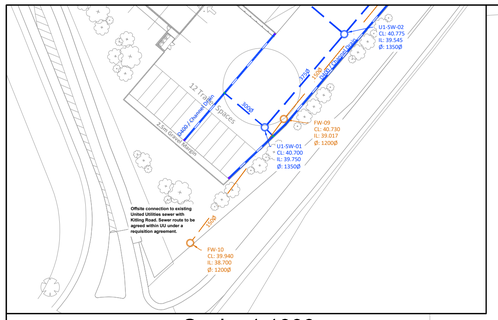


Scale: 1:1000 Inset 1

ASSUMED FFL: 41.950m

All internal drainage and roof drainage to be confirmed, subject to detailed design

ASSUMED FFL: 42.150m

All internal drainage and roof drainage to be confirmed, subject to detailed design

ASSUMED FFL: 41.750m

All internal drainage and roof drainage to be confirmed, subject to detailed design

Attenuation Pond
Bed Level: 38.500
Top of Bank Level: 40.500
Volume: 3,215 m³

Drainage for S278 works to have separate system and outfall

Refer to inset 1

Existing trees to be retained
Existing Commercial Use
Tincle Peg Farmhouse
NHO
Existing Farm Access retained
New Access Road
Building 1
Building 2
Building 3
The Cottage
Strawberry Lodge
Knowsley Lane
Existing Electric Cable
42 Car Spaces
17 Car Spaces
10 Car Spaces
45 Car Spaces
48 Car Spaces
25 Car Spaces
22 Car Spaces
10 Car Spaces
Open grated manhole for overspill from watercourse
Unit 3 Full Retention Separator Area: 0.439 Ha
Unit 2 Full Retention Separator Area: 0.390 Ha
Unit 1 Full Retention Separator Area: 0.724 Ha
Headwall IL: 38.165
Flow Control Chamber CL: 40.500 IL: 38.250 Q: 10.64 l/s
Headwall IL: 38.500
Headwall IL: 38.500
Headwall IL: 38.500
0m

U3-SW-01 CL: 41.765 IL: 39.970 Ø: 1200Ø
U3-SW-02 CL: 41.765 IL: 39.870 Ø: 1200Ø
U3-SW-03 CL: 41.950 IL: 40.450 Ø: 1350Ø (Open Grating)
U3-SW-04 CL: 41.885 IL: 40.285 Ø: 1350Ø (Open Grating)
U2-SW-04 CL: 42.045 IL: 40.370 Ø: 1350Ø (Open Grating)
U2-SW-03 CL: 41.910 IL: 40.600 Ø: 1200Ø (Open Grating)
U2-SW-02 CL: 41.705 IL: 39.800 Ø: 1350Ø
U2-SW-01 CL: 41.685 IL: 40.090 Ø: 1200Ø
U1-SW-06 CL: 41.680 IL: 39.010 Ø: 1350Ø
U1-SW-05 CL: 41.675 IL: 39.100 Ø: 1200Ø (Open Grating)
U1-SW-04 CL: 41.535 IL: 39.180 Ø: 1350Ø
U1-SW-03 CL: 40.875 IL: 39.360 Ø: 1350Ø
U1-SW-02 CL: 40.775 IL: 39.545 Ø: 1350Ø
SW-SW-01 CL: 41.765 IL: 40.200 Ø: 1200Ø
SW-SW-02 CL: 42.105 IL: 39.450 Ø: 1350Ø
SW-SW-03 CL: 41.990 IL: 38.975 Ø: 1350Ø
SW-SW-04 CL: 41.475 IL: 38.865 Ø: 1800Ø
SW-SW-05 CL: 40.500 IL: 39.000 Ø: 1200Ø
FW-01 CL: 41.855 IL: 40.505 Ø: 1050Ø
FW-02 CL: 41.755 IL: 40.202 Ø: 1050Ø
FW-03 CL: 41.700 IL: 39.944 Ø: 1200Ø
FW-04 CL: 42.100 IL: 40.750 Ø: 1050Ø
FW-05 CL: 42.100 IL: 40.561 Ø: 1050Ø
FW-06 CL: 41.700 IL: 40.350 Ø: 1050Ø
FW-07 CL: 41.315 IL: 39.851 Ø: 1200Ø
FW-08 CL: 40.855 IL: 39.608 Ø: 1200Ø
SRWP
Kerb Drain
D400 / Channel Drain
Keb Drain
Surface Water Drainage
Surface Water Drainage Manhole
Surface Water Channel Drain
Access Point
Outlet Point
SRWP Siphonic Roof Downpipe (specialist design)
Proposed Petrol Interceptor / Separator
Kerb Drainage
Site Wide Surface Water Headwall
Foul Water Drainage
Foul Water Drainage Manhole
0 10 20 30 40 50
SCALE IN METRES
Scale: 1:500

