

Appendix 12.2: Drainage Strategy



Tier Consult Ltd

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Chester Business Park, Chester CH4 9QZ
01244 684900

**Station Road,
Battram,
Leicestershire,
LE67 1HT.**

Drainage Strategy

May 2025

Version 1.0



DOCUMENT CONTROL

Project No:	T/24/2757
Report Status:	Preliminary
Version No:	1.0
Project Engineer:	Ellie Grimsley
Date of Issue:	09/05/2025

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Version	Date Issued	Purpose of Issue	Author	Reviewed	Approved
V1.0	09/05/2025	Planning	ESG	JH	PJB



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1.0 Introduction

- 1.1 Tier Consult have been appointed by Barberry Industrial Ltd, to prepare a drainage strategy proposal for the proposed development off Station Road, Battram, Leicestershire.
- 1.2 The report aims to provide an outline of the proposed drainage strategy, taking account of the requirements of the National Planning Policy Framework (NPPF) and associated Planning Practice Guidance.

2.0 Site Description and Development Proposal

- 2.1 The site is located adjacent off Station Road, Battram, Leicestershire. LE67 1HT. The approximate National Grid Reference for the centre of the site is SK438098 with coordinates Easting: 443814, Northing: 309801 at postcode LE67 1HT
- 2.2 The proposed development is 12.50Ha with a max impermeable area of 11.6Ha
- 2.3 A topographic survey (Appendix A) has been undertaken by Blue Earth Construction, indicates that the site predominantly falls from south to north with site levels varying from circa 162.6m to 150.3m AOD.
- 2.4 The soils mapping details the site conditions to be Mudstone and siltstone, red-brown and greenish grey, with beds of indurated, variably dolomitic siltstone and very fine-grained sandstone common in the lower half; finely disseminated gypsum common in upper half. British Geological Survey Map indicates that the geological sequence below the site comprises mudstone of siltstone.

3.0 Existing Drainage

- 3.1 The development land is greenfield located southwest of Bardon Hill Industrial Estate. There are no public sewers within the site boundary.
- 3.2 Severn Trent Water have provided public sewer records in response to the pre-planning sewerage enquiry (Appendix B).

4.0 Surface Water Drainage

- 4.1 Requirement H3 of the Building Regulations 2010 and the NPPF, as suggested by Leicestershire County Council LLFA, prescribe a hierarchal approach to surface water discharge. Consideration should firstly be given to discharge to soakaway, infiltration system and watercourse in that priority order before discharge to a sewer/ formal drainage system is considered.

The government guidance to local authorities includes a hierarchy of connection, which can be summarised as follows:

- a) surface water runoff is collected for use.
- b) discharge into the ground via infiltration.
- c) discharge to a watercourse or other surface water body.
- d) discharge to a surface water sewer, highway drain or other drainage system, discharging to a watercourse or other surface water body.



e) discharge to a combined sewer.

4.2 Infiltration/Soakaways

- 4.2.1 The ground infiltration testing has not been carried out on the site at this stage, however from the desktop study reviewing the BGS and soils mapping the ground conditions defined do not suggest that infiltration is achievable.

4.3 Discharges to Watercourse

- 4.3.1 There is a watercourse to the south of the development and an existing pond to the east of the site.

5.0 Proposed Surface Water Drainage Strategy

- 5.1 Following the planning guidance, the existing area of 12.5 Ha has been used to calculate the greenfield run-off rate as 54.9l/s.
- 5.2 As there is an existing pond to the east of the development, the proposed drainage strategy is discharge into an existing surface water network that discharges to the pond.
- 5.3 The storm water drainage system is to be designed in accordance with the requirements of the NPPF and associated Planning Practice Guidance to ensure that flood risk is not increased, either on or off site, for all storm events up to and including the 1 in 100 year +40% climate change events.
- 5.4 The strategy is to restrict the surface water discharge rate to 54.9 l/s. This is to ensure that the discharge rate at the outfall location remains the same as the greenfield run off rate of the site.
- 5.5 Surface water runoff from roofs, private drives and any adoptable highways, will drain via a piped network to an attenuation facility which will provide attenuation storage for all flows up to and including the 1 in 100-year event plus 40% for climatic change. Refer to appendix C.
- 5.6 SuDS features, such as permeable paving and attenuation ponds, will be incorporated into the surface water drainage proposals to aid in the mitigation requirements for water quality prior to discharging to the wider natural surface water drainage network.
- 5.7 In addition to the SuDS features mentioned above, the proposals also include a petrol/ oil interceptor with an enhanced silt retention providing greater pollution mitigation indices.



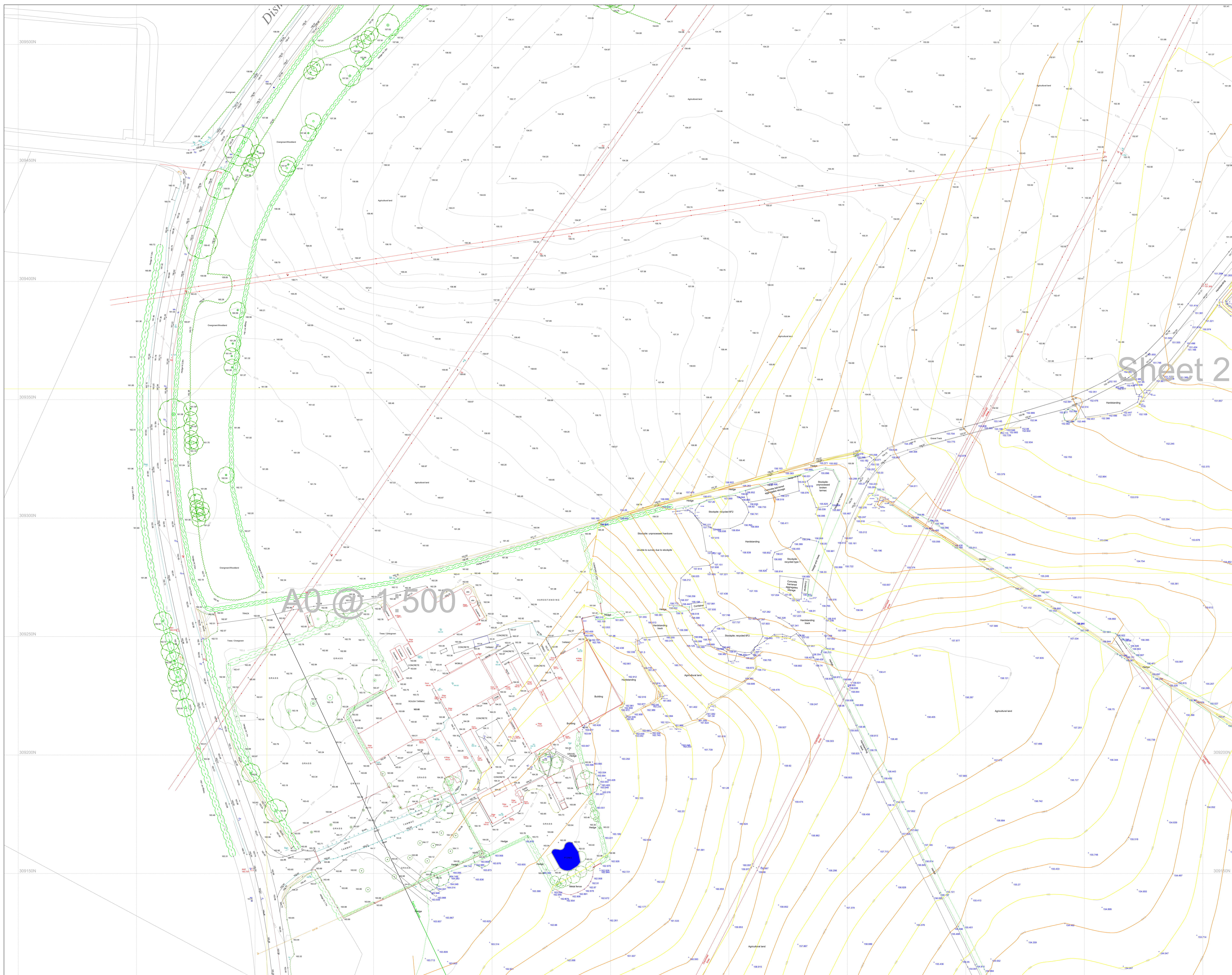
6.0 **Proposed Foul Drainage Strategy**

- 6.1 The proposed foul drainage system will convey foul flows via a piped network and discharge into a proposed private pumping station. Foul water will be pumped to Station Road and connect to the Severn Trent adopted network.

Proposed drainage layout is pertained in Appendix C.



Appendix A Topographic Survey



BlueEarth Construction Note

This drawing shows the combined topographical survey work of Axis Survey and BlueEarth construction. Axis Survey's survey work was undertaken in September 2022, within approximately the northern half of the plot. BlueEarth Construction's survey work was undertaken in June 2023. At the request of the client, we (BlueEarth Construction) have merged our survey with Axis's survey work.

The drawing title of Axis Survey's original topographic survey was titled "4063".

BlueEarth Constructions survey work has been completed based on the Control Stations listed on Axis Survey's drawing "4063"; specifically a GPS calibration to stations: AA2, AX7, AX6, ST1 and JL3.

