
Drainage Maintenance & Management Plan

Phase 6
Green Park Village
Reading

Client

Berkeley Homes
200 Longwater Avenue
Green Park
Reading
RG2 6GB
Ref: 7143/2.3G
Date: 22 November 2019

Consulting Engineers

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Issue	Issue date	Compiled	Checked
Initial Issue	22 November 2019	JR	MR

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Checked by: Martin Roberts IEng, ACIWEM, MCIHT

1 Introduction

- 1.1 This document has been prepared for Berkeley Homes in relation to Phase 6 of a residential development at Green Park Village, Reading. No responsibility is accepted to any third party for all or part of this study in connection with this or any other development.
- 1.2 GTA Civils & Transport Ltd. was appointed by the client to provide a Drainage Maintenance & Management Plan as required by Planning Condition 28.
- 1.3 Drainage design: drawings G259-GTA-SW-00-DR-C-96-1061 & 1062 by GTA Civils showing the Site Drainage design are contained in the Appendix.

2 Maintenance Responsibilities

- 2.1 Ongoing maintenance of the shared private elements of the drainage system will be contracted out to a Property Maintenance company. Regular inspections of the different elements of the surface water and foul drainage systems shall be made in line with industry standards. Details of maintenance of the different parts of the system are provided within this report under the headings which follow.
- 2.2 The public elements of the drainage system – i.e. those that have been adopted by the sewerage undertaker – will be maintained by Thames Water.
- 2.3 At Green Park Village Phase 6, all of the surface water drainage system is private. The foul drainage system contains private and public elements; those which are private are shown in a solid orange line type, whereas public drainage is in a dashed-dotted red line type – refer drawings in the Appendix.

3 Contamination or Dilution of Spillage

- 3.1 The Environment Agency would prefer all spillages on any highway to be contained to prevent any downstream contamination. However, this cannot always be achieved, depending on the nature of the spillage. In all circumstances involving the spillage of substances on the highway it is important that the Environment Agency are notified as soon as possible so that they can provide advice and take appropriate action.
- 3.2 Prompt action following a spillage can prevent or reduce its affects, whilst inappropriate action may cause or worsen the pollution effects. In the design of the drainage on this site, measures have been put in place to prevent any pollution entering the groundwater such as permeable paving. The permeable paving sub-base is lined with a geotextile fabric.
- 3.3 In the event of a spillage on site it is the responsibility of the Property Maintenance company's staff to clear up any spillage before it enters the drainage system. The primary method of dealing with any spillage of hydrocarbons should be to use sand to soak up the leak and prevent any hydrocarbons entering the drainage system. Once sand has been contaminated it should not be washed into the drainage system but disposed of by a Licensed Contractor.

4 Catchpits and Gullies

- 4.1 Regular inspection and maintenance is required to ensure the effective long-term operation of catchpits and gullies.
- 4.2 Operation and maintenance requirements for all catchpits and gullies are described in the following table:

Schedule	Action	Frequency
Regular Maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	6 Monthly intervals.
	Common car park & other hard standing areas to be swept clear of debris, to prevent possibility of blockages to the receiving drainage systems.	Weekly.
	Debris removal from gullies & silt pits, channel drains (where may cause risks to performance).	6 Monthly intervals, after autumn leaf fall, or as required based on specific observations.
	Lift and inspect receiving manholes from new dwellings within public areas to check for any blockages.	Monthly.
Remedial Actions	Repair any damaged gully gratings or silt pit covers.	As required.
	Replace / fix any loose channel drain covers.	As required.

5 Oil Interceptor

- 5.1 Inspection frequency: every 6 months
- 5.2 Maintenance requirements: in accordance with manufacturer's instructions, experienced personnel should carry out maintenance to both the separator and alarm.

6 Cellular Storage Tank

- 6.1 The catchpit chambers at the inlet and outlet ends of the cellular tank should be checked periodically in conjunction with general maintenance of the underground pipe network (refer to Section 4). It is not possible to access the cellular tank directly.

