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Bicester Gateway, Bicester

Services, Foul & Surface Water Drainage Strategy

1.0 Introduction

1.1 This planning statement offers a general overview of the feasibility of providing services, surface water and foul drainage to the proposed development at Bicester Gateway, Bicester.

1.2 The development proposal, as shown by the umc Architects drawing no. 16084 P102 included within Appendix A, includes for hotel and office accommodation on greenfield sites.

2.0 Services Strategy

2.1 The proposed development is located on greenfield land adjacent to the A41 as shown by the umc Architects masterplan included within Appendix A.

2.2 The proposed development is to be serviced by extending the existing services, shown on HDL drawing nos. 16-2625-001 P1, 002 P1, 700 P1& 701 P1 included within Appendix B, into the site.

2.3 BT apparatus runs adjacent to the development sites as shown by HDL drawing nos. 16-2625-700 P1 & 701 P1. The new telecommunications requirement will be connected to the adjacent BT network.

2.4 SGN service returns included within Appendix C indicate that there are no gas mains in the vicinity of the site. A new gas supply will need to be requisitioned from SGN or an on site gas tank installed.

2.5 HDL drawing no. 16-2625-002 P1 shows the routes of existing Thames Water water mains. The development will be connected to the water main closest to the development sites.

2.6 HDL drawing nos. 16-2625-700 P1 & 701 P1 shows the location of HV & LV cables which run adjacent to the site. The new supply will be fed to the development from the existing electricity cables via on site substations if required.

3.0 Foul Drainage Strategy

3.1 HDL drawing no. 16-2625-001 P1 shows the existing adopted drainage network in proximity to the development sites which discharge to the Bicester Sewerage Treatment Plant.

3.2 HDL drawing no. 16-2625-551 shows an existing adopted foul rising main passing through the southern development site.

3.3 Foul discharges from the development sites will be collected via a new on site gravity pipe system to a proposed pumping station on the line of the existing rising main in the southwest corner of the Phase 1B development site.

3.4 The on site sewers will be designed and constructed in accordance with the current edition of 'Sewers for Adoption'. The on-site drainage layout will be designed as a gravity fed system. An on-site pumping station will be required to allow discharge from the development site to the existing rising main.

3.5 Connection to the existing foul drainage system will need to be agreed with Thames Water as part of a Section 104 agreement.

4.0 Surface Water Drainage Strategy

4.1 The Code of Practice for Sustainable Drainage Systems provides a flexible approach to drainage systems with a wide range of components and includes a hierarchy of techniques. These are:-

Prevention - The use of good site design and housekeeping measures on site to prevent run-off and pollution:-

1. Source Control - Control of run off at or very near to its source.

2. Site Control - Management of water from several sub catchment areas.

3. Regional Control - Management of run off from several sites, typically in a detention pond or wetland.

4.2 With the above in mind surface water disposal will respect the hierarchy of techniques outlined above.

4.3 Prevention will be at the forefront of the development of the site with the site set out to maximise the areas of soft landscaping.

4.4 Source control forms the basis of the surface water drainage strategy and will be introduced in the following ways:-

Surface water will be attenuated and discharged to the existing surface water drainage ditch in a controlled manner attenuating using permeable paving and hydrobreaks as shown by HDL drawing nos. 16-2625-500P2 & 501P2 included within Appendix B.

