
FLOOD RISK ASSESSMENT

PREPARED FOR STATUE HOMES LIMITED

FOR LAND AT KYNGS GOLF CLUB, STATION ROAD, MARKET BOSWORTH

EXECUTIVE SUMMARY

1. The site is at no quantifiable risk of flooding from tidal events due to its location being remote from any coastal areas.
2. The site has been identified as being wholly located within flood zone 1 and is considered to have a low risk of flooding, in addition to EA maps confirming the site is at no risk of flooding from fluvial sources.
3. The 2019s0332 – Strategic Flood Risk Assessment for Hinckley and Bosworth Borough Council Final Report (July 2019), prepared by JBA Consulting identifies the site to have a low chance of flooding from groundwater sources. In addition, the EA maps identify the site to be outside of the flood risk zones for groundwater flooding.
4. The EA maps have identified that there is no risk of flooding from surface water sources, however in the event of an extreme rainfall event it has been identified that overland flows would be directed towards the water source to the north and west, away from the site.
5. The escape flows from the water main within the surrounding highway network have been considered and in the unlikely event of failure of the mains, the flows channel to the south.
6. The EA flood maps have identified that the site is at NO risk of flooding from artificial sources such as reservoirs or the Ashby de la Zouch canal situated 300 metres to the West of the site boundary.
7. The site is at a negligible risk of flooding from its own private drainage connections however this can be mitigated by regular maintenance, to ensure the ongoing performance of the system.

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APPENDICES

Appendix 1	Approved Site Layout
Appendix 2	Severn Trent Water Sewer Records
Appendix 3	Approved Drainage Layout 19/01437/FUL

1. INTRODUCTION

- 1.1. This report has been prepared on behalf of Statue Homes Limited, to accompany a planning application for the proposed erection of 9 holiday cabins with access and landscaping on land at Kyngs Golf Club, Station Road, Market Bosworth, CV13 0NP.
- 1.2. This report considers the flood risk associated with the redevelopment proposals which comprise of the proposed erection of 9 holiday cabins with associated landscaping and access.
- 1.3. The report has been prepared in accordance with the Department for Communities and Local Government's National Planning Policy Framework (NPPF) and Planning Practice Guidance, which provides advice on development and flood risk.

2. EXISTING SITUATION

i. Site Location and Topography

- 2.1. The site address is Kyngs Golf Course, Station Road, Market Bosworth, Station Road, CV13 0NP, Grid Reference SK 39761 03795.
- 2.2. The site is bounded to the north by agricultural land, separated by a field ditch *circa.* 200m north that is majority Flood Zone 3. To the east are agricultural fields and scattered woodland, separated by Barton Road. To the south of the application site is a cluster of trees that limit views into the site from the east and south. Over Station Road, commercial and residential buildings are located. To the west of the site lies the expanse of the golf course, Bosworth Marina and the Ashby de la Zouch Canal, separated by the Battlefield Heritage Rail line.

ii. Site Description

- 2.3. The site's current lawful use is as a golf course. Planning permission ref: 19/01437/FUL, for the Erection of a multi-purpose golf clubhouse (D2), formation of new car parking areas and access roads and the erection of 6 Golf holiday homes (c1) and all associated ancillary works and landscaping was granted on 15th June 2020. An existing site layout drawing, showing the wider golf course is provided at Appendix 1.

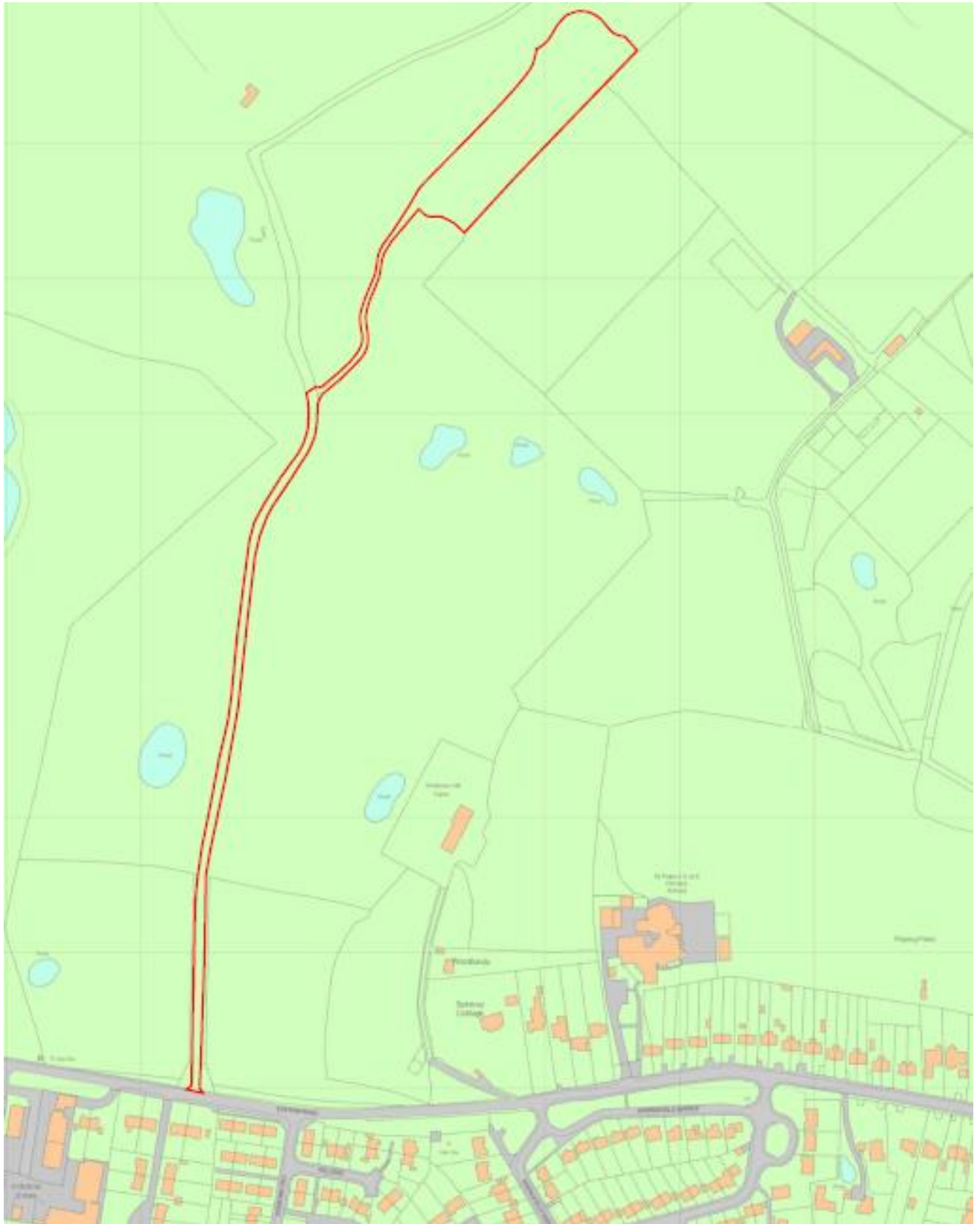


Figure 1: Site Location Plan

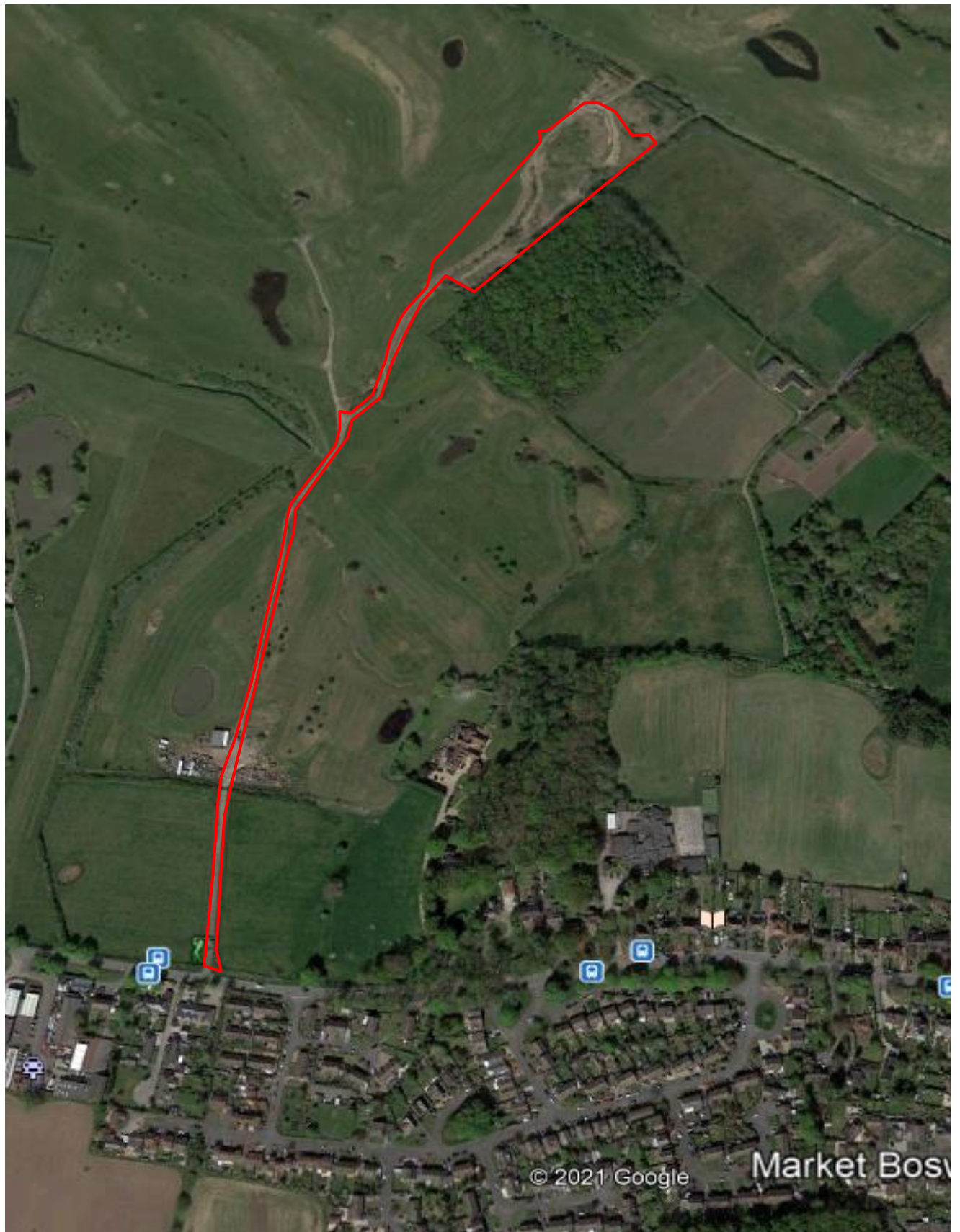


Figure 2: Aerial Imagery of Site

3. EXISTING DRAINAGE CHARACTERISTICS

- 3.1. The site topography tends from the south towards the north, through the application site. The ground slopes gently away to the north, towards the field ditch.
- 3.2. Surface water drainage comprises natural infiltration, with rainwater running directly into the soils. To the south-west there is an existing 300mmVC, with the nearest manhole no. 8601, 60m from the application site which comprises the nearest foul water drainage system. A copy of Severn Trent Sewer Records are provided at Appendix 2. The approved Drainage Layout for planning permission ref:19/01437/FUL is provided at Appendix 3.

4. PROPOSED DEVELOPMENT

- 4.1. The proposed development comprises the erection of 9 holiday cabins with associated parking, access and landscaping.

5. SOURCES OF FLOODING

- 5.1. This report has been prepared using the following guidance documentation:
- National Planning Policy Guidance (NPPG)
 - The SuDS Manual (C753) 2015
 - Guidance: Flood and coastal risk projects, schemes and strategies: climate change allowances
 - 2019s0332 – Strategic Flood Risk Assessment for Hinckley and Bosworth Borough Council Final Report
- 5.2. The possible flood risk associated with sources of flooding considered within this report has been reviewed as follows.
- i. Tidal / Coastal Flooding*
- 5.3. The site is geographically remote from any coastal areas and therefore is not considered to be at risk of flooding from tidal or coastal sources.
- ii. Fluvial Flooding*

5.4. The Environment Agency has flood maps for the whole of England which categorise land as being within Flood Zone 1, Flood Zone 2, or Flood Zone 3. Flood Zone 1 is identified as land being outside of the floodplain and therefore land at the lowest risk of flooding. Flood Zones 2 and 3 is land within the Floodplain. Flood Zone 3 is split into two further categories, with Flood Zones 3a and 3b, with Flood Zone 3b being considered as functional floodplain.