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Axis Survey Note (from Axis Survey Drawing 4063)

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THIS SURVEY HAS BEEN ORIENTATED TO THE ORDNANCE SURVEY (O.S)
NATIONAL GRID (OSGB36) VIA A GLOBAL POSITION SYSTEM (GPS) AND THE
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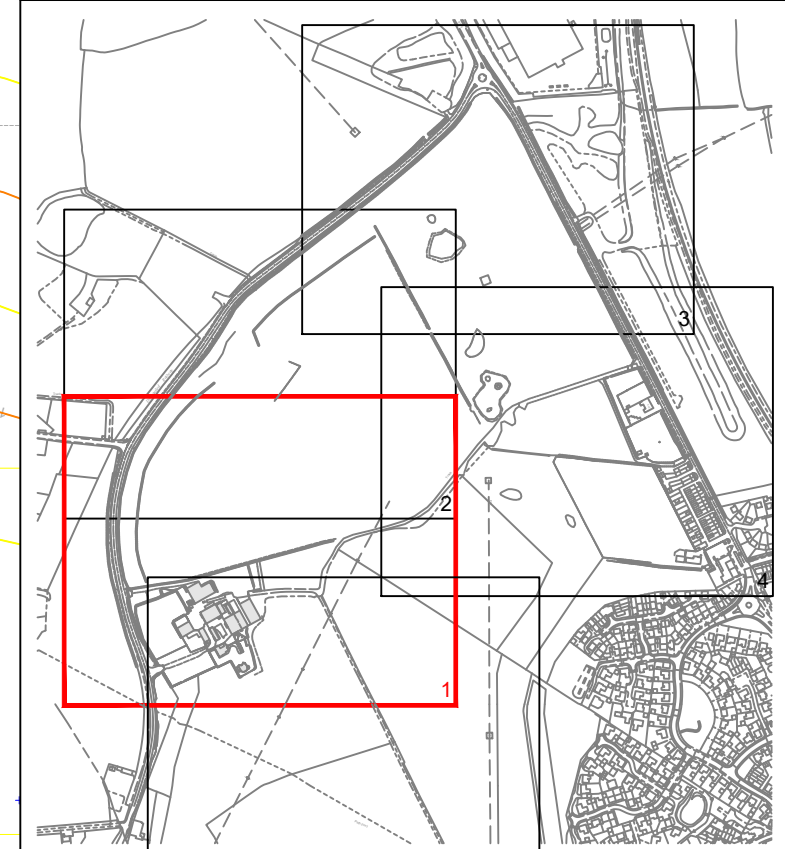
Axis Survey Legend (from Axis Survey Drawing 4063)

[illegible]

BlueEarth Construction Additional Legend

- * 152.804 BlueEarth Construction Surveyed Point
- † 151.90 Axis Survey Surveyed Point
- Hedge/Bushes
- o Wooden Electricity pole

Drawing Layout Plan



Control Stations (taken from Axis Survey drawing 4063)

Station	Easting	Northing	Level
AA1	443317.367	302652.265	162.916
AA2	443336.703	303014.867	163.000
AA3	443393.013	303644.208	166.850
AA4	443401.959	303715.579	167.000
AX3	443592.850	303982.100	160.646
AX4	443594.131	303991.162	163.539
AX5	443621.989	303991.162	160.889
AX6	443739.935	304001.856	166.605
AX7	443741.000	304001.856	166.605
AX8	443424.396	304047.074	159.407
J10	443369.875	303587.747	157.646
J11	443421.945	303587.747	157.646
J12	443730.480	303640.013	151.348
J13	443730.480	303640.013	151.348
J14	443730.480	303640.013	151.348
J15	443730.480	303640.013	151.348
J16	443885.017	303750.399	160.669
J17	443885.017	303750.399	159.702
ST1	444131.746	303801.878	159.702
ST2	444170.626	303816.766	159.901
ST3	444170.626	303816.766	159.901
ST4	444003.917	303591.800	155.565



**BlueEarth
Construction Ltd**
**Whiteley Road
Ripley
Derbyshire
DE5 3QL**

Client

Richard Bailey Plant and Construction Ltd

Site

Land at Wood Road, Bagworth

Drawing Title

OGL Topographical Survey -
 Combined BEC and Axis Survey

Combined BEC and Axis Survey		
Date Drawn	Drawn	Checked

Date Drawn	Drawn	Checked
12/6/2023	SG	KE

Scale	Revision	Sheet
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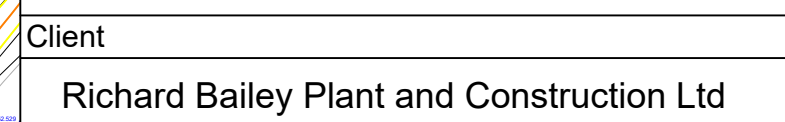
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A TRUE OSG36 COORDINATE HAS BEEN ESTABLISHED NEAR TO THE SITE CENTRE VIA A TRANSFORMATION USING THE OSTN02 & OSGM02 TRANSFORMATION MODELS. THE SURVEY HAS BEEN CORRELATED TO THIS POINT AND A FURTHER ONE OR MORE OSG36 POINTS ESTABLISHED TO CREATE A TRUE O.S. BEARING FOR ANGLE ORIENTATION.

[illegible]

- + 102.804 BlueEarth Construction Surveyed Point
- + 151.90 Axis Survey Surveyed Point
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- o Wooden Electricity pole

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AA1	443363.367	309151.342	163.707
AA2	443348.747	309151.542	163.707
AX1	4432693.013	309547.208	156.859
AX2	443269.249	309547.208	156.859
AX3	4433052.850	309684.920	160.646
AX4	443213.131	309684.920	160.646
AX5	443234.999	309692.953	160.983
AX6	443279.935	30994.856	166.605
AX7	443275.751	30994.856	166.605
AX8	443234.396	309807.074	159.407
AX9	443275.875	309807.074	159.407
JL1	443749.945	308398.271	151.309
JL2	443733.490	308446.973	151.348
JL3	443787.870	308446.973	151.348
JL4	443390.036	309057.016	157.813
JL5	443254.254	309057.016	157.813
JL6	443922.703	309755.309	160.669
JL7	443883.817	309700.878	156.702
JL8	443275.745	309700.878	156.702
ST2	444017.626	306381.766	155.901
ST3	444017.626	306381.766	155.901
ST4	444003.917	306340.860	155.565



Site	
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Land at Wood Road, Bagworth

Drawing Title

OGL Topographical Survey -
 Combined BEC and Axis Survey

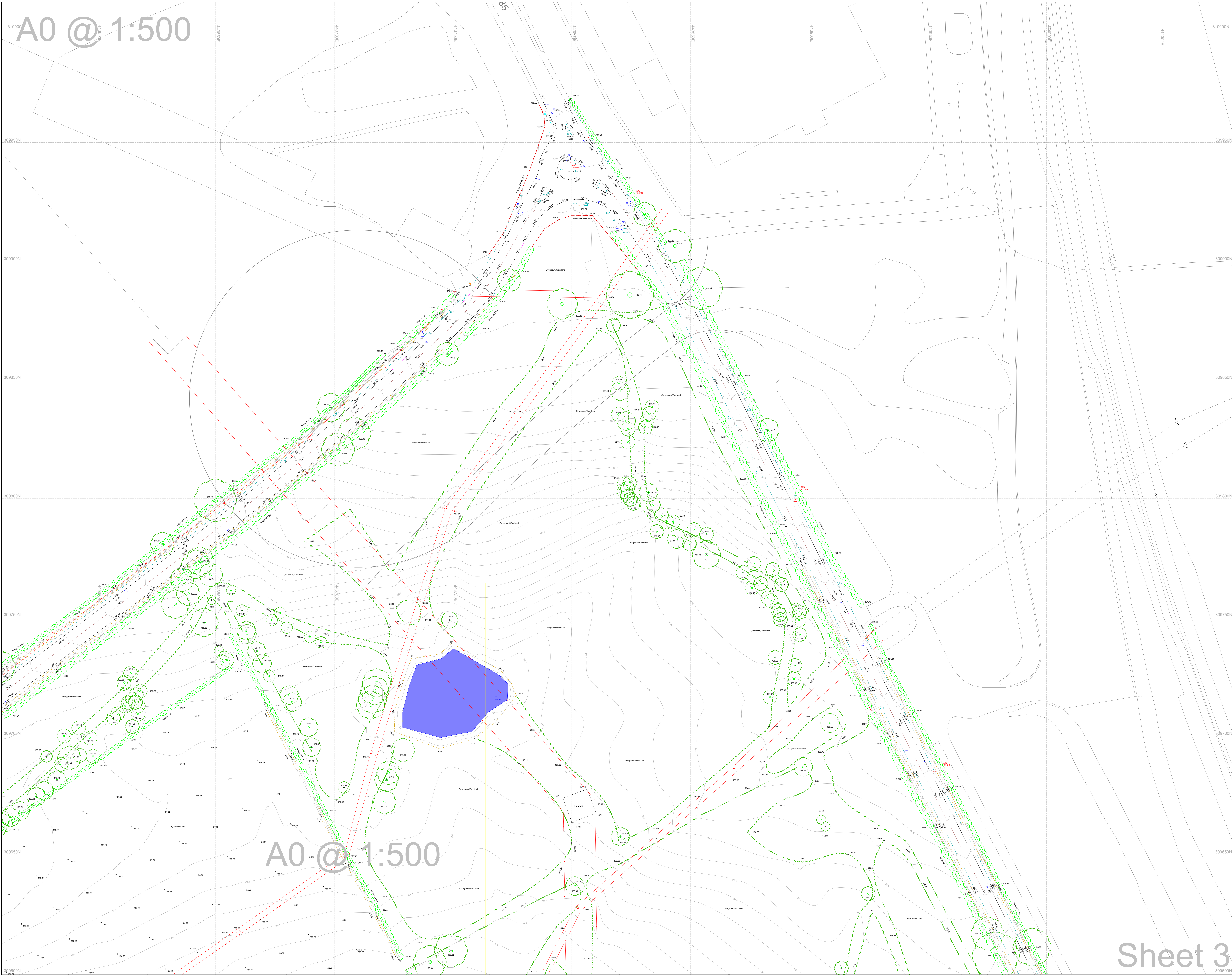
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12/6/2023	SG	KE

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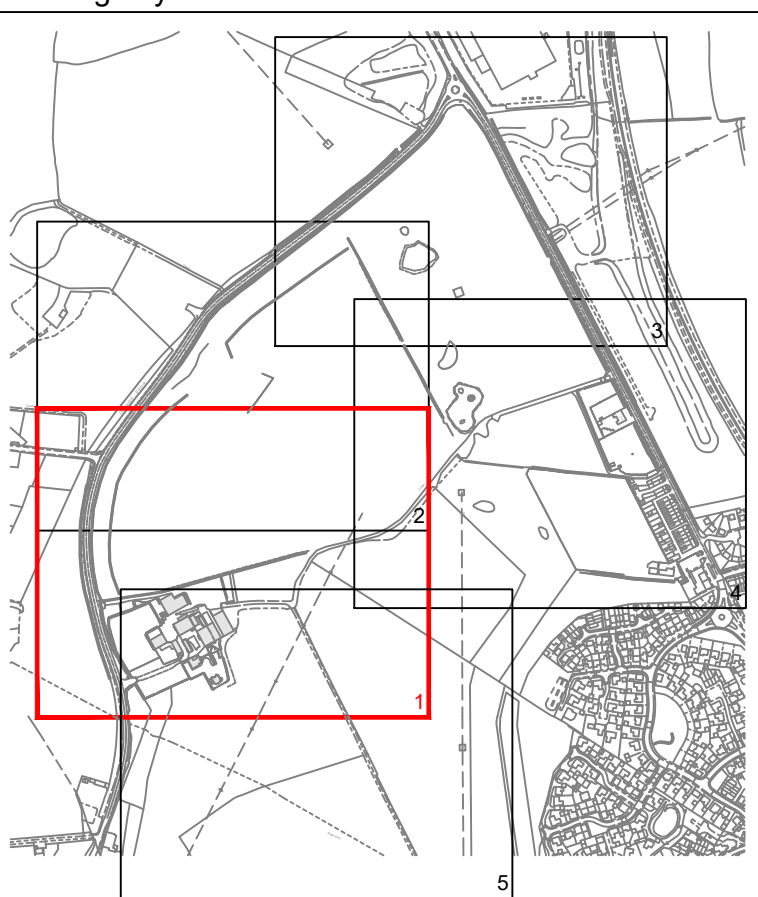
Axis Survey Legend (from Axis Survey Drawing 4063)