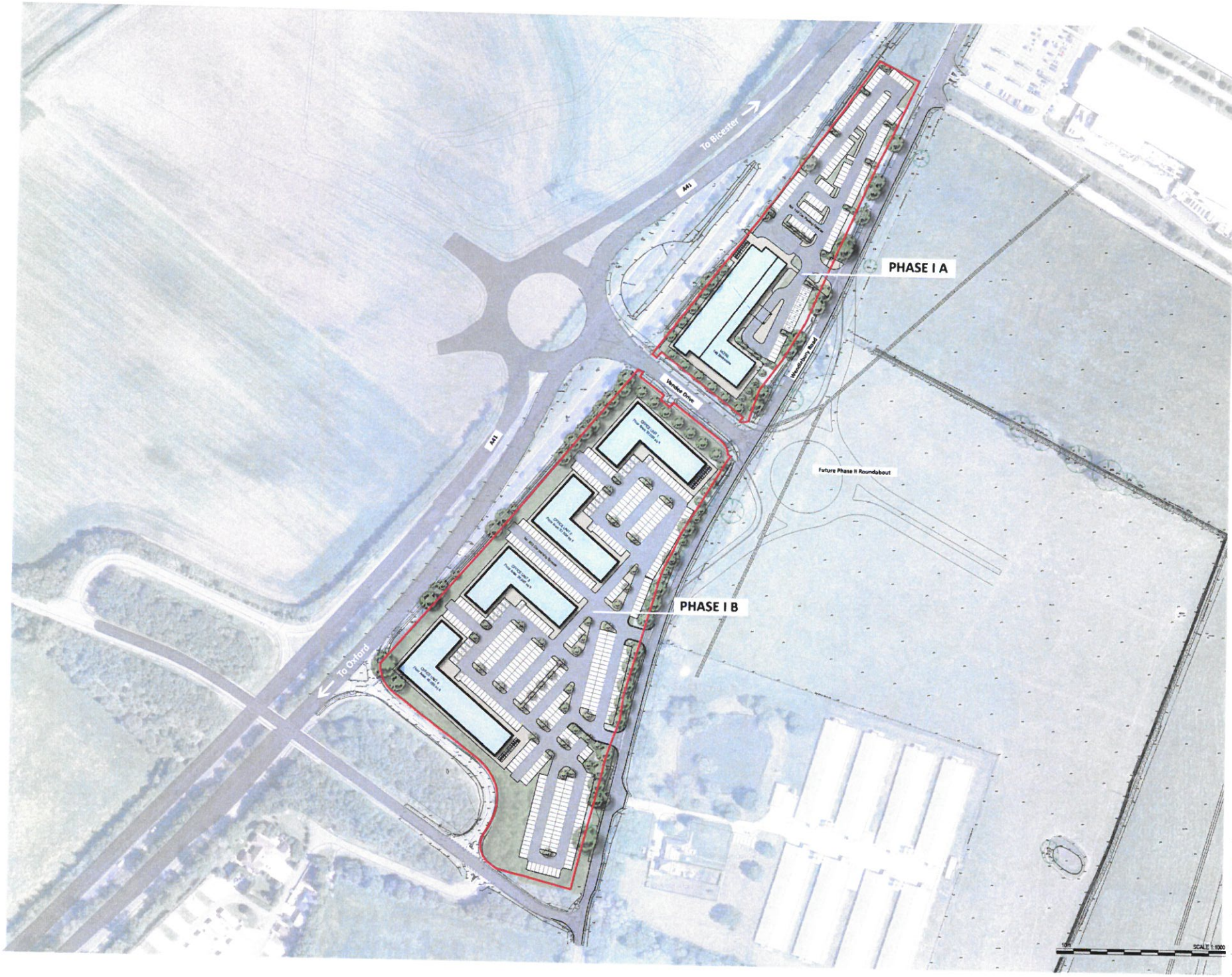
4.5 Rainfall within soft landscaped areas which are minimal will be allowed to permeate through the ground in order to mimic as closely as possible the natural drainage from the site before development.

5.0 Conclusions

5.1 The above shows that it is feasible to provide both services and foul and surface water drainage to the proposed development sites at Bicester Gateway.

Appendix A

Umc Architects Masterplan



- Dimensions are in millimetres, unless stated otherwise.
- Scaling of this drawing is not recommended.
- It is the recipients responsibility to print this document to the correct scale.
- All relevant drawings and specifications should be read in conjunction with this drawing.

N

SCHEDULE OF ACCOMMODATION

PHASE IA	- 2.56 Acres (1.043 Ha)
PHASE IA Land to be Retained for Future Phase II Road Widening	- 0.02 Acres (0.01 Ha)
Total Area PHASE IA	- 2.58 Acres (1.044 Ha)

PHASE IB	- 6.56 Acres (2.65 Ha)
PHASE IB Land to be Retained for Future Phase II Road Widening	- .25 Acres (0.10 Ha)
Total Area PHASE IB	- 6.81 Acres (2.75 Ha)

PHASE IA

Hotel	- 149 Bedrooms
Car Parking Spaces	- 149 (Including 8 Accessible Spaces)

PHASE IB

Unit 1	- 37,038 sq ft
Unit 2	- 37,038 sq ft
Unit 3	- 37,040 sq ft
Unit 4	- 49,050 sq ft
Car Parking Spaces	- 503 (Including 25 Accessible Spaces)

BOUNDARY

rev	amendments	by	ckd	date

Bicester Gateway, Bicester

Masterplan - Phase 1

Bloombridge Development Partners

umc architects

Drawing Status	Planning
Drawn / Checked	GW / GMc
Date	12.12.2016
Scale	1:1000 @ A1
Drawing no	Revision
16084 P102	-

Appendix B

HDL Drawings

ALS Sewer Map Key

Public Sewer Types (Owned & Maintained by Thames Water)

- Foul: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
- Surface Water: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
- Combined: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
- Trade Surface Water
- Trunk Foul
- Some Recut
- Trade Combined
- Vent Pipe
- Sludge (Sludge)
- Proposed Thames Surface Water Sewer
- Proposed Thames Water Foul Sewer
- Gallery
- Foul Rising main
- Surface Water Rising Main
- Combined Rising main
- Sludge Rising Main
- Proposed Thames Water Rising Main
- Vacuum

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a valve is a fitting as the function of a valve is to release sewage gas.

- Air Valve
- Dam Sluice
- Fitting
- Meter
- Vent Column

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: a hydrobrake limits the flow passing downstream.

- Control Valve
- Drop Pipe
- Ancillary
- Weir

End Items

End symbols appear at the start or end of a sewer pipe. Example: an Unidified End at the start of a sewer indicates that Thames Water has no knowledge of the location of the sewer upstream of that symbol. Outlet on a surface water sewer indicates that the pipe discharges into a stream or river.

- Outlet
- Unidified End
- Inlet

Other Symbols

Symbols used on maps which do not fall under other general categories

- Public/Private Pumping Station
- Change of characteristics indicator (C.O.C.I.)
- Invert Level
- Summit

Areas

Lines depicting areas of underground surveys, etc.