5.5. The definitions of the Flood Zones, having reference to NPPG are identified as:

- Zone 1 Low Probability: Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
- Zone 2 Medium Probability: Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
- Zone 3a High Probability: Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
- Zone 3b The Functional Floodplain: This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

5.6. Figure 3, shown overleaf is taken from the EA website and identifies that the site is to be located within flood zone 1, and some 160m from the nearest area of land that is categorised as Flood Zone 2. The site is therefore within an area considered to be at the lowest risk of tidal or fluvial flooding, with a less than a 1 in 1000 annual probability of flooding (<0.1%) in any year.

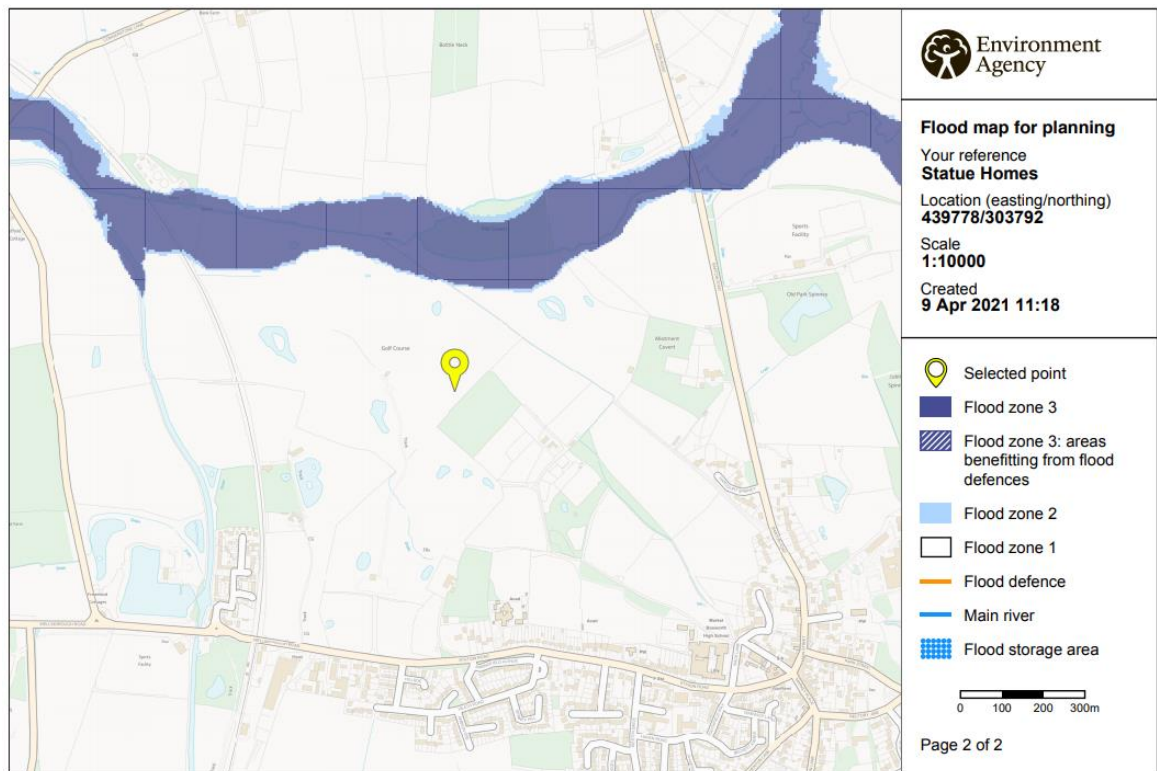


Figure 3: Extract from online EA Flood Zone Map

5.7. Figure 4 below also identifies that the application site is not at risk from fluvial flooding.

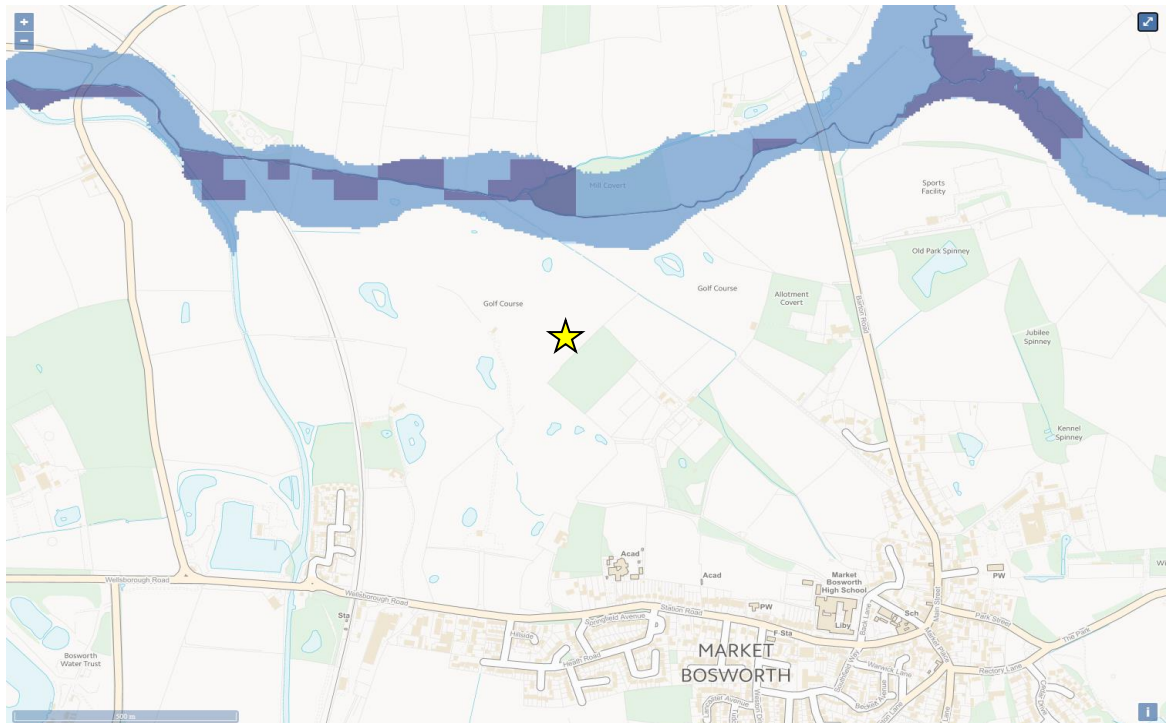


Figure 4: Extract from EA Flood Maps showing predicted Fluvial Flood Risk Levels

- 5.8. The nearest watercourse to the application site is located *circa.* 160m north of the application site and is therefore considered to be a sufficient distance away to not be at risk.

iii. Groundwater Flooding

- 5.9. Figure 5 is taken from the Hinckley and Bosworth Strategic Flood Risk Assessment, inset map area C3 and demonstrates that the likeliness of groundwater flooding at the site is low (<25%).

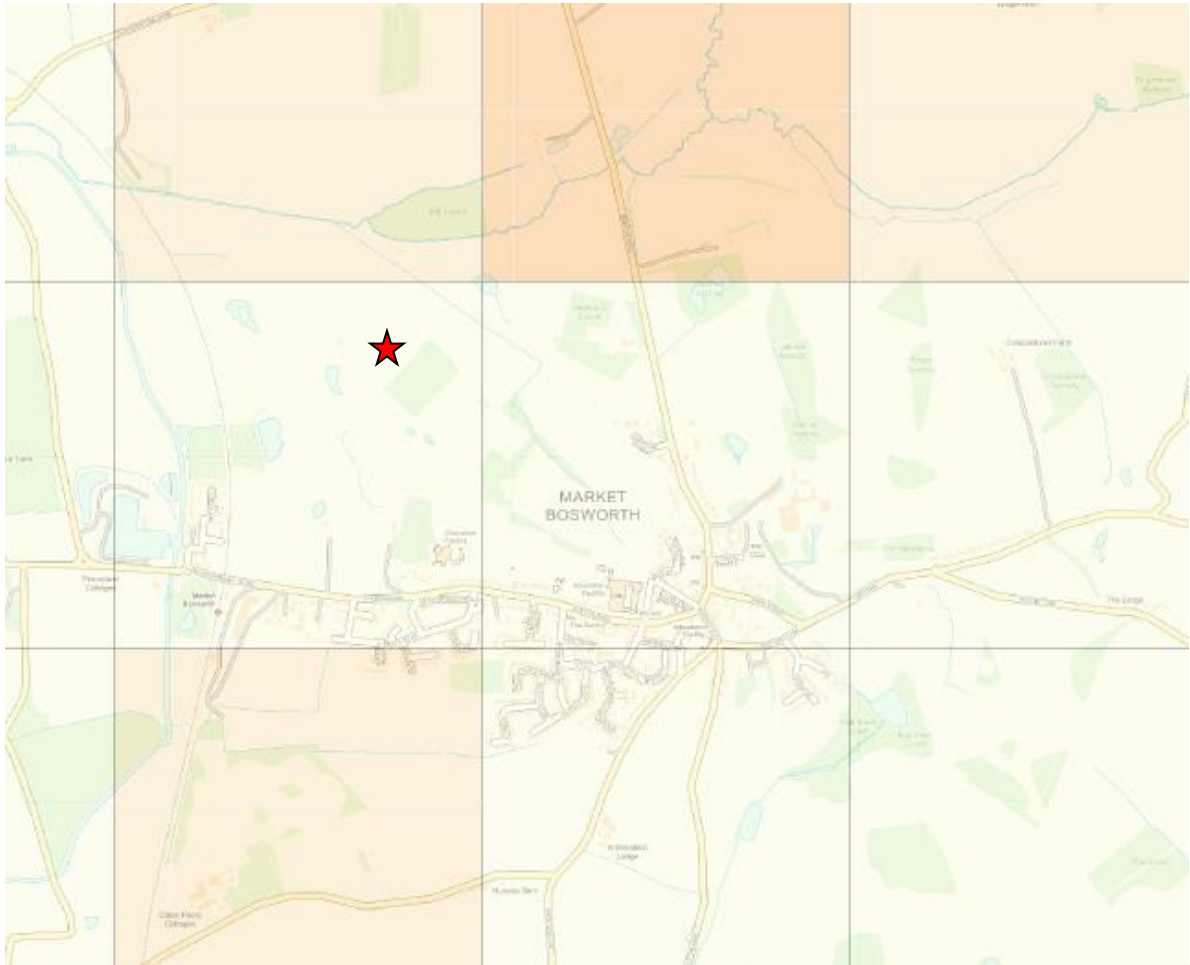


Figure 5: Extract from Hinckley and Bosworth SFRA (2019) demonstrating the site is located within the zone considered least likely to flood from groundwater sources

- 5.10. The EA flood maps also show that the site is located in a medium risk from groundwater flooding as shown in Figure 6 overleaf. However, it should be noted that borehole excavations at Pipistrelle Drive, 580m south west of the site identified no groundwater down to 10m depth (BGS website) and the application site has previously been identified as being located outside of the inner and outer zones at risk from groundwater flooding.



Figure 6: Extract from DEFRA MagicMap showing groundwater vulnerability zones (site marked by red dot)

- 5.11. Given the information provided within the Council's SFRA and from publically accessible EA data, the site is not considered to be at risk from groundwater flooding.

iv. Surface Water Flooding

- 5.12. The EA have modelled locations along critical flow paths and areas situated in topographic depressions, which could flood following an extreme rainfall event when drainage capacity has been exceeded. Figure 7 below shows a surface water flood risk map taken.



Figure 7: Extract from EA Flood Risk Map showing surface water flood risk

- 5.13. Figure 7 identifies the site not to be at risk of surface water flooding although flood routes have been identified to the North and South West. However, the site is located at a higher level topographically than the areas at risk and therefore is not considered to be at risk of flooding from overland surface water flows.

v. Sewer Flooding

- 5.14. Within the Joint SFRA 2014 references sewer flooding as 'Flooding caused by a blockage or overflowing in a sewer or urban drainage system'.
- 5.15. No reference is made to sewers adjacent to the site in Station Road encountering sewer flooding and there is not a history of sewer flooding within the surrounding area.

vi. Artificial Sources

- 5.16. Flooding from artificial sources, is most likely to result from burst water mains or from infrastructure failure in an artificial watercourse or water body, i.e. canals or other water features such as reservoirs.

