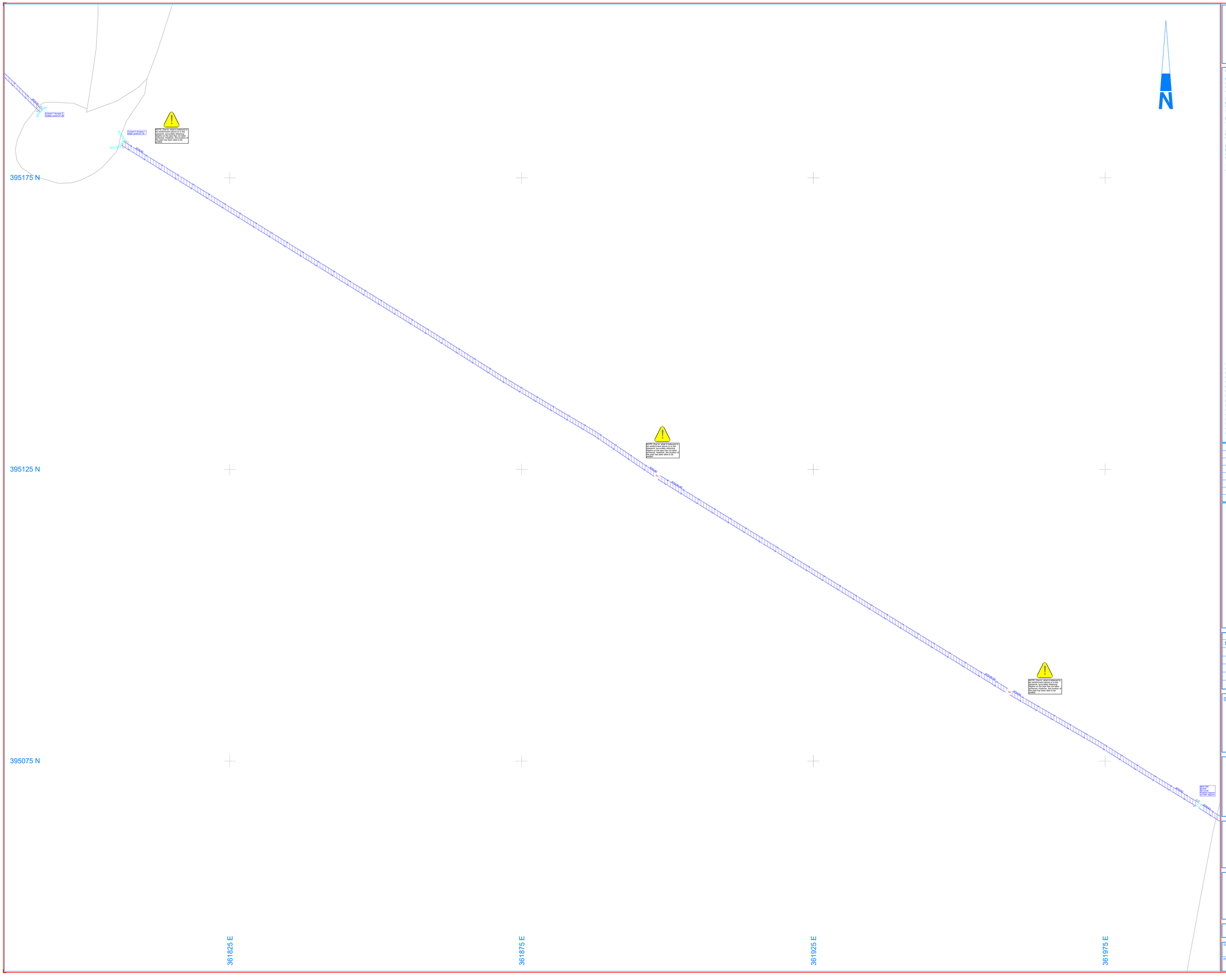

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BT B3 (PAS128)	HEATING PIPES B3 (PAS128)	HV B3 (PAS128)	SERVICE DUCT B3 (PAS128)
BT B4 (PAS128)	HEATING PIPES B4 (PAS128)	HV B4 (PAS128)	SERVICE DUCT B4 (PAS128)
CATV B1 (PAS128)	HV B1 (PAS128)	POWER B1 (PAS128)	STORM SEWER
CATV B2 (PAS128)	HV B2 (PAS128)	POWER B2 (PAS128)	TRAFFIC B1 (PAS128)
CATV B3 (PAS128)	HV B3 (PAS128)	POWER B3 (PAS128)	TRAFFIC B2 (PAS128)
CATV B4 (PAS128)	HV B4 (PAS128)	POWER B4 (PAS128)	TRAFFIC B3 (PAS128)
CCTV B1 (PAS128)	POWER B1 (PAS128)	SERVICE DUCT B1 (PAS128)	TRAFFIC B4 (PAS128)
CCTV B2 (PAS128)	POWER B2 (PAS128)	SERVICE DUCT B2 (PAS128)	UNKNOWN B1 (PAS128)
CCTV B3 (PAS128)	POWER B3 (PAS128)	SERVICE DUCT B3 (PAS128)	UNKNOWN B2 (PAS128)
CCTV B4 (PAS128)	POWER B4 (PAS128)	SERVICE DUCT B4 (PAS128)	UNKNOWN B3 (PAS128)
COMMS B1 (PAS128)	SERVICE DUCT B1 (PAS128)	STORM SEWER	UNKNOWN B4 (PAS128)
COMMS B2 (PAS128)	SERVICE DUCT B2 (PAS128)	TRAFFIC B1 (PAS128)	VENT PIPE B1 (PAS128)
COMMS B3 (PAS128)	SERVICE DUCT B3 (PAS128)	TRAFFIC B2 (PAS128)	VENT PIPE B2 (PAS128)
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FUELOIL B1 (PAS128)	STORM SEWER	TRAFFIC B4 (PAS128)	VENT PIPE B4 (PAS128)