Buildings	Overhead Cable	IC	Inspection chamber	Build
Wall	Concrete edge	Flow	Pipe invert	Manhole/Invert
Kerb line	Tarmac edge	Gully	Down pipe	Manhole
Line crossing	Green verge	Flow	Pipe above ground	Manhole
Drop kerb	Concrete/Overhang	Flow	Manhole	Manhole
Centre line	Verge	Flow	Manhole	Manhole
Bank Top	Bank Bottom	Flow	Manhole	Manhole
Station and Name	Station Level	Flow	Manhole	Manhole
Tree / Bush / Sapling	Area of Undergrowth	Flow	Manhole	Manhole
Hedge	Ridge Level	Flow	Manhole	Manhole
Level	Level	Flow	Manhole	Manhole
Flat Roof Level	Flat Roof Level	Flow	Manhole	Manhole
Gate	Gate	Flow	Manhole	Manhole
Intervenor	Iron Railings	Flow	Manhole	Manhole
Plant & Rail	Plant & Rail	Flow	Manhole	Manhole
Plant & Nix	Plant & Nix	Flow	Manhole	Manhole
Choke Link	Choke Link	Flow	Manhole	Manhole
Concrete Panels	Concrete Panels	Flow	Manhole	Manhole
Steel Palisade	Steel Palisade	Flow	Manhole	Manhole

BlueEarth Construction Additional Legend

BlueEarth Construction Surveyed Point	BlueEarth Construction Surveyed Point
Axis Survey Surveyed Point	Axis Survey Surveyed Point
Hedge/Bushes	Hedge/Bushes
Wooden Electricity pole	Wooden Electricity pole

Drawing Layout Plan

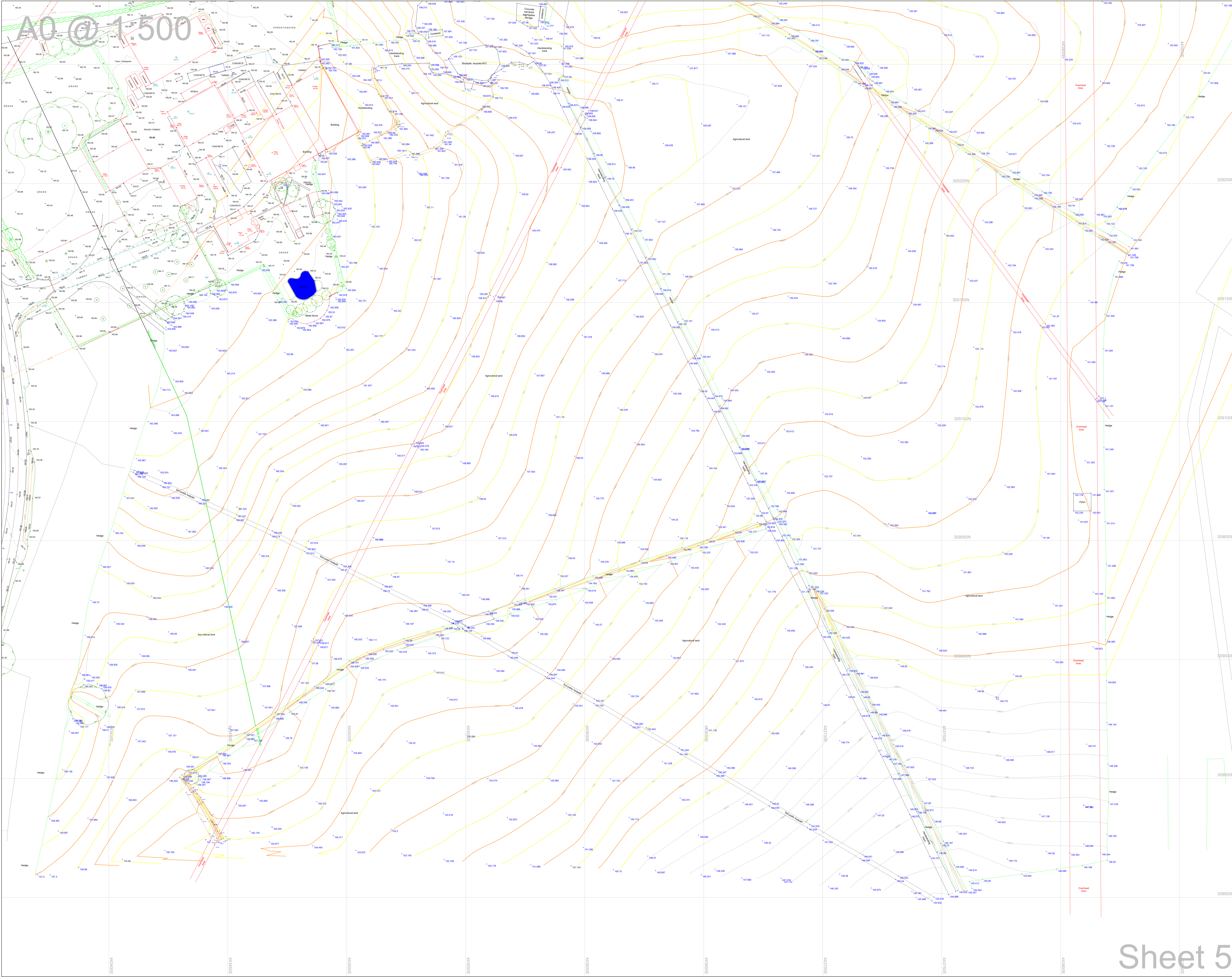


Control Stations (taken from Axis Survey drawing 4063)

Station	Easting	Northing	Level
AX1	443317.365	309552.465	162.916
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AX3	443365.015	309547.208	162.859
AX4	444014.249	309564.579	157.504
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AX98	443924.999	309526.593	166.983
AX99	443924.999	309526.593	166.983
AX100	443924.999	309526.593	166.983



Client		
Richard Bailey Plant and Construction Ltd		
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Drawing Title		
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Visible features in the vicinity of the boundaries, as shown on this survey may not represent the extent of legally conveyed ownership.

THIS SURVEY HAS BEEN ORIENTATED TO THE ORDNANCE SURVEY (O.S.) NATIONAL GRID (OSGB36) VIA A GLOBAL POSITION SYSTEM (GPS) AND THE O.S. ACTIVE NETWORK (OS NET).

A TRUE OSGB36 COORDINATE HAS BEEN ESTABLISHED NEAR TO THE SITE CENTRE VIA A TRANSFORMATION USING THE OSTN02 & OSGB02 TRANSFORMATION MODELS. THE SURVEY HAS BEEN CORRELATED TO THIS POINT AND A FURTHER ONE OR MORE OSGB36 POINTS ESTABLISHED TO CREATE A TRUE O.S. BEARING FOR ANGLE ORIENTATION.

Axis Survey Legend (from Axis Survey Drawing 4063)

Buildings	Overhead Cable	IC	Inspection chamber	IC	Build
Wall	Concrete edge	Flow	Flow	Flow	Manhole/duct
Kerb line	Tarmac edge	Gully	Gully	Gully	Manhole
Line crossing	Green verge	Down pipe	Down pipe	Down pipe	Manhole
Drop kerb	Concrete/overpass	Flow above ground	Flow above ground	Flow above ground	Manhole
Centre line	Verge	Manhole	Manhole	Manhole	Manhole
Bank Top	Bank Bottom	Water level	Water level	Water level	Manhole
Station and Name	Station	Flow	Flow	Flow	Manhole
Tree / Bush / Sapling	Tree / Bush / Sapling	Tree / Bush / Sapling	Tree / Bush / Sapling	Tree / Bush / Sapling	Manhole
Area of Undergrowth	Area of Undergrowth	Area of Undergrowth	Area of Undergrowth	Area of Undergrowth	Manhole
Hedge	Hedge	Hedge	Hedge	Hedge	Manhole
Ridge Level	Ridge Level	Ridge Level	Ridge Level	Ridge Level	Manhole
Level	Level	Level	Level	Level	Manhole
Flat Roof Level	Flat Roof Level	Flat Roof Level	Flat Roof Level	Flat Roof Level	Manhole
Water meter	Water meter	Water meter	Water meter	Water meter	Manhole
Gate	Gate	Gate	Gate	Gate	Manhole
Interference	Interference	Interference	Interference	Interference	Manhole
Iron Railings	Iron Railings	Iron Railings	Iron Railings	Iron Railings	Manhole
Wire Mesh	Wire Mesh	Wire Mesh	Wire Mesh	Wire Mesh	Manhole
Plant & Soil	Plant & Soil	Plant & Soil	Plant & Soil	Plant & Soil	Manhole
Plant & Nix	Plant & Nix	Plant & Nix	Plant & Nix	Plant & Nix	Manhole
Cable for	Cable for	Cable for	Cable for	Cable for	Manhole
Choke Link	Choke Link	Choke Link	Choke Link	Choke Link	Manhole
Marker post	Marker post	Marker post	Marker post	Marker post	Manhole
Concrete Poles	Concrete Poles	Concrete Poles	Concrete Poles	Concrete Poles	Manhole
Steel Poles	Steel Poles	Steel Poles	Steel Poles	Steel Poles	Manhole

