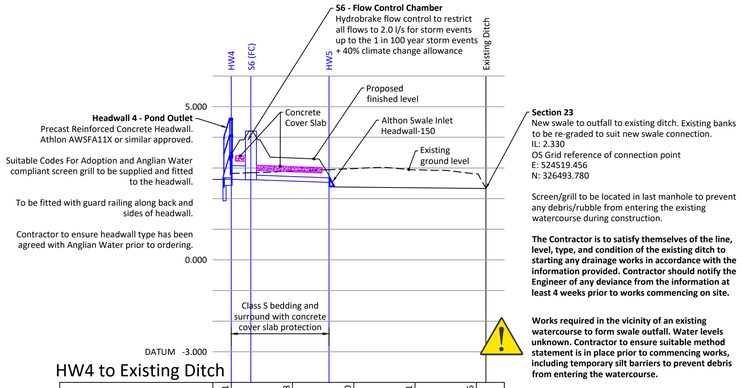


Section 23
New swale to outfall to existing ditch. Existing banks to be re-graded to suit new swale connection.
IL: 2.330
OS Grid reference of connection point
E: 524519.456
N: 326493.780

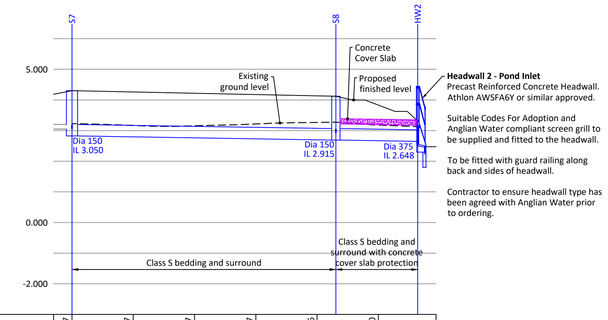
Screen/grill to be located in last manhole to prevent any debris/rubble from entering the existing watercourse during construction.

The Contractor is to satisfy themselves of the line, level, type, and condition of the existing ditch to starting any drainage works in accordance with the information provided. Contractor should notify the Engineer of any deviance from the information at least 4 weeks prior to works commencing on site.

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.

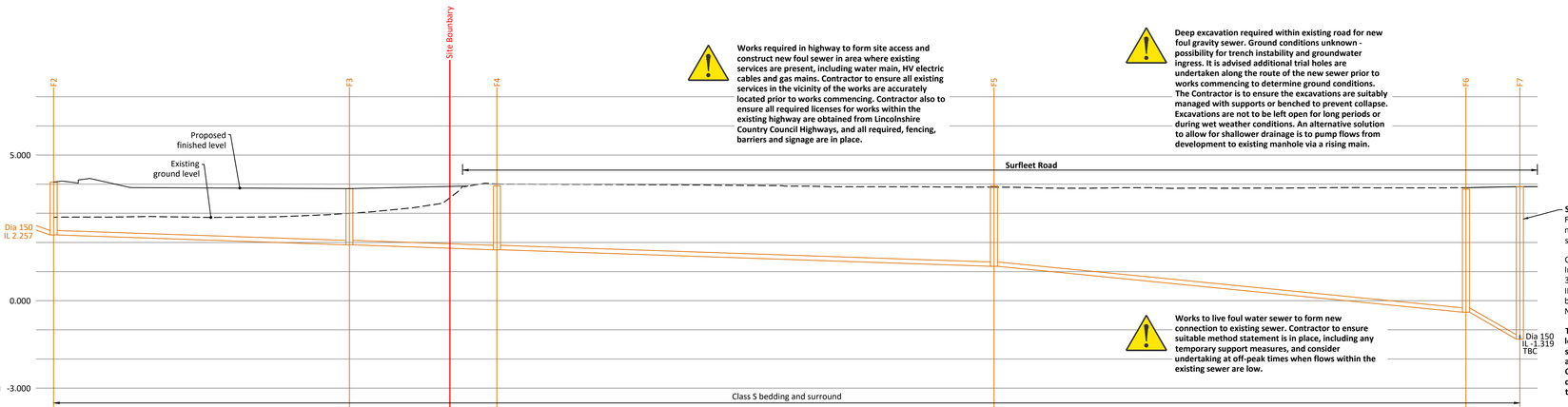
HW4 to Existing Ditch

EXISTING GROUND LEVEL	2.821		2.898	2.980	2.941	2.806	
STORMWATER COVER LEVEL	3.625	4.205	2.975			2.840	
STORMWATER INVERT		2.625	2.615	2.530 2.380		2.329	
STORMWATER DETAILS	Pipe 1.004 Dia 450 Circular CONC 1 in 320		Pipe 1.005 Dia 150 Circular CLAY 1 in 150		Pipe 1.006 Swale 1:3 1 in 500		
STORMWATER LENGTHS		3.200	12.748		25.624		



S7 to HW2

EXISTING GROUND LEVEL	3.227	3.167	3.157	3.217	3.266	3.180	
STORMWATER COVER LEVEL	4.255				4.120		
STORMWATER INVERT		2.825			2.690	2.690	2.648
STORMWATER DETAILS		Pipe 2.000 Dia 375 Circular CONC 1 in 320				Pipe 2.001 Dia 375 Circular CONC 1 in 318	
STORMWATER LENGTHS		43.069				13.350	



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.

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.

Section 106
Foul water (domestic effluent only) to outfall into new manhole on line of existing 150Ø Anglian Water sewer subject to S106 Application and approval.

CL: 3.915
Invert levels interpolated between existing manhole 3401 and 3403 as follows:
IL: -1.319 (1500mm) (IL assumed only, upstream IL to be confirmed)
Number of dwellings served: 37

The Contractor is to satisfy themselves of the line, level, type, pipe size and condition of the existing sewer prior to starting Section 104 works in accordance with the information provided. Contractor should notify the Engineer of any deviance from the information at least 4 weeks prior to works commencing on site.

Works to live foul water sewer to form new connection to existing sewer. Contractor to ensure suitable method statement is in place, including any temporary support measures, and consider undertaking at off-peak times when flows within the existing sewer are low.

F2 to F7

GROUND LEVEL	2.863	2.870	2.879	2.864	2.893	2.991	3.157	3.884	4.000	3.992	3.982	3.971	3.957	3.929	3.911	3.908	3.897	3.867	3.866	3.867	3.861	3.864	3.880	3.872	3.876	3.910	
FOULWATER COVER LEVEL	4.071					3.850			3.940								3.940								3.830	3.915	
FOULWATER INVERT		2.257				1.919	1.919		1.750	1.750							1.181	1.181							-0.394	-0.394	-1.319
FOULWATER DETAILS			Pipe 1.001 Dia 150 Circular CLAY 1 in 150				Pipe 1.002 Dia 150 Circular CLAY 1 in 150			Pipe 1.003 Dia 150 Circular CLAY 1 in 150								Pipe 1.004 Dia 150 Circular CLAY 1 in 51								Pipe 1.005 Dia 150 Circular CLAY 1 in 10	
FOULWATER LENGTHS			50.745				25.297			85.289								80.970								9.249	

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.

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	JGA Architects	02.05.2023	23001 1000-P02 GA 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

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.

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.

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.

Rev	D	F5 - F7 longitudinal section amended to suit revised foul water outfall. Surface water drainage amended to suit removal of swale.	By SH	Checked LC	12.09.2023
Rev	C	F3 - F7 longitudinal section amended to suit revised foul water outfall.	By SH	Checked LC	18.07.2023
Rev	B	Flow Control Manhole note amended.	By SH	Checked LC	13.04.2023
Rev	A	Flow Control Manhole Chamber 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:	AD	**Client**	Burmor Construction
Chkd By:	LC	**Project**	Land East of Surfleet Road Pinchbeck
Scale @ A1:	NTS		
Date:	February 2023	**Title**	Longitudinal Sections (Sheet 3)
Status:	FOR TECHNICAL APPROVAL		
Project No.:	26043	**Drawing No:** 101 (3)	**Rev:** D