

**Boorley Green Local Centre
Winchester Road, Boorley**

Vistry Southern

Surface Water Drainage Technical Note

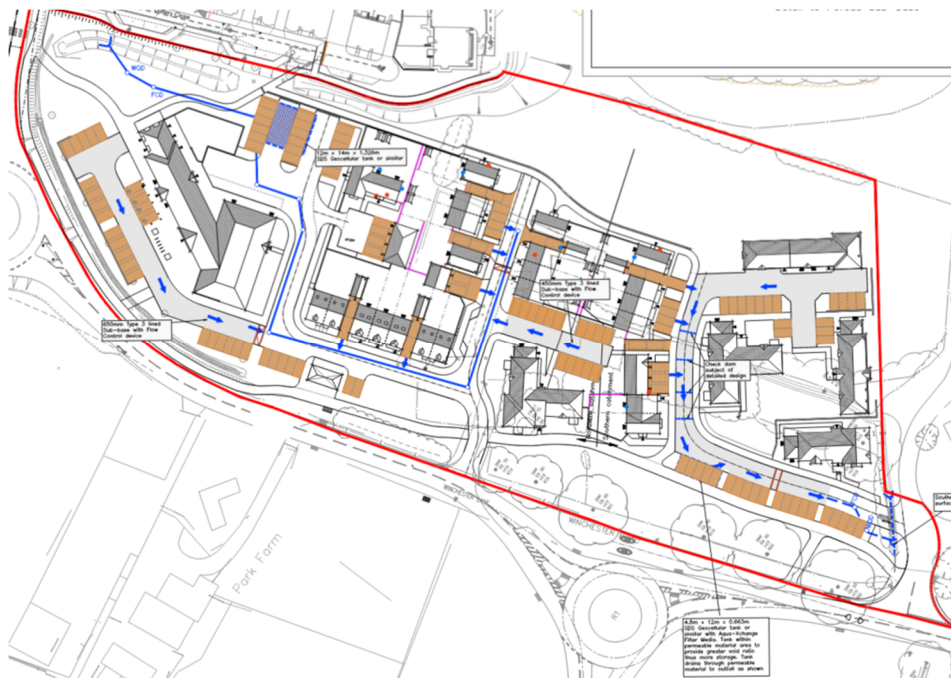
AMc/ST/23:0918/6663
7th December 2023

The following statement is in response to queries raised by Eastleigh Borough Council Planning Department in relation to the surface water drainage and outfalls from the Boorley Green Local Centre development area.

Drainage Strategy Background:

The Boorley Green Local Centre drainage strategy was based on principles outlined in the original FRA produced by OPUS International associated with the wider Boorley development. The OPUS model associated with Phase 1 made an allowance for the Gateway Centre.

PFA Consulting then took forward the design work as part of the planning application. As part of the outline planning design PFA progressed an addendum Flood Risk Assessment and Drainage Strategy for the development area in 2019. The design confirmed two storm outfalls for the development, one to the north-west discharging a maximum of 5.6 l/sec to an existing watercourse and balancing pond, the other discharging at a maximum of 5 l/sec to an existing ditch on the south-eastern side.