- 5.17. These systems are maintained, improved and regularly inspected by British Waterways (canals), Severn Trent Water (water mains) and EA (water bodies). Therefore, flood risk from these sources is generally considered to be low.
- 5.18. Flood maps associated with large reservoirs that hold over 25,000 cubic metres of water are available on the EA website. The maps identify areas that could potentially be affected by reservoir flooding and display a realistic worst case scenario of the largest area that may be flooded if a reservoir were to fail and release the water it holds.
- 5.19. The below Reservoir Flood Map taken from the EA's website shows the site and surrounding area to be unaffected by reservoir flooding, therefore, the site is not considered to be at risk of flooding from this source.

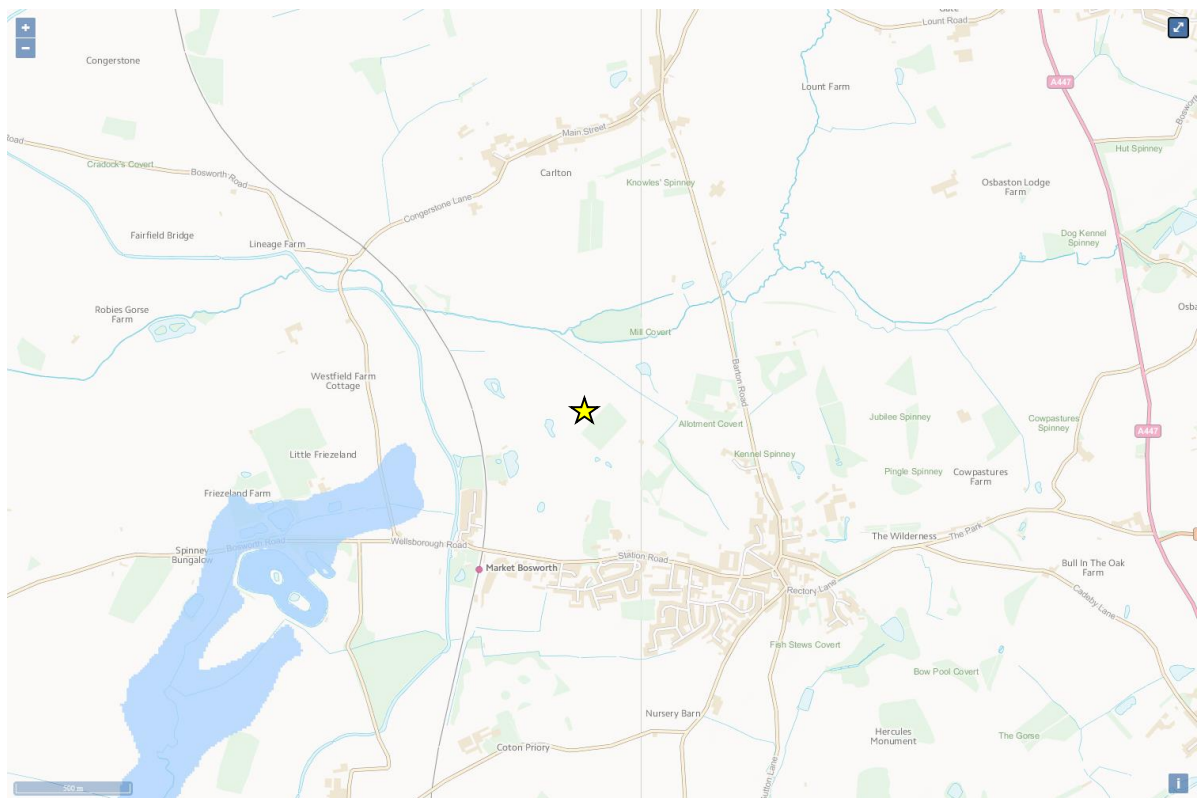


Figure 8: Extract from EA Flood Maps showing predicted Reservoir Flood Risk Levels

- 5.20. The Ashby de la Zouch Canal is located approximately 300 metres to the West of the site. There are no canals located within the immediate surrounding area of the site, therefore, it is considered unlikely that the site could be affected by flooding from this source.

- 5.21. In the unlikely event of a burst water main occurring, it is anticipated that flows would follow a similar pattern to overland surface water flood routes identified, therefore the development is not considered to be at risk from this source.

6. PROPOSED SURFACE WATER DRAINAGE STRATEGY

- 6.1. The proposed site surface water drainage strategy will involve connecting to the drainage system that has been secured under planning permission ref: 19/01437/FUL.

7. PROPOSED FOUL WATER DRAINAGE STRATEGY

- 7.1. The proposed foul water drainage strategy will involve connecting to the drainage system that has been secured under planning permission ref: 19/01437/FUL.

8. SEQUENTIAL TEST

- 8.1. For clarity, the aim of the sequential test is to steer new development to areas with the lowest probability of flooding. Furthermore, approval of the Sequential Test lies with the Local Planning Authority.
- 8.2. The NPPF indicates that for a more vulnerable land use within Flood Zone 1 development is appropriate. The site is identified within Flood Zone 1, as defined by the NPPF, identified on the EA Indicative Flood Map and also in the within the Strategic Flood Risk Assessment.
- 8.3. The site is in a rural area where residential and commercial properties dominate the surrounding areas. Surface water runoff is unrestricted to the existing sewer network and the area is not susceptible to groundwater flooding.
- 8.4. In view of the facts as identified the applicant does not own other sites considered to be more suitable for leisure use in the immediate vicinity.
- 8.5. The above clearly demonstrates that the sequential test would be satisfied provided it can be demonstrated that flood water will not pose excessive risk to the development, safe ingress and egress can be created and the development will not increase risk of flooding elsewhere.

- 8.6. The NPPF defines what type of development is appropriate in an individual location and seeks to guide development generally away from areas of flood risk (paragraph 158). It nevertheless accepts implicitly that some development in areas of higher potential risk may be appropriate or indeed essential, and seeks to classify zones of risk, types of development and development suitability.

9. EXCEPTION TEST

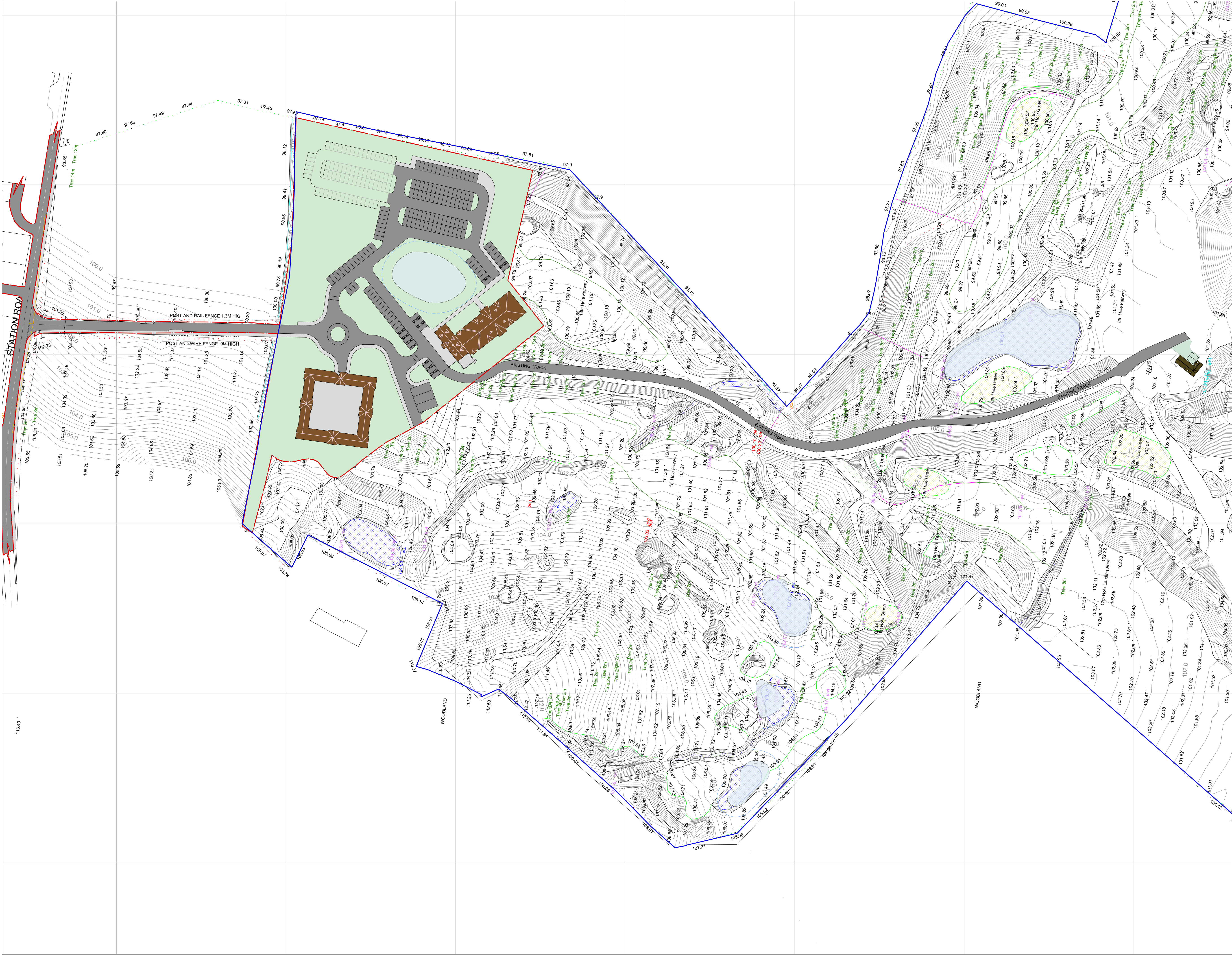
- 9.1. The National Planning Policy Framework encourages a sequential risk-based approach to determine the suitability of land for development in flood risk areas. It advises local planning authorities to demonstrate that there are no reasonably available sites in areas with a lower probability of flooding that would be appropriate to the type of development or land use proposed.
- 9.2. The site has been identified to be located within Flood Zone 1 where the annual probability of flooding from rivers or sea is less than 1 in 1000 in any given year (<0.1%). In areas at risk of river flooding, NPPG advises that preference be given to new development in Flood Zone 1. Therefore as shown in Table 3 within the NPPG (Paragraph: 067 Reference ID: 7-067-20140306), the site is deemed appropriate for use as a “more vulnerable” land use.
- 9.3. Wider sustainable benefits to the community include:
- The regeneration of land previously used for leisure activity.
 - Provides accommodation for patrons of the approved facility.
- 9.4. The FRA demonstrates safety and flooding sustainability by:
- Maintaining floor levels
 - Ingress and egress routes for pedestrians being available from the land to the South
 - Dry means of escape exists for residents.
- 9.5. As the impermeable area of the site is only slightly increasing, there will be no increase in the level of surface water runoff over the current land use as surplus flows will remain on site.
- 9.6. In view of the above the exception test is deemed to have passed.

10. CONCLUSIONS

- 10.1. It has been established that the site is located in Flood Zone 1, which is an area not considered to be at risk of tidal or fluvial flooding. The site was also identified to not be at risk of flooding from other sources considered in the SFRA available on the Planning Authorities website, which included surface water, groundwater, sewer and artificial sources.
- 10.2. Regarding the sequential test, the proposed development is considered to an appropriate development as it would be located in Flood Zone 1, which is considered suitable for all forms of development in terms of flood risk.
- 10.3. In terms of flood risk it is concluded that the development can be occupied and operated safely and that there will be no increase in the level of flood risk to the site or neighbouring sites as a result of the development

APPENDIX 1

APPROVED SITE LAYOUT



Notes

Measurements not to be scaled from this drawing. All dimensions to be checked and confirmed prior to commencement of work. Contractors to notify architects of site variations affecting information on this drawing. The information in this drawing is copyright of Hickman & Smith Architects Ltd.

Measurements are based on previous drawings provided by the client and as such the site boundary area is to be confirmed by the client.

