Do Not Scale

Note:
Existing sink connection from optician to be connected into the proposed internal foul drainage system with a roddable access.

Note:
All internal FW access covers to be double sealed and recessed as necessary to suit internal finish.

Surface water discharge arrangement remained as siphonic due to presence of existing services in Kendray Street. Internal foul layout to suit drawing BGW2-IBI-ZA-GF-PN-A-G221-0001-P08.

All Super Bowl svp connection are denoted with S in front of the connection for clarity, all SVP from above to have a roddable access/cover at GF level.

Pipe to pass through middle third of foundation

FW ZA 03
460Ø PPIC
CL: 96.095
IL: 94.920
Sealed cover

SVPS13
SVP S14
SVPA12 & S15
SVP A24
FW ZA 07A
460Ø PPIC
CL: 95.195
IL: 94.183
Sealed cover
SVPS12
SVPA17
SVPA07
SVPA06
SVP08 & A10
SVPA20 & A11
SVP A16
SVPA15
SVP S1, S2 & S3
FW ZA 07
460Ø PPIC
CL: 95.195
IL: 94.145
Sealed cover
SVP S6 & S5
SVPA04, A18 & A09
SVPA19
FW ZA 05
460Ø PPIC
CL: 95.545
IL: 94.370
Sealed cover
FW ZA 05A
460Ø PPIC
CL: 95.545
IL: 94.420
Sealed cover
SVP A25
SVP S7
SVP S4
FW ZA 07C
460Ø PPIC
CL: 95.195
IL: 94.495
Sealed cover
IL: 95.300
Sealed cover
FW ZA 01B
460Ø PPIC
CL: 96.470
IL: 95.300
Sealed cover
FW ZA 01
460Ø PPIC
CL: 96.470
IL: 95.320
Sealed cover
SVPA01
SVPA02
SVPS11
SVPA14
SVPA13
SVPA21
FW ZA 05B
460Ø PPIC
CL: 95.545
IL: 94.450
Sealed cover
FW ZA 03A
460Ø PPIC
CL: 96.095
IL: 94.967
Sealed cover
Pipe to pass through middle third of foundation
FW 1.000 150Ø 24.2m @1:80
FW 2.000 150Ø 22.9m @1:80
FW 3.000 150Ø 22.9m @1:80
FW 4.000 150Ø 25.0m @1:80
SVPA23
SVPA22
SVPS10
FW ZA 05C
460Ø PPIC
CL: 95.545
IL: 94.285
Sealed cover
SVP S8
Siphonic connection (indicated location to avoid lift pit)
Outfall pipe to be fitted with non-return valve (Checkmate Valve) to prevent back flow
FW ZA 06
600Ø PPIC
CL: 95.645
IL: 94.084
FW ZA 04
600Ø PPIC
CL: 96.095
IL: 94.634
FW ZA 08
600Ø PPIC
CL: 95.195
IL: 93.833
SVP S9
FW ZA 02
600Ø PPIC
CL: 96.470
IL: 95.018
FW 1.001 150Ø 11.7m @1:30
FW 1.002 150Ø 6.4m 1:12
FW 1.003 150Ø 16.9m 1:67
FW 1.004 150Ø 13.3m 1:12
FW ZA 10
1200Ø PCC
CL: 94.045
IL: 91.370(150) TBC
IL: 91.295(225) TBC
IL: 91.220(300) TBC
SW PR 01
375Ø PPIC
CL:94.815
IL:92.890 (375)
FW ZA 09
600Ø PPIC
CL: 94.700
IL: 92.725
FW 1.005 150Ø 20m 1:15
Lateral run to be adopted under S106 agreement
FW 1.006 225Ø 2m 1:26 (TBC)
Existing brick MH 1200x2200 CL:93.903 IL:91.663 (BD) IL:89.473
Drainage Channel 1a
Drainage Channel 1b
Drainage Channel 1c
375Ø siphon break point and vented access to be located in area free of services
KENDRAY STREET
Proposal to utilise existing gully connection to the Sough Dyke is only valid, subject to the confirmation of the existing connection are in good condition (CCTV footage need to be submitted to Barnsley Highways for approval). Existing lines of the gully connection based on topographic survey and shown indicatively
Drainage Channel 2
Drainage Channel 3
SW #.### 150Ø 6.3m @1:###
SW 4.001 375Ø 27.6m @1:225
Filtration backwash to outfall to 900mm dia. PCC chamber with flows averaging of 30 l/s for up to 5 minutes. (subject to trade effluent consent)
Outfall pipe to be fitted with non-return valve (Checkmate Valve) to prevent back flow
Lateral run to be adopted under S106 agreement
FW ZB 23A
600Ø PPIC
CL: 92.270