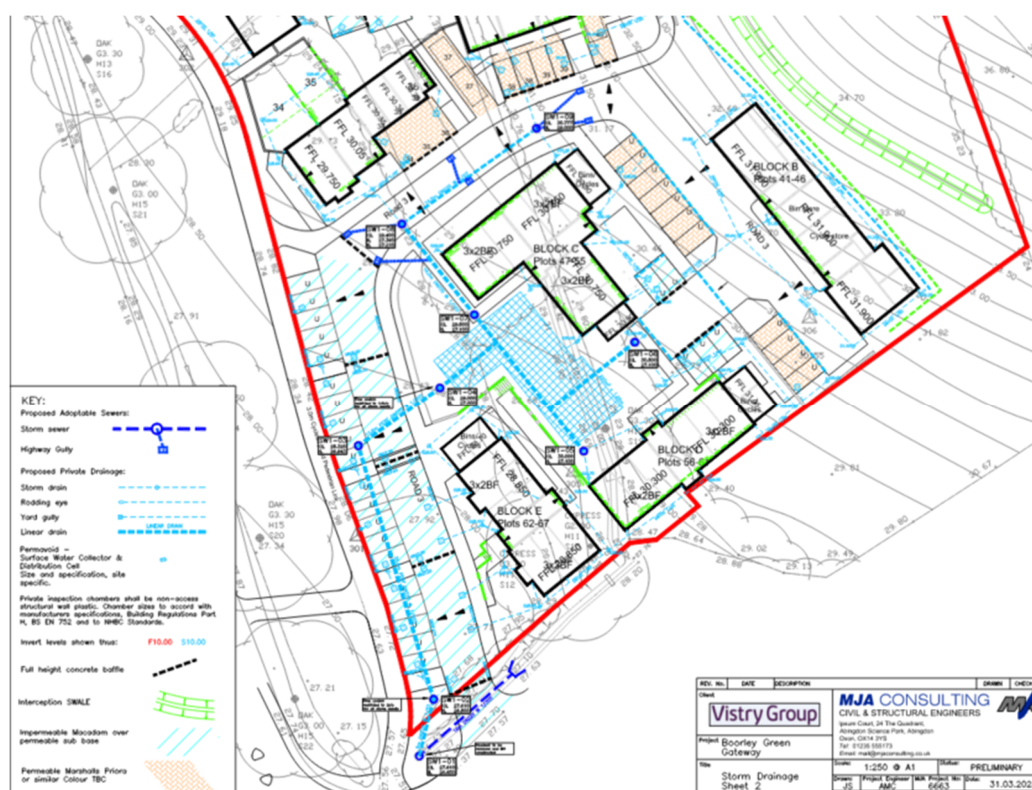


MJA Consulting were appointed by Bovis Homes now Vistry to undertake the detailed development design. During this design process the development layout was amended and updated. As the design work progressed the changes were required to the way the site drained due to the layout and shallow outfalls. This had a knock-on effect of requiring amendments to the storm water discharge rates; the overall flow rate from the development remained the same. However, the north-west outfall increased to a maximum of 8.6 l/sec and the outfall to the south-eastern side decreased to a maximum of 2.0 l/sec.

The north-western outfall and downstream catchment was reviewed and remodelled by PFA Consulting who confirmed that the 3 l/sec increase in flow has very little effect on the downstream catchment. The updated on-site drainage designs along with the PFA report confirming that the change in flows were acceptable. All information was issued to Eastleigh Borough Council as part of the planning condition discharge.

South-Eastern Outfall

The outline drainage designs showed the development storm water outfalling into an existing boundary ditch on the south-eastern corner of the development adjacent to the entrance to the Botley Park Hotel & Spa. The outline designs and information from site surveys indicated that the ditch was then culverted under Winchester Road, flowing in a southerly direction outfalling to an existing ditch network south of the Winchester Road.



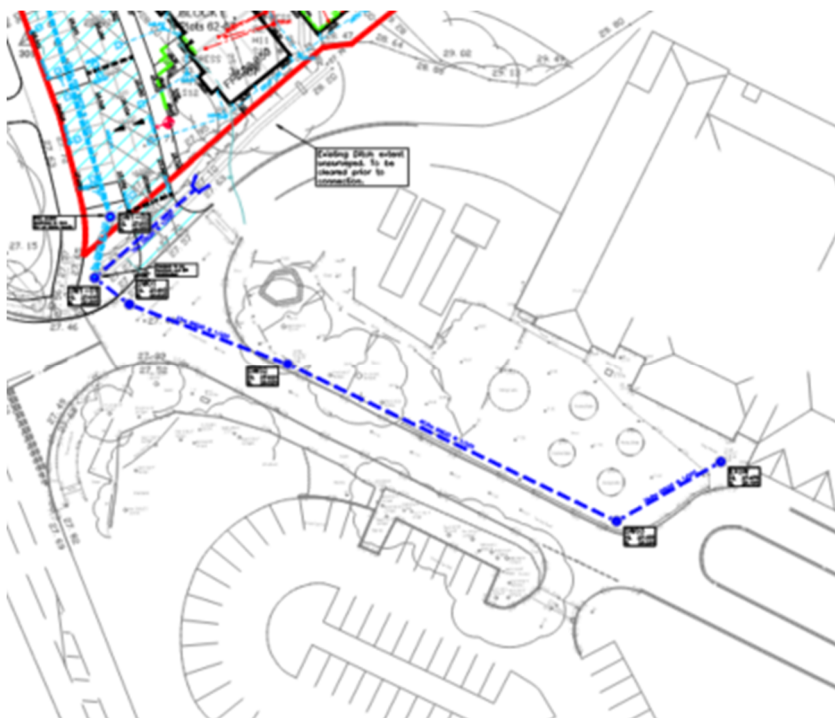
During the construction works it has been found that the piped outfall culvert under the B3354 Winchester Road has been severed by the installation of a Gas Main. A review of options was undertaken to reinstate the connection to the downstream ditch, this included relaying the pipe on the same or alternative route while adjusting the levels around the Gas Main. Unfortunately, due to the number of existing and new utility mains within Winchester Road was not possible.