Date	Rev	By	Details
20.04.18	/	DG	Issued for Client Comments
27.04.18	A	DG	Issued for Client Comments
30.04.18	B	DG	Issued for Client Comments
01.05.18	C	DG	Issued for Client Comments
24.05.18	D	DG	Issued for Client Comments
07.06.18	E	DG	Issued for Client Comments
23.07.18	F	DG	Issued for Client Comments
13.09.18	G	DG	Issued for Client Comments
08.10.18	H	DG	Issued for Client Comments
11.07.19	I	DG	Issued for Client Comments
20.11.19	J	DG	Issued for Client Comments
25.11.19	K	DG	Issued for Client Comments
26.11.19	L	DG	Issued for Client Comments

Location Key

PLANNING

Hickman & Smith Architects

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Project
Market Bosworth Golf Leisure and Country Club

Client
Statue Homes Ltd

Drawing Title
Proposed Site Plan

Date	Scale	Checked
26.11.19	1:1000@A1 1:2000@A3	AS
Project Ref.	Drawing No.	Revision
0196	A-PL-001	L

APPENDIX 2

SEVERN TRENT SEWER RECORDS

SK4003NW

SK3903SE

SK4003SE

SK4002NW

- ✕✕✕✕ Abandoned Sewer

Private Combined Gravity Sewer

Private Foul Gravity Sewer

Private Surface Water Gravity Sewer

Public Combined Gravity Sewer

Public Foul Gravity Sewer

Public Surface Water Gravity Sewer

Trunk Combined Gravity Sewer

Trunk Foul Use Gravity Sewer

Trunk Surface Water Gravity Sewer

Combined Use Pressurised Sewer

Foul Use Pressurised Sewer

Surface Water Pressurised Sewer

Highway Drain

Combined Lateral Drain (SS)

Foul Lateral Drain (SS)

Surface Water Lateral Drain (SS)

○—○—○ Cable, Earthing

○— Cable Junction

— Cable, Optical Fibre/Instrumentation

— Cable, Low Voltage

— Cable, High Voltage

— Cable, Other

B

Housing, Building

K

Housing, Kiosk

LT

Disposal Site

STW

Sewage Treatment Works

●

Housing, Other

—

Pipe Support Structure

▲

Sewage Pumping Facility

⊠

Sewer Facility Connection Inlet / Outlet

■ Blind Shaft

● Combined Use Manhole

□ Flushing Chamber

● Foul Use Manhole

● Grease Trap

● Head Node

— Hydrobrake

□ Lamphole

□ Outfall

□ Overflow

— Penstock

⊕ Petrol Interceptor

★ Sewer Blockage

☆ Sewer Collapse

— Sewer Chemical Injection Point

▪ Sewer Junction

◆ Sewerage Air Valve

|| Sewerage Hatch Box Point

— Sewerage Isolation Valve

⊕ Soakaway

○ Surface Water Manhole

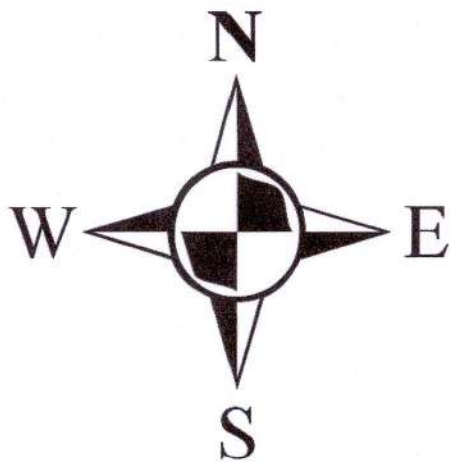
■ Vent Column

■ Waste Water Storage

— Culverted Watercourse

— Pre-1937 Properties

Sewer Node		Sewer Pipe Data									
REFERENCE	COVER LEVEL	R/W LEVEL UPSTR	R/W LEVEL DOWNSTR	PURP	MATL	SHAPE	MAX SIZE	MIN SIZE	GRADIENT	YEAR LAID	
SK4003001	123.70	nil	nil	S	VC	nil	300	nil	0.00	nil	
SK40030101	121.92	120.07	116.76	F	VC	C	175	nil	43.44	nil	
SK40031001	124.91	122.98	121.83	S	VC	C	nil	nil	46.09	nil	
SK40031002	124.86	123.18	123.55	S	VC	C	nil	nil	125.23	nil	
SK40031003	125.38	124.44	123.76	F	VC	C	nil	nil	102.53	nil	
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SK40031103	nil	nil	121.71	F	VC	C	nil	nil	0.00	nil	
SK40031104	125.04	124.26	123.26	S	VC	C	nil	nil	92.78	nil	
SK40032001	127.07	125.80	125.11	S	VC	C	150	nil	98.49	nil	
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SK40032008	128.40	127.22	126.54	F	VC	C	150	nil	39.81	nil	
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SK40033002	129.10	127.43	126.33	F	VC	C	150	nil	75.55	nil	
SK40033101	125.14	124.42	125.20	F	VC	C	150	nil	0.00	nil	
SK40033102	123.71	123.31	123.29	F	VC	C	nil	nil	2384.00	nil	
SK40033103	123.84	122.84	122.70	S	VC	C	150	nil	185.86	nil	
SK40033104	126.92	125.18	123.33	F	VC	C	150	nil	1.21	nil	
SK40033105	123.73	122.66	122.55	S	VC	C	150	nil	192.82	nil	
SK40033202	115.07	113.08	110.11	F	VC	C	225	nil	41.02	nil	
SK40033203	114.96	113.70	112.35	S	VC	C	300	nil	4.19	nil	
SK40033301	111.72	110.11	107.15	F	VC	C	300	nil	31.30	nil	
SK40033401	110.39	nil	107.93	C	VC	C	150	nil	0.00	nil	
SK40034001	128.61	126.30	123.71	F	VC	C	150	nil	11.59	nil	
SK40034002	128.36	126.99	nil	S	VC	C	300	nil	0.00	nil	
SK40034003	128.43	127.41	126.31	F	VC	C	150	nil	32.84	nil	
SK40034004	128.61	127.15	126.35	F	VC	C	150	nil	63.10	nil	
SK40034005	128.73	127.39	nil	S	VC	C	225	nil	0.00	nil	
SK40034006	130.71	129.07	128.14	F	VC	C	150	nil	70.94	nil	
SK40034007	129.75	128.03	nil	S	VC	C	225	nil	0.00	nil	
SK40034101	124.05	123.68	122.87	F	VC	C	nil	nil	98.06	nil	
SK40034103	123.98	123.28	122.92	F	VC	C	nil	nil	69.44	nil	
SK40034104	124.16	122.83	122.57	F	VC	C	nil	nil	50.15	nil	
SK40034105	123.75	122.15	121.67	F	VC	C	nil	nil	48.65	nil	
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SK40034110	123.83	122.53	122.34	S	VC	C	150	nil	121.53	nil	
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SK40034202	121.39	119.98	115.98	F	VC	C	nil	nil	14.14	nil	
SK40034203	117.35	114.88	113.17	F	VC	C	150	nil	28.21	nil	



SEVERN
TRENT
WATER

Sewer Trent Water Limited
Asset Data Management
PO Box 5344
Coventry
CV3 9FT
Telephone: 0845 601 6616

SEWER RECORD (TABULAR)

O/S Map scale: 1:1250

Date of issue: 01.11.16

Sheet No. 1 of 1

This map is centred upon:

O / S Tile reference:

SK4003SW

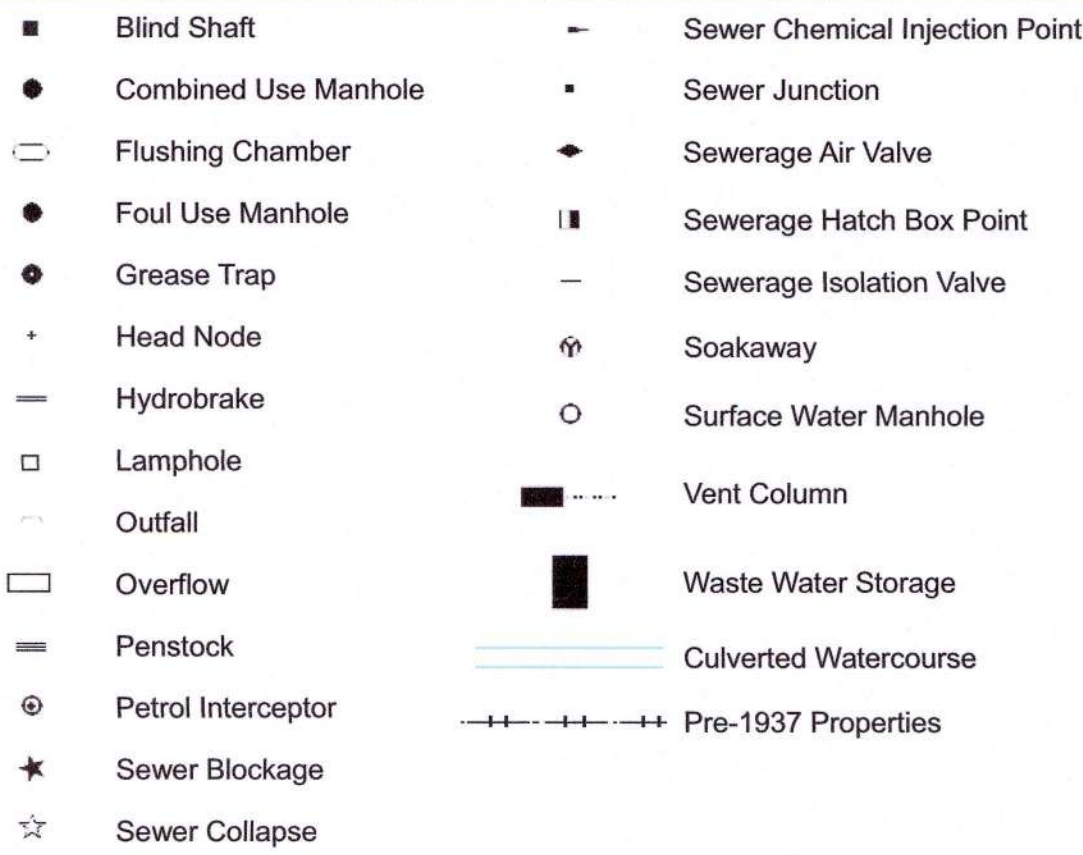
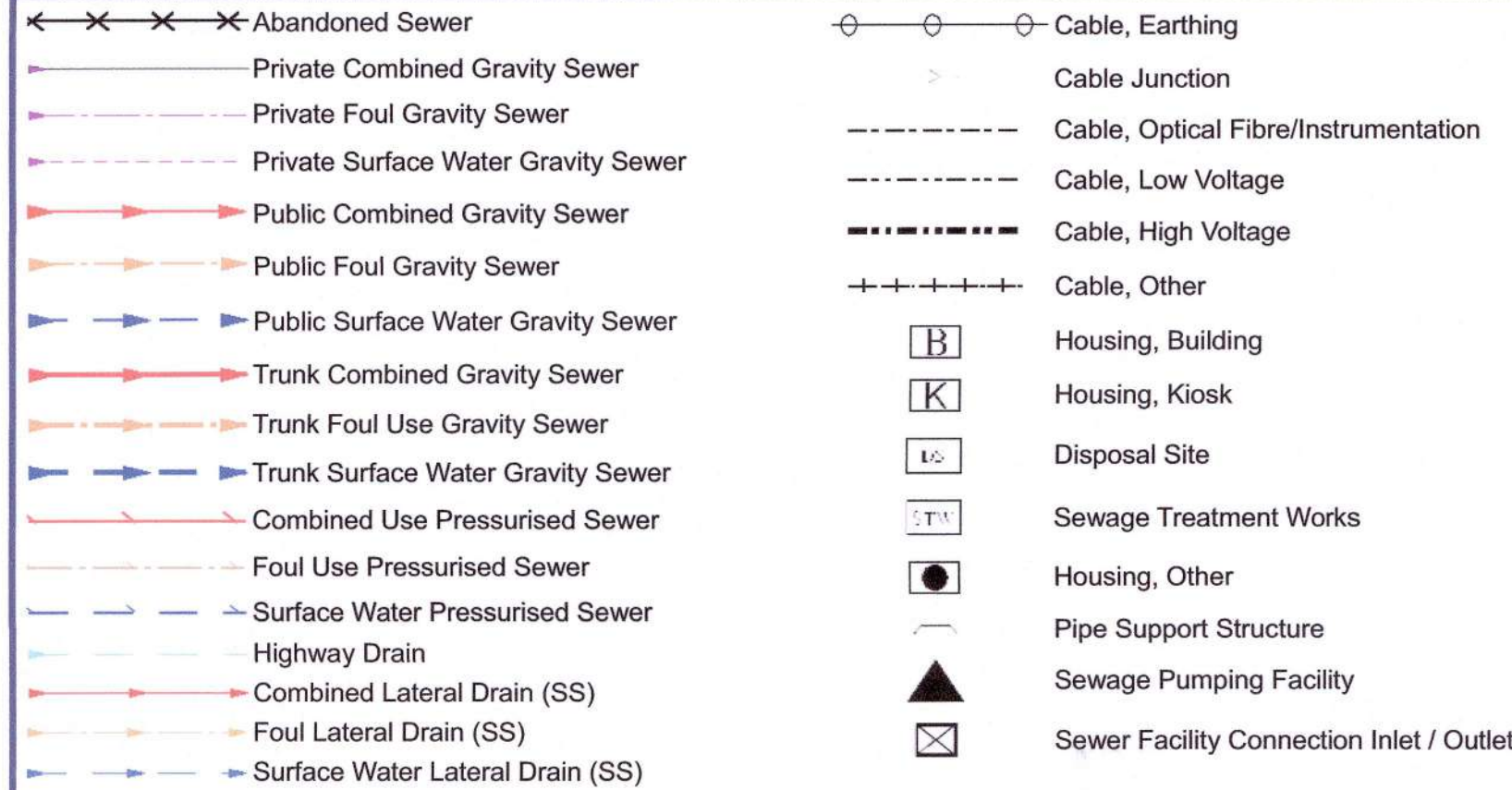
Disclaimer Statement:

