1. STANDARD NOTES:

This Drawing is to be read in conjunction with all relevant Architect's Engineer's and specialists' drawings and specifications. Any discrepancies from the information indicated on these drawings shall immeditately be brought to the attention of the engineer.

Do not scale from this drawing in either paper or digital form. Use written dimensions only. To check drawing has been printed to the intended scale this bar should be 50mm long @ A1 or 25mm long @ A3.

Health & Safety :
All specific drawing notes are to be read in conjunction with the project "Information Pack" and "Site Rules".

All drainage design and installation to be carried out in accordance with the following:
BSEN 752: Drain and sewer systems outside buildings.
BSEN 12056: Gravity drainage systems inside buildings.
Building Regulations - Part H.
Sewers for Adoption - Current edition
BS 8000 Pt.14 - Workmanship on building sites.

2. PIPEWORK NOTES:

All pipework to be vitrified clay under building & in hard & soft landscaped areas U.N.O
All perforated pipes to be twin wall plastic

All pipes under building to be Y & W surround. All other external pipes to be laid in class 'S' unless cover is less than 600mm where they should be laid in class 'Z'.

Where GEN 3 concrete is noted ST 4 may be used as an alternative.

All FWP and RWPs shown are indicative only (coordinated with Architects) setting out is to be shown on the Architects drawings at a future stage.

All gullies indicative only, subject to final road levels.

All gullies to be trapped and roddable.

All below ground branch pipes to main runs shall be 100mm diameter unless stated otherwise. Initial below ground 100mm diameter foul and 150mm diameter surface water lateral pipes shall be laid no flatter than 1:40 and 1:60 respectively (unless stated otherwise). Where necessary, to avoid clashes, lateral connections may be laid to nominal falls and ramp at 45 degrees to manhole invert or pipe junction.

All drainage pipes to be sleeved in concrete when passing through foundations.

All bends in pipework shall be long radius.

Pipe connections not to inspection chambers shall be via preformed oblique junction swept in the direction of flow.

All buried surface water pipes to be Ø150mm & all foul water pipes to be Ø100mm U.N.O

All manholes to have recessed manhole covers to match Landscape Architects specification.

Where a WC is connected directly to a drain or via a sub-stack the depth to invert from finished floor level can be no greater than 1.3m.

Kitchen facilities to be fitted with above ground grease traps

3. CONTRACTOR NOTES:

The Contractor shall allow for the temporary and permanent support and diversion works as necessary, to all existing services to the satisfaction of the puplic utilities.

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 project.

All levels and dimensions shall be verified on site prior to the commencement of any works. Any discrepancies shall be immediately be brought to the attention of the engineer.

Contractor to confirm hydrobrake, attenuation tank & SW pump with manufacturer prior to placing order.

The contractor shall allow for a drainage CCTV survey (refer to R12/901/971)

4. SERVICE NOTES

All connections to existing drainage to be confirmed on receipt of condition survey.

The location, size and depth of all existing drains/sewers and services shall be established by the contractor prior to the commencement of works on site. Any discrepancies from the information indicated on these drawings shall immeditately be brought to the attention of the engineer.

Details of existing and public sewers to be taken from relevant Water Authority, Asset Maps, CCTV Surveys & Site Survey.

Connections to the public sewer are to be made in accordance with Thames Waters S106 consent letter.

5. LANDSCAPE/ ARCHITECTS NOTES:

Cover levels have been set out by Landscape Architect and Architect.

Landscape drainage gullies are to be set out by landscape architect

Landscape layout, road and carpark finished levels to be confirmed by Landscape Architect.

Site surface water drainage has been designed based on the levels and grades shown on Landscape Architects drawings.

Manhole covers shall be set to same level and fall as adjacent ground and should be recessed.

Architect to confirm the temination position of all vent pipes.

All falls are to be away from the building and TBC by Landscape Architect.

Tree protection zones to be surrounded with a root protection barrier.

6. DISUSED PIPEWORK:

All disused pipework within new building envelope to be demolished and removed and replaced with clean fill material once it is confirmed that there are no connections from neighbouring properties.

All other existing drainage to be abandoned is to be removed or plugged, U.N.O.

7. ATTENUATION:

GENERAL NOTES:

Site surface water drainage has been designed to attenuate flows to the existing greenfield run-off rate. Storage is provided in underground storage cells and permeable paving. Storage is subject to approval by local authority.

Surface water attenuation has been designed for a 100yr storm plus 30% climate change.

To protect the modular attenuation / storage tank from construction site debris, the contractor shall ensure that stoppers are securely placed in all connections immediately upstream of the tank units, only to be removed once the final cleaning of the roads and drainage has been completed.

Attenuation tank to be constructed in accordance with Hewitech's installation manual.

Attenuation tank maintenance is in accordance with Hewitech's guidelines.

Hewitech to confirm tank is suitable in the proposed location.

8. M+E NOTES:

Pump chamber electric supply to be confirmed by M+E. Pumps to be connected to uninterrupted electrical supply.

Pump to be duty / standby

Surface water pump to discharge at 13.5 l/s

Refer to New Haden quote P-171337 A0 for pump specification

9. MANHOLE SCHEDULE NOTES:

PPIC = Polypropylene Inspection Chamber by Hepworth.
Types A, B, C & E as 'Sewers for Adoption'.
Types A, B, & E by Milton Precast.
Type C is brick construction.

Concrete inspection chamber by Milton Precast (or similar approved).
Recessed cover to suit finished surfaces.

Polypropylene inspection chamber by Osma (or similar approved). Recessed cover to suit finished surfaces.

Internal manhole - Concrete inspection chamber by Milton Precast (or similar approved). Cover to be double sealed and airtight.

All trafficked manholes to have D400 loading covers.

All manholes with 3 branch connections on one side to be min 1000x675mm PCC inspection chamber
All manholes with 4 branch connections on one side to be min 1200x750mm PCC inspection chamber

All phase 2 manholes within the phase 1 boundary are to have capped pipes for future connections.

10. ROADS:

CBR tests need to be carried out in-situ and at the proposed formation level, prior to final design and construction. This is required to determine depths of sub-base and capping material.

All material within 450mm of ground level to be non frost susceptible.

Surface course, binder course and base course to be in accordance with BSEN 13108.

Sub-base to be accordance with the specification for Highway Works, Series 800.

Capping material to be in accordance with the Specification for Highway Works, Series 600.

Road formation to be checked for soft spots prior to laying pavement materials. All soft spots to be removed and replaced with 6F2 capping material.

All road pavement buildup drawings to be read in conjunction with Q series specification.

Formation to be trimmed and rolled to Specification for Highway Works, Series 600 prior to laying pavement material.

Sub-base Type 1 granular material to have minimum CBR of 30%.

All thicknesses of granular material are after compaction.

All pavement materials damaged by construction traffic to be repaired prior to replacing full pavement layers.

Capping material to have CBR of 15%.

All tolerances for pavement layers in accordance with Specification for Highway Works, Series 700.

All kerbs to be laid in accordance with BS7533-6.

11. PERMEABLE PAVEMENTS:

PERMEABLE PAVEMENTS CONSTRUCTION DETAILS:

1. Lay a geomembrane on top of the existing ground (formation level) or on capping if capping is specified
2. Construct the permeable sub-base in layers no more than 150mm thick, taking care not to puncture the membrane
3. Coarse graded aggregate should comply with the requirements of BS EN 13242:2002. The material should be designated Type 4 / 20 (4mm minimum and 20mm maximum particle size).
4. Tank the sides of the sub-base with a geomembrane and cover the sub-base with a geotextile.
5. Lay the rest of the build up in accordance with the pavement build up details.

Ver	Date	Drawn	Eng	Amendment
7	11.04.16	DLa	KB	Issued for Construction
6	08.04.16	DLa	KB	Issued for Draft Construction
5	12.02.16	AH	KB	Issued for Construction
4	28.04.15	DLa	KB	Issued for Tender
3	21.04.15	DLa	KB	Issued for Tender
2	20.03.15	DLa	KB	Issued for Comment
1	16.12.14	DLa	DFC	Stage 3 Issue

KINGSGATE SCHOOL
LIDDELL ROAD

DRAINAGE & ROADS
GENERAL NOTES

Status
FOR CONSTRUCTION

Drawn DLa	Eng KB
Scales NTS at A1	NTS at A3
Drawing No 22885-600	Ver 7

PRICE&MYERS
Consulting Engineers
30 Newman Street London W1T 1LT
T 020 7631 5128 F 020 7462 1390
E name@pricemyers.com www.pricemyers.com