An alternative option of providing a syphon link under the utilities was proposed; However, approval could not be gained from Hampshire Highways.

Options for reinstating the culvert connection to the south are very limited due to the location of main utility pipework. Therefore, an alternative option was considered taking the restricted development flow of 2.0 l/sec directly east into the adjacent Botley Park Hotel & Spa network removing the need to cross the Winchester Road.

A CCTV and level survey was undertaken of the Hotel network which confirmed a connection was possible. The CCTV survey also confirmed that the hotels storm network discharges in an eastern direction towards Wallace Avenue and outfalls to the lake adjacent to the road. Flows from the lake run through the Boorley Green development outfalling Ford Lake stream and the River Hamble.

Botley Park Hotel & Spa have confirmed to Vistry Homes that they are willing to accept the restricted storm water flow from the development area into their network. The proposed outfall through the Botley Park Hotel & Spa has been submitted to Eastleigh Borough Council LLFA & Hampshire CC OWC Team.

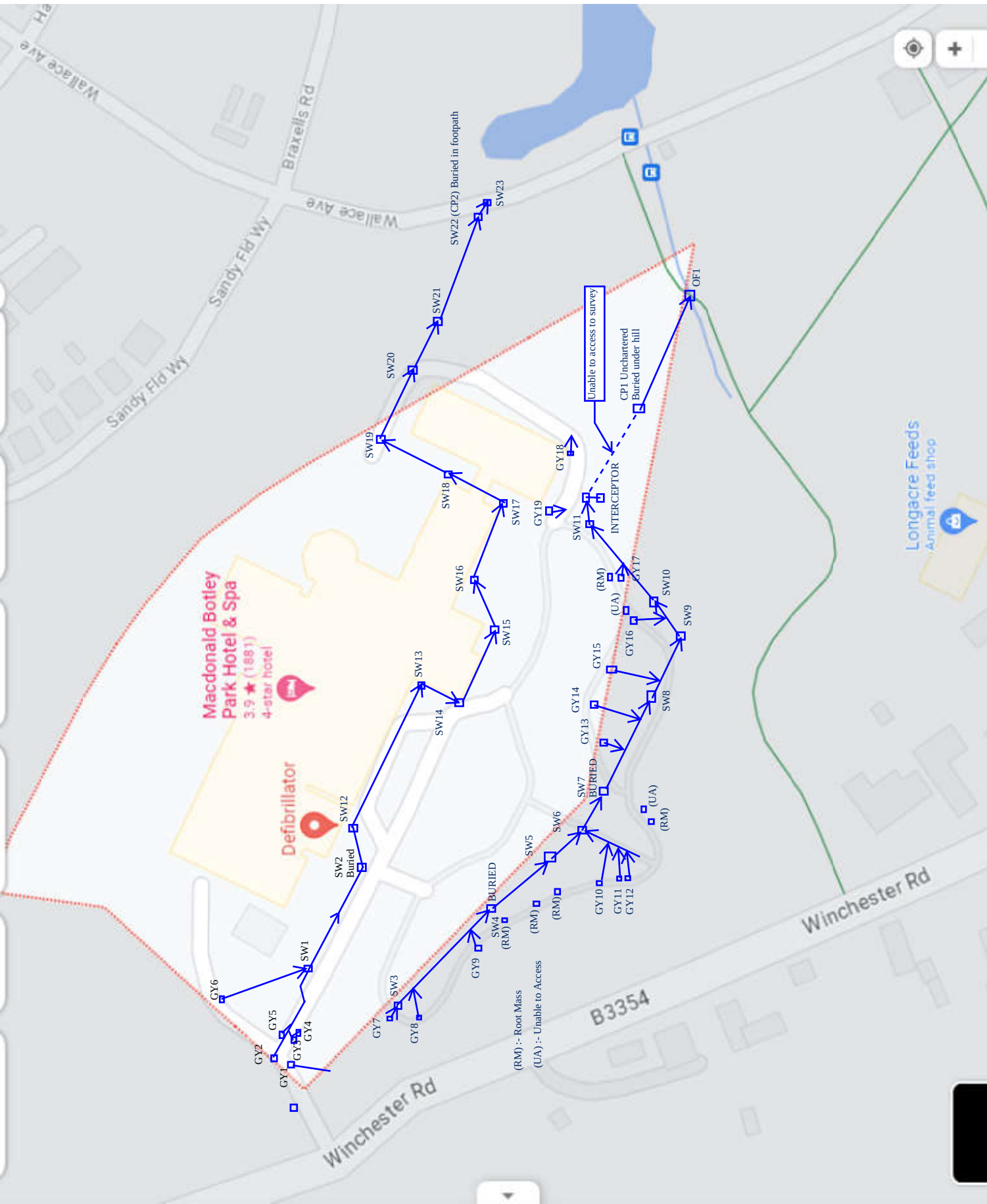


Appendices

Appendix A: Extract from Botley Park Hotel CCTV

Appendix B: Engineering Sheets showing proposed outfalls

Appendix A:
Extract from Botley Park Hotel CCTV



Section Profile

Project Name
Boorley Green Gateway Consortium - MacDonald Hotel - LSO0001564

Project Date
11/08/2023

Circular, 150 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Asset Material	Total Length	Inspected Length
1	GY1	Main	11/08/2023	Winchester Road	Vitrified clay	5.74 m	5.74 m
2	GY2	Main	11/08/2023	Winchester Road	Vitrified clay	23.51 m	23.51 m
3	GY3	Main	11/08/2023	Winchester Road	Vitrified clay	4.16 m	4.16 m