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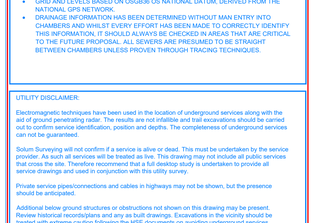

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Winwick Ln, Croft, Warrington WA3 7ED

Drainage CCTV

Scale	Sheet Size:		ALSO SEE DRAWING:
1:200	A0	3 of 5	NA
Project Number:	Rev:	Drawing Date: 15/08/25	CHECKED BY:
14514	R0	Surveyed By: JA JM	ST
		Drawn By: JA	

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CCTV B2 (PAS128)	POWER B2 (PAS128)	UNKNOWN B1 (PAS128)	
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DRAINAGE CCTV REFERENCE

(x) Indicates Pipe Reference
(1) CCTV Report Item Number

ABBREVIATIONS

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Assumed Route	AR	Lamp Post	LP	Soil Vent Pipe	SVP
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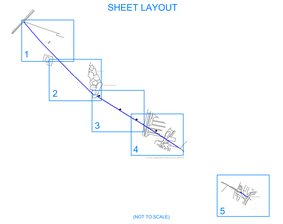
SHEET LAYOUT



Drawing Revision

No	Date	Description
R0	12/08/25	SITE SURVEY COMPLETE - JA JM
R1		
R2		
R3		
R4		

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Drainage CCTV

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1:200	A0	4 of 5	NA
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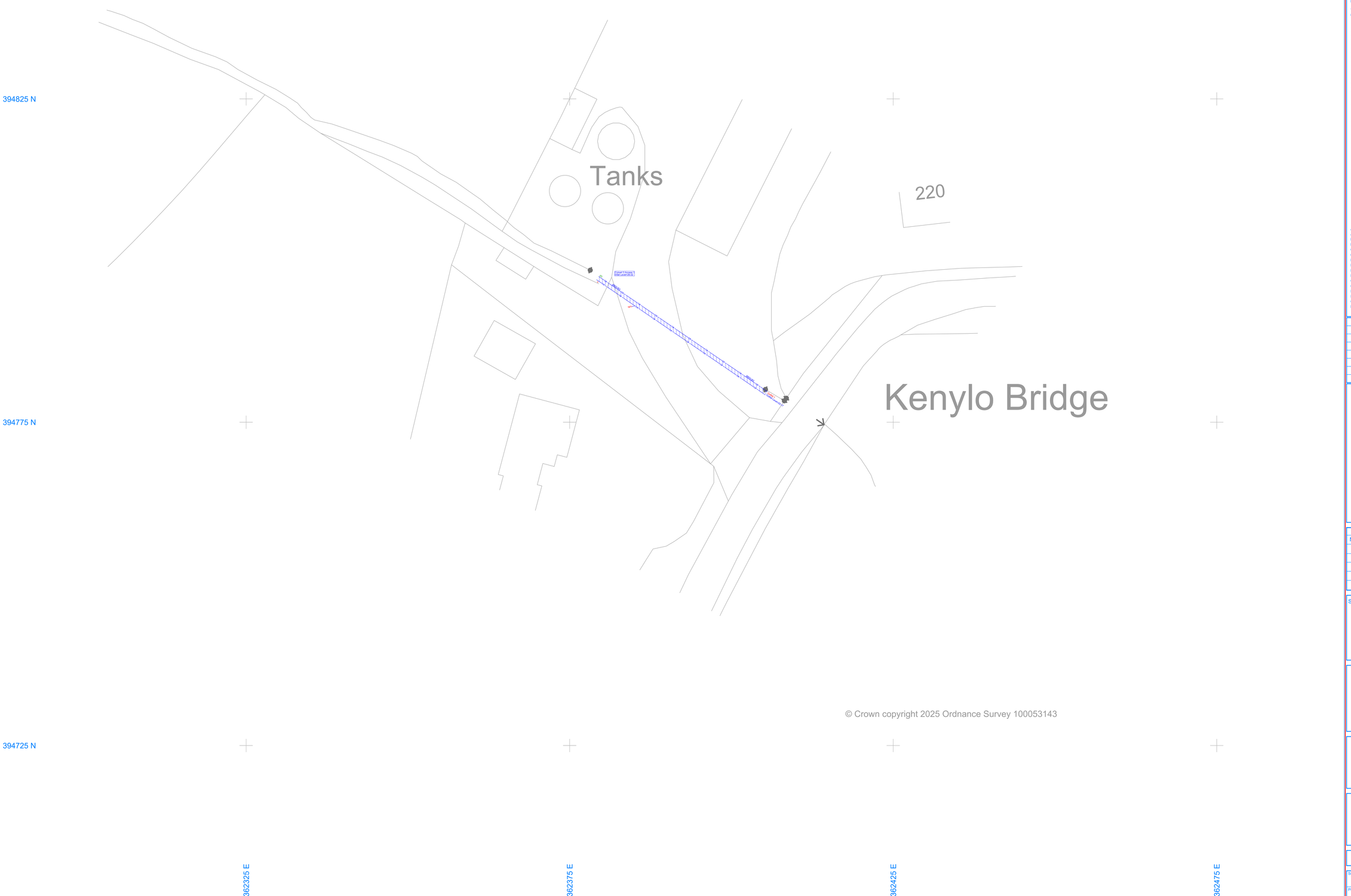

