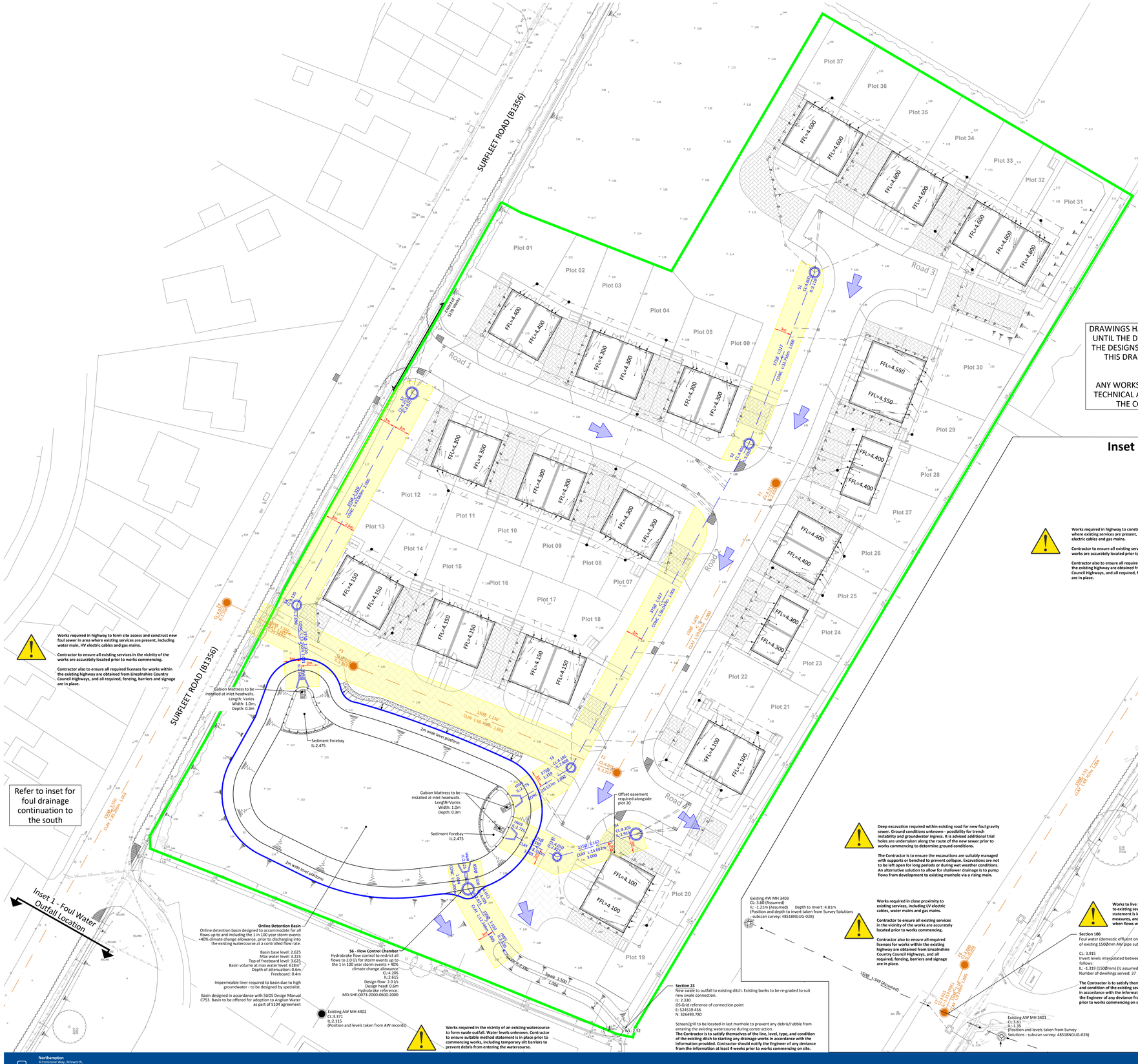


Works required in highway to form site access and construct new foul sewer in area where existing services are present, including water main, HV electric cables and gas mains.

Contractor to ensure all existing services in the vicinity of the works are accurately located prior to works commencing.

Contractor also to ensure all required licenses for works within the existing highway are obtained from Lincolnshire Country Council Highways, and all required, fencing, barriers and signage are in place.

Works required in the vicinity of an existing watercourse to form swale outfall. Water levels unknown. Contractor to ensure suitable method statement is in place prior to commencing works, including temporary silt barriers to prevent debris from entering the watercourse.

Deep excavation required within existing road for new foul gravity sewer. Ground conditions unknown - possibility for trench instability and groundwater ingress. It is advised additional trial holes are undertaken along the route of the new sewer prior to works commencing to determine ground conditions.

The Contractor is to ensure the excavations are suitably managed with supports or benched to prevent collapse. Excavations are not to be left open for long periods or during wet weather conditions. An alternative solution to allow for shallower drainage is to pump flows from development to existing manhole via a rising main.

Works required in close proximity to existing services, including LV electric cables, water mains and gas mains.