- Agreement
- Operational Site
- Chamber
- Tunnel
- Conduit Bridge

Other Sewer Types (Not Owned or Maintained by Thames Water)

- Foul Sewer
- Surface Water Sewer
- Combined Sewer
- Culvert
- Culverted Watercourse
- Proposed
- Abandoned Sewer

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.
2) All measurements on the plans are metric.
3) Arrows (on gravity foul sewers) or flades (on rising mains) indicate direction of flow.
4) Vent/ducts pipes are not shown on our plans, as in the past this information has not been recorded.
5) 'n' or 'f' on a manhole lists indicates that also a connection.
6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimetres. Text 'var' in a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology shown on the plan, please contact a Developer Property Insight on 0845 070 9148.

Thames Water Utilities Ltd Property Services, PO Box 3189, Slough SL1 4AX. DN 101280 Slough 12
T 0845 070 9148 E developerservices@thameswater.co.uk F www.thameswater.co.uk/developers

CONSTRUCTION

Version	Amendment	Revised by and date	Checked by and date	Approved by and date
C1	CONSTRUCTION	HDL/12.16	HDL/12.16	HDL/12.16

ORIGINAL DRAWING SIZE – A1

CAD REF.

X-REF'S:

HAMILL DAVIES LIMITED
Consulting Civil and Structural Engineers

Client: BLOOMBRIDGE LLP
Project: BICESTER GATEWAY, BICESTER
Drawing Title: EXISTING FOUL WATER DRAINAGE
Purpose: CONSTRUCTION
Drawn: HDL
Designed:
Scale: NTS
Drawing Office: SWANMORE
Telephone: 01489 893 596
Drawing Number: 16-2625-001
Version: C1

ALS Water Map Key

Water Pipes (Operated & Maintained by Thames Water)

Distribution Main: The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.

Trunk Main: A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.

Supply Main: A supply main indicates that the water main is used as a supply for a single property or group of properties.

Fire Main: Where a pipe is used as a fire supply. The word FIRE will be displayed along the pipe.

Metered Pipe: A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.

Transmission Tunnel: A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.

Proposed Main: A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

PIPE DIAMETER	DEPTH BELOW GROUND
76 to 300mm (3")	900mm (3')
350mm - 600mm (14" - 24")	1100mm (3.6')
630mm and bigger (24" plus)	1200mm (4')

Thames Water Utilities Ltd, Property Searches, PO Box 3189, Slough SL1 4ld. Dx 151280 Slough 13
T 0845 070 9148 E searches@thameswater.co.uk I www.thameswater.propertysearches.co.uk

Valves

General Purpose Valve
Air Valve
Pressure Control Valve
Customer Valve

Hydrants

Single Hydrant

Meters

Meter

End Items

Symbol indicating what happens at the end of a water main.

Blank Flange
Capped End
Emptying Pit
Undefined End
Manhole
Customer Supply
Fire Supply

Operational Sites

Booster Station
Other
Other (Proposed)
Pumping Station
Service Reservoir
Shaft Inspection
Treatment Works
Unknown
Water Tower

Other Symbols

Data Logger

Other Water Pipes (Not Operated or Maintained by Thames Water)

Other Water Company Main: Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are detailed in purple and in most cases have the owner of the pipe displayed along them.

Private Main: Indicates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

CONSTRUCTION

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C1	CONSTRUCTION	HDL/12.16	HDL/12.16	HDL/12.16

ORIGINAL DRAWING SIZE - A1
CAD REF.
X-REFS:

HDL
HAMILL DAVIES LIMITED
Consulting Civil and Structural Engineers

Client: BLOOMBRIDGE LLP
Project: BICESTER GATEWAY, BICESTER
Drawing Title: EXISTING WATER SUPPLY
Purpose: CONSTRUCTION
Drawn: HDL
Designed:
Scale: NTS
Issuing Office: SWANMORE
Telephone: 01489 893 596
Drawing Number: 16-2625-002
Version: C1

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D1. INVERT LEVELS AND POSITIONS OF EXISTING DRAINS /CHAMBERS /SEWERS WHERE NEW CONNECTIONS ARE TO BE MADE MUST BE CHECKED AND CONFIRMED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORKS.
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D6. ALL PIPES UP TO 300mm DIAMETER TO BE VITRIFIED CLAY, EXTRA STRENGTH TO BSEN 295 OR BS 65 WITH PLAIN ENDED SLEEVED OR SOCKETED FLEXIBLE JOINTS. ALL PIPES OF 375mm DIAMETER AND OVER, TO BE SULPHATE RESISTING CONCRETE CLASS M WITH SOCKETED FLEXIBLE JOINTS.
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DRAINAGE KEY:

SWMH	SURFACE WATER MANHOLE/DRAINAGE 150mm ø MIN. 1:60 U.N.O.
	100ø RWP CONNECTION (ALL TRAPPED)
	SW INSPECTION CHAMBER
	RWP
	DISTRIBUTION BOX
HB	HYDROBRAKE
	POROUS PAVING (4835.28m2)

PRELIMINARY

Revision	Amendment	Revised by and date	Checked by and date	Approved by and date
P2	PRELIMINARY	HDL/12.16	HDL/12.16	HDL/12.16
P1	PRELIMINARY	HDL/10.16	HDL/10.16	HDL/10.16

