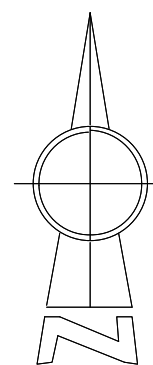


KEY

- ???-??? Finished Floor Level
- Surface Water Manhole
- Foul Water Manhole
- Combined Water Manhole
- Surface Water Demarcation Chamber
- Foul Water Demarcation Chamber
- Surface Water Sewer
- Foul Water Sewer
- Combined Water Sewer
- Highway Drain
- Existing Public Combined Sewer
- Existing Public Surface Water Sewer
- Existing Public Foul Water Sewer
- G Gully
- ExG Existing Gully
- ▨ Easement
- ▨ Pump Station Access Track



Where there are double road gullies, the gully leads shall be connected onto separate pipe lengths

NOTE:  
Class B bedding can be used on pipes greater than 0.6m Ø subject to providing a marker tape above the pipes.

NOTE  
Lateral sewers to be Polysewer (UPVC) and manufactured by Polypipe or similar approved by Anglian Water.  
Demarcation chamber to be polypropylene Non-Entry Inspection Chamber up to 2.0m depth manufactured by Polypipe or similar approved by Anglian Water to BS EN 13598-1:2003.

J	AB	12.08.20	Drainage revised to suit road revised road levels	AB
H	AB	10.01.20	SuDS features removed from adoption	AB
G	AB	04.12.19	Swale hatched adjacent road 2	AB
F	AB	26.11.19	Rising main route altered	AB
E	AB	05.11.19	Swales and filter strips hatched, LCC Highways notes added	AB
D	AB	01.08.19	Flow control manhole diameters updated	AB
C	AK	18.04.19	Updated to suit S104 & S38 comments	AB
B	AB	09.03.19	Updated to suit client comments	WW
A	AB	27.02.19	F3, F3a, F3b, F4 & F7 Omitted, Swale Headwalls and Pump station compound updated	WW
/	AB	25.02.19	Issued for approval	WW
Rev	By	Date	Description	CHK