BlueEarth Construction Additional Legend

BlueEarth Construction Surveyed Point	BlueEarth Construction Surveyed Point
Axis Survey Surveyed Point	Axis Survey Surveyed Point
Hedge/Bushes	Wooden Electricity pole

Drawing Layout Plan

Control Stations (taken from Axis Survey drawing 4063)

Station	Easting	Northing	Level
AA1	443317.365	309252.465	162.916
AA2	443348.747	309151.542	163.707
AA3	443360.113	309047.208	162.859
AA4	444014.249	309564.579	157.504
AA5	443952.853	309564.500	160.846
AA6	443954.131	309779.742	163.339
AA7	443924.999	309626.593	160.963
AA8	443924.126	309697.014	159.497
AA9	443787.751	309659.332	158.901
AA10	443924.126	309697.014	159.497
AA11	443924.126	309697.014	159.497
AA12	443924.126	309697.014	159.497
AA13	443924.126	309697.014	159.497
AA14	443924.126	309697.014	159.497
AA15	443924.126	309697.014	159.497
AA16	443924.126	309697.014	159.497
AA17	443924.126	309697.014	159.497
AA18	443924.126	309697.014	159.497
AA19	443924.126	309697.014	159.497
AA20	443924.126	309697.014	159.497
AA21	443924.126	309697.014	159.497
AA22	443924.126	309697.014	159.497
AA23	443924.126	309697.014	159.497
AA24	443924.126	309697.014	159.497
AA25	443924.126	309697.014	159.497
AA26	443924.126	309697.014	159.497
AA27	443924.126	309697.014	159.497
AA28	443924.126	309697.014	159.497
AA29	443924.126	309697.014	159.497
AA30	443924.126	309697.014	159.497
AA31	443924.126	309697.014	159.497
AA32	443924.126	309697.014	159.497
AA33	443924.126	309697.014	159.497
AA34	443924.126	309697.014	159.497
AA35	443924.126	309697.014	159.497
AA36	443924.126	309697.014	159.497
AA37	443924.126	309697.014	159.497
AA38	443924.126	309697.014	159.497
AA39	443924.126	309697.014	159.497
AA40	443924.126	309697.014	159.497
AA41	443924.126	309697.014	159.497
AA42	443924.126	309697.014	159.497
AA43	443924.126	309697.014	159.497
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AA48	443924.126	309697.014	159.497
AA49	443924.126	309697.014	159.497
AA50	443924.126	309697.014	159.497
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AA72	443924.126	309697.014	159.497
AA73	443924.126	309697.014	159.497
AA74	443924.126	309697.014	159.497
AA75	443924.126	309697.014	159.497
AA76	443924.126	309697.014	159.497
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AA78	443924.126	309697.014	159.497
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AA80	443924.126	309697.014	159.497
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AA82	443924.126	309697.014	159.497
AA83	443924.126	309697.014	159.497
AA84	443924.126	309697.014	159.497
AA85	443924.126	309697.014	159.497
AA86	443924.126	309697.014	159.497
AA87	443924.126	309697.014	159.497
AA88	443924.126	309697.014	159.497
AA89	443924.126	309697.014	159.497
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AA91	443924.126	309697.014	159.497
AA92	443924.126	309697.014	159.497
AA93	443924.126	309697.014	159.497
AA94	443924.126	309697.014	159.497
AA95	443924.126	309697.014	159.497
AA96	443924.126	309697.014	159.497
AA97	443924.126	309697.014	159.497
AA98	443924.126	309697.014	159.497
AA99	443924.126	309697.014	159.497
AA100	443924.126	309697.014	159.497

BlueEarth Construction Ltd
Whitby Road
Ripley
Derbyshire
DE8 3DL

Client

Richard Bailey Plant and Construction Ltd

Site

Land at Wood Road, Bagworth

Drawing Title

OGL Topographical Survey - Combined BEC and Axis Survey

Date Drawn	Drawn	Checked
12/6/2023	SG	KF
Scale	Revision	Sheet
1:500 at A0	0	5/5



Appendix B

Pre-Planning Sewerage Enquiry – Severn Trent Water Response

WONDERFUL ON TAP

SEVERN
TRENT

Unit 5 Office Village,
Sandpiper Court,
Chester Business Park,
Chester,
CH4 9QZ

F.A.O: Joe Botting

09/02/2024

Severn Trent Water Ltd
Leicester Water Centre
Gorse Hill
Anstey
Leicester
LE7 7GU

www.stwater.co.uk

Email:
Network.Solutions@SevernTrent.co.uk

Page Barot

Tel:

Our ref: 1106607

Dear Sir/Madam,

Proposed Development: (1 industrial unit – 3l/s) Wood Road, Coalville, LE67 1GA, 443548, 309455

I refer to your 'Development Enquiry Request' in respect of the above named site. Please find enclosed the sewer records that are included in the fee together with the Supplementary Guidance Notes (SGN) which refer to surface water disposal from development sites.

Protective Strip

No public sewers within site boundary.

Due to a change in legislation on 1 October 2011 there may be former private sewers on the site which have transferred to the responsibility of Severn Trent Water Ltd, which are not shown on the statutory sewer records, but are located in your client's land. These sewers would require protective strips of 3 metres either side of the sewer's centreline that we will not allow to be built over. If such sewers are identified to be present on the site, please contact us for further guidance.

Please note: there is no guarantee that you will be able to build over or close to any Severn Trent sewers, and where a diversion is required there is no guarantee that you will be able to undertake those works on a self-lay basis. Every approach to build near to or divert our assets has to be assessed on its own merit and the decision of what is or isn't permissible is taken based on the risk to the asset and the wider catchment it serves. It is vital therefore that you contact us at the earliest opportunity to discuss the implications of our assets crossing your site. Failure to do so could significantly

affect the costs and timescales of your project if it transpires diversionary works need to be carried out by Severn Trent.

Foul Water Drainage

After reviewing the proposed options, the 225mm combined sewer, MH SK44091301 along station Road would be the most suitable connection point for your development due it having larger capacity and can be reached via gravity. The network can accommodate flows for 1 industrial unit (2.28 l/s 2dwf). Therefore, a connection is acceptable to the company subject to a S106 submission.

Alternatively, connection to the 150mm combined network along Battram road is also a suitable connection point it can be reached via gravity and is the closest to the site. However, we are unable to confirm if this connection point has enough capacity to handle the flows as a result modelling will need to take place.

In a change to our previous process, we no longer charge developers for the hydraulic modelling service. We will liaise with you over time with regards to the outcome of our investigations and any impact that may have on the planning status, occupation, or phasing of the site. However, while we can provide a brief summary of our findings if you need us to, we will no longer provide the full external capacity assessment report.

From the application you have submitted, I am assuming that the development has not been granted planning approval. Please inform us as and when planning has progressed as this will help determine how quick we carry out the modelling exercise. In the meantime, the site will be added to our modelling tracker and reviewed regularly until the site can be progressed for sewer modelling.

Surface Water Drainage

Under the terms of Section H of the Building Regulations 2000, the disposal of surface water by means of soakaways should be considered as the primary method. If these are found to be unsuitable, satisfactory evidence will need to be submitted. The evidence should be either percolation test results or by the submission of a statement from the SI consultant (extract or a supplementary letter).

Severn Trent Water expects all surface water from the development to be drained in a sustainable way to the nearest watercourse or

land drainage channel, subject to the developer discussing all aspects of the developments surface water drainage with the Local Lead Flood Authority (LLFA). Any discharge rate to a watercourse or drainage ditch will be determined by the LLFA / EA.

Note, STW will have to be satisfied that all sustainable option have been exhausted before allowing discharge to the public network.

Sewer records show a watercourse that runs east of the site. It is advised to pursue a connection to this if feasible, with flow rates to be agreed by the LLFA.

Connections

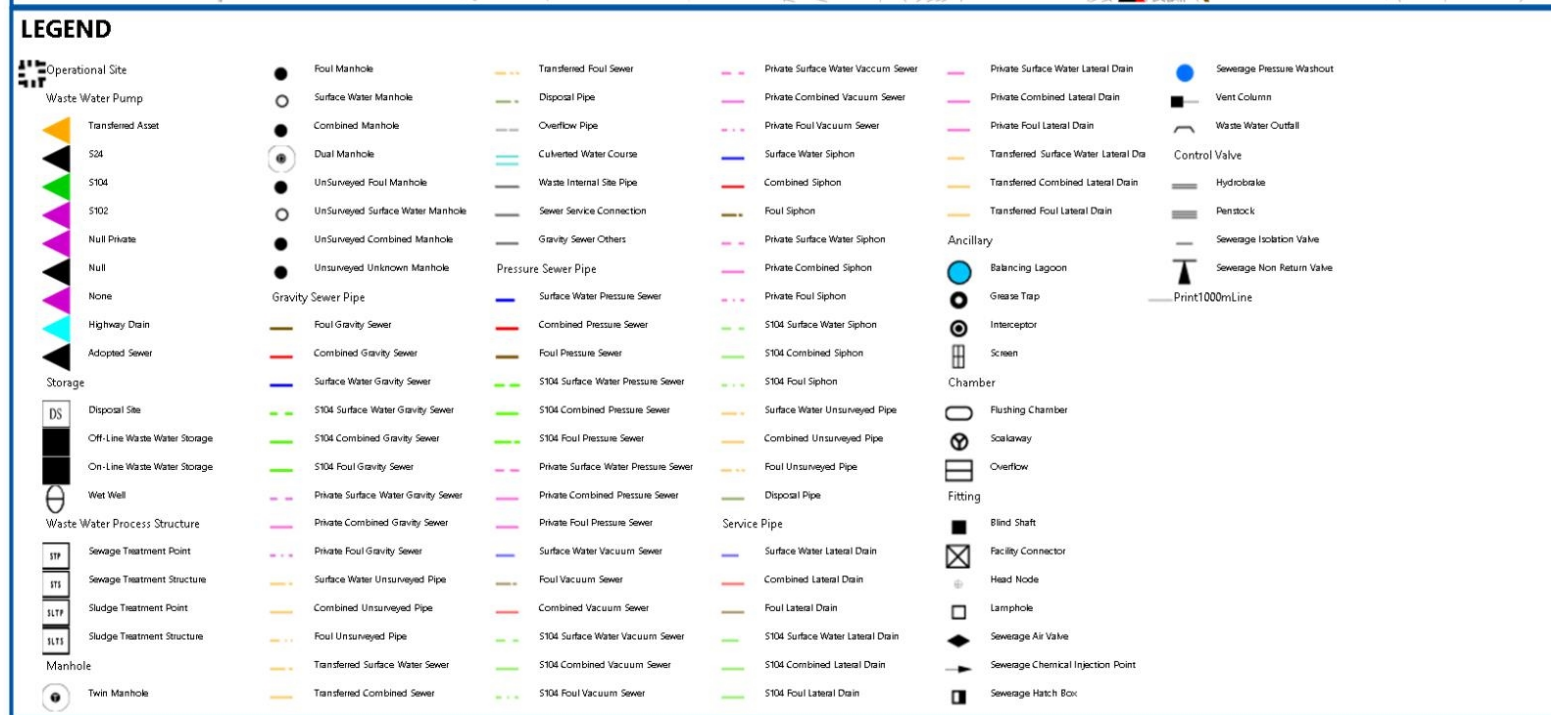
For any new connections (including the re-use of existing connections) to the public sewerage system, the developer will need to submit a Section 106 application form. Our Developer Services department are responsible for handling all new connections enquiries and applications. To contact them for an application form and associated guidance notes please call 0800 7076600 or download from www.stwater.co.uk.

