GENERAL NOTES

1. The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non intrusive observations , record drawings or the like. The contractor shall safely carry out intrusive investigations, trial holes or soundings prior to commencing work to satisfy himself that it is safe to proceed and that the assessments are accurate. any discrepancies shall be notified to gta prior to works commencing.

2. Prior to commencement of works the contractor shall provide co-ordinated and dimensioned installation drawings and calculations and allow 10 working days for gta's checking procedure prior to proceeding with those works or the ordering of materials.

3. Tender or billing drawings shall not be used for construction or the ordering of materials.

4. Do not scale. All dimensions and levels to be site confirmed.

5. This drawing shall be read in conjunction with all relevant architects, consultants drawings and specifications, together with H&S plan requirements

6. Copyright : This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.

7. All drawings specifications and recommendations made by gta are subject to Local Authority and other relevant Statutory Authorities approval. Any works or services made abortive due to the client proceeding prior to these approvals is considered wholly at the Clients risk. gta hold no responsibility for resulting abortive works or costs.

SPECIFICATION NOTES

1. ALL DRAINAGE SHALL BE CONSTRUCTED AND COMMISSIONED IN ACCORDANCE WITH BS EN 295 & BS EN752, BUILDING REGULATIONS DOC. H AND ANY PARTICULAR REQUIREMENTS OF THE BUILDING CONTROL OFFICER.

2. DRAIN BEDDING IS TO BE PROVIDED AS D200.0, D200.1 and D200.2 AS SHOWN ON THE DRAINAGE DETAILS SHEETS.

3. 'EFFECTIVE COVER' IS THE MINIMUM DEPTH OF COVER OVER THE PIPE CROWN AT ANY TIME DURING THE CONSTRUCTION PROCESS.

4. ALL DRAINS MARKED 'FWS' OR 'SWS' ARE PROPOSED ADOPTED SEWERS. ALL ADOPTABLE ELEMENTS OF THE WORKS TO BE CONSTRUCTED AS DETAILED IN THE SECTOR GUIDANCE IN RELATION TO THE ADOPTION OF SEWERAGE ASSETS BY SEWERAGE COMPANIES IN ENGLAND AS ENABLED BY WATER UK'S CODE FOR ADOPTIONS. SECTIONS OF DRAINAGE TO BE ADOPTED UNDER THE TERMS OF A SECTION 104 AGREEMENT. ALL ADOPTABLE PIPEWORK TO BE CONSTRUCTED FROM VITRIFIED CLAY TO BS EN 295 (UP TO 225mmØ PIPE) OR CONCRETE TO BS EN 1916 AND BS EN 5911 (300mmØ PIPE AND ABOVE).

5. ALL CONCRETE PIPEWORK, MANHOLES AND FITTINGS SHALL BE TO BS EN 1916 & BS 5911 (ALL RELEVANT PARTS). ALL CONCRETE PIPEWORK TO BE TO HIGH STRENGTH

6. WHERE CONNECTIONS ARE TO BE MADE TO EXISTING MANHOLES/SEWERS, INVERT LEVELS, PIPE SIZES & ORIENTATION SHALL BE CHECKED PRIOR TO THE COMMENCEMENT OF THE WORKS AND ANY VARIANCE REPORTED TO THE ENGINEER IMMEDIATELY. WORK TO COMMENCE AT DOWNSTREAM END WHEREVER POSSIBLE.

7. WHERE PIPELINES CROSS, EACH IS TO BE SURROUNDED WITH GRADE ST4 MASS CONCRETE FOR A DISTANCE NOT LESS THAN 1m CENTRED ON THE CROSSING POINT. LENGTH OF SURROUND TO BE EXTENDED AS NECESSARY TO WITHIN 150mm OF THE NEXT NEAREST FLEXIBLE JOINTS.

8. THE CONTRACTOR IS TO ENSURE THAT PROTECTIVE MEASURES ARE TAKEN TO ENSURE THAT DRAINAGE PIPEWORK AND FITTINGS ARE NOT DAMAGED BY SITE TRAFFIC PRIOR TO OVERSITE FILLING OPERATIONS BEING COMPLETED AROUND BUILDINGS.