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Client GLEESON HOMES

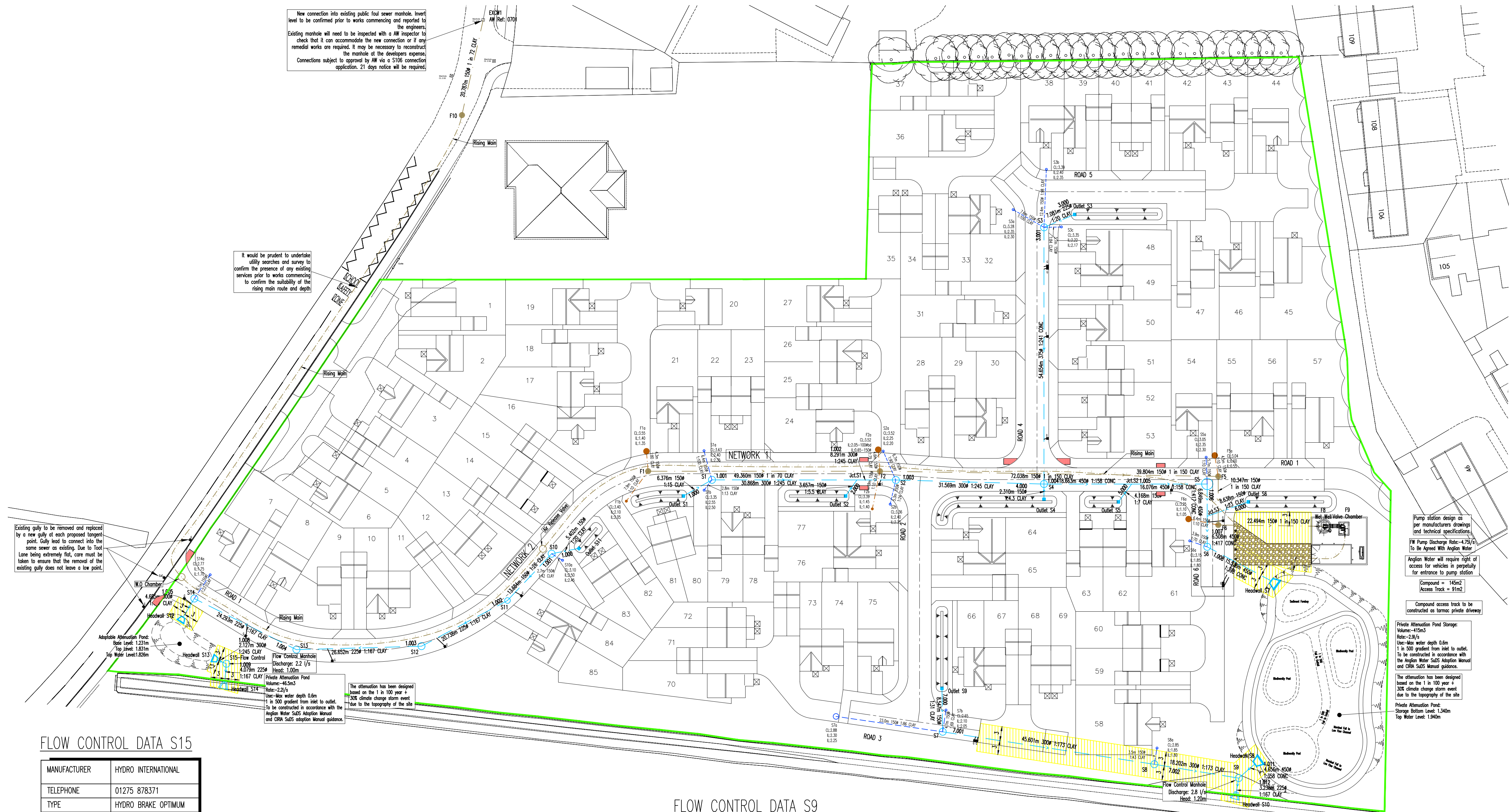
Project TOOT LANE, BOSTON

Title SECTION 104 LAYOUT

Scale	1:500	Drawn	AB	Checked	WW	Date	FEB.19
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Drawing Status FOR APPROVAL

Job No.	102.001	Drawing No.	03	Revision	J
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FLOW CONTROL DATA S15

MANUFACTURER	HYDRO INTERNATIONAL
TELEPHONE	01275 878371
TYPE	HYDRO BRAKE OPTIMUM
FLOW/HEAD	2.2 l/s @ 1.000m
HYDRO REF	SHE-0070-2200-1000-2200
To be installed in accordance with manufacturers specifications and recommendations before the manhole cover slab is installed	

FLOW CONTROL DATA S9

MANUFACTURER	HYDRO INTERNATIONAL
TELEPHONE	01275 878371
TYPE	HYDRO BRAKE OPTIMUM
FLOW/HEAD	2.8 l/s @ 0.950m
HYDRO REF	SHE-0080-2800-0950-2800
To be installed in accordance with manufacturers specifications and recommendations before the manhole cover slab is installed	

Lincolnshire County Council Highway Authority notes:

- The specification in all respects shall be in accordance with the current Development Road and Sustainable Drainage Specification and Construction publication in force in the county at the time of construction
- The minimum longitudinal fall for highways, without channel blocks shall be 1 in 150, and with channel blocks 1 in 250  
See Clause 10.1 of the Development Road and Sustainable Drainage Specification and Construction. In addition, ensure that the first section of any side road falls away from the road from the road to which it is connecting. If general topography requires it to rise, this change of direction should take place after the first set of gullies. This is to ensure a 'false channel' with associated drainage problems is not created in the belfmouth of junctions.
- General deterioration of the existing highway/footway/verges created through construction of the new Section 38 Development will be reinstated to the Development Road and Sustainable Drainage Specification and Construction at the developers' own cost at the agreement of the inspecting Highway and Flood Authority Officer.
- No Private surface water shall discharge onto the adoptable highway.
- No private structural features shall overhang the adoptable highway.
- No private retaining wall exceeding 1.37 metres shall be within 3.66 metres of the highway boundary.