4	GY4	Main	11/08/2023	Winchester Road	Vitrified clay	0.22 m	0.22 m
5	GY5	Main	11/08/2023	Winchester Road	Vitrified clay	3.69 m	3.69 m
6	GY6	SW1	11/08/2023	Winchester Road	Vitrified clay	12.68 m	12.68 m
9	GY7	SW3	14/08/2023	Winchester Road	Vitrified clay	1.19 m	1.19 m
31	CP2	SW23	17/08/2023	Winchester Road	Vitrified clay	3.88 m	3.89 m
32	GY8	Main	18/08/2023	Winchester Road	Vitrified clay	8.44 m	8.44 m
33	GY9	Main	18/08/2023	Winchester Road	Vitrified clay	6.18 m	6.18 m
34	GY10	Main	18/08/2023	Winchester Road	Vitrified clay	9.75 m	9.75 m
35	GY11	Main	18/08/2023	Winchester Road	Vitrified clay	8.71 m	8.71 m
36	GY12	Main	18/08/2023	Winchester Road	Vitrified clay	1.63 m	1.63 m
37	GY13	Main	18/08/2023	Winchester Road	Vitrified clay	7.37 m	7.37 m
38	GY14	Main	18/08/2023	Winchester Road	Vitrified clay	8.52 m	8.52 m
39	GY15	Main	18/08/2023	Winchester Road	Vitrified clay	6.93 m	6.93 m
40	GY16	Main	18/08/2023	Winchester Road	Vitrified clay	11.66 m	11.66 m
41	GY17	Main	18/08/2023	Winchester Road	Vitrified clay	1.16 m	1.16 m
42	GY18	Main	18/08/2023	Winchester Road	Vitrified clay	7.84 m	7.84 m
43	GY19	Main	18/08/2023	Winchester Road	Vitrified clay	3.12 m	3.12 m

Total: 20 Inspections x Circular 150 mm = 136.38 m Total Length and 136.39 m Inspected Length

Circular, 225 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Asset Material	Total Length	Inspected Length
7	SW1	SW2	11/08/2023	Winchester Road	Vitrified clay	43.30 m	43.30 m
8	SW3	SW4	14/08/2023	Winchester Road	Vitrified clay	27.84 m	27.84 m
10	SW4	SW5	14/08/2023	Winchester Road	Vitrified clay	27.38 m	27.38 m
18	SW2	SW12	14/08/2023	Winchester Road	Vitrified clay	13.77 m	13.77 m
19	SW12	SW13	14/08/2023	Winchester Road	Vitrified clay	0.07 m	0.07 m

Total: 5 Inspections x Circular 225 mm = 112.36 m Total Length and 112.36 m Inspected Length