9. ALL PRIVATE DRAINAGE PIPEWORK SHALL BE UNPLASTICISED PVC TO BS EN 1401. ALL UNDERBUILDING DRAINS TO BE LAID AT A GRADIENT OF 1:40 WITH A MINIMUM REST BEND LEVEL OF 575mm BELOW THE PROPOSED FINISHED FLOOR LEVEL. CONNECTIONS INTO PIPE RUNS BENEATH BUILDINGS WILL NOT BE PERMITTED WITH THE EXCEPTION OF WASH HAND BASINS, BATHS OR SHOWERS STRICTLY IN ACCORDANCE WITH NHBC TECHNICAL GUIDANCE 'Y JUNCTIONS IN DRAINS UNDER BUILDINGS'.

10. WHERE DRAINS PASS THROUGH FOUNDATIONS OR CONNECT TO MANHOLES, FLEXIBLE PIPE JOINTS ARE TO PROVIDED WITHIN 150mm OF THE FACE OF THE STRUCTURE AND WITHIN A FURTHER 600mm TO FORM A ROCKER PIPE.

11. WHERE PIPES PASS THROUGH SCREEN WALLS, FOOTINGS OR RETAINING WALLS, LINTELS ARE TO BE PROVIDED.

12. WHERE PIPELINES PASS WITHIN 1m OF BUILDINGS OR WALLS THE FOUNDATIONS ARE TO BE TAKEN DOWN BELOW THE BOTTOM OF THE TRENCH

13. 450mm DIA. INSPECTION CHAMBERS (FIC/SIC) MAY BE USED:
- WITH 350mm REDUCED OPENING WHERE THE DEPTH FROM COVER TO INVERT EXCEEDS 1000mm.

300mm DIA. POLYPROPYLENE ACCESS CHAMBERS (FAC/SAC) MAY BE USED
- WHERE THE DEPTH FROM COVER TO INVERT DOES NOT EXCEED 600mm AND WHERE THE PIPE SIZE DOES NOT EXCEED 100mm DIA.

14. STEEL COVERS WITHIN PROPERTY BOUNDARIES SHALL BE:
(UNLESS NOTED ON DRAWING OR MANHOLE SCHEDULE)
-ON PRIVATE DRIVEWAYS: FACTA GRADE B (BS EN ISO 1461: 1999)
-ON PRIVATE PATHWAYS, VERGES OR ON GARDENS: FACTA GRADE A (BS EN ISO 1461: 1999)

DUCTILE IRON COVERS OUTSIDE PROPERTY BOUNDARIES SHALL BE:
(UNLESS NOTED ON DRAWING OR MANHOLE SCHEDULE)
-ON ACCESS ROADS AND CAR PARKS: GRADE D400 (BS EN 124:1994)
-ON SHARED PATHWAYS, VERGES: GRADE A15 (BS EN 124:1994)

15. COVER LEVELS SHOWN 'CL' AND INVERT LEVELS SHOWN 'IL' ARE IN METRES ABOVE ORDNANCE DATUM.

16. ALL DRAINS TO BE 100mm DIAMETER UNLESS NOTED OTHERWISE

17. SEWER JETTING FOR FUTURE MAINTENANCE SHOULD ACCORD WITH BS EN 14654-1:2014 AND THE 'SEWER JETTING CODE OF PRACTICE' (PUBLISHED BY WRc). MANUFACTURERS OF THE DRAINAGE SYSTEM COMPONENTS SHOULD ASLO BE CONSULTED BUT UNDER NO CIRCUMSTANCES SHOULD THE FOLLOWING PRESSURES BE EXCEEDED;

PLASTIC PIPES - 2600 psi
CLAY PIPES - 5000 psi
CONCRETE PIPES - 5000 psi

18. BELOW GROUND SURFACE WATER ATTENUATION TANK TO PROVIDE THE MINIMUM VOLUME SHOWN ON THE DRAINAGE LAYOUT. THIS ARRANGEMENT IS BASED UPON THE USE OF WAVIN AQUACELL CORE / AQUACELL PLUS WITH A MINIMUM VOID RATIO OF 95%. TANK SHALL INCORPORATE FULL LENGTH ACCESS 'CHANNEL' TO ALLOW FOR CCTV INSPECTION AND JETTING. SHOULD THE CONTRACTOR PROPOSED A DIFFERENT TANK ARRANGEMENT / PRODUCT TO ACHIEVE THE STATED VOLUME, DETAILS SHOULD BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