ORIGINAL DRAWING SIZE - A1
CAD REF.
X-REFS:

HAMILL DAVIES LIMITED
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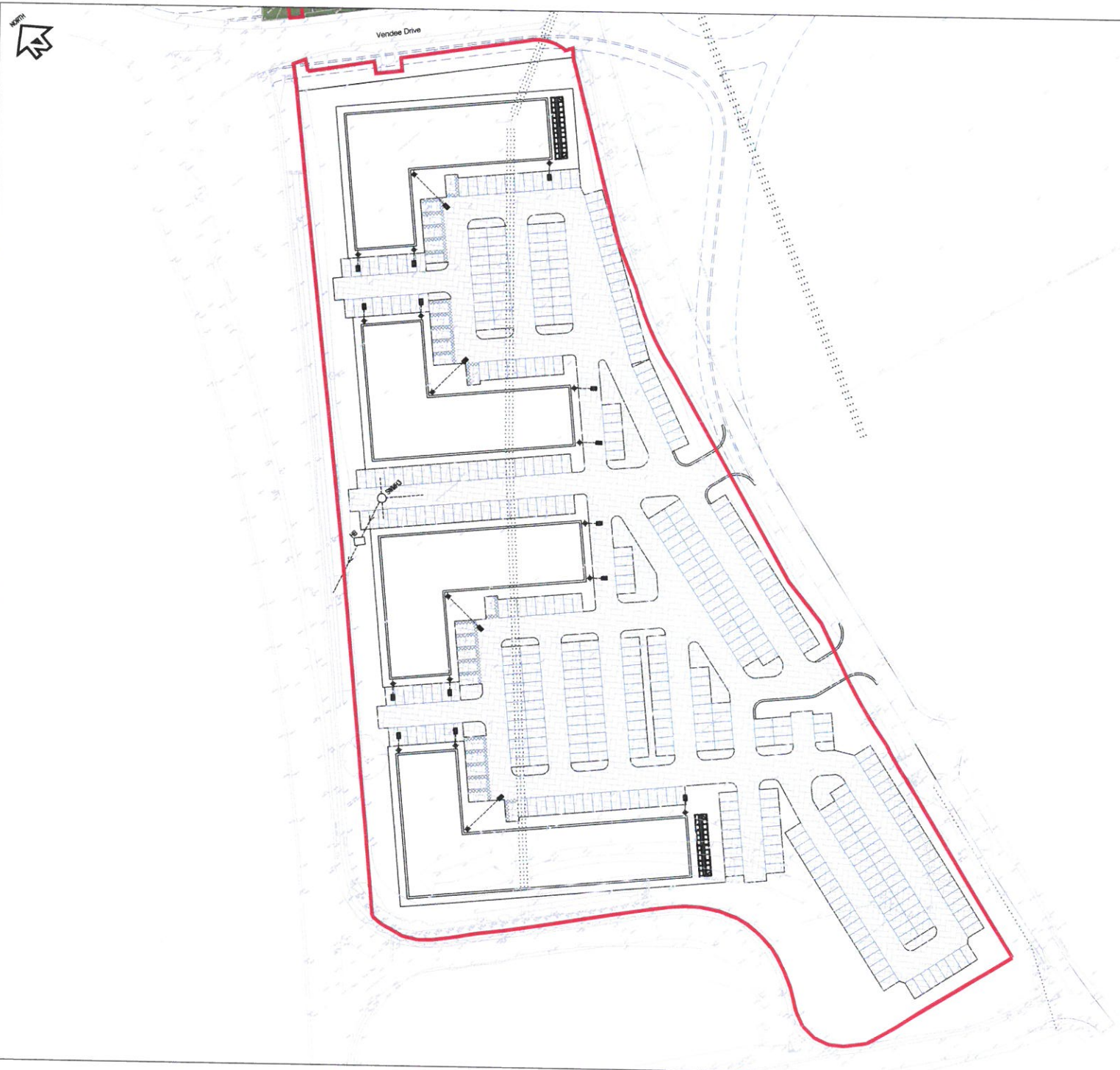
Client: BLOOMBRIDGE LLP
Project: BICESTER GATEWAY, BICESTER
Drawing Title: PHASE 1A SURFACE WATER DRAINAGE LAYOUT
Purpose: PRELIMINARY
Drawn: HDL
Designed:
Scale: AS SHOWN@A1
Issuing Office: SWANMORE
Telephone: 01489 893 596
Drawing Number: 16-2625-500
Revision: P2



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	SW INSPECTION CHAMBER
	RWP
	DISTRIBUTION BOX
HB	HYDROBRAKE
	POROUS PAVING (14106.54m2)

PRELIMINARY

Revision	Amendment	Revised by and date	Checked by and date	Approved by and date
P2	PRELIMINARY	HDL/12.16	HDL/12.16	HDL/12.16
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ORIGINAL DRAWING SIZE - A1

X-REFS:

CAD REF.

