

Summary of Drainage Strategy

Storm Water

- The site is located off Stockwell Gate, Whaplode, Spalding. The postcode for the site is PE12 6UE and the approximate center of the site at National Grid Reference is TF 33157 24728.
- The site size is 0.46 ha. The proposed buildings (including garages) cover an area of approximately 985m²
- A number of private drainage systems is to be provided to collect storm runoff from roofs, parking spaces and the driveway for all storms up to 1 in 100-year event plus 40% climate change, discharging to Soakaways located at the back gardens. Due to limitation of space groups of properties need to discharge to shared Soakaways. Additional attenuation to Soakaway 4 will be provided via a tanked attenuation crated in the garden of Plot 8, as shown
- Soakaways shall be designed in accordance with Building Regulations
- Storm water from the private driveways shall be filter by a layer of grit provided below the permeable blockwork. Underdrains to discharge to the private Soakaways systems
- The road shall be offered for adoption to the relevant authority. Storm water from the adoptable road will be collected via trapped gullies, discharging to the existing IDB watercourse at the south-east side of the site
- An Oil separator will be incorporated in the adoptable system providing treatment to the storm water
- A Hydro-brake (MH-0106-S) will control discharge at a rate of 5.0 l/s for the adoptable drainage
- Attenuation shall be provided in 375mm pipes
- Easement strips shall be provided for the adoptable drainage (foul and storm water)

For the Private System:

Total Attenuation Volume provided in Soakaways: 92 m³
Attenuation volume used in 1:30 yrs storm event: 52%
Attenuation volume used in 1:100 yrs storm event: 70%
Attenuation volume used in 1:100 yrs storm event + 40% Climate Change: 99%

Foul Water

A positive Foul water system should be provided with discharging to the existing AW foul sewer located at the north boundary of the site. Foul water beneath the adopted Highway will be offered for adoption to Anglian Water

Exceedence Flows

- Exceedence flows shall be routed as demonstrated in drawing 21101-002, without risk of flooding to any building

	Drainage Hierarchy	Y / N	Comment
1	Infiltration to the maximum extent that is practical	Y	Soakaways will be utilised for the private development. Infiltration rate stated 1.6 x 10-6 m/s
2	Discharge to surface waters	Y	Adoptable drainage shall discharge to the existing IDB Ditch
3	Discharge to Surface Water Sewer	N	No Surface Sewers located at the vicinity of the site
4	Discharge to combined sewer (last resort)	N	No Combined Sewer exists

Management & Maintenance

The private drainage systems shall be managed by the Plot Owners for this development. The maintenance activities listed below are considered to be the basic tasks necessary to keep the site drainage systems working at optimum efficiency, which is necessary to ensure that they have capacity to deal with extreme / unusual events. Other activities, such as litter removal / repairs etc. will also be required.

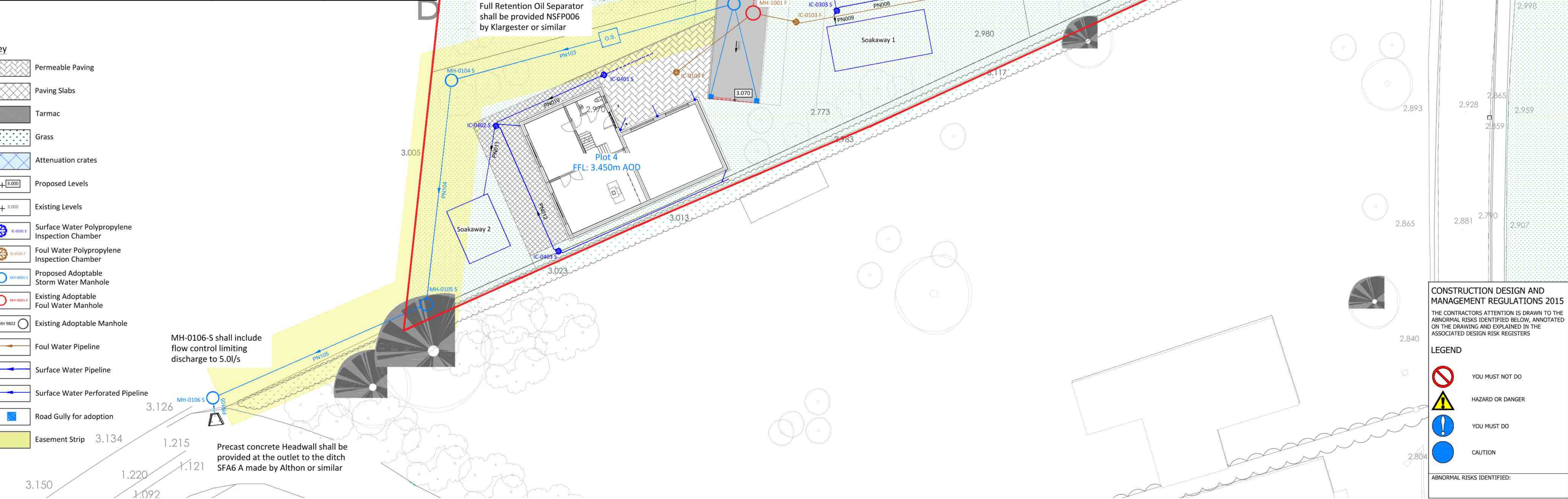
Area	Maintenance Activity	Frequency	Responsibility
Adoptable Road	Periodic sweeping to remove debris, leaves etc.	Every 2-4 weeks during Autumn	Highways Authority
	Cleaning of Gullies	Recommended every 2-years	Highways Authority
Highways Drainage Infrastructure	CCTV / Jetting of Sewers	Every 10-years	Highways Authority
	Repairs to sewers	As required	Highways Authority
Adoptable Foul Drainage System	Cleaning and Inspection	As required	Anglian Water
'On-plot' Hard-surfacing & Drainage	Blockwork paved areas to be swept and de-weeded	As required during Spring and Summer months	Plot Owner
	CCTV / Jetting of Sewers	Recommended every 10-years	Plot Owner
	Inspection of Manholes / Chambers	Recommended every 5-years	Plot Owner
Building Roof Drainage	Gutters to be cleared of debris	Recommend every 2-years	Plot Owner
Building Foul Drainage	Cleaning of below ground pipework	Recommend every 10-years	Plot Owner