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OFFSET FUEL B2 (PAS128)		GPR B1 (PAS128)	
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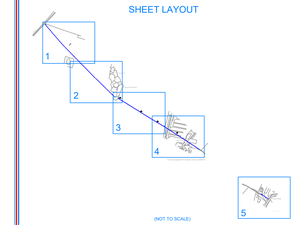

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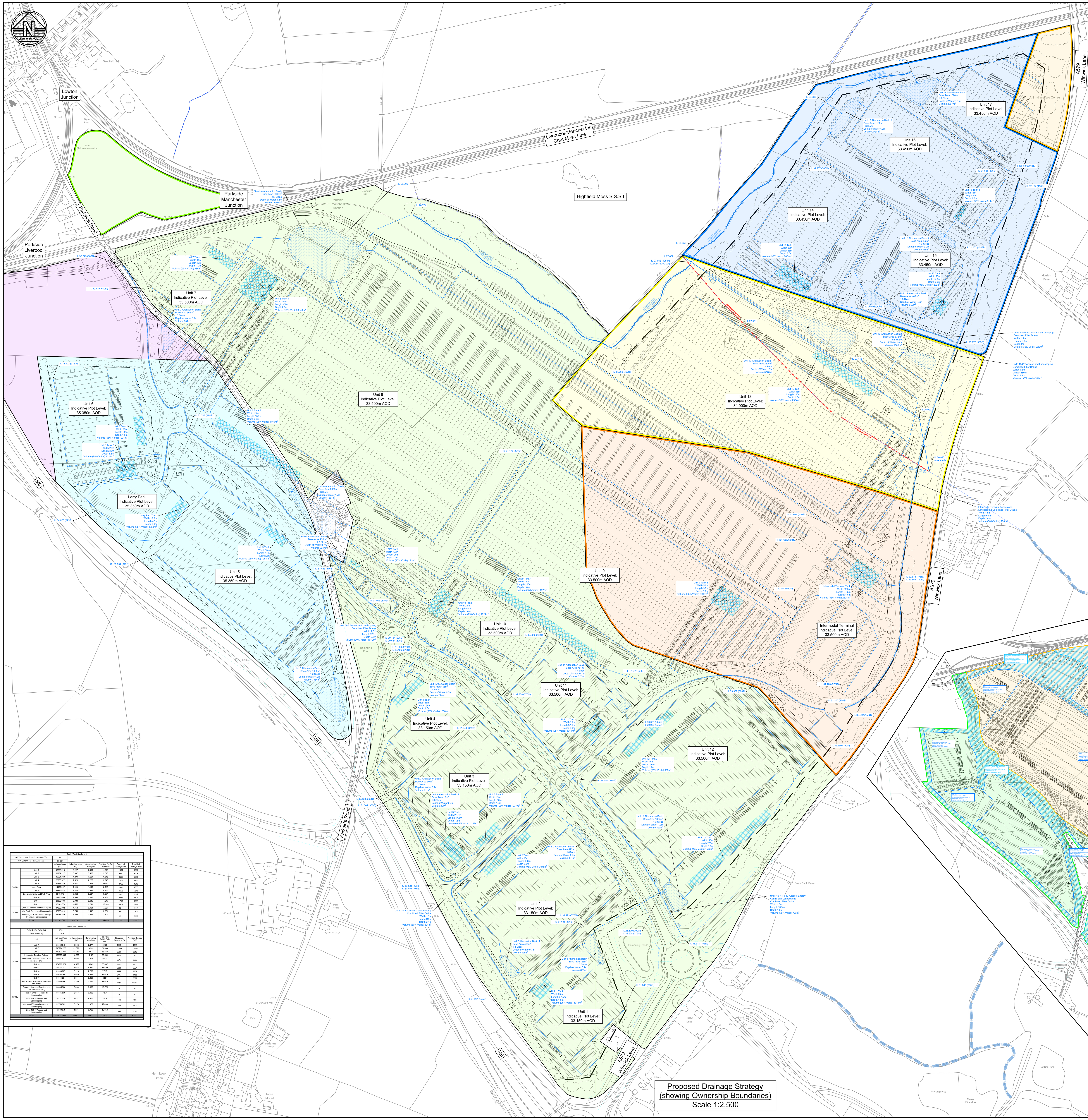
Drainage CCTV