1. Do not scale off this Map.
2. This map 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 Map 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's 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 (date to be confirmed). Private pumping stations, which form part of these sewers or lateral drains, will transfer to the ownership of Severn Trent Water on or before 1 October 2016.
4. Severn Trent Water does not possess complete records of these assets.
5. These assets may not be displayed on this Map.
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SK4003NE



SK4002NE



MATERIALS

AC	- ASBESTOS CEMENT
BR	- BRICK
CC	- CONCRETE BOX CULVERT
CI	- CAST IRON
CO	- CONCRETE
CSB	- CONCRETE SEGMENTS (BOLTED)
CSU	- CONCRETE SEGMENTS (UNBOLTED)
DI	- DUCTILE IRON
GRC	- GLASS REINFORCED CONCRETE
MAC	- MASONRY IN REGULAR COURSES
MAR	- MASONRY RANDOMLY COURSED
PE	- POLYETHYLENE
PF	- PITCH
PP	- POLYPROPYLENE
PSC	- PLASTIC STEEL COMPOSITE
PVC	- POLYVINYL CHLORIDE
RPM	- REINFORCED PLASTIC MATRIX
SI	- SPUN (GREY) IRON
XXX	- OTHER

CATEGORIES

W	- WEIR
C	- CASCADE
DB	- DAMBOARD
SE	- SIDE ENTRY
FV	- FLAP VALVE
BD	- BACK DROP
S	- SIPHON
HD	- HIGHWAY DRAIN
S104	- SECTION 104
C	- CIRCULAR
E	- EGG SHAPED
O	- OTHER
R	- RECTANGLE
S	- SQUARE
T	- TRAPEZOIDAL
U	- UNKNOWN

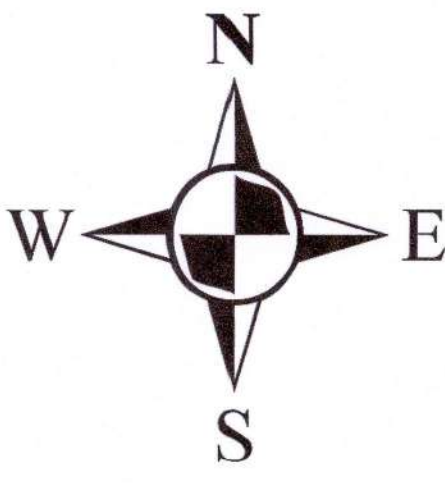
TABULAR KEY

- A. Sewer pipe data refers to downstream sewer pipe.
B. Where the node bifurcates (splits) X and Y indicates downstream sewer pipe.
C. Gradient is stated a 1 in...

PURPOSE

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

Sewer Node	Sewer Pipe Data									
REFERENCE	COVER LEVEL	INV LEVEL UPSTR	INV LEVEL DOWNSTR	PURP	MATL	SHAPE	MAX SIZE	MIN SIZE	GRADIENT	YEAR LAID
SK40035001	130.64	129.01	128.82	F	VC	C	150	nil	93.68	nil
SK40035002	130.77	129.20	129.02	F	VC	C	150	nil	81.39	nil
SK40035003	130.33	128.79	128.81	F	VC	C	150	nil	36.09	nil
SK40035004	130.72	129.01	128.83	F	VC	C	150	nil	82.11	nil
SK40035005	130.24	128.06	127.42	F	VC	C	150	nil	87.95	nil
SK40035101	124.12	122.28	122.20	F	VC	C	nil	nil	555.25	nil
SK40035102	124.25	122.43	122.35	F	VC	C	nil	nil	520.25	nil
SK40035103	130.47	128.05	121.45	S	VC	C	225	nil	20.36	nil
SK40035104	124.01	122.80	122.57	F	VC	C	150	nil	1195.00	nil
SK40035105	130.77	128.49	128.08	F	VC	C	150	nil	86.49	nil
SK40035106	130.58	128.72	128.52	F	VC	C	150	nil	92.20	nil
SK40035401	122.42	119.29	119.29	C	VC	C	nil	nil	51.87	nil
SK40035402	121.72	119.28	111.50	C	VC	C	nil	nil	15.35	nil
SK40036001	131.01	129.46	129.28	S	VC	C	150	nil	230.22	nil
SK40036002	130.43	128.58	127.36	F	VC	C	150	nil	24.61	nil
SK40036003	131.36	129.58	nil	F	VC	C	150	nil	0.00	nil
SK40036005	130.88	129.59	128.93	S	VC	C	150	nil	33.88	nil
SK40036006	131.10	129.65	129.63	S	VC	C	150	nil	200.00	nil
SK40036101	129.05	127.17	126.28	C	VC	C	150	nil	82.03	nil
SK40036102	129.87	128.90	127.18	C	VC	C	225	nil	17.84	nil
SK40036103	131.45	129.85	127.20	C	VC	C	150	nil	26.47	nil
SK40036201	128.84	126.24	123.68	C	VC	C	nil	nil	25.79	nil
SK40036202	131.45	129.62	128.28	C	VC	C	150	nil	21.47	nil
SK40036203	122.83	121.43	123.42	S	VC	C	nil	nil	0.00	nil
SK40036301	125.41	123.85	122.36	C	VC	C	nil	nil	27.63	nil
SK40036302	124.76	nil	nil	S	VC	nil	225	nil	0.00	nil
SK40036303	124.20	122.35	120.50	C	VC	C	nil	nil	42.74	nil
SK40036304	124.77	123.53	122.38	C	VC	C	nil	nil	9.37	nil
SK40037001	131.48	129.90	129.48	S	VC	C	150	nil	79.14	nil
SK40037102	132.79	131.08	129.65	C	VC	C	150	nil	36.10	nil
SK40037103	134.02	132.38	131.10	C	VC	C	150	nil	45.72	nil
SK40038001	133.09	131.75	130.93	S	VC	C	150	nil	37.65	nil



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Asset Data Management
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CV3 9FT
Telephone: 0845 601 6616

SEWER RECORD (TABULAR)

O/S Map scale: 1:1250

Date of issue: 01.11.16

Sheet No. 1 of 1

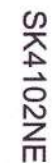
This map is centred upon:
O / S Tile reference:

SK4003SE

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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 (date to be confirmed). Private pumping stations, which form part of these sewers or lateral drains, will transfer to the 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 this Map.
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SK4002SW



C		TABULAR KEY	
W	- WEIR	A.	Sewer pipe data refers to downstream sewer pipe.
C	- CASCADE	B.	Where the node bifurcates (splits) X and Y indicates downstream sewer pipe.
DB	- DAMBOARD	C.	Gradient is stated a 1 in...
SE	- SIDE ENTRY		
FV	- FLAP VALVE		
BD	- BACK DROP		
S	- SIPHON		
HD	- HIGHWAY DRAIN		
S104	- SECTION 104		
SHAPE		PURPOSE	
C	- CIRCULAR	C	- COMBINED
E	- EGG SHAPED	E	- FINAL EFFLUENT
O	- OTHER	F	- FOUL
R	- RECTANGLE	L	- SLUDGE
S	- SQUARE	S	- SURFACE WATER
T	- TRAPEZOIDAL		
U	- UNKNOWN		



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SK4002NW

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 2. On **1 October 2014**, the ownership of the sewerage and private lateral distribution system in the Seven Tent Water sewage area, which were transferred to a public sewer as at 1 July 2011, transferred to the ownership of Seven Tent Water and became public assets and public lateral drains. A further transfer takes place on 1 October 2012 (date to be confirmed).
 3. Private pumping stations, which form part of these sewers or lateral drains, will transfer to the ownership of Seven Tent Water on or before 1 October 2016.
 4. Seven Tent Water does not possess complete records of these assets.
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SK3903NW

SK3803SE

SK3903SE

Sewer Node		Sewer Pipe Data									
REFERENCE	COVER LEVEL	INV LEVEL UPSTR	INV LEVEL DOWNSTR	PURP	MATL	SHAPE	MAX SIZE	MIN SIZE	GRADIENT	YEAR LAID	
SK39031301	nil	nil	nil	S	nil	nil	nil	nil	0.00	2004	
SK39032206	nil	nil	nil	S	nil	nil	nil	nil	0.00	2004	
SK39032207	nil	nil	nil	F	nil	nil	nil	nil	0.00	2004	
SK39032301	nil	nil	nil	F	nil	nil	nil	nil	0.00	2004	
SK39032301	nil	nil	nil	F	nil	nil	nil	nil	0.00	2004	
SK39032302	nil	nil	nil	F	nil	nil	nil	nil	0.00	2004	
SK39032303	nil	nil	nil	S	nil	nil	nil	nil	0.00	2004	
SK39032303	nil	nil	nil	S	nil	nil	nil	nil	0.00	2004	
SK39032304	nil	nil	nil	S	nil	nil	nil	nil	0.00	2004	
SK39032305	nil	nil	nil	S	nil	nil	nil	nil	0.00	2004	
SK39032306	nil	nil	nil	F	nil	nil	nil	nil	0.00	2004	
SK39032401	nil	nil	nil	S	nil	nil	nil	nil	0.00	2004	
SK39032402	nil	nil	nil	F	nil	nil	nil	nil	0.00	2004	
SK39032404	nil	nil	nil	S	nil	nil	nil	nil	0.00	2004	
SK39033101	nil	nil	nil	F	nil	nil	nil	nil	0.00	nil	
SK39034001	99.11	96.58	96.19	C	VC	C	300	nil	260.31	nil	
SK39034002	99.12	96.62	96.59	C	VC	C	300	nil	298.00	nil	
SK39034101	99.12	97.12	96.69	C	VC	C	nil	nil	225.28	nil	
SK39034101	99.12	nil	nil	C	VC	nil	nil	nil	0.00	nil	
SK39034102	nil	nil	97.29	F	VC	C	225	nil	0.00	nil	
SK39034103	99.13	97.12	97.07	C	VC	C	300	nil	117.00	nil	

SK3902NW

- Abandoned Sewer

Private Combined Gravity Sewer

Private Foul Gravity Sewer

Private Surface Water Gravity Sewer

Public Combined Gravity Sewer

Public Foul Gravity Sewer

Public Surface Water Gravity Sewer

Trunk Combined Gravity Sewer

Trunk Foul Use Gravity Sewer

Trunk Surface Water Gravity Sewer

Combined Use Pressurised Sewer

Foul Use Pressurised Sewer

Surface Water Pressurised Sewer

Highway Drain

Combined Lateral Drain (SS)

Foul Lateral Drain (SS)

Surface Water Lateral Drain (SS)

Cable, Earthing

Cable Junction

Cable, Optical Fibre/Instrumentation

Cable, Low Voltage

Cable, High Voltage

Cable, Other

Housing, Building

Housing, Kiosk

Disposal Site

Sewage Treatment Works

Housing, Other

Pipe Support Structure

Sewage Pumping Facility

Sewer Facility Connection Inlet / Outlet
- Blind Shaft

Combined Use Manhole

Flushing Chamber

Foul Use Manhole

Grease Trap

Head Node

Hydrobrake

Lamphole

Outfall

Overflow

Penstock

Petrol Interceptor

Sewer Blockage

Sewer Collapse

Sewer Chemical Injection Point

Sewer Junction

Sewerage Air Valve

Sewerage Hatch Box Point

Sewerage Isolation Valve

Soakaway

Surface Water Manhole

Vent Column

Waste Water Storage

Culverted Watercourse

Pre-1937 Properties

MATERIALS

- AC

BR

CC

CI

CO

CSB

CSU

DI

GRC

MAC

MAR

PE

PF

PP

PSC

PVC

RPM

SI

XXX
- ASBESTOS CEMENT

- BRICK

- CONCRETE BOX CULVERT

- CAST IRON

- CONCRETE

- CONCRETE SEGMENTS (BOLTED)

- CONCRETE SEGMENTS (UNBOLTED)

- DUCTILE IRON

- GLASS REINFORCED CONCRETE

- MASONRY IN REGULAR COURSES

- MASONRY RANDOMLY COURSED

- POLYETHYLENE

- PITCH

- POLYPROPYLENE

- PLASTIC STEEL COMPOSITE

- POLYVINYL CHLORIDE

- REINFORCED PLASTIC MATRIX

- SPUN (GREY) IRON

- OTHER

All Private Sewers are shown in magenta
All section 104 sewers are shown in green
All sewers that have been transferred to Severn Trent Water after the 1st October 2011, but have not been surveyed and confirmed by Severn Trent Water are shown in orange

CATEGORIES

- W

C

DB

SE

FV

BD

S

HD

S104

SHAPE

C

E

O

R

S

T

U
- WEIR

- CASCADE

- DAMBOARD

- SIDE ENTRY

- FLAP VALVE

- BACK DROP

- SIPHON

- HIGHWAY DRAIN

- SECTION 104

- CIRCULAR

- EGG SHAPED

- OTHER

- RECTANGLE

- SQUARE

- TRAPEZOIDAL

- UNKNOWN

TABULAR KEY

- A.