HAMILL DAVIES LIMITED
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Client: BLOOMBRIDGE LLP
Project: BICESTER GATEWAY, BICESTER
Drawing Title: PHASE 1B SURFACE WATER DRAINAGE LAYOUT
Purpose: PRELIMINARY
Drawn: HDL
Designed:
Scale: 1:500 @ A1
Sending Office: SWANMORE
Telephone: 01489 893 596
Drawing Number: 16-2625-501
Revision: P2

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DRAINAGE KEY:

FWMH	FOUL WATER MANHOLE/DRAINAGE 150mm ø MIN. 1:40 U.N.O.
	100ø SVP/ARV/SS CONNECTION
	SVP
	RISING MAIN

PRELIMINARY

Version	Amendment	Revised by and date	Checked by and date	Approved by and date
P1	PRELIMINARY	HDL/12.16	HDL/12.16	HDL/12.16

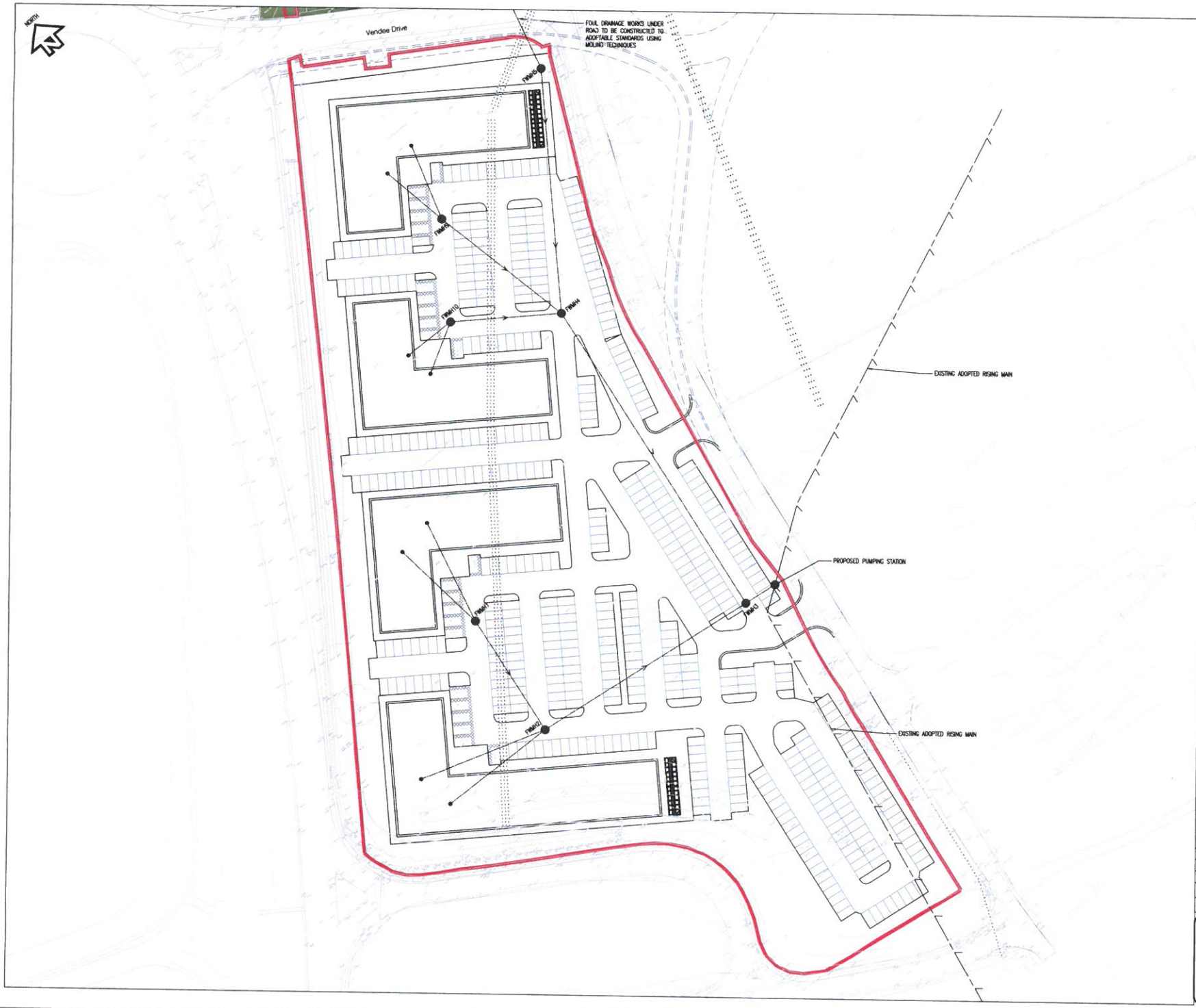
ORIGINAL DRAWING SIZE - A1

X-REF'S:

CAD REF.