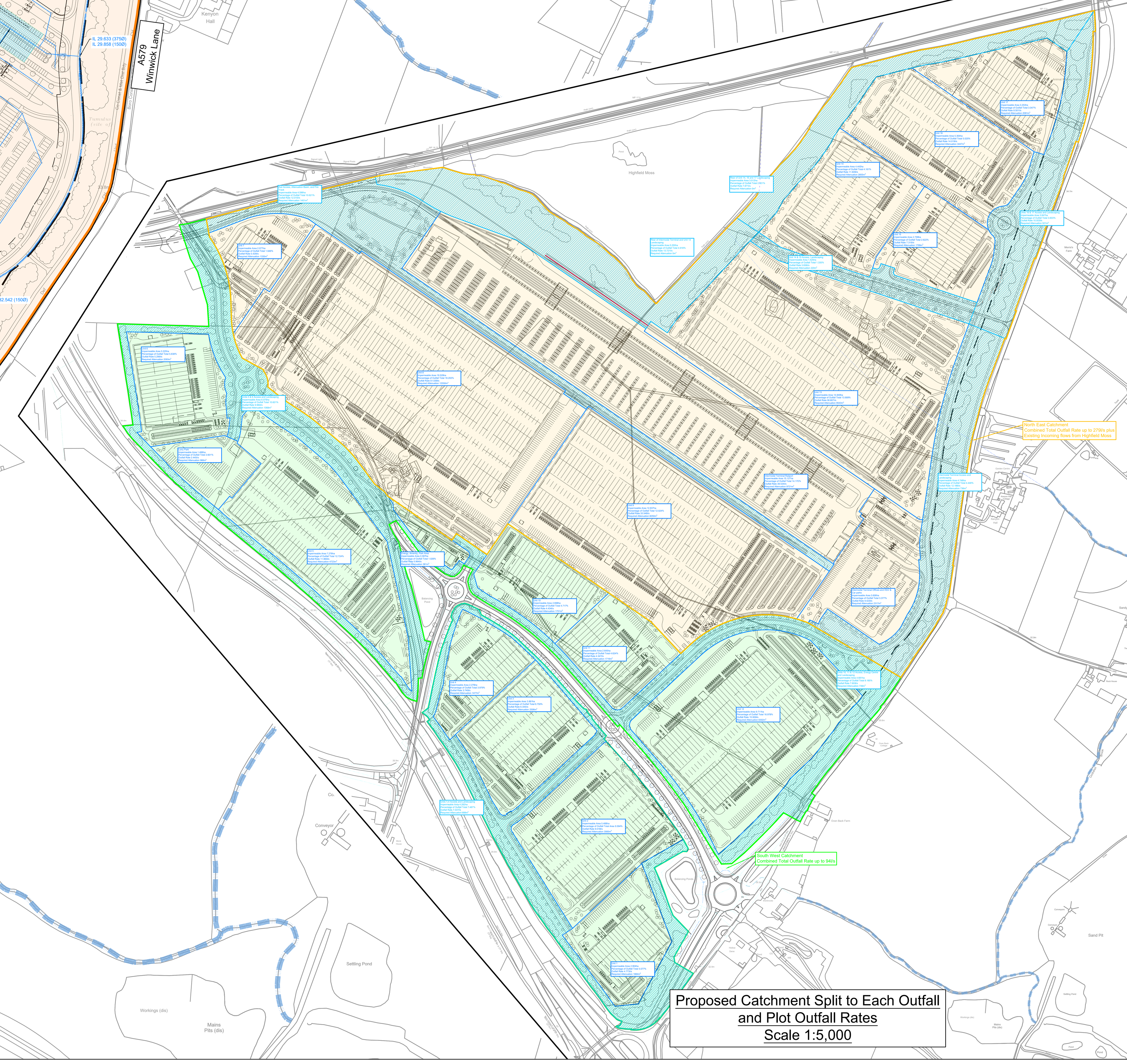
Scale: 1:200	Sheet Size: A0	5 of 5		ALSO SEE DRAWING: NA
		Drawing Date: 15/08/25		
Project Number: 14514	Rev: R0	Surveyed By: JA JM		CHECKED BY: ST
		Drawn By: JA		