B.

C.
- Sewer pipe data refers to downstream sewer pipe.

Where the node bifurcates (splits) X and Y indicates downstream sewer pipe.

Gradient is stated a 1 in...
- PURPOSE

C

E

F

L

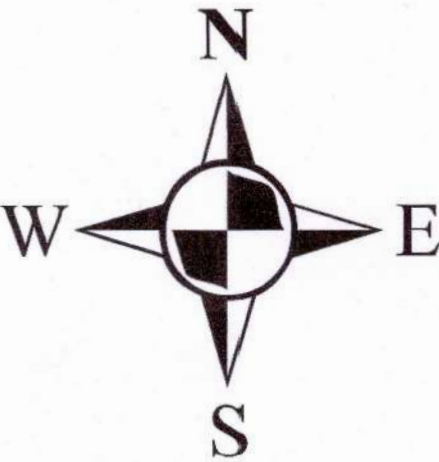
S
- COMBINED

- FINAL EFFLUENT

- FOUL

- SLUDGE

- SURFACE WATER



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SEWER RECORD (TABULAR)

O/S Map scale: 1:1250

Date of issue: 01.11.16

Sheet No. 1 of 1

This map is centred upon:
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SK3903NE



Server Node		Sewer Pipe Data								
REFERENCE	COVER LEVEL	INV LEVEL UPSTR	INV LEVEL DOWNSTR	PURP	MATL	SHAPE	MAX SIZE	MIN SIZE	GRADIENT	YEAR LAID
SC03000001	103.26	101.95	101.84	S	CO	C	375	nil	66.18	nil
SC03000002	102.96	101.19	100.73	F	VC	C	150	nil	52.89	nil
SC03000003	103.11	101.77	101.63	S	CO	C	375	nil	54.43	nil
SC03000004	102.82	101.49	99.79	S	CO	C	450	nil	10.65	nil
SC03000005	102.13	100.72	nil	F	VC	C	150	nil	0.00	nil
SC03000006	nil	nil	98.88	F	nil	nil	nil	nil	0.00	nil
SC03000008	100.32	98.67	98.43	F	VC	C	150	nil	48.22	nil
SC03000021	88.77	97.51	97.12	C	VC	C	300	nil	272.54	nil
SC03000401	99.35	97.94	97.51	C	VC	C	300	nil	259.47	nil
SC03000402	99.76	98.31	97.94	C	VC	C	300	nil	294.22	nil
SC03000601	108.02	106.04	105.89	S	VC	C	150	nil	33.33	nil
SC03000602	108.08	105.74	105.28	F	VC	C	150	nil	36.96	nil
SC03000603	106.60	105.02	103.30	S	VC	C	nil	nil	25.10	nil
SC03000604	106.03	103.25	102.88	F	VC	C	150	nil	69.65	nil
SC03000605	104.75	102.75	101.20	S	VC	C	150	nil	92.45	nil
SC03000606	104.07	103.21	102.42	S	CO	C	300	nil	30.89	nil
SC03000607	105.47	104.52	103.21	S	CO	C	300	nil	23.77	nil
SC03000607	105.47	103.82	103.79	S	CO	C	375	nil	105.33	nil
SC03000608	105.29	103.74	101.95	S	CO	C	375	nil	48.20	nil
SC03000609	103.73	102.41	102.00	S	CO	C	300	nil	56.15	nil
SC03000610	107.80	105.86	105.04	S	VC	C	150	nil	31.91	nil
SC03000611	107.30	105.26	105.03	F	VC	C	150	nil	48.61	nil
SC03000611	106.84	105.08	97.29	F	VC	C	175	nil	21.65	nil
SC03000701	106.94	105.05	104.41	S	CO	C	300	nil	31.28	nil
SC03000702	107.71	105.86	104.41	F	VC	C	150	nil	45.60	nil
SC03000703	106.47	104.38	102.76	F	VC	C	nil	nil	33.48	nil
SC03000704	106.25	104.37	103.82	S	CO	C	300	nil	67.67	nil
SC03000705	107.83	106.23	105.05	S	CO	C	300	nil	39.19	nil
SC03000801	109.28	107.59	106.25	S	CO	C	300	nil	32.57	nil
SC03000802	109.95	107.84	107.84	S	VC	C	225	nil	36.06	nil
SC03000803	110.73	108.67	107.81	S	CO	C	300	nil	20.36	nil
SC03000804	110.26	108.69	105.87	F	VC	C	150	nil	21.90	nil
SC03000905	111.04	109.46	108.73	F	VC	C	150	nil	21.68	nil
SC03000906	111.03	109.56	108.73	F	VC	C	150	nil	46.36	nil
SC03000907	112.79	110.34	107.89	S	VC	C	225	nil	20.10	nil
SC03000908	116.80	114.23	110.54	S	VC	C	225	nil	17.43	nil
SC03000908	118.54	115.78	105.14	F	VC	C	175	nil	21.15	nil
SC03000909	nil	nil	nil	F	VC	U	150	nil	0.00	nil
SC03000909	114.53	112.51	108.68	S	CO	C	300	nil	16.28	nil
SC03000909	114.72	112.60	109.52	F	VC	C	150	nil	20.56	nil
SC03000909	117.45	115.51	112.62	F	VC	C	150	nil	10.18	nil
SC03000904	117.13	114.89	112.62	S	VC	C	225	nil	15.19	nil
SC03000905	116.06	114.52	112.72	F	VC	C	150	nil	23.37	nil
SC03000906	116.12	114.23	112.53	S	CO	C	300	nil	32.74	nil
SC03000907	116.25	114.94	114.53	F	VC	C	150	nil	40.88	nil
SC03000908	116.15	114.39	114.01	S	VC	C	225	nil	0.00	nil
SC03000909	117.17	115.71	115.71	nil	S	VC	C	150	0.00	nil
SC03000910	117.12	115.55	114.95	F	VC	C	150	nil	27.33	nil
SC03000911	119.77	118.63	115.77	S	VC	C	180	nil	9.81	nil
SC03000909	117.01	115.04	114.46	S	VC	C	150	nil	114.12	nil
SC03000902	116.46	115.31	114.90	F	VC	C	150	nil	75.68	nil
SC03000903	116.63	114.77	114.40	S	VC	C	225	nil	63.11	nil
SC03000904	119.10	117.51	114.80	S	VC	C	150	nil	14.20	nil
SC03000905	119.82	116.74	115.80	F	VC	C	175	nil	41.31	nil
nil	nil	nil	nil	F	VC	nil	nil	nil	0.00	nil

	Abandoned Sewer		Cable, Earthing		Blind Shaft		Sewer Chemical Injection Point
	Private Combined Gravity Sewer		Cable Junction		Combined Use Manhole		Sewer Junction
	Private Foul Gravity Sewer		Cable, Optical Fibre/Instrumentation		Flushing Chamber		Sewerage Air Valve
	Private Surface Water Gravity Sewer		Cable, Low Voltage		Foul Use Manhole		Sewerage Hatch Box Point
	Public Combined Gravity Sewer		Cable, High Voltage		Grease Trap		Sewerage Isolation Valve
	Public Foul Gravity Sewer		Cable, Other		Head Node		Soakaway
	Public Surface Water Gravity Sewer		Housing, Building		Hydrobrake		Surface Water Manhole
	Trunk Combined Gravity Sewer		Housing, Kiosk		Lamphole		Vent Column
	Trunk Foul Use Gravity Sewer		Disposal Site		Outfall		Waste Water Storage
	Trunk Surface Water Gravity Sewer		Sewage Treatment Works		Overflow		Culverted Watercourse
	Combined Use Pressurised Sewer		Housing, Other		Penstock		Pre-1937 Properties
	Foul Use Pressurised Sewer		Pipe Support Structure		Petrol Interceptor		
	Surface Water Pressurised Sewer		Sewage Pumping Facility		Sewer Blockage		
	Highway Drain		Sewer Facility Connection Inlet / Outlet		Sewer Collapse		
	Combined Lateral Drain (SS)						
	Foul Lateral Drain (SS)						
	Surface Water Lateral Drain (SS)						

MATERIALS

AC	- ASBESTOS CEMENT
BR	- BRICK
CC	- CONCRETE BOX CULVERT
CI	- CAST IRON
CO	- CONCRETE
CSB	- CONCRETE SEGMENTS (BOLTED)
CSU	- CONCRETE SEGMENTS (UNBOLTED)
DI	- DUCTILE IRON
GRC	- GLASS REINFORCED CONCRETE
MAC	- MASONRY IN REGULAR COURSES
MAR	- MASONRY RANDOMLY COURSED
PE	- POLYETHYLENE
PF	- PITCH
PP	- POLYPROPYLENE
PSC	- PLASTIC STEEL COMPOSITE
PVC	- POLYVINYL CHLORIDE
RPM	- REINFORCED PLASTIC MATRIX
SI	- SPUN (GREY) IRON
XXX	- OTHER

All Private Sewers are shown in magenta

CATEGORIES

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

SHAPE

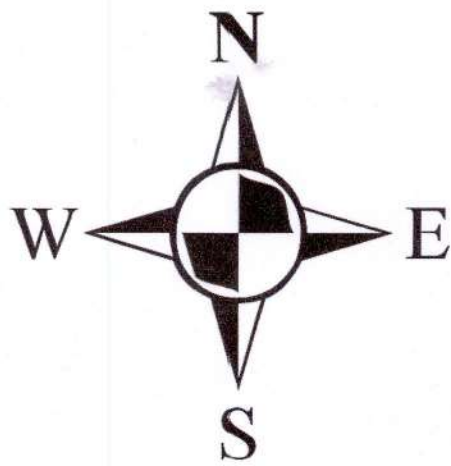
C - CIRCULAR
E - EGG SHAPED
O - OTHER
R - RECTANGLE
S - SQUARE
T - TRAPEZOIDAL
U - UNKNOWN

TABULAR KEY

- A. Sewer pipe data refers to downstream sewer pipe.
- B. Where the node bifurcates (splits) X and Y indicate downstream sewer pipe.
- C. Gradient is stated a 1 in...