IL: 92.280
225Ø 12.1m 1:12
Line of proposed CW diversion by Yorkshire Water shown thus
Existing MH
CL:94.045
IL: 91.145 300Ø (Ex)
IL: 91.065 900x800 Brick Egg (Ex)
FW BA 23
1200Ø PCC
CL:94.550
IL:92.765(225)
IL: 92.840 (150)
Sealed cover
FW 225Ø
FW 150Ø
FW 150Ø 3.5m @1:100
FW BA 24
1200Ø PCC
CL:94.550
IL:92.875(150)
Sealed cover
FW connection to water feature tank for drain down/overflow (92.845 IL)
FW 150Ø 6.6m @1:30
FW BA 25
1200Ø PCC
CL:94.550
IL:93.097(150)
Sealed cover
Sough Dyke
Existing size, depth and material to be confirmed onsite.
1200Ø PCC
SL:92.242
IL:91.042
SW 1.005 525Ø 18.5m @1:56
SW PR 06
2700Ø PCC
CL:96.740
IL:92.121(900)
IL:92.121(525 OUT)
IL: 92.496 (375)
Flow control chamber restricted to 157 l/s.
Head to be confirmed.
SW 4.002 375Ø 17.3m @1:219
SW 4.003 375Ø 16.1m @1:234
SW PR 04
1500Ø PCC
CL:97.270
IL: 92.643 (375)
SW PR 05
1500Ø PCC
CL:97.050
IL: 92.564 (375)
IL: 94.595 (BD 225)
SW 5.000 225Ø 16.6m @1:16
Attenuation tank vent to be located in artificial grassed area. Ventilation box and cowl to be provided for vent pipe.
Attenuation tank to be offline cruciform by-pass or similar approved. Tank linked with 11No. 300Ø pipes to 1500Ø pipe. 13.5x20.0x1.6m deep to gain 410.5m³ volume. CL:96.839 - 96.592 Design to be confirmed by manufacturer.
SW 1.004 900Ø 25.8m @1:500 Perforated
SW PR 12
1200Ø PCC
CL:97.119
IL: 95.619 (225)
SW PR 08
1800Ø PCC
CL:97.075
IL:95.219(525)
IL: 95.294 (450)
IL: 95.369 (375)
Vented Break Chamber
SW 1.003 525Ø 7.6m @1:28
SW 1.002 525Ø 16.9m @1:42
SW 1.001 450Ø 5.3m @1:84
SW 1.000 450Ø 15.1m @1:100
Proposed filter drain situated below the contig wall to pick up any potential water - IL 88.5 (Depth based on "Contiguous Piled Wall Design–ZA, ZB, ZC & ZD"). It is envisage the filter drain to be laid with nominal gradient (1 in 500) and discharge to PPIC catchpit. (Filter drain positioned behind contig wall, shown in current position for clarity)
High level foul connections with indicative above ground drainage shown.
Siphonic connection
SW PR 10
2100Ø PCC
CL:96.669
IL: 92.548(900)
IL:94.548(525 BD)
Vented break chamber
SW 3.000 375Ø 8.3m @1:200
SW PR 09
1800Ø PCC
CL:96.807
IL: 94.821 (525)
IL: 94.971 (375)
Vented break chamber
SW 2.000 375Ø 7.7m @1:200
SW PR 07
1800Ø PCC
CL:97.367
IL:95.357(450)
Vented break Chamber
Drainage Channel Above
450Ø PPIC
CL:91.110
IL:90.620
Above ground drainage to discharge into FW BA 05
FW BA 05
1200Ø PCC
CL:91.110
IL:87.648
Sealed cover
450Ø PPIC
CL:91.110
IL:90.670
FW BA 01
1800Ø PCC
CL:91.100
IL:87.300(225)
IL:90.260(100)
Proposed siphonic pipe work from phase 1 shown indicative discharging into SW PR 10.
450Ø PPIC
CL:91.110
IL:90.650
Siphonic connection
FW channel block and gully in basement to collect any fluids from basement washdown
FW BA 07
450Ø PPIC
CL:91.110
IL:89.500 (150)
Sealed cover
FW BA 06
1200Ø PCC
CL:91.110
IL:87.716(225)
IL:88.078(150 BD EX)
Sealed cover
FW BA 04
1200Ø PCC
CL:91.110
IL:87.607(225)
Sealed cover
Above ground drainage to discharge into FW BA 03
FW BA 03
1200Ø PCC
CL:91.110
IL:87.408(225)
Sealed cover
FW 225Ø 10.2m @1:150
FW 225Ø 6.2m @1:150
FW 225Ø 4.8m @1:150
FW BA 08
Above ground
Tracing information based on the FTA Design Articulated Vehicle (16m)
MAY DAY GREEN
COLUMN POSITIONS
OFFICE BUILDING
OPEN MARKET
NO ENTRY
ZA
ZB
ZC
ZD