7 Rainwater Harvesting Tank

- 7.1 Inspection frequency and maintenance requirements: in accordance with manufacturer's instructions.

8 Pipes, Chambers and Outfalls - Surface Water Drainage

- 8.1 Inspection frequency: annually.
- 8.2 Maintenance Requirements: Carry out visual check of all inspection chambers, manholes and the outfall to ensure all pipes are clear and free flowing. If not, clean out by rodding or jetting.
- 8.3 A CCTV Drainage Survey should be completed every 10 Years and any of blockage/waste build up should be jet washed or removed by a Licensed Effluent Disposal Contractor.

9 Pipes Chamber and Outfalls - Foul Drainage

- 9.1 Maintenance Requirements: Visual inspection of chambers & manholes should be completed on a 5-yearly basis and any signs of blockage / waste build up should be jet washed or removed by a Licensed Effluent Disposal Contractor.
- 9.2 Maintenance Requirements: Visual inspection of chambers & manholes should be completed on a 5-yearly basis and any signs of blockage / waste build up should be jet washed or removed by a Licensed Effluent Disposal Contractor.
- 9.3 A CCTV Drainage Survey should be completed every 10 Years and any of blockage/waste build up should be jet washed or removed by a Licensed Effluent Disposal Contractor.

DMMP: Phase 6, Green Park Village, Reading

Appendix A

Site Drainage Plans

- DESIGN NOTES
1. DISCHARGE RATE OF 4.6L/S ESTABLISHED BY SITES QBAR BASED ON IMPERMEABLE AREA.
 2. STORAGE DESIGN BASED ON 1 IN 100 YR STORM + 40% WITH FLOOD RESTRICTION OF 4.6L/S TO LAKE.
 3. CONTRACTOR TO ESTABLISH LOCATIONS OF ALL EXISTING SERVICES PRIOR TO COMMENCING.
 4. EXISTING TREES TO BE PROTECTED WHERE EXCAVATIONS RUN CLOSE.
 5. APPROVAL TO BE GAINED FROM LEAD LOCAL FLOOD AUTHORITY AND THAMES WATER FOR CONNECTIONS TO SEWERS AND SECTION 104 APPROVAL. WORKS AT RISK UNTIL APPROVAL RECEIVED

- 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. Tender or billing drawings shall not be used for construction or the ordering of materials.
 3. Do not scale. All dimensions and levels to be site confirmed.
 4. This drawing shall be read in conjunction with all relevant architects, consultants drawings and specifications, together with H&S plan requirements.
 5. Copyright : This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.
 6. 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.

ABBREVIATIONS

D307.0	DETAIL NUMBER - SEE DRAINAGE DETAIL SHEET
FD	FOUL DRAIN
SWD	SURFACE WATER DRAIN
MH	MANHOLE
IC	INSPECTION CHAMBER
SA	SOAKAWAY
FIC	450mm DIA. FOUL INSPECTION CHAMBER - D202.6
FAC	450mm DIA. SURFACE WATER INSPECTION CHAMBER - D202.6
SIC	300mm DIA. FOUL ACCESS CHAMBER - D202.18
FAC	300mm DIA. SURFACE WATER ACCESS CHAMBER - D202.18
CI	CAST IRON
VC	VITRIFIED CLAY
CONC	CONCRETE
PVC-U	POLYVINYL CHLORIDE - UNPLASTICISED
G	SMALL GULLY - D209.0
YG	YARD GULLY - D209.2
RG	ROAD GULLY - D208.1
CPG	CAR PARK GULLY - D208.2
DP	BELOW GROUND DRAIN POINT
SVP	SOIL VENT PIPE DROP
RP	EXTERNAL RODDING POINT - D213.1
DT	SURFACE WATER DISTRIBUTION TANK
FLL	FINISHED FLOOR LEVEL
SSL	STRUCTURAL SLAB LEVEL
GL	GROUND LEVEL
CL	COVER LEVEL
IL	INVERT LEVEL
BD	BACKDROP
CBS	CONCRETE BED & SURROUND
CLASS S	GRANULAR BED & SURROUND
CLASS B	GRANULAR BED

