

1. General Notes

All civil engineer's drawings are to be read in conjunction with all relevant architect's, engineer's and specialist's drawings and specifications.

Do not scale from any civil engineer's drawings in either paper or digital form. Use written dimensions only. To check drawing has been printed to the intended scale the above bar should be 100mm.

All drainage design and installation shall be carried out in accordance with the following:
BS EN 752 Drain and Sewer Systems Outside Buildings;
BS EN 12056 Gravity Drainage Systems inside Buildings;
Building Regulations - Part H;
Sewers for Adoption - 6th and 7th editions.

- Abbreviations:-
FWP - Foul Waste Pipe
RWP - Rainwater Pipe
CD - Channel Drain
SD - Slot Drain
RE - Rodding Eye
RA - Above Ground Rodding Access
BD - Backdrop
FW - Foul Water
SW - Surface Water
CW - Combined Water
FG - Floor Gully
YG - Yard Gully
SSL - Structural Slab Level
FFL - Finished Floor Level
Ø - Diameter
TOC - Top of Concrete
NTS - Not to Scale
PC - Pumping Chamber

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 works.

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 attenuation of engineer.

HEALTH & SAFETY: Future works shall be carried out by specialist competent and experienced contractors. All operatives shall have received full and appropriate training with appropriate qualifications for the operations they are required to undertake. All work shall be carried out in accordance with the relevant Health & Safety Regulations.

2. Drainage Notes

PIPEWORK

All private drainage pipework for foul and surface water systems have been designed on the basis of UPVC to BS EN 1401-1, unless noted otherwise.

All drainage pipework shown shall be 100mm diameter unless noted otherwise.

All underslab drainage shall be laid at gradients of 1:40 min. for foul pipework and 1:80 min. for surface water unless noted otherwise.

All underslab drainage shall be clear of foundations unless shown otherwise with long radius bends kept to a minimum and used where unavoidable.

Pipe connections not to inspection chambers shall be via preformed oblique junction swept in the direction of flow and to have above ground rodding access.

All pipework laid under roads with less than 900mm cover, or under landscaped areas with less than 600mm cover to have min. 150mm concrete surround.

All bends in pipework to be long radius.

Concrete encasement of the pipework shall be required where the vertical clearance between two pipes crossing is less than 300mm.

ADOPTABLE PIPEWORK

All existing drainage shall be assumed to be 'live' and shall be maintained at all times during the works. Existing drainage shall be reconnected to the new drainage system unless proven to be redundant for abandonment. All existing drainage to be abandoned shall be sealed by appropriate means.

All adoptable drainage pipework for foul and surface water systems have been designed on the basis of clayware, concrete or plastic to comply with Sewers for Adoption 7th Edition.

All drainage connecting to the public sewer network shall not commence until receipt of the approval from the drainage authority and shall comply with requirements using vitrified clay pipework to BS EN 295 with plain sleeved or socketed flexible joints subject to their approval.

Where drainage works are carried out in the public highway the relevant necessary approvals and road opening notices shall be obtained from the highway authority and utility companies.

COORDINATION NOTES

All FWP's, RWP's, channel drains and gullies shown are indicative only, to be set out by others.

All gullies to be trapped and roddable.

At least one soil pipe at the head of each foul run shall be vented to the atmosphere.

All gutters shall be fitted with a leaf filter at each outlet to reduce the risk of blockage.

Threshold drain requirements TBC by architect.

ACCESS CHAMBERS

Access covers and frames shall comply with the loadings specified and to BS EN 124 and kitemarked or if recessed covers are specified then in accordance with FACTA association equivalent.

All internal access covers shall be recessed, double sealed and lockable unless where noted otherwise. Covers by Steelway Brickhouse to suit architects floor finishes.

Cover levels are given indicatively based on information provided by the architects and landscape architects. Covers shall be set to the same level and fall as adjacent ground.

Any covers that will be trafficked in the permanent case or by construction traffic to have covers with load class D400.

ATTENUATION TANKS

Attenuation tanks have been sized for the 1 in 100 year +40% storm using FSR rainfall data.

To protect the geocellular tanks from construction 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 roads and drainage has been completed.

Attenuation tanks are to be installed in accordance with manufacturers requirements. Contractor to ensure geomembrane is sealed using welding and installed with a minimum overlap of 300mm.

Attenuation tanks to be Polypipe. Structural calculations in accordance with CIRIA C737 to be completed prior to tanks being ordered.

PUMP NOTES

Contractor shall confirm pump selection and construction drainage with manufacturer prior to procurement.

24 hour storage or back up power supply required for any foul pump serving residential buildings.

M&E Engineer to provide back-up power supply in line with Premier Guarantee Technical Requirements.

Venting and power supply by M&E. Pumps to be connected to uninterrupted electrical power supply.

Position of control panel to be coordinated with architect and M&E. Pumps are to be fitted with alarms.

TESTING

Air testing (Method L) off entire pipe network required.

Upon completion all new drainage installation together with any existing drainage retained shall be jetted and CCTV surveyed. Contractor to ensure that the drainage system is fully operational, free of excess debris/silt and all identified faults rectified.

WORKS TO THAMES WATER ASSETS

Diversion and deculverting of Thames Water surface water sewer subject to Thames Water approval and agreement with Waltham Forest.

All works to be carried out in compliance with agreed Section 185 drawings, once Thames Water approval has been secured.

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

3. Roads & Pavement Notes

GENERAL NOTES

Pavement finishes and kerb details to be specified by landscape architect.

Paving to be installed in accordance with BS EN 7533.

CBR test are to be carried out in-situ and at the proposed formation level, prior to final design and construction.

Road formation to be checked for soft spots. Soft spots to be report to engineer who will confirm remediation requirements. Allowance to be made for soft spots to be removed and replaced with Type 1 material or Type 6F2 capping material.

MATERIAL REQUIREMENTS

All material is to be non frost susceptible.

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

Sub-base material to be in accordance with Specification for Highways Works, Clause 801.

Capping materials to be in accordance with Specification for Highways Works, Series 600, Tables 6/1 & 6/2.

Capping material should be type 6F1 or 6F2 to Specification for Highways Works Clause 613, 616 & 617 prior to the placement of the sub-base material.

KERBS

Kerbs to be laid in accordance with BS EN 7533-6.

Precast concrete kerbs and edging shall be in accordnace with BS EN 1340.

Granite kerbs shall comply with BS EN 1343:2012.

Bedding and backing to GEN 0 (or ST1) concrete.

All concrete bedding to be laid on a minimum of 100mm sub-base. The base of the kerb bedding is to be set level with the top of the sub-base subject to a minimum depth of concrete of 150mm.

The depth of concrete haunch below the top of kerb will be determined by the minimum construction thickness of the adjacent surfacing.

Kerb joints to be 2mm minimum , mortar not required.

Closures are to be a minimum length of 300mm. Cuts are to be sawn.

PERMEABLE PAVING

Permeable paving sub-base to be constructed and covered with a sacrificial layer of geotextile and hardcore (100mm thick minimum). Towards the end of the construction works remove the sacrificial layer and construct the laying and surface courses.

The laying course material must be sufficiently coarse to allow the free vertical flow of water and to prevent its intrusion into the underlying coarse graded aggregate, yet sufficiently fine to permit the accurate installation of the paving blocks.

BS SIEVE SIZE (mm)	PERCENTAGE PASSING
14	100
10	98 - 100
6.3	80 - 99

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).

Tank the sides and base of the sub-base with the geomembrane.

Spread the depth of sub-base in layers no more than 150mm thick, taking care not to puncture the membrane.

Lay geotextile on top of stone layer with overlapping joints.

Spread the laying course on top of the geotextile.

4. Health & Safety

Future works shall be carried out by specialist competent and experienced contractors. All operatives shall have received full and appropriate training with appropriate qualifications for the operations they are required to undertake. All work shall be carried out in accordance with the relevant Health & Safety Regulations.

The key construction stage health and safety hazards from a civil's point of view are:

Excavations	Excavation for manholes, pumps and attenuation tank Contractor to ensure adequate edge protection to excavations for workers and plant and to ensure sides of excavations are sufficiently stable or shored up. Contractor to restrict access into areas where excavations are being carried out.
Sewer Connections	Working with live sewers Extra care must be taken when dealing with live sewers to ensure there is no adverse effect to the existing drainage.
Existing services	Working alongside/near existing services Extra care must be taken when working/digging near existing services. A survey should be carried out prior to works commencing to determine the exact location of existing services.

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HEYNE

TILLET

STEEL

STRUCTURAL
ENGINEERS

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Job Name
Hornsey Town Hall

Drawing Title
Civils Notes