DESIGN NOTES

1. STORAGE DESIGN BASED ON 1 IN 100 YR STORM + 40%.

2. DRAIN POINTS AND LOCATIONS TO BE CONFIRMED BY ARCHITECT.

3. CONTRACTOR TO ESTABLISH LOCATIONS OF ALL EXISTING SERVICES PRIOR TO COMMENCING.

4. EXISTING TREES TO BE PROTECTED WHERE EXCAVATIONS RUN CLOSE.

5. THE PROPOSED CONNECTIONS INTO THE ADOPTED SEWER NETWORK AND THE DISCHARGE RATES WILL ALL BE SUBJECT TO APPROVAL AND INSPECTION BY SOUTHERN WATER UNDER THE TERMS OF A SECTION 106 AGREEMENT.

6. ALL ADOPTABLE ELEMENTS OF THE WORKS TO BE CONSTRUCTED AS DETAILED IN THE SECTOR GUIDANCE IN RELATION TO THE ADOPTION OF SEWERAGE ASSETS BY SEWERAGE COMPANIES IN ENGLAND AS ENABLED BY WATER UK'S CODE FOR ADOPTIONS.

7. THE PROPOSED DRAINAGE LAYOUT IS SUBJECT TO DRAINAGE SURVEY OUTCOME CONFIRMING PIPE SIZES AND INVERT LEVELS OF EXISTING MANHOLES FORMING FINAL OUTFALLS OF THE SITE'S PROPOSED DRAINAGE NETWORK. ANY VARIATIONS TO BE REPORTED TO THE ENGINEER PRIOR TO COMMENCING ANY WORKS ON SITE. WORK TO COMMENCE AT DOWNSTREAM END WHEREVER POSSIBLE.

KEY

- Existing surface water drain
- Existing foul water drain
- Private surface water drain
- Private foul drain
- Adoptable foul rising main
- Adoptable foul sewer
- Adoptable surface water sewer
- Adoptable Section 38 highway drain
- Private Foul Water Manhole
- Private Surface Water Manhole
- Adoptable Foul water Sewer Manhole
- Adoptable Highway Manhole
- Adoptable Section 104 Surface water sewer Manhole
- SVP — Foul drain point (Refer to drawing 1702)
- RWP — SW Drain point for RWP (Refer to drawing 1702)
- Drainage channel (Refer to drawing 1701)
- 300mm wide x 450mm deep gravel filled french drain (Refer to drawing 1702)
- FIC — Foul Plastic Inspection Chamber (Refer to drawing 1701)
- SIC — Surface Water Plastic Inspection Chamber (Refer to drawing 1701)
- RG CL 5.996 — Adoptable Highway Road gully (Refer to drawing 1401) CL indicates cover level (set -25mm from final surface level)
- YG — Private Yard gully (Refer to drawing 1701)
- RG CL 5.996 — Private Road gully (Refer to drawing 1701) CL indicates cover level (set -25mm from final surface level)
- Headwall (Refer to drawing 1502)
- Permeable Paving (Refer to drawing 1901 where collector drain is shown within the sub-base layer or to drawing 1702 where distribution tank is shown within sub-base layer)
- DT — Distribution collection tank (Refer to drawing 1702)
- Underground attenuation tank (Refer to drawing 1503)
- Proposed SuDS Service Margin 1.0m
- Proposed SuDS Buffer Zone 3.0m
- Existing/Proposed Watercourse Easement 5.0m

ABBREVIATIONS

FD	FOUL DRAIN
SWD	SURFACE WATER DRAIN
FWS	ADOPTABLE FOUL WATER SEWER
SWS	ADOPTABLE SURFACE WATER SEWER
MH	MANHOLE
IC	INSPECTION CHAMBER
FIC	450mm DIA. FOUL INSPECTION CHAMBER
SIC	450mm DIA. SURFACE WATER INSPECTION CHAMBER
YG	YARD GULLY
RG	ROAD GULLY
DP	BELOW GROUND DRAIN POINT
SVP	SOIL VENT PIPE DROP
RP	EXTERNAL RODDING POINT
DT	SURFACE WATER DISTRIBUTION TANK
FFL	FINISHED FLOOR LEVEL
GL	GROUND LEVEL
CL	COVER LEVEL
IL	INVERT LEVEL
SL	SUMP LEVEL
BL	BASE LEVEL
BDIL	BACKDROP INVERT LEVEL