PURPOSE

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



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Telephone: 0845 601 6616

SEWER RECORD (TABULAR)

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Date of issue: 01.11.16

Sheet No. 1 of 1

This map is centred upon:

O / S Tile reference:

SK3903SE

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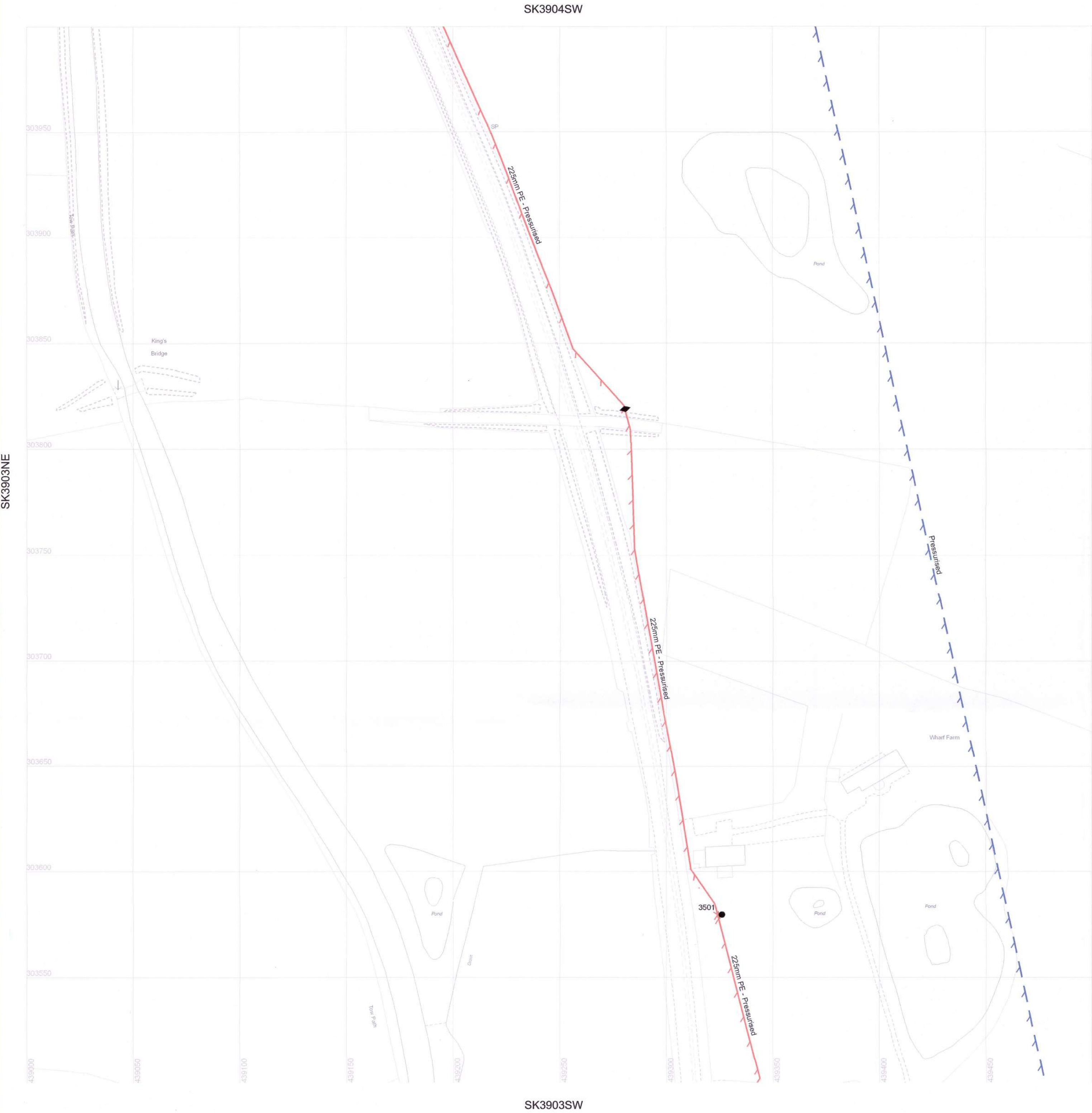
On **1 October 2011** all private sewers and private lateral drains in Severn Trent Water's sewerage area, which were previously owned by local authorities, transferred to the ownership of Severn Trent Water and became public sewers or public lateral drains. A further transfer takes place on 1 October 2012 (date to be confirmed).

Private pumps which form part of these sewers or lateral drains, will transfer to the 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 this Map.

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- ✕✕✕✕ Abandoned Sewer

Private Combined Gravity Sewer

Private Foul Gravity Sewer

Private Surface Water Gravity Sewer

Public Combined Gravity Sewer

Public Foul Gravity Sewer

Public Surface Water Gravity Sewer

Trunk Combined Gravity Sewer

Trunk Foul Use Gravity Sewer

Trunk Surface Water Gravity Sewer

Combined Use Pressurised Sewer

Foul Use Pressurised Sewer

Surface Water Pressurised Sewer

Highway Drain

Combined Lateral Drain (SS)

Foul Lateral Drain (SS)

Surface Water Lateral Drain (SS)

○-○-○ Cable, Earthing

○ Cable Junction

--- Cable, Optical Fibre/Instrumentation

--- Cable, Low Voltage

--- Cable, High Voltage

--- Cable, Other

B

Housing, Building

K

Housing, Kiosk

L

Disposal Site

T

Sewage Treatment Works

●

Housing, Other

—

Pipe Support Structure

▲

Sewage Pumping Facility

⊠

Sewer Facility Connection Inlet / Outlet

■

Blind Shaft

●

Combined Use Manhole

□

Flushing Chamber

●

Foul Use Manhole

●

Grease Trap

+

Head Node

—

Hydrobrake

□

Lamphole

□

Outfall

—

Overflow

—

Penstock

⊕

Petrol Interceptor

★

Sewer Blockage

☆

Sewer Collapse
- Sewer Chemical Injection Point
- Sewer Junction
- ◆

Sewerage Air Valve
- ||

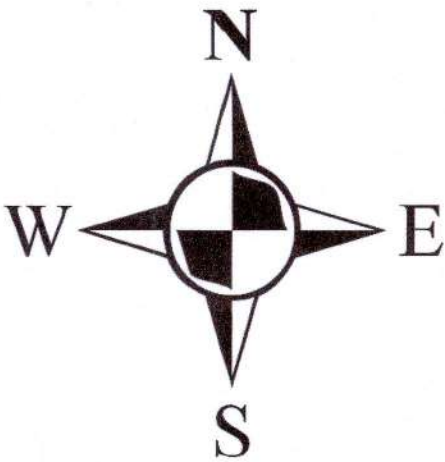
Sewerage Hatch Box Point
- Sewerage Isolation Valve
- ⊕

Soakaway
- Surface Water Manhole
- Vent Column
- Waste Water Storage
- Culverted Watercourse
- Pre-1937 Properties

MATERIALS	
AC	- ASBESTOS CEMENT
BR	- BRICK
CC	- CONCRETE BOX CULVERT
CI	- CAST IRON
CO	- CONCRETE
CSB	- CONCRETE SEGMENTS (BOLTED)
CSU	- CONCRETE SEGMENTS (UNBOLTED)
DI	- DUCTILE IRON
GRC	- GLASS REINFORCED CONCRETE
MAC	- MASONRY IN REGULAR COURSES
MAR	- MASONRY RANDOMLY COURSED
PE	- POLYETHYLENE
PF	- PITCH
PP	- POLYPROPYLENE
PVC	- PLASTIC STEEL COMPOSITE
RPV	- REINFORCED PLASTIC MATRIX
SI	- SPUN (GREY) IRON
XXX	- OTHER
All Private Sewers are shown in magenta	
All section 104 sewers are shown in green	
All Sewers that have been transferred to Severn Trent Water after the 1 st October 2011, but have not been surveyed and confirmed by Severn Trent Water are shown in orange	

CATEGORIES	
W	- WEIR
C	- CASCADE
DB	- DAMBOARD
SE	- SIDE ENTRY
FV	- FLAP VALVE
BD	- BACK DROP
S	- SIPHON
HD	- HIGHWAY DRAIN
S104	- SECTION 104
SHAPE	
C	- CIRCULAR
E	- EGG SHAPED
O	- OTHER
R	- RECTANGLE
S	- SQUARE
T	- TRAPEZOIDAL
U	- UNKNOWN

TABULAR KEY	
A.	Sewer pipe data refers to downstream sewer pipe.
B.	Where the node bifurcates (splits) X and Y indicates downstream sewer pipe.
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PURPOSE	
C	- COMBINED
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F	- FOUL
L	- SLUDGE
S	- SURFACE WATER



Severn Trent Water Limited
Asset Data Management
PO Box 5344
Coventry
CV3 9FT
Telephone: 0845 601 6616

SEWER RECORD (TABULAR)

O/S Map scale: 1:1250

Date of issue: 01.11.16

Sheet No. 1 of 1

This map is centred upon:

O / S Tile reference:

SK3903NW

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SK3904SE

Sewer Node		Sewer Pipe Data									
REFERENCE	COVER LEVEL	INV LEVEL UPSTR	INV LEVEL DOWNSTR	PURP	MATL	SHAPE	MAX SIZE	MIN SIZE	GRADIENT	YEAR LAID	
SK39036501	100.35	98.79	98.31	C	VC	C	300	nil	253.31	nil	
SK39037501	102.08	100.48	98.79	C	VC	C	300	nil	63.78	nil	
SK39038601	104.32	102.24	100.48	C	GRP	C	300	nil	64.23	nil	
SK39039601	103.95	102.33	102.24	C	VC	C	300	nil	1205.78	nil	

SK3803NNW

SK3903NNW

SK3903SE

- ✕✕✕✕ Abandoned Sewer

Private Combined Gravity Sewer

Private Foul Gravity Sewer

Private Surface Water Gravity Sewer

Public Combined Gravity Sewer

Public Foul Gravity Sewer

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Trunk Combined Gravity Sewer

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○—○—○ Cable, Earthing

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----- Cable, Optical Fibre/Instrumentation

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----- Cable, High Voltage

+++++ Cable, Other

B

Housing, Building

K

Housing, Kiosk

LC

Disposal Site

STW

Sewage Treatment Works

●

Housing, Other

—

Pipe Support Structure

▲

Sewage Pumping Facility

⊠

Sewer Facility Connection Inlet / Outlet

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●

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○

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●

Foul Use Manhole

●

Grease Trap

+

Head Node

—

Hydrobrake

□

Lamphole

□

Overflow

—

Penstock

⊕

Petrol Interceptor

★

Sewer Blockage

☆

Sewer Collapse

—

Sewer Chemical Injection Point

▪

Sewer Junction

◆

Sewerage Air Valve

||

Sewerage Hatch Box Point

—

Sewerage Isolation Valve

⊕

Soakaway

○

Surface Water Manhole

■

Vent Column

■

Waste Water Storage

—

Culverted Watercourse

+++++ Pre-1937 Properties

MATERIALS

- AC

- ASBESTOS CEMENT
- BR

- BRICK
- CC

- CONCRETE BOX CULVERT
- CI

- CAST IRON
- CO

- CONCRETE
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- CONCRETE SEGMENTS (BOLTED)
- CSU

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PURPOSE

- C

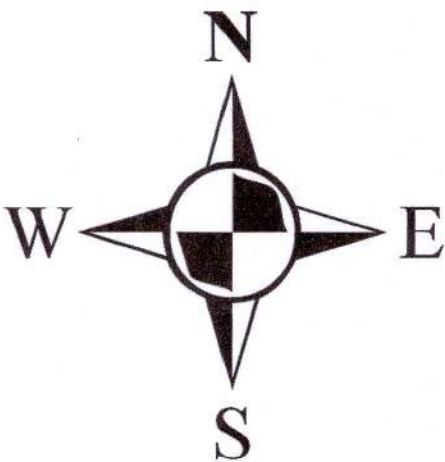
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SEWER RECORD (TABULAR)

O/S Map scale: 1:1250

Date of issue: 01.11.16

Sheet No. 1 of 1

This map is centred upon:
O / S Tile reference:

SK3903NE

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APPENDIX 3

APPROVED DRAINAGE LAYOUT 19/01437/OUT

Site Details

37,786m² / 3.779ha : Development area
10,540m² / 1.054ha : Proposed impermeable area
5.0 l/s : Proposed Q100+40% climate change storm discharge rate to sewer (93.97% Betterment)
Storage Areas:
Northern Area (Attenuation Ponds 2+3) : 237m³
South Area 1 (Club House & Units 1-6 - Attenuation Pond 1) : 250m³
South Area 2 (Permeable Paving with 500mm deep Voided Stone) : 250m³
Development impermeable areas to be drained into the ordinary watercourse via attenuation ponds and voided stone with minimum SUDs treatment to Ciria753, via gravity and pumped sewers.

All drainage to be constructed in accordance with Sewers for Adoption 6th Edition and Building Regulations Part H.

Layout subject to detailed level and FFL design.

A CCTV survey of the as-built drainage is to be undertaken by the Contractor and provided to the Engineer for final approval

Sewer details shown are taken from STW sewer records and are to be confirmed by Contractor prior to commencement of the works

Minimum pipe cover to soffits to be as per The Building Regulations 2010 Part H for thermoplastic pipes:
• 0.6m in pedestrian or landscaped areas
• 0.9m in vehicle accessible areas
Any pipes with cover to soffit less than those stated above are to have a Class Z concrete pipe bed & surround

Internal foul drain pipe minimum gradients:
• 1:80 from SVP & WC to IC
• 1:40 from Basin & Sink to IC

Refer to Architect's/M&E drawings for pipe sizes and setting-out information.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- Mesh screen to be placed over the outlet pipe of chambers during site construction works and removed immediately prior to the first occupancy of the dwellings served by the sewers
- Proposed storm outfall to ditch subject to LLFA and Environmental Agency approval
- Online basin to store surface water runoff on site prior to discharge
- Storm discharge from site restricted to 5.0l/s. for a 1in100 year +40% climate change storm event, using a flow control chamber. Subject to approval with LLFA
- Drainage discharge rate, water quality criteria and surface water ditch headwall construction subject to the Approval of the Environment Agency prior to commencement of the works.
- Connection subject to Ordinary watercourse consent and discharge is subject to LLFA Approval.
- Proposed manhole 1200Ø fitted with orifice plate and 400mm sump (silt trap) to restrict private surface water discharge.
- Proposed storm conveyance ditch will convey storm water run off from the private drive
- New precast concrete headwall constructed within the attenuation pond.

