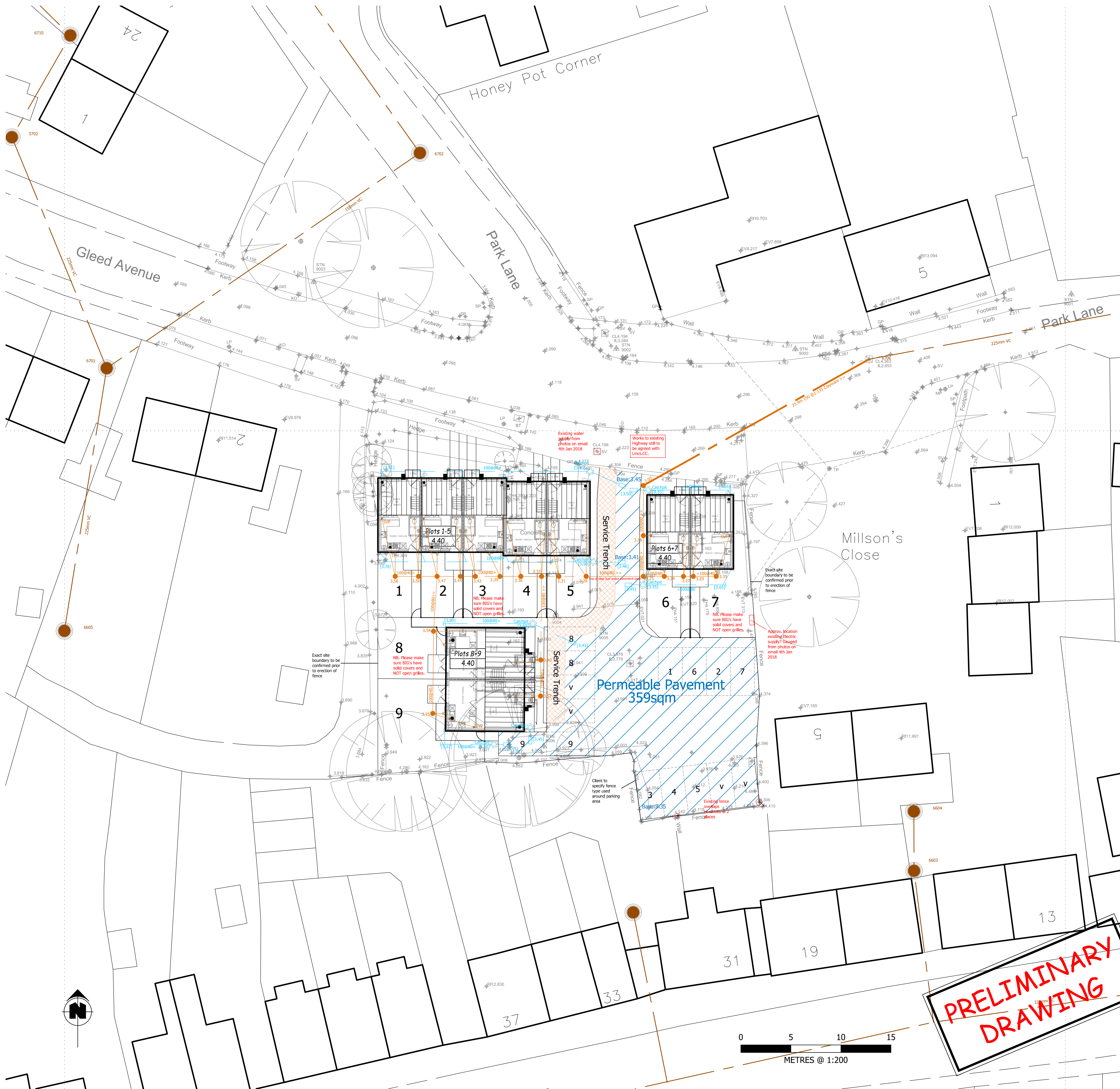


FEEDBACK: This drawing is one of a series that have been prepared to define the civil element of the development. If this, or any, drawing in the series could be improved to better communicate the proposed design please do not hesitate to contact Stafford IE.