HAMILL DAVIES LIMITED
Consulting Civil and Structural Engineers

Client: BLOOMBRIDGE LLP
Project: BICESTER GATEWAY, BICESTER
Drawing Title: PHASE 1A FOUL WATER DRAINAGE LAYOUT
Purpose: PRELIMINARY
Drawn: HDL
Designed:
Scale: 1:500 @A1
Issuing Office: SWANMORE
Telephone: 01489 893 596
Drawing Number: 16-2625-550
Version: P1



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DRAINAGE NOTES:

D1. INVERT LEVELS AND POSITIONS OF EXISTING DRAINS /CHAMBERS /SEWERS WHERE NEW CONNECTIONS ARE TO BE MADE MUST BE CHECKED AND CONFIRMED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORKS.
D2. ALL DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY, ENVIRONMENT AGENCY AND IN CONJUNCTION WITH ALL RELEVANT BRITISH STANDARDS, CODES OF PRACTICE AND 'SEWERS FOR ADOPTION' AS APPROPRIATE.
D3. ALL DRAINAGE SHALL COMPLY WITH THE TYPICAL DETAILS AND THE REQUIREMENTS OF BSEN 752.
D4. REFER TO MANHOLE SCHEDULE OR DRAWINGS FOR MANHOLE TYPES, SIZE, DEPTHS AND SPECIFIC REQUIREMENTS.
D5. FOR SETTING OUT DIMENSIONS OF SVP'S, RWP'S ETC. REFER TO ARCHITECT'S DRAWINGS.
D6. ALL PIPES UP TO 300mm DIAMETER TO BE VITRIFIED CLAY, EXTRA STRENGTH TO BSEN 295 OR BS 65 WITH PLAIN ENDED SLEEVED OR SOCKETED FLEXIBLE JOINTS. ALL PIPES OF 375mm DIAMETER AND OVER, TO BE SULPHATE RESISTING CONCRETE CLASS M WITH SOCKETED FLEXIBLE JOINTS.
D7. INVERTS OF INCOMING BRANCHES SHALL BE AT SPRINGING LEVEL TO THE MAIN PIPE AND FORMED GENERALLY USING CHANNEL PIPES AND SLIPPER BENDS, CUT TO SUIT.
D8. ALL GULLY AND DRAINAGE CHANNEL CONNECTIONS SHALL BE 150mm DIAMETER AND TRAPPED UNLESS OTHERWISE SPECIFIED.
D9. ALL FOUL AND RWP CONNECTIONS SHALL BE 100MM DIAMETER UNLESS OTHERWISE SPECIFIED.
D10. ALL PRE-CAST CONCRETE UNITS IN THE DRAINAGE WORKS SHALL BE MANUFACTURED USING SULPHATE RESISTING CEMENT.
D11. MANHOLE COVERS AND FRAMES SHALL BE TO BSEN 124 AND KITEMARKED. COVER AND FRAMES SHALL BE HEAVY DUTY D400 IN CARRIAGEWAYS AND VEHICULAR AREAS AND MEDIUM DUTY B125 IN FOOTWAYS AND SOFT LANDSCAPING. IN BLOCK PAVED AREAS COVERS SHALL BE RECESSED FABRICATED STEEL.
D12. REFER TO STRUCTURAL DRAWINGS FOR DETAILS OF MANHOLES AND DRAINS CONSTRUCTED WITHIN FLOOR SLABS AND FOUNDATIONS.
D13. COVER LEVELS ARE TO BE ADJUSTED LOCALLY TO SUIT FINISHED GROUND LEVELS.
D14. HEALTH & SAFETY: THE WORKS SHALL BE CARRIED OUT BY SPECIALIST COMPETENT AND EXPERIENCED CONTRACTORS WHO ARE MEMBERS OF A RECOGNISED NATIONAL ORGANISATION.
OPERATIVES SHALL HAVE RECEIVED FULL AND APPROPRIATE TRAINING FOR THE OPERATION THEY ARE TO UNDERTAKE. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH ALL PERTINENT HEALTH AND SAFETY REGULATIONS.
D15. PIPES TO BE LAID TO A MINIMUM GRADIENT OF 1:60 UNLESS NOTED OTHERWISE.
D16. ALL BRICK MANHOLES SHALL BE BUILT IN 225mm THICK CLASS B BRICKWORK LAID IN ENGLISH BOND WITH CLASS 1 CEMENT MORTAR, SULPHATE RESISTING TO BS 4027.
D17. EXISTING SOFT SPOTS OR SOFT MATERIAL FOUND BELOW THE BOTTOM OF EXCAVATION SHALL BE REMOVED AS DIRECTED BY THE ENGINEER TO A MINIMUM DEPTH OF 500mm, THE VOID THUS FORMED TO BE FILLED WITH WELL COMPACTED TYPE 1 MATERIAL OR COMPACTED TYPE A GRANULAR BEDDING MATERIAL WITH TERRAM 1000 MEMBRANCE ADJUSTED TO SUIT NEW FORMATION LEVEL.

DRAINAGE KEY:

FWMH	FOUL WATER MANHOLE/DRAINAGE 150mm ø MIN. 1:40 U.N.O.
	100ø SVP/MW/SS CONNECTION
	SVP
	RISING MAIN

PRELIMINARY

Version	Amendment	Drawn by and date	Checked by and date	Approved by and date
P1	PRELIMINARY	HDL/12.16	HDL/12.16	HDL/12.16