Circular, 300 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Asset Material	Total Length	Inspected Length
11	SW5	SW6	14/08/2023	Winchester Road	Vitrified clay	15.03 m	15.03 m
12	SW6	SW7	14/08/2023	Winchester Road	Vitrified clay	7.21 m	7.21 m
13	SW7	SW8	14/08/2023	Winchester Road	Vitrified clay	22.86 m	22.86 m
14	SW8	SW9	14/08/2023	Winchester Road	Vitrified clay	36.55 m	36.55 m
15	SW9	SW10	14/08/2023	Winchester Road	Vitrified clay	16.87 m	16.87 m
16	SW10	SW11	14/08/2023	Winchester Road	Vitrified clay	16.29 m	16.29 m
20	SW13	SW14	14/08/2023	Winchester Road	Vitrified clay	12.75 m	12.75 m
21	SW14	SW15	14/08/2023	Winchester Road	Vitrified clay	22.16 m	22.16 m
22	SW16	SW17	15/08/2023	Winchester Road	Vitrified clay	17.41 m	17.41 m
23	SW15	SW16	15/08/2023	Winchester Road	Vitrified clay	21.48 m	21.48 m
24	SW17	SW18	15/08/2023	Winchester Road	Vitrified clay	17.17 m	17.17 m
25	SW18	SW19	15/08/2023	Winchester Road	Vitrified clay	18.59 m	18.59 m

Total: 12 Inspections x Circular 300 mm = 224.37 m Total Length and 224.37 m Inspected Length



Section Profile

Project Name

Boorley Green Gateway Consortium - MacDonald Hotel - LSO0001564

Project Date

11/08/2023

Circular, 375 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Asset Material	Total Length	Inspected Length
17	SW11	INTERCEPTO	14/08/2023	Winchester Road	Concrete pipe	1.80 m	1.80 m
26	SW19	SW20	15/08/2023	Winchester Road	Concrete pipe	22.34 m	22.34 m
27	SW20	SW21	15/08/2023	Winchester Road	Concrete pipe	8.54 m	8.54 m
28	SW21	SW22	15/08/2023	Winchester Road	Concrete pipe	28.78 m	28.78 m
29	CP1	OF1	16/08/2023	Winchester Road	Concrete pipe	20.61 m	20.61 m
30	SW21	SW22	17/08/2023	Winchester Road	Concrete pipe	38.65 m	38.65 m

Total: 6 Inspections x Circular 375 mm = 120.72 m Total Length and 120.72 m Inspected Length

Total: 43 Inspections = 593.83 m Total Length and 593.84 m Inspected Length



Appendix B: Engineering Sheets



KEY:

Proposed Adoptable Sewers:

- Storm sewer
- Highway Gully

Proposed Private Drainage:

- Storm drain
- Rodding eye
- Yard gully
- Linear drain
- Permeable - Surface Water Collector & Distribution Cell - Size and specification, site specific.

Private inspection chambers shall be non-access structural wall plastic. Chamber sizes to accord with manufacturers specifications, Building Regulations Part H, BS EN 752 and to NHBC Standards.