Appendix 2: Proposed Surface Water Drainage



South West Catchment							
SW Catchment Total Outfall Rate (l/s)		94					
SW Catchment Total Area (ha)		63.554					
		Individual Area (m2)	Individual Area (ha)	Contributing Area (ha)	Pro-Rata Outfall Rate (l/s)	Required Storage (m3)	Provided Storage (m3)
On-Plot	Unit 1	32268.215	3.227	2.904	4.773	1884	1947
	Unit 2	60974.217	6.097	5.488	9.018	3560	3908
	Unit 3	42901.348	4.290	3.861	6.345	2506	2675
	Unit 4	25286.922	2.529	2.276	3.740	1477	1765
	Unit 5	80865.840	8.087	7.278	11.961	4723	4818
	Lorry Park	16529.097	1.653	1.488	2.445	966	1053
	Unit 6	35829.643	3.583	3.225	5.299	2093	2318
	Energy, Amenity and Park Area	6519.747	0.652	0.587	0.964	381	395
	Unit 10	29976.696	2.998	2.698	4.434	1751	1824
	Unit 11	29390.306	2.939	2.645	4.347	1716	1928
	Unit 12	107903.364	10.790	9.711	15.960	6302	6337
Off-Plot	Units 1-4 Access and Landscaping	47580.082	4.758	0.964	7.037	524	550
	Units 5 & 6 Access and Landscaping	67500.614	6.750	1.542	9.984	847	871
	Units 10, 11 & 12 Access, Energy Centre and Landscaping	52016.289	5.202	1.067	7.694	581	628
Totals		635542.379	63.554	45.733	94.000	29311	31017

North East Catchment							
	Total Outfall Rate (l/s)	279					
	Total Area (ha)	118.618					
	Unit	Individual Area (m2)	Individual Area (ha)	Contributing Area (ha)	Pro-Rata Outfall Rate (l/s)	Required Storage (m3)	Provided Storage (m3)
On-Plot	Unit 7	23082.049	2.308	2.077	5.429	1335	1441
	Unit 8	216994.278	21.699	19.529	51.039	12550	12980
	Unit 9	142629.300	14.263	12.837	33.548	8250	8316
	Intermodal Terminal Railport	168079.385	16.808	15.127	39.534	9760	0
	Intermodal Terminal Offices, HGV and Car Parks	40061.623	4.006	3.606	9.423	2317	2508
	Unit 13	164989.901	16.499	14.849	38.807	9543	9900
	Unit 14	49354.713	4.935	4.442	11.609	2855	2884
	Unit 15	31099.027	3.110	2.799	7.315	1799	1854
	Unit 16	59603.365	5.960	5.364	14.019	3447	3466
	Unit 17	36144.284	3.614	3.253	8.501	2091	2097
Off-Plot	Rail Access, Attenuation Basin and Fire Track	51063.066	5.106	2.017	12.010	1451	11304
	Rear of Intermodal Terminal and Unit 13 Landscaping	58335.906	5.834	0.000	13.721	0	0
	Rear of Units 14, 16 and 17 Landscaping	33465.530	3.347	0.000	7.871	0	0
	Units 14&15 Access and Landscaping	15837.775	1.584	0.321	3.725	166	166
	Intermodal Terminal Access and Landscaping	52756.569	5.276	1.073	12.409	555	562
	Units 16&17 Access and Landscaping	42739.079	4.274	0.723	10.053	364	376
Totals		1186235.848	118.624	88.017	279.013	56483	57854



Land Boundaries Legend

Tritax		237.37 acres -	
GIA	2,300,991ft²	213,767m²	
Adamson		58.98 acres -	
GIA	982,925ft²	91,316m²	
Bulmer (1)		51.26 acres -	
GIA	842,548ft²	78,275m²	
Bulmer (2)		64.98 acres -	
GIA	963,710ft²	89,531m²	
Hennedy		4.59 acres	
GIA	13,607ft²	1,264m²	
Harworth		49.52 acres -	
GIA	780,121ft²	72,475m²	
Langtree (1)		17.69 acres -	
Langtree (2)		13.90 acres -	
GIA	65,433ft²	6,079m²	
Langtree (3)		214.22 acres -	
GIA	2,476,280ft²	230,054m²	
Total GIA	8,425,615ft²	782,761m²	

Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

Legend

- Surface Water Manhole/Inspection Chamber
- Surface Water Drainage Pipe
- Surface Water Filter Drain
- Surface Water Attenuation Cells
- Surface Water Detention Basin
- Surface Water Headwall
- Existing Surface Water Culvert to be Abandoned