Please quote the above reference in any future correspondence (including e-mails) with STW Limited. Please note that Developer Enquiry responses are only valid for 6 months from the date of this letter.

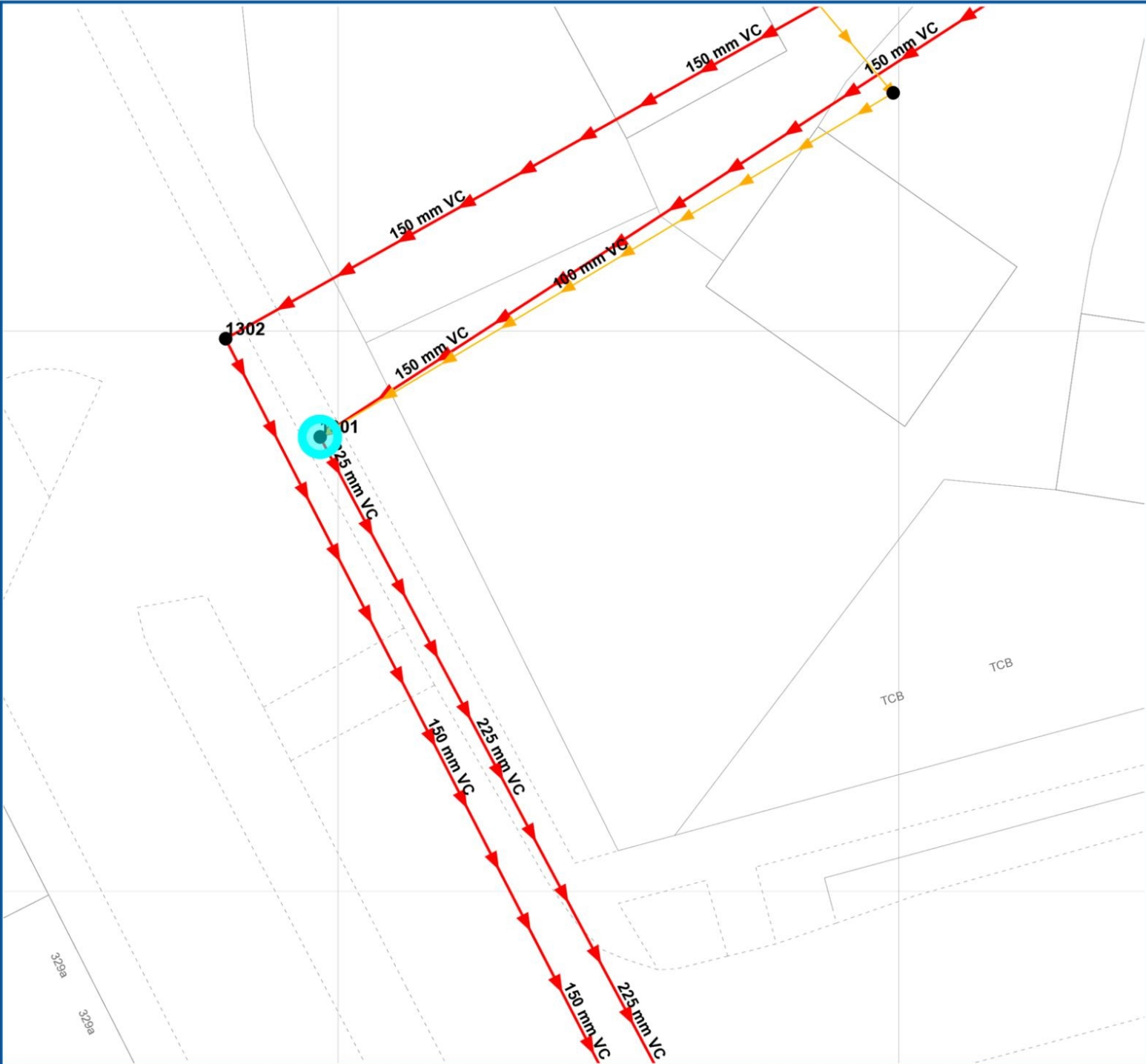
Yours sincerely

A handwritten signature in black ink, appearing to read 'Page Barot' with a stylized flourish at the end.

Page Barot
Network Solutions
Developer Services



<u>MATERIALS</u>	<u>SIZES</u>	<u>SHAPE</u>
- - NONE	W - WEIR	C - CIRCULAR
AC - ASBESTOS CEME	C - CASCADE	E - EGG SHAPED
BR - BRICK	DB - DAMBOARD	O - OTHER
CC - CONCRETE BOX CULVERT	SE - SIDE ENTRY	R - RECTANGLE
CI - CAST IRON	FV - FLAP VALVE	S - SQUARE
CO - CONCRETE	BD - BACK DROP	T - TRAPEZOIDAL
CSB - CONCRETE SEGMENTS (BOLTED)	S - SIPHON	U - UNKNOWN
CSU - CONCRETE SEGMENTS (UNBOLTED)	D - HIGHWAY DRAIN	
DI - DUCTILE IRON	S104 - SECTION 104	
GRP - GLASS REINFORCED PLASTIC		<u>PURPOSE</u>
MAC - MASONRY IN REGULAR COURSES		C - COMBINED
MAR - MASONRY RANDOMLY COURSED		E - FINAL EFFLUENT
PE - POLYETHYLENE		F - FOUL
PF - PITCH		L - SLUDGE
PP - POLYPROPYLENE		S - SURFACE WATER
PSC - PLASTIC STEEL COMPOSITE		
PVC - POLYVINYL CHLORIDE		
RPM - REINFORCED PLASTIC MATRIX		
SI - SPUN (GREY) IRON		
ST - STEEL		
U - UNKNOWN		
VC - VITRIFIED CLAY		
XXX - OTHER		



Reference	Cover Level	Invert Level Upstream	Invert Level Downstream	Purpose	Material	Pipe Shape	Max Size	Min Size	Gradient	Year Laid
SK44091301	155.2899	153.59	153.02	C	VC	C	225	<UNK>	94.95	31/12/1899 00:00:00
SK44091302	155.2799	153.41	152.89	C	VC	C	150	<UNK>	81.71	31/12/1899 00:00:00
<UNK>	<UNK>	<UNK>	<UNK>	C	VC	<UNK>	<UNK>	<UNK>	<UNK>	31/12/1899 00:00:00