N

NOTE - EXISTING WATERCOURSE TO BE DIVERTED AROUND DETENTION BASIN 5 AND CULVERTED UNDER PROPOSED ROAD.
SUBJECT TO ORDINARY WATERCOURSE CONSENT.
EXISTING SECTION DOWNSTREAM OF THE CULVERT TO BE CLEANED OUT TO THE SATISFACTION OF ADC ENGINEER.

DETENTION BASIN 5
TOP OF BANK MIN. 5.750
BASE OF POND 4.300
DEPTH 1.450m
BASE AREA 59.60m²
TOP OF BANK AREA 279.00m²
1:3 SIDE SLOPES
0.5m wide/0.6m depth channel - clean coarse granular material nominal size 40/60mm - to be provided within the base of the basin to allow water flow.
*Basins to be lined with an impermeable geo-membrane - Bentotex GCL50 Geosynthetic Clay liner installed to manufacturer's instruction on base and sides of excavation. Pond liner anchorage to be installed as per Bentotex installation instructions. Basins to be backfilled with 150mm topsoil and 660mm minimum thickness of engineering fill of high clay content to act as ballast to prevent pond buoyancy. Liner wrapped under and up sides to existing ground level.

HEADWALL 12
Precast Concrete Splayed Headwall SFA15 B with Cranked Grating (3 Sided Kee Klamp) Invert Level: 4.300

Proposed 375Ø surface water connection laid at 1:313 left capped for future development. 2300m² of impermeable area has been allowed to discharge free into surface water system.

Proposed 150Ø foul water connection laid at 1:150 left capped for future development. *Pumping Station design does not allow for future development to discharge into the downstream foul network.

HEADWALL 17
Bagwork Headwall to WSCC specification. (Refer to drawing 10768/1638) Invert Level: 4.700

Remove existing culvert and reinstate ditch

Contractor to ensure fence foundations span either side of 600mm diameter pipe

HEADWALL 15
Precast Concrete Splayed Headwall SFA15 B with Cranked Grating (3 Sided Kee Klamp) Invert Level: 4.225

HEADWALL 13
Precast Concrete Splayed Headwall SFA15 B with Cranked Grating (3 Sided Kee Klamp) Invert Level: 4.190

HEADWALL 18
Bagwork Headwall to WSCC specification. (Refer to drawing 10768/1638) Invert Level: 4.650

HEADWALL 14
Precast Concrete Splayed Headwall SFA15 B with Cranked Grating (3 Sided Kee Klamp) Invert Level: 4.185

HEADWALL 16
Precast Concrete Splayed Headwall SFA15 B with Cranked Grating (3 Sided Kee Klamp) Invert Level: 4.190

ATTENUATION TANK 1
min GROUND LEVEL ABOVE TANK 5.600
TOP OF TANK 5.100
BASE OF TANK 4.300
AREA 144m² / DEPTH 0.800m
Aquacell Core or similar with a single width row of Aquacell Plus units aligned with the inlet/outlet pipes.

DETENTION BASIN 6
TOP OF BANK MIN. 5.350
BASE OF POND 4.185
DEPTH 1.165m
BASE AREA 69.00m²
TOP OF BANK AREA 236.00m²
1:3 SIDE SLOPES
0.5m wide/0.6m depth channel - clean coarse granular material nominal size 40/60mm - to be provided within the base of the basin to allow water flow.
*Basins to be lined with an impermeable geo-membrane - Bentotex GCL50 Geosynthetic Clay liner installed to manufacturer's instruction on base and sides of excavation. Pond liner anchorage to be installed as per Bentotex installation instructions. Basins to be backfilled with 150mm topsoil and 720mm minimum thickness of engineering fill of high clay content to act as ballast to prevent pond buoyancy. Liner wrapped under and up sides to existing ground level.