Drainage Notes

1. This drainage strategy has been developed to demonstrate how the entire site can be positively drained to the two main outfalls identified on the Winwick Lane (eastern) boundary of the site (discharging to Cockshot Brook) as identified on BWB drawing ref: ILPN-BWB-EWE-ZZ-DR-CD-0510 "Sitewide Existing Drainage & Catchments".
2. BWB drawing ref: ILPN-BWB-EWE-ZZ-DR-CD-0510 "Sitewide Existing Drainage & Catchments" identifies two other positive outfalls from the site on the M6 (western) boundary (one through a culvert beneath the M6, and one into the National Highways motorway drainage network). The continued use of these outfalls has been discounted for this exercise as it is not considered to be appropriate to discharge to these outfalls.
3. BWB drawing ref: ILPN-BWB-EWE-ZZ-DR-CD-0510 "Sitewide Existing Drainage & Catchments" also suggestes infiltration is possible and being actively used as a means of discharge from the site. BWB has undertaken infiltration testing and groundwater monitoring at various locations across the site, to ascertain the infiltration rate and the groundwater levels. It is acknowledged that the site is located within a groundwater source protection zone. If infiltration is found to be viable, a further exercise would be required to establish how and where infiltration can be applied and what measures would be required to mitigate contamination.
4. BWB drawing ref: ILPN-BWB-EWE-ZZ-DR-CD-0510 "Sitewide Existing Drainage & Catchments" shows the area and (calculated) greenfield run-off rate identified to drain to the two outfalls on Winwick Lane to be approximately 56% of the whole site. Draining the full site to these two outfalls alone therefore impacts the allowable discharge rate and attenuation required.
5. With regard to the existing cross-field culvert, its alignment and its levels have been confirmed through surveys. The diversion route is shown such that it has the same length as the culvert being abandoned, to limit the impact on the flow rate through the culvert. The alignment and levels of the diversion is to be refined through detailed design.
6. BWB drawing ref: ILPN-BWB-RDG-XX-DR-CH-0504 "Intermodal Terminal Proposed Drainage Sheet 4 of 4" shows the current design for surface water drainage from the Intermodal Terminal Offices and HGV & Car parks. This design will need to be modified in order so that this area can discharge to North East Catchment, as shown here.
7. The discharge rate for each plot or off-plot zone has been calculated pro-rata based on its area as a propotion of the greater catchment within which it sits.
8. The attenuation requirement for each plot has been calculated based on it's discharge rate and it's contributing area (calculated to be 90% of the plot area) for the 1 in 100 year event +45% climate change.
9. The attenuation requirement for most of the off-plot zones has been calculated based on the estimated impermeable area for the 1 in 100 year event +45% climate change. This area is derived from assigning a 15m impermeable width to each highway section (allows for 7.3m carriageway, 2 x 3m footways and some greenfield runoff) and adding impermeable area for notable other areas; the roundabouts, bus interchange, energy centre and fire access track.
10. The remaining two off-plot areas; "Rear of Unit 14, 16 and 17 Landscaping" and "Rear of Intermodal Terminal and Unit 13 Landscaping" will have no or negligible hardstanding areas, their contributing area has been taken to be zero. It is beleived to be possible to contain runoff from these areas to the specified rate without attenuation in addition to the swales that are already present as part of the design in these areas, despite the rate required being somewhat lower than Greenfield rates.
11. Attenuation volumes for the Intermodal Terminal Railport are provided in the sitewide attenuation basin adjacent to it at present as it is expected to be difficult to employ tanks under the slab, in addition to there being available capacity in that pond.
12. Attenuation has been shown in tanks, basins, filter drains and swales.
13. Drainage and attenuation installed over recent years as part of the Link Road is retained in-place.
14. All surface water drainage from vehicular areas is to pass through appropriately sized and specified on-plot separators/interceptors prior to discharging to the wider site drainage network.

Rev	Date	Details of issue / revision	Drw	Rev
P04	17.10.25	Attenuation volumes revised. Culvert updated	JB	RAL
P03	20.06.25	Layout amended to suit Design Team comments: Option 2 presented (only), swales revised and land boundaries added.	JB	RAL
P02	02.06.25	Attenuation volumes updated and table added	JB	RAL
P01	20.05.25	Preliminary Issue	JB	RAL

Issues & Revisions

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☐ London | 020 7407 3879
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☐ Nottingham | 0115 924 1100
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Client

TRITAX BIG BOX

Project Title

INTERMODAL LOGISTICS PARK NORTH

Drawing Title

SITE-WIDE SURFACE WATER DRAINAGE STRATEGY

Drawn:	J. Bethell			Reviewed:	R. Leyland
BWB Ref:	233398	Date:	May '25	Scale@A0:	As Shown

Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
ILPN-BWB-EWE-ZZ-DR-C-0515	S1	P04

Appendix 3: Proposed Foul Water Drainage

Lowton Junction

Indicative Proposed foul outfall into existing combined public sewer network. Connection subject to agreement with United Utilities. Pre-application discussions to determine the final foul drainage solution are ongoing.