DRAINAGE NOTES:

1. This drawing is to be read in conjunction with all relevant drawings, specifications and documentation.
2. The position, size and levels of all drains are to be confirmed on site prior to the commencement of the works and any discrepancies reported immediately to the Engineer.
3. Do not scale from this drawing, work to dimensions or co-ordinates provided. All levels are in metres and all dimensions are in millimetres, unless otherwise noted.
4. The Contractor shall allow for the protection, temporary and permanent support and diversion works as necessary, to all existing services to the satisfaction of the public utilities.
5. The Contractor shall allow for dealing with surface water run-off into excavations and from groundwater by means of sumps, pumping and de-watering as appropriate, in order to keep the excavation as reasonably dry as possible during the construction of the works.
6. All private drainage within the site is to comply with the requirements of the relevant British/European Standard and the Building Regulations Part H.
7. Concrete protection to pipework is to be provided as follows:
 a) All pipework within pedestrian/soft areas with less than 600mm cover.
 b) All pipework subject to vehicular overrun with less than 1.2m cover.
8. All pipework within manholes are to be laid soffit to soffit (U.N.O). All chamber invert levels are for the outgoing pipe levels. Backdrop pipework shall be connected at soffit to soffit with the rodding access level specified.
9. Any gradients of drains indicated are indicative only and the Contractor shall install the drains to the specified levels shown for each manhole (U.N.O). Catchpit invert levels are for the outgoing pipe with the sump level specified separately.
10. Co-ordinate setting out information for manholes is to the intersection the drains and not the centre of the manhole.
11. Cover levels of the manholes are provisional and subject to adjustment on site to suit the finished ground levels. All external works construction areas to be as located by the architect.
12. Manhole covers and frames are to be in accordance with the relevant British/European Standard and the following:
 g) Vehicular Areas: Class D400, double triangular, 150mm deep ductile iron cover and frame with three point cover seating, badged FW or SW for Foul or Surface Water drainage.
 h) Pedestrian Areas: Class B125, 100mm deep, badged FW or SW for Foul or Surface Water drainage.
13. Double seal manhole covers and frames are to be used on internal foul water drainage chambers. Finish to be confirmed by the Architect.
14. Heavy duty cover slabs are to be used within vehicular trafficked areas.
15. Gully gratings and steel channel covers are to be in accordance with the relevant British/European Standard as follows:
 a) Areas subject to vehicular overrun: Class D400 minimum.
 b) Areas not subject to regular vehicle overrun (adjacent to kerbs etc): Class C250.
 c) Gully grates adjacent to kerbs shall be hinged on the side of the traffic direction (left hand side).
16. Positions and sizes of above ground foul and surface water drainage connections are to be confirmed prior to construction with the Architect and M&E Engineer.
17. All oil/petrol separators to have oil alarm system in accordance with Client's requirements and vents in accordance with manufacturer's details/recommendations. Separator to have full concrete surround to manufacturer's recommendations.
18. Diameter of PCC manholes varies with pipe size, and is to be in accordance with the tables shown on the accompanying Burrows Graham Standard Details drawings.
19. Drainage channels are to be ACO Qmax in service yards and ACO Multidrain in car parks, or similar approved. Channels are to be sized by the supplier and approved by the Engineer in writing prior to ordering. Drainage channels to be installed to manufacturers' requirements. Design of channels shall be based on a 1 in 30 year storm return period, 15 minute duration. Outlet units on channel drains to include silt traps.
20. All brickwork in connection with drainage is to be solid Class B Engineering Brick to the relevant British/European Standard.
21. All precast concrete pipes, chamber products and road gullies shall be to the relevant British/European Standard and should be Kite-marked/CE-marked accordingly.
22. Insitu concrete grades to be as stated on the drawings. Design chemical class for all precast concrete products shall be DC4 unless agreed otherwise.
23. All separators shall be in accordance with the Environment Agency document PPG3.
24. All below ground plastic/grp tanks shall be installed in accordance with the manufacturers instructions. They shall be provided with sufficient concrete surround to counter floatation and shall have a wall thickness adequate to resist the highest ground water level which could be encountered at their location.
25. All existing drainage/structures to be abandoned shall be broken out and removed from site, the excavation shall be backfilled with a suitable granular material to the required level. Alternatively, deep drains may be cleaned and grouted with a 1:10 cementitious grout, with structures broken down 1m below finished ground level and backfilled with a suitable granular material.
26. Where utility/land drainage trenches etc cross over drainage trenches, the Contractor shall construct an impermeable barrier to prevent groundwater infiltrating into the drainage trench.