Drainage

1. This drawing should be read in conjunction with Adept specification for drainage works and any other subsequent additions to this list.
2. All building drainage works shall be carried out in accordance with the current British/European standards BSEN752, the current building regulations and the local authority building control or NHBC specifications and requirements.
3. For external finished ground levels refer to architects external works drawing.
4. All private foul drainage to be 100ø laid at a minimum gradient of 1 in 40, all private surface water drainage to be 100ø laid at a minimum gradient of 1 in 60 unless otherwise noted. Pipework to be laid to inverts shown on schedule.
5. All Junctions are to be done using a "Y" junction to direct the flow in line with the main pipe.
6. All cover levels to manholes are approximate only and may be adjusted on site to tie in with Architects proposed levels.
7. Exact location of rainwater downpipes and all internal drainage points to be confirmed by Architect. Rainwater pipe outlets to be roddable.
8. For all setting out, dimensions and current site layout refer to Architects drawing. Do not scale from this drawing
9. Invert levels of all outfall points to be clarified prior to commencing drainage works. Position size and depth of all existing drains and services shall be established prior to commencement on site and any discrepancies reported to engineer.
10. The contractor shall allow for the protection, temporary and permanent support, and temporary and permanent diversion works, as necessary to all existing services
11. The contractor shall allow for all traffic management in connection with road and sewer works
12. The contractor shall allow for keeping trenches and excavations as dry as practicable by pumping from temporary sumps and dewatering as appropriate. The point and method of discharge to be agreed with the drainage authority and Environment Agency
13. Contractor to apply for sewer permits and road opening permits as necessary from the appropriate authorities, prior to commencing works.
14. At changes in pipe diameter Soffits to coincide unless noted otherwise
15. Wherever possible, drainage works are:
    - To commence at outfall
    - To work Upstream
16. Generally all Adoptable pipe work < 300 to be Clay, > 300 to be Concrete. With the strengths shown below:

    Clay Pipe Min Strengths
    100mm dia 40KN/m
    150mm dia 40KN/m
    225mm dia 45KN/m
    300mm dia 72KN/m

    Concrete Pipe Min Strengths all diameters to be class 120 (54KN/m).

    Where plastic pipework is proposed Water Authority & Highway Authority requirements for strength and durability will vary. Calculations may well be required from the pipe supplier. Min. requirements as below;
    Deformation limit: 5% at 300 days
    Jetting pressure: 4000psi
17. Tree's should not be planted within 5m of adoptable sewers, where this is not possible due to planning conditions a suitable root barrier needs to be installed around any tree types that are within the prescribed restrictions as set out in Sewers for Adoption 6th Edition Figure 2.3. Where the Mature tree canopy will overhang the adoptable highway a suitable root barrier will be required to prevent damage to statutory undertakers equipment and the integrity of the highway construction.