PRINCIPAL OUTSTANDING HAZARDS

This schedule is provided to assist the principle contractor to determine appropriate working practices & plant requirements during the construction phase & should be included in the Health & Safety Plan File.

The schedule indicates the principle hazards that could not be wholly eliminated during the design phase or that are inherent in the layout of the construction.

This schedule should not be considered as an exhaustive list of hazards - It has been assumed an appropriately experienced contractor with a fully trained labour force will be appointed to carry out the work. Hazards implicit in the nature of construction (safe use of tools/plant & appropriate PPE) are assumed. Compliance with relevant legislation (Health and Safety at Work Act etc.) has been assumed.

The notes given here relate to work shown on this drawing ONLY - (Please note that other items may occur on other drawings.)

Ref. No.	IDENTIFIED HAZARD
1.	DRAINAGE WORKS DRAIN LAYING AND ASSOCIATED WORKS IS REQUIRED TO BE UNDERTAKEN IN OPEN EXCAVATIONS AND STABILITY OF TRENCHES PRESENTS POTENTIAL COLLAPSE HAZARD - TRENCH SUPPORT REQUIRED
2.	OPEN TRENCHES PRESENT HAZARD OF FALLING TO PERSONNEL AND PLANT - PROTECTION/BARRIERS REQD.
3.	SOME WORK REQUIRED ON EXISTING, LIVE DRAINAGE - HAZARD OF CONTAMINATION/ STORM FLOWS - PPE REQUIRED/ WORK TO BE CARRIED OUT BY EXPERIENCED PERSONNEL
4.	EXCAVATED MATERIALS POTENTIALLY CONTAMINATED (FILL) - REFER TO SITE INVESTIGATION INFO.
5.	HEAVY DRAINAGE COMPONENTS ARE SPECIFIED - SUITABLE LIFTING EQUIPMENT REQUIRED
6.	CEMENTITIOUS MATERIALS REQUIRED - HAZARD OF CONTACT WITH AGGRESSIVE MATERIALS
7.	WORKS REQUIRED IN ACTIVE HIGHWAYS - SUITABLE TRAFFIC CONTROL REQUIRED
8.	WORK IN POTENTIALLY CONFINED SPACES (MANHOLES) - COMPLETE MHS BEFORE INSTALLING COVER SLABS - USE EXPERIENCED PERSONNEL

- ALL OFFSITE DRAINAGE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH 'CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY' 5th EDITION, B.S.E.N.752 & 'SEWERS FOR ADOPTION' 6th EDITION FOR ADOPTABLE DRAINAGE, AND TO THE RELEVANT PROJECT SPECIFICATION AS DIRECTED BY THE ENGINEER FOR PRIVATE DRAINAGE.
- PIPE MATERIAL SHALL BE AS FOLLOWS:
100+ TO 225+ CLAYWARE TO BS EN 295
300+ AND ABOVE - CONCRETE TO BS EN 5911.
NB. PVCU PIPES TO BS EN 1401-1:1998 MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER
- CLAY AND CONCRETE PIPES SHALL BE BEDDED ON CLASS S BEDDING UNLESS COVER IS LESS THAN 1.2m IN TRAFFICKED AREAS, THEN CLASS A BEDDING.
- UPVC PIPES SHALL BE BEDDED ON CLASS P BEDDING UNLESS COVER IS LESS THAN 1.2m IN TRAFFICKED AREAS, THEN CLASS Q BEDDING.
- BACKFILL TO TRENCHES MAY BE SUITABLE EXCAVATED MATERIAL IN LANDSCAPED AREAS, TYPE 1 GRANULAR MATERIAL TO BE USED UNDER HARDSTANDINGS AND ROADS.
- ALL MANHOLE AND DRAINAGE CHANNEL COVERS SHALL COMPLY WITH BS EN124. MANHOLE COVERS WITHIN BLOCK PAVED AREAS & BUILDINGS SHALL BE RECESSED. COVER STRENGTHS TO BE:-
CLASS E600 IN AREAS SUBJECT TO HIGH POINT LOADS (E.G. FORK-LIFTS)
CLASS D400 IN HEAVY TRAFFICKED AREAS (ACCESS ROADS, SERVICE YARDS ETC.)
CLASS C250 IN LIGHTLY TRAFFICKED AREAS (CAR PARKS ETC.)
CLASS B125 (WITH MIN. 100mm DEEP FRAME) IN LANDSCAPE & NON-TRAFFICKED AREAS (PLANTING, PEDESTRIAN AREAS ETC.).
- VENTILATION SHALL BE PROVIDED AT THE HEAD OF FOUL DRAINAGE RUNS.
- ACCESS FOR RODDING/JETTING SHALL BE PROVIDED TO ALL SOIL AND RAINWATER DOWNPIPES ABOVE FINISHED FLOOR LEVEL.
- FOR DETAILS OF MANHOLE TYPES AND PIPE BEDDING ETC., SEE STANDARD DETAIL DRAWING(S).
- COVER LEVELS SHOWN ARE APPROXIMATE.
COVER LEVELS FOR MANHOLES WITHIN LANDSCAPED AREAS SHOULD BE CHECKED WITH THE LANDSCAPE ARCHITECTS. COVERS SHOULD BE ADJUSTED TO MATCH SURROUNDING FINISH LEVELS.
- THE CONTRACTOR IS TO PROTECT EXISTING BURIED PIPES (PARTICULARLY SHALLOW PIPES) AND TRENCHES FROM DAMAGE CAUSED BY LOADS IMPOSED BY CONSTRUCTION PLANT.

Anglian Water Notes

All S.104 adoptable drainage shall conform to the design and construction guide for developers, Sewers for Adoption 6th Edition published by WRc plc and any AWSL additions & deletions current at the time of execution.

All covers and frames on adoptable AW sewers are to be D400, kitemarked and be badged 'FW' or 'SW' accordingly. Suppliers shall be Stanton, Paul Savage, Noranco or Wrekin.

Adoptable pipework shall be to the following specification:

Clayware: BS EN 295-1:1991
150 dia. Crushing Strength 34kN/m
225 dia. Class 160
Concrete: BS EN 5911-1:2002
>300 dia. Class 120

SOAKAWAY PROTECTION:
Please ensure that during the construction phase all soakaways, gullies and gully laterals are protected from the ingress of silt or grit from the site. Placing a fine heavy duty geotextile under the gully grating, between it and the frame should suffice.

sFA6; Clause 2.9.10 The first manhole upstream from the connection to the (existing) public sewer should, when constructed, be fitted with a screen in order to prevent debris entering the public sewer. The screen should not be removed until immediately prior to the occupation of premises to be served by the sewer.

Survey Data:

CONTROL STATIONS			
Stn:	Eastings:	Northings:	Height:
9000	520673.028	335708.166	4.326
9001	520700.596	335713.643	4.619
9002	520655.138	335708.224	4.188
9003	520624.910	335714.884	4.176
9004	520649.105	335681.697	4.021
9005	520653.795	335680.243	3.982
9006	520647.897	335668.487	4.014

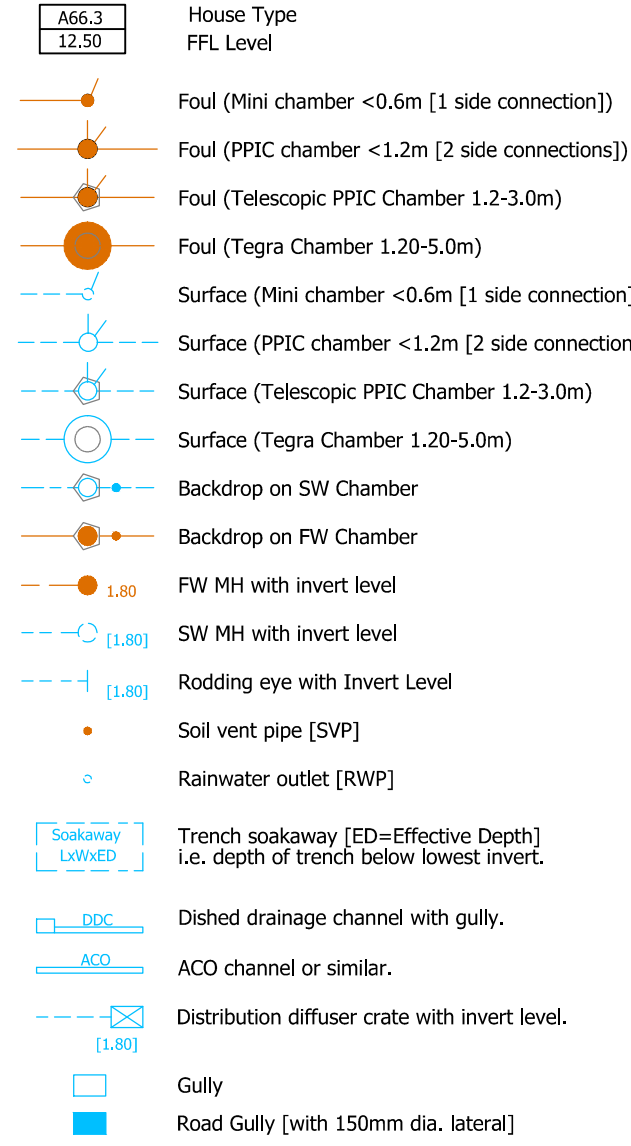
Data taken from Axis Surveys Ltd. drawing AS2128/1.

NOTES:
All dimensions must be checked on site and not scaled from this drawing.

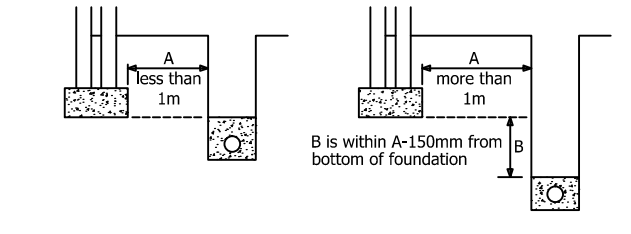
PRIVATE DRAINAGE NOTES:

Pipework to be 110mm dia. PVC-U Hephworth PlastiDrain or similar approved, unless otherwise stated.
Generally laid to falls of 1:50 on the foul drain and 1:60 on the surface water drain, minimum 1:80 on both.
160mm dia. pipework to be laid at a min. fall of 1:130.

The Specification and installation of the drainage systems are to comply with the Building Regulations Approved Document H & British Standard 8301. Building Drainage current at the time of construction and also the manufacturers recommendations. All connections are to be soffit to soffit.



Cover levels generally to be 150mm below slab levels.
Private pipework under adopted areas to be laid as min. 150mm dia. Extra Strength Clayware at minimum fall of 1:130.
Pipework under drives and other areas likely to be trafficked shall be backfilled with Type 2 material. Where depth of cover less than 900mm pipe to have 175mm thick reinforced (A393) concrete slab over. Both treatments to extend a minimum of 1m behind kerb-face.
Foul sewers serving more than 10 dwellings should have a minimum diameter of 150mm.
A Soil Vent Pipe [SVP] must be added at the head of any foul drainage system. Air Admittance Valves [AAV] can be used in other locations if required.



C	25-01-18	Note added re. solid cover to BIG's
B	17-01-18	Housetypes & drainage updated.
A	09-01-18	Housetypes overall dims amended to match info. provided by client.
	Date	Revisions

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Drawing Title
Drainage Layout

Date **DEC 2017** Scale @ **A1 1:200** Drawn **LCM/TRS**

Drg.No. **8885-107** Rev. **C**

**PRELIMINARY
DRAWING**