DETENTION BASIN 7
TOP OF BANK MIN. 5.600
BASE OF POND 4.190
DEPTH 1.410m
BASE AREA 166.20m²
TOP OF BANK AREA 446.40m²
1:3 SIDE SLOPES
0.5m wide/0.6m depth channel - clean coarse granular material nominal size 40/60mm - to be provided within the base of the basin to allow water flow.
*Basins to be lined with an impermeable geo-membrane - Bentotex GCL50 Geosynthetic Clay liner installed to manufacturer's instruction on base and sides of excavation. Pond liner anchorage to be installed as per Bentotex installation instructions. Basins to be backfilled with 150mm topsoil and 840mm minimum thickness of engineering fill of high clay content to act as ballast to prevent pond buoyancy. Liner wrapped under and up sides to existing ground level.

PERMEABLE PAVING
Min CL 6.300
Formation level of sub-base 5.825
Flat formation with 450mm min width of trench to accommodate the collector drain.
Refer to drawing 1901.

PERMEABLE PAVING
Min CL 6.210
Formation level of sub-base 5.735
Flat formation with 450mm min width of trench to accommodate the collector drain.
Refer to drawing 1901.

PERMEABLE PAVING
Min CL 6.050
Formation level of sub-base 5.575
Flat formation with 450mm min width of trench to accommodate the collector drain.
Refer to drawing 1901.

PERMEABLE PAVING
Min CL 6.225
Formation level of sub-base 5.750 (flat).
For distribution tank detail refer to drawing 1702.

PERMEABLE PAVING
Min CL 6.410
Formation level of sub-base 5.935 (flat).
For distribution tank detail refer to drawing 1702.

PERMEABLE PAVING
Min CL 6.390
Formation level of sub-base 5.915 (flat).
For distribution tank detail refer to drawing 1702.

PERMEABLE PAVING
Min CL 6.070
Formation level of sub-base 5.595
Flat formation with 450mm min width of trench to accommodate the collector drain.
Refer to drawing 1901.

New manhole on line of existing Anti-Tank drain. 2 No. 150Ø inlets to be set 150 higher than the existing invert level of 600Ø Anti-Tank drain (interpolated IL 3.985)

WASTOP inline check valve to prevent flows from Anti-Tank sewer backup into drainage network.

NOTE - EXISTING WATERCOURSE TO BE CULVERTED UNDERNEATH PROPOSED ACCESS. DESIGN AND SPECIFICATION BY OTHERS. REFER TO S278 DRAWINGS.

Rev	Amendments	Date	Dsn	Chk
P9	SWMH17.9 discharge flow rate updated. Service margin, buffer zones and easement zones around SuDS, existing/proposed watercourses added.	19/10/22	DT	MR
P8	SWMH17.10 moved, detention basin 5 resized & relocated, attenuation tank size amended. Notes regarding existing ditch added. SWMH17.10 and SWMH1.25 changed to 1.8m internal dia catchpits. Changes in line with ADC Engineer.	03/08/22	DT	MR
P7	Private NA22 house types changed to NA21.	17/06/22	DT	MR
P6	Amended to suit ICOSA Water comments	10/05/22	DT	MR
P5	Rising main levels amended. Wash out valve manhole added.	04/05/22	DT	MR
P4	Adoptable highway road gully/private road gully cover levels added. Engineering fill thickness adjusted underneath ponds to suit updated buoyancy calculations.	19/04/22	DT	MR
P3	Drawing updated to suit client's comments dated 28/03/22	28/03/22	DT	MR
P2	Drainage layout updated	18/03/22	DT	MR
P1	Initial Issue	14/02/22	DT	MR

Status: PRELIMINARY

Client: Taylor Wimpey

Architect:

Project: SEFTER ROAD BOGNOR REGIS

Title: SITE DRAINAGE LAYOUT SHEET 1 OF 7

Date: FEBRUARY 2022 | Scale @ A0: 1:200

Clients Ref. | Project Ref.: 10768

gta Civils & Transport
Gloucester House, 66a Church Walk,
Burgess Hill, West Sussex, RH15 9AS
Tel.01444 871444 Web: www.gtacivils.co.uk

Drawing Number: 10768/1601 | Rev.: P9

ARUN DISTRICT COUNCIL P/88/22/DOC