Contractor to ensure all existing services in the vicinity of the works are accurately located prior to works commencing.

Contractor also to ensure all required licenses for works within the existing highway are obtained from Lincolnshire Country Council Highways, and all required, fencing, barriers and signage are in place.

High Groundwater and Trench Instability

Deep Made Ground present within area of proposed detention basin and plots 13-22 (exact extents of Made Ground unknown). Constant inflow of groundwater and excavation collapse encountered in this area during ground investigations. There is also the risk of trench instability and high groundwater across the site. Excavations have been limited where possible by raising site levels.

Geogrid required - design to be undertaken by a specialist. Allowance to also be made for removal of Made Ground.

Prior to commencing works the Contractor is to familiarise themselves with the ground conditions detailed within the Elemental GI Ltd Phase II Geo-Environmental Investigation Report (Jan 2022, Ref: E21142/2/1) and the findings of JPP Geotechnical additional ground investigations undertaken in February 2023. The Contractor is to ensure suitable safe working practices are followed in accordance with current best practice. The Contractor is to ensure the excavations are suitably managed with supports or benched to prevent collapse, and de-watering / pump equipment in place where required. Excavations are not to be left open for long periods

Site Wide Build-Up

Levels across the site have been lifted significantly above existing ground levels to allow for the following:

- To allow surface water drainage to drain to the existing ditch at the southern side of the site by gravity.
- To avoid deep foul drainage required to allow the site to drain to the existing AW manhole by gravity (alternative solution is to pump foul fouls via a rising main)
- To limit excavations required for drainage and services in the unstable ground and Made Ground, where high groundwater is present.

A geogrid will be required under all road, footway, parking areas and patios due to low strength soils (CBR values shave been shown to range from 5.2% to 0.3%) and deep Made Ground. Geogrid to be designed by a specialist.

Allowance to be made for Geogrid to extend below all manholes and inspection chambers, and also to cover POS and garden areas where there is a risk of future settlement. Fill material specification also to be advised by Geotechnical Engineer to reduce risk of settlement - allowance to be made for removal of Made Ground material.

WORKS TO BE IN ACCORDANCE WITH LINCOLNSHIRE COUNTY COUNCIL SECTION 278 WORKS SPECIFICATION + CONSTRUCTION - MARCH 2017

ALL ADOPTABLE DRAINAGE WORKS TO BE IN ACCORDANCE WITH CODES FOR ADOPTION DESIGN & CONSTRUCTION GUIDANCE

DRAWINGS HAVE NOT BEEN APPROVED, UNTIL THE DRAWINGS ARE APPROVED THE DESIGNS AND DETAILS SHOWN ON THIS DRAWING ARE SUBJECT TO CHANGE.

ANY WORKS UNDERTAKEN PRIOR TO TECHNICAL APPROVAL IS ENTIRELY AT THE CONTRACTORS' RISK.

Inset 1 - Foul Water Outfall Location

(1:250)



General Notes

1. All dimensions are in metres unless otherwise stated.
2. All levels are in metres.
3. This drawing is to be read in conjunction with all relevant Engineers and Architect's drawings, Specifications, Reports and Engineering Details.
4. Do not scale from this drawing.

Section 104 Notes

1. All adoptable drainage works shall be in accordance with Codes For Adoption - Design and Construction Guidance and Anglian Water's guidance notes.
2. All adoptable manhole covers shall comply with BSEN 124 in accordance with Codes For Adoption - Design and Construction Guidance, clause E2.32
3. Lateral manholes with a depth of less than 1.2m from cover to soffit shall have a chamber with a minimum internal diameter of 450mm.
4. Lateral manholes with a depth of more than 1.2m from cover to soffit shall have a chamber with a minimum internal diameter of 450mm, with a restricted access opening of 350mm for safety reasons.
5. All pipework with less than 1.2m cover in Highway or less than 0.9m cover in soft shall have a concrete protective cover slab to adopting water company requirements.
6. Flow routes need to facilitate the potential route of flood flow in rainfall events exceeding the storm sewer design criteria, as required by Codes For Adoption - Design and Construction Guidance. Flow routes shall be kept clear of permanent physical obstructions which may obstruct the flow of surface water and cause flooding.
7. Screen/grill to be located in last manhole to prevent any debris/rubble from entering the existing network during construction.
8. All uncovered and shallow pipework to be protected against construction traffic as part of the contractors temporary works.
9. Manholes with outgoing pipes greater than 600mm diameter shall be fitted with guard bars, safety chains or other approved safety device.
10. A Section 106 application and approval is required with Water Company for all connections (including indirectly) to the existing public sewer network prior to any connection being made.
11. Any amendments to the Section 104 agreement after Section 104 technical approval compliance is issued, may incur a charge from Anglian Water. Refer to Table 22 of Anglian Water's Developer Changing Arrangement 2022 - 2023 for details of any fees.
12. All pipe lengths and gradients are based on centre of manhole to centre of manhole.
13. The exact position, level, size and use of existing sewers to be confirmed on site and reported to the Engineer prior to the commencement of works.
14. All pipes are to be laid with level soffit's or as indicated.
15. Trapped road gullies to be used for all gullies designed in shared parking areas.
16. No infill covers and frames to be used in block paved areas.
17. Protective concrete cover slabs to be used on pipes in non traffic area which doesnt achieve 0.9m cover level and 1.2 cover in traffic area.
18. Where pipe crossing, plastic membrane to be used for protection to eliminate any chance of cross contamination.
19. Precast concrete manhole rings will not be cut under any circumstances. Other options will instead be utilised such as building up with concrete or brickwork to the top of the pipe.
20. Covers and frames should be kitemarked.
21. Pipes of different diameters entering the same manhole should be installed with soffits at the same level.
22. All pipes located within the carriageway are located at least 1m from the kerb. The manholes are located 0.5m from the kerb.
23. All manholes covers to be 675x675mm cover and frame to maintain clear 600x600mm access in accordance with BS EN 124 Class D400 and embossed FW or SW as appropriate. All proposed manhole covers must comply with Anglian Water Ltd current Health & Safety Standards.
24. All private lateral connections are to be a minimum of 100Ø, clay material and laid soffit to soffit.