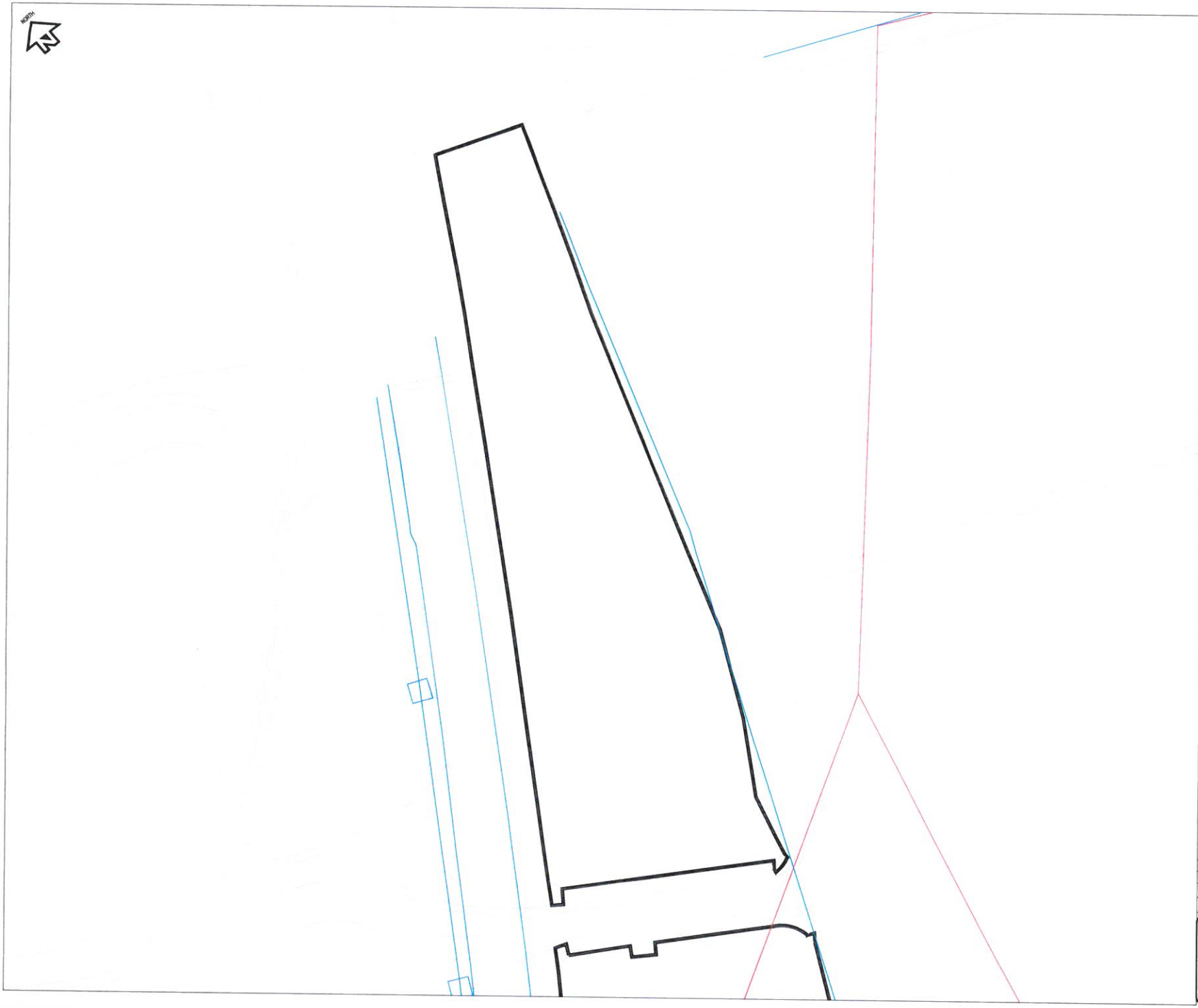
ORIGINAL DRAWING SIZE - A1

CAD REF.

X-REFS:

HAMILL DAVIES LIMITED
Consulting Civil and Structural Engineers

Client: BLOOMBRIDGE LLP
Project: BICESTER GATEWAY, BICESTER
Drawing Title: PHASE 1B FOUL WATER DRAINAGE LAYOUT
Purpose: PRELIMINARY
Drawn: HDL
Designed:
Scale: 1:500 @ A1
Drawing Office: DRAYMORE
Telephone: 01489 893 596
Drawing Number: 16-2625-551
Version: P1



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KEY:

- BT
- HV 1
- HV 2
- LV 1
- LV 2

PRELIMINARY

Version	Amendment	Revised by and date	Checked by and date	Approved by and date
P1	PRELIMINARY	HDL/12.16	HDL/12.16	HDL/12.16