LEGEND

Operational Site

Waste Water Pump

Transfered Asset

S24

S104

S102

Null Private

Null

None

Highway Drain

Adopted Sewer

Storage

DS

Disposal Site

Off-Line Waste Water Storage

On-Line Waste Water Storage

Wet Well

Waste Water Process Structure

119

111

117

1111

Manhole

Twin Manhole

Foul Manhole

Surface Water Manhole

Combined Manhole

Dual Manhole

Unsurveyed Foul Manhole

Unsurveyed Surface Water Manhole

Unsurveyed Combined Manhole

Unsurveyed Unknown Manhole

Gravity Sewer Pipe

Foul Gravity Sewer

Combined Gravity Sewer

Surface Water Gravity Sewer

S104 Surface Water Gravity Sewer

S104 Combined Gravity Sewer

S104 Foul Gravity Sewer

Private Surface Water Gravity Sewer

Private Combined Gravity Sewer

Surface Water Unserved Pipe

Combined Unserved Pipe

Foul Unserved Pipe

Transfered Surface Water Sewer

Transfered Combined Sewer

Transfered Foul Sewer

Disposal Pipe

Overflow Pipe

Culverted Water Course

Waste Internal Site Pipe

Sewer Service Connection

Gravity Sewer Others

Pressure Sewer Pipe

Surface Water Pressure Sewer

Combined Pressure Sewer

Foul Pressure Sewer

S104 Surface Water Pressure Sewer

S104 Combined Pressure Sewer

S104 Foul Pressure Sewer

Private Surface Water Pressure Sewer

Private Combined Pressure Sewer

Foul Vacuum Sewer

Combined Vacuum Sewer

S104 Surface Water Vacuum Sewer

S104 Combined Vacuum Sewer

S104 Foul Vacuum Sewer

Private Surface Water Vacuum Sewer

Private Combined Vacuum Sewer

Private Foul Vacuum Sewer

Surface Water Siphon

Combined Siphon

Foul Siphon

Private Surface Water Siphon

Private Combined Siphon

Private Foul Siphon

S104 Surface Water Siphon

S104 Combined Siphon

S104 Foul Siphon

Surface Water Unserved Pipe

Combined Unserved Pipe

Foul Unserved Pipe

Surface Water Lateral Drain

Combined Lateral Drain

Foul Lateral Drain

S104 Surface Water Lateral Drain

S104 Combined Lateral Drain

S104 Foul Lateral Drain

Private Surface Water Vacuum Sewer

Private Combined Vacuum Sewer

Private Foul Vacuum Sewer

Surface Water Siphon

Combined Siphon

Foul Siphon

Private Surface Water Siphon

Private Combined Siphon

Private Foul Siphon

S104 Surface Water Siphon

S104 Combined Siphon

S104 Foul Siphon

Surface Water Unserved Pipe

Combined Unserved Pipe

Foul Unserved Pipe

Surface Water Lateral Drain

Combined Lateral Drain

Foul Lateral Drain

S104 Surface Water Lateral Drain

S104 Combined Lateral Drain

S104 Foul Lateral Drain

Ancillary

Balancing Lagoon

Grease Trap

Interceptor

Screen

Chamber

Flushing Chamber

Scalaway

Overflow

Connector

Sewer Junctions

Sewer Line Connection Node

Fitting

Blind Shaft

Facility Connector

Head Node

Lamphole

Sewerage Air Valve

Sewerage Chemical Injection Point

Sewerage Hatch Box

Sewerage Pressure Washout

Vent Column

Waste Water Outfall

Control Valve

Hydrobrake

Penstock

Sewerage Isolation Valve

Sewerage Non Return Valve

Landline Symbol

Culvert Symbol

Direction Of Flow Symbol

Boundary Half Meeting Symbol

Bench Mark Symbol

Railway Switch Symbol

Road Related Flow Symbol

Print20mLine

MATERIALS

-
- AC
- BR
- CC
- CI
- CO
- CSB
- CSU
- DI
- GRP
- MAC
- MAR
- PE
- PF
- PP
- PSC
- PVC
- RPM
- SI
- ST
- U
- VC
- XXX
- NONE
- ASBESTOS CEME
- BRICK
- CONCRETE BOX CULVERT
- CAST IRON
- CONCRETE
- CONCRETE SEGMENTS (BOLTED)
- CONCRETE SEGMENTS (UNBOLTED)
- DUCTILE IRON
- GLASS REINFORCED PLASTIC
- MASONRY IN REGULAR COURSES
- MASONRY RANDOMLY COURSED
- POLYETHLENE
- PITCH
- POLYPROPYLENE
- PLASTIC STEEL COMPOSITE
- POLYVINYL CHLORIDE
- REINFORCED PLASTIC MATRIX
- SPUN (GREY) IRON
- STEEL
- UNKNOWN
- VITRIFIED CLAY
- OTHER

CATEGORIES

- W
- C
- DB
- SE
- FV
- BD
- S
- D
- S104
- WEIR
- CASCADE
- DAMBOARD
- SIDE ENTRY
- FLAP VALVE
- BACK DROP
- SIPHON
- HIGHWAY DRAIN
- SECTION 104

SHAPE

- C
- E
- O
- R
- T
- S
- U
- CIRCULAR
- EGG SHAPED
- OTHER
- RECTANGLE
- SQUARE
- TRAPEZOIDAL
- UNKNOWN

PURPOSE

- C
- E
- F
- L
- S
- COMBINED
- FINAL EFFLUENT
- FOUL
- SLUDGE
- SURFACE WATER



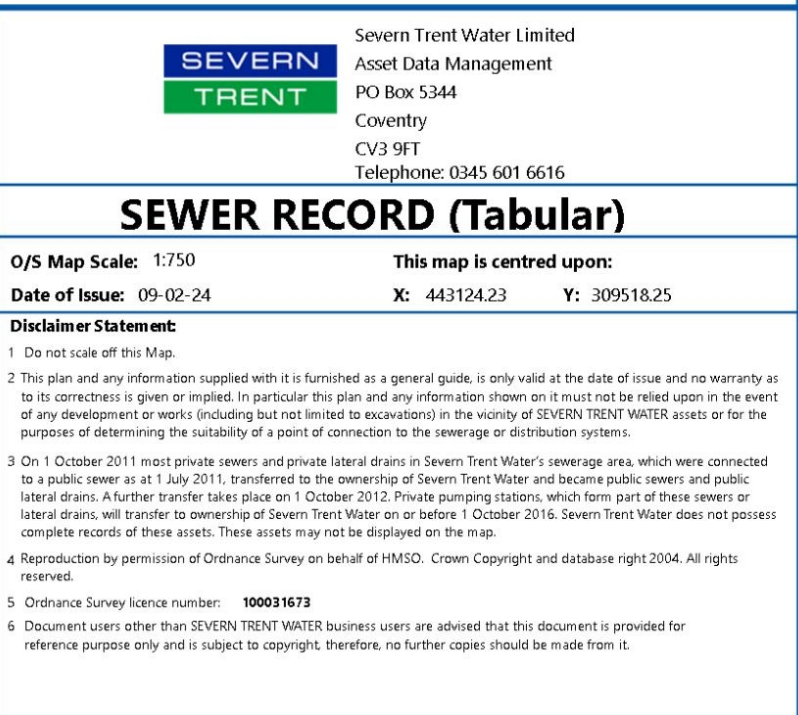
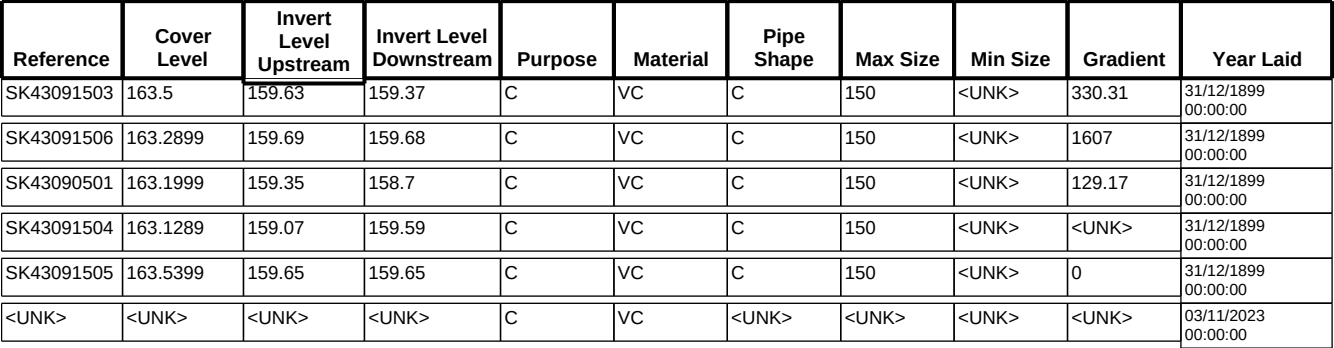
Severn Trent Water Limited
Asset Data Management
PO Box 5344
Coventry
CV3 9FT
Telephone: 0345 601 6616

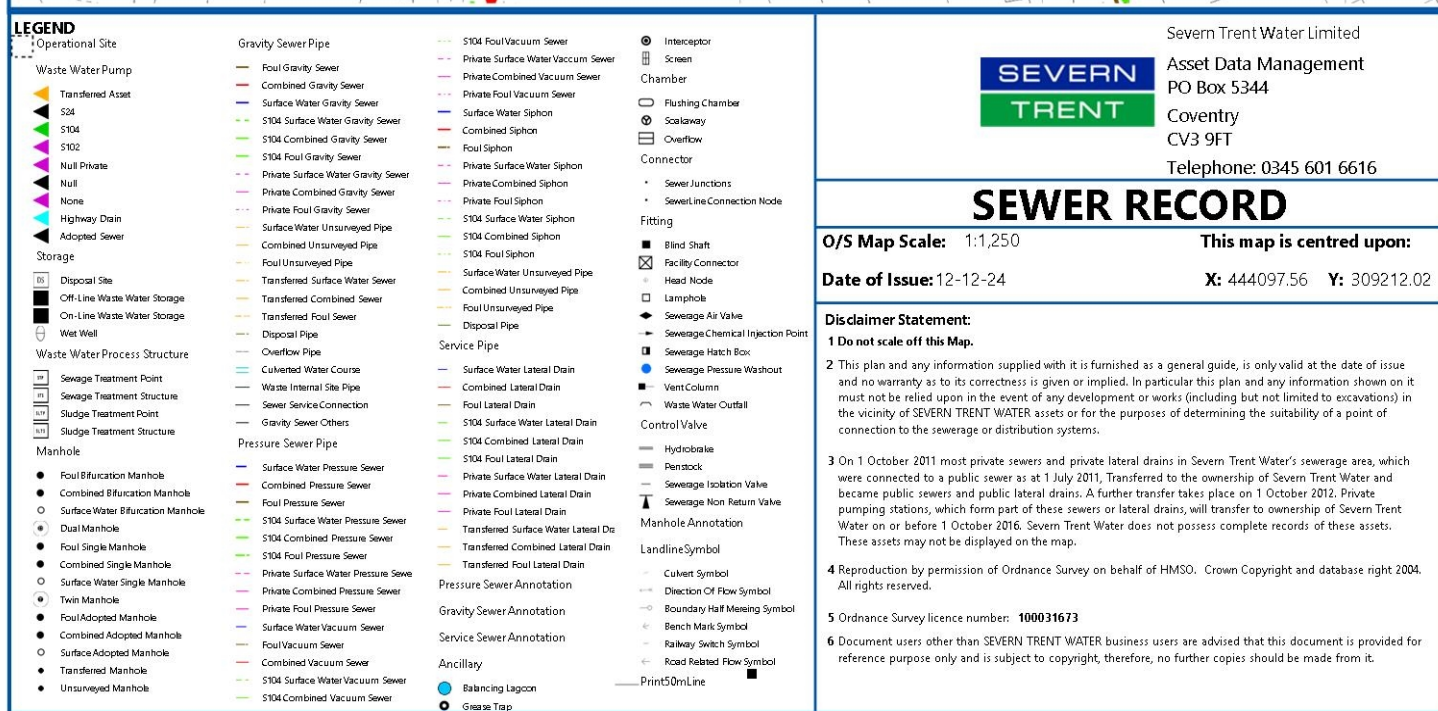
SEWER RECORD (Tabular)

O/S Map Scale: 1:200
Date of Issue: 09-02-24
This map is centred upon:
X: 444148.41 Y: 309312.73

Disclaimer Statement

- 1 Do not scale off this Map.
- 2 This plan and any information supplied with it is furnished as a general guide, is only valid at the date of issue and no warranty as to its correctness is given or implied. In particular this plan and any information shown on it must not be relied upon in the event of any development or works (including but not limited to excavations) in the vicinity of SEVERN TRENT WATER assets or for the purposes of determining the suitability of a point of connection to the sewerage or distribution systems.
- 3 On 1 October 2011 most private sewers and private lateral drains in Severn Trent Water's sewerage area, which were connected to a public sewer as at 1 July 2011, transferred to the ownership of Severn Trent Water and became public sewers and public lateral drains. A further transfer takes place on 1 October 2012. Private pumping stations, which form part of these sewers or lateral drains, will transfer to ownership of Severn Trent Water on or before 1 October 2016. Severn Trent Water does not possess complete records of these assets. These assets may not be displayed on the map.
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Sewer Node