REFER TO DRAWING 1070, 1071 & 1072 FOR DRAINAGE DETAILS RELATIVE TO ALL PRIVATE DRAINAGE

C7	SIC28 and FIC58 moved	30.09.19	GK	MR
C6	Northern perimeter channel relocated	06.09.19	GK	MR
C5	Updated to coordinate with service trench	27.08.19	GK	MR
C4	Residents pavilion drainage revised to suit latest architect's layout	14.08.19	MR	SL
C3	Drainage points moved, added, deleted.	18.06.19	MR	SL
C2	Updated to latest architect's model	13.12.18	MR	SL
C1	CONSTRUCTION ISSUE	10.12.18	MR	SL
T1	Drawing re-numbered. Drain connections added, site layout updated. TENDER ISSUE	21.9.18	MR	SL
A	Additional drainage channels	30.8.18	MR	SL
-	Initial issue for comment	17.8.18	MR	SL
Rev	Amendments	Date	Dsn	Chk

CONSTRUCTION

Client BERKELEY HOMES

Architect BROOKES

Project PHASE 6
GREEN PARK VILLAGE

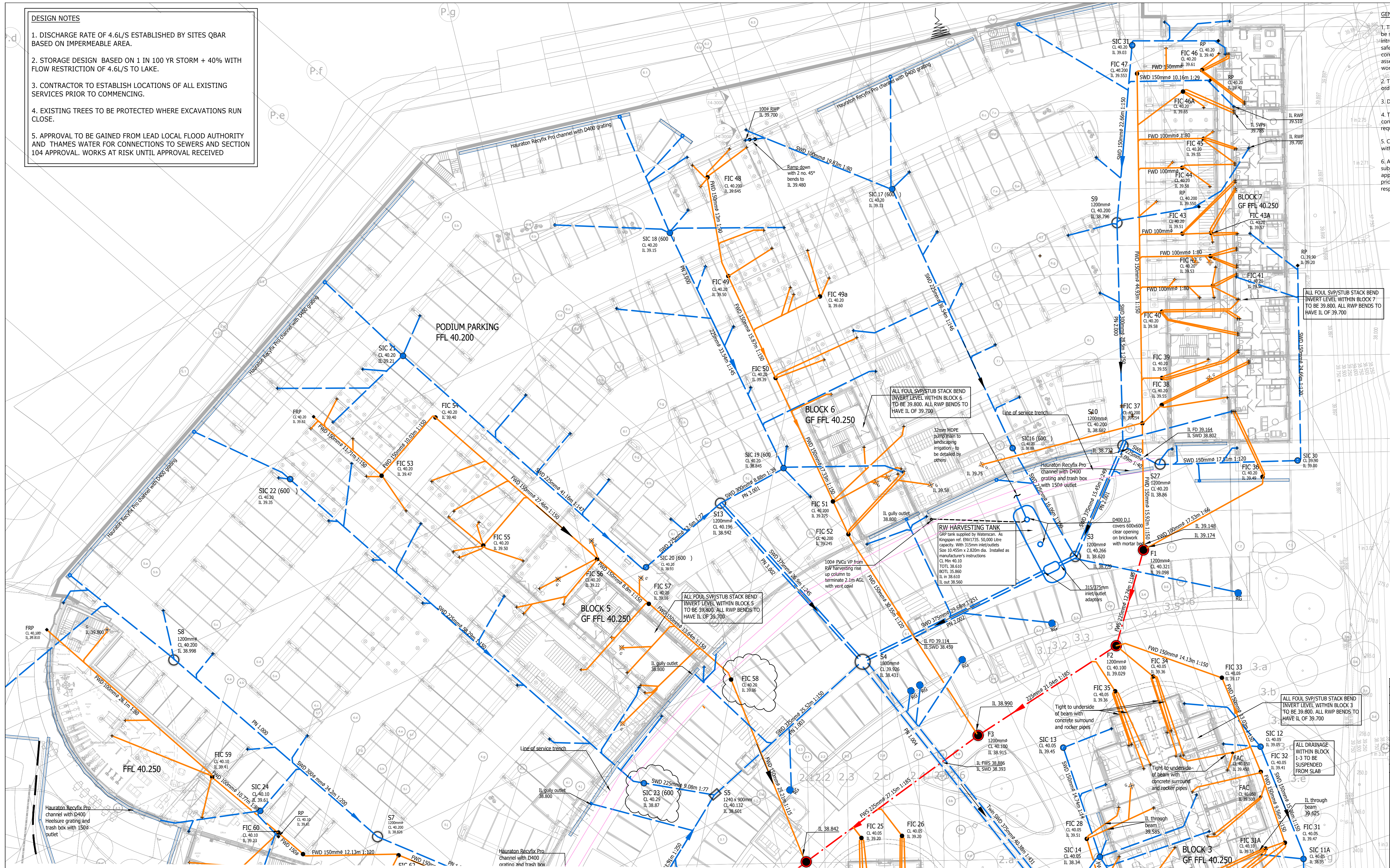
Title SITE DRAINAGE
SHEET 1 OF 2

Date	JULY 2018	Scale @ A1	1/250
Clients Ref.		Project Ref.	7143

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Drawing Number	G259-GTA-SW-00-DR-C-96-1060	Rev.	C7
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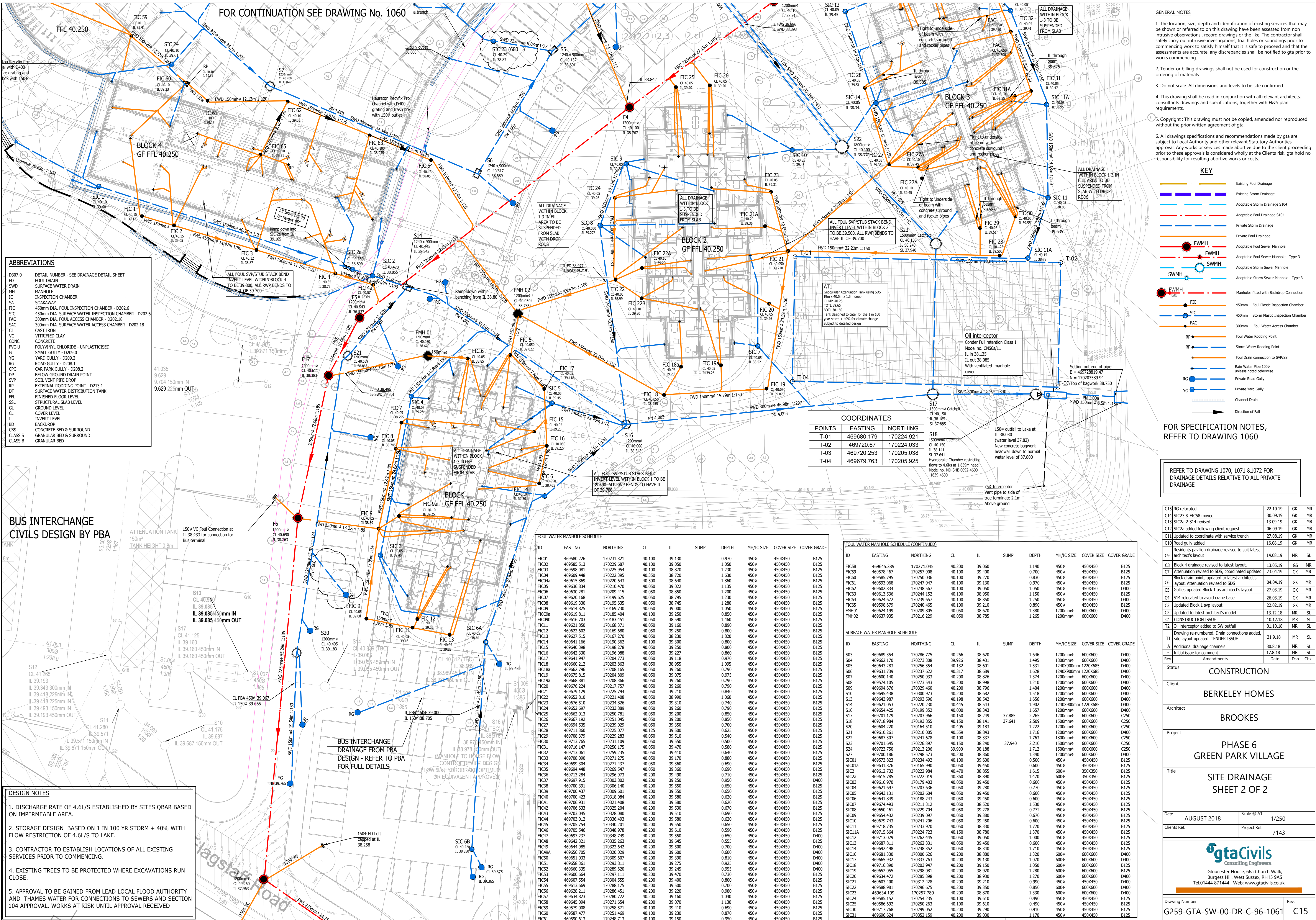
FOR CONTINUATION SEE DRAWING No. 1061