Invert levels shown thus: F10.00 S10.00

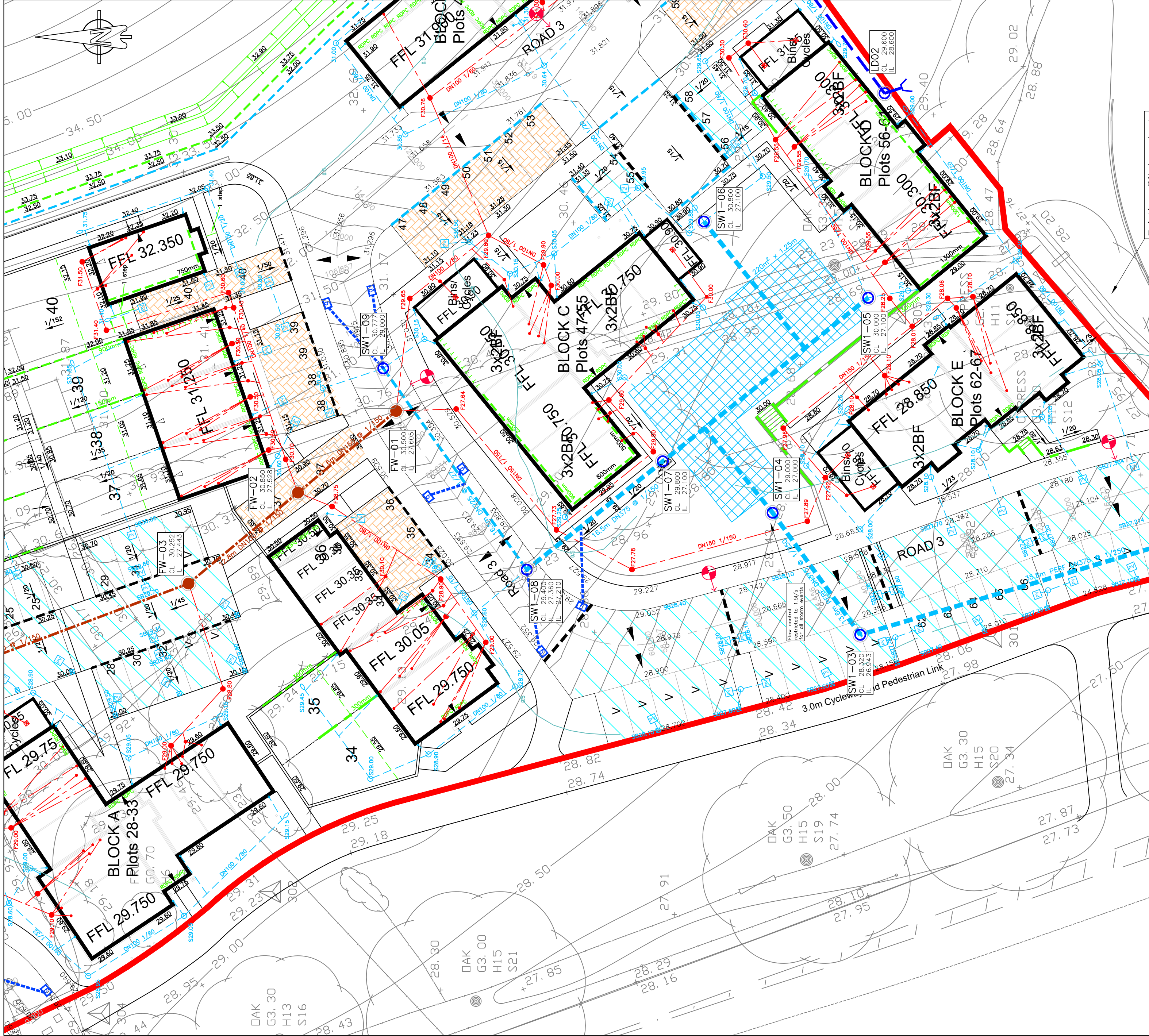
Full height concrete baffle

Interception SWALE

Impermeable Macadam over permeable sub base

Permeable Marshalls Priors or similar Colour TBC

REV. No.	DATE	DESCRIPTION	DRAWN	CHECKED
Client				
MJA CONSULTING CIVIL & STRUCTURAL ENGINEERS Ipsium Court, 24 The Quadrant Arlington Science Park, Arlington Oxon, OX14 3YS Tel: 01235 555173 Email: mail@mjaconsulting.co.uk				
Project Boorley Green Gateway				
Title Storm Drainage Sheet 2				
Scale: 1:250 @ A1				
Status: PRELIMINARY				
Drawn: JS Project Engineer MJA Project No: 6663 Date: 31.03.2023				
Drawing Number: 6663-MJA-SW-XX-DR-C-004 Rev: P1				