KEY

- PCC Manhole, Brick Manhole, PPIC — Proposed Surface water
- PCC Manhole, Brick Manhole, PPIC — Proposed Foul water
- Existing Foul water
- Existing Surface water
- SW Channel Drain
- FW Channel Block
- Highway Extents
- AP — Channel Drain Access Point
- CO — Channel Outlet
- G — Gully
- FGL — Foul Water Gully

Drainage Design Assumptions

1. Based on the FRA submitted for planning, the peak discharge from site subject to a 30% reduction is to be 267 l/s. The proposed surface water outfall connection to Sough Dyke will be need to be restricted to 157 l/s.
2. The total impermeable area for plots ZA, ZB and ZD the Public realm and phase 1 is measured/calculated to be 20010m². The breakdown of the various areas are detailed below,
   - Plot ZA - 1900m²
   - Plot ZB - 4470m²
   - Plot ZD - 2520m²
   - Phase 1 - 5850m²
   - Kendray Street - 1690m²
   - Public Realm area - 3580m²
3. Detailed design to be confirmed by manufacturer. Possible drainage alterations required following confirmation.
4. The location of internal drainage within ZA to be altered to suit proposed foundation layout. The internal access chambers within ZA are to have sealed covers. Client to confirm acceptability of internal FW access chambers.
5. Location of siphonic drainage taken from Siphonix drawings. Siphonic down pipes in ZB to be run above ground to location shown for discharge.
6. Above ground drainage to be designed and specified by M&E Engineer.

DESIGN REVIEW

Design review by:	**	Checked by:	**

Residual hazards:
1. For general notes refer to drawing 002.

Health, Safety & Environmental Notes

Drawing Notes

Channel Drain Lengths:

Channel Drain 1a:	20.0m
Channel Drain 1b:	20.0m
Channel Drain 1c:	20.0m
Channel Drain 2:	21.3m
Channel Drain 3:	25.0m
Channel Drain 4:	15.8m

Date	Revision	By	Chkd	Rev
18.11.20	Updated drainage layout to suit clients comments.	LW	WD	C17
30.10.20	Updated drainage layout to suit layout on site.	LW	WD	C16
22.09.20	Updated drainage layout to suit discussion on site with HBC on 08.09.20	MM	WD	C15
10.07.20	Highway boundary added, FW pipe length amended	JR	WD	C14
26.06.20	Updated in line with comments from Henry Boot	JR	WD	C13
25.06.20	Updated in line with comments from Henry Boot	JR	WD	C12
23.06.20	Foul runs updated to allow submission for S106 application	JR	WD	C11
28.01.20	Note added regarding siphonic connection.	LW	DZ	C10
24.01.20	Gully connections in Kendray St. updated and SW PR 01 mh moved to suit comment.	LW	DZ	C9
23.01.20	Note added about backwash and omission of sw drain. Details added on land drain serving contig wall. ZA drainage updated.	LW	DZ	C8
02.10.19	Additional SVP added to ZA. Filtration backwash arrangement added to ZC.	DZ	RP	C7
21.09.19	Drainage crossing Kendray St. updated to prevent clash with proposed structural element and ex. culvert. R4 unit pop location and internal foul drainage updated to suit latest layout.	DZ	RP	C6
01.08.19	Water feature drain down pipe lowering incorporated, note added onto about fou drainage over pile cap and flow control mh diameter corrected .	DZ	RP	C5
12.07.19	Water feature drain down pipe lowering incorporated and ZA surface water system reverted to gravity.	DZ	RP	C4
11.05.19	SW PR10 layout updated and SW PR04 & PR04 position updated to reflect comment. Siphonic pipe updated to suit flows rates and non-return valve arrangement added	DZ	RP	C3

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Originating Office

Project
The Glassworks
Barnsley

Title
Proposed Drainage Layout 1

Client
Henry Boot CONSTRUCTION

Scale @ A1	Drawn	Checked	Date
1:200	JE	RP	Oct 18

Suitability: CR
Purpose: Construction Record

UPRN	Originator	Zone	Level	Type	Role	Class	Drg. No.	Rev.
	BGW2	ACE	XX	ZZ	DR	C	G700-0161	C17

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