Indicative Proposed foul gravity head of run upstream from connection into public sewer network

Rising mains required to cross over/under railway bridges. The method used to cross these bridges is currently under investigation.

Liverpool-Manchester Chat Moss Line

Parkside Manchester Junction

Parkside Liverpool Junction

Highfield Moss

FW Drainage for rail refueling area shown indicatively, will be carried in FRM to join rest of Intermodal Terminal FW drainage system

Parkside Road

Northwest Pump Area 37.983ha

Northeast Pump Area 54.933ha

Southwest Pump Area 47.319ha

FW Pumping Station CL 35.000m IL 28.754m

FW Pumping Station CL 34.000m IL 27.279m

FW Pumping Station CL 34.251m IL 26.612m

FW Manhole CL 35.350m IL 34.000m

FW Manhole CL 35.054m IL 30.556m

FW Manhole CL 35.350m IL 34.000m

FW Manhole CL 33.500m IL 32.150m

FW Manhole CL 33.500m IL 32.150m

FW Manhole CL 33.500m IL 32.150m

FW Manhole CL 33.500m IL 32.150m

FW Manhole CL 33.450m IL 32.100m

FW Manhole CL 33.450m IL 32.100m

FW Manhole CL 33.450m IL 32.100m

FW Manhole CL 33.450m IL 32.100m

FW Manhole CL 33.450m IL 32.100m

FW Manhole CL 33.450m IL 32.100m

FW Manhole CL 33.450m IL 29.920m

FW Manhole CL 33.450m IL 28.123m

FW Manhole CL 34.000m IL 32.650m

FW Manhole CL 34.000m IL 32.650m

FW Manhole CL 34.000m IL 32.650m

FW Manhole CL 34.000m IL 27.842m

FW Manhole CL 34.000m IL 27.842m

FW Manhole CL 34.248m IL 32.898m

FW Manhole CL 34.248m IL 32.898m

FW Manhole CL 34.248m IL 32.898m

FW Manhole CL 34.248m IL 32.898m

FW Manhole CL 34.248m IL 32.898m

FW Manhole CL 33.150m IL 31.800m

FW Manhole CL 33.150m IL 31.800m

FW Manhole CL 33.150m IL 31.800m

FW Manhole CL 33.150m IL 31.800m

FW Manhole CL 33.150m IL 31.800m

FW Manhole CL 33.836m IL 30.373m

FW Manhole CL 33.350m IL 32.150m

FW Manhole CL 33.150m IL 31.800m

FW Manhole CL 36.035m IL 27.180m

FW Manhole CL 33.150m IL 31.800m

FW Manhole CL 33.150m IL 31.800m

FW Manhole CL 33.150m IL 30.158m

FW Manhole CL 33.500m IL 32.150m

FW Manhole CL 33.500m IL 32.150m

FW Manhole CL 33.500m IL 32.150m

FW Manhole CL 33.500m IL 32.000m

FW Manhole CL 34.000m IL 27.842m

Alternative Rising mains required to cross over/under Kenylo Bridge / Watercourse. The method used to cross the bridge is currently under investigation.

Indicative Proposed (alternative) foul outfall into existing foul public sewer network. Connection subject to agreement with United Utilities. Pre-application discussions to determine the final foul drainage solution are ongoing.

Indicative Proposed (alternative) foul gravity head of run upstream from connection into public sewer network.

A579

A579

M6

Sand Pit

Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

Foul Drainage Notes

1. Foul Water from the site to discharge to three pumping stations, each with its own foul rising main, to connect to existing United Utilities network.
2. Proposed Foul Rising main routes and destination are yet to be confirmed pending discussion with United Utilities.
3. Proposed Cover and invert levels have generally only been shown at heads of runs, pumping stations, and notable manhole locations for clarity.
4. Minimum cover to pipes is 1.2 metres.
5. Foul inflows have been calculated in Causeway Flow with the l/s/ha values suggested in Sewerage Sector Guidance (SSG).
6. As the development is for distribution and not industrial use, the trade effluent flows have been reduced from the 0.6 l/s/ha suggested to a more appropriate 0.3 l/s/ha.
7. The values in SSG are considered to be tDWF but as distribution uses tend to have a more consistent foul water production than typical domestic use due to shift working, these flows have been reduced to 3DWF to be more appropriate.
8. Therefore; (0.6 + 0.3)/2 = 0.45l/s/ha has been applied to all manholes, with areas distributed according to the length of the downstream link compared to the total length of links within the same pumping station network.
9. The foul event has not been analysed as it is not always a requirement in SSG and this is a preliminary design, subject to change.