Sewer Pipe Data

Reference	Cover Level	Invert Level Upstream	Invert Level Downstream	Purpose	Material	Pipe Shape	Max Size	Min Size	Gradient	Year Laid
<UNK>	<UNK>	<UNK>	<UNK>	S	<UNK>	<UNK>	<UNK>	<UNK>	<UNK>	16/05/2012 00:00:00
SK44090007	0	<UNK>	<UNK>	C	<UNK>	<UNK>	<UNK>	<UNK>	0	01/12/2011 00:00:00
<UNK>	<UNK>	<UNK>	<UNK>	S	<UNK>	<UNK>	<UNK>	<UNK>	<UNK>	16/05/2012 00:00:00
<UNK>	<UNK>	<UNK>	<UNK>	S	<UNK>	<UNK>	<UNK>	<UNK>	<UNK>	16/05/2012 00:00:00
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<UNK>	<UNK>	<UNK>	<UNK>	S	<UNK>	<UNK>	<UNK>	<UNK>	<UNK>	16/05/2012 00:00:00
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SK44090005	0	<UNK>	<UNK>	C	<UNK>	<UNK>	<UNK>	<UNK>	0	01/12/2011 00:00:00
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<UNK>	<UNK>	<UNK>	<UNK>	S	<UNK>	<UNK>	<UNK>	<UNK>	<UNK>	16/05/2012 00:00:00
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Sewer Node

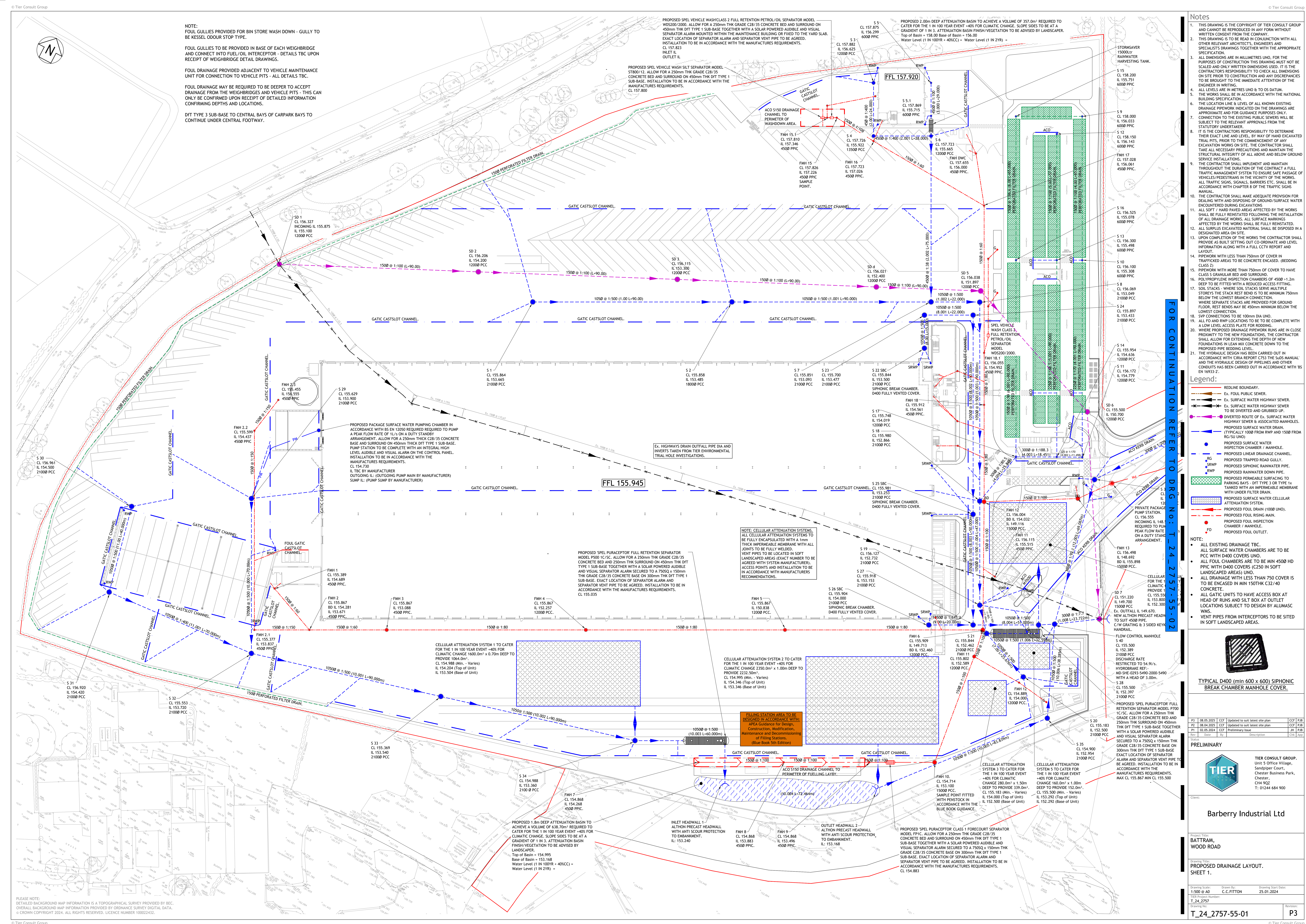
Sewer Pipe Data

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Appendix C

Drainage Layout



DFT TYPE 3 SUB-BASE TO CENTRAL BAYS OF CARPARK BAYS TO CONTINUE UNDER CENTRAL FOOTWAY.

PROPOSED SPEL VEHICLE WASH SILT SEPARATOR MODEL
ST800/12. ALLOW FOR A 250mm THK GRADE C28/35
CONCRETE BED AND SURROUND ON 450mm THK DFT TYPE 1
SUB-BASE. INSTALLATION TO BE IN ACCORDANCE WITH THE
MANUFACTURES REQUIREMENTS.
CL 157.800

PROPOSED 2.0m DEEP ATTENUATION BASIN TO ACHIEVE A VOLUME OF 357.0m³ REQUIRED TO CATER FOR THE 1 IN 100 YEAR EVENT +40% FOR CLIMATIC CHANGE. SLOPE SIDES TO BE AT A GRADIENT OF 1 IN 3. ATTENUATION BASIN FINISH/VEGETATION TO BE ADVISED BY LANDSCAPE.

AND CANNOT BE REPRODUCED IN ANY FORM WITHOUT WRITTEN CONSENT FROM THE COMPANY.

2. DRAWINGS TO BE SUBMITTED TO THE CONTRACTOR WITH ALL OTHER RELEVANT ARCHITECT'S, ENGINEERS AND SPECIALISTS' DRAWINGS TOGETHER WITH THE APPROPRIATE SPECIFICATION.

3. ALL DIMENSIONS ARE IN MILLIMETRES UNO, FOR THE PURPOSES OF CONSTRUCTION THIS DRAWING MUST NOT BE SCALED AND ONLY WRITTEN DIMENSIONS SHALL BE VALID. THE CONTRACTORS RESPONSIBILITY TO CHECK ALL DIMENSIONS ON SITE PRIOR TO CONSTRUCTION AND ANY DISCREPANCIES TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OR THE ENGINEER IN WRITING.

4. THE WORKS SHALL BE COMPLETED WITHIN THE PERIOD OF 18 WEEKS UNO 6 TO 05 DATUM.

5. THE WORKS SHALL BE IN ACCORDANCE WITH THE NATIONAL BUILDING SPECIFICATION.

6. THE LOCATION LINE OF ALL KNOWN EXISTING DRAINAGE PIPEWORK INDICATED ON THE DRAWINGS ARE APPROXIMATE AND FOR GUIDANCE PURPOSES ONLY. THE EXISTENCE OF THE EXISTING PIPEWORK SHALL BE SUBJECT TO THE RELEVANT APPROVALS FROM THE STATUTORY UNDERTAKER.

7. THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXACT LINE AND LEVEL, BY WAY OF HAND EXCAVATED TO THE REQUIRED DEPTH, SHALL BE THE CONTRACTOR'S. ON EXCAVATION WORKS ON SITE, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS AND MAINTAIN THE STRUCTURAL INTEGRITY OF ALL ABOVE AND BELOW GROUND SERVICE INSTALLATIONS.

8. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THROUGHOUT THE DURATION OF THE WORKS A SAFE TRAFFIC MANAGEMENT SYSTEM TO ENSURE SAFE PASSAGE OF VEHICLES/PEDESTRIANS IN THE VICINITY OF THE WORKS. TRAFFIC SIGNS, SIGNALLING AND LIGHTS SHALL BE IN ACCORDANCE WITH CHAPTER 8 OF THE TRAFFIC SIGNS MANUAL.

9. THE CONTRACTOR SHALL MAKE ADEQUATE PROVISION FOR DEALING WITH AND DISPOSING OF GROUND/SURFACE WATER DURING THE WORKS.

10. ALL SOFT / HARD PAVED AREAS AFFECTED BY THE WORKS SHALL BE FULLY REINSTATED FOLLOWING THE INSTALLATION OF THE DRAINAGE WORKS. ALL EXISTING AREAS NOT AFFECTED BY THE WORKS SHALL BE FULLY REINSTATED.

11. ALL SURPLUS EXCAVATED MATERIAL SHALL BE DISPOSED IN A DESIGNATED AREA.

12. ON COMPLETION OF THE WORKS THE CONTRACTOR SHALL PROVIDE AS BUILT SETTING OUT CO-ORDINATE AND LEVEL INFORMATION FOR THE NEW DRAINAGE WORKS, INCLUDING LAYOUT.

13. THE CONTRACTOR SHALL PROVIDE LESS THAN 750mm OF COVER IN TRACKED AREAS TO BE CONCRETE CENOS. (BEDDING CLASS 2)

14. PIPEWORK WITH MORE THAN 750mm OF COVER TO HAVE CLASS 3 GRANULAR BED AND SURROUND.

15. POLYPROPYLENE INSPECTION CHAMBERS OF 450mm x 120mm TO BE FITTED WITH 150mm DIA. 150mm DIA. 150mm DIA. SLOPE STACKS - WHERE SLOPE STACKS SURVEY MULTIPLE STOREYS THE STACK REST BEND IS TO BE MINIMUM 750mm FROM THE LOWEST BEND.