SPECIFICATION NOTES

1. ALL ADAPTABLE SEWERS SHALL BE CONSTRUCTED TO THE STANDARDS LAID DOWN IN "SEWERS FOR ADOPTION" 6th EDITION, AND THAMES WATER SPECIFICATIONS, WITH A VIEW TO ADOPTION UPON COMPLETION.
2. BEFORE CONNECTIONS ARE MADE TO EXISTING DRAINAGE, ITS LEVEL IS TO BE CHECKED AND CONFIRMED AGAINST LEVELS SHOWN ON THIS DRAWING AND THIS INFORMED OF ANY SIGNIFICANT DIFFERENCE. **NOTE - NO NEW CONNECTIONS ARE TO BE MADE TO THE EXISTING PUBLIC SEWERS UNTIL A SECTION 106 AGREEMENT HAS BEEN APPROVED BY THAMES WATER.**
3. ALL SEWERS WITH LESS THAN 1.2m OF COVER WHEN LAID BENEATH THE ROADS, OR 0.9m OF COVER IN OTHER AREAS, SHALL BE PROTECTED WITH CONCRETE IN ACCORDANCE WITH EITHER OF THE DETAILS SHOWN ON THE STANDARD DRAWING PROVIDED (FOR BEDDING TYPE LOCATIONS, REFER TO SEWER SECTIONS).
4. THE MINIMUM SIZE OF PIPE CONNECTING GULLIES TO THE DRAINAGE SYSTEM SHALL BE 150mm DIA. LAID AT A MINIMUM GRADIENT OF 1 IN 80.
5. IN ORDER TO MAINTAIN THE SATISFACTORY FUNCTIONING OF THE DRAINAGE SYSTEM, ALL ROAD AND YARD GULLIES ARE TO BE "TRAPPED".
6. ALL NON ADAPTABLE LATERALS BENEATH THE HIGHWAY SHALL BE BACKFILLED WITH LEAN MIX CONCRETE UNLESS OTHERWISE AGREED WITH THE HIGHWAYS ENGINEER.
7. THE DESIGN IS SUCH THAT WATER FROM PRIVATE AREAS DOES NOT NEED TO ADAPTABLE AREAS AND VICA VERSA.
8. ALL PRIVATE SEWERS ARE TO BE 100mm DIA. UNLESS OTHERWISE STATED. THE PRIVATE DRAINAGE DESIGN ON THE PLAN HAS BEEN BASED ON THE PRINCIPLES OF A PVC SYSTEM. IT CAN BE ADAPTED TO SUIT A STONEWARE SYSTEM BUT REFERENCE SHOULD BE MADE TO THIS OFFICE BEFORE AMENDMENTS ARE MADE.
9. ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS APPROVED DOCUMENT "H" BRITISH STANDARD 8301, AND TO THE SATISFACTION OF THE BUILDING CONTROL SECTION.
10. MANHOLES SITUATED WITHIN AREAS ACCESSIBLE TO MOTOR VEHICLES ARE TO BE FITTED WITH SUITABLE STRENGTH COVERS AND FRAMES.
11. WHERE DRAINS PASS THROUGH FOUNDATIONS, A FLEXIBLE JOINT SHOULD BE PROVIDED WITHIN 150mm OF THE FACE OF THE STRUCTURE. WHERE TYPE 2 MANHOLES ARE EMPLOYED OR CONCRETE SUBGROUND IS ADDED TO OTHER MANHOLES, A ROCKER PIPE OF MAX 600mm IN LENGTH SHALL BE PROVIDED EITHER SIDE OF THE MANHOLE, LAID AT A SLIGHTLY STEEPER GRADIENT TO ALLOW FOR SETTLEMENT.
12. STUB STACKS FITTED WITH AIR ADMITTANCE VALVES MAY BE USED INSTEAD OF SOIL AND VENT PIPES. SUBJECT TO THE ARCHITECT'S APPROVAL (EXCEPT WHERE THE DRAINAGE CONNECTION EXCEEDS 10m BEFORE CONNECTING WITH ANOTHER VENTILATED DRAIN OR INSPECTION CHAMBER OR MANHOLE). HEAD OF DRAIN VENT PIPES MUST NOT BE FITTED WITH AIR ADMITTANCE VALVES.
13. SHALLOW PRIVATE DRAINS MAY REQUIRE PROTECTION USING CONCRETE SURROUND OR PAVING SLABS BRIDGING THE TRENCH SUBJECT TO THE BUILDING INSPECTOR'S REQUIREMENTS.
14. APPROPRIATE MEASURES (TO BE AGREED WITH THE BUILDING CONTROL SECTION, ARE TO BE TAKEN TO DISCOURAGE ROIDENT ENTRY INTO THE PROPERTIES.
15. WHERE DRAIN RUNS PASS CLOSE TO BUILDINGS OR THEIR INVERT LEVELS ARE BELOW FOUNDATION LEVEL, THEN THE TRENCHES ARE TO BE BACKFILLED IN ACCORDANCE WITH THE STANDARD DETAIL PROVIDED.
16. REFERENCE SHOULD BE MADE TO THE STRUCTURAL ENGINEERS DETAILS FOR ALL ASPECTS OF FOUNDATION DESIGN AND CONSTRUCTION.
17. BEFORE DETERMINING THE AMOUNT OF FACE BRICKWORK TO EACH UNIT, CONSIDERATION MUST BE GIVEN TO THE PROPOSED FINISHED GROUND LEVELS IN THE VICINITY OF THE PROPERTY. THE LEVELS SHOWN ON THIS DRAWING HAVE BEEN DESIGNED UPON THE PARAMETERS SET DOWN IN THE APPROVED DOCUMENT "H" OF THE BUILDING REGULATIONS 2000 (2004 EDITION).
18. THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SEWERS OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWING CAN BE PREPARED UPON COMPLETION OF THE PROJECT.
19. THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE.
20. IT IS THE SUBCONTRACTORS RESPONSIBILITY TO ENSURE COMPLIANCE WITH CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE.

KEY







Civil Engineering - Transport Planning - Flood Risk

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