Legend

- Foul Water Manhole / Inspection Chamber
- Foul Water Penstock Chamber
- Foul Water Drainage Pipe
- FRM FRM Foul Water Rising Main
- Foul Water Channel Drain
- Forecourt Separator / Wash-down & Silt Separator
- Foul Water Pumping Station
- Alternative Foul Water Drainage Pipe
- FRM FRM Alternative Foul Water Rising Main

Rev	Date	Details of issue / revision	Drw	Rev
P01	20.05.25	Preliminary Issue	JB	RAL

Issues & Revisions

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Client: TRITAX BIG BOX

Project Title: **INTERMODAL LOGISTICS PARK NORTH**

Drawing Title: **SITE-WIDE FOUL WATER DRAINAGE STRATEGY**

Drawn:	J Bethell		Reviewed:	R. Leyland
BWB Ref:	233398	Date:	May '25	Scale@A0: 1:2500

Drawing Status: **PRELIMINARY**

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
ILPN-BWB-EWE-ZZ-DR-CD-0520	**S1**	**P01**

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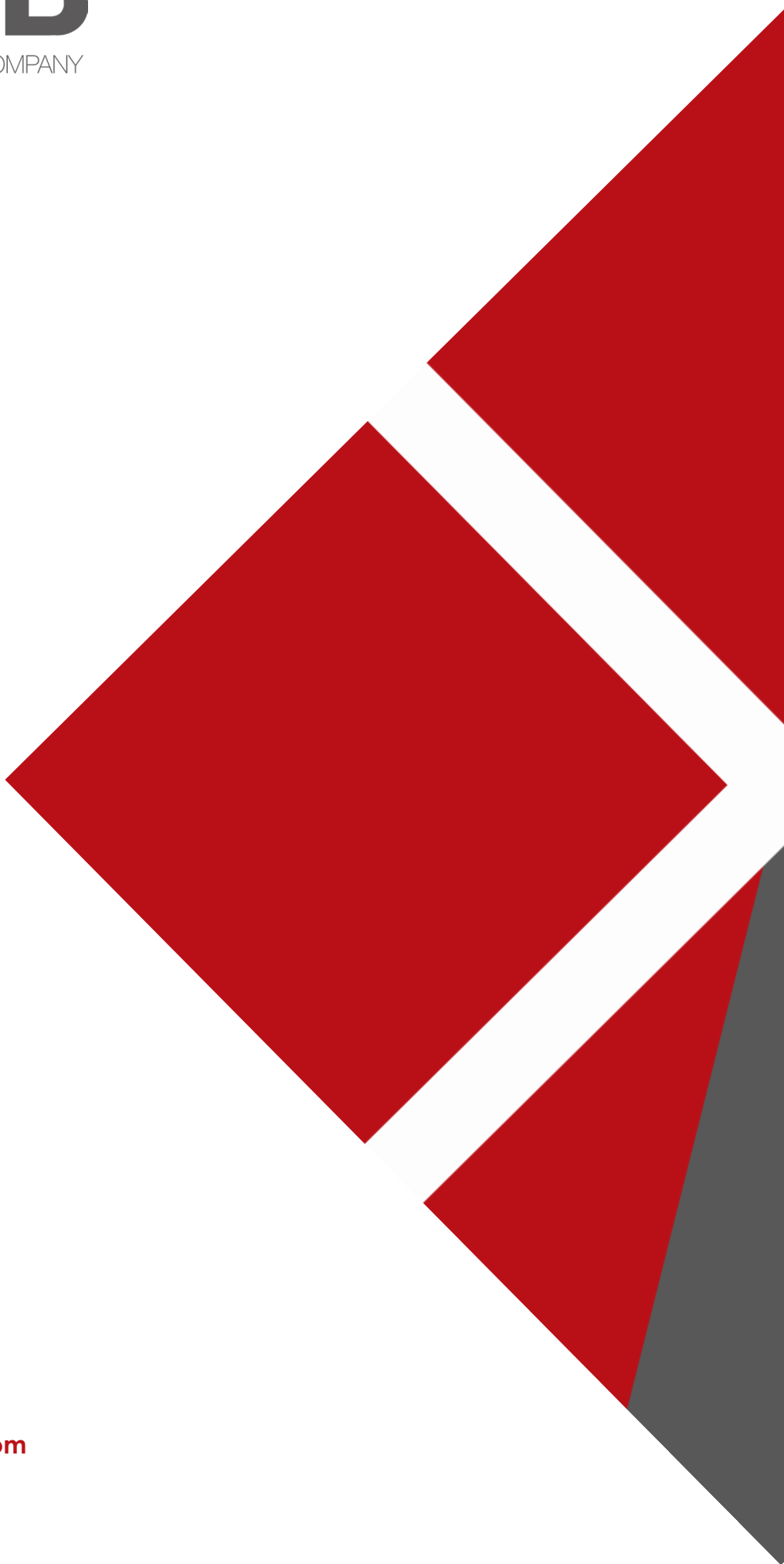

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