Key

- Permeable Paving
- Paving Slabs
- Tarmac
- Grass
- Attenuation crates
- Proposed Levels
- Existing Levels
- Surface Water Polypropylene Inspection Chamber
- Foul Water Polypropylene Inspection Chamber
- Proposed Adoptable Storm Water Manhole
- Existing Adoptable Foul Water Manhole
- Existing Adoptable Manhole
- Foul Water Pipeline
- Surface Water Pipeline
- Surface Water Perforated Pipeline
- Road Gully for adoption
- Easement Strip

MH-0106-S shall include flow control limiting discharge to 5.0l/s

Precast concrete Headwall shall be provided at the outlet to the ditch SFA6 A made by Althon or similar



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NOTES

- Do not scale this drawing.
- All dimensions are in millimetres unless stated otherwise.
- This drawing to be read in conjunction with all other relevant drawings and specifications.
- All proprietary items to be installed in strict compliance with manufacturers instructions and recommendations.

STANDARD DRAINAGE NOTES:

- Except where specifically shown otherwise all below ground pipes / connections shall be 100mm dia PVC (to BS 4660) or VC (to BS 5481) with flexible joints and laid to minimum falls of 1 in 40, except where connected to WC when falls may be 1 in 80.
- All gravity pipe runs to be tested to a standing head of 1500mm head of water above the invert at the head of the pipe run (but not exceeding 4000mm at the lower end)
- For details of bed and surround requirements refer to long-sections and standard details. In all other situations provide 150mm of 10mm single-sized rounded gravel bedding and surround.
- Except where specifically shown otherwise, pipes to be a minimum of 900mm below roads/driveways and 600mm below gardens/fields.
- Ventilating pipes to be provided at the head of each drain and to any branch longer than 6m where a single appliance is connected, or 12m where a group of appliances is connected.
- Step-irons shall not be fitted in any chambers unless specified otherwise.
- Manhole/Gully covers shall be regulated to suit finished levels and crossfalls
- All proprietary items to be installed in strict compliance with manufacturers instructions and recommendations
- Drains passing beneath buildings to have minimum 100mm granular fill or flexible filling around pipe. Where the pipe crown is within 300mm of the underside of the slab, pipe shall be encased in concrete integral with the slab.
- Drains passing through walls below ground level to have minimum 50mm clearance all round and opening in walls to be masked all round with rigid sheet material to prevent ingress of fill or vermin. Openings in walls for pipes shall have concrete lintels to support wall construction above
- Unless stated otherwise, pipes to be 150mm Diameter.
- Unless Stated otherwise car parking spaces subbase to be 350mm type 3 granular material

STANDARD ROADS / FOOTPATH NOTES:

- Existing structures to be broken out to minimum 450mm below top of finished surface level. Existing footpath to be broken out and rubble and existing subbase to be removed off-site.
- Subgrade to be proof rolled with one pass of a smooth-wheeled roller having a mass per M-width of roll of not less than 2,100-kg or a Vibrating Roller having a mass per M-width of roll of not less than 700-kg or a Vibrating Plate Compactor having a mass per m2 of not less than 1400-kg. Any soft spots shall be removed and replaced with Type 1 compacted in layers not exceeding 150mm thickness.
- All formations are to be treated with an approved herbicide before placing sub-base material on a geotextile separation membrane (Terram 1000 or similar approved)
- All sub-base material is to be non-frost-susceptible. All concrete to be sulphate resisting

Rev	Amendments	Rev'd by	Date
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Client
Stinders Development Ltd

Project
Proposed Development
Stockwell Gate
Whaphole, Spalding

Title
Drainage Strategy

Job No
21101

Drawing No
21101-001

Status
Preliminary

Scale
1:200

Date
26-04-21

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THE CONTRACTORS ATTENTION IS DRAWN TO THE ABNORMAL RISKS IDENTIFIED BELOW, ANNOTATED ON THE DRAWING AND EXPLAINED IN THE ASSOCIATED DESIGN RISK REGISTERS

LEGEND

- YOU MUST NOT DO
- HAZARD OR DANGER
- YOU MUST DO
- CAUTION

ABNORMAL RISKS IDENTIFIED: