DO NOT SCALE

Gravity connection to Anglian Water foul water sewer at manhole ref. 9102, via construction of new receiving manhole for rising main.

Ditch to be culverted beneath access road.

Proposed foul water pumping station to be adopted by Anglian Water.

Pump should to discharge at a maximum rate of 3.8 l/s based on the minimum self cleansing velocity for an 80mm pumped connection.

For details of foul water rising main connection to sewer, refer to inset. Route of rising main to be agreed and shall be treated as indicative for the purposes of this drawing.

16.5m x 15.9m x 1.25m geocellular storage tank wrapped in an impermeable membrane to store and attenuate excess surface water runoff for all storm return periods up to and including a 1 in 100–year event with a further 40% allowance for future climate change.

Drainage to pass through wall footings. Pipe to be surrounded in min. 50mm compressible material.

Existing 300mm dia. surface water sewer to be diverted into proposed road network via a S185 agreement with Anglian Water.

Flow control chamber to limit surface water flows to maximum allowable discharge rate of 4.8 l/s, for all analysed events up to and including the 1 in 100 year +40% climate change event, with a minimum 100mm orifice dia. to adoptable standards.

32m length swale for treatment, conveyance, and attenuation of runoff, prior to discharge to existing drainage ditch adjacent to site boundary. Base level = 124.41

Short length of gabion retaining wall around canopy of existing tree to increase available storage within swale.

Flow control chamber to limit surface water flows to maximum allowable discharge rate of 8.2 l/s, for all analysed events up to and including the 1 in 100 year + 40% climate change event.

New concrete headwall outfall to be fitted with non-return valve and grille cover to prevent blockage.

Existing 300mm dia. surface water sewer to be removed following completion of diversion.

Connection to the Existing Public Footpath

AREA EXCLUDED FROM THE DEVELOPMENT

RETAINED PADDOCK
NO CONTRUCTION WORKS

OPEN SPACE

Area of Grasscrete to allow for maintenance of pump station

HODGSON CLOSE

FEWCOTT ROAD

LEVELS LEGEND

[FFL 127.10]	Proposed finished floor level
127.90 +	Proposed level
	Existing level
1 in 24.5	Proposed gradient
R600	Proposed bank and gradient
600 ER	Denotes extent of retaining wall with max. retaining height shown.
150 RDPC	Denotes extent of additional Exposed Brickwork below standard, with max. additional height as indicated.
+ 450 GR +	Denotes extent of Raised Damp Proof Course, with max. height as indicated.
	Denotes extent of Gravel Board with max. level difference shown.
	Gabion retaining wall

PRIVATE DRAINAGE LEGEND

RG	Trapped road gully
G	Trapped yard gully
RE	Surface water rodding eye
	Surface water drain 100mm dia. unless noted otherwise.
	Land drain
	SW Drain to be removed
SA	Private surface water shallow access chamber
MC	Private surface water Universal Inspection Chamber with 100mm dia. pipe outfall unless shown otherwise
ST	Surface Water Silt Trap
	Private surface water catchpit manhole
	Surface water flow control chamber
	Perforated collector pipe
	Surface water distribution pipe
	Denotes extent of permeable block paved car park.
	Denotes extent of deepened section of permeable sub-base.
	Foul water drain 100mm dia. unless noted otherwise.
SA	Foul water shallow access chamber with 100mm dia. pipe outfall
MC	Foul water Universal Inspection Chamber with 100mm dia. pipe outfall unless shown otherwise
	Site Boundary.

DESIGNERS RESIDUAL RISK SCHEDULE

CONSTRUCTION

1. EXISTING SEWERS / DRAINAGE / SERVICES / OVERHEAD CABLES:

a. Refer to topographical survey (Ref:6983/01 & 02) & statutory undertakers records for location of existing sewers / drainage / services & overhead cables.

b. Works in close proximity to existing sewers / drainage / services / overhead cables. Contractors construction health & safety plan should include method statement outlining safe method of working agreed with relevant statutory undertaker where necessary.

c. Works affected by existing sewers / drainage / services / overhead cables. Contractor should arrange for diversion / lowering / protection by statutory undertaker where necessary prior to commencement of works.

2. GROUND CONDITIONS / SOIL CONTAMINATION / REMEDIATION

a. The ground investigation report (Ref:BC195 RE001) identified traces of asbestos to be present. Contractor should ensure site personnel use appropriate PPE when carrying out excavations & that construction health & safety plan includes method statement for dealing with unforeseen contamination if encountered during works.

b. Site was previously occupied by buildings & structures. Contractor should ensure site personnel use appropriate PPE when carrying out excavations & that construction health & safety plan includes method statement for dealing with unforeseen contamination / obstructions if encountered during works. Where ground conditions deviate from those reported in the site investigation report, the engineer should be contacted immediately for advice on how to proceed.

c. The ground investigation report (Ref:BC195 RE001) identified marginally elevated levels of asbestos in underlying soils. Site personnel should use appropriate PPE when carrying out excavations & contractors construction health & safety plan should include method statement that adopts best practice health and safety policies for all site personnel throughout the duration of the construction works.

d. TO protect future users of the site, contractor should ensure areas of proposed soft landscaping are remediated in accordance with remediation strategy set out in section 16 of the ground investigation report (Ref:BC195 RE001).

3. EXCAVATIONS & EARTHWORKS

a. Refer to ground investigation report (Ref:BC195 RE001) for details of underlying soils. Where ground conditions are found to deviate from those reported in the site investigation report, the engineer should be contacted immediately for advice on how to proceed.

b. Excavations where access is required should be temporary supported with slopes battered well back and maintained at a safe angle.

c. Contractors construction health & safety plan should include method statement outlining safe method of working in or adjacent to deep excavations adjacent to boundaries / structures / embankments / bulk earthworks.

d. Groundwater may be encountered in excavations. contractors construction health & safety plan should include method statement outlining safe method for dewatering excavations during groundworks.

4. WORKS ON OR ADJACENT TO HIGHWAY

a. Contractor should ensure site personnel have appropriate training & use appropriate PPE when carrying out works in the highway and the construction health & safety plan should include method statement that adopts best practice health and safety policies for all site personnel throughout the duration of the works on / adjacent to highway.

5. CONNECTING TO EXISTING MANHOLES / SEWERS

a. Contractors construction health & safety plan should include method statement that adopts best practice health and safety policies for all site personnel throughout the duration of such works.

b. Contractor should ensure site personnel have appropriate training & use appropriate PPE when making sewer connections to existing manholes / sewers.

MAINTENANCE / CLEANING

6. ACCESS OF MANHOLES / CHAMBERS FOR MAINTENANCE OF DRAINAGE SYSTEM & HIGH PRESSURE JETTING

a. Maintenance contractor should provide risk assessment and method statement that adopts best practice health and safety policies for maintenance personnel throughout the duration of such works.

b. Maintenance personnel should have appropriate training & use appropriate PPE.

DEMOLITION

a. Demolition contractor should provide risk assessment and method statement that adopts best practice health and safety policies for all site personnel throughout the duration of such works.

ENGINEERING NOTES

1. This drawing to be read in conjunction with all relevant Architects, Engineers and Subcontractors drawings and details.
2. This drawing is based on topographical survey by groundsurveys Ltd:
   Drawing Numbers 6983/01 & 02
   Dated August 2018
3. All levels relate to levels given on survey drawing.
4. Refer to Architects drawings for details of all paving types & patterns, soft landscaping, fences, gates & bollards.
5. For lighting, service supplies & ducting requirements, refer to M&E drawings.
6. Private drainage works to be carried out in accordance with BS EN 752 "Drain and sewer systems outside buildings" and the current edition of The Building Regulations "Approved document H".
7. New drainage connections are to be made with appropriate lengths of rocker pipes & couplings.
8. All manhole chamber covers to be installed parallel to final kerbs, edgings, paving joints or building lines as appropriate.
9. This drawing details all below ground drainage up to finished floor level. For details of drainage above finished floor level, refer to Architects drawings.
10. All stack connections under buildings to be minimum 100mm diameter solid PVC–U to BS EN 1401–1/BS4660 & laid at a minimum gradient of 1 in 40 unless otherwise noted. If the stack is greater than 100mm then the diameter of the connection is to be increased to match it.
11. All RWP connections to be minimum 100mm diameter solid PVC–U to BS EN 1401–1/BS4660 & laid at a minimum gradient of 1 in 80 unless otherwise noted. If the RWP is greater than 100mm then the diameter of the connection is to be increased to match it.
12. All private foul water pipework up to 150mm in diameter to be PVC–U to BS EN 1401–1/BS4660. All private foul water pipework should not be laid at gradients flatter than 1 in 40 internally or externally, unless otherwise indicated on drawing. Contractor to report back to engineer in any instance where a gradient of 1 in 40 or steeper cannot be achieved and is not identified on the drawing.
13. All private surface water pipework up to 150mm in diameter to be solid PVC–U to BS EN 1401–1/BS4660. All private surface water pipework 225mm and above to be structured wall plastic sewer pipe complying with clause 518 of the specification for highway works.
14. Plastic chambers shall comply with BS EN 1917 and BS 5911–3.
15. Concrete manholes shall comply with BS EN 1917 and BS 5911–3.
16. Refer to Section 104 Agreement drawings for specifications of foul and surface water pipework and chambers.
17. All dwelling front entrances to be Part M compliant to levels shown. 1.2m landing at front door at maximum 1 in 20 required.
18. On completion of development all drainage shall be jet cleaned and CCTV surveyed.
19. Sewers marked to be removed are to be dug out with manholes demolished & void filled with suitable engineering fill material.
20. All private road gully connections to be minimum 150mm diameter solid PVC–U pipework to BS EN 1401–1/BS4660 and laid at a minimum gradient of 1 in 150. Refer to Section 38 drawings for adopted road gully specifications.
21. Location of all services in close proximity to works should be confirmed by means of trial pits under supervision of statutory undertaker & in accordance with HSE document "Avoiding Danger from Underground Services" and "Avoiding Danger from overhead power lines".
22. Contractor to confirm exact location and level of existing drainage spurs and manholes where new drainage connections are proposed prior to commencing construction, with any discrepancies reported back to the engineer.

C1	ISSUED FOR CONSTRUCTION.	JJH	04.10.22
MK	REVISION	BY	DATE

DRAWING STATUS

CONSTRUCTION

DRAWING TITLE

PRIVATE ENGINEERING LAYOUT

PROJECT

LAND AT FEWCOTT ROAD, FRITWELL

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Drawn	Ch'kd	Scales	Date
J.J.H.	M.A.C.	1:250 @ A0	MARCH '22

Purpose of Issue: FOR CONSTRUCTION

Project Number	Drawing Number	Revision
P18-654	300	C1

A0