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING

CONSTRUCTION

MAINTENANCE

DEMOLITION

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

GENERAL NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL THE RELEVANT ARCHITECTS, ENGINEERS' AND SERVICE ENGINEERS DRAWINGS & SPECIFICATIONS.
27. Upon completion of the works the Contractor shall clean all drainage by jetting, removing all debris from site. no debris shall be permitted to enter the existing drainage system.
28. All works are assumed to be within public highway or within land owners lands & no works are required on third party land owners property.
29. All RWP, gully and channel connections shall be 150mm dia U.N.O. Waste/soil stack connections shall be 100mm dia. UNO and shall have internal above ground rodding eyes or large access fittings in accordance with Building Regulations.
30. Design assumes that no water authority sewers or other drainage systems require modification, diversion or abandoning.
31. Backfill to all drainage trenches to be Class 6F1 material.
32. All works within the public highway to be reinstated to highway authority requirements.
33. Unless otherwise agreed all outfalls to ponds and watercourses to be proprietary PCC Units. Headwall details to be approved by local Internal Drainage Board where applicable.
34. Penstocks where indicated shall be electronically operated complete with power supply and connection (refer to service engineers drawings for cable and ducting etc.)
35. Syphonic break chambers (i.e. with SRWP entering) to be constructed with open grated manhole covers. (waterway 2000 or similar approved)
36. No deep rooting trees/vegetation should be planted within 5.0m of any drainage works.
37. All WPC's, SRWP's and RWP's are shown indicatively. Locations shall be confirmed by others.
38. All manholes less than 1.5m deep are considered as none man entry and shall be maintained from ground level.
39. All sprinkler drain and gully locations and flow rates to be confirmed by the sprinkler Contractor. Potential local storage manholes for sprinkler discharge are to be confirmed following definition of system requirements. It is assumed that future sprinkler installation points will be located close to foul water drainage runs.
40. Below ground drainage connections to be provided to all canopy downpipes - 150mm dia with concrete bed and surround UNO.
41. All sewers to be adopted shall be in accordance with sewers for adoption and local water board details.
42. All headwalls to have guardrail and headwalls greater than 375mm dia to have a trash screen/grating fitted.

REV	DATE	BY	REVISION	CHK'D
P06	14.10.25	RO	Updated to suit latest site layout	JW
P05	11.09.25	RO	Updated to suit TSA Riley comments	JW
P04	27.08.25	RO	Updated to suit latest site layout Updated to suit S278 levels	CA
P03	27.03.25	RO	Diverted watercourse omitted	JW
P02	05.10.22	RO	Manhole labels updated	JW
P01	05.08.22	RO	Preliminary	JW

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CLIENT

Caddick Construction.

PROJECT

KNOWSLEY BUSINESS PARK
KNOWSLEY

DRAWING TITLE

DRAINAGE LAYOUT

OUR PROJECT NUMBER	DRAWING STATUS	OFFICE	
22075	PRELIMINARY	NORTH	
SCALE @ A1	DATE	DRAWN BY	CHECKED BY
AS SHOWN	05.08.2022	RO	JW

DRAWING No: 22075-BGL-XX-XX-DR-C-00210
REV: P06