16. WHERE SEPARATE STACKS ARE PROVIDED FOR GROUND FLOOR, REST BENDS MAY BE 450mm MINIMUM BELOW THE LOWEST CONNECTION.

17. SVP CONNECTIONS TO BE 100mm DIA UNO.

18. 40 TO 60mm DIA. 40mm DIA. 40mm DIA. SLOPESTACKS WITH A LOW LEVEL ACCESS PLACE FOR RODDING.

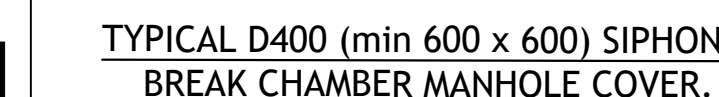
19. WHERE PROPOSED DRAINAGE PIPEWORK RUNS ARE IN CLOSE PROXIMITY TO THE NEW FOUNDATIONS THE CONTRACTOR SHALL ALLOW FOR EXTENDING THE DEPTH OF NEW FOUNDATIONS IN LEAN MIX CONCRETE DOWN TO THE PROPOSED BEDDING.

20. THE HYDRAULIC DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH CIVIA REGIO C753 THE SUDS MANUAL.

21. THE HYDRAULIC DESIGN HAS BEEN CARRIED OUT BY THE CONSULTANTS HAS BEEN CARRIED OUT IN ACCORDANCE WITH THE

	REDLINE BOUNDARY.
	EX. FOUL PUBLIC SEWER.
	EX. SURFACE WATER HIGHWAY SEWER.
	EX. SURFACE WATER HIGHWAY SEWER TO BE DIVERTED AND GRUBBED UP.
	PROPOSED ROUTE OF EX. SURFACE WATER HIGHWAY SEWER RE-ASSIGNED MANHOLES.
	PROPOSED SURFACE WATER DRAIN (TYPICALLY 1000' FROM RWP AND 1500' FROM RG/SU UNO)
	PROPOSED SURFACE WATER INSPECTION CHAMBER / MANHOLE.
	PROPOSED LINEAR DRAINAGE CHANNEL.
	PROPOSED TRAPPED ROAD GULLY.
	PROPOSED SWP RAINWATER DOWN PIPE.
	PROPOSED PERMEABLE SURFACING TO PARKING BAYS - D/T TYPE 3 OR TYPE 1X TANKED WITH AN IMPERMEABLE MEMBRANE WITH UNDER FILTER DRAIN.
	PROPOSED SURFACE WATER CELLULAR ATTENUATION SYSTEM.
	PROPOSED FOUL DRAIN (1000' UNO).
	PROPOSED FOUL RISING MAIN.
	PROPOSED FOUL INSPECTION CHAMBER / MANHOLE.
	PROPOSED FOUL OUTLET.

- ALL EXISTING DRAINAGE TBCR,
- ALL SURFACE WATER CHAMBERS ARE TO BE PCC WITH D400 COVERS UNO.
- ALL FOUL CHAMBERS ARE TO BE MIN 450Ø HD PPIC WITH D400 COVERS (C250 IN SOFT LANDSCAPED AREAS) UNO.
- ALL DRAINAGE WITH LESS THAN 75% COVER IS TO BE ENCASED IN MIN 150THK C32/40 CONCRETE.
- ALL GATIC UNITS TO HAVE ACCESS BOX AT HEAD OF RUNS AND SILT BOX AT OUTLET LOCATIONS SUBJECT TO DESIGN BY ALUMASC WMS.
- VENT PIPES FROM INTERCEPTORS TO BE SITED IN SOFT LANDSCAPED AREAS,



P3	08.05.2025	CCF	Updated to suit latest site plan	CCF	PJB
P2	08.04.2025	CCF	Updated to suit latest site plan	CCF	PJB
P1	02.05.2024	CCF	Preliminary Issue	JH	PJB
Rev	Date	By	Description	Chk	App

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Barberry Industrial Ltd

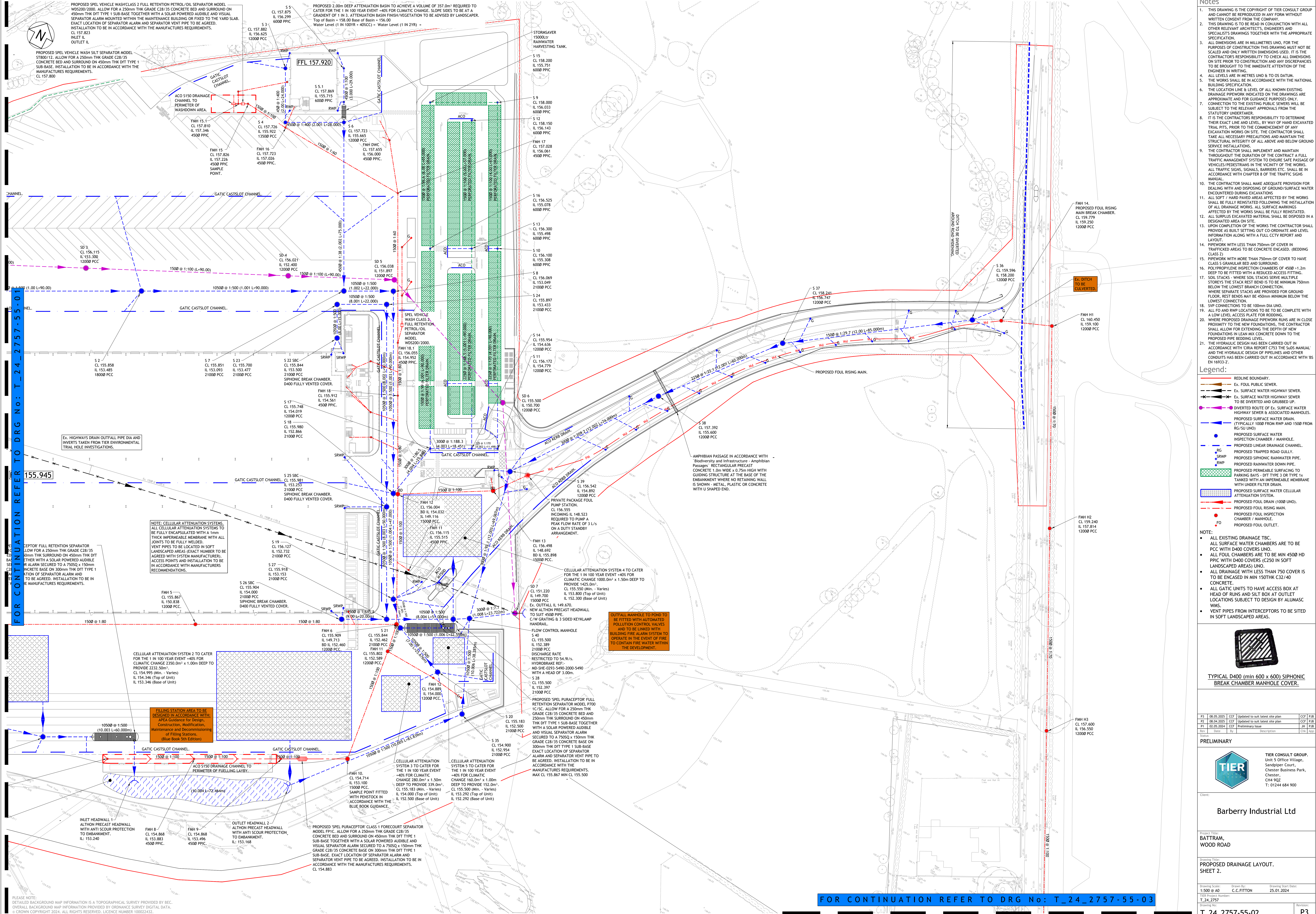
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PROPOSED DRAINAGE LAYOUT.
SHEET 1

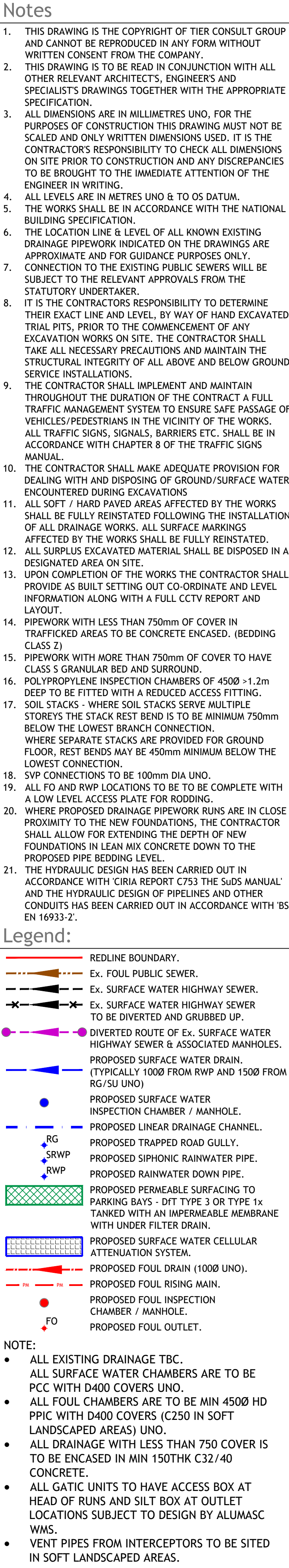
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1:500 @ A0		C.C.FITTON	25.01.2024
TIER Project Number: T_24_2757			
Drawing No:			Revision:

T 24 2757-55-01	P3
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TYPICAL D400 (min 600 x 600) SIPHONIC
BREAK CHAMBER MANHOLE COVER.

P3	08.05.2025	CCF	Updated to suit latest site plan	CCF	PJE
P2	08.04.2025	CCF	Updated to suit latest site plan	CCF	PJE
P1	02.05.2024	CCF	Preliminary Issue	JH	PJE
Rev	Date	By	Description	Chk	App

PRELIMINARY



TIER CONSULT GROUP.
Unit 5 Office Village,
Sandpiper Court,
Chester Business Park,
Chester,
CH4 9QZ
T: 01244 684 900

Client: _____

Barberry Industrial Ltd

Project Title:
**BATTRAM,
WOOD ROAD**

Drawing Title:
PROPOSED DRAINAGE LAYOUT.
SHEET 3.

Drawing Scale: 1:500 @ A0	Drawn By: C.C.FITTON	Drawing Start Date: 25.01.2024
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Drawing No:	Revision:
T. 24 2757 55 02	D2

T_24_2757-55-03	P3
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