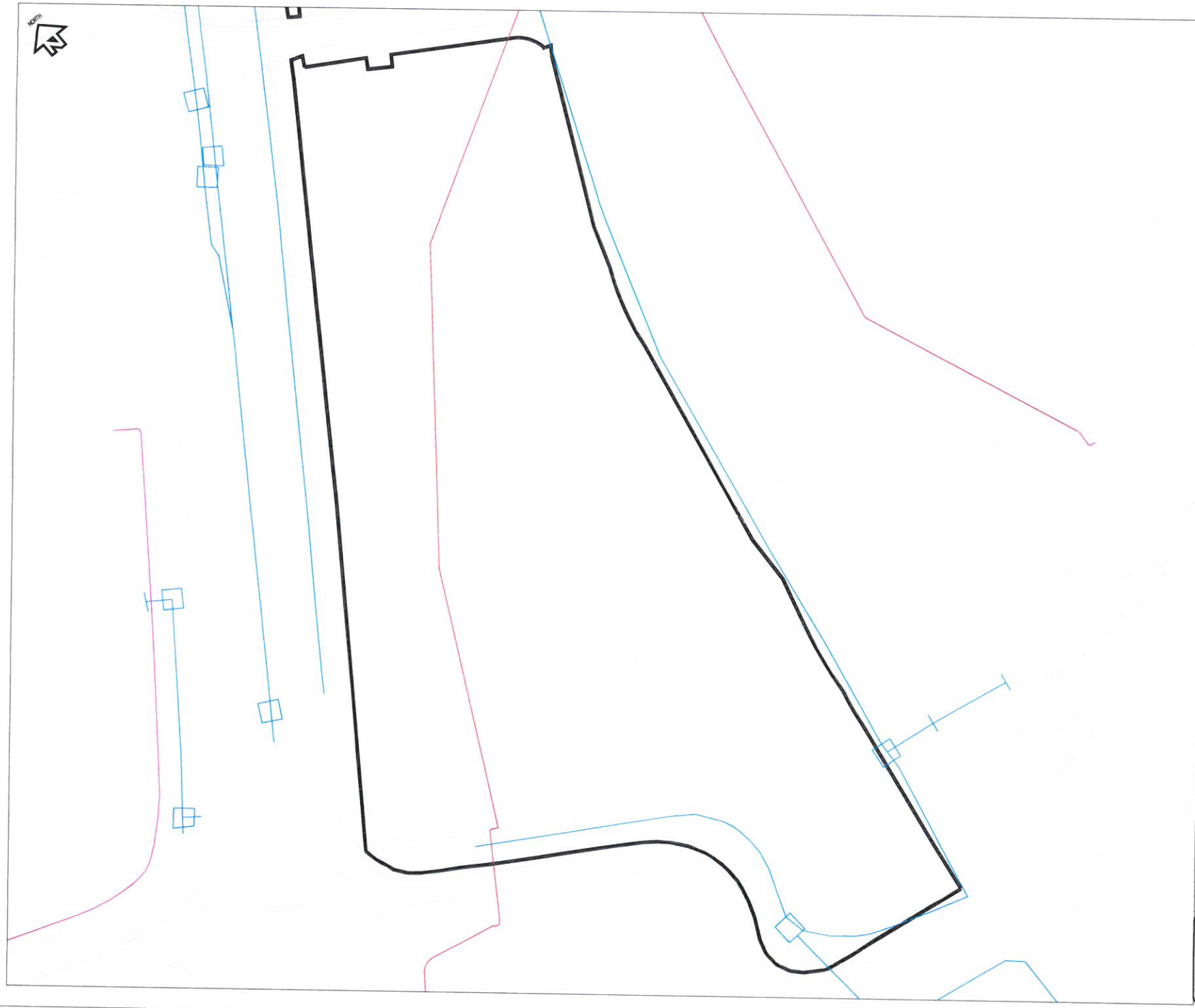
ORIGINAL DRAWING SIZE – A1

X-REFS:

CAD REF.

HAMILL DAVIES LIMITED
Consulting Civil and Structural Engineers

Client: BLOOMBRIDGE LLP
Project: BICESTER GATEWAY, BICESTER
Drawing Title: PHASE 1A EXISTING SERVICES
Purpose: PRELIMINARY
Drawn: HDL
Designed:
Scale: 1:500 @A1
Issuing Office: SWANMORE
Telephone: 01489 893 596
Drawing Number: 16-2625-700
Version: P1



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KEY:

- BT
- HV 1
- HV 2
- LV 1
- LV 2

PRELIMINARY

Version	Amendment	Reviewed by and date	Checked by and date	Approved by and date
P1	PRELIMINARY	HDL/12.16	HDL/12.16	HDL/12.16

ORIGINAL DRAWING SIZE – A1

X-REFS:

CAD REF.

HAMILL DAVIES LIMITED
Consulting Civil and Structural Engineers

Client: BLOOMBRIDGE LLP
Project: BICESTER GATEWAY, BICESTER
Drawing title: PHASE 1B EXISTING SERVICES
Purpose: PRELIMINARY
Drawn: HDL
Designed:
Scale: 1:500 @ A1
Issuing Office: SWANMORE
Telephone: 01489 893 596
Drawing Number: 16-2625-701
Version: P1

Appendix C

Gas Service Returns

Subject: RE: Gas Utility Apparatus enquiry Bicester Oxfordshire

From: Plant Location/SGN (plantlocation@sgn.co.uk)

To: brian.w.hamill@btopenworld.com;

Date: Thursday, December 8, 2016 2:23 PM

Dear Customer

Thank you for contacting us.

Our records show that we have no gas mains in the area of your enquiry.

Gas pipes owned by other gas transporters and privately owned pipes may be in this area. Information about these pipes should be obtained from the owners. When we know the location, they will be represented on the plans as a shaded area and/or a series of x's.

If you have any further enquiries, please contact the number below.

Regards

SGN - Plant Location Team

Phone: 0800 912 1722

Janet MacCuish, SHE Admin
T: +44 0141 418 4059
E: janet.maccuish@sgn.co.uk
SGN, 95 Kilbirnie Street, Glasgow G5 8JD

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Find us on Facebook and follow us on Twitter: @SGNgas