General Notes

- DO NOT SCALE.
- This drawing is to be read in conjunction with all other relevant drawings and details.
- Should there be any conflict between the details indicated on this drawing and those on other drawings the Engineer should be informed PRIOR to construction on site.
- Until technical approval has been obtained from the relevant Authority, it should be understood that all drawings issued are Preliminary and NOT for construction. Should the contractor commence site work prior to such approval being given it is entirely at his own risk.
- Sketch proposals are for illustrative purposes only & as such are subject to detailed site investigation including ground conditions / contaminants, drainage, design & planning/density negotiations.
- All dimensions are in millimetres unless otherwise stated.
- The Farrow Walsh Consulting Designers Risk Assessments for this project must be reviewed PRIOR to the commencement of any works on site.

NOTES

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- The exact position, level, size and use of existing sewers to be confirmed on site. Any discrepancies to be reported to the Engineer prior to commencement of works.
- All uncovered and shallow pipework to be protected against construction traffic as part of the Contractors temporary works requirements.
- All connections to road gullies and channels shall be 150mm nominal bore pipework.
- All pipework to be U-PVC type in accordance with WIS 4-35-01 unless otherwise noted.
- All pipes connecting to adopted manholes up to and including 300mm dia. to be Wavin Ultrarb or similar approved.
- All pipes connecting to adopted manholes greater than 300mm dia. to be Concrete or approved U-PVC.
- All pipework entering and exiting manholes to be connected with pipe soffits level.
- All works are to be to the satisfaction of the Engineer, Building Officer, Severn Trent Water, local authority Highway & Flood Planning Officer.
- All insitu services and drainage networks are to be located and protected as necessary by the Contractor prior to the commencement of the works.

LEGEND

- Site Boundary
- Application Boundary
- 1200mm dia. IC
- 450mm dia. IC Max Depth 3.0m
- Surface Water 150mm dia. Pipe
- Foul Water 100mm dia. Pipe
- Existing 300mm dia. Pipe
- Rodding eye (storm only)
- Perforated Pipe
- Voided stone to provide treatment for the private access
- Exceedance flow direction
- Yard Gully

P2	Site Boundary amended to reflect Land Title Plan, SW pump added to Eastern region and overland flood arrows added as requested by the LLFA 02.10.2018.	BM	CB	JD	11.10.18
A1	Issued for Planning.	BM	CB	JD	06.09.18
Rev	Description of updates	Drawn	Checked	Appd	Date

Farrow Walsh CONSULTING

Second Floor, 48 Cank Street, Leicester, LE1 9GW
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PLANNING

Client:
Statue Homes

Project:
Market Bosworth Golf Leisure and Country Retreat, Market Bosworth

Title:
Drainage Strategy
Sheet 1 of 3

Drawn: BM	Checked: CB	Approved: JD	Date: Sept 2018	Scale: 1:500 @ A1
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Drawing No. **FW1219-D-400** Revision: **P2**

Site Details

37,786m² / 3.779ha : Development area

10,540m² / 1.054ha : Proposed impermeable area

5.0 l/s : Proposed Q100+40% climate change storm discharge rate to sewer (93.97% Betterment)

Storage Areas:

Northern Area (Attenuation Ponds 2+3) : 237m³

South Area 1 (Club House & Units 1-6 - Attenuation Pond 1) : 250m³

South Area 2 (Permeable Paving with 500mm deep Voided Stone) : 250m³

Development impermeable areas to be drained into the ordinary watercourse via attenuation ponds and voided stone with minimum SUDs treatment to Ciria753, via gravity and pumped sewers.

1 Mesh screen to be placed over the outlet pipe of chambers during site construction works and removed immediately prior to the first occupancy of the dwellings served by the sewers

2 Proposed storm outfall to ditch subject to LLFA and Environmental Agency approval

3 Online basin to store surface water runoff on site prior to discharge

4 Storm discharge from site restricted to 5.0l/s. for a 1in100 year +40% climate change storm event, using a flow control chamber. Subject to approval with LLFA

5 Drainage discharge rate, water quality criteria and surface water ditch headwall construction subject to the Approval of the Environment Agency prior to commencement of the works.

6 Connection subject to Ordinary watercourse consent and discharge is subject to LLFA Approval.

7 Proposed manhole 1200Ø fitted with orifice plate and 400mm sump (silt trap) to restrict private surface water discharge.

8 Proposed storm conveyance ditch will convey storm water run off from the private drive

9 New precast concrete headwall constructed within the attenuation pond.

10 Proposed foul treatment bio discs

Existing surface water ditch to be surveyed at proposed outfall point, using same local grid and datum as site survey, prior to commencement of the works

All FFLs and Drainage Strategy details are indicative only and subject to detailed design

ALL THE PROPOSED DRAINAGE IS INDICATIVE ONLY AND SUBJECT TO DETAILED DESIGN

All FFLs and Drainage Strategy details are indicative only and subject to detailed design

Storm Event	Proposed Max. Discharge Rate
1 in 1 year	5.0 l/s
1 in 30 year	5.0 l/s
1 in 100+40%CC	5.0 l/s

All drainage to be constructed in accordance with Sewers for Adoption 6th Edition and Building Regulations Part H.

Layout subject to detailed level and FFL design.

A CCTV survey of the as-built drainage is to be undertaken by the Contractor and provided to the Engineer for final approval

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W: www.farrowwalsh.com T: 0116 251 5558

PLANNING

Client: Statue Homes

Project: Market Bosworth Golf Leisure and Country Retreat, Market Bosworth

Title: Drainage Strategy Sheet 2 of 3

Drawn: BM	Checked: CB	Approved: JD	Date: Sept 2018	Scale: 1:500 @ A1
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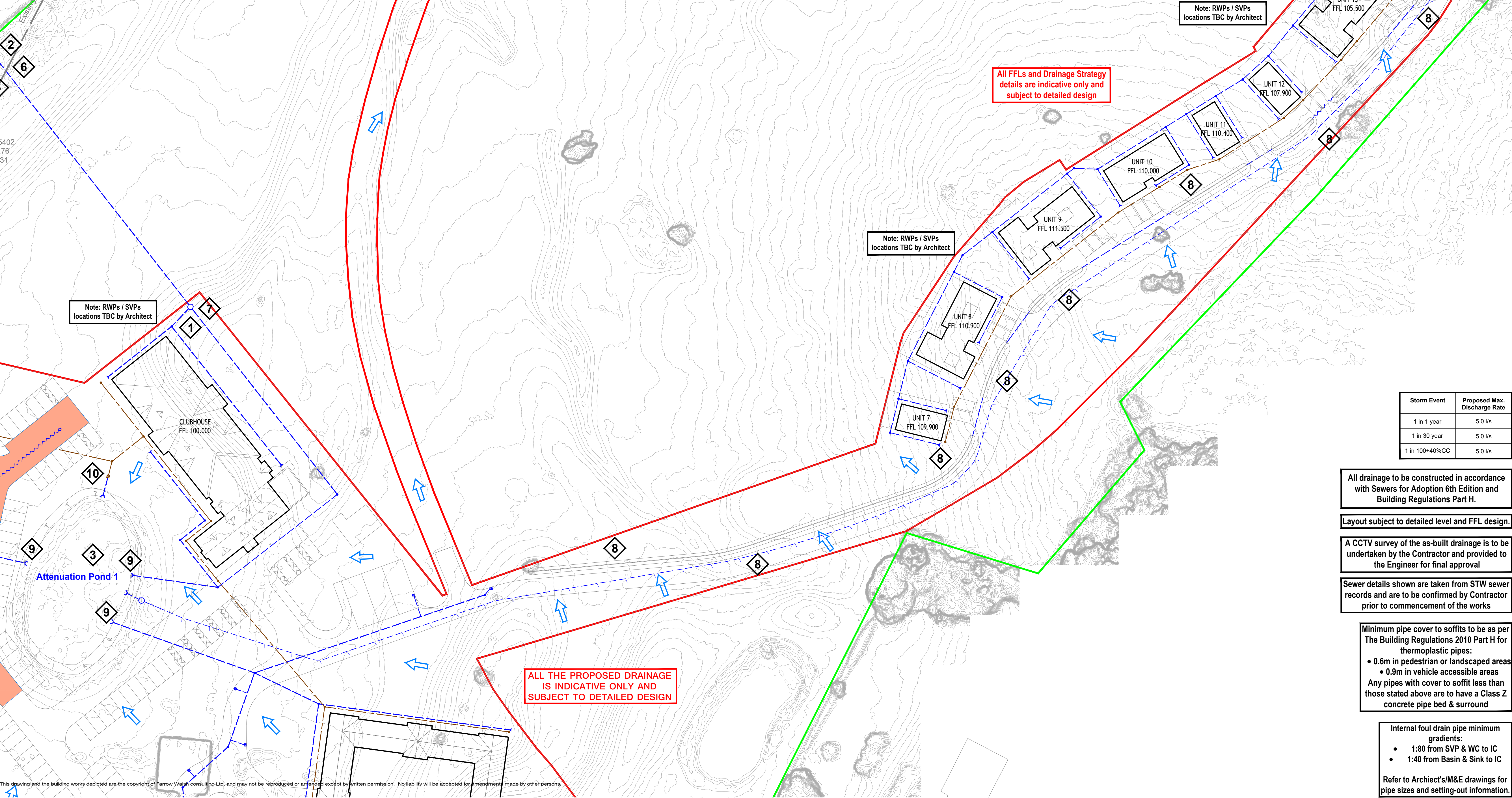
Drawing No. **FW1219-D-401** Revision: **P2**

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- All in situ services and drainage networks are to be located and protected as necessary by the Contractor prior to the commencement of the works.

- Mesh screen to be placed over the outlet pipe of chambers during site construction works and removed immediately prior to the first occupancy of the dwellings served by the sewers
- Proposed storm outfall to ditch subject to LLFA and Environmental Agency approval
- Online basin to store surface water runoff on site prior to discharge
- Storm discharge from site restricted to 5.0l/s. for a 1in100 year +40% climate change storm event, using a flow control chamber. Subject to approval with LLFA
- Drainage discharge rate, water quality criteria and surface water ditch headwall construction subject to the Approval of the Environment Agency prior to commencement of the works.
- Connection subject to Ordinary watercourse consent and discharge is subject to LLFA Approval.
- Proposed manhole 1200Ø fitted with orifice plate and 400mm sump (silt trap) to restrict private surface water discharge.
- Proposed storm conveyance ditch will convey storm water run off from the private drive
- New precast concrete headwall constructed within the attenuation pond.
- Proposed foul treatment bio discs
- Proposed Klargester or similar approved storm water pumping station. Pumping specification to be provided by the M&E Engineers.

Storm Event	Proposed Max. Discharge Rate
1 in 1 year	5.0 l/s
1 in 30 year	5.0 l/s
1 in 100+40%CC	5.0 l/s

All drainage to be constructed in accordance with Sewers for Adoption 6th Edition and Building Regulations Part H.

Layout subject to detailed level and FFL design.

A CCTV survey of the as-built drainage is to be undertaken by the Contractor and provided to the Engineer for final approval

Sewer details shown are taken from STW sewer records and are to be confirmed by Contractor prior to commencement of the works

Minimum pipe cover to soffits to be as per The Building Regulations 2010 Part H for thermoplastic pipes:
• 0.6m in pedestrian or landscaped areas
• 0.9m in vehicle accessible areas
Any pipes with cover to soffit less than those stated above are to have a Class Z concrete pipe bed & surround

Internal foul drain pipe minimum gradients:
• 1:80 from SVP & WC to IC
• 1:40 from Basin & Sink to IC

Refer to Archiect's/M&E drawings for pipe sizes and setting-out information.

P2	Site Boundary amended to reflect Land Title Plan, SW pump added to Eastern region and overland flood arrows added as requested by the LLFA 02.10.2018.	BM	CB	JD	11.10.18
P1	Issued for Planning.	BM	CB	JD	06.09.18
Rev	Description of updates	Drawn	Checked	App'd	Date

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PLANNING

Client: Statue Homes

Project: Market Bosworth Golf Leisure and Country Retreat, Market Bosworth

Title: Drainage Strategy Sheet 3 of 3

Drawn: BM	Checked: CB	Approved: JD	Date: Sept 2018	Scale: 1:500 @ A1
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Drawing No. **FW1219-D-402** Revision: **P2**