Anglian Water General Notes

- This drawing is to be read in conjunction with all relevant Walker Ingram Associates and Architects drawings and project specifications.
- All adoptable sewer works and material to be in accordance with "Sewers for Adoption" 6th Edition, the relevant British/European and Anglian Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and be Kitemarked.
- The location, size and depth of all existing drains/sewers and services shall be established by the contractor prior to commencement of works on site. Any discrepancies from the information indicated on these drawings shall immediately be brought to the attention of the engineers.
- All levels and dimensions shall be verified on site prior to commencement of any works. Any discrepancies shall immediately be brought to the attention of the engineers.
- Sewers must have 5 metres clearance from trees and hedges, (please also refer to Figure 2.3 on page 33 in "Sewers for Adoption" 6th Edition for restrictions on tree planting adjacent to Sewers).
- The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
- All connections to public sewers to be a minimum of 150mm Ø via a 45° junction.
- Sewers to be laid in Class "S" bedding (150mm granular bed and surround). Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 900mm in none vehicular access areas) then a concrete slab should be provided above the granular bed and surround.
- Anglian Water policy is not to accept Type "C" brick manhole and 1050mm dia manhole rings. Instead it is preferred that you use a type "B" manhole with 1200mm dia or 1500mm dia. rings, with the opening sited over the channel where depth of cover to pipe soffit is 1-1.5m.
- The chamber size of manholes with more than one connection in them may need to be increased on an increment to accommodate the connections and bends.
- Manhole covers shall must have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.
- Cover slabs must carry the BSI Kitemark or will be rejected by the Anglian Water inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600x600mm for the Anglian Water specified cover size. Please refer to the Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued autumn 2004 for kitemarked cover slab opening sizes.
- Plastic channel sections in manholes are not acceptable and clayware is preferable. Plastic channels are difficult to set in concrete and a satisfactory finish cannot be obtained on the benching.
- Maximum depth of demarcation chamber to be 2m, where depth exceeds 2m, manhole to be constructed as type B manhole.
- Demarcation chambers to be a min. 450mmØ chambers for 100mmØ foul & 150mmØ surface water pipes up to 1.2m deep. For depths greater than 1.2m, restricted access opening to 350mm is required for safety reasons.
- Where plastic pipes are proposed for adoptable sewers, structural calculations for the plastic pipes and a site investigation report to prove that the ground condition is suitable for the plastic pipes are to be produced.
- Where plastic pipes are installed into the ground prior to getting full technical approval, the developer must provide a CCTV survey of the prospectively adoptable sewers and a deformation test (Light-Line test) of the plastic pipes.
- If plastic pipes are to be used then the following should apply:-
  - All adoptable sewers to be BSI Kitemark (certified to WIS 4-35-01).
  - Bedding and backfill material to conform to the requirements of

Water industry Specification 4-08-02 (Table A2)

- Adoptable plastic sewer pipes to be BSI Kitemarked (Certified to WIS 4-35-01 and BS/EN13476). Adoptable sewer pipes to be laid in maximum 3 metre lengths unless there is a specific operational need to lay longer.
- Filled ground or soft spots must be excavated, backfilled and consolidated under the supervision, and to the satisfaction, of Anglian Water before any sewer works are carried out.
- Sulphate resisting cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
- The strength of vitrified clay pipes (if used) to be 40KN/m for 100Ø, 40KN/m for 150Ø, 45KN/m for 225Ø and 72KN/m for 300Ø. All concrete pipes to be Class 120 concrete to EN 1916/BS 5911-1:2002.
- Surface water and foul rising mains to be provided with marker tape above the rising mains.
- Anglian Water is not obliged to accept filter drain/land drainage runoff into the public sewer network or adoptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage runoff will therefore be required and you will have to liaise with the Land Drainage Authority/Land Drainage Section with regard to the disposal of the filter drain/land drainage runoff if required.
- All excavations in areas of high water tables and granular materials with high sand/silt contents shall be wrapped with a suitable geotextile filter membrane to prevent migration of sands/silts. Full height clay stanks across trenches and/or at manhole locations at 25m intervals to restrict water movement along the excavation shall be provided.
- All works within the public highway to be reinstated to the highway authority requirements. All drainage connections onto adoptable drainage systems shall be carried out to the water authority's approval.
- The contractor must allow for any fee's required for road and sewer opening permits, sewer connections and make the appropriate applications.
- Where there are double road gullies, the gully leads shall be connected onto separate pipe lengths.