- Drawing Notes:**
- This drawing to be read in conjunction with all other relevant documents and specifications, including architectural layouts and developer house type information.
 - Any discrepancies should be reported to MJA Consulting.
 - Do not scale from this drawing.
 - All levels relate to Ordnance Datum; all dimensions in metres unless otherwise specified. Site survey grid & co-ordinates to be checked on site prior to commencement of any works.
 - The level & location of all existing services shall be verified and marked on site by the Contractor prior to commencing any construction works.
 - All highway works should be built to an adoptable standard and carried out in accordance with the MCHW Specification for highway Works and the requirements of the Local Highway Authority.
 - All adoptable foul & surface manholes, pipework and associated structures shall be constructed in accordance with current form of Sewers for Adoption latest 'Design & Construction Guidance (DCG)' and any relevant Water Authority specification or Addendum.
 - All highway drainage and associated structures to be constructed in accordance with Sewers Adoption guidance and any relevant specification issued by the Local Highway Authority.
 - Engineering layouts show below ground drainage only. All soil pipes, stub stacks, WC outlets and rainwater downpipe locations are indicative only. Details should be cross checked against latest development Architect's drawings to ensure compatibility. All stub stacks to be fitted with air admittance valve where branch drain exceeds 12m, except head of run. Lintels or sleeves to be used for passing through foundation brickwork.
 - Reinwater downpipes to be connected directly to drains via removable adaptor to permit access for rodding.
 - All foul & storm water building drainage not offered for adoption shall be constructed using clay, uPVC or structural wall plastic pipework laid in accordance with manufacturer's specification, Building Regulations Part H, BS EN 752 and to NHBC Standards.
 - Building drainage. Foul drainage to be DN100 laid at a minimum gradient of 1 in 40 where setting less than 1 WC. 1 in 80 otherwise or as specified. Minimum gradient for surface water to be 1 in 80 or as specified. Minimum depth of cover to unprotected gravity pipework should be:
 - Domestic gardens without vehicle access – 0.6m
 - Domestic driveways and parking courts – 0.9m
 - All access roads and main parking areas – 1.2m
 - Private inspection chambers shall be non-access structural wall plastic. Chamber sizes to accord with manufacturers specifications. Building Regulations Part H, BS EN 752 and to NHBC Standards.
 - Sewers of different diameters to be laid soffit to soffit.
 - All gully connections other than at manholes to be 'Y' junctions.
 - All finished floor levels shown are for guidance only and may need to be adjusted on site where required. However, any amendments or deviation are subject to Engineer's approval. Levels shown within rear gardens are indicative only and subject to landscaping proposals.
 - Requirement for raised DPC / Tanking as follows (refer to standard details):
 - Standard DPC where ground level is 150mm below FFL
 - Raised DPC where external ground level is between –150 & level with FFL
 - Where ground level is above the FFL then tanking will be required, specified by structural engineer.
 - Position of driveway or parking area gullies and manholes are nominal and should be adjusted to suit, linear drains to be installed where private areas fall towards adjacent to public highway. All covers and gully grates to be suitable for vehicle loading.
 - All drainage chambers to be inspected and runs to be flushed through to remove any building material and debris prior to final tests by Building Inspector.

KEY:

Externals:

- Step Cavity Tray/Raised DPC – SCT/RDPC
- External ground level is level or 0.15m below finished floor level.
- Stepped Cavity Tray or Raised DPC to Structural engineer /Architect's specification.
- Tanking – External level is above finished floor level, specified by structural engineer.
- DPC where ground level is 0.15m below finished floor level.
- Exposed Brickwork – <0.150m below finished floor level
- Retaining Wall – Refer to structural engineer details
- Fall Arrows
- Finished floor levels shown thus: FFL 10.00
- Proposed Levels XXX.XXX
- Primary Access
- Secondary Access
- In accordance with Part-M of the Building Regulations – Every flight of steps with three or more risers (approach to primary access point to have a suitable grippable handrail on one side of the flight (or both sides where the flight is wider than 1000mm). This grippable handrail is 850-1000mm above the pitch line of the flight and extends at least 300mm beyond the top and bottom nosings.

Proposed Adoptable Sewers:

- Foul sewer
- Storm sewer
- Highway Gully

Proposed Private Drainage:

- Foul drain
- Storm drain
- Rodding eye
- Yard gully
- Linear drain
- Permavoid – Surface Water Collector & Distribution Cell
- Size and specification, site specific.

Private inspection chambers shall be non-access structural wall plastic. Chamber sizes to accord with manufacturers specifications, Building Regulations Part H, BS EN 752 and to NHBC Standards.

Invert levels shown thus: F10.00 S10.00

Full height concrete baffle

REV. No.	DATE	DESCRIPTION	DRAWN	CHECKED
Client				
Vistry Group				
Project Boorley Green Gateway				
Title Storm Outfall				
MJA CONSULTING CIVIL & STRUCTURAL ENGINEERS Ipsum Court, 24 The Quadrant Arlington Science Park, Arlington Oxon, OX14 3YS Tel: 01235 555173 Email: mail@mjaconsulting.co.uk				
Scale: 1:250 @ A1				
Status: CONSTRUCTION				
Drawn: Project Engineer MJA Project No: 6663				
Date: 12/10/2023				
Drawing Number: 6663-MJA-SW-XX-DR-C-006				
Rev: P1				