Drawing Key

- Site boundary (Taken from latest site layout referenced)
- 150Ø @ 1 in 150 — F1 — Adoptable Section 104 foul water sewer with pipe diameter, pipe code, gradient and manhole
- 150Ø @ 1 in 150 — S1 — Adoptable Section 104 surface water sewer with pipe diameter, pipe code, gradient and manhole
- Adoptable surface water headwall
- Adoptable Section 104 sewer easement
- Section 38 trapped road gully
- Section 278 highway drainage
- Section 278 highway linear drainage kerbs
- Existing foul water drainage (Taken from drainage and utilities survey referenced below)
- Private surface water drainage
- Private foul water drainage
- Perforated pipe
- FFL=96.800 — Finished floor level
- Banking Works
- Existing ground level
- Filter strip
- Permeable block paving
- Extent of detention basin proposed for adoption
- Flood routing arrow
- Existing underground LV electricity cable (Taken from drainage and utilities survey referenced below)
- Existing underground gas main (Taken from drainage and utilities survey referenced below)
- Existing underground water main (Taken from drainage and utilities survey referenced below)

Health, safety & the environment

In accordance with the Construction (Design and Management) Regulations 2015, the designs and details on this drawing have been the subject of a Designers Risk Assessment, to identify risks in the construction, use, or demolition of the scheme.

It is not considered necessary for Designers to highlight obvious and/or common risks (such as deep excavations, manual handling and working around heavy plant) which Contractors should be familiar with, and be able to control by good management and site practice.

So far as is reasonably practicable, the risks inherent in the design have been eliminated. Where it has been considered that elimination of a risk (or part of a risk) is not reasonably practicable, it has been reduced.

This drawing has been based/developed using the following external drawings

Type	Company	Drawing date	Drawing title	Date received	Rev
Site Layout	IGA Architects	02.05.2023	23001 1000-P02 IGA Site Layout	02.05.2023	P02
Topographical survey	EMP Surveys LTD	July 2022	1021_Pinchbeck Topographical Survey_Final	04.01.2023	P05
Utilities and Drainage survey	Survey Solutions	26.06.2023	48518NGUG-01 & 02	26.06.2023	B

Agreement	Approval Granted
S23 (Land drainage consent)	NOT APPROVED
S104 (Adoption of sewers)	NOT APPROVED
S278 (Works in existing highway)	NOT APPROVED
S106 (Foul connection)	Approved 23.05.2023

Rev	H	Swale 1 removed from extent of adoption. Swale 2 amended to a pipe. F5 to F7 amended to suit S278 highway drainage.	By	SH	Checked LC 12.09.2023
Rev	G	Foul water outfall amended to suit Anglian Water requirements.	By	SH	Checked LC 17.07.2023
Rev	F	Foul water outfall amended to suit Anglian Water requirements.	By	SH	Checked LC 17.07.2023
Rev	E	Amended in accordance with Anglian Water	By	AD	Checked LC 20.06.2023
Rev	D	Kerb drainage removed and added gullies	By	AD	Checked LC 31.05.2023
Rev	C	Updated to suit latest site layout	By	AD	Checked LC 10.05.2023
Rev	B	Flow control flow rate and hydrobrake reference amended	By	AD	Checked LC 13.04.2023
Rev	A	Flow control manhole S6 cover level amended.	By	SH	Checked LC 17.03.2023

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- Infrastructure Design
- Structural Engineering
- Development Planning
- Geotechnical & Environmental
- Surveying
- Professional Advice

Drawn By:	ARJ
Chkd By:	DJ
Scale @ A0:	1:250
Date:	February 2023
Status:	FOR TECHNICAL APPROVAL
Project No.:	26043

Client Burmor Construction

Project Land East of Surfleet Road Pinchbeck

Title Section 104 Layout

Drawing No: 105 **Rev:** H