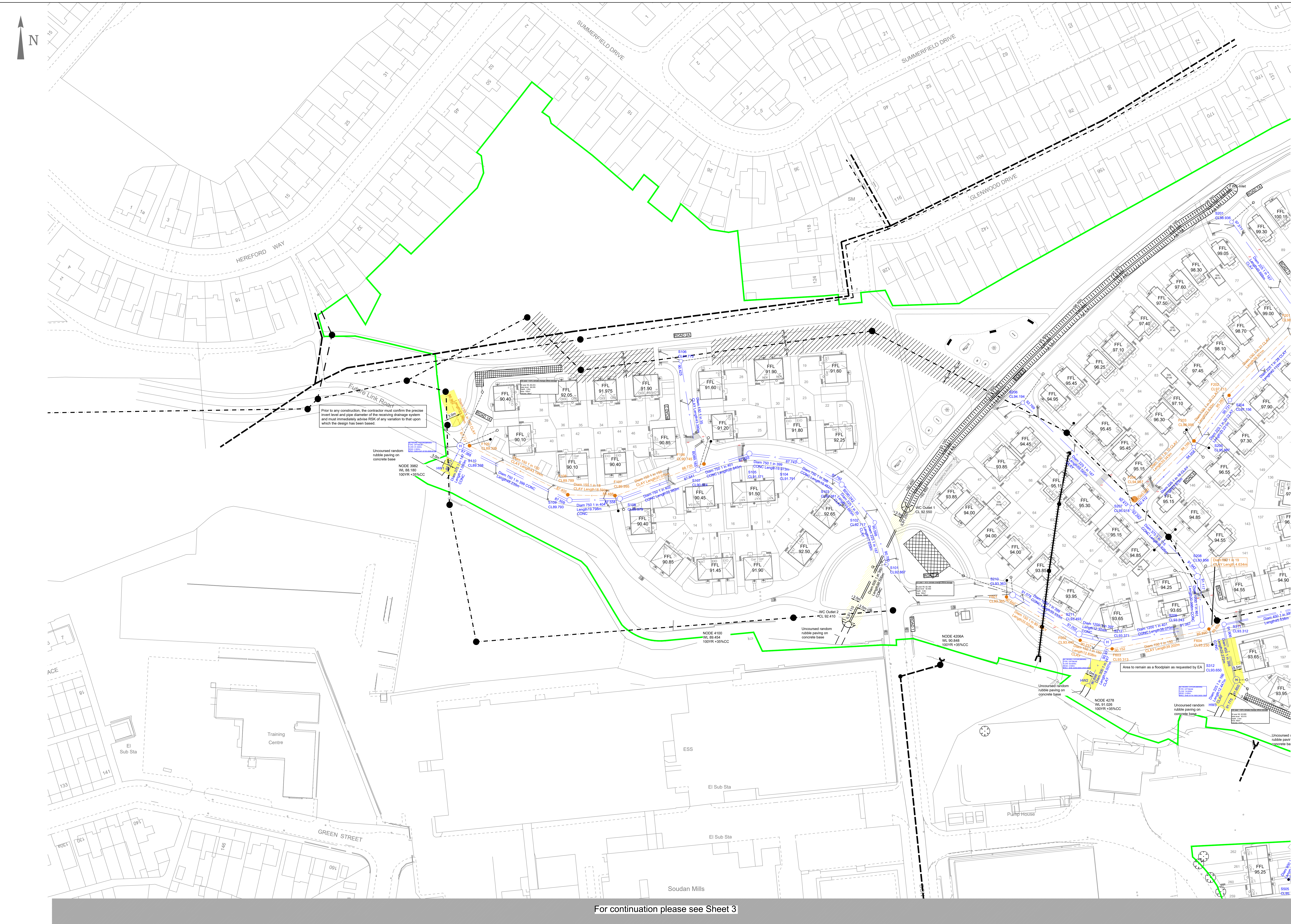




For continuation please see Sheet 2

CIVIL / STRUCTURAL DESIGN RISK MANAGEMENT

Abnormal or unusual residual risks associated with the design outcomes shown on this drawing are:-

RSK LDE LTD has followed its Design Risk Management process for Hazard Elimination and Risk reduction in developing the designs shown on this drawing.
Abnormal or unusual residual risks may be shown above where it is considered that such risk may not normally be expected by competent persons engaged on work of this nature or type.

Legend

Proposed foul water sewer and manhole by Developer

Proposed surface water sewer and manhole by Developer

Existing Foul water sewer and manhole

Existing Combined water sewer and manhole

Existing culverted watercourse to be removed

Watercourse diversion open channel

Watercourse diversion piped system

Proposed S104 Drainage Easement

Existing S104 Drainage Easement

Proposed Watercourse diversion Easement

FFL 102.85

Finished Floor Level

- Notes
- All adoptable sewer works and material to be in accordance with Sewers for Adoption 6th Edition, The Relevant British/European and United Utilities' Standards/Requirements/Addendum and Kitemarked.

Manhole covers shall have a minimum clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.

Filled ground must be filled and consolidated under the supervision and to the satisfaction of United Utilities before any sewer works are carried out.

United Utilities is not obliged to accept filter drain/land drainage run-off into the public sewer network or adoptable drainage system (directly or indirectly). An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section with regard to the disposal of the filter drain/land drainage run-off.

Cover slabs must carry the BSI Kitemark or will be rejected by United Utilities 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 600mm x 600mm for the United Utilities specified cover size. Please refer to Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued Autumn 2004 for Kitemarked cover slab opening sizes.

Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.

The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.

Sewers must have 6 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).

Unless noted otherwise, sewers are to be laid in Class S bedding in accordance with United Utilities standard details. Refer to RSK drawing 40-17 for pipe embedment details. 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 bed and surround shall be provided.

United Utilities policy is not to accept 'Type C' brick manholes 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.

All lateral drains to be 150mm dia.

P11	25.07.22	Revised to new planning layout Rev A2	DS	MS	
P10	31.05.22	Updated to Client comments	DS	MS	
P9	25.05.22	Updated to site layout Rev AL	DS	MS	
P8	11.03.22	Updated to latest private drainage design	LGS	MS	
P7	22.02.22	Revised to new planning layout Rev AD	LGS	MS	
Rev.	Date	Amendment	Drawn	Chkd	Appd

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Client

Kellen Homes

Project Title

Don Street
Middleton

Status

DETAILED DESIGN

S104 Agreement Plan
Sheet 1 of 3

Drawn Date

EP JULY 21

Checked Date

MS JULY 21

Approved Date

Scale

1:500

Orig Size

A0

Dimensions

m

Project No.

882333

Drawing File

Drawing No.

40-20-01

Rev

P12

Scale 1:500

0 5 10 15 20 25m

FFL's and Dragout's subject to change following completion of external works and private drainage designs.

The details provided on this drawing are subject to comments by all the relevant approving authorities. Until such time as all comments have been received and incorporated onto the drawings, all the information provided and costings, are used at Kellen Homes risk and no liability will be accepted by RSK. Scheme based on Kellen Homes Sketch Scheme site plan REV AQ

Drainage Statement - Surface Water

100 year storage to be maintained by private maintenance company.

System designed not to flood in 30yrs and surcharge in 2yrs.

Climate allowance of 40% as per FRA.

10% Urban Creep has been allowed for calculations.

The use of Plastic pipework must be requested from UU.

All networks have been modelled w/100 year surcharge.

Outfalls subject to EA / UU consent.

Networks 1,2 and 5- discharge is based on Brownfield discharge for the catchment for the existing 30yr flow with 50% betterment achieved. The storage is achieved using oversized pipes with storage over 30yr event stored in private areas.

Network 3 and 4- discharge is based on Greenfield Qbar pro-rata rate for the catchment of 6.77 U/s/ha, refer to FRA.

Drainage Statement - Foul Water

Foul by gravity to existing foul manholes or online of existing sewer.

Receiving drain may require CCTV investigation/further investigation to prove condition of receiving pipework or Manholes.

Pipe bridge crossing required between F508 and F509- subject to structural design and EA / UU approval.

Existing sewers have been recently surveyed and Client has confirmed layout is to be amended to accommodate sufficient easement clearances.

Level Statement

FFL's are all set more than 600mm above 1% AEP flood level.

Large retaining wall requirement are located adjacent to EA Main River- Easement yet to be determined.

Any flood storage loss by development platform should be compensated